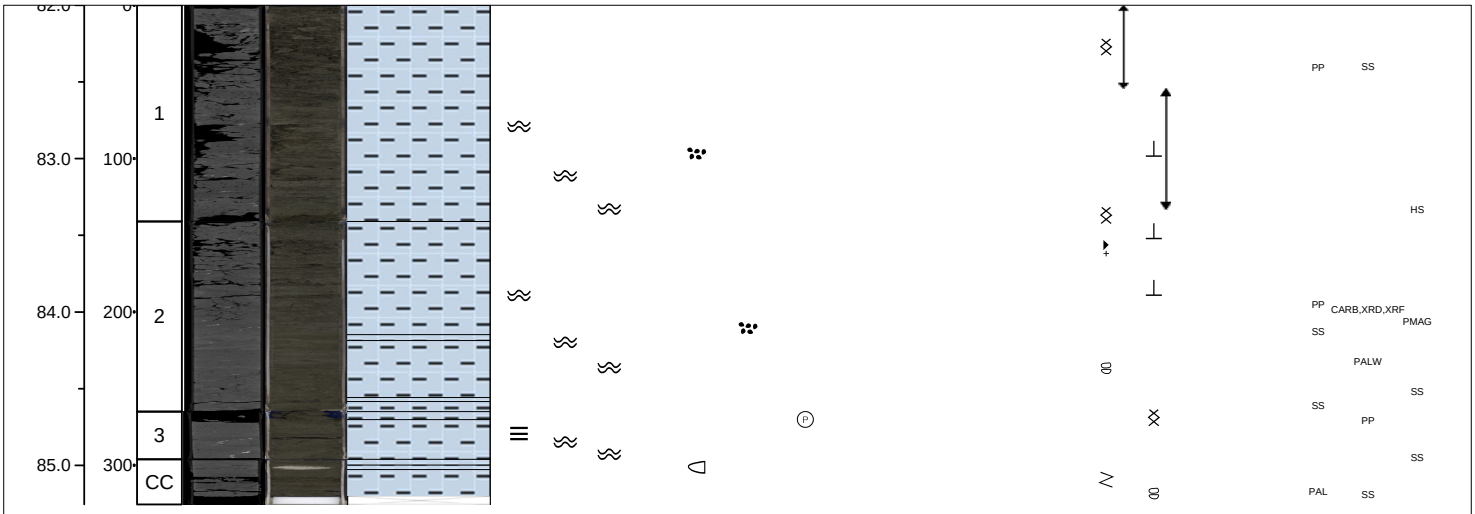
Hole C0019J Core 1K, interval 82 to 85.255 m (core depth below seafloor)

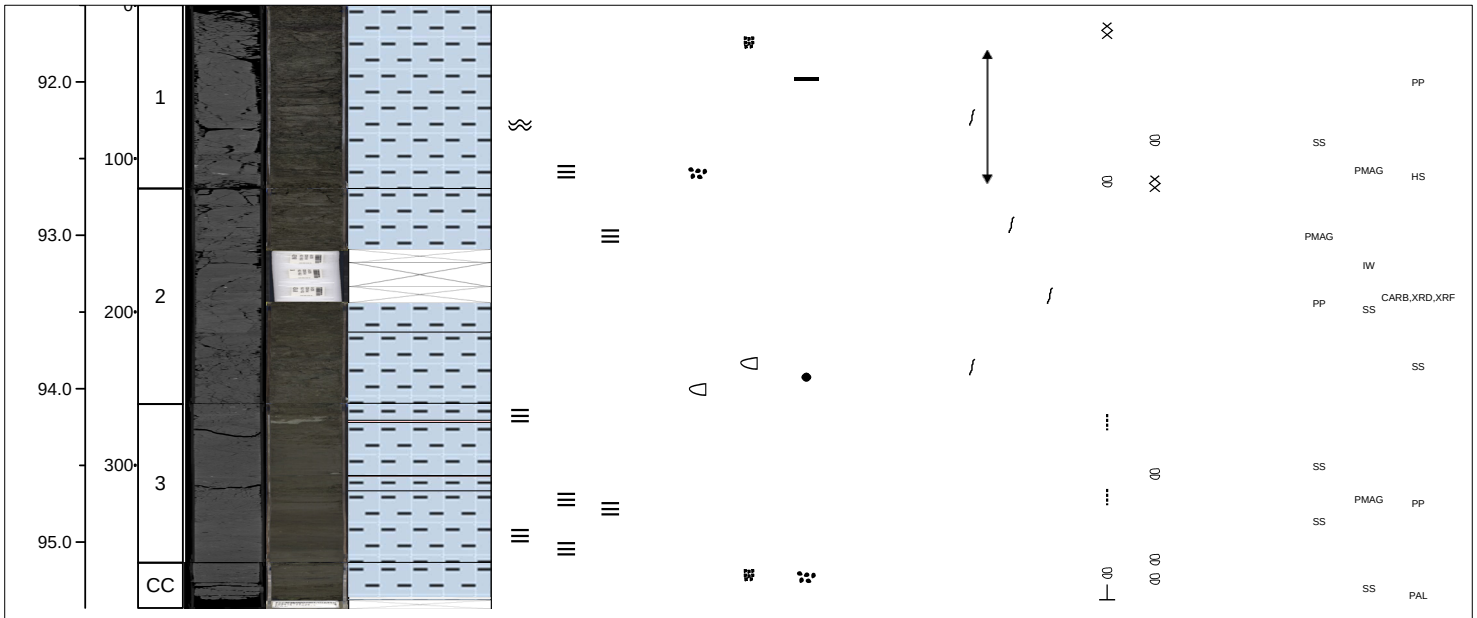
Major lithology: Olive black siliceous mud with black lamina.



Hole C0019J Core 2K, interval 91.5 to 95.43 m (core depth below seafloor)

Major lithology: Olive black siliceous ash and ooze with black lamina.

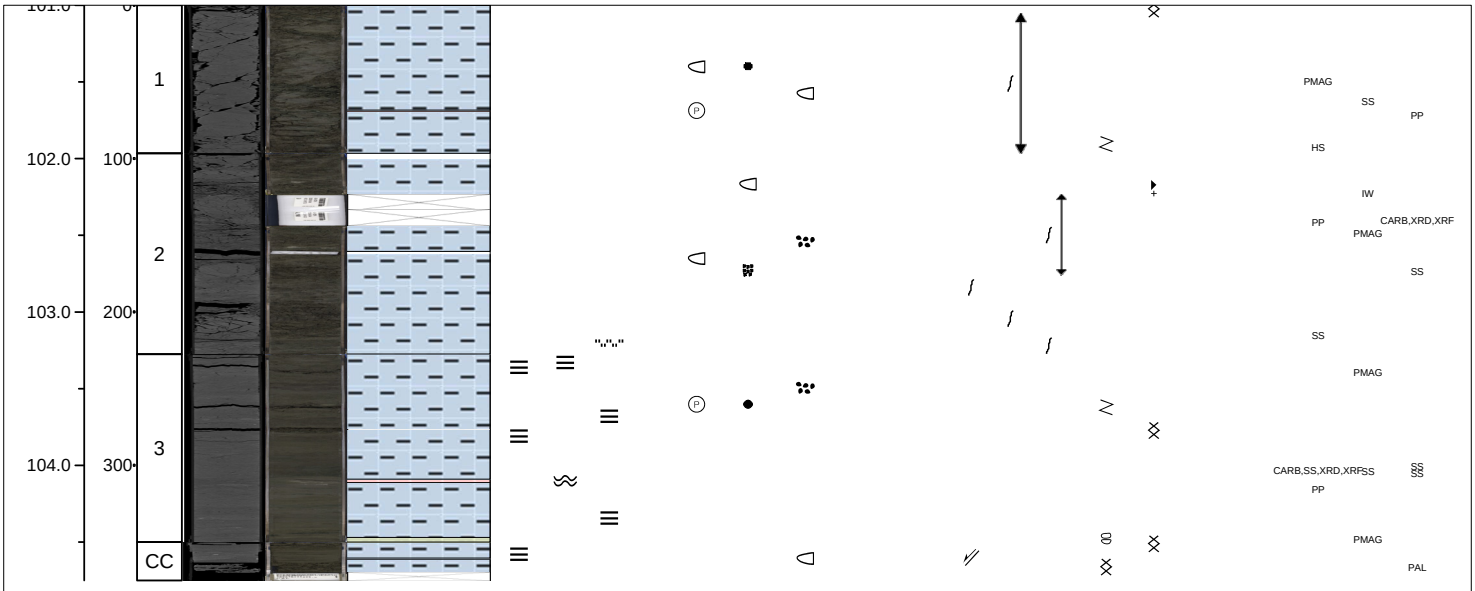
Minor lihtology: Dispersed pumice and tuff (grey/white) clasts with some green rims, rust orange/red clasts and occasional black clasts.



