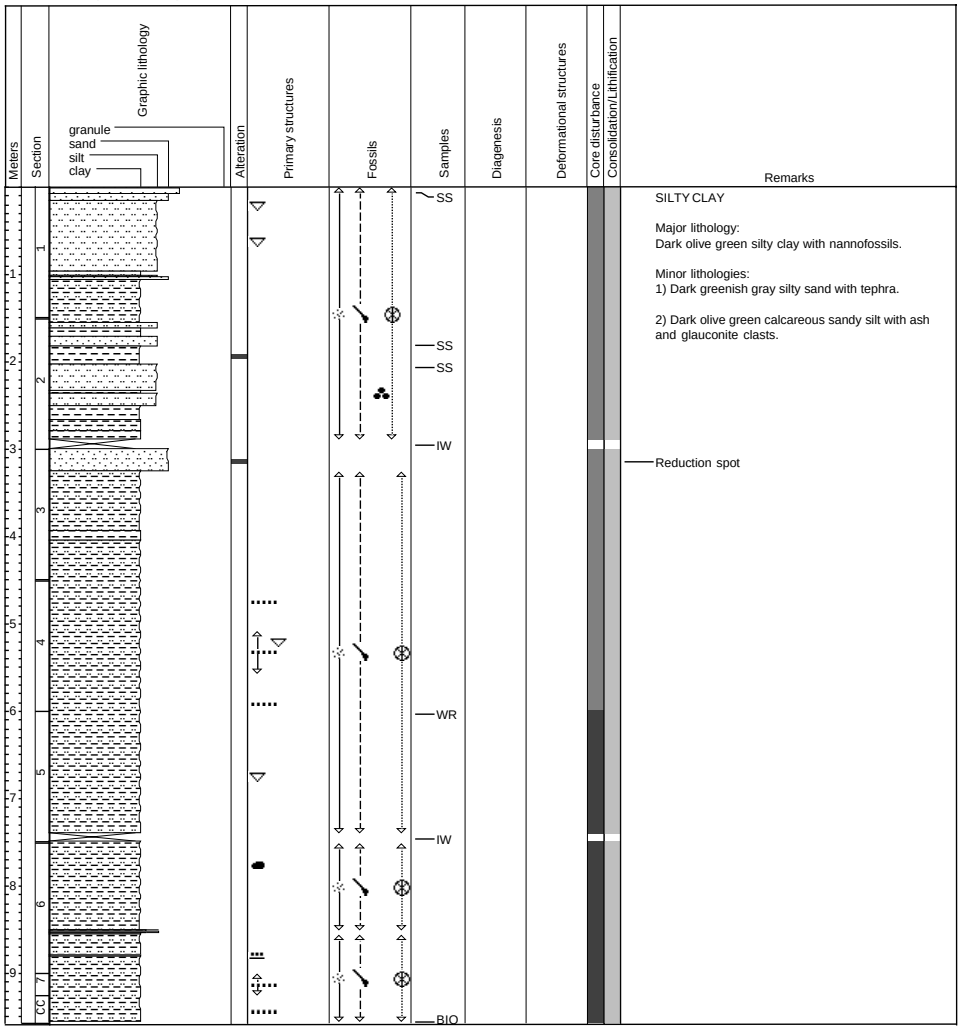
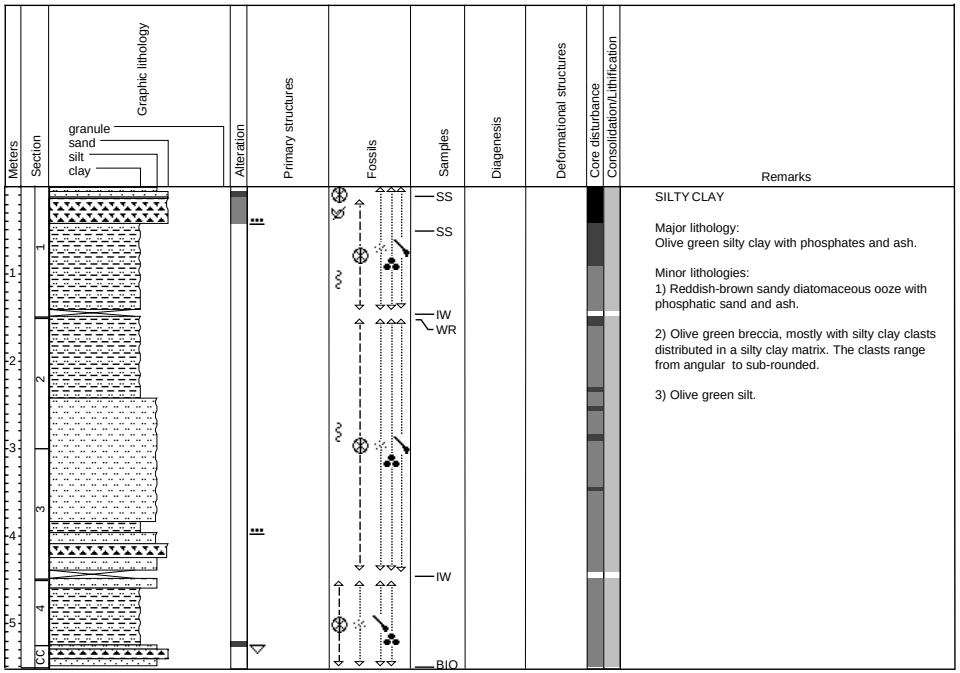
Site 1040, Hole A, Core 1H - Cored: 0.00 - 9.50 mbsf

1040A-1H



Site 1040, Hole B, Core 1H - Cored: 0.00 - 5.50 mbsf

1040B-1H



SILTY CLAY

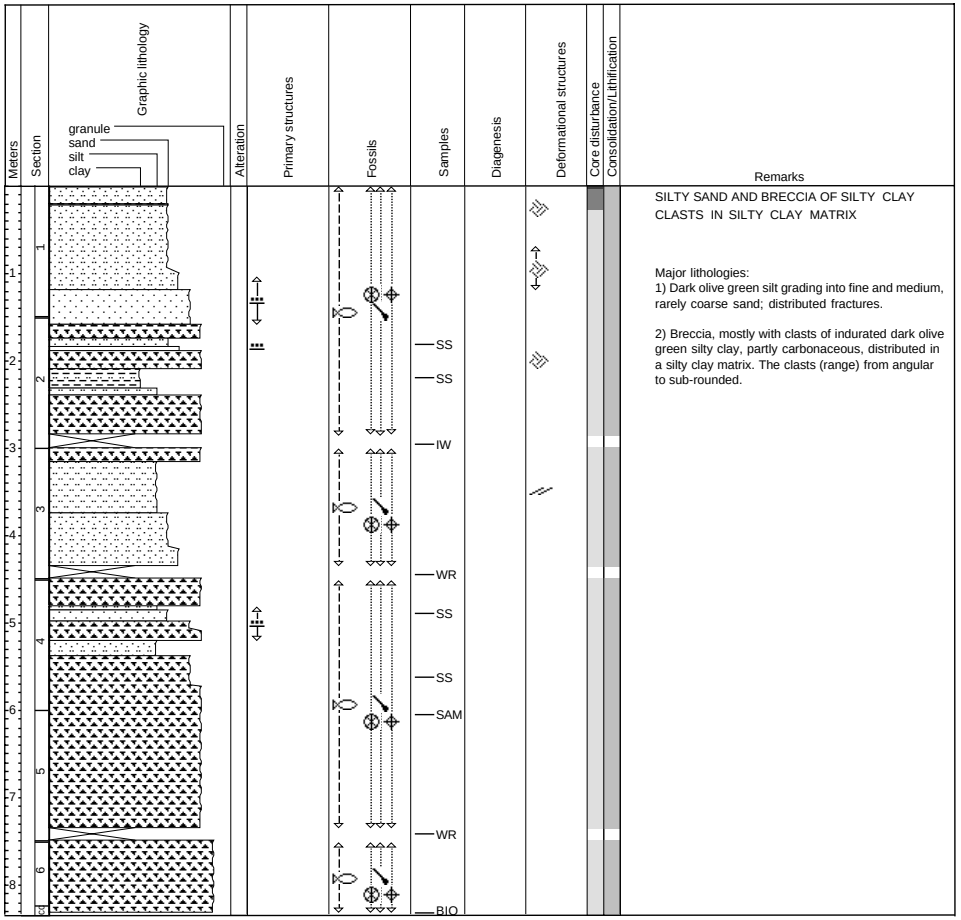
Major lithology:
Olive green silty clay with phosphates and ash.

Minor lithologies:
1) Reddish-brown sandy diatomaceous ooze with phosphatic sand and ash.

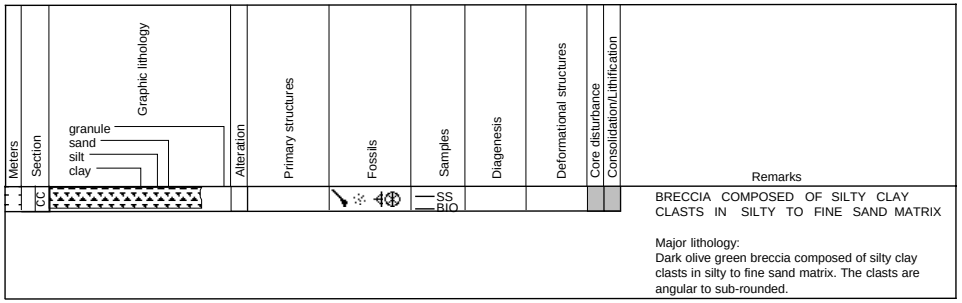
2) Olive green breccia, mostly with silty clay clasts distributed in a silty clay matrix. The clasts range from angular to sub-rounded.

3) Olive green silt.

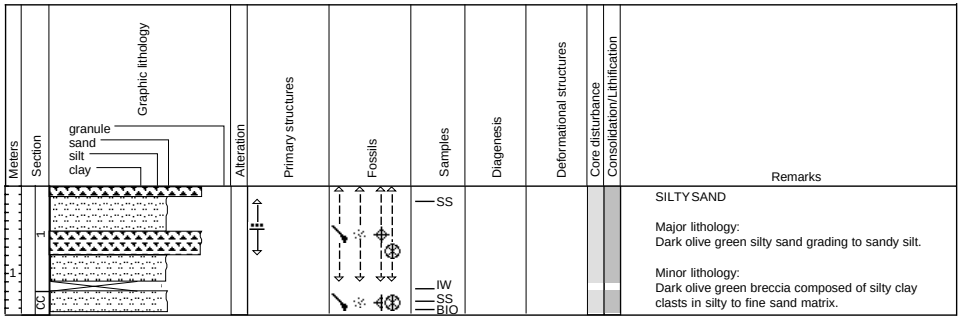
Site 1040, Hole B, Core 2H - Cored: 5.50 - 14.00 mbsf



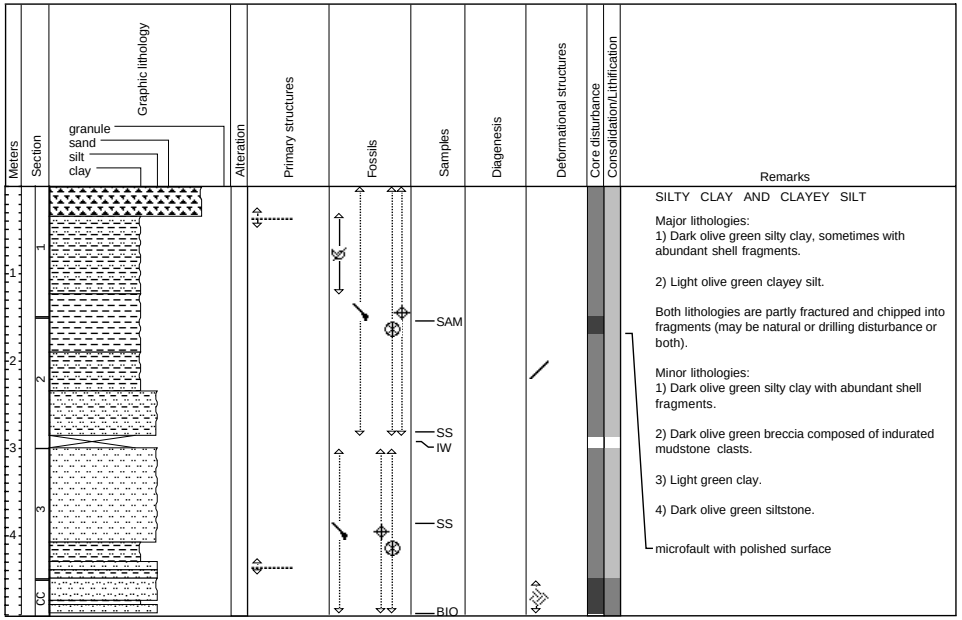
Site 1040, Hole B, Core 3X - Cored: 14.00 - 18.00 mbsf



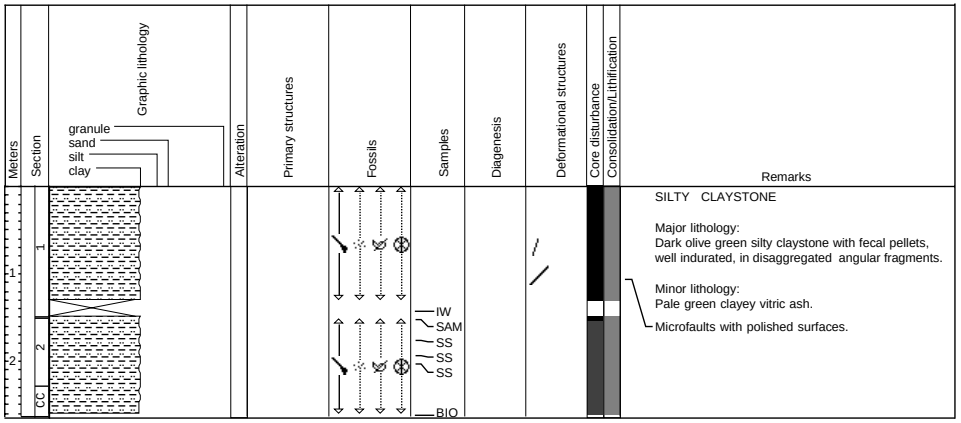
Site 1040, Hole B, Core 4X - Cored: 18.00 - 27.00 mbsf



Site 1040, Hole B, Core 5X - Cored: 27.00 - 36.40 mbsf



Site 1040, Hole B, Core 6X - Cored: 36.40 - 45.80 mbsf



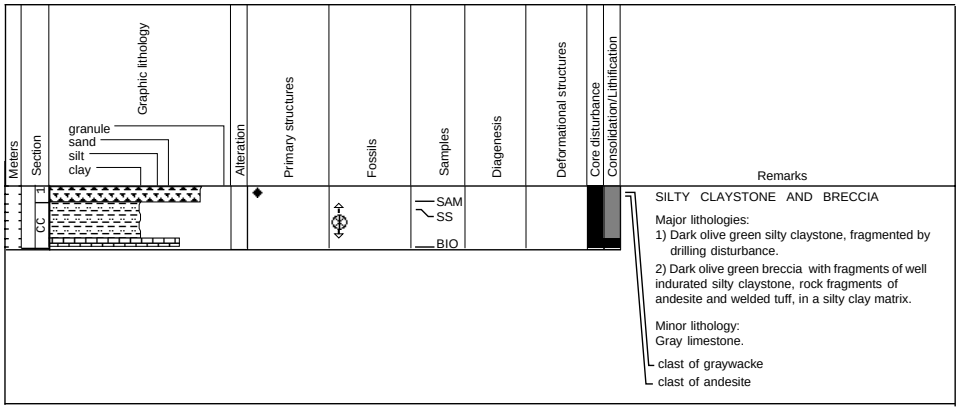
SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone with fecal pellets, well indurated, in disaggregated angular fragments.

Minor lithology:
Pale green clayey vitric ash.

Microfaults with polished surfaces.

Site 1040, Hole B, Core 7X - Cored: 45.80 - 55.20 mbsf



SILTY CLAYSTONE AND BRECCIA

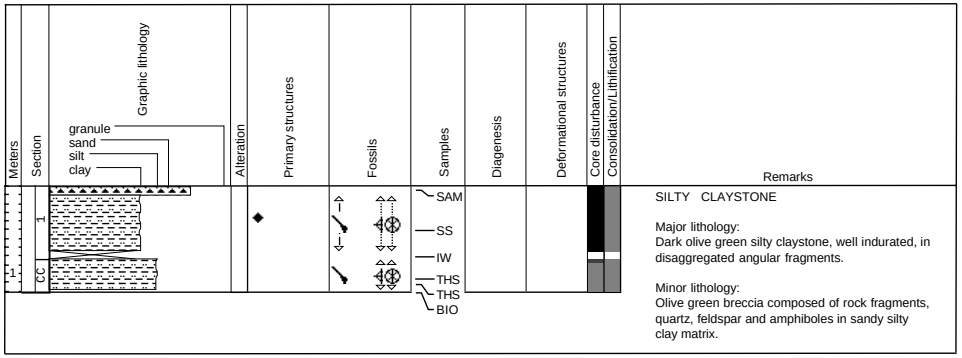
Major lithologies:
1) Dark olive green silty claystone, fragmented by drilling disturbance.
2) Dark olive green breccia with fragments of well indurated silty claystone, rock fragments of andesite and welded tuff, in a silty clay matrix.

Minor lithology:
Gray limestone.

clast of graywacke

clast of andesite

Site 1040, Hole B, Core 8X - Cored: 55.20 - 64.80 mbsf

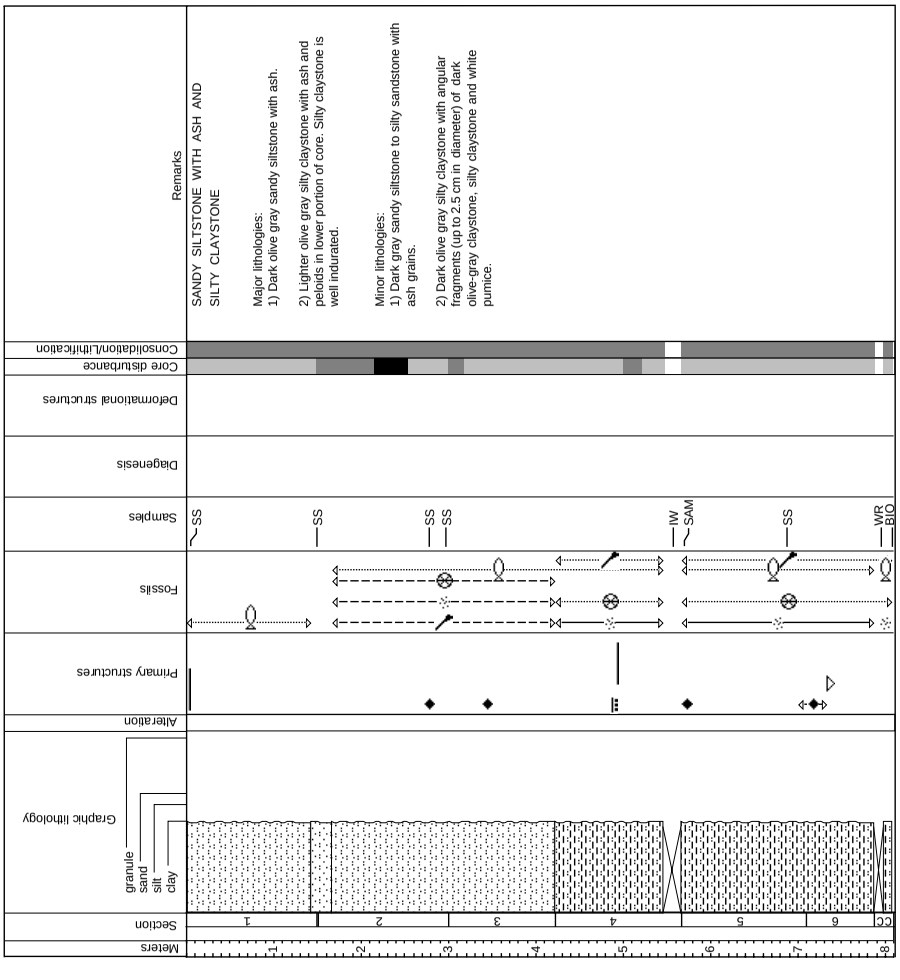


SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone, well indurated, in disaggregated angular fragments.

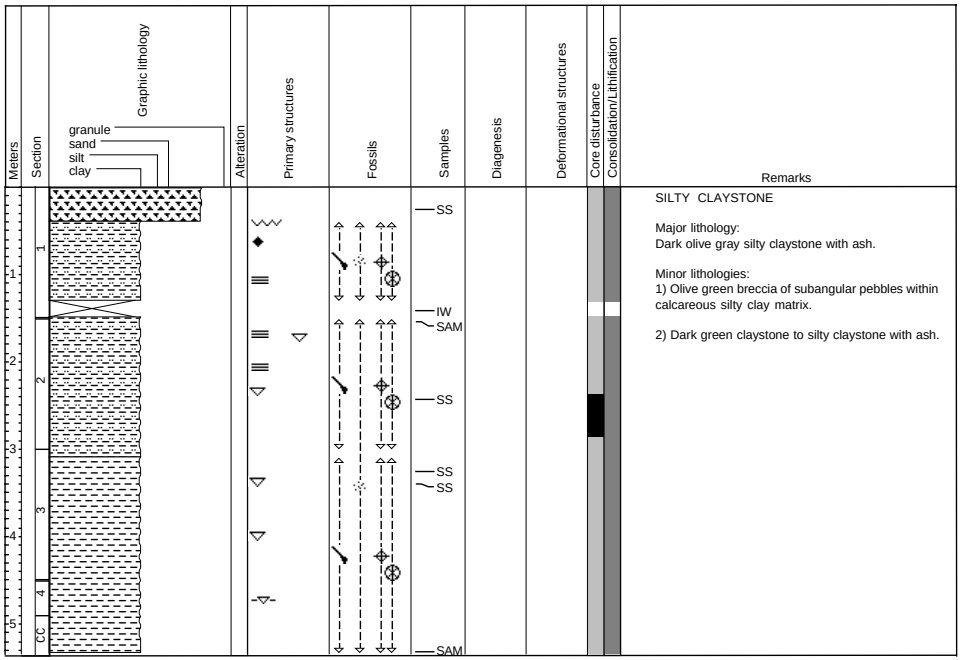
Minor lithology:
Olive green breccia composed of rock fragments, quartz, feldspar and amphiboles in sandy silty clay matrix.

1040B-9X


Site 1040, Hole B, Core 9X - Cored: 64.80 - 74.40 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SANDY SILTSTONE WITH ASH AND SILTY CLAYSTONE
Major lithologies:
1) Dark olive gray sandy siltstone with ash.
2) Lighter olive gray silty claystone with ash and peloids in lower portion of core. Silty claystone is well indurated.
Minor lithologies:
1) Dark gray sandy siltstone to silty sandstone with ash grains.
2) Dark olive gray silty claystone with angular fragments (up to 2.5 cm in diameter) of dark olive-gray claystone, silty claystone and white pumice.
SS
IW
SAM
WR
BIO
1
2
3
4
5
6
CC

Site 1040, Hole B, Core 10X - Cored: 74.40 - 84.00 mbsf

1040B-10X



SILTY CLAYSTONE

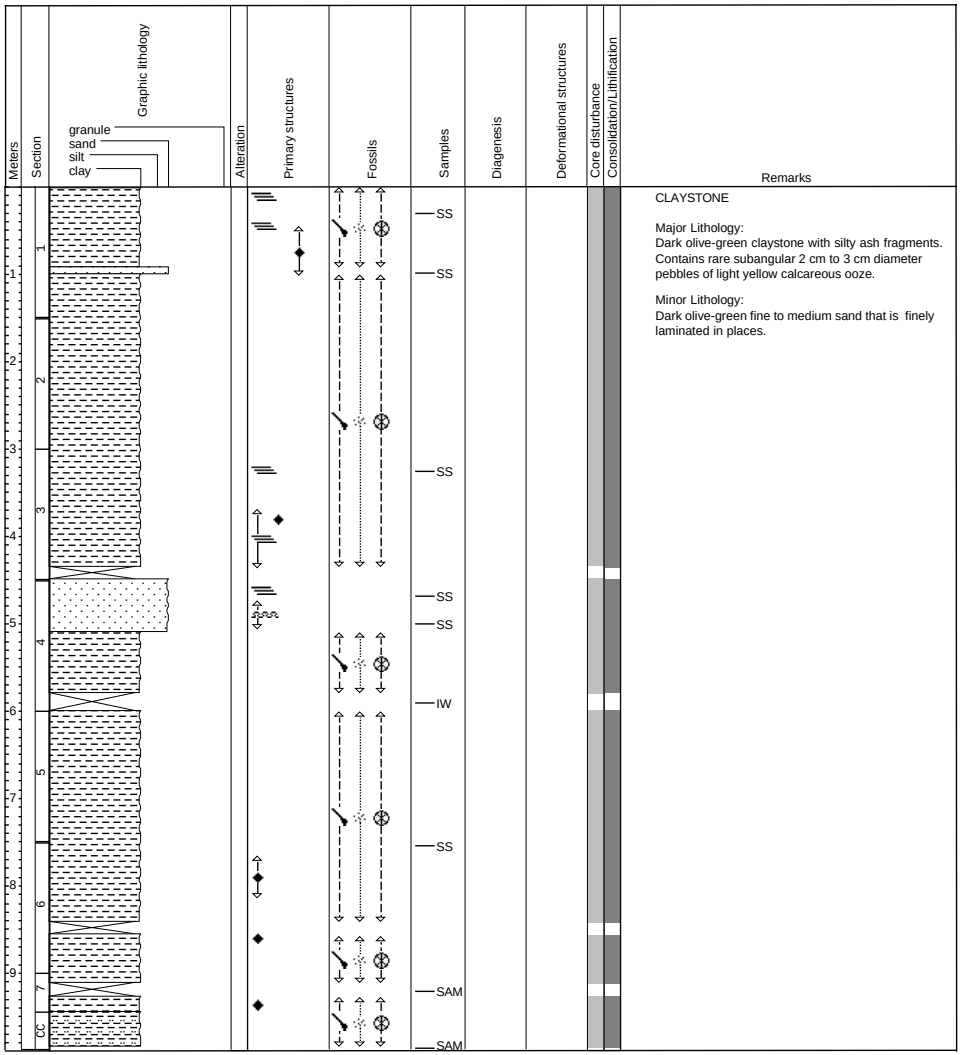
Major lithology:
Dark olive gray silty claystone with ash.

Minor lithologies:
1) Olive green breccia of subangular pebbles within calcareous silty clay matrix.

2) Dark green claystone to silty claystone with ash.

Site 1040, Hole B, Core 11X - Cored: 84.00 - 93.60 mbsf

1040B-11X

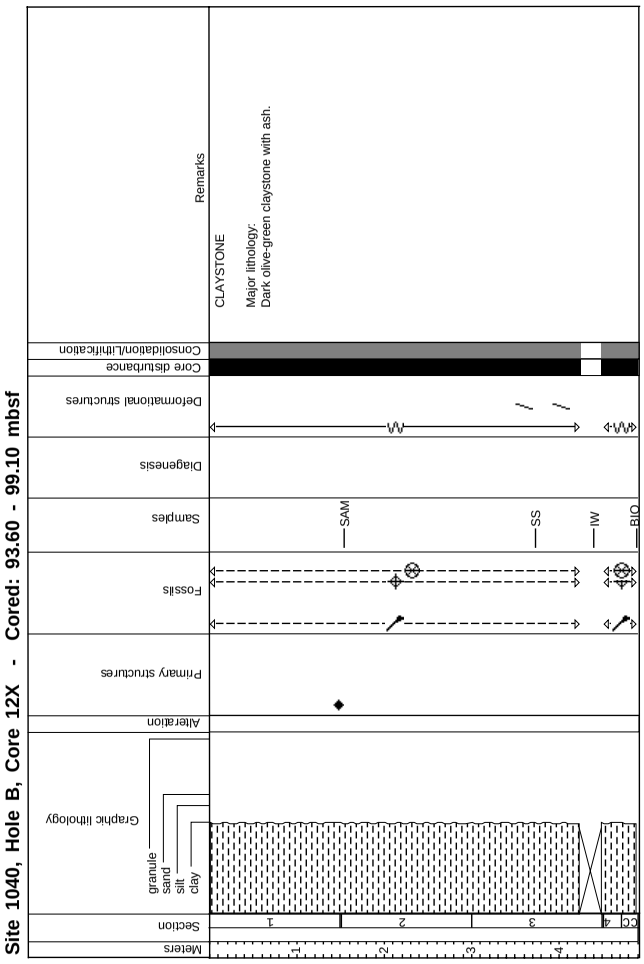


CLAYSTONE

Major Lithology:
Dark olive-green claystone with silty ash fragments. Contains rare subangular 2 cm to 3 cm diameter pebbles of light yellow calcareous ooze.

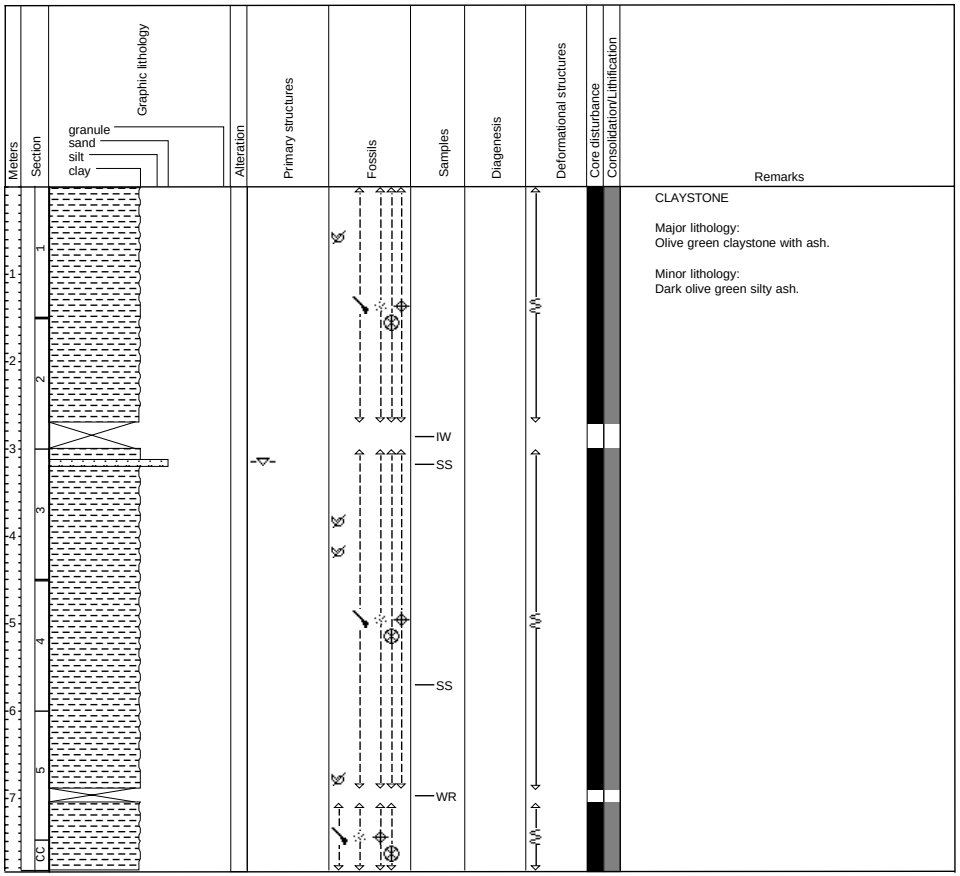
Minor Lithology:
Dark olive-green fine to medium sand that is finely laminated in places.

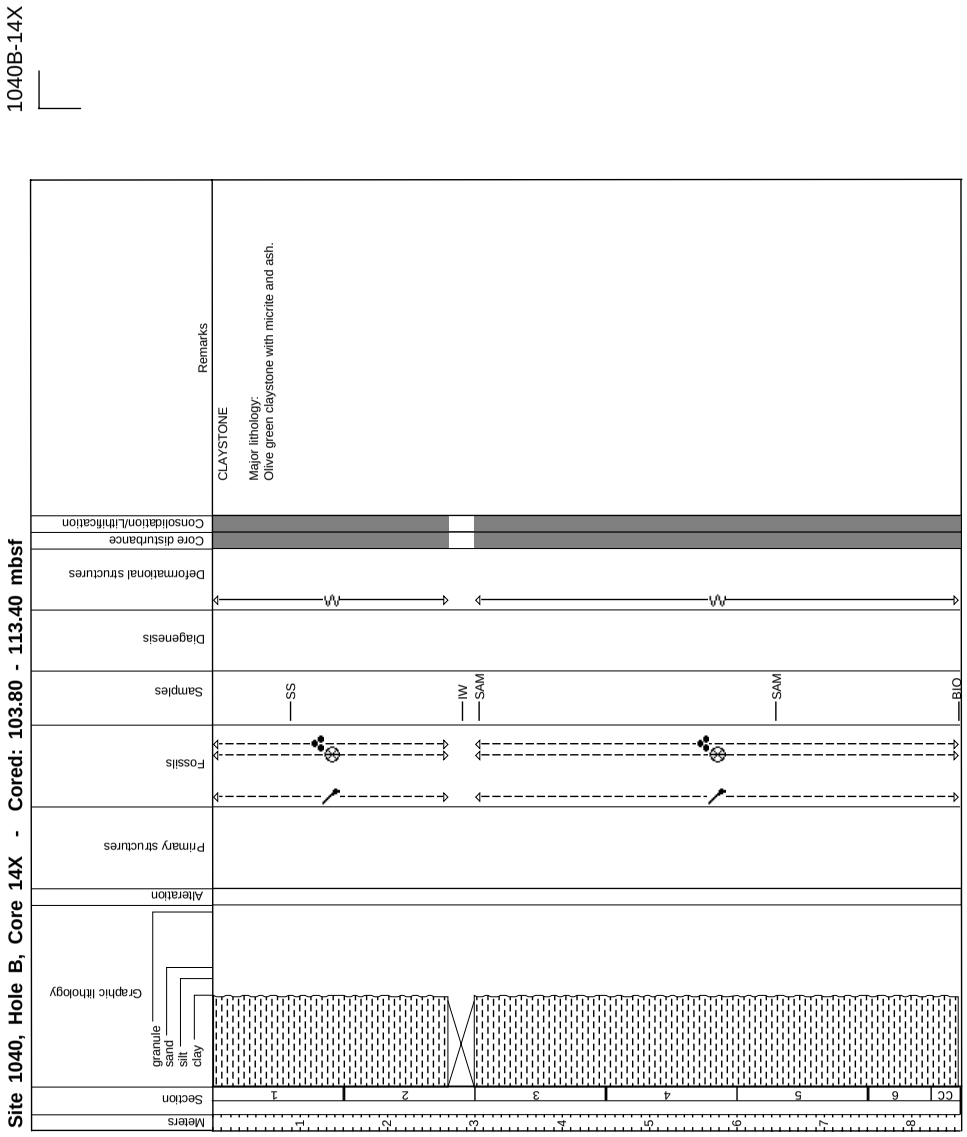
1040B-12X


Site 1040, Hole B, Core 12X - Cored: 93.60 - 99.10 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
CLAYSTONE
Major lithology:
Dark olive-green claystone with ash.
SAM
SS
IW
MI
BIO
1
2
3
4
CC

Site 1040, Hole B, Core 13X - Cored: 99.10 - 103.80 mbsf

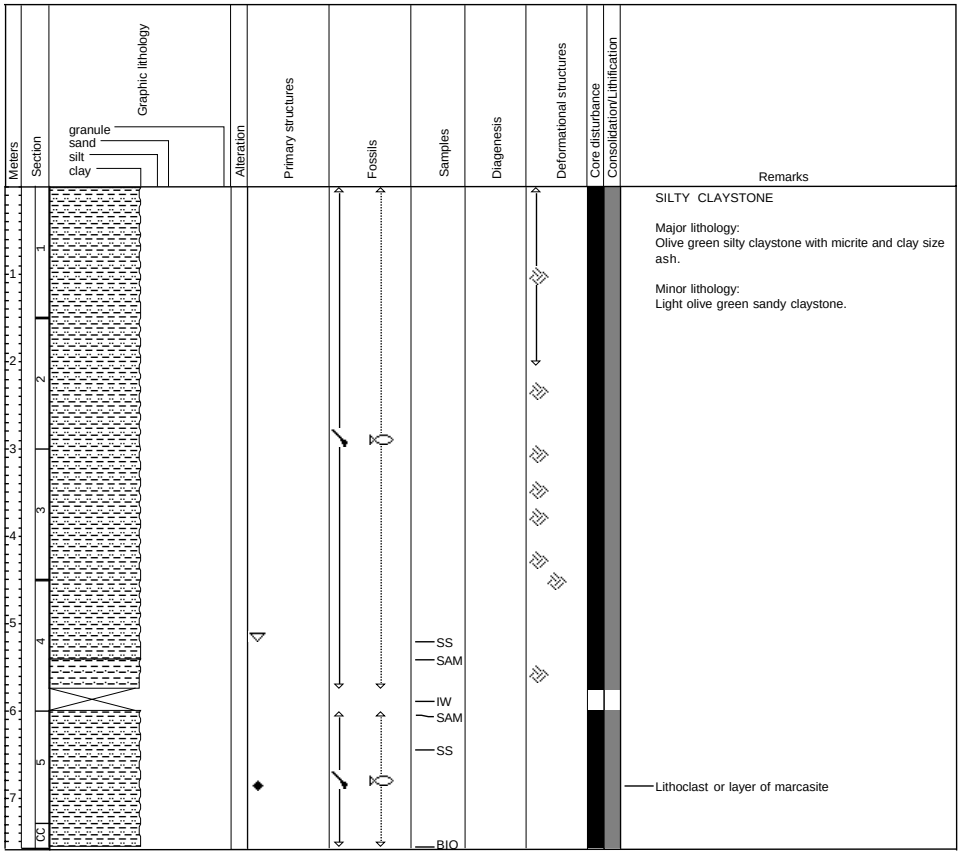
1040B-13X



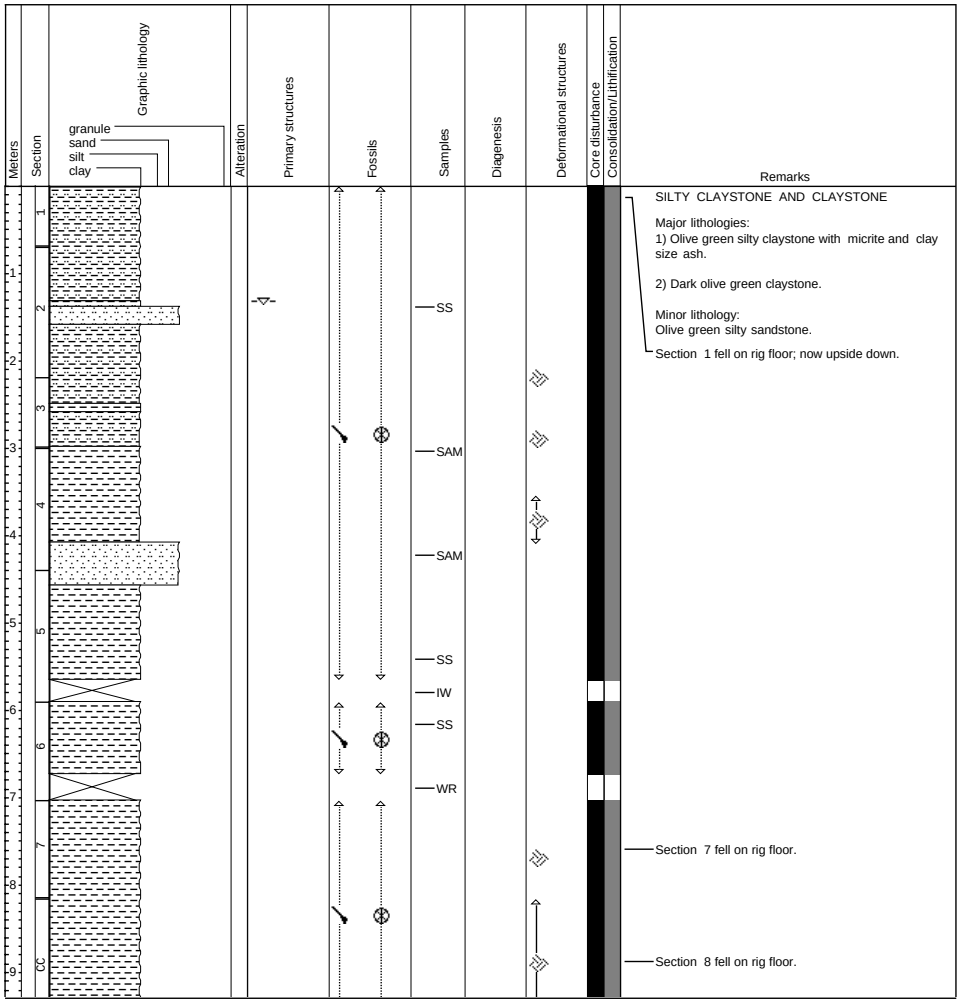

1040B-14X
Site 1040, Hole B, Core 14X - Cored: 103.80 - 113.40 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
CLAYSTONE
Major lithology:
Olive green claystone with micrite and ash.
SS
IW
SAM
SAM
BIO
1
2
3
4
5
6
CC

Site 1040, Hole B, Core 15X - Cored: 113.40 - 122.90 mbsf

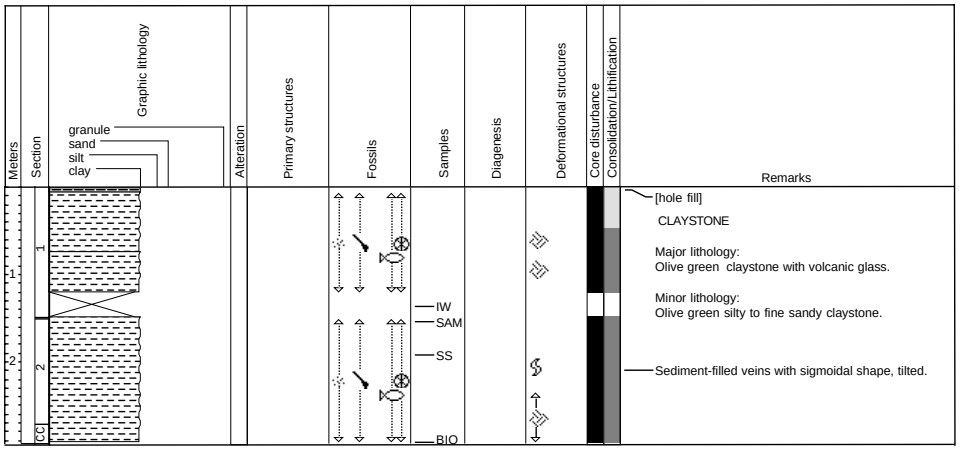
1040B-15X



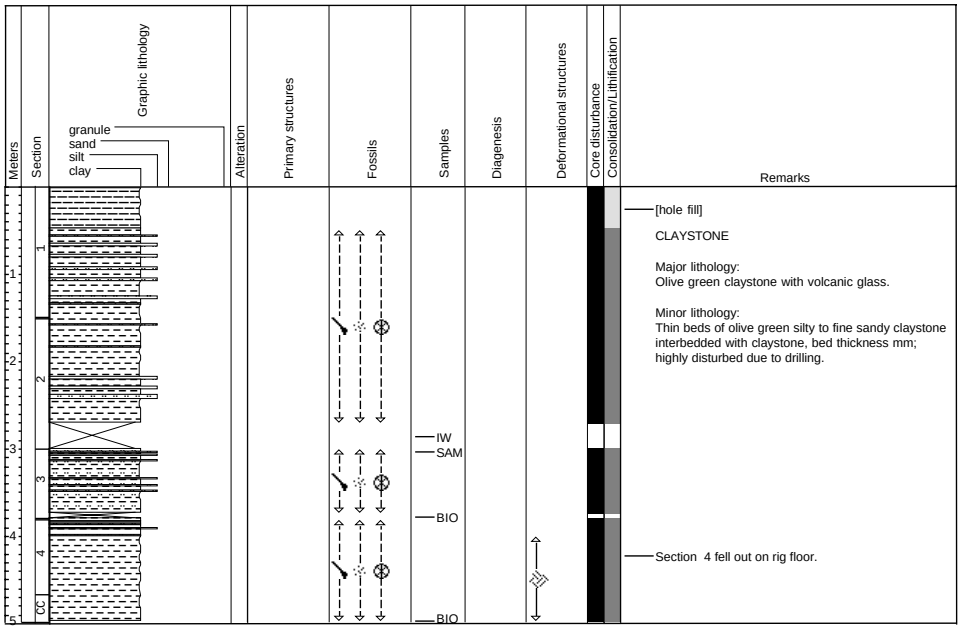
Site 1040, Hole B, Core 16X - Cored: 122.90 - 132.50 mbsf



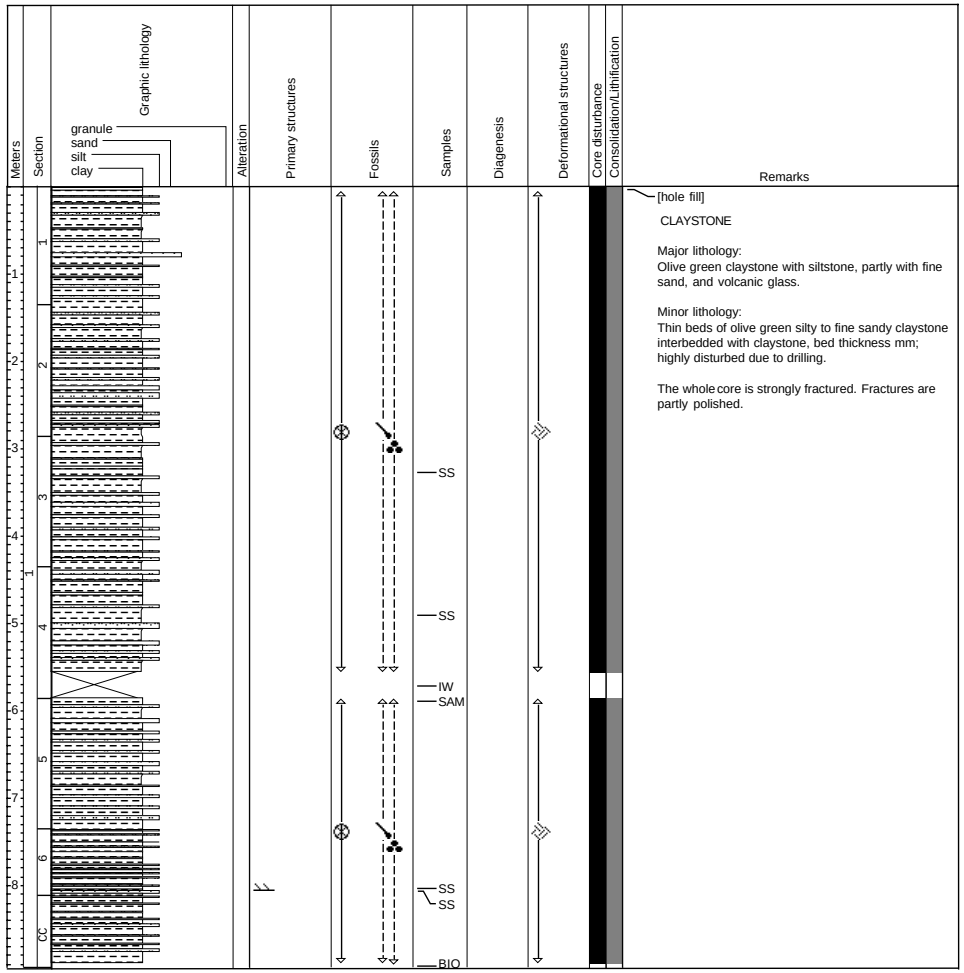
Site 1040, Hole B, Core 17X - Cored: 132.50 - 142.20 mbsf



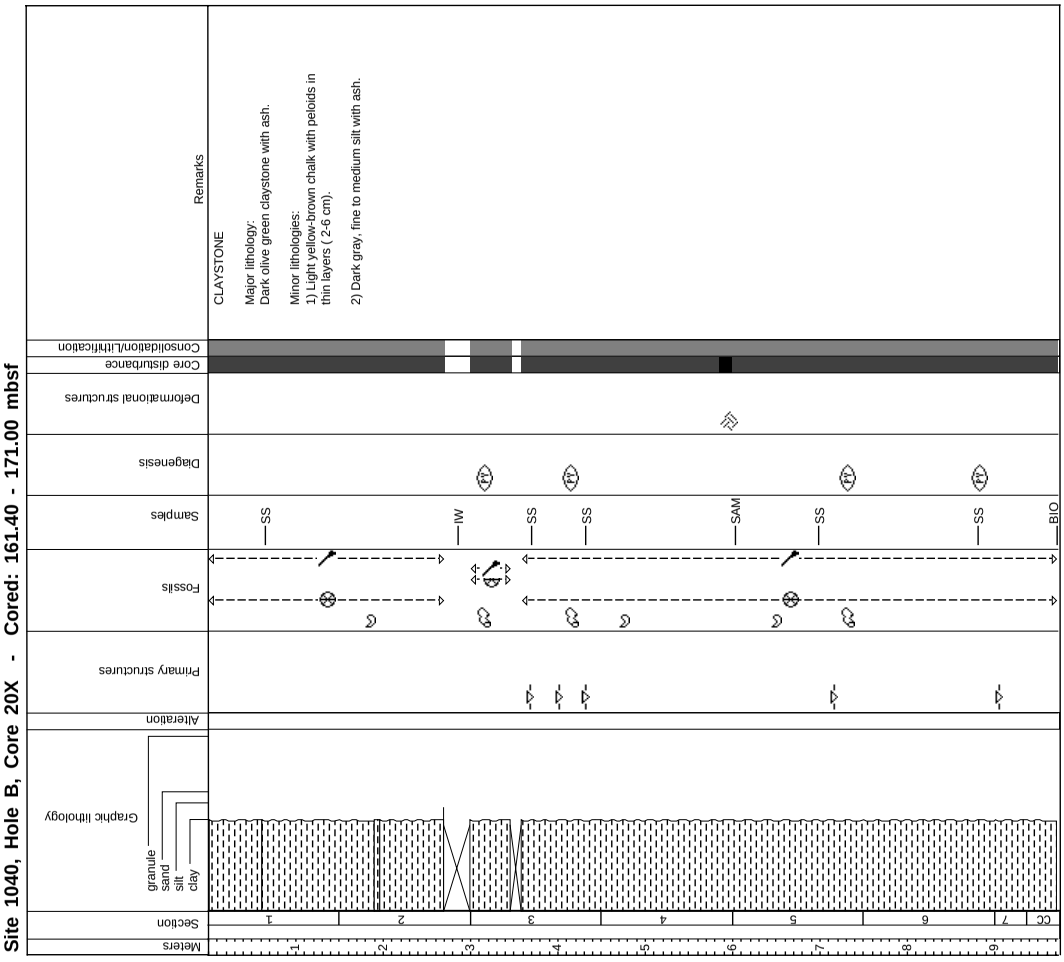
Site 1040, Hole B, Core 18X - Cored: 142.20 - 151.80 mbsf



Site 1040, Hole B, Core 19X - Cored: 151.80 - 161.40 mbsf

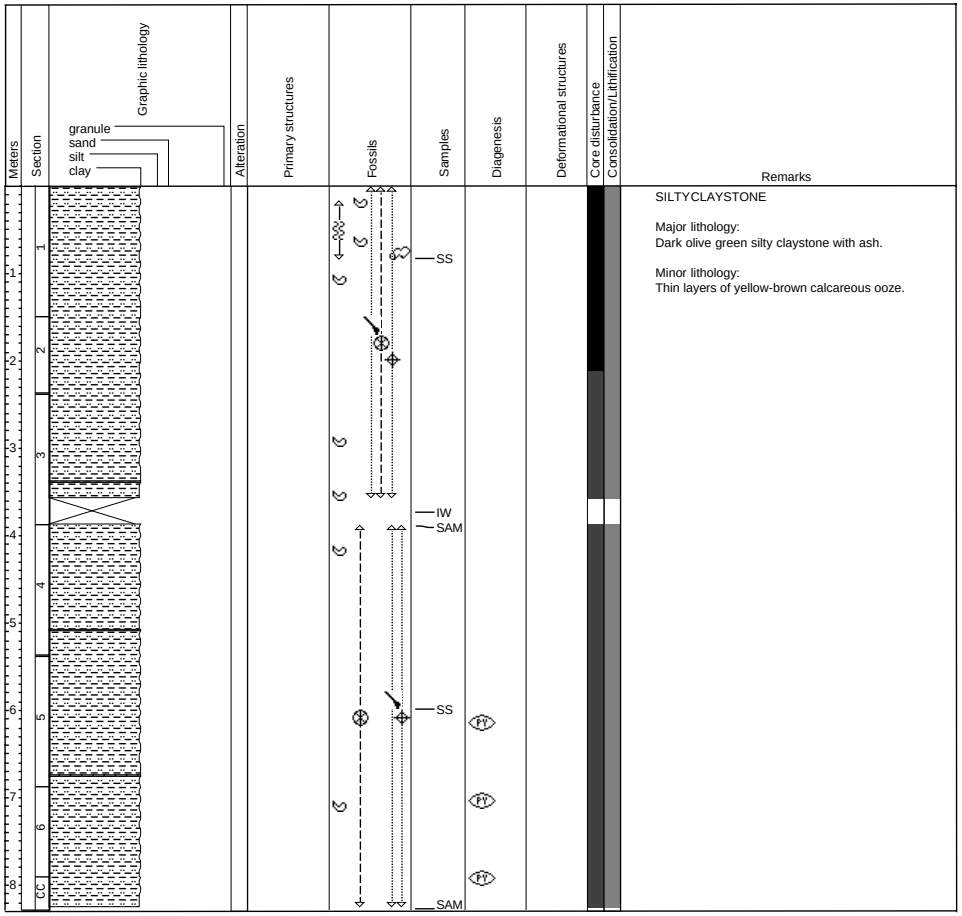


1040B-20X

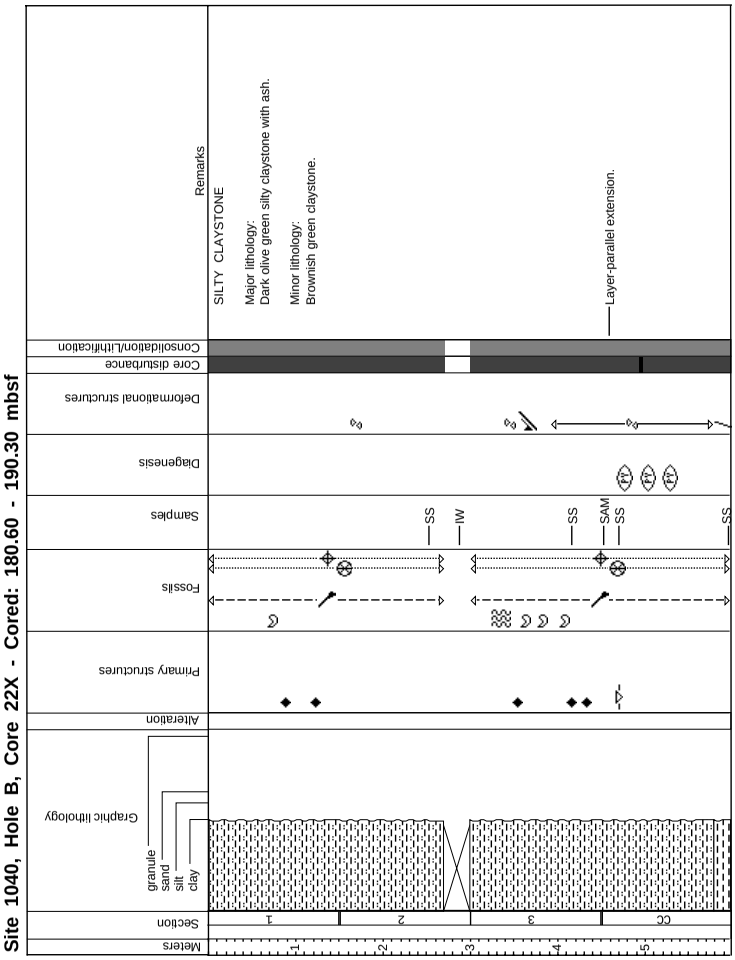

Site 1040, Hole B, Core 20X - Cored: 161.40 - 171.00 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
CLAYSTONE
Major lithology:
Dark olive green claystone with ash.
Minor lithologies:
1) Light yellow-brown chalk with peloids in thin layers (2-6 cm).
2) Dark gray, fine to medium silt with ash.
SS
IW
SS
SS
SAM
SS
SS
BIO
1
2
3
4
5
6
7
CC