Hole C0019J Core 3K, interval 101 to 104.75 m (core depth below seafloor)

Major lithology: Olive black to gray siliceous mud with black wavy sub horizontal lamina and is.

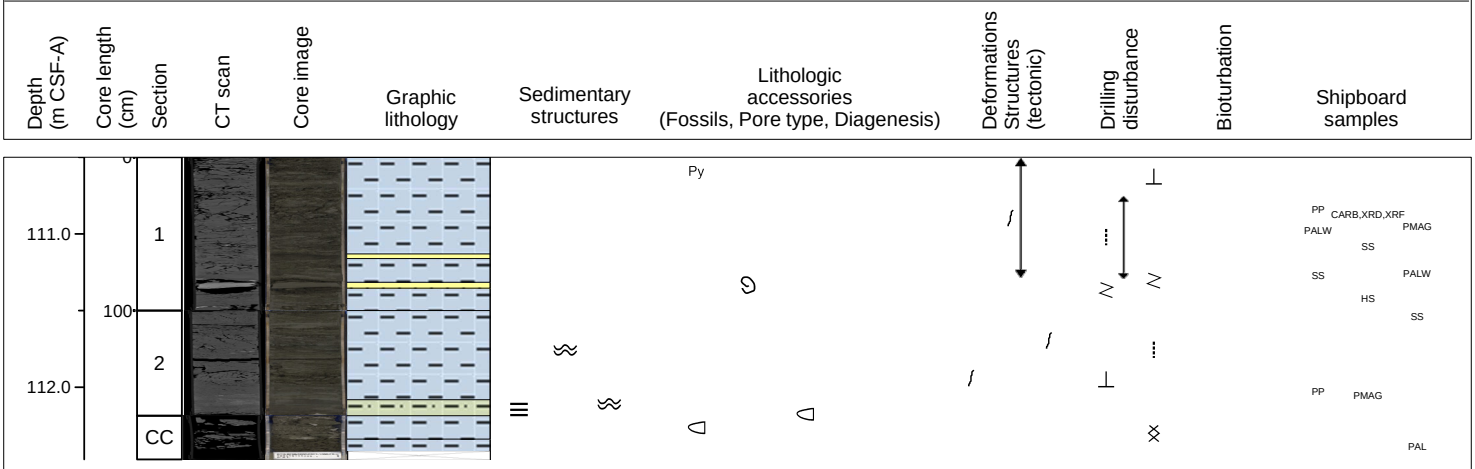
Minor lithology:



Hole C0019J Core 4K, interval 110.5 to 112.47 m (core depth below seafloor)

Major lithology: Olive black to gray siliceous mud with black wavy sub horizontal lamina and is.

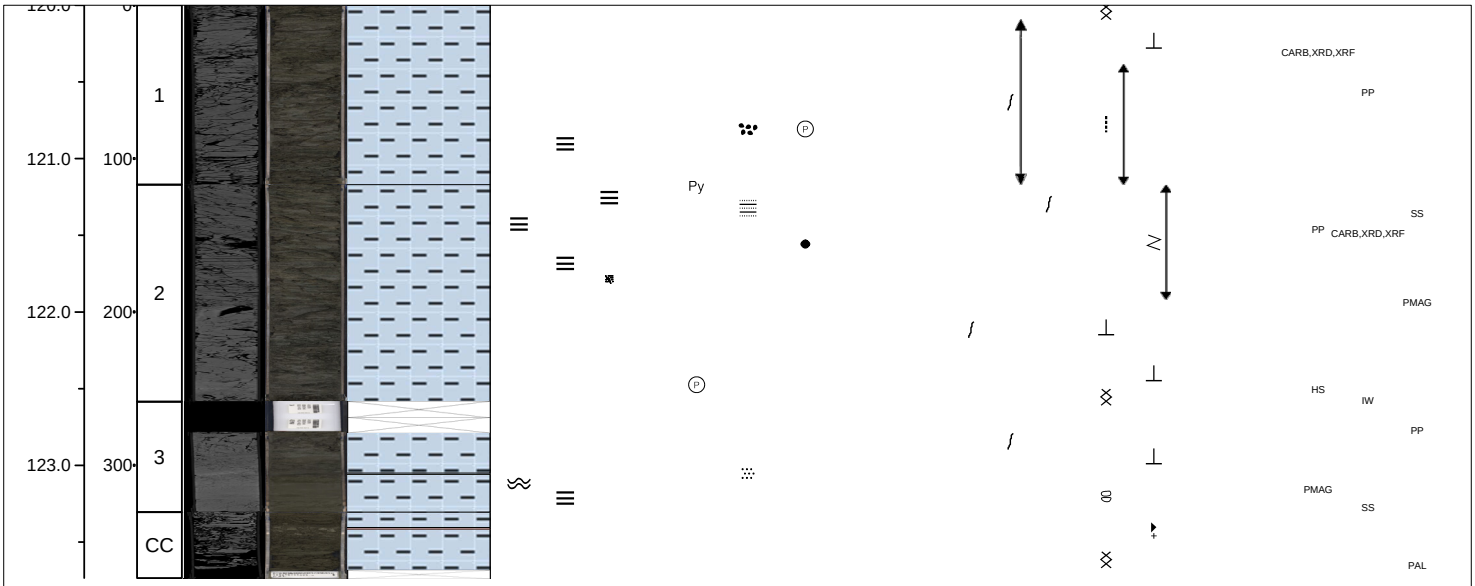
Minor lithology: Isolated cobble.



Hole C0019J Core 5K, interval 120 to 123.735 m (core depth below seafloor)

Major lithology: Olive black siliceous ooze with mottled black paches, subhorizontal lamination, discontinuous ash layers, and dispersed clasts.

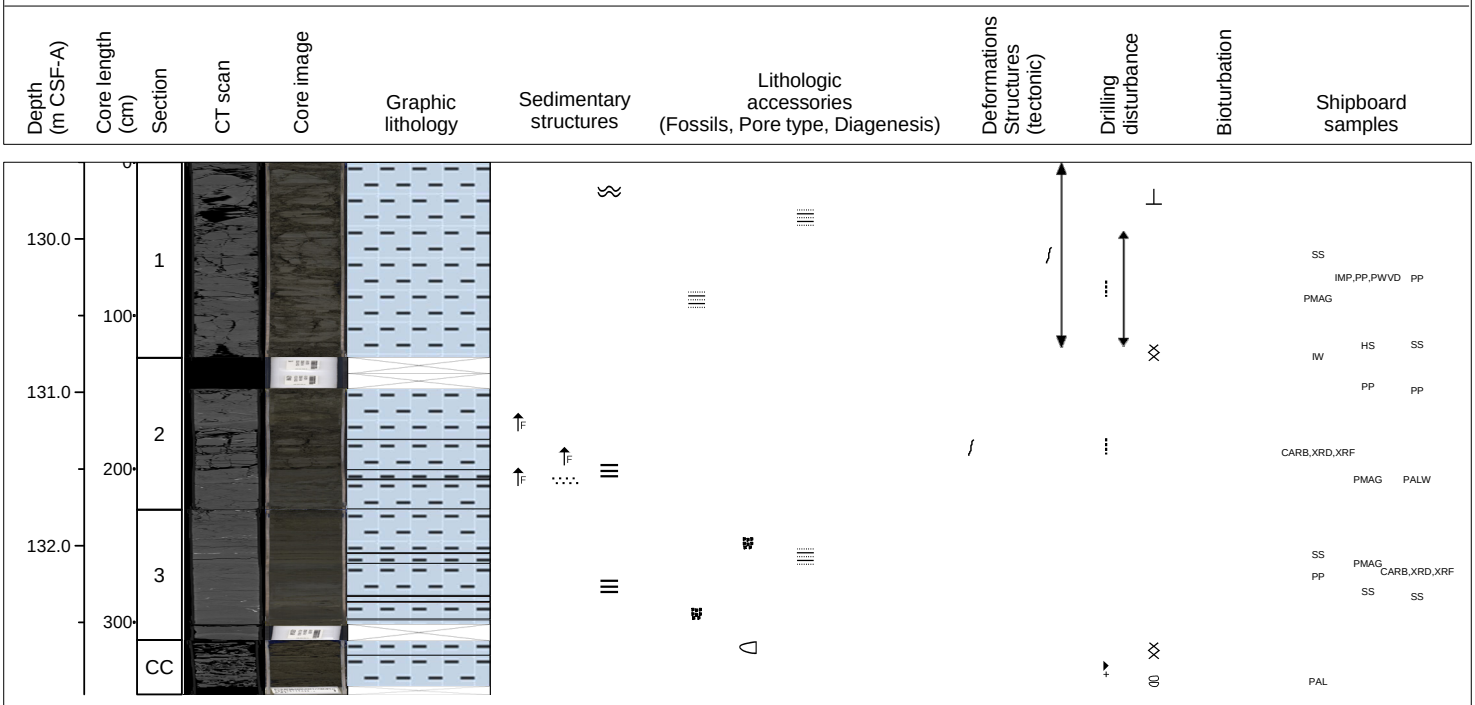
Minor lithology:Silt bedding (~ 4 cm thickness)(Sec 3).



Hole C0019J Core 6K, interval 129.5 to 132.97 m (core depth below seafloor)

Major lithology: Olive black siliceous ooze and siliceous mud (stone) with black laminae.

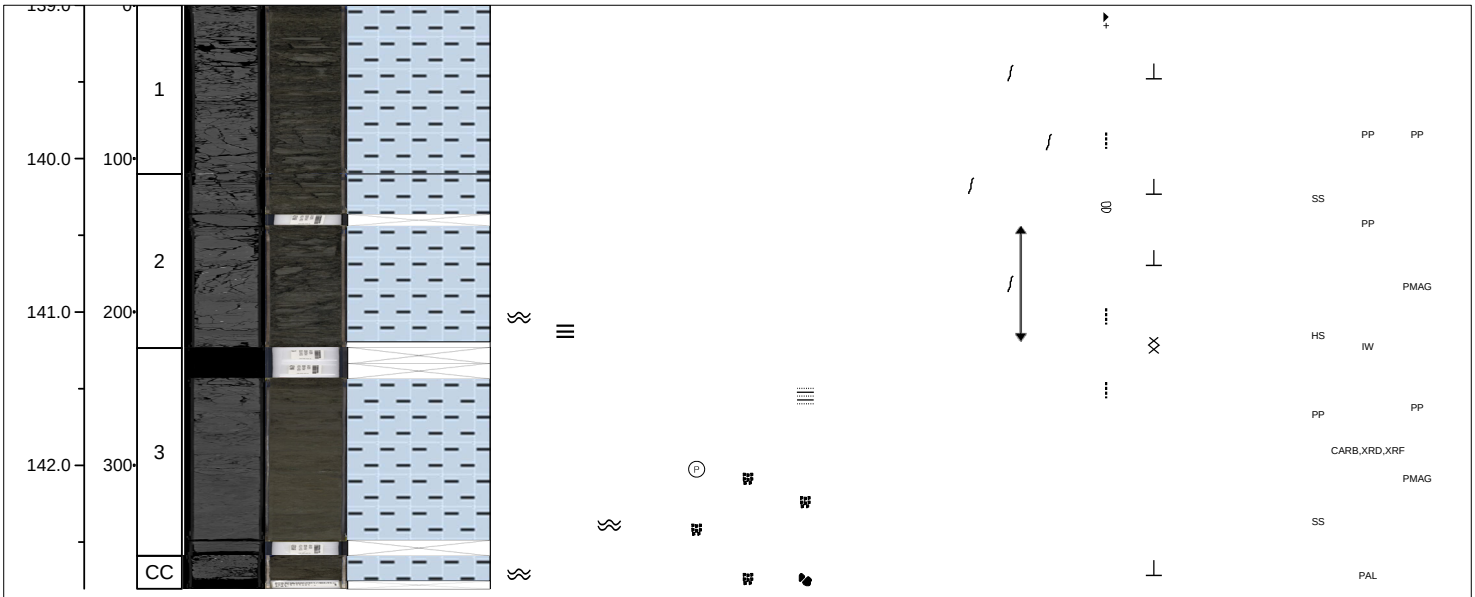
Minor lithology: Black mud with subhorizontal laminae, and dark olive gray mud.



Hole C0019J Core 7K, interval 139 to 142.805 m (core depth below seafloor)

Major lithology: Olive black siliceous mud (stone) with black wavy laminae.

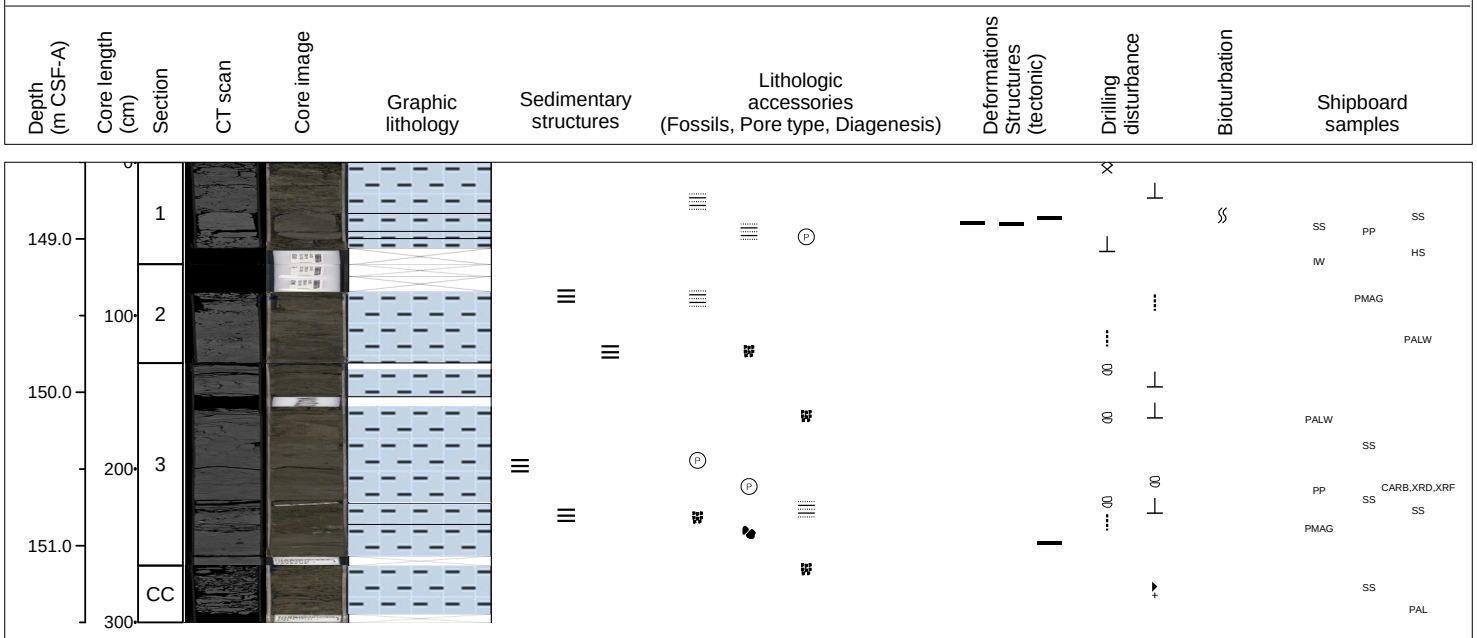
Note: Heavily disturbed due to drilling, so most sed structures are disturbed (Sec 1). Lots of drilling disturbance - hard to see sedimentary features (Sec 2). Sed structures hard to determine due to large drilling disturbance (CC).



Hole C0019J Core 8K, interval 148.5 to 151.5 m (core depth below seafloor)

Major lithology: Olive black siliceous ash and siliceous mud with some darker patches and seams throughout.