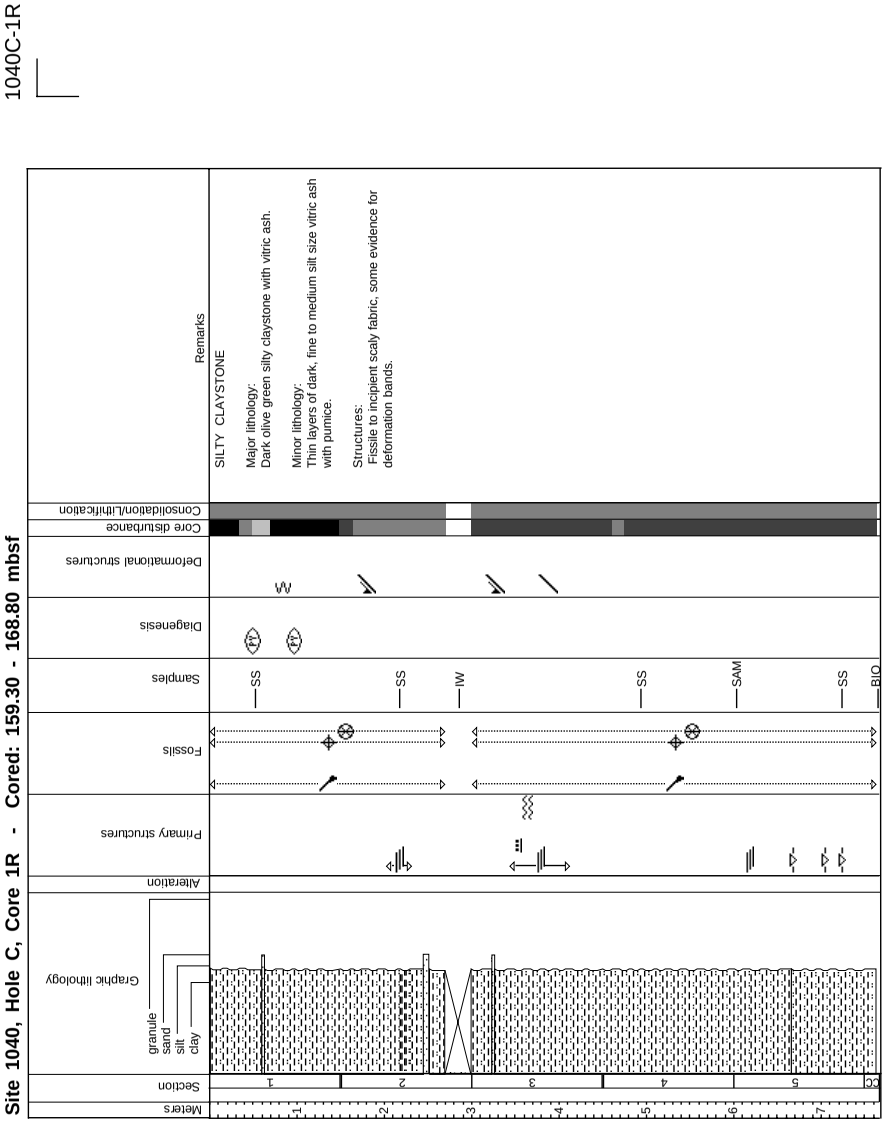
Site 1040, Hole B, Core 21X - Cored: 171.00 - 180.60 mbsf

1040B-21X



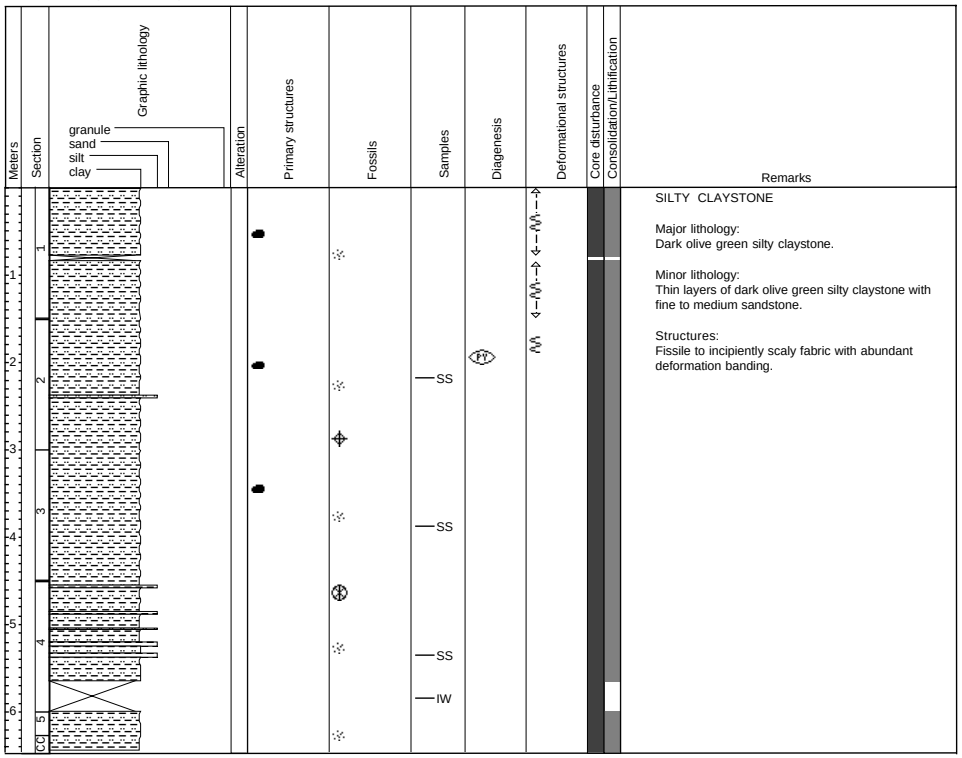
1040B-22X


Site 1040, Hole B, Core 22X - Cored: 180.60 - 190.30 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
1
2
3
CC
SS
IW
SS
SAM
SS
SS
SILTY CLAYSTONE
Major lithology:
Dark olive green silty claystone with ash.
Minor lithology:
Brownish green claystone.
Layer-parallel extension.


1040C-1R
Site 1040, Hole C, Core 1R - Cored: 159.30 - 168.80 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAYSTONE
Major lithology:
Dark olive green silty claystone with vitric ash.
Minor lithology:
Thin layers of dark, fine to medium silt size vitric ash with pumice.
Structures:
Fissile to incipient scaly fabric, some evidence for deformation bands.
SS
SS
IW
SS
SAM
SS
BIO
1
2
3
4
5
CC

Site 1040, Hole C, Core 2R - Cored: 168.80 - 178.40 mbsf

1040C-2R



SILTY CLAYSTONE

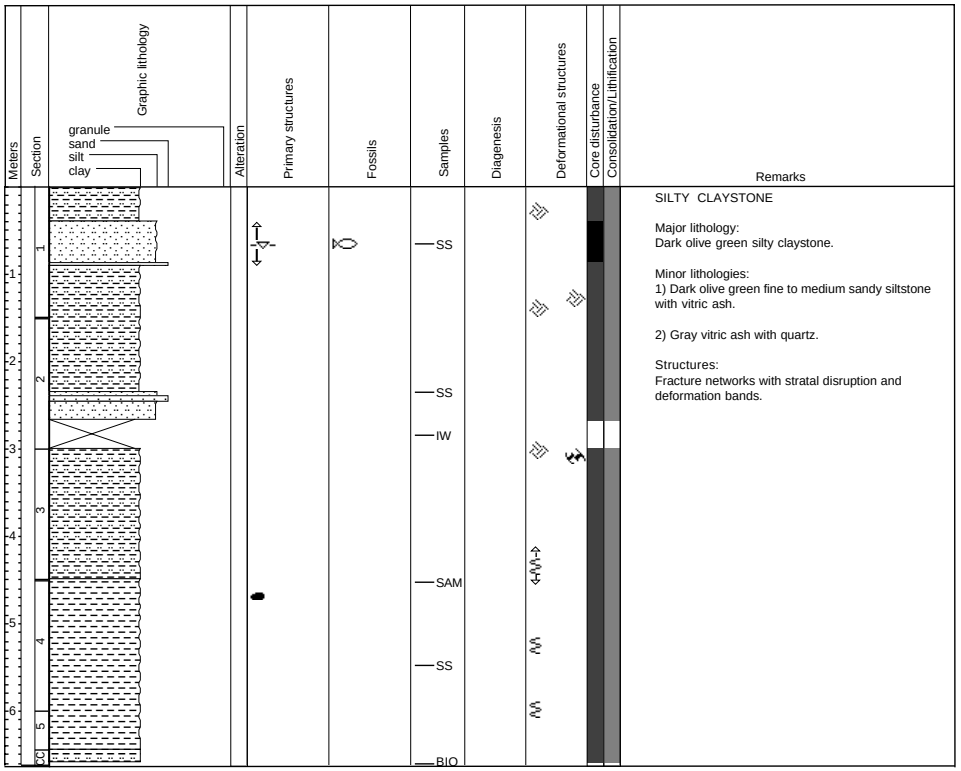
Major lithology:
Dark olive green silty claystone.

Minor lithology:
Thin layers of dark olive green silty claystone with fine to medium sandstone.

Structures:
Fissile to incipiently scaly fabric with abundant deformation banding.

Site 1040, Hole C, Core 3R - Cored: 178.40 - 188.00 mbsf

1040C-3R



SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone.

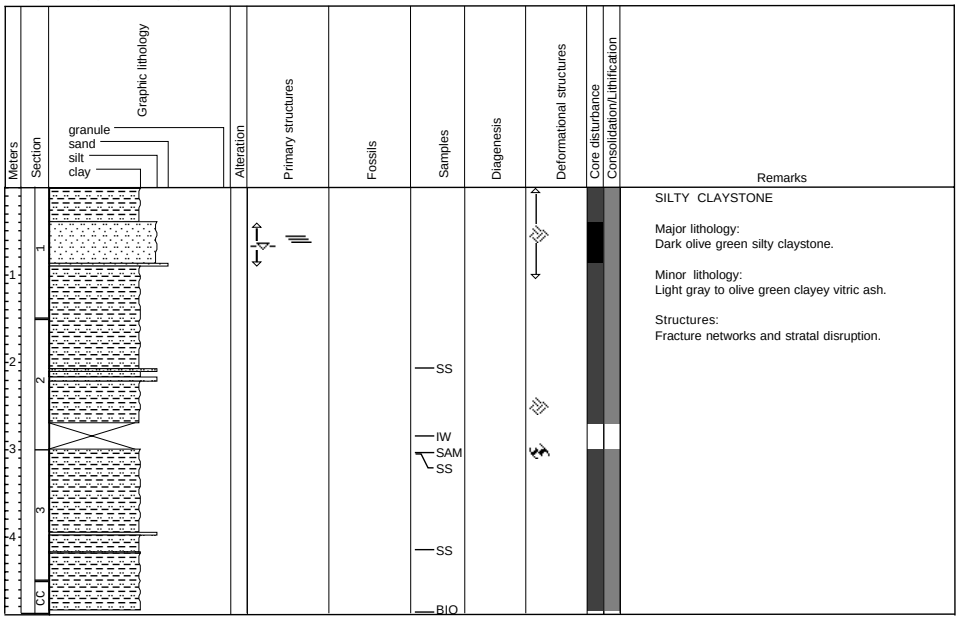
Minor lithologies:
1) Dark olive green fine to medium sandy siltstone with vitric ash.

2) Gray vitric ash with quartz.

Structures:
Fracture networks with stratal disruption and deformation bands.

Site 1040, Hole C, Core 4R - Cored: 188.00 - 197.60 mbsf

1040C-4R



SILTY CLAYSTONE

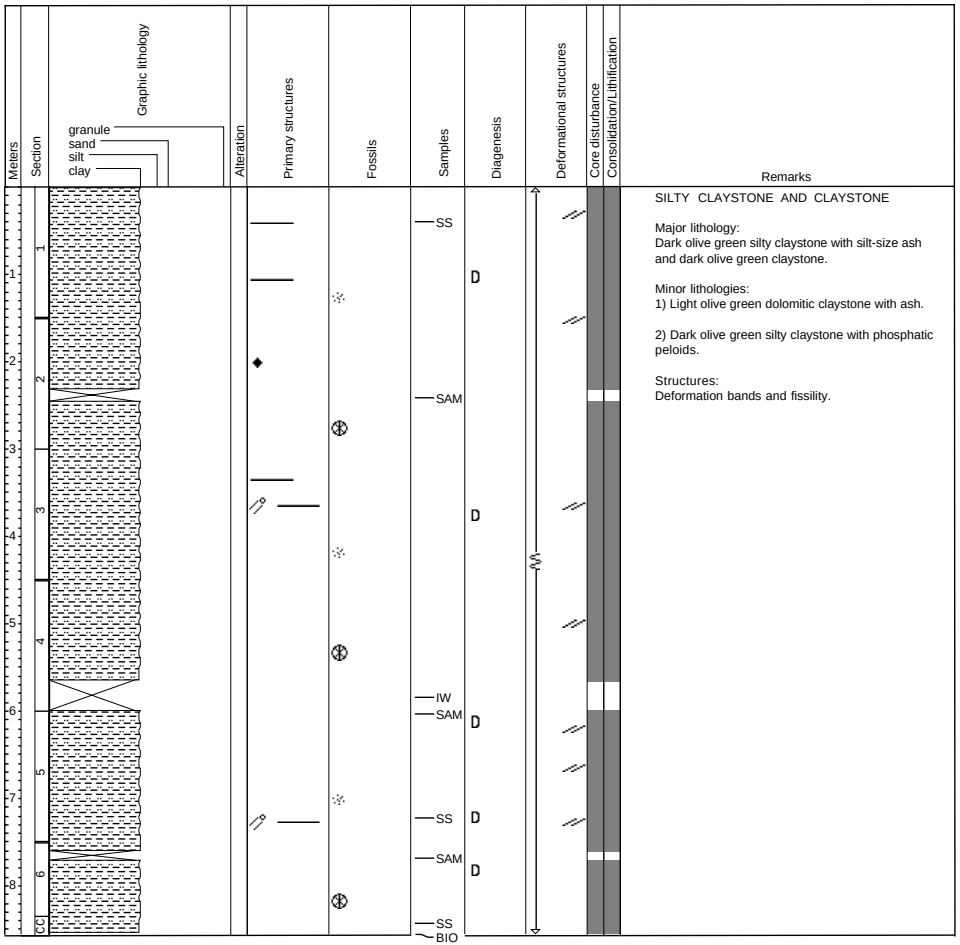
Major lithology:
Dark olive green silty claystone.

Minor lithology:
Light gray to olive green clayey vitric ash.

Structures:
Fracture networks and stratal disruption.

Site 1040, Hole C, Core 5R - Cored: 197.60 - 207.30 mbsf

1040C-5R



SILTY CLAYSTONE AND CLAYSTONE

Major lithology:
Dark olive green silty claystone with silt-size ash and dark olive green claystone.

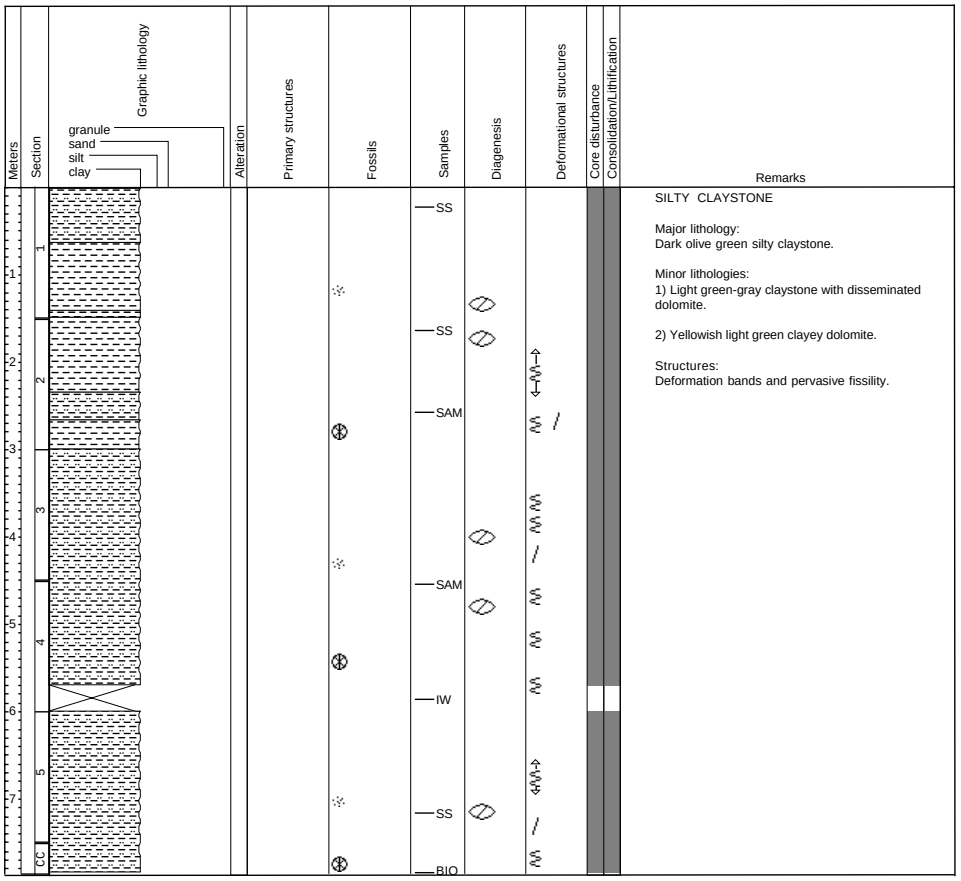
Minor lithologies:
1) Light olive green dolomitic claystone with ash.

2) Dark olive green silty claystone with phosphatic peloids.

Structures:
Deformation bands and fissility.

Site 1040, Hole C, Core 6R - Cored: 207.30 - 216.90 mbsf

1040C-6R



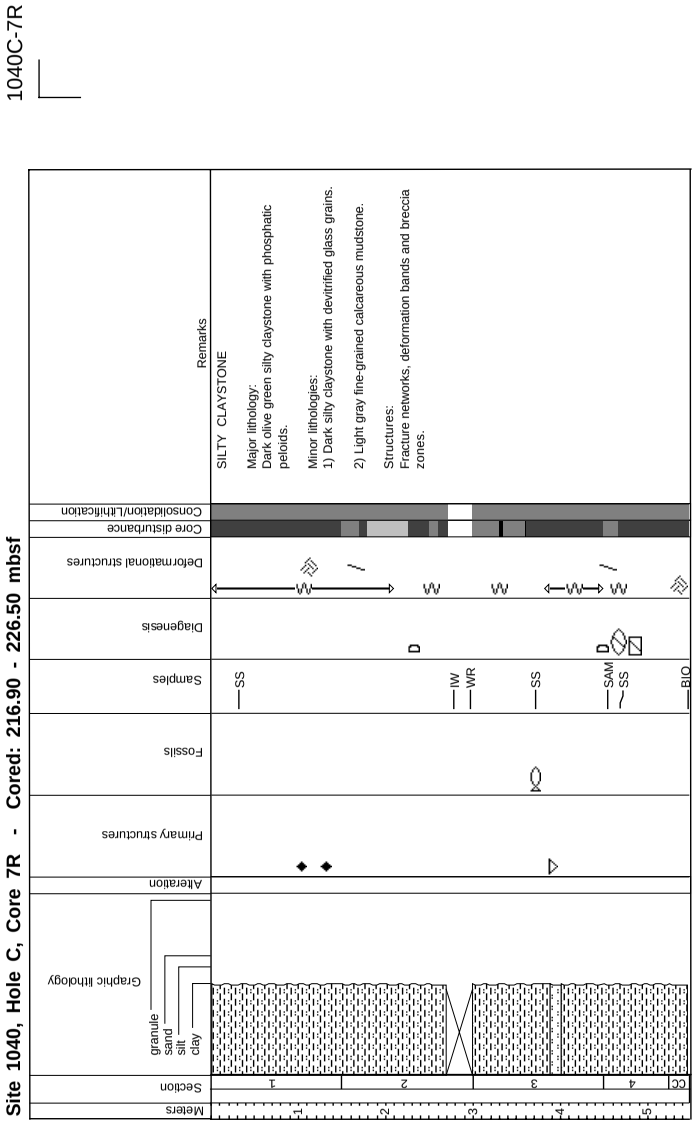
SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone.

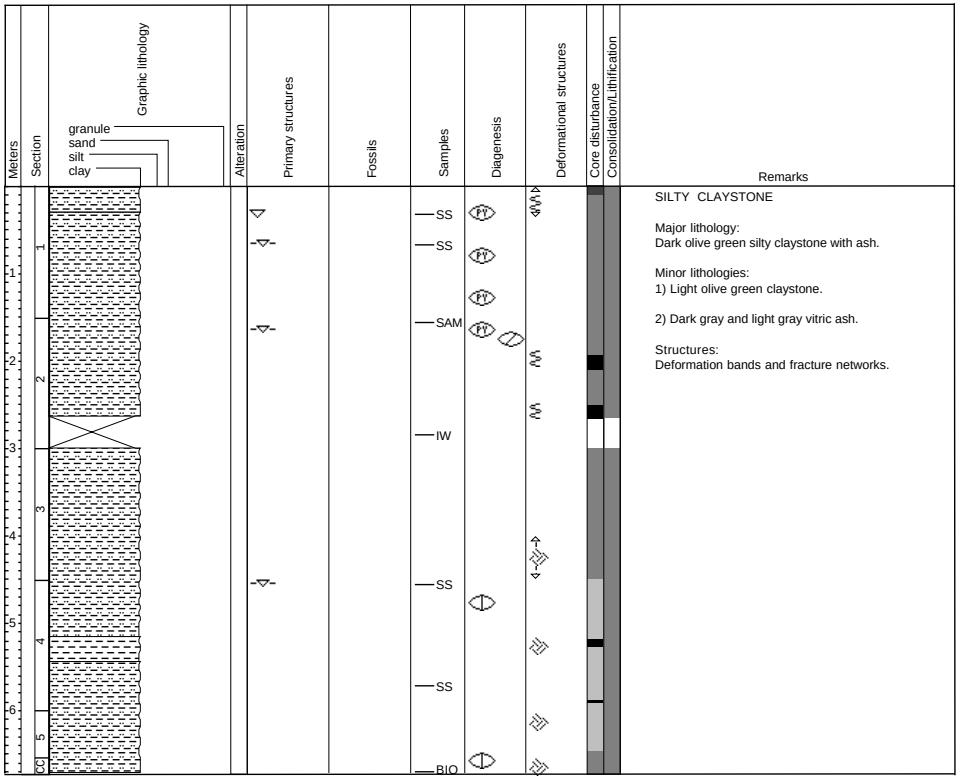
Minor lithologies:
1) Light green-gray claystone with disseminated dolomite.

2) Yellowish light green clayey dolomite.

Structures:
Deformation bands and pervasive fissility.


Site 1040, Hole C, Core 7R - Cored: 216.90 - 226.50 mbsf
1040C-7R
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAYSTONE
Major lithology:
Dark olive green silty claystone with phosphatic peloids.
Minor lithologies:
1) Dark silty claystone with devitrified glass grains.
2) Light gray fine-grained calcareous mudstone.
Structures:
Fracture networks, deformation bands and breccia zones.
SS
IW
WR
SS
SAM
SS
BIO
D
D
1
2
3
4
CC

Site 1040, Hole C, Core 8R - Cored: 226.50 - 236.10 mbsf



SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone with ash.

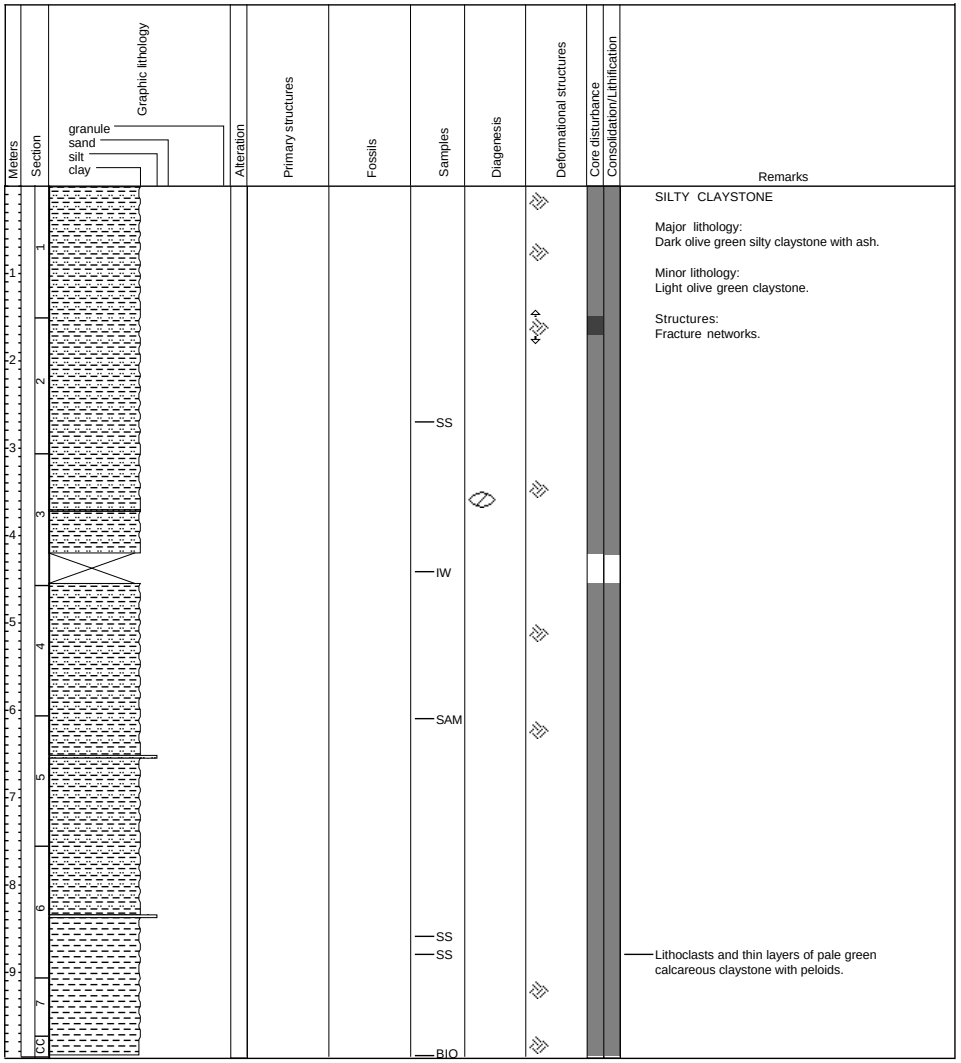
Minor lithologies:
1) Light olive green claystone.

2) Dark gray and light gray vitric ash.

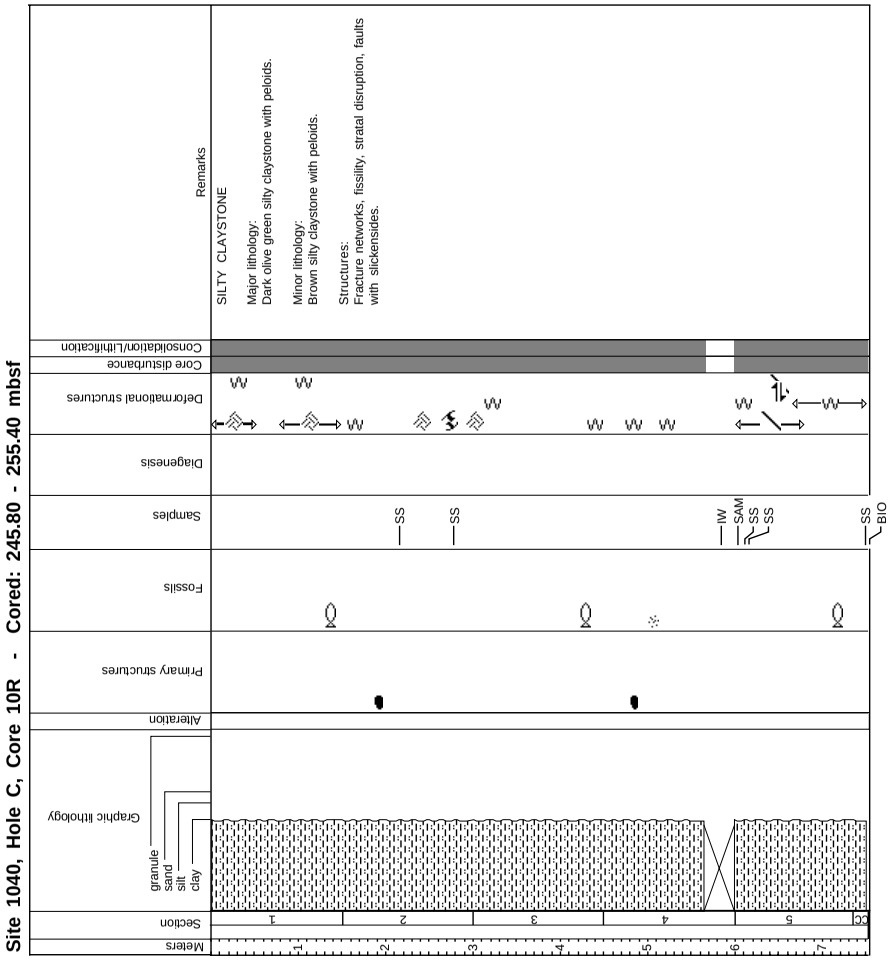
Structures:
Deformation bands and fracture networks.