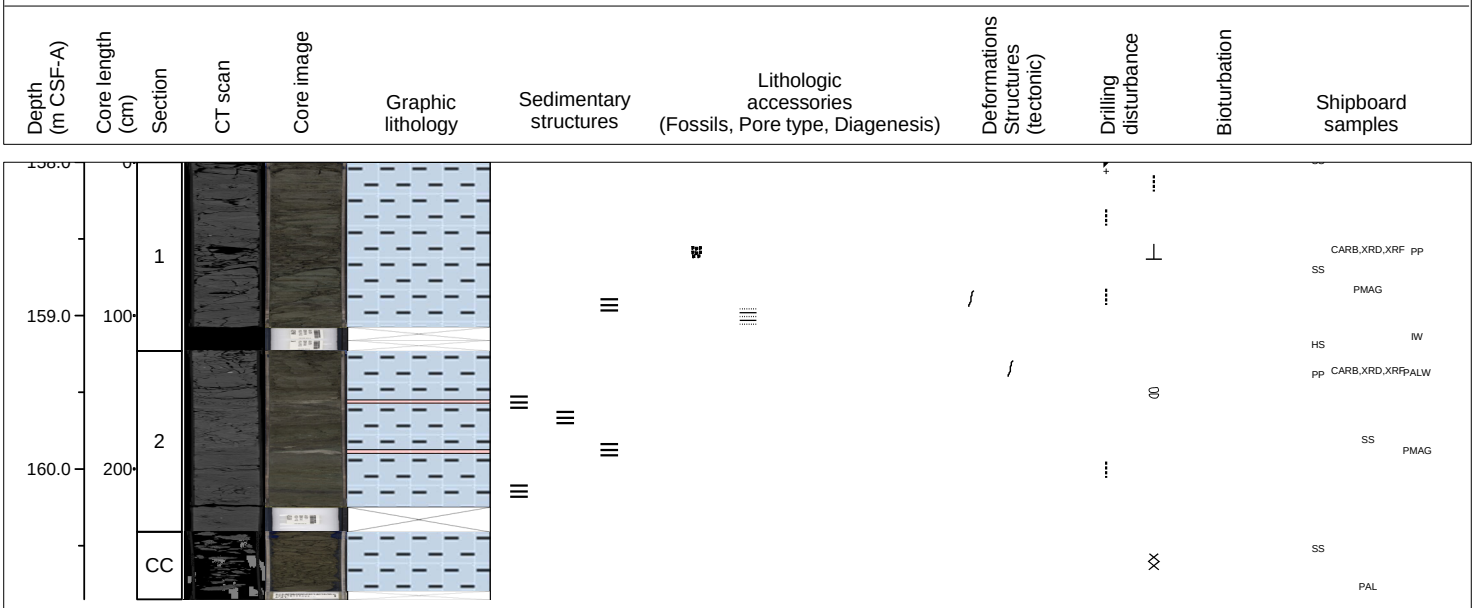
Minor lithology: Gray siliceous ash with ash or pumice pebble.



Hole C0019J Core 9K, interval 158 to 160.85 m (core depth below seafloor)

Major lithology: Olive black to gray siliceous ash with black laminae.

Minor lithology: Light gray ash, olive gray altered ash, green gray ashy mudstone and black laminae (color bands) with fresh and alterd pumice layer and/or patches.

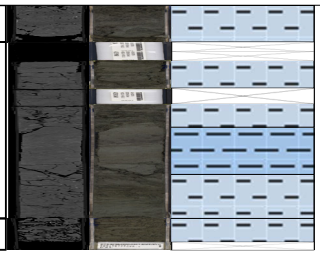


Hole C0019J Core 10K, interval 167.5 to 169.095 m (core depth below seafloor)

Major lithology: Olive black siliceous ash with pebble and white ash.

Minor lithology: Gray siliceous ash with color bands.

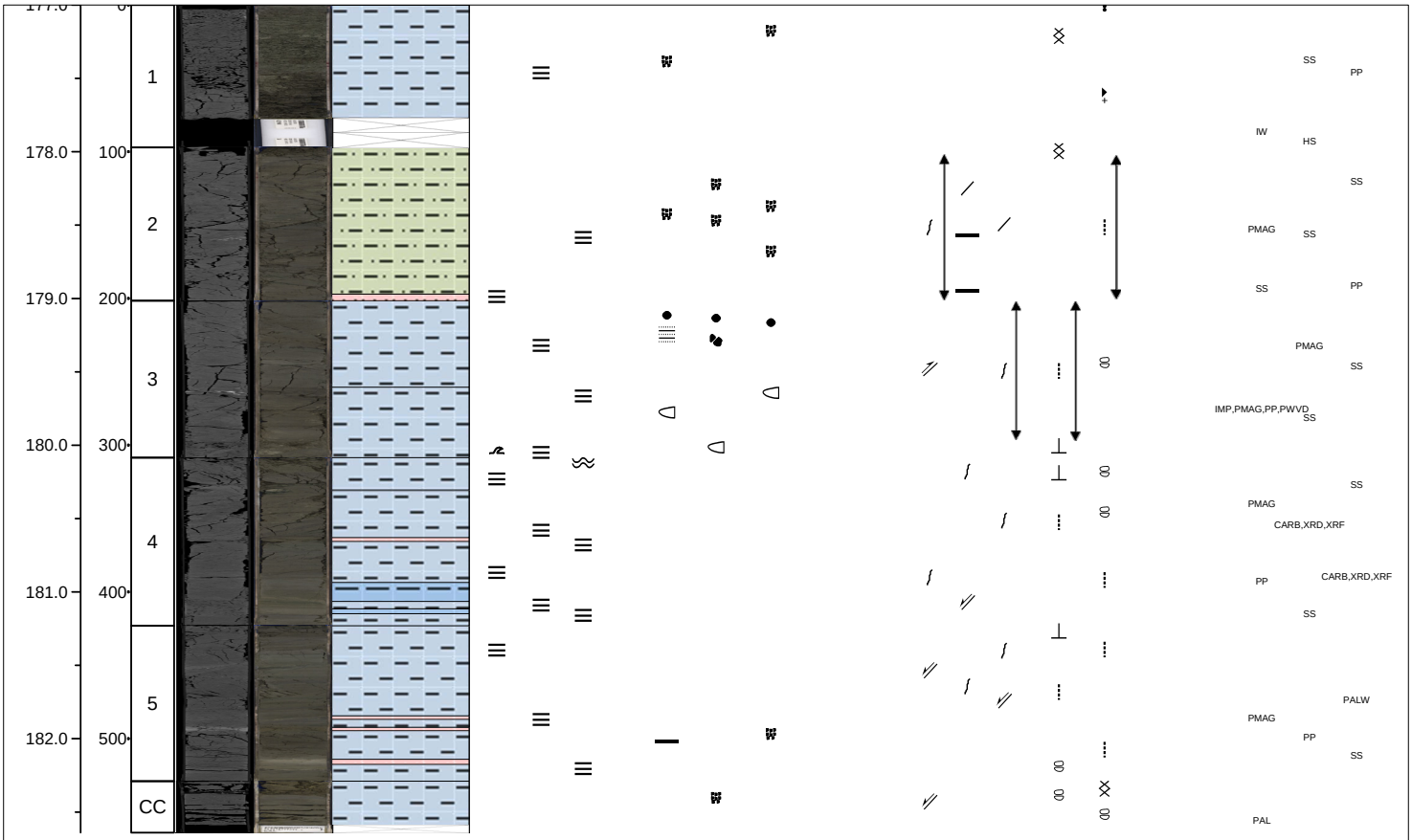
Note: Heavily fractured due to drilling(Sec 1). Quite a lot of drilling disturbance (Sec 2).

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
168.0	0	1									SS HS IW PP CARB,XRD,XRF,PWVD
	100	2									SS CARB,XRD,XRF PMAG
169.0		CC									SS PAL

Hole C0019J Core 11K, interval 177 to 182.64 m (core depth below seafloor)

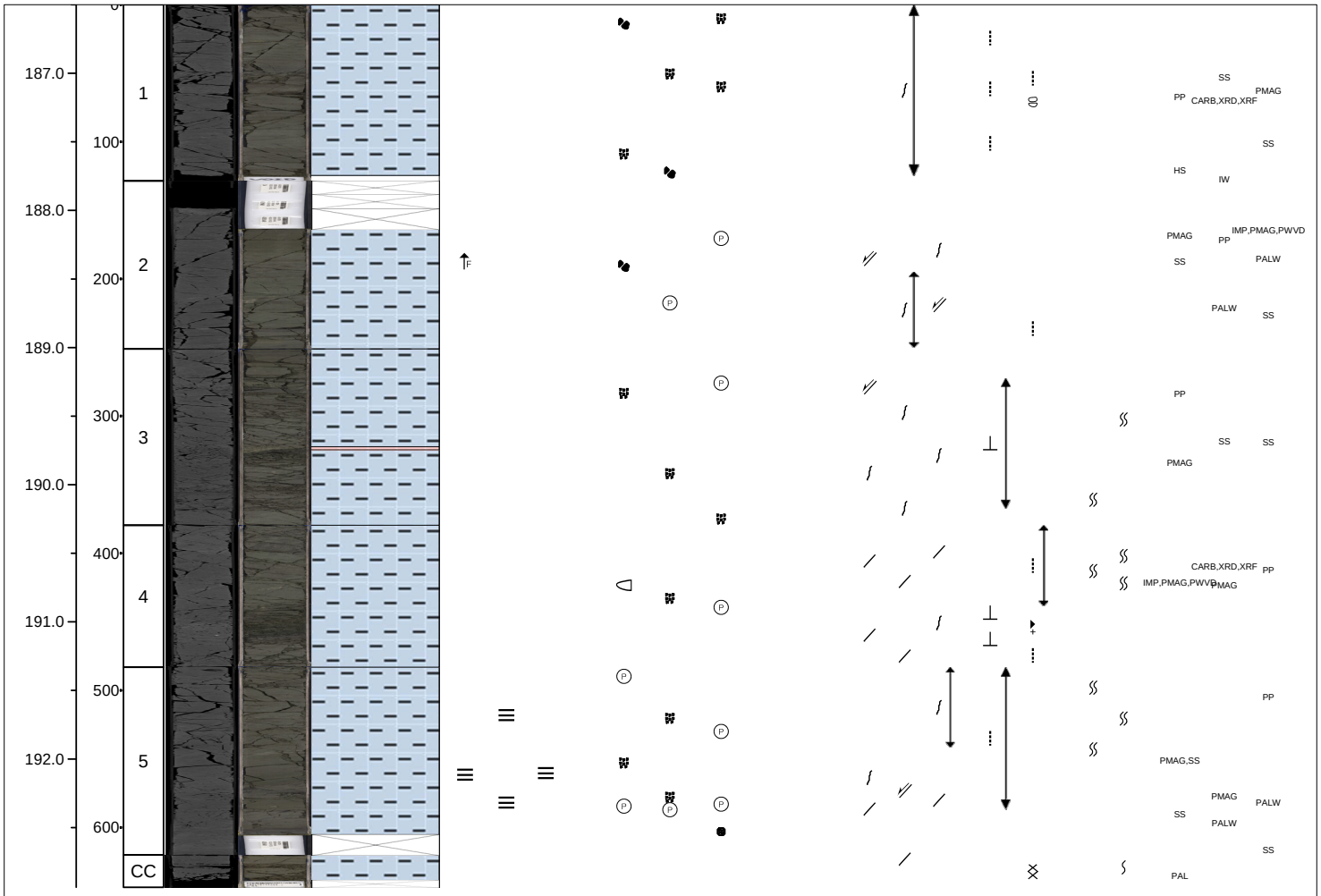
Major lithology: Olive black siliceous ooze with black laminae, pumice clasts and ash (starting from Sec 1 48cm and below, similar to 1K-8K lithology).

Minor lithology: Dark olive gray siliceous ash with interbedded light gray to gray ash layers.



Hole C0019J Core 12K, interval 186.5 to 192.935 m (core depth below seafloor)

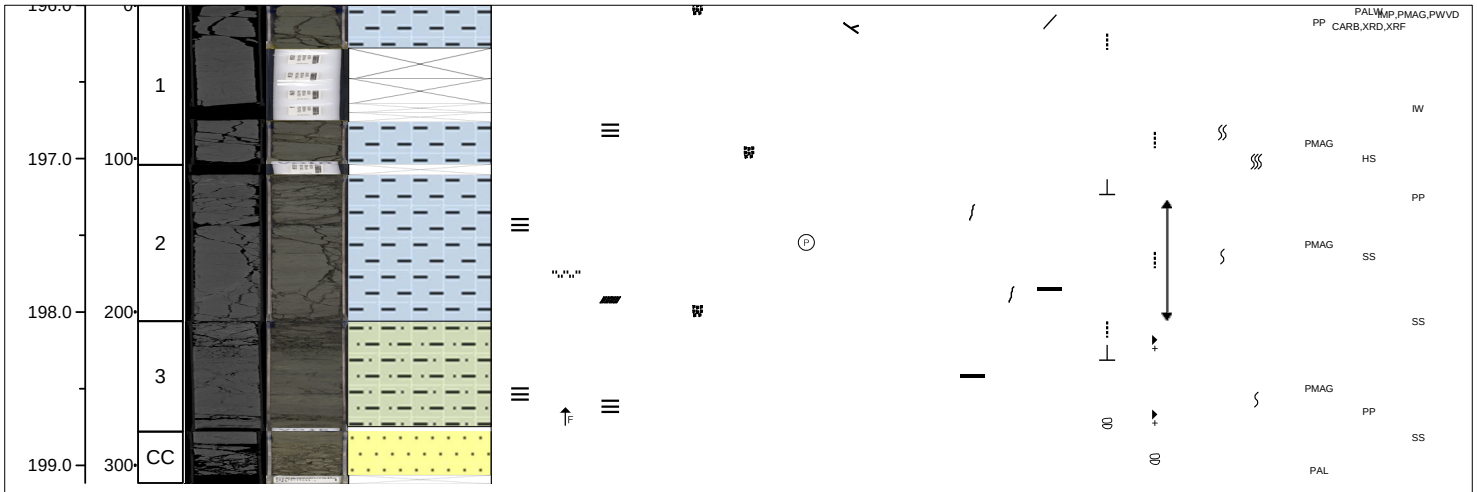
Major lithology: Olive black to gray siliceous mudstone with fine sand, black lamina, and abundunt pumice clasts.



Hole C0019J Core 13K, interval 196 to 199.115 m (core depth below seafloor)

Major lithology: Gray siliceous mudstone with dispersed pumice clasts (Sec 1 and Sec 2).

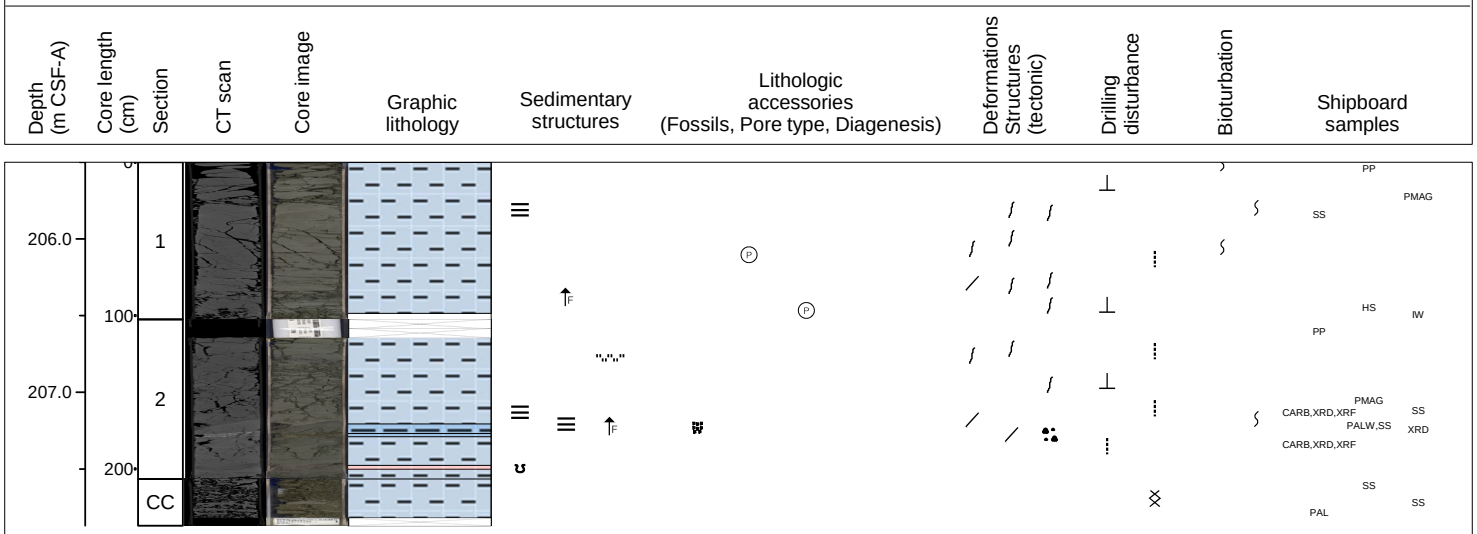
Minor lithology: Dark gray siltstone and some normal grading at the base (Sec 3). Fine grained sandstone in the core catcher (CC).



Hole C0019J Core 14K, interval 205.5 to 207.87 m (core depth below seafloor)

Major lithology: Gray siliceous mudstone.Some burrows and bioturbation (narrow and bulbous). Intermittent green bedding, pumice clasts, subtle nomal grading.