Site 1040, Hole C, Core 9R - Cored: 236.10 - 245.80 mbsf

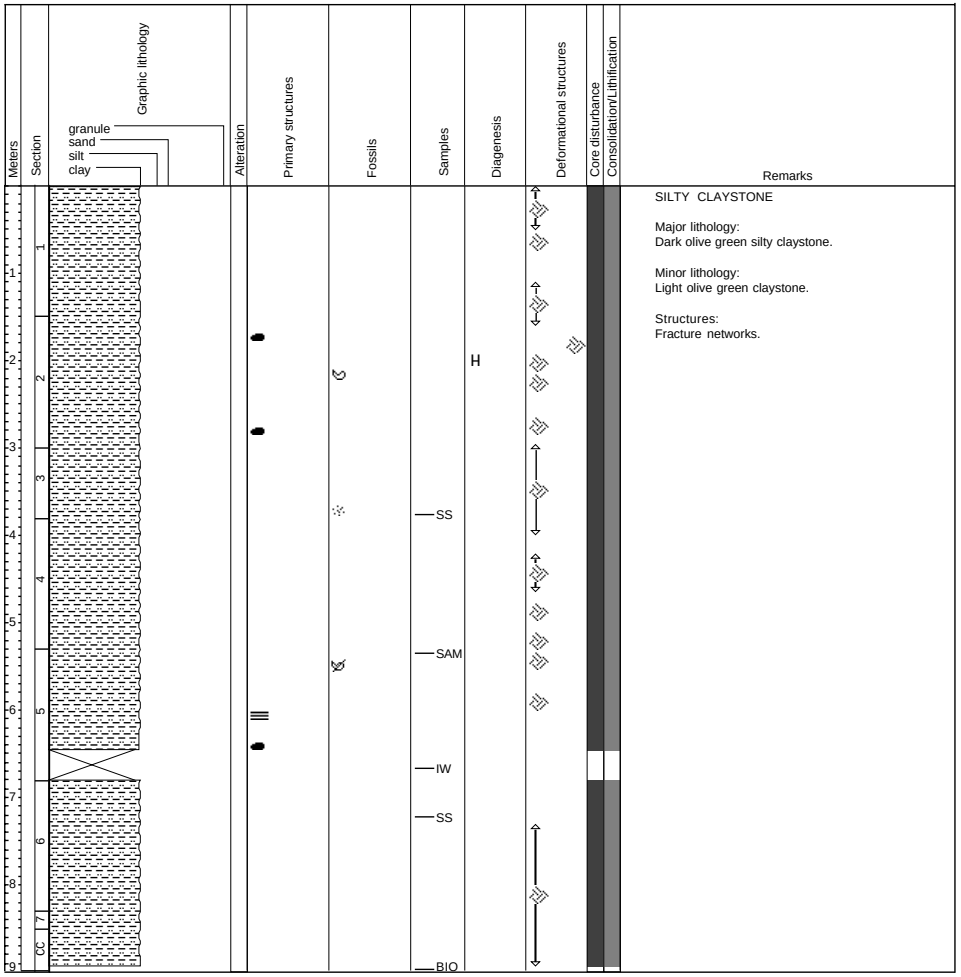
1040C-9R



1040C-10R


Site 1040, Hole C, Core 10R - Cored: 245.80 - 255.40 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAYSTONE
Major lithology:
Dark olive green silty claystone with peloids.
Minor lithology:
Brown silty claystone with peloids.
Structures:
Fracture networks, fissility, stratal disruption, faults
with slickensides.
SS
SS
IW
SAM
SS
SS
SS
BIO

Site 1040, Hole C, Core 11R - Cored: 255.40 - 265.10 mbsf



SILTY CLAYSTONE

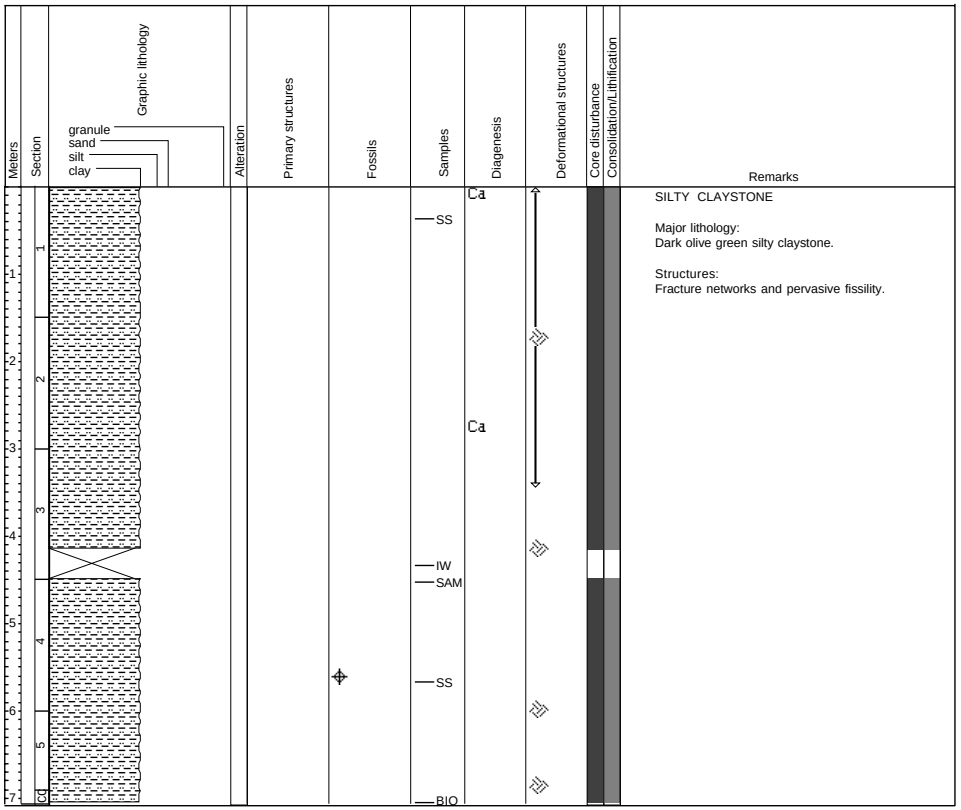
Major lithology:
Dark olive green silty claystone.

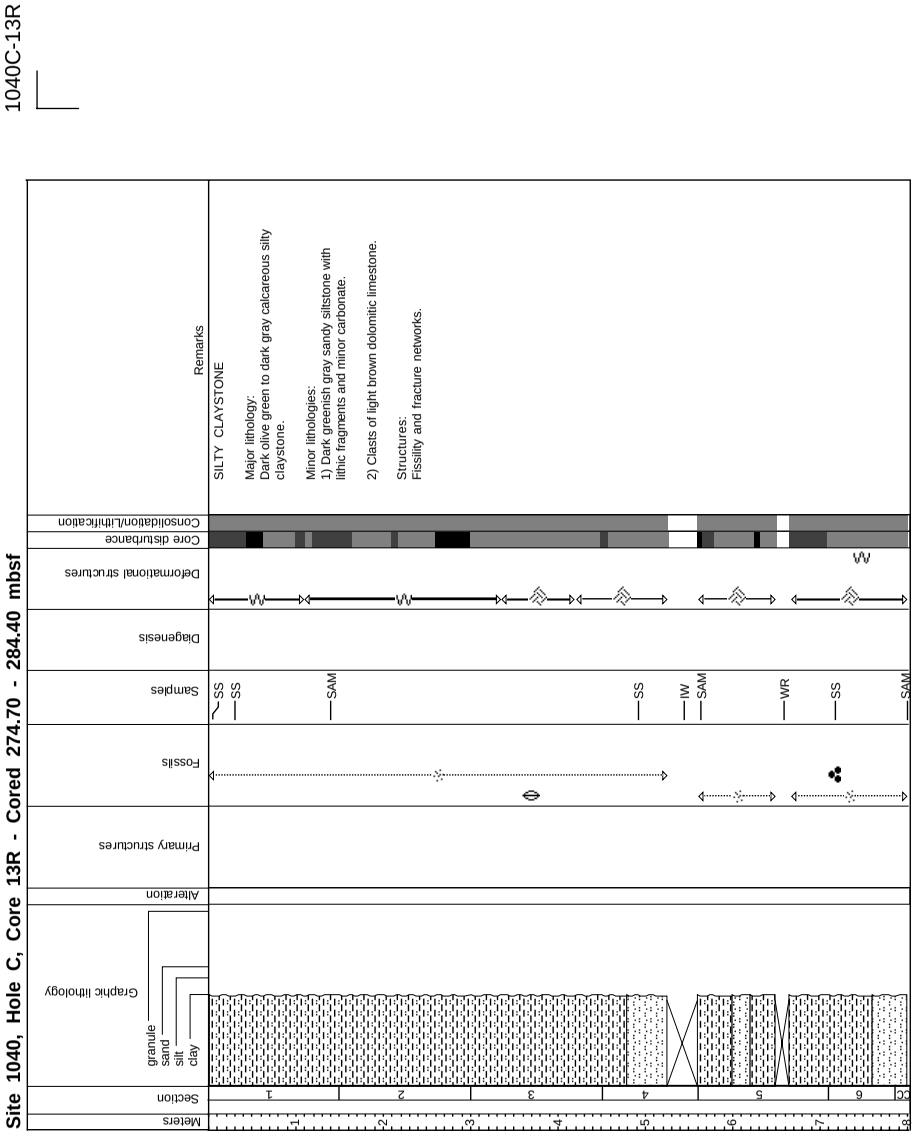
Minor lithology:
Light olive green claystone.

Structures:
Fracture networks.

Site 1040, Hole C, Core 12R - Cored: 265.10 - 274.70 mbsf

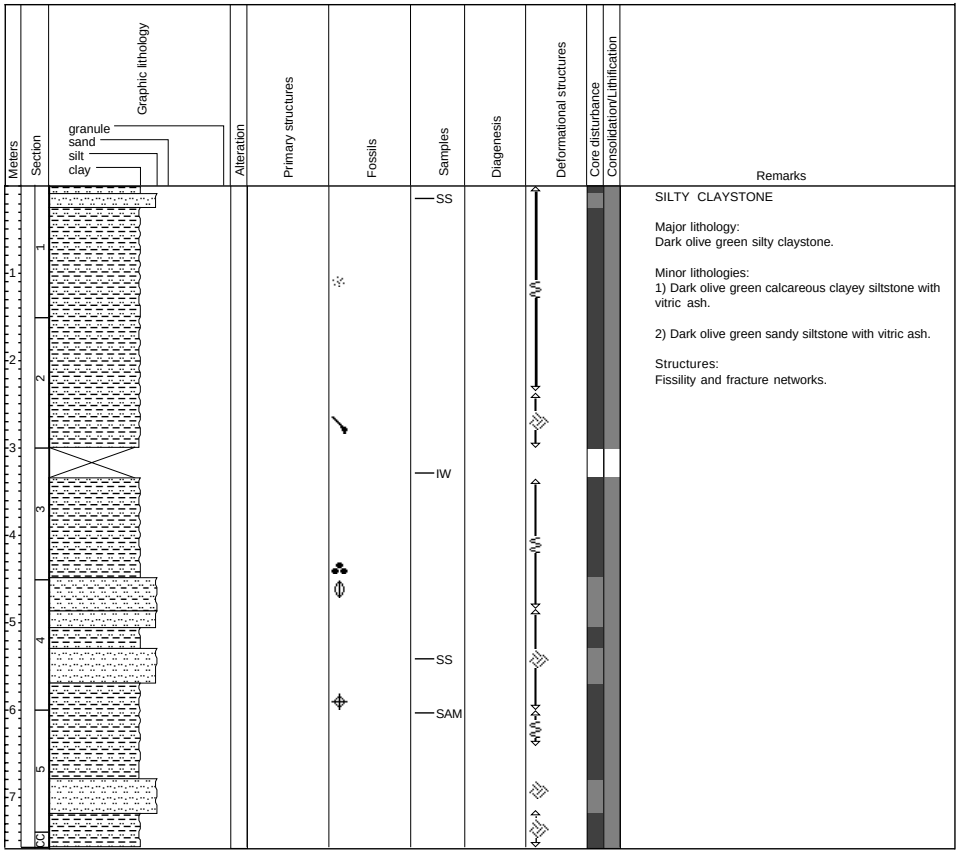
1040C-12R




Site 1040, Hole C, Core 13R - Cored 274.70 - 284.40 mbsf
1040C-13R
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAYSTONE
Major lithology:
Dark olive green to dark gray calcareous silty claystone.
Minor lithologies:
1) Dark greenish gray sandy siltstone with lithic fragments and minor carbonate.
2) Clasts of light brown dolomitic limestone.
Structures:
Fissility and fracture networks.
SS
SAM
IW
WR
CC

Site 1040, Hole C, Core 14R - Cored 284.40 - 294.10 mbsf

1040C-14R



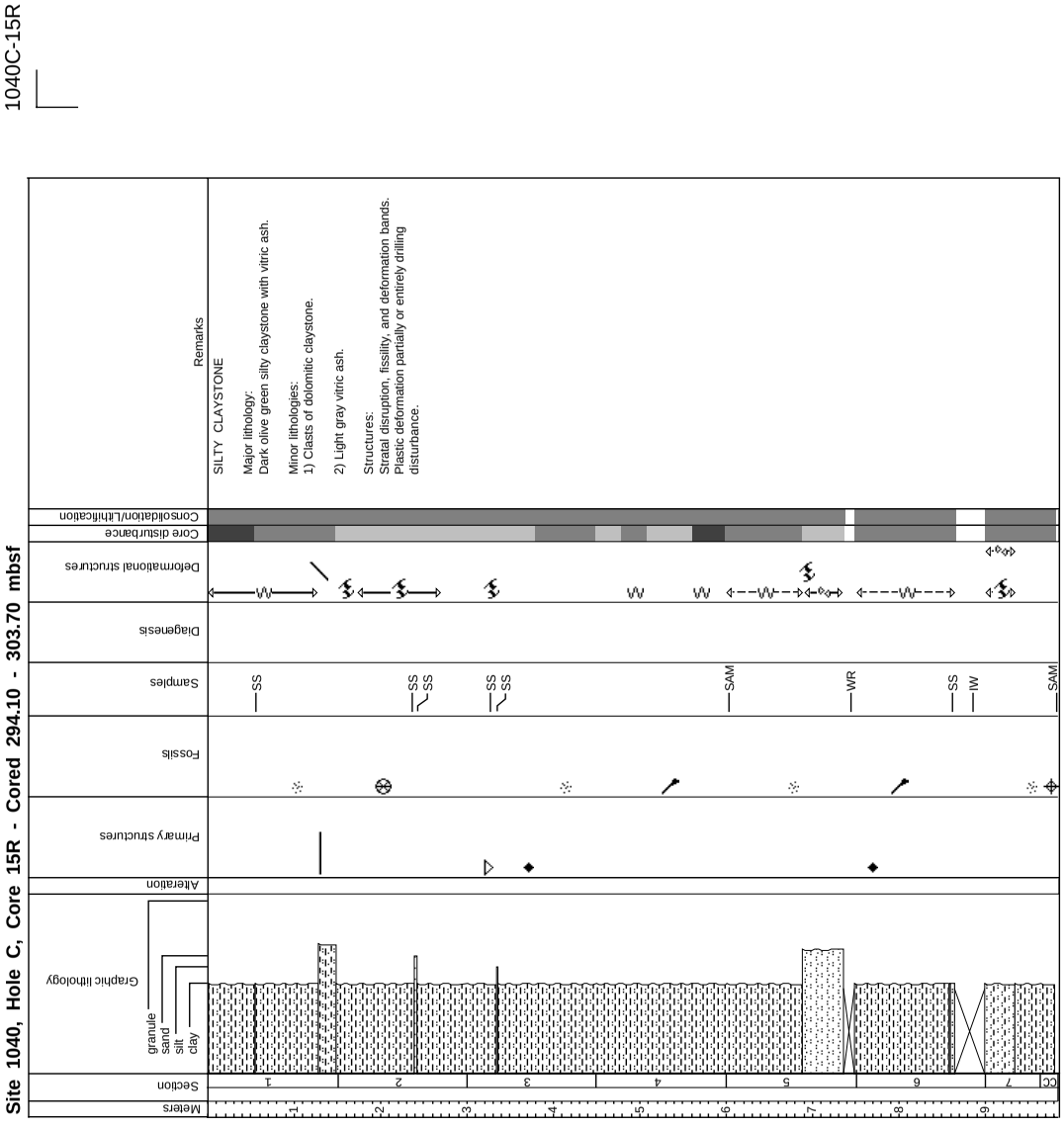
SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone.

Minor lithologies:
1) Dark olive green calcareous clayey siltstone with vitric ash.

2) Dark olive green sandy siltstone with vitric ash.

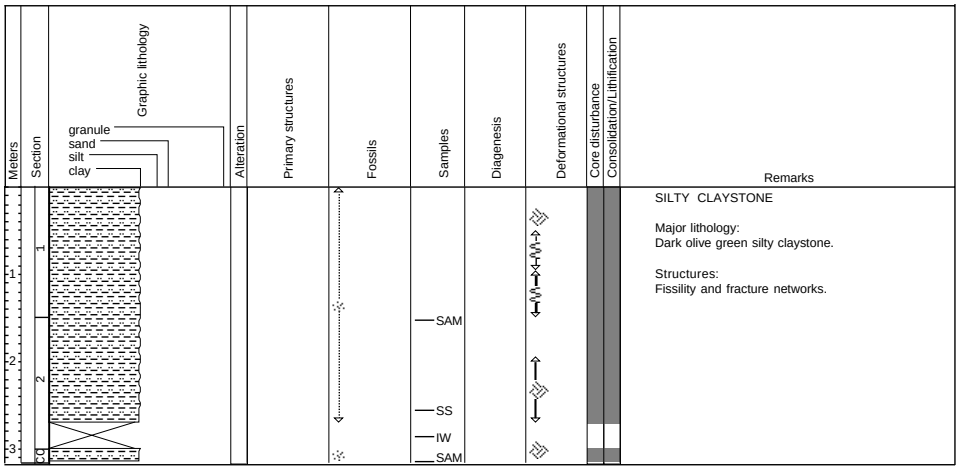
Structures:
Fissility and fracture networks.


Site 1040, Hole C, Core 15R - Cored 294.10 - 303.70 mbsf
1040C-15R
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAYSTONE
Major lithology:
Dark olive green silty claystone with vitric ash.
Minor lithologies:
1) Clasts of dolomitic claystone.
2) Light gray vitric ash.
Structures:
Stratal disruption, fissility, and deformation bands.
Plastic deformation partially or entirely drilling disturbance.
SS
SAM
WR
IW
1
2
3
4
5
6
7
CC

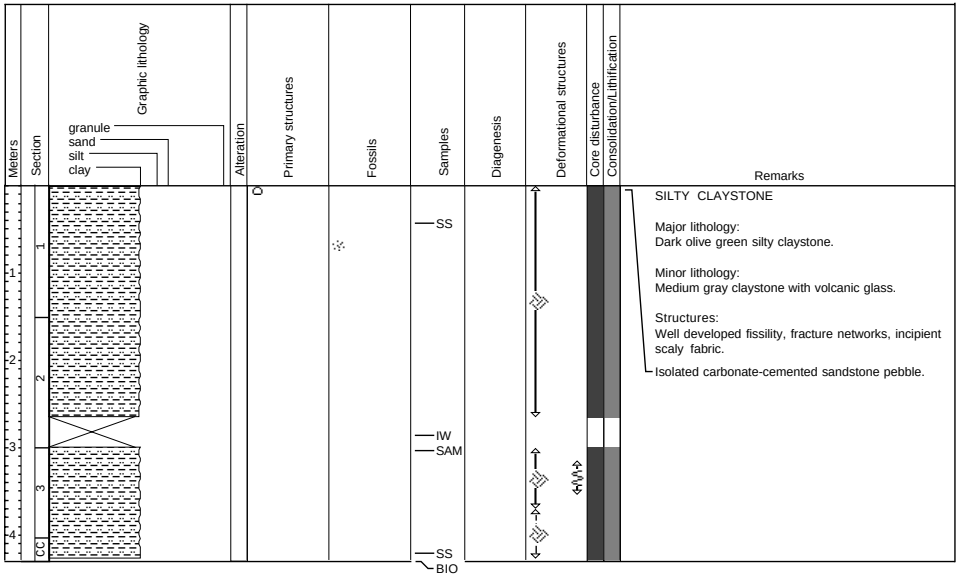
1040C-16R

1040C-17R

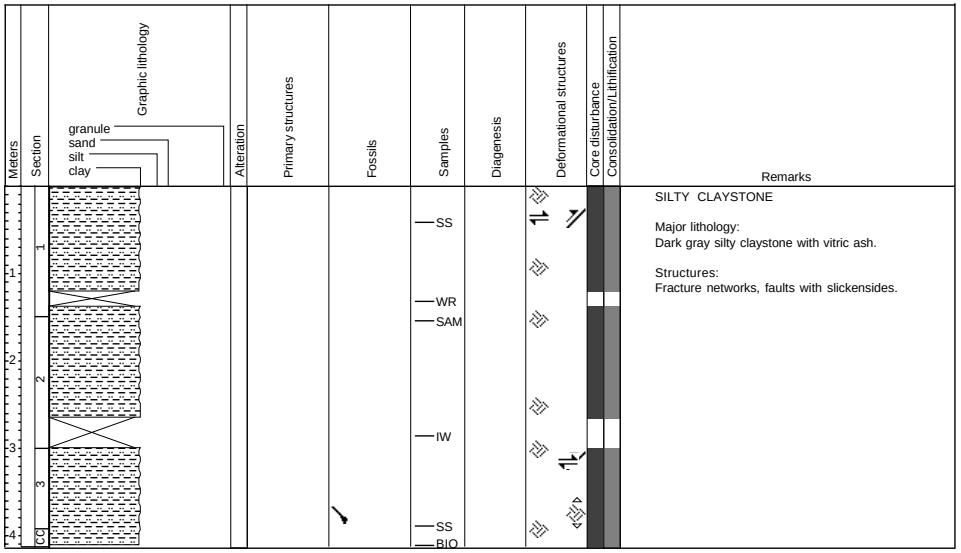
Site 1040, Hole C, Core 16R - Cored 303.70 - 313.30 mbsf



Site 1040, Hole C, Core 17R - Cored 313.30 - 323.00 mbsf



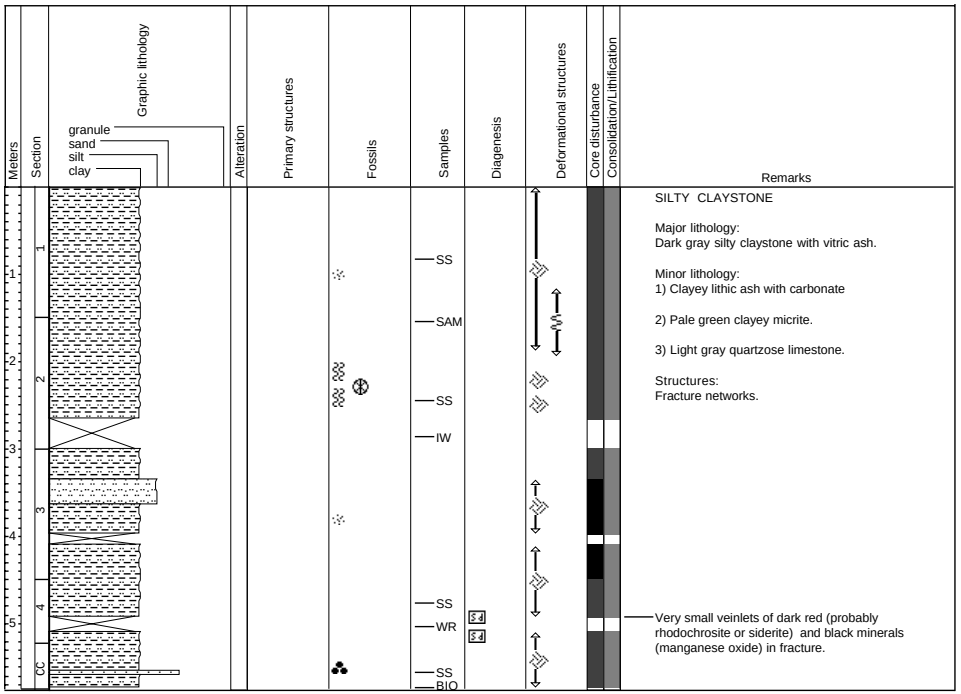
Site 1040, Hole C, Core 18R - Cored 323.00 - 332.60 mbsf



1040C-18R

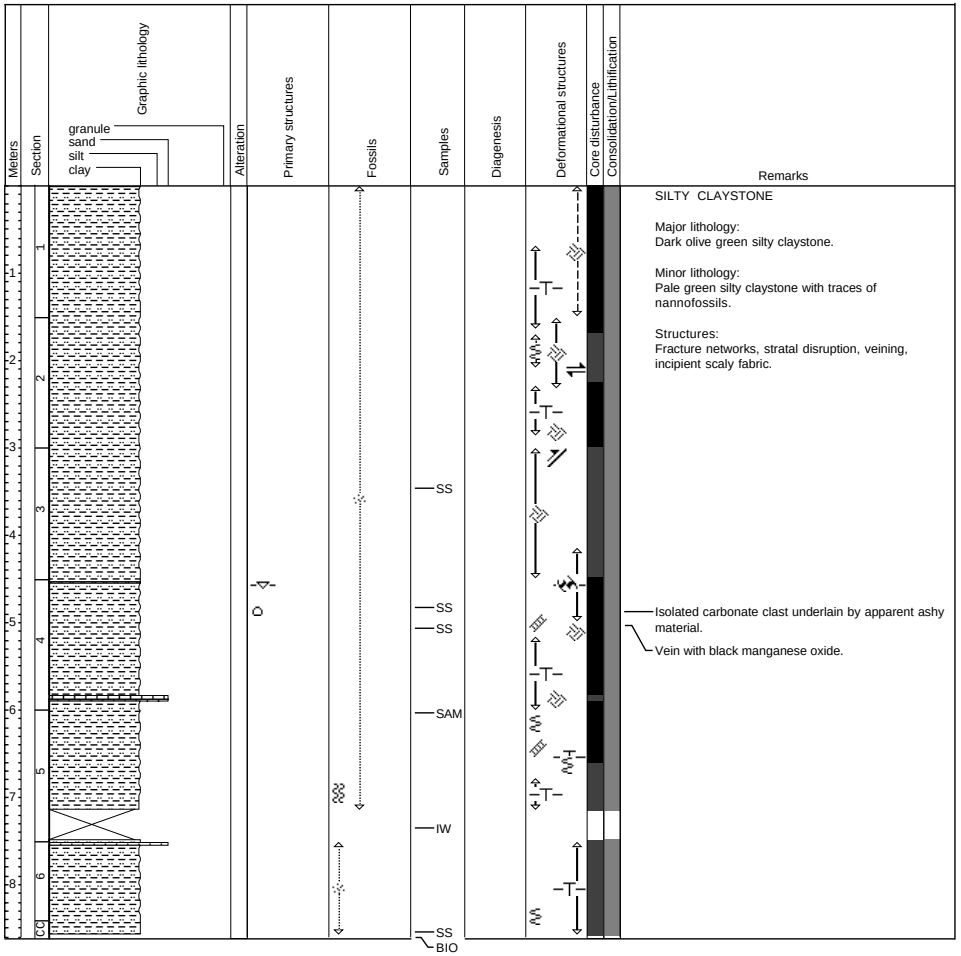
1040C-19R

Site 1040, Hole C, Core 19R - Cored 332.60 - 342.20 mbsf



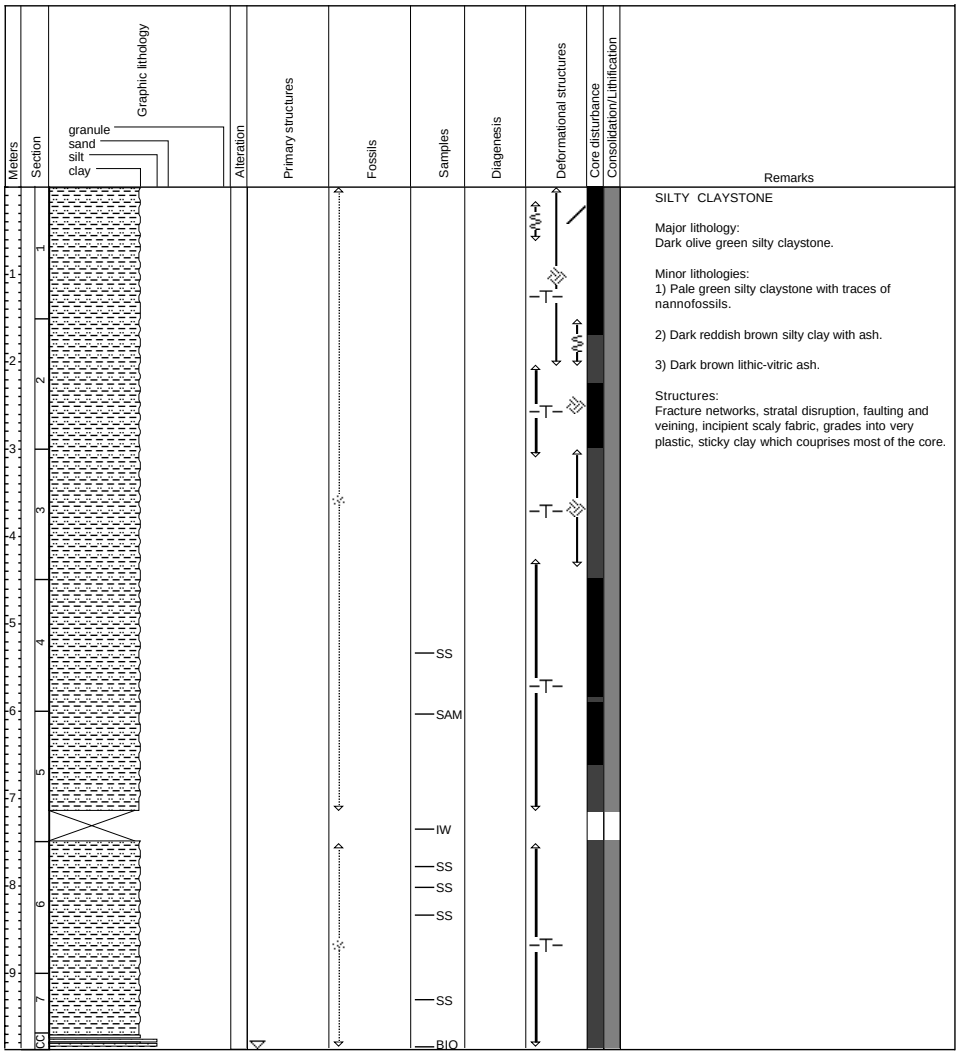
Site 1040, Hole C, Core 20R - Cored 342.20 - 351.80 mbsf

1040C-20R



Site 1040, Hole C, Core 21R - Cored 351.80 - 361.40 mbsf

1040C-21R



SILTY CLAYSTONE

Major lithology:
Dark olive green silty claystone.

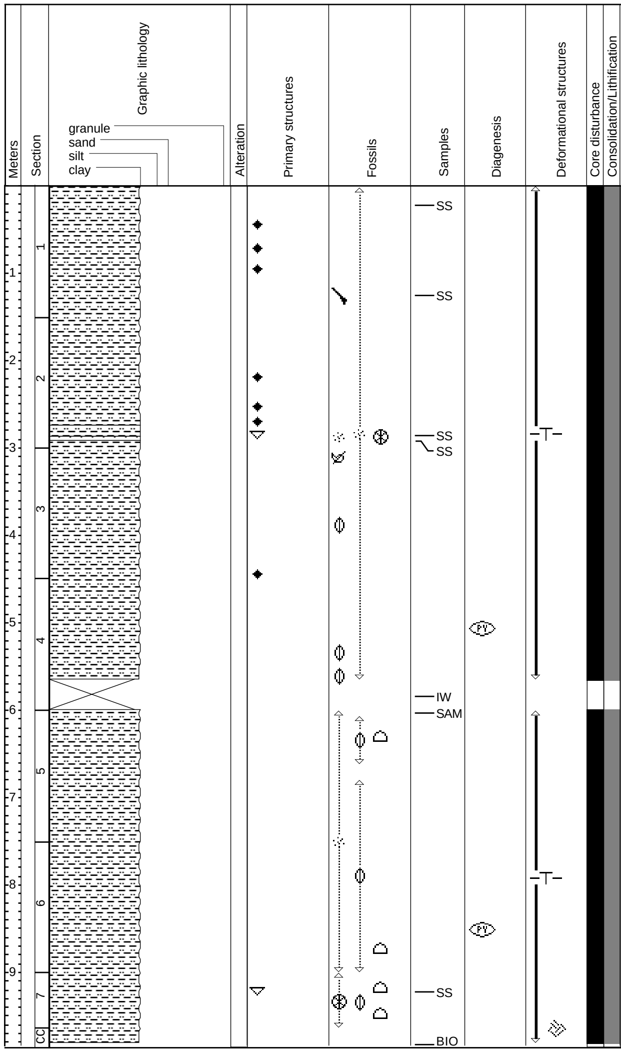
Minor lithologies:
1) Pale green silty claystone with traces of nannofossils.

2) Dark reddish brown silty clay with ash.

3) Dark brown lithic-vitric ash.

Structures:
Fracture networks, stratal disruption, faulting and veining, incipient scaly fabric, grades into very plastic, sticky clay which couprises most of the core.

Site 1040, Hole C, Core 22R - Cored 361.40 - 371.00 mbsf



Remarks

SILTY CLAYSTONE

Major lithology:
Dark gray calcareous silty claystone with vitric ash.

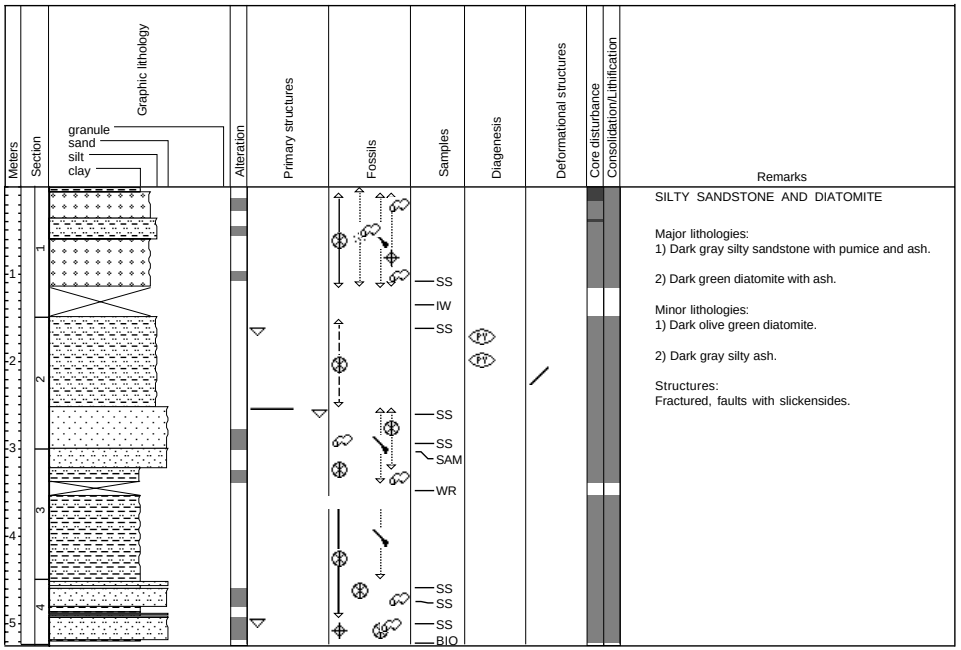
Minor lithologies:
1) Dark gray calcareous claystone with light yellow green calcarous pebbles.

2) Dark gray lithic-vitric ash.

Structures:
Very plastic sticky clay, no brittle deformation, incipient scaly fabric.

Site 1040, Hole C, Core 23R - Cored 371.00 - 380.60 mbsf

1040C-23R



SILTY SANDSTONE AND DIATOMITE

Major lithologies:
1) Dark gray silty sandstone with pumice and ash.

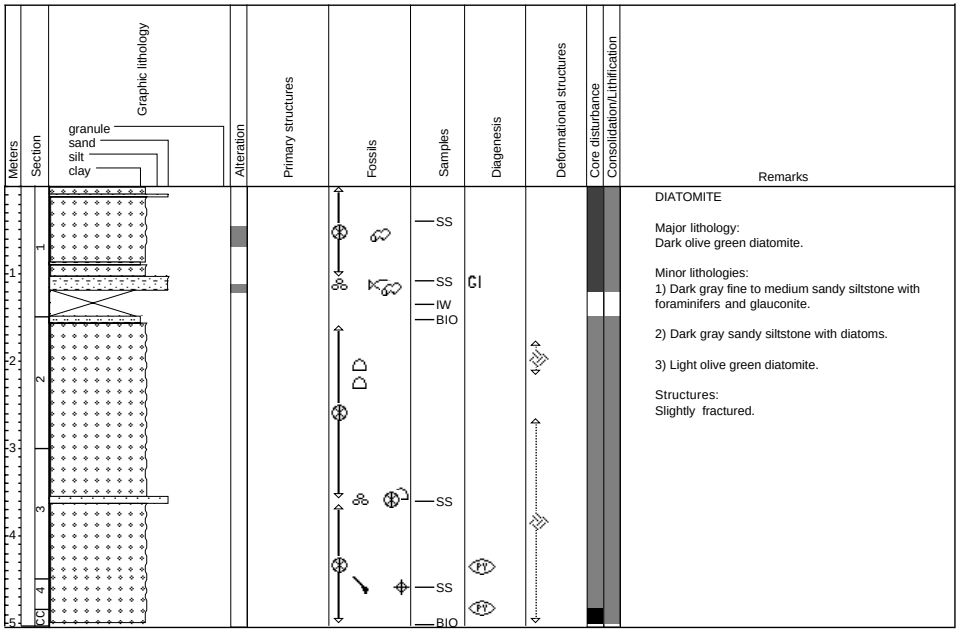
2) Dark green diatomite with ash.

Minor lithologies:
1) Dark olive green diatomite.

2) Dark gray silty ash.

Structures:
Fractured, faults with slickensides.

Site 1040, Hole C, Core 24R - Cored 380.60 - 390.20 mbsf



DIATOMITE

Major lithology:
Dark olive green diatomite.

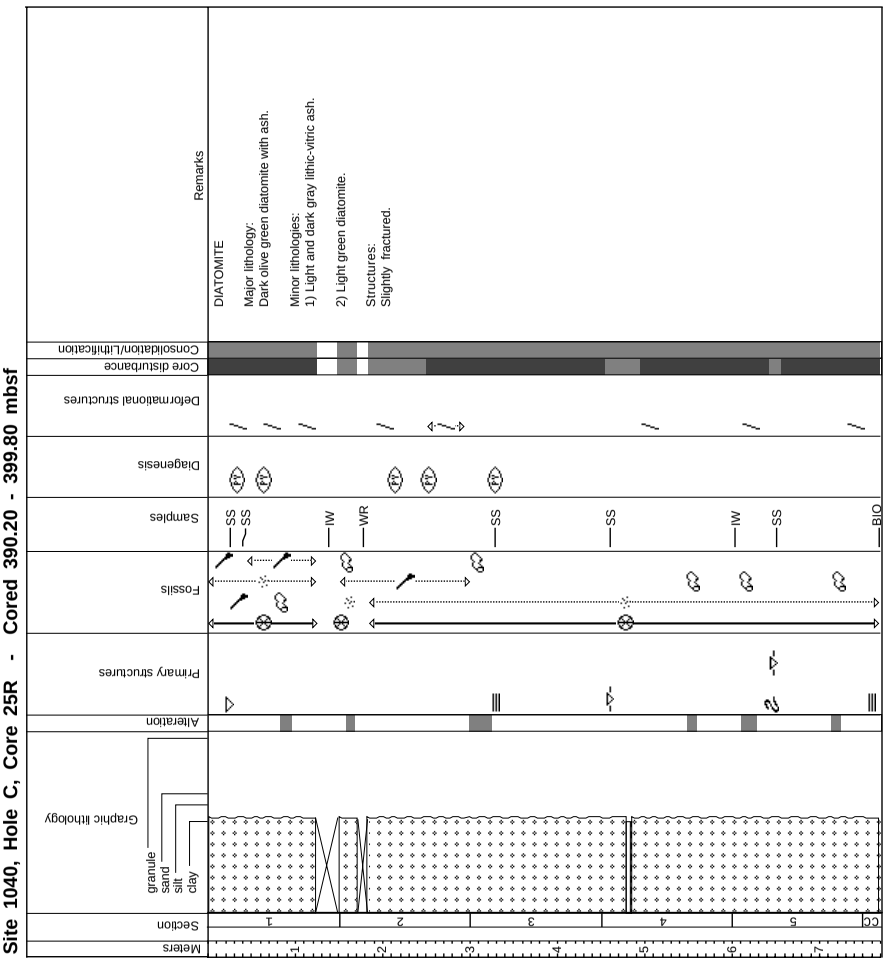
Minor lithologies:
1) Dark gray fine to medium sandy siltstone with foraminifers and glauconite.

2) Dark gray sandy siltstone with diatoms.

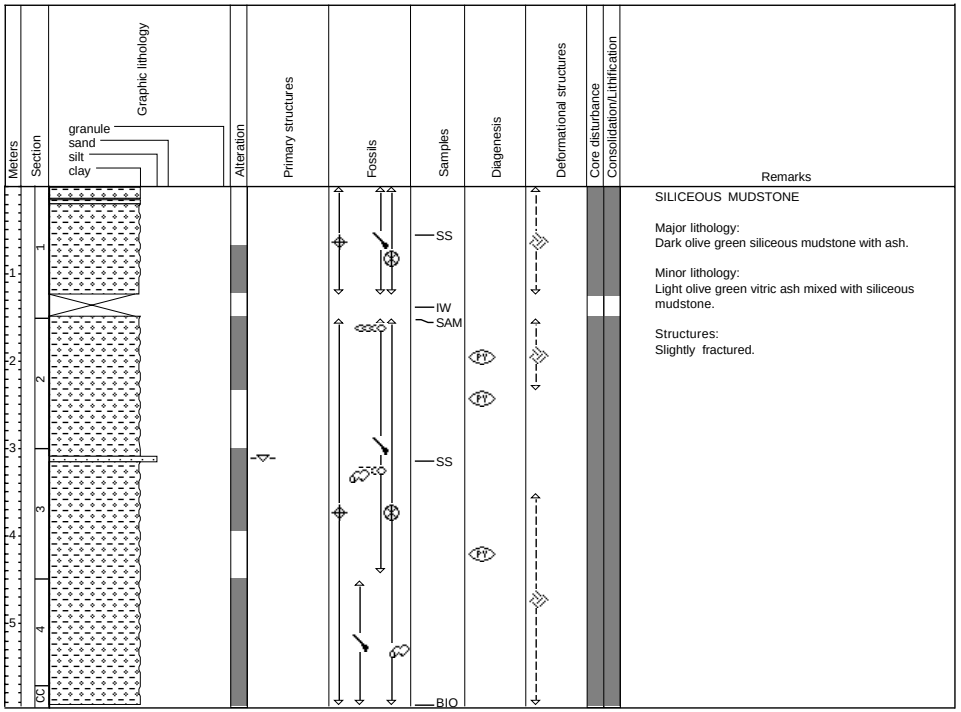
3) Light olive green diatomite.

Structures:
Slightly fractured.

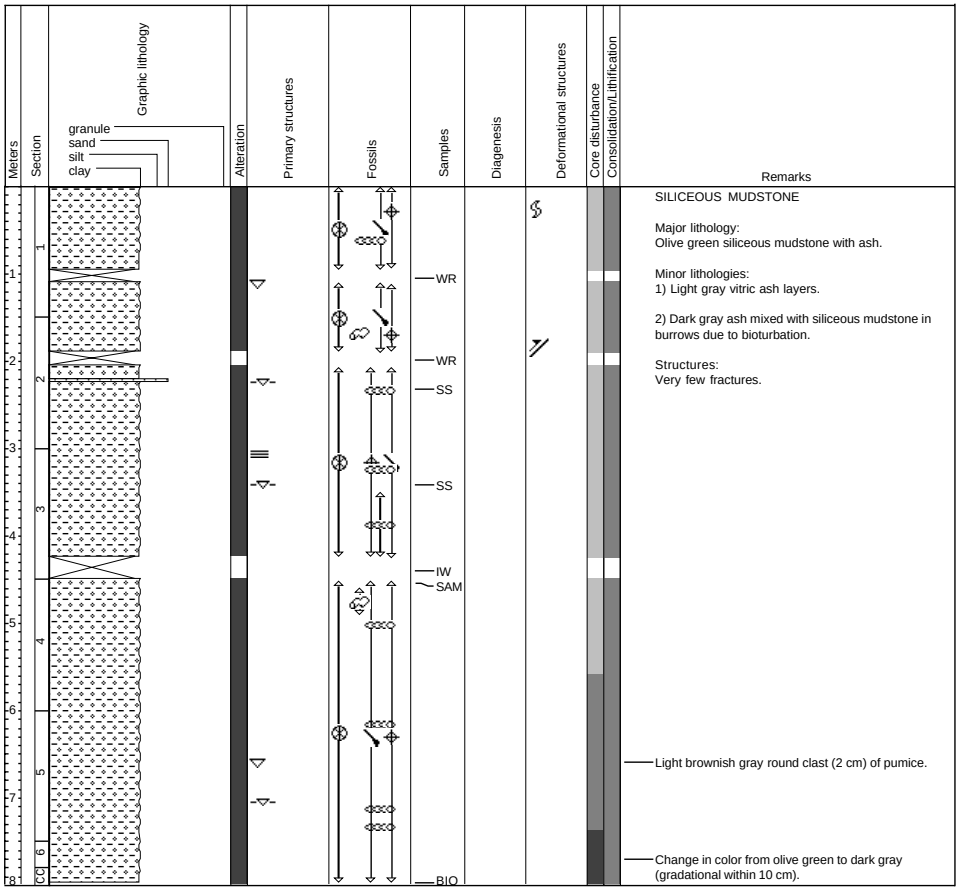
1040C-25R


Site 1040, Hole C, Core 25R - Cored 390.20 - 399.80 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
DIATOMITE
Major lithology:
Dark olive green diatomite with ash.
Minor lithologies:
1) Light and dark gray lithic-vitric ash.
2) Light green diatomite.
Structures:
Slighty fractured.
SS
IW
WR
BIO
1
2
3
4
5
CC

Site 1040, Hole C, Core 26R - Cored 399.80 - 409.40 mbsf

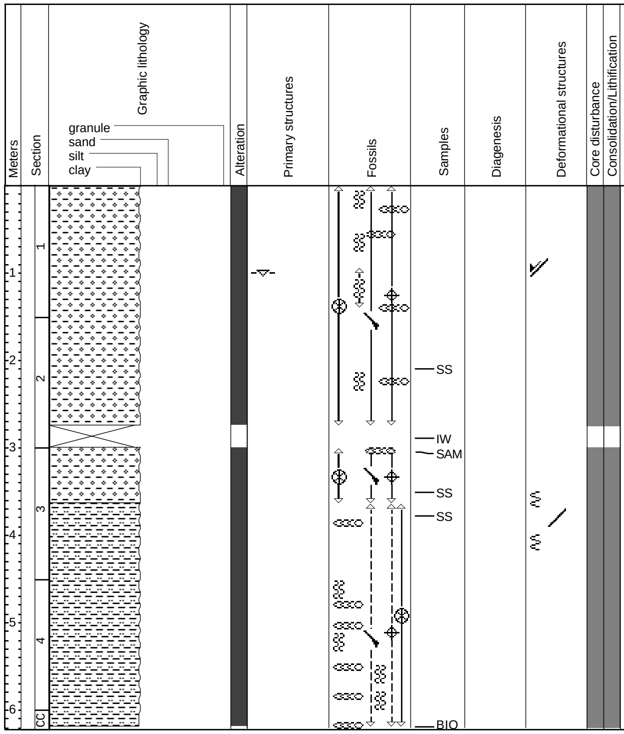


Site 1040, Hole C, Core 27R - Cored 409.40 - 419.10 mbsf



1040C-27R

Site 1040, Hole C, Core 28R - Cored 419.10 - 428.60 mbsf



Remarks

SILICEOUS MUDSTONE AND SILTY CLAYSTONE

Major lithologies:
1) Olive green siliceous mudstone with volcanic ash and opaques.

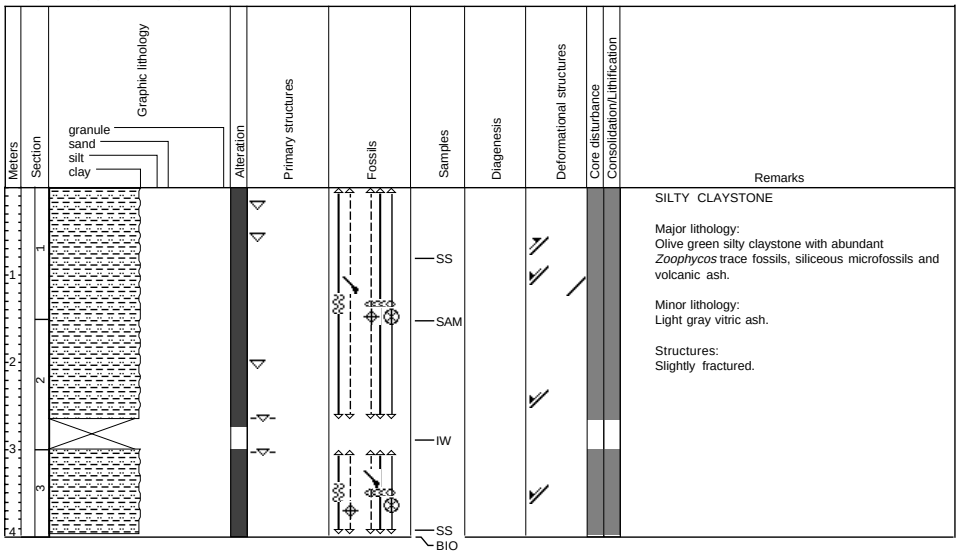
2) Olive green silty claystone with diatoms, radiolarians and spicules.
Change in lithology is gradational between sections 2 and 4.

Minor lithologies:
1) Light gray vitric ash layers.

2) Dark gray ash mixed with diatomite in burrows due to bioturbation.

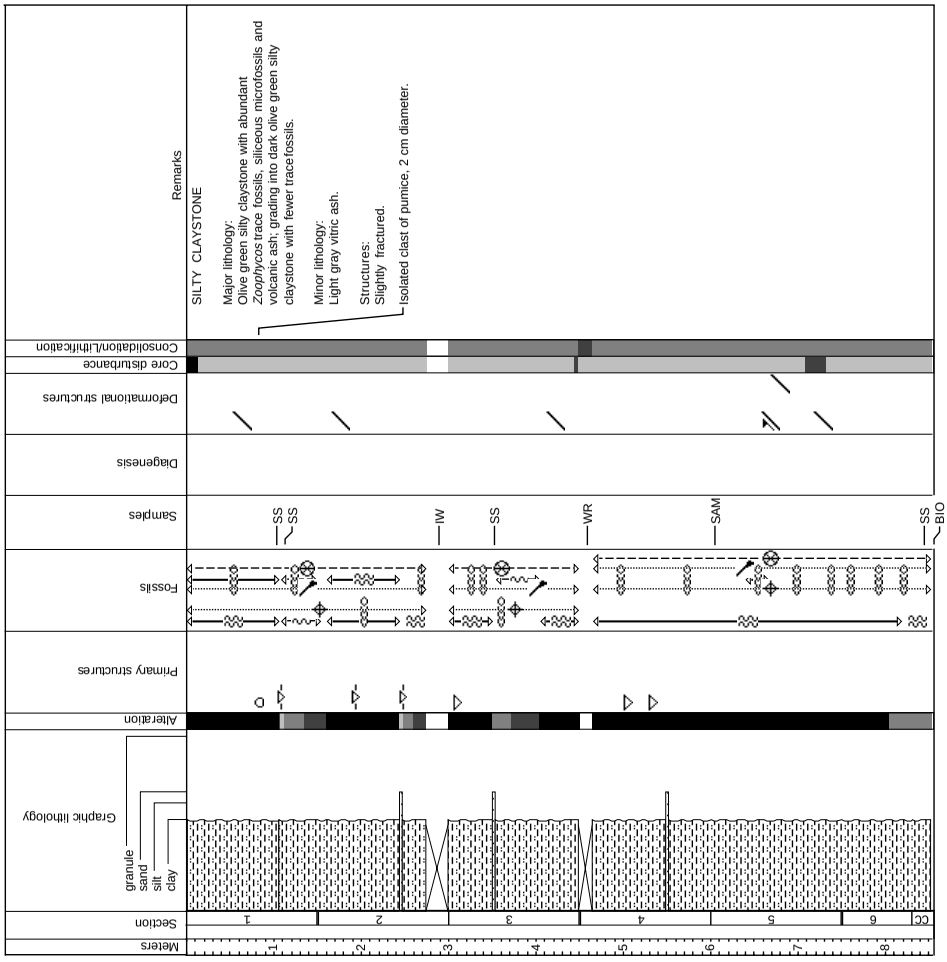
Structures:
Very few fractures.

Site 1040, Hole C, Core 29R - Cored 428.60 - 438.20 mbsf

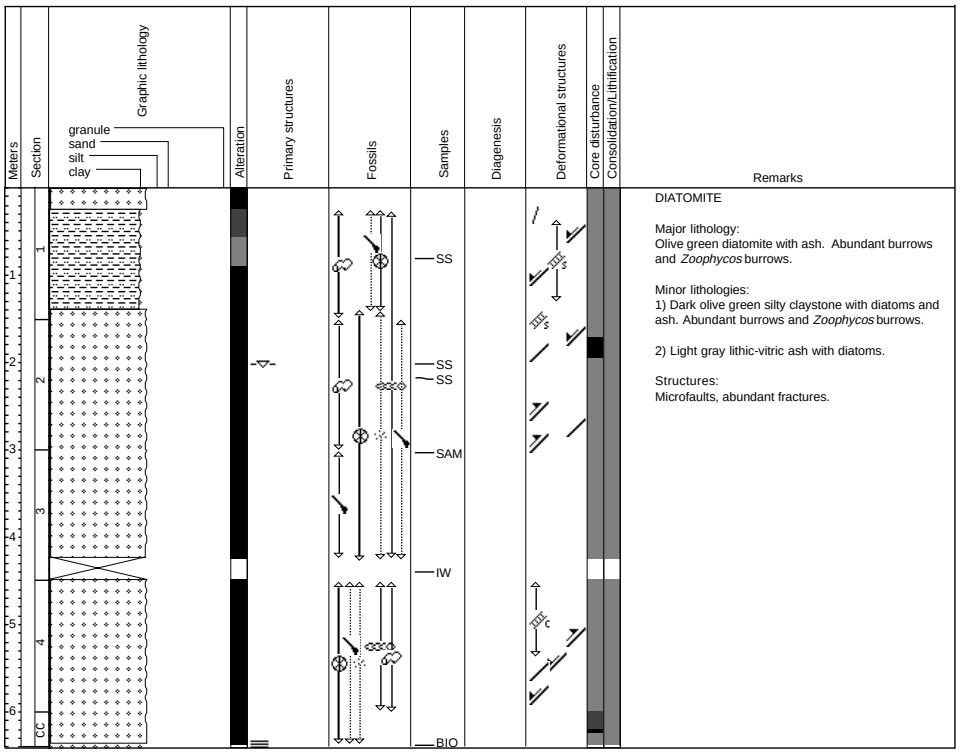


1040C-29R

1040C-30R


Site 1040, Hole C, Core 30R - Cored 438.20 - 447.80 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAYSTONE
Major lithology:
Olive green silty claystone with abundant Zoophycos trace fossils, siliceous microfossils and volcanic ash; grading into dark olive green silty claystone with fewer trace fossils.
Minor lithology:
Light gray vitric ash.
Structures:
Slighthy fractured.
Isolated clast of pumice, 2 cm diameter.
SS
SS
IW
SS
WR
SAM
SS
BIO
1
2
3
4
5
6
CC

Site 1040, Hole C, Core 31R - Cored 447.80 - 457.40 mbsf



DIATOMITE

Major lithology:
Olive green diatomite with ash. Abundant burrows and *Zoophycos* burrows.