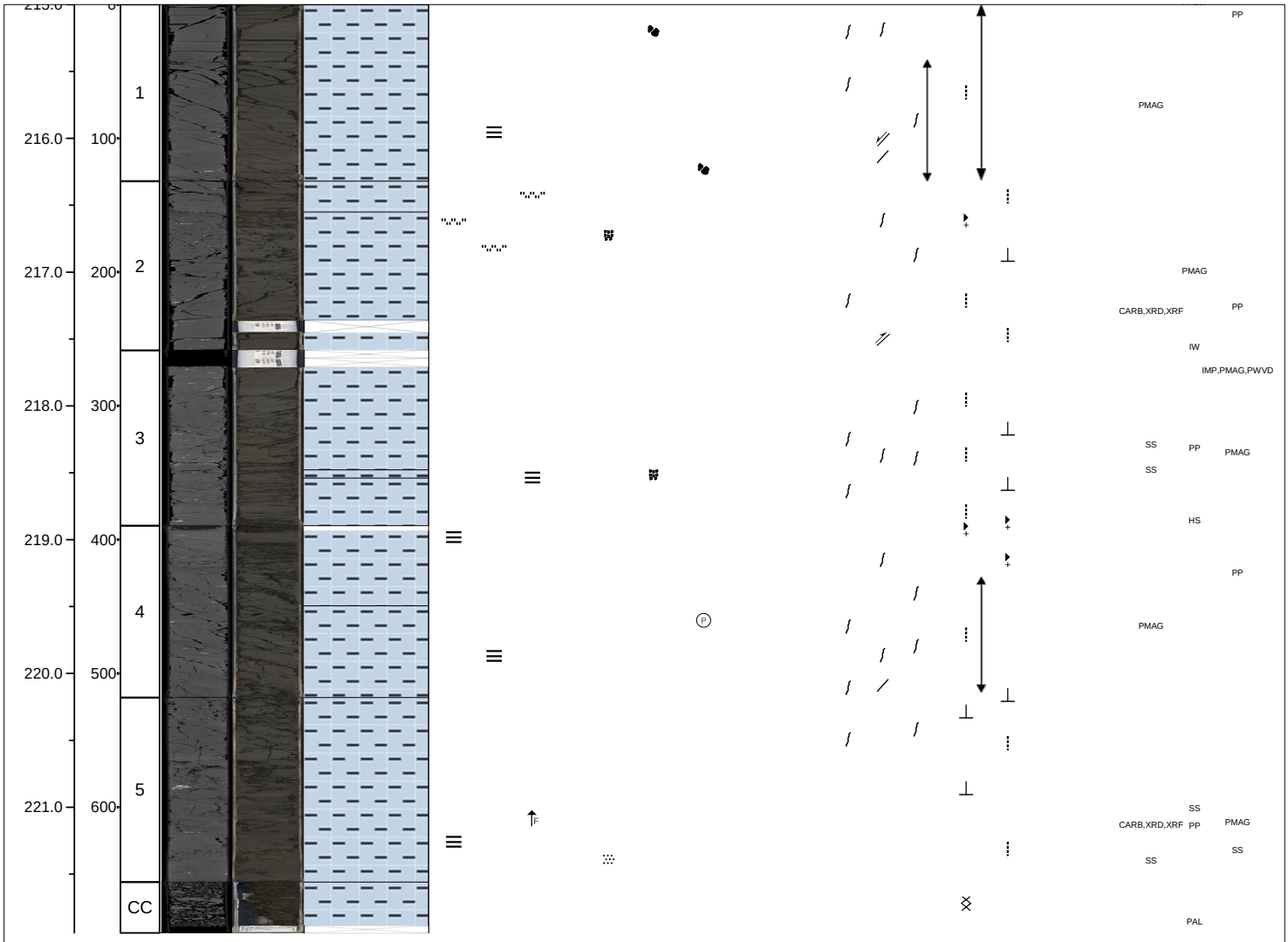
Minor lithology (Specific features/structures): 65-70 cm: Large fragments, pumice clasts, clay in gouge, intermixed ash, loading structures, deformed fabric (Sec 2).



Hole C0019J Core 15K, interval 215 to 221.94 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone and muddy ashwith some very rare silt grade clasts. Intermittent black and green alteration bands and patches. Silt and mud with black lamina, upwards fining cycles. Degassing texture. Ash intermixed with mud with a mottled texture - turbidites.

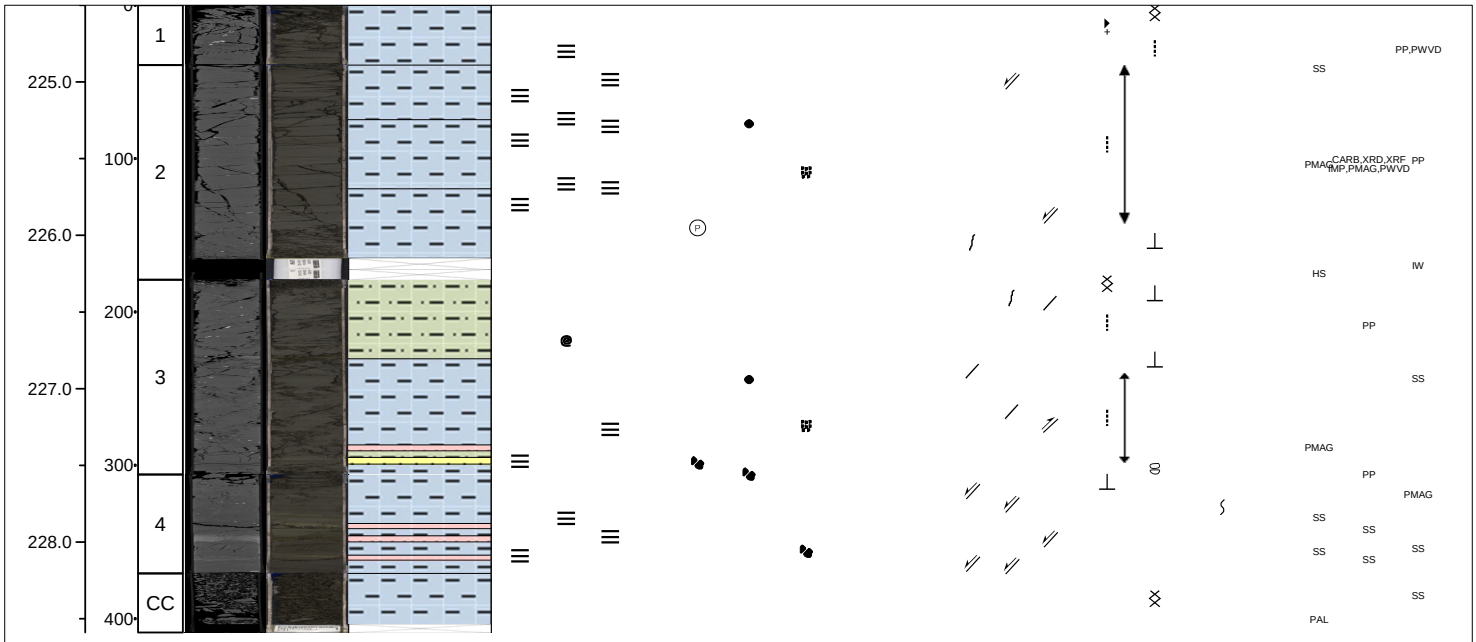
Minor lithology: The colour changes from grey to olive black at 83cm. Accumulation of pebbles,ash and pumice at 123 - 124 cm (Sec 1).



Hole C0019J Core 16K, interval 224.5 to 228.59 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with green black banding/laminae wih intermixed ash, some pebbles and pumice.

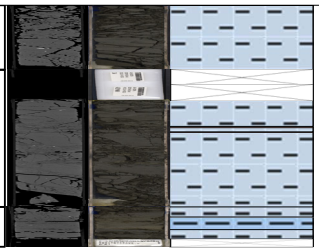
Specific features/structures: Muddy and sandy sample with lots of slumping-lots of colour and lithologic changes. Black clasts (possible burrows) disseminated throughout. Lots of squashed pumice (Sec 3). Interbedded silliceous ooze and ash layers (weathering to clay). Evidence of mass movement (Sec 4).



Hole C0019J Core 17K, interval 234 to 235.575 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with black laminae throughout, some intercalations of sand and ash (marked as pumice) - some mottled texture throughout - either burrows or dewatering or slumping.

Minor lithology: Quite disturbed by the drilling which obscures sed structures - but a big lithological change from siliceous mud into brown clay (checked by SS) and then back to siliceous mud. Lots of intermixed ash (CC).

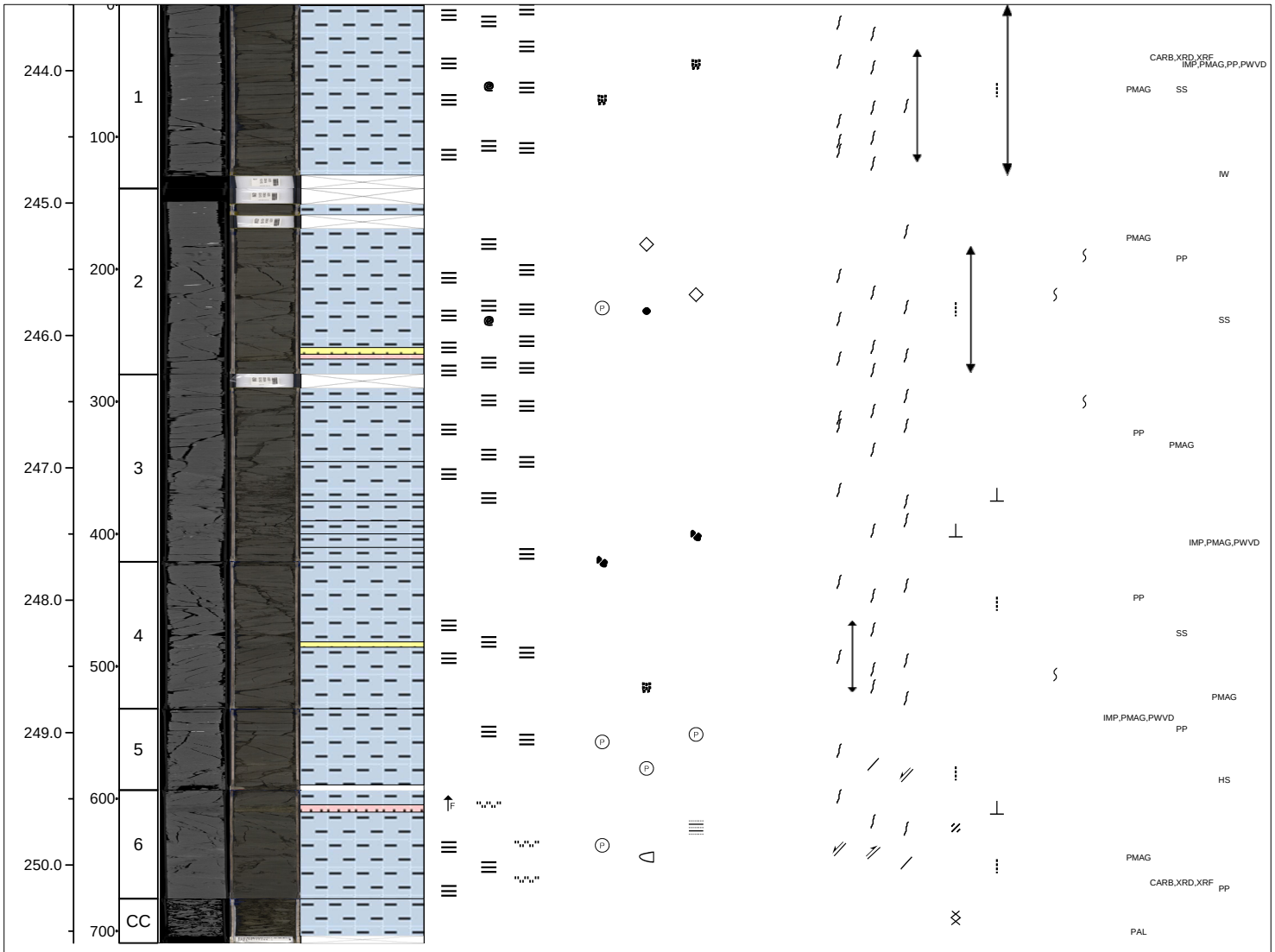
Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
234.0	0	1									
		2									
235.0	100	CC									

Shipboard samples: HS, CARB,XRD,XRF, PP, IW, SS, SS, PMAG, SS, PP, SS, PAL, SS

Hole C0019J Core 18K, interval 243.5 to 250.59 m (core depth below seafloor)

Major lithology: Olive black siliceous mud with green and black bedding(color banding) with intercalated ash granules, dipping seams, disseminated clasts, and burrows,black patches.

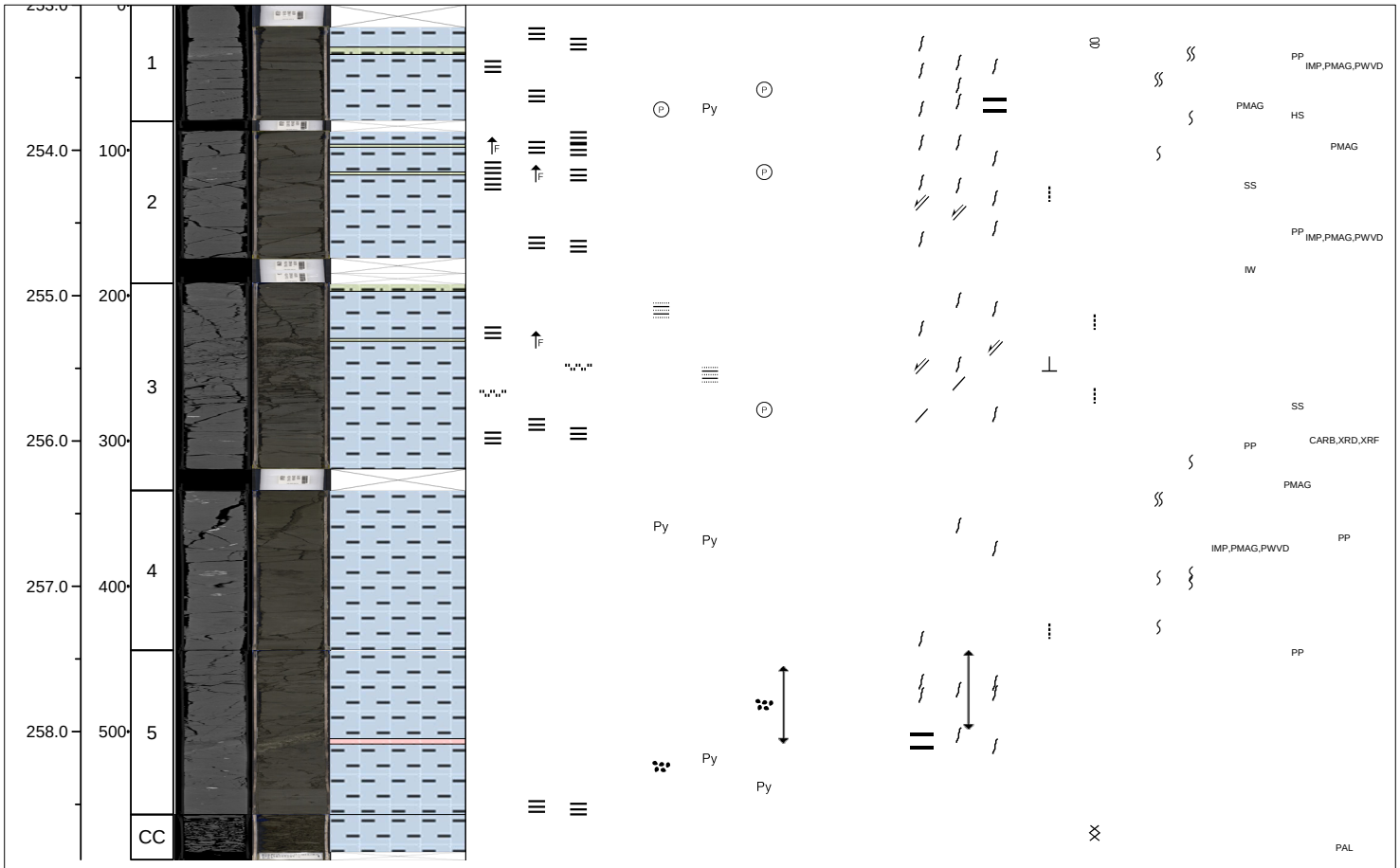
Minor lithology: Slumping and ashy sand (Sec 2). Colour banding with u-shaped alteration (?slumping), and some bands of pebbles (Sec 3). One coarser band with ash - sand grade material. Some wavy banding and burrows towards the top of the section (Sec 4). Intercalated ash throughout with absundant ash and pumice (Sec 5). Olive black siliceous mud with grading and loading strcutures - greyish ash (Sec 6).