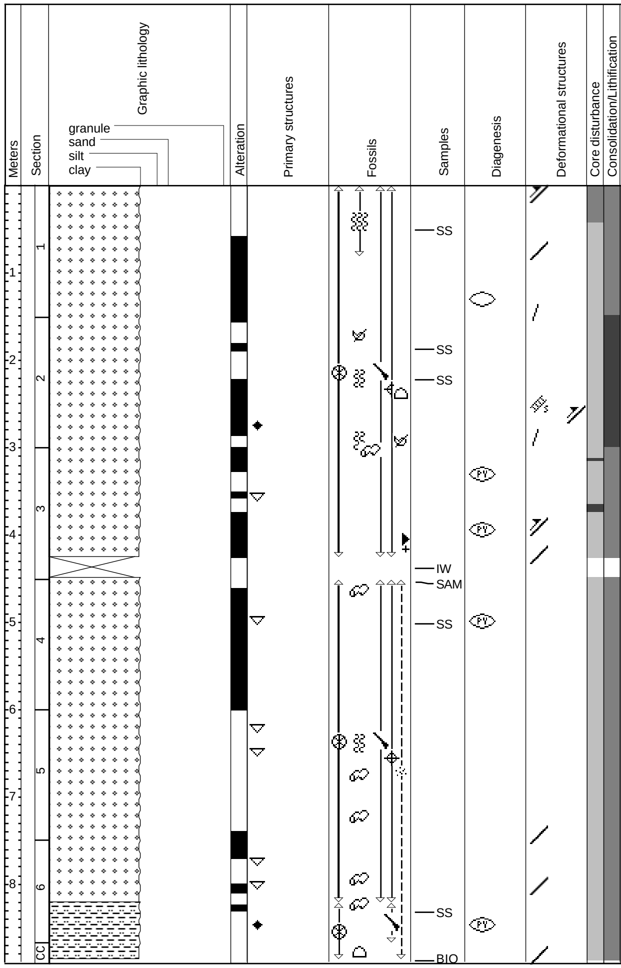
Minor lithologies:
1) Dark olive green silty claystone with diatoms and ash. Abundant burrows and *Zoophycos* burrows.

2) Light gray lithic-vitric ash with diatoms.

Structures:
Microfaults, abundant fractures.

Site 1040, Hole C, Core 32R - Cored: 457.40 - 467.00 mbsf

1040C-32R



Remarks

DIATOMITE AND SILTY CLAYSTONE

Major lithologies:
1) Light grayish green and dark gray diatomite with clay.

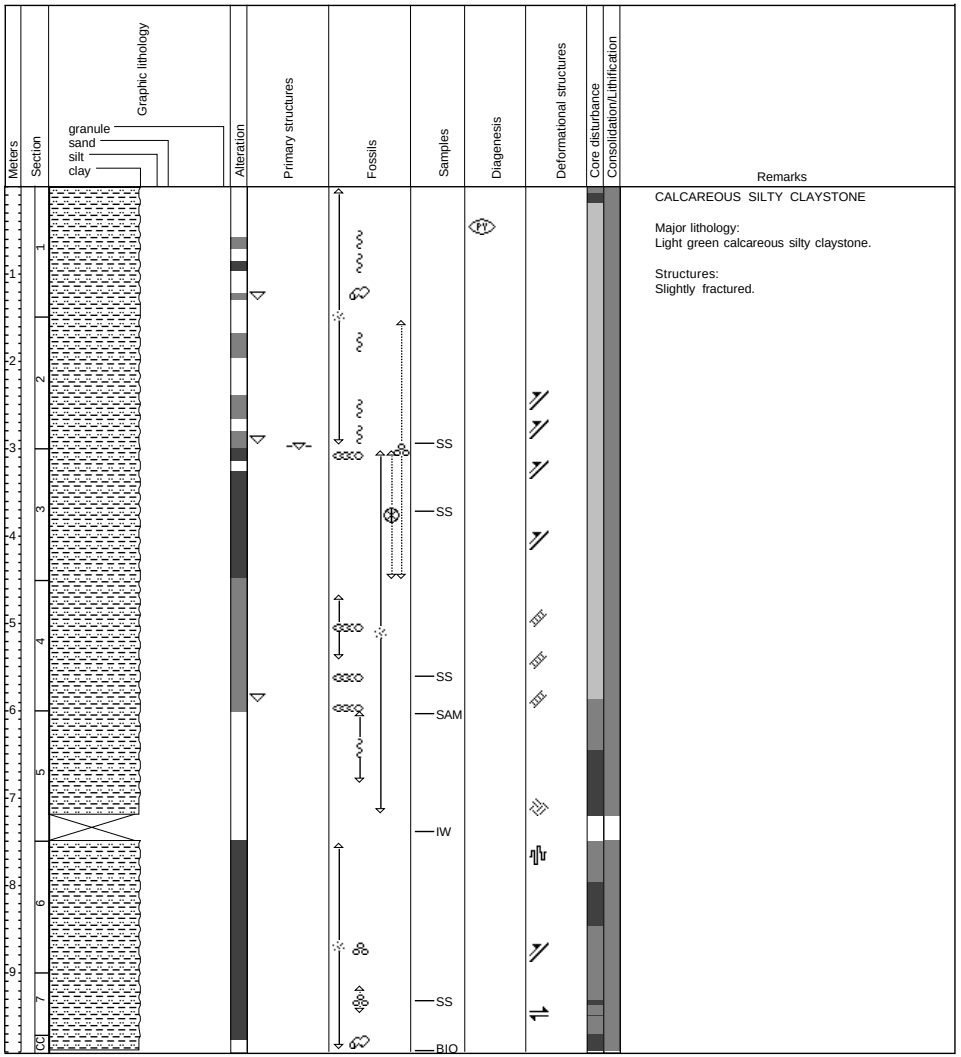
2) Light yellow green calcareous silty claystone with diatoms.

Minor lithologies:
1) Gray vitric ash.

2) Light yellow green calcareous silty claystone with diatoms.

Structures:
Moderately fractured.

Site 1040, Hole C, Core 33R - Cored 467.00 - 476.70 mbsf



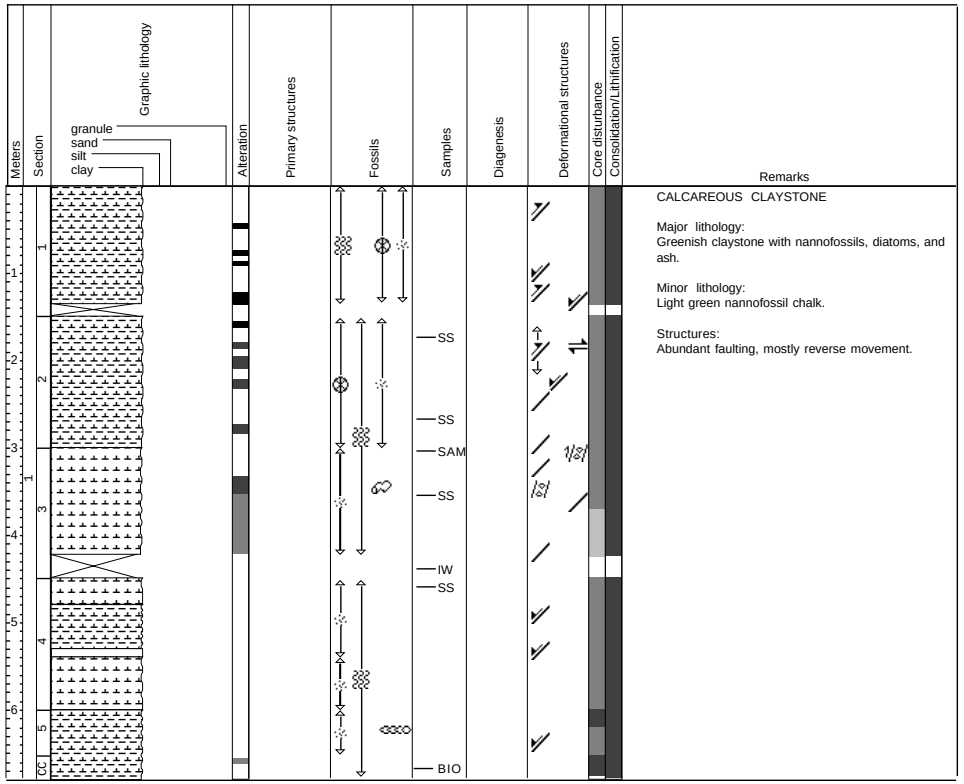
CALCAREOUS SILTY CLAYSTONE

Major lithology:
Light green calcareous silty claystone.

Structures:
Slightly fractured.

Site 1040, Hole C, Core 34R - Cored: 476.70 - 486.40 mbsf

1040C-34R



CALCAREOUS CLAYSTONE

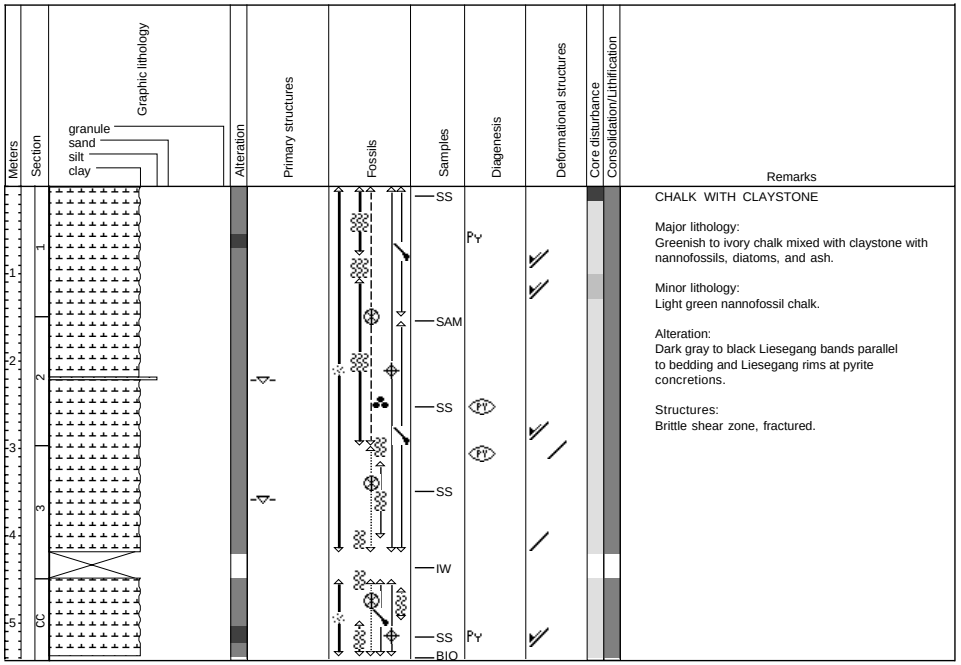
Major lithology:
Greenish claystone with nannofossils, diatoms, and ash.

Minor lithology:
Light green nannofossil chalk.

Structures:
Abundant faulting, mostly reverse movement.

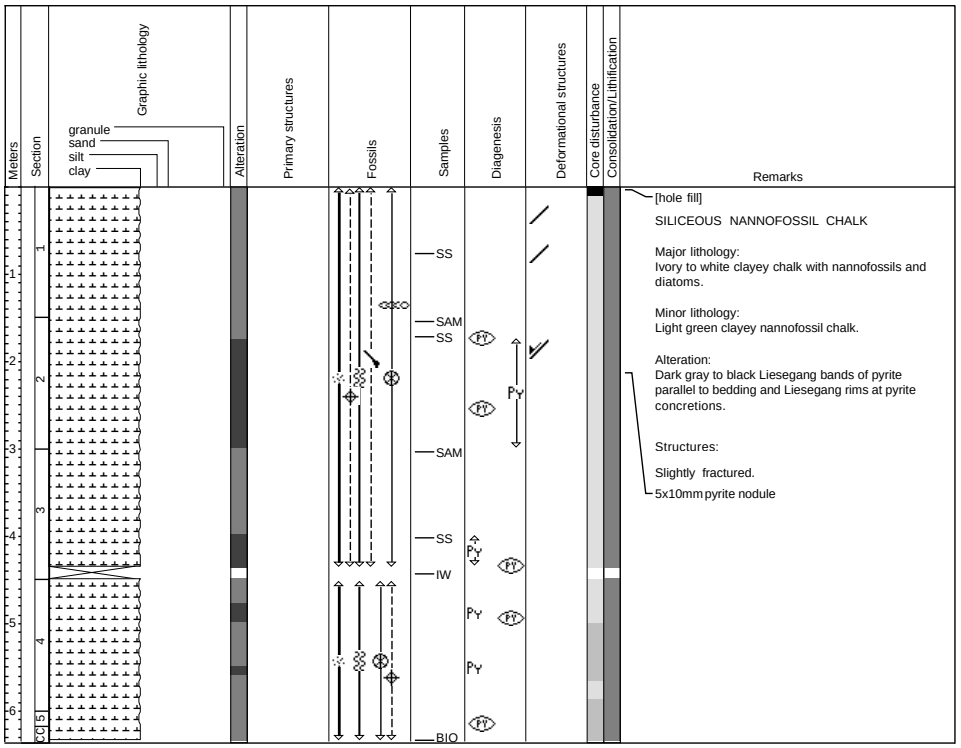
Site 1040, Hole C, Core 35R - Cored: 486.40 - 496.00 mbsf

1040C-35R

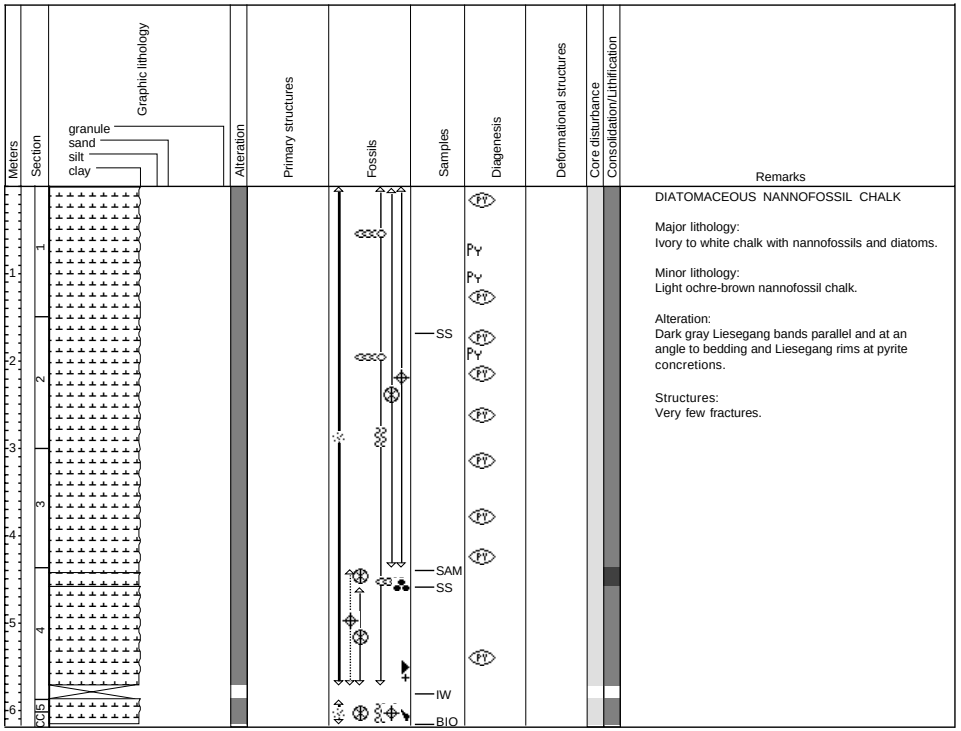


Site 1040, Hole C, Core 36R - Cored: 496.00 - 505.60 mbsf

1040C-36R



Site 1040, Hole C, Core 37R - Cored: 505.60 - 515.30 mbsf



DIATOMACEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory to white chalk with nannofossils and diatoms.

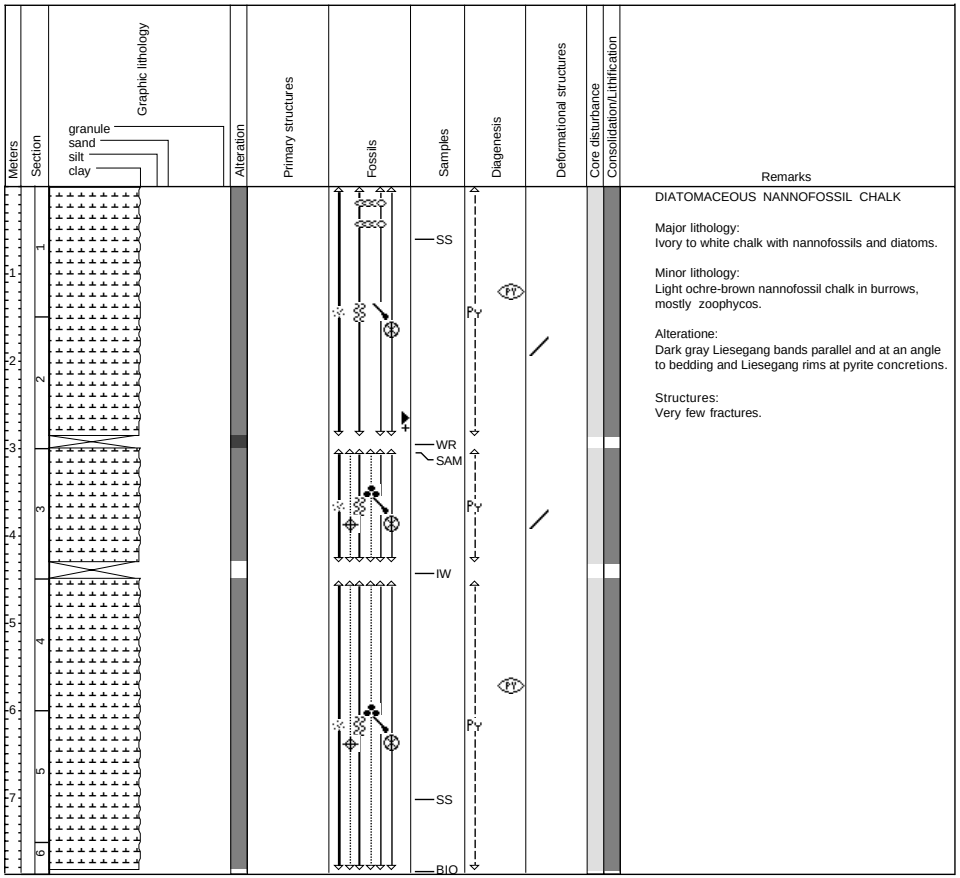
Minor lithology:
Light ochre-brown nannofossil chalk.

Alteration:
Dark gray Liesegang bands parallel and at an angle to bedding and Liesegang rims at pyrite concretions.

Structures:
Very few fractures.

Site 1040, Hole C, Core 38R - Cored: 515.30 - 524.90 mbsf

1040C-38R



DIATOMACEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory to white chalk with nannofossils and diatoms.

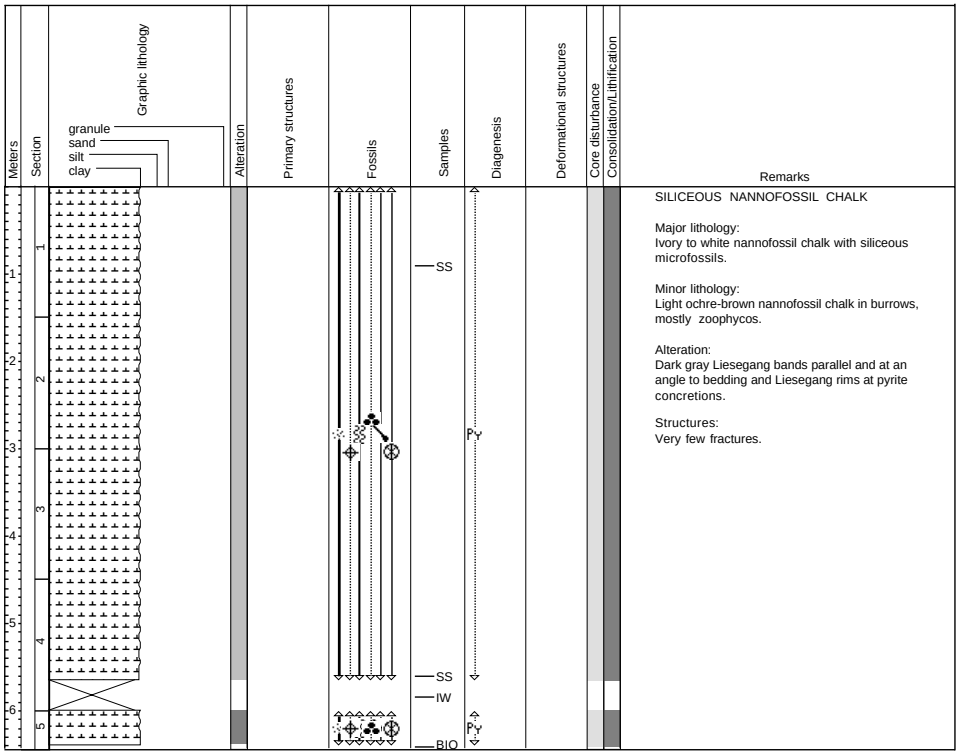
Minor lithology:
Light ochre-brown nannofossil chalk in burrows, mostly zoophycos.

Alteratione:
Dark gray Liesegang bands parallel and at an angle to bedding and Liesegang rims at pyrite concretions.

Structures:
Very few fractures.

Site 1040, Hole C, Core 39R - Cored: 524.90 - 534.50 mbsf

1040C-39R



SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory to white nannofossil chalk with siliceous microfossils.

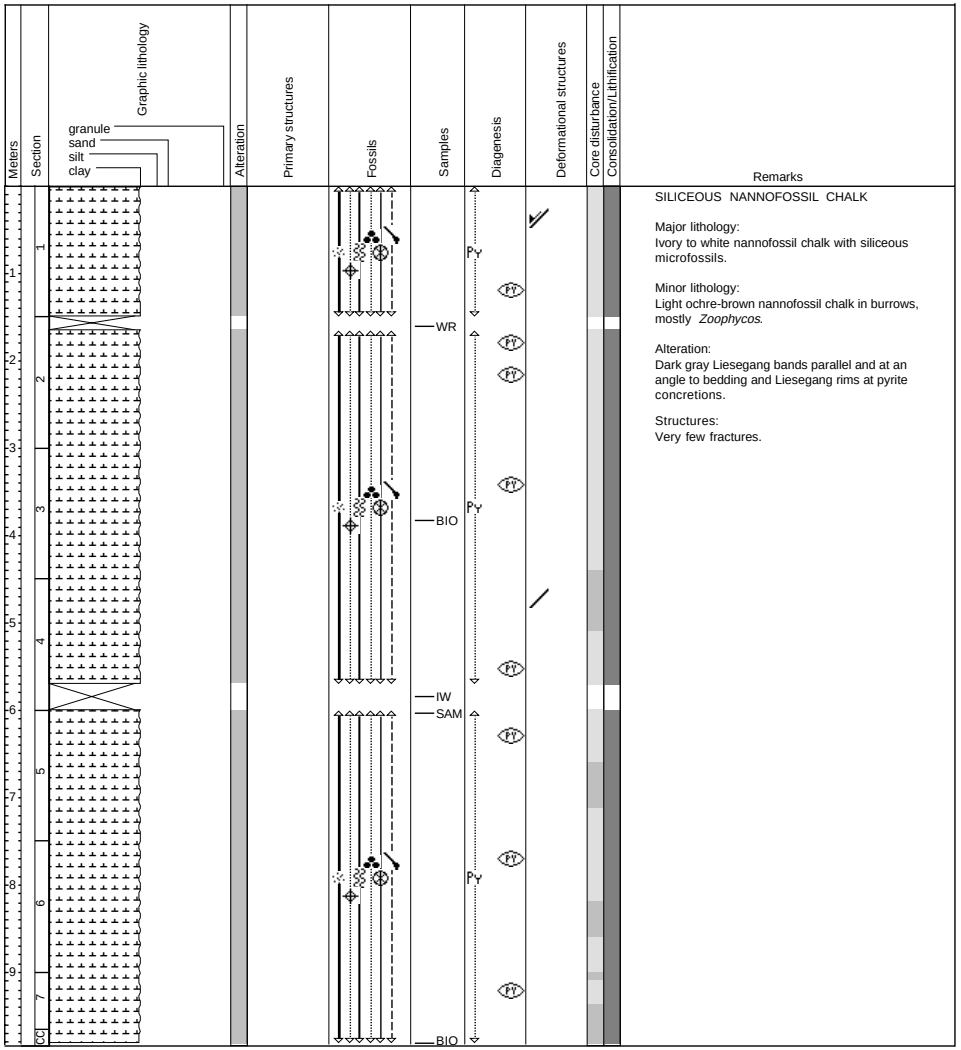
Minor lithology:
Light ochre-brown nannofossil chalk in burrows, mostly zoophycos.

Alteration:
Dark gray Liesegang bands parallel and at an angle to bedding and Liesegang rims at pyrite concretions.

Structures:
Very few fractures.

Site 1040, Hole C, Core 40R - Cored: 534.50 - 544.10 mbsf

1040C-40R



SILICEOUS NANNOFOSSIL CHALK

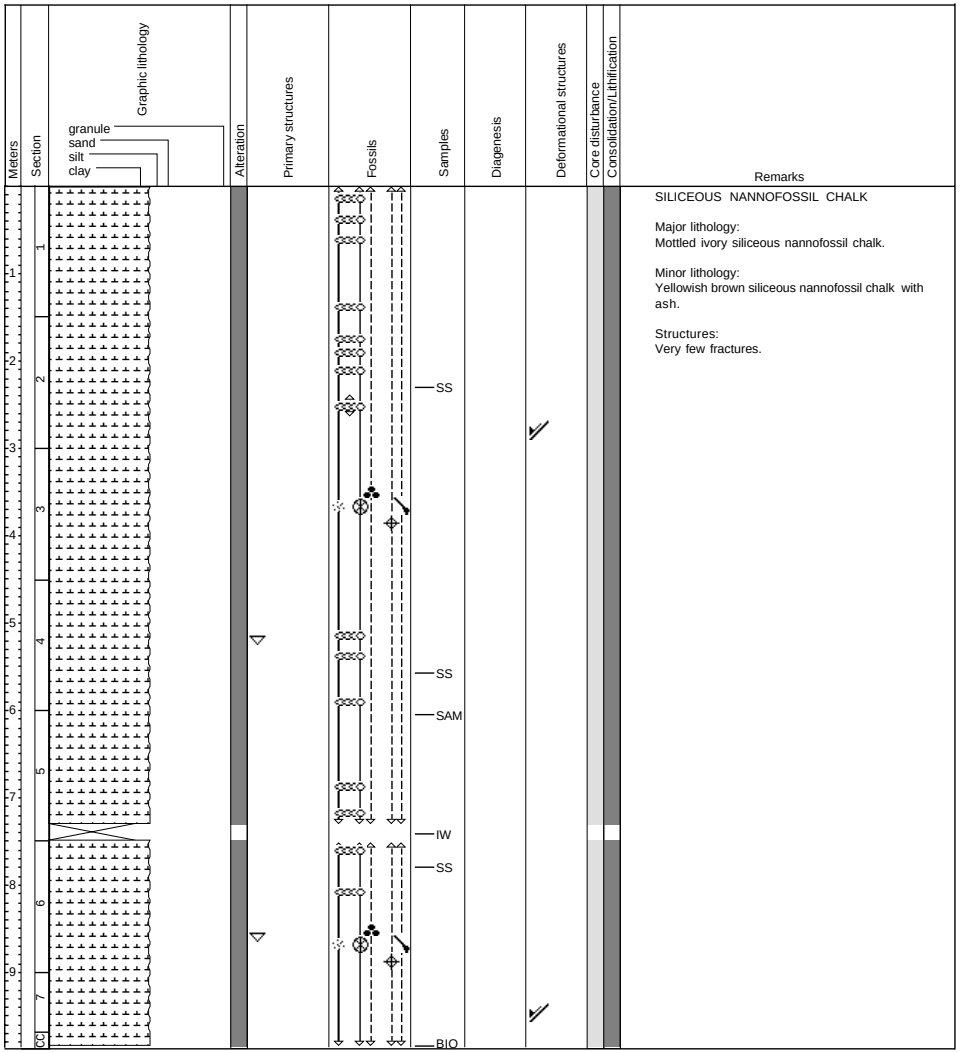
Major lithology:
Ivory to white nannofossil chalk with siliceous microfossils.

Minor lithology:
Light ochre-brown nannofossil chalk in burrows, mostly *Zoophycos*.

Alteration:
Dark gray Liesegang bands parallel and at an angle to bedding and Liesegang rims at pyrite concretions.

Structures:
Very few fractures.

Site 1040, Hole C, Core 41R - Cored: 544.10 - 553.70 mbsf



SILICEOUS NANNOFOSSIL CHALK

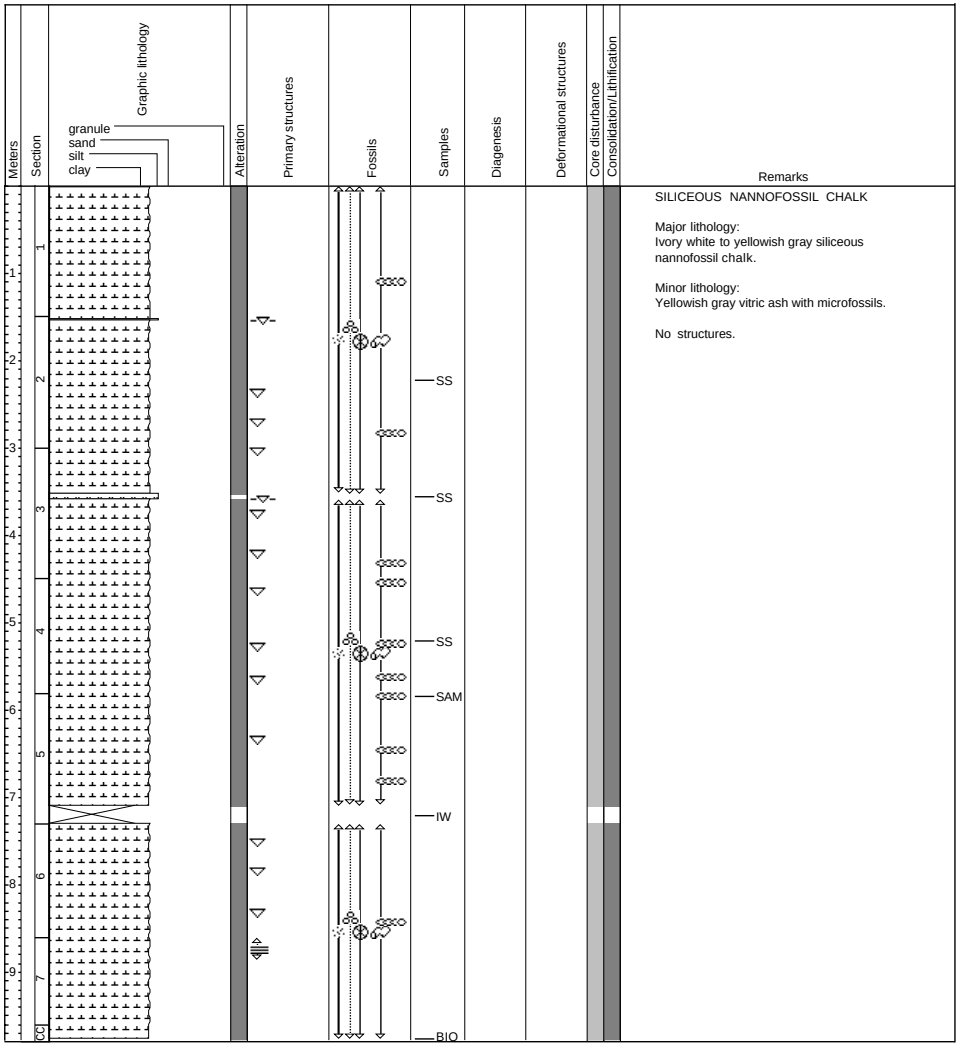
Major lithology:
Mottled ivory siliceous nannofossil chalk.

Minor lithology:
Yellowish brown siliceous nannofossil chalk with ash.

Structures:
Very few fractures.

Site 1040, Hole C, Core 42R - Cored: 553.70 - 563.40 mbsf

1040C-42R



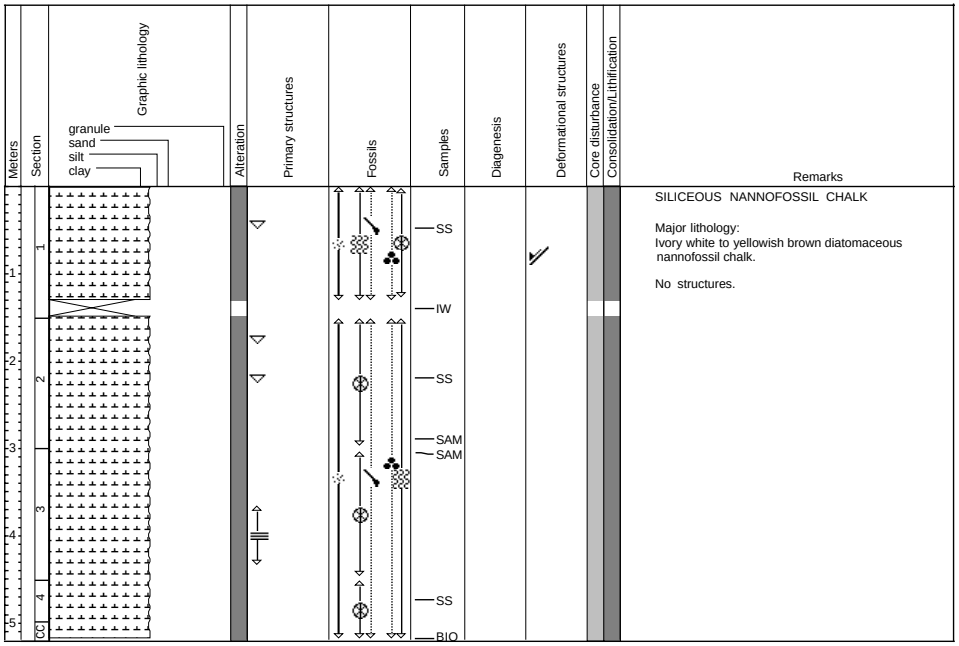
SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory white to yellowish gray siliceous nannofossil chalk.

Minor lithology:
Yellowish gray vitric ash with microfossils.

No structures.

Site 1040, Hole C, Core 43R - Cored: 563.40 - 573.10 mbsf



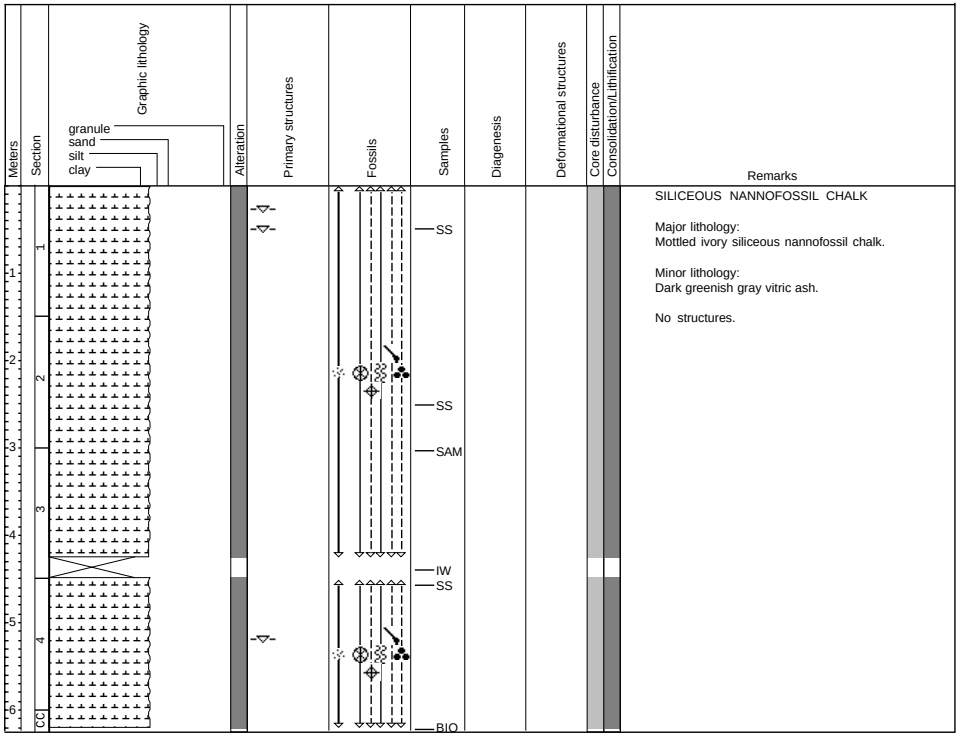
SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory white to yellowish brown diatomaceous nannofossil chalk.

No structures.

Site 1040, Hole C, Core 44R - Cored 573.10 - 582.70 mbsf

1040C-44R



SILICEOUS NANNOFOSSIL CHALK

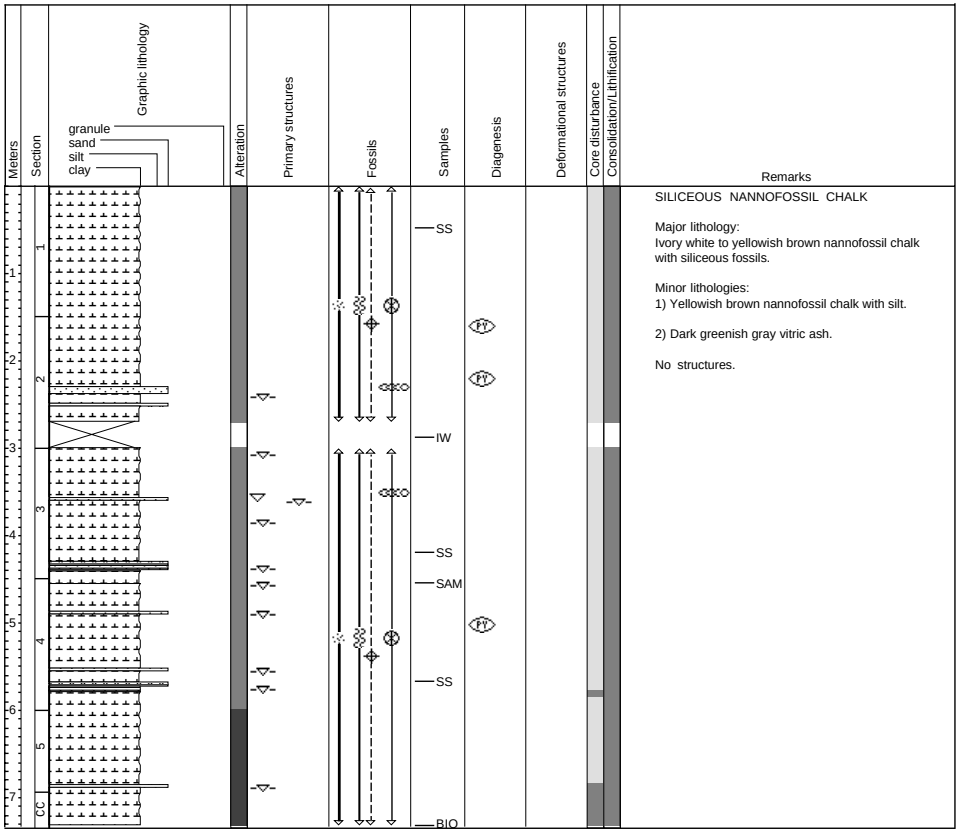
Major lithology:
Mottled ivory siliceous nannofossil chalk.

Minor lithology:
Dark greenish gray vitric ash.

No structures.

Site 1040, Hole C, Core 45R - Cored: 582.70 - 592.30 mbsf

1040C-45R



SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory white to yellowish brown nannofossil chalk with siliceous fossils.

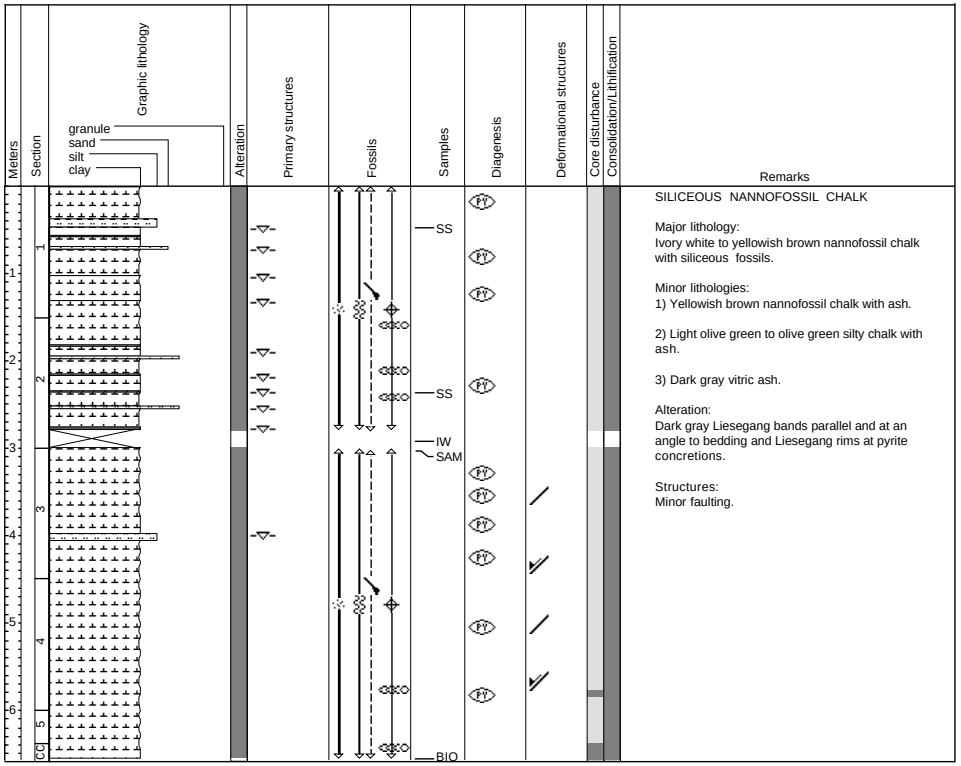
Minor lithologies:
1) Yellowish brown nannofossil chalk with silt.

2) Dark greenish gray vitric ash.

No structures.

Site 1040, Hole C, Core 46R - Cored: 592.30 - 601.90 mbsf

1040C-46R



SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory white to yellowish brown nannofossil chalk with siliceous fossils.

Minor lithologies:
1) Yellowish brown nannofossil chalk with ash.

2) Light olive green to olive green silty chalk with ash.

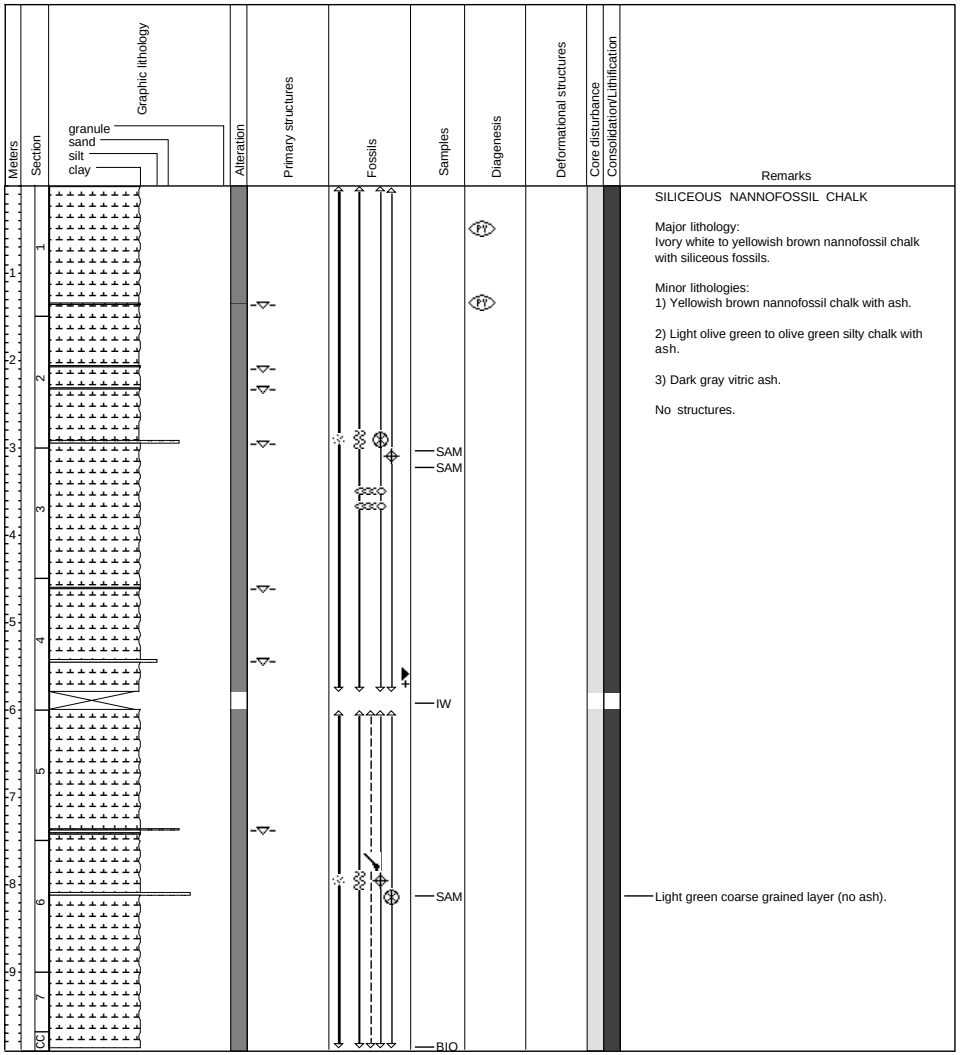
3) Dark gray vitric ash.

Alteration:
Dark gray Liesegang bands parallel and at an angle to bedding and Liesegang rims at pyrite concretions.

Structures:
Minor faulting.

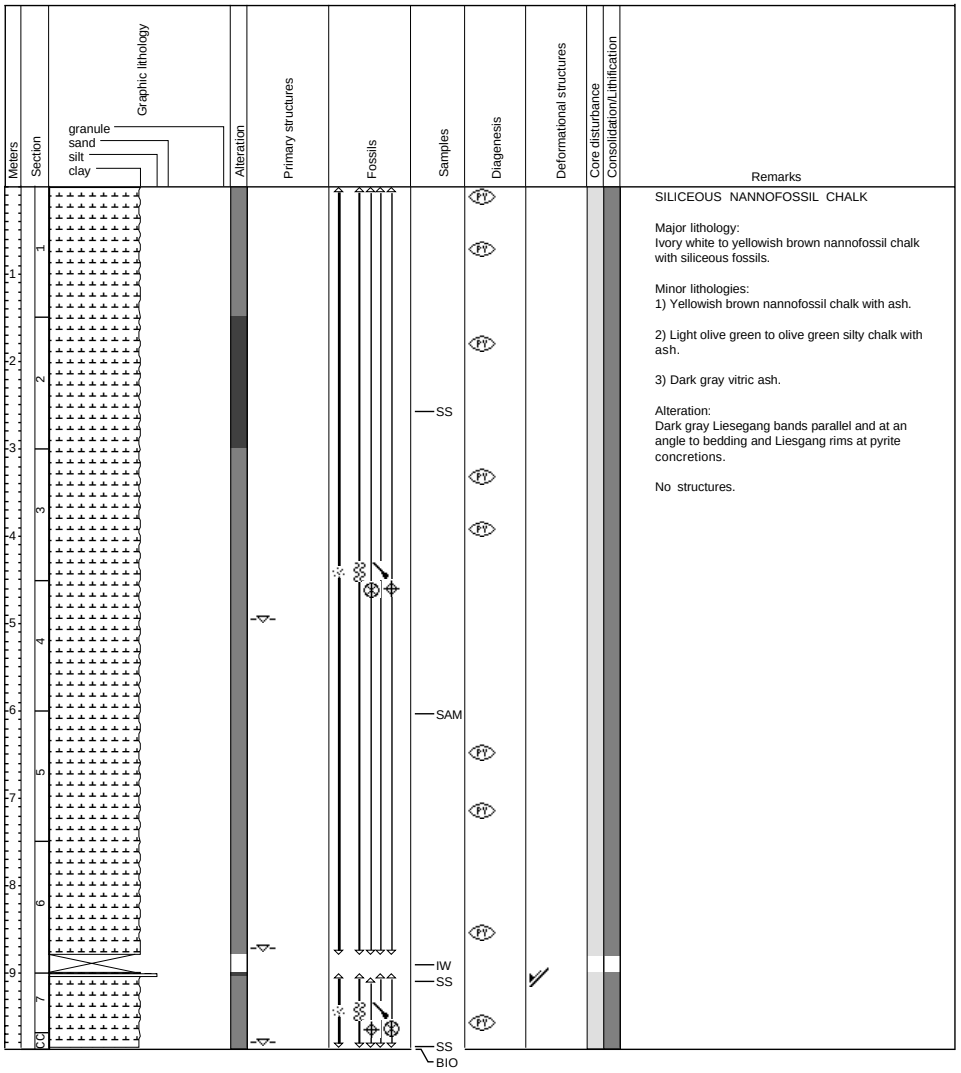
Site 1040, Hole C, Core 47R - Cored: 601.90 - 611.60 mbsf

1040C-47R



Site 1040, Hole C, Core 48R - Cored: 611.60 - 621.20 mbsf

1040C-48R



SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory white to yellowish brown nannofossil chalk with siliceous fossils.

Minor lithologies:
1) Yellowish brown nannofossil chalk with ash.

2) Light olive green to olive green silty chalk with ash.

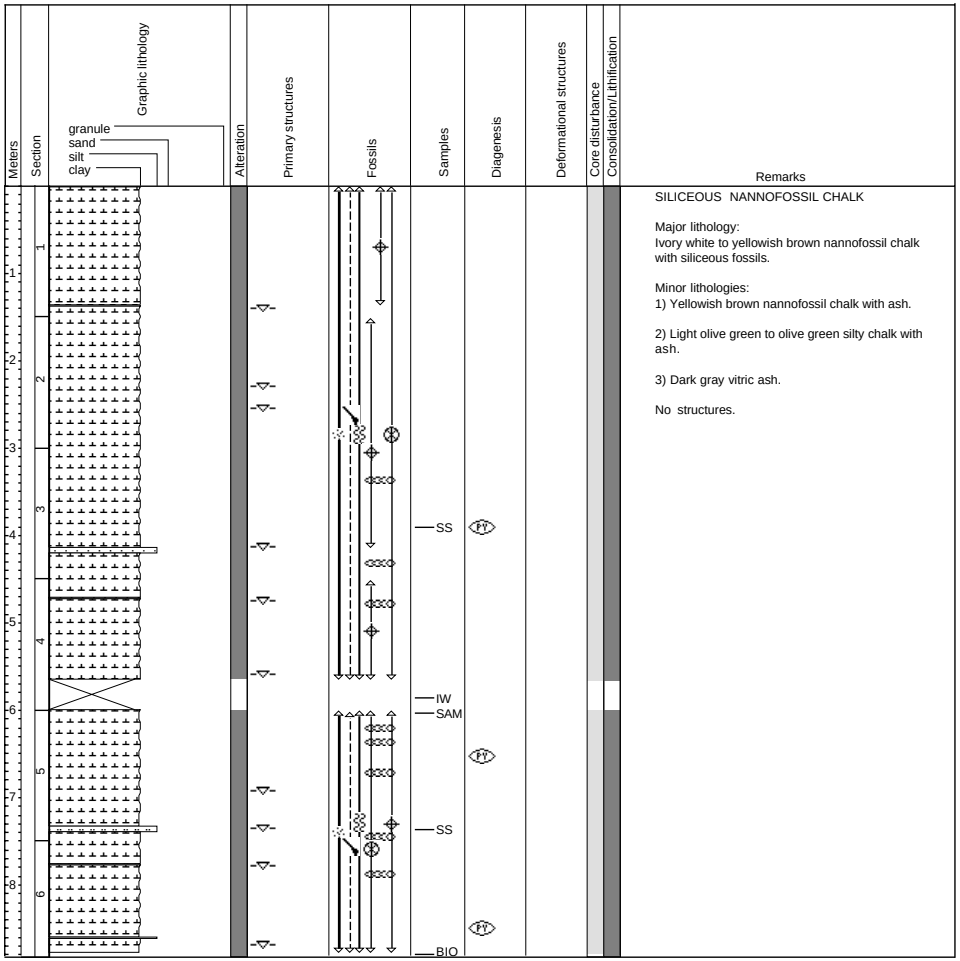
3) Dark gray vitric ash.

Alteration:
Dark gray Liesegang bands parallel and at an angle to bedding and Liesgang rims at pyrite concretions.

No structures.

Site 1040, Hole C, Core 49R - Cored: 621.20 - 630.80 mbsf

1040C-49R



SILICEOUS NANNOFOSSIL CHALK

Major lithology:
Ivory white to yellowish brown nannofossil chalk with siliceous fossils.

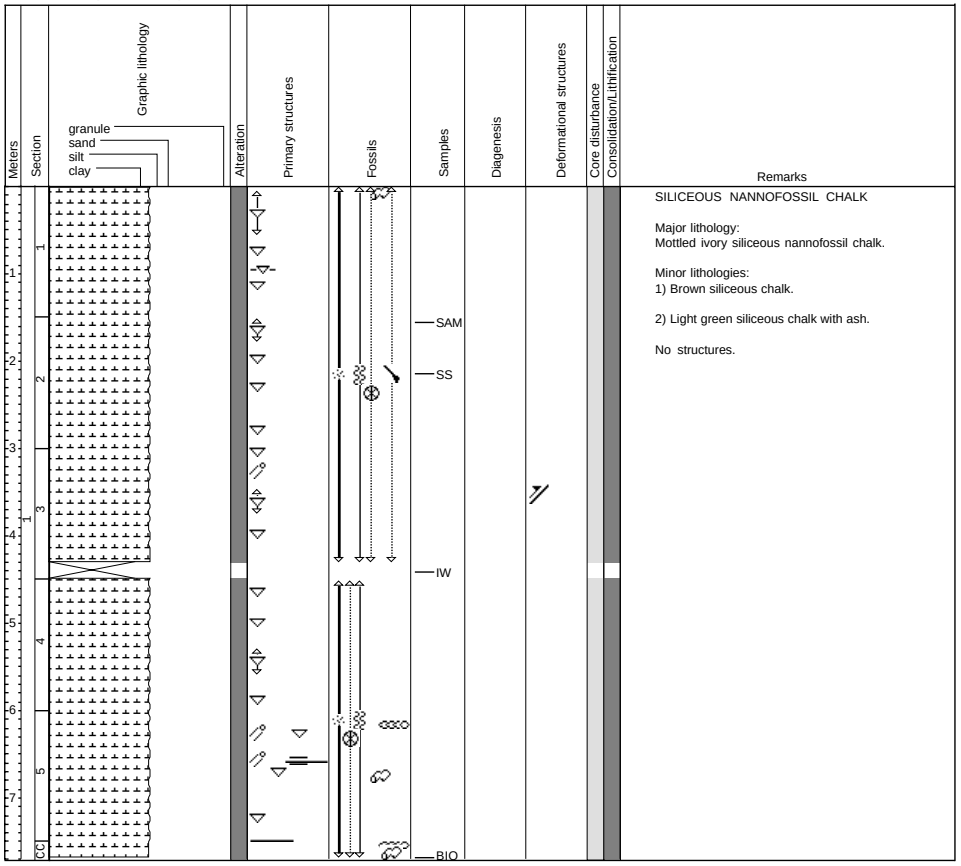
Minor lithologies:
1) Yellowish brown nannofossil chalk with ash.

2) Light olive green to olive green silty chalk with ash.

3) Dark gray vitric ash.

No structures.

Site 1040, Hole C, Core 50R - Cored 630.80 - 640.40 mbsf



SILICEOUS NANNOFOSSIL CHALK

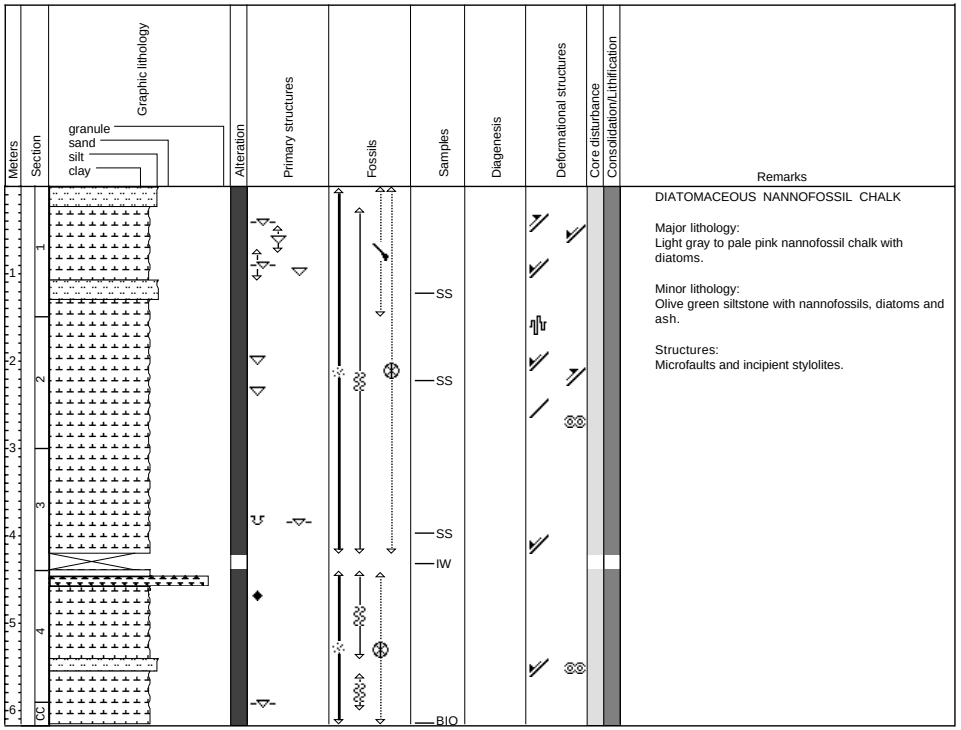
Major lithology:
Mottled ivory siliceous nannofossil chalk.

Minor lithologies:
1) Brown siliceous chalk.

2) Light green siliceous chalk with ash.

No structures.

Site 1040, Hole C, Core 51R - Cored: 640.40 - 650.00 mbsf



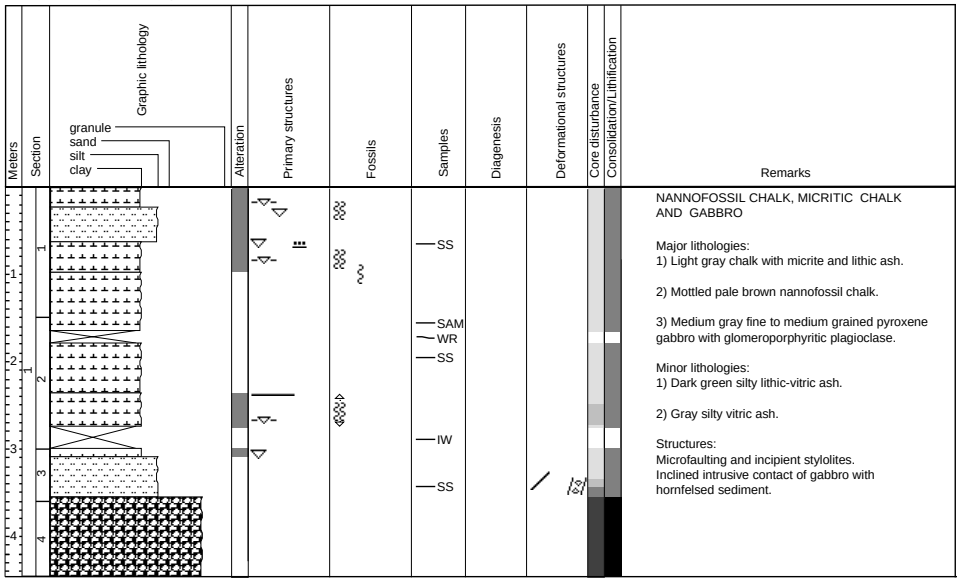
DIATOMACEOUS NANNOFOSSIL CHALK

Major lithology:
Light gray to pale pink nannofossil chalk with diatoms.

Minor lithology:
Olive green siltstone with nannofossils, diatoms and ash.

Structures:
Microfaults and incipient stylolites.

Site 1040, Hole C, Core 52R - Cored: 650.00 - 659.60 mbsf



NANNOFOSSIL CHALK, MICRITIC CHALK AND GABBRO

Major lithologies:
1) Light gray chalk with micrite and lithic ash.

2) Mottled pale brown nannofossil chalk.

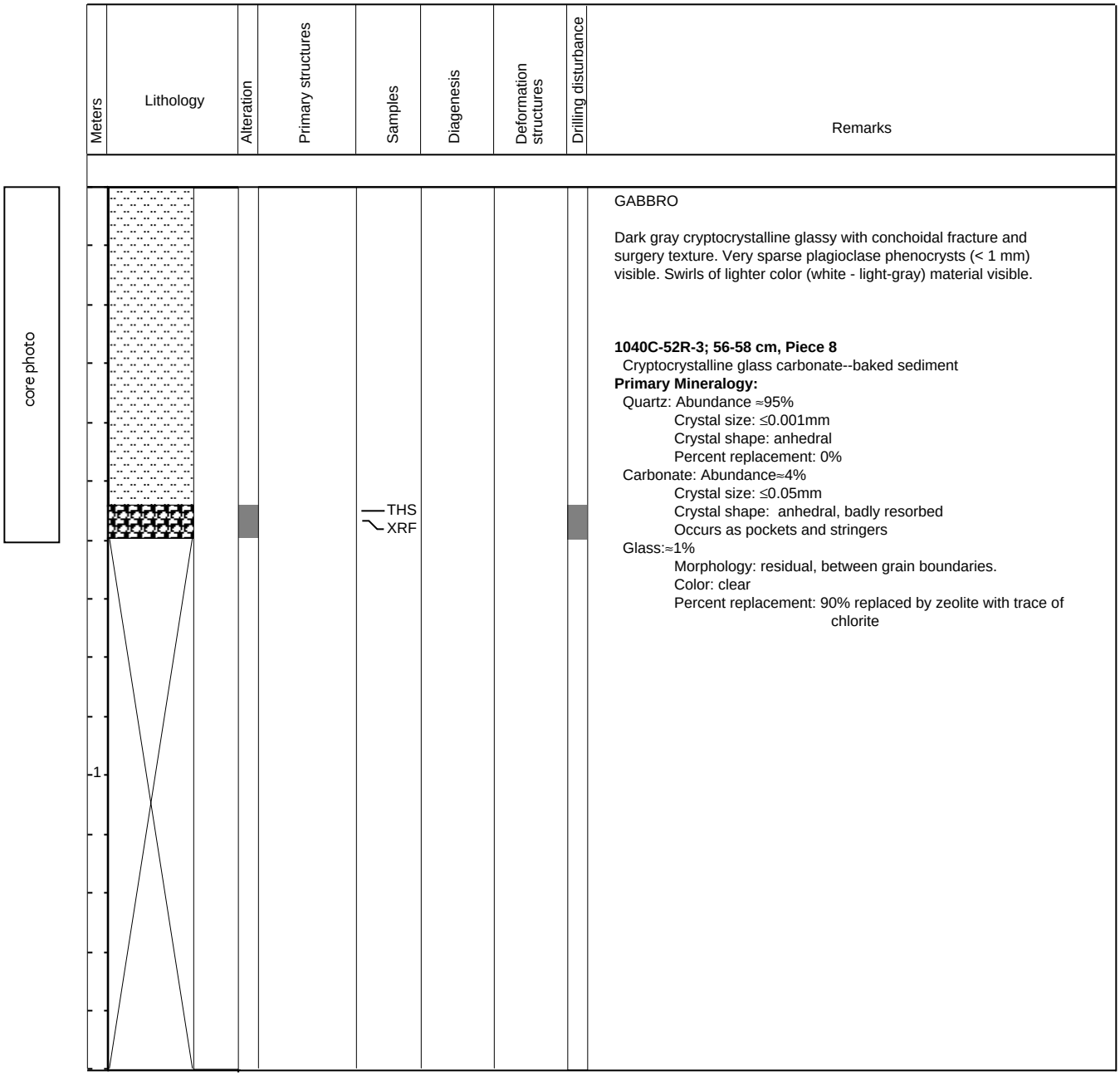
3) Medium gray fine to medium grained pyroxene gabbro with glomeroporphyritic plagioclase.

Minor lithologies:
1) Dark green silty lithic-vitric ash.

2) Gray silty vitric ash.

Structures:
Microfaulting and incipient stylolites.
Inclined intrusive contact of gabbro with hornfelsed sediment.

Site 1040, Hole C, Core 52R, Section 3 - Cored: 653.00 - 653.59 mbsf

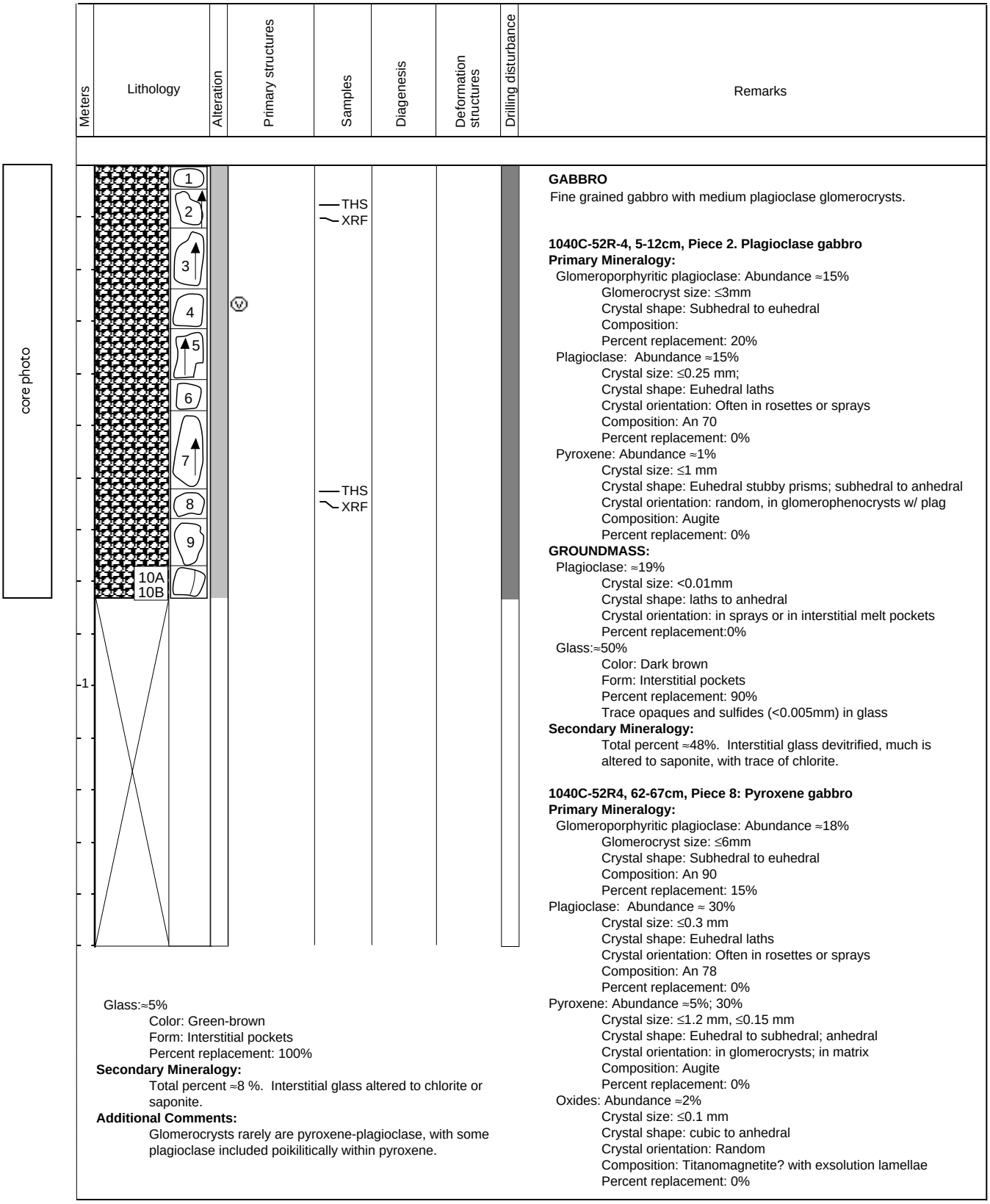


GABBRO

Dark gray cryptocrystalline glassy with conchoidal fracture and surgery texture. Very sparse plagioclase phenocrysts (< 1 mm) visible. Swirls of lighter color (white - light-gray) material visible.

1040C-52R-3; 56-58 cm, Piece 8
Cryptocrystalline glass carbonate--baked sediment
Primary Mineralogy:
Quartz: Abundance ≈95%
Crystal size: ≤0.001mm
Crystal shape: anhedral
Percent replacement: 0%
Carbonate: Abundance≈4%
Crystal size: ≤0.05mm
Crystal shape: anhedral, badly resorbed
Occurs as pockets and stringers
Glass:≈1%
Morphology: residual, between grain boundaries.
Color: clear
Percent replacement: 90% replaced by zeolite with trace of chlorite

Site 1040, Hole C, Core 52R, Section 4 - Cored: 653.59 - 654.43 mbsf



GABBRO
Fine grained gabbro with medium plagioclase glomerocrysts.

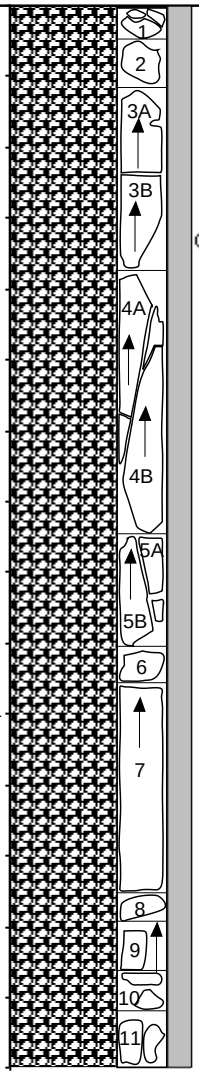
1040C-52R-4, 5-12cm, Piece 2. Plagioclase gabbro
Primary Mineralogy:
Glomeroporphyritic plagioclase: Abundance ≈15%
Glomerocryst size: ≤3mm
Crystal shape: Subhedral to euhedral
Composition:
Percent replacement: 20%
Plagioclase: Abundance ≈15%
Crystal size: ≤0.25 mm;
Crystal shape: Euhedral laths
Crystal orientation: Often in rosettes or sprays
Composition: An 70
Percent replacement: 0%
Pyroxene: Abundance ≈1%
Crystal size: ≤1 mm
Crystal shape: Euhedral stubby prisms; subhedral to anhedral
Crystal orientation: random, in glomerophenocrysts w/ plag
Composition: Augite
Percent replacement: 0%
GROUNDMASS:
Plagioclase: ≈19%
Crystal size: <0.01mm
Crystal shape: laths to anhedral
Crystal orientation: in sprays or in interstitial melt pockets
Percent replacement:0%
Glass:≈50%
Color: Dark brown
Form: Interstitial pockets
Percent replacement: 90%
Trace opaques and sulfides (<0.005mm) in glass
Secondary Mineralogy:
Total percent ≈48%. Interstitial glass devitrified, much is altered to saponite, with trace of chlorite.

1040C-52R4, 62-67cm, Piece 8: Pyroxene gabbro
Primary Mineralogy:
Glomeroporphyritic plagioclase: Abundance ≈18%
Glomerocryst size: ≤6mm
Crystal shape: Subhedral to euhedral
Composition: An 90
Percent replacement: 15%
Plagioclase: Abundance ≈ 30%
Crystal size: ≤0.3 mm
Crystal shape: Euhedral laths
Crystal orientation: Often in rosettes or sprays
Composition: An 78
Percent replacement: 0%
Pyroxene: Abundance ≈5%; 30%
Crystal size: ≤1.2 mm, ≤0.15 mm
Crystal shape: Euhedral to subhedral; anhedral
Crystal orientation: in glomerocrysts; in matrix
Composition: Augite
Percent replacement: 0%
Oxides: Abundance ≈2%
Crystal size: ≤0.1 mm
Crystal shape: cubic to anhedral
Crystal orientation: Random
Composition: Titanomagnetite? with exsolution lamellae
Percent replacement: 0%

Glass:≈5%
Color: Green-brown
Form: Interstitial pockets
Percent replacement: 100%
Secondary Mineralogy:
Total percent ≈8 %. Interstitial glass altered to chlorite or saponite.
Additional Comments:
Glomerocrysts rarely are pyroxene-plagioclase, with some plagioclase included poikilitically within pyroxene.

Site 1040, Hole C, Core 53R, Section 1 - Cored: 659.60 - 661.10 mbsf

core photo



GABBRO

Fine grained pyroxene gabbro with medium plagioclase glomerocrysts.

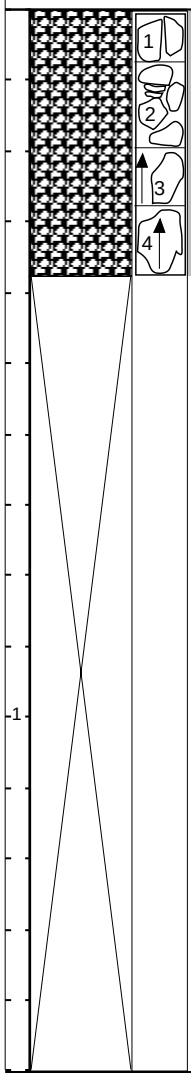
1040C-53R-1, 5-11cm, Piece 1A: Pyroxene gabbro
Primary Mineralogy:
Phenocrysts
Glomeroporphyritic plagioclase: Abundance ≈10%
Glomerocryst size: ≤2mm
Crystal shape: Subhedral to euhedral
Composition: zoned
Percent replacement: 10%
Plagioclase: Abundance ≈15%
Crystal size: ≤0.25 mm
Crystal shape: Euhedral laths
Crystal orientation: Rosettes or sprays common
Composition:
Percent replacement: 0%
Pyroxene: Abundance ≈5%
Crystal size: ≤1.2mm
Crystal shape: Euhedral stubby prism to subhedral
Crystal orientation: in glomerocrysts, partially encloses plag.
Composition: Augite
Percent replacement: 40%
Oxides: Abundance ≈0%
GROUNDMASS:
Plagioclase: ≈30%.
Crystal size: <0.05mm
Crystal shape:laths and anhedral
Crystal orientation: in sprays and in interstitial melt pockets
Percent replacement: 0%
Pyroxene: 10%
Crystal size: ≤0.05mmmm
Crystal shape: anhedral
Crystal orientation: random, in interstitial melt pockets
Percent replacement: 0%
Glass:≈30%
Color: dark brown
Form: Interstitial pockets
Percent replacement:100%
Trace opaques and sulfides in glass
Secondary Mineralogy:
Total percent ≈30%. Glass in interstitial pockets is altered to chlorite.
Additional Comments:
Glomerocrysts of plagioclase, or rarely plagioclase plus pyroxene. Plagioclase plus pyroxene glomerophenocrysts characterized by skeletal mineral grains.

Oxides: Abundance ≈2%
Crystal size: ≤0.1mm
Crystal shape: cubic and subhedral
Crystal orientation: Random
Composition: Titanomagnetite? no exsolution lamellae
Percent replacement: 0%
Glass:≈5%
Color: green brown
Form: Interstitial pockets
Percent replacement:100%
Trace opaques and sulfides in glass
Secondary Mineralogy:
Total percent ≈6%. Glass in interstitial pockets is altered to chlorite , saponite plus trace of zeolites.
Additional Comments:
Glomerocrysts of plagioclase, very rarely of pyroxene (with sub-rounded grains)

1040C-53R-1, 37-51cm, Piece 1A: Pyroxene gabbro
Primary Mineralogy:
Glomeroporphyritic plagioclase: Abundance ≈3%
Glomerocryst size: ≤5mm
Crystal shape: Subhedral to euhedral
Composition:
Percent replacement: 30%
Plagioclase: Abundance ≈35%
Crystal size: ≤0.5 mm
Crystal shape: Euhedral laths
Crystal orientation: Often in rosettes or sprays
Composition:
Percent replacement: 0%
Pyroxene: Abundance ≈2%
Crystal size: ≤0.25mm
Crystal shape: subhedral to anhedral
Crystal orientation:random
Composition: Augite

Site 1040, Hole C, Core 53R, Section 2 - Cored: 661.10 - 661.47 mbsf

core photo



Meters | Lithology | Alteration | Primary structures | Samples | Diagenesis | Deformation structures | Drilling disturbance | Remarks

Samples: THS; XRF

GABBRO

Fine grained pyroxene gabbro with plagioclase glomerocrysts.

1040C-53R-2, 28-31cm, Piece 4: Pyroxene gabbro
Primary Mineralogy:
Phenocrysts:
Glomeroporphyritic plagioclase: Abundance ≈7%
Glomerocryst size: ≤4mm
Crystal shape: Subhedral to euhedral
Composition:
Percent replacement: 14%
Plagioclase: Abundance ≈25%
Crystal size: ≤0.15 mm
Crystal shape: Euhedral laths
Crystal orientation: Often in rosettes or sprays
Composition:
Percent replacement: 0%
Pyroxene: Abundance ≈22%
Crystal size: ≤0.4 mm
Crystal shape: Euhedral stubby prism or subhedral
Crystal orientation:random;
Composition: Augite
Percent replacement: 0%
Oxides: Abundance ≈0%
GROUNDMASS:
Plagioclase: ≈20%.
Crystal size: <0.02mm
Crystal shape: anhedral
Crystal orientation: random, in interstitial melt pockets
Percent replacement: 0
Pyroxene: 33%
Crystal size: ≤0.02mm
Crystal shape: anhedral
Crystal orientation: random, in interstitial melt pockets
Percent replacement: 0%
Glass:≈10%
Color: Green-brown
Form: Interstitial pockets, ovoid vug
Percent replacement:100%
Trace opaques and sulfides in glass
Secondary Mineralogy:
Total percent ≈15%. Glass in interstitial pockets and ovoid vugs is altered to saponite plus chlorite plus trace of zeolite.

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

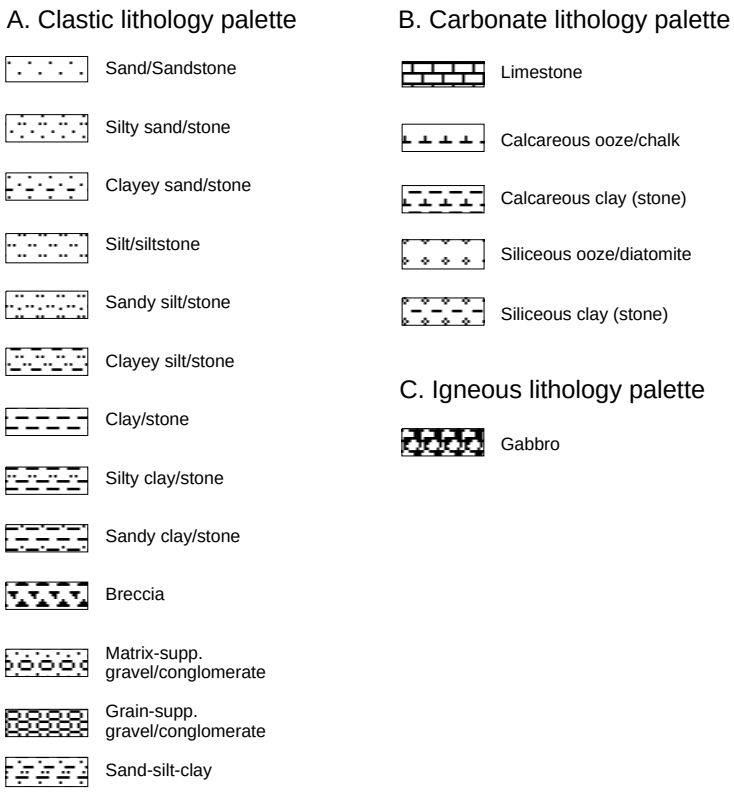


Figure 5, Chapter 2. Gray-scale patterns for three data types used with customized AppleCORE visual core description program.

	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.

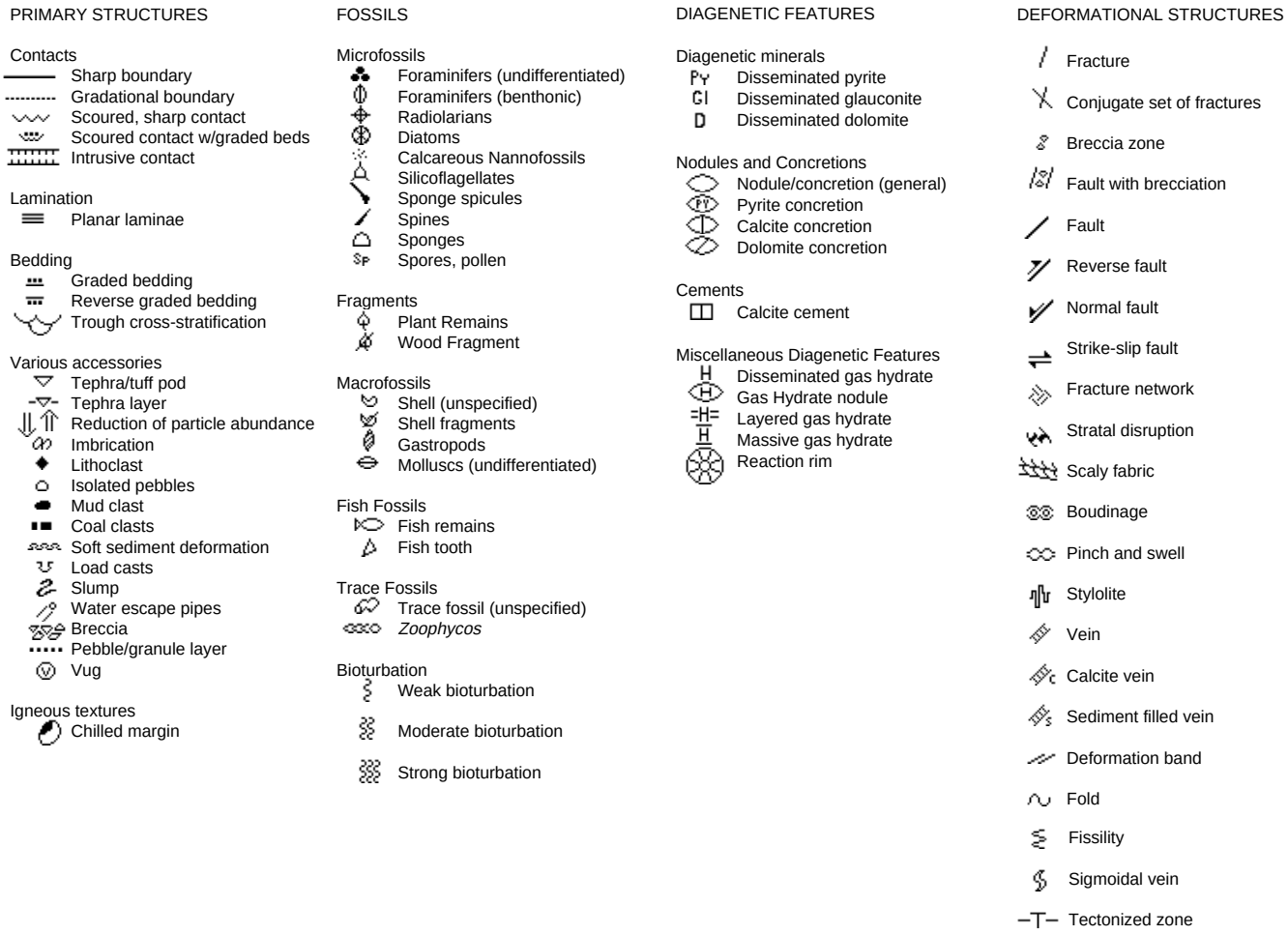


Figure 7, Chapter 2. Abundance plots associated with symbols used with customized AppleCORE visual core description program.