Hole C0019J Core 19K, interval 253 to 258.88 m (core depth below seafloor)

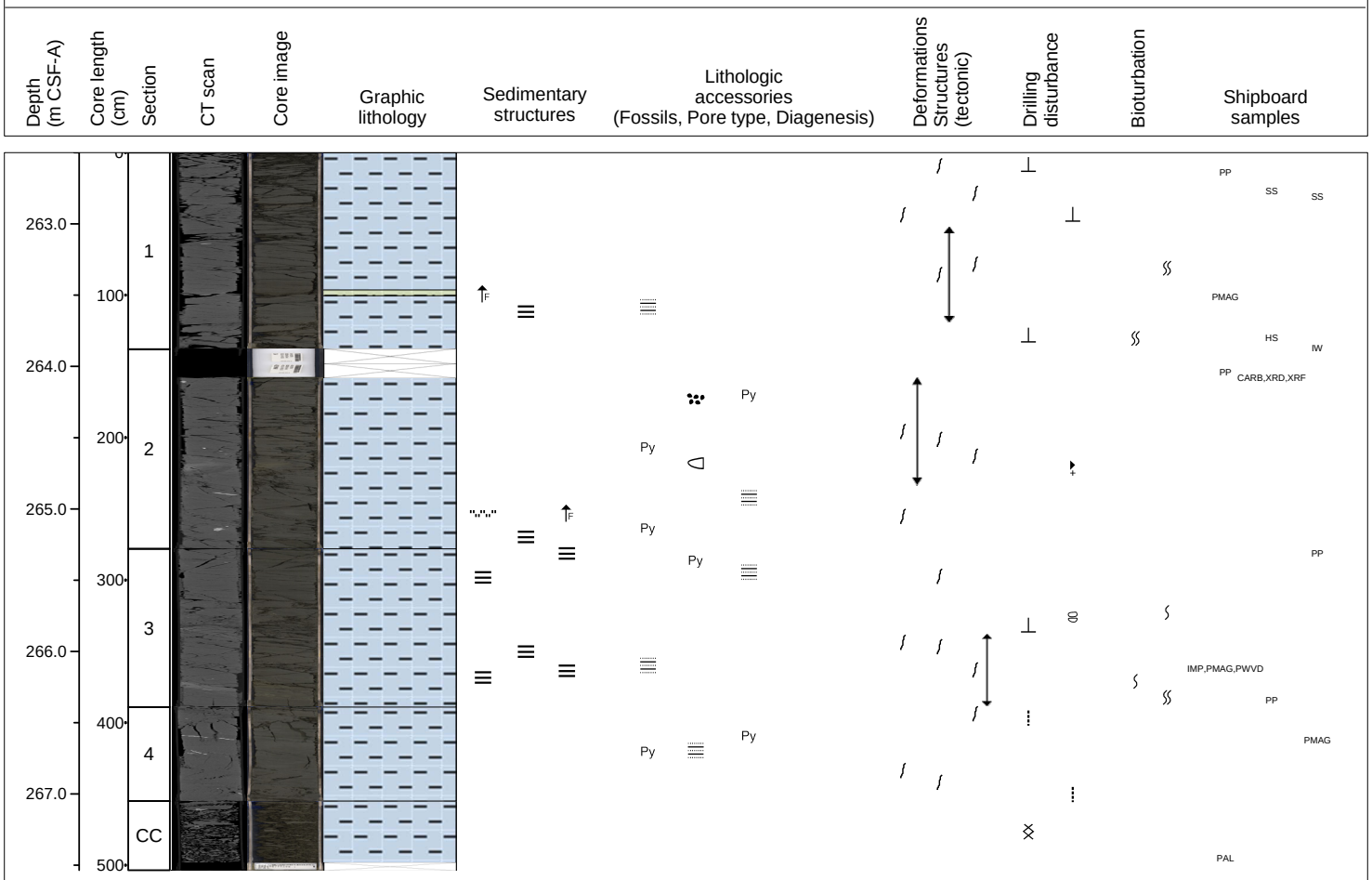
Major lithology: Olive black siliceous mudstone with gray-green laminations, occ., burrows and thin silt beds.

Minor lithology: Olive black siliceous mudstone, almost completely brecciated by drilling (CC).



Hole C0019J Core 20K, interval 262.5 to 267.535 m (core depth below seafloor)

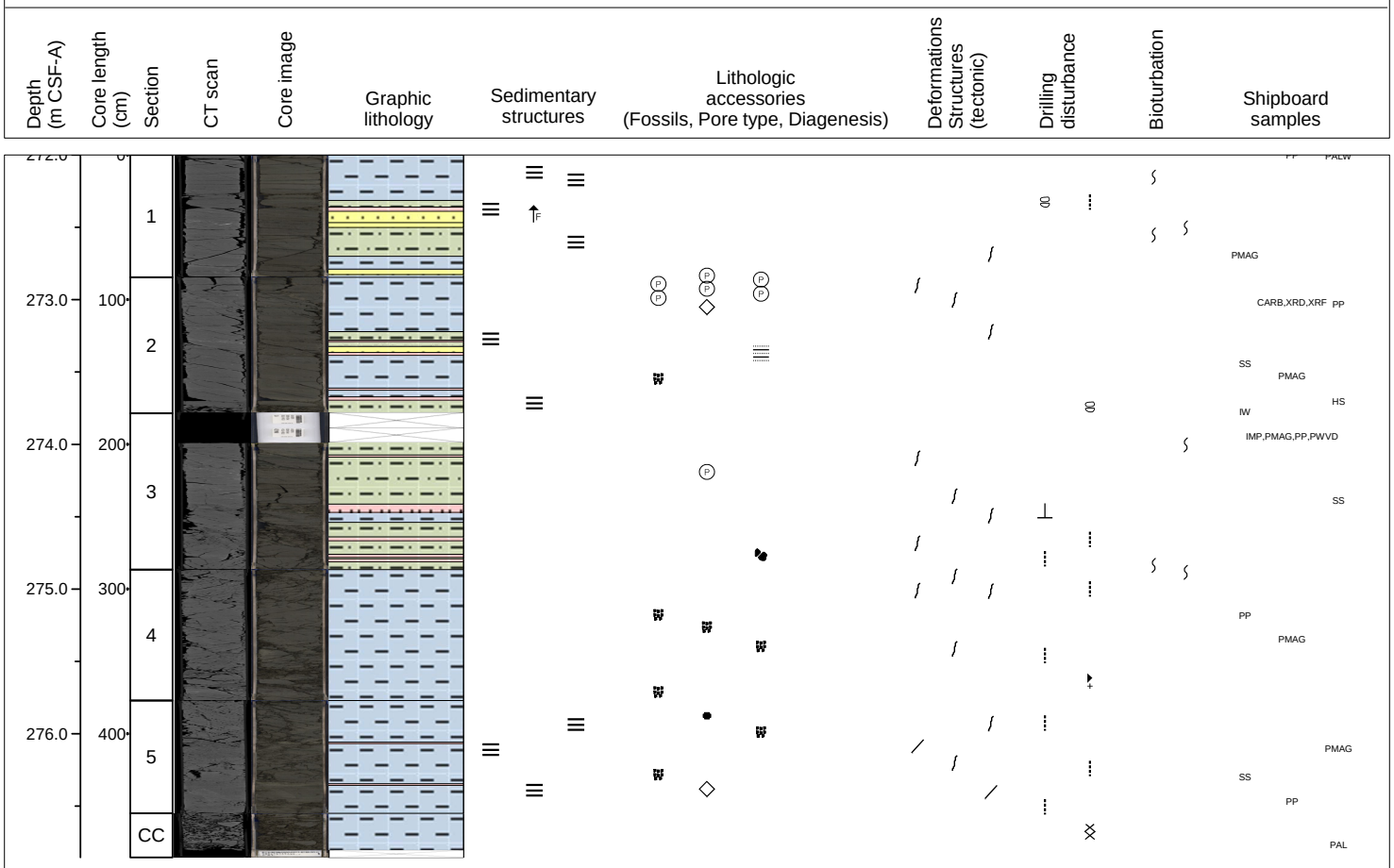
Major lithology: Olive black siliceous mudstone with gray-green laminations, occasional burrows and thin silt beds.



Hole C0019J Core 21K, interval 272 to 276.855 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with lots of interspersed volcanisclastic material, colour bandings and burrows at top of the sedimentary structure.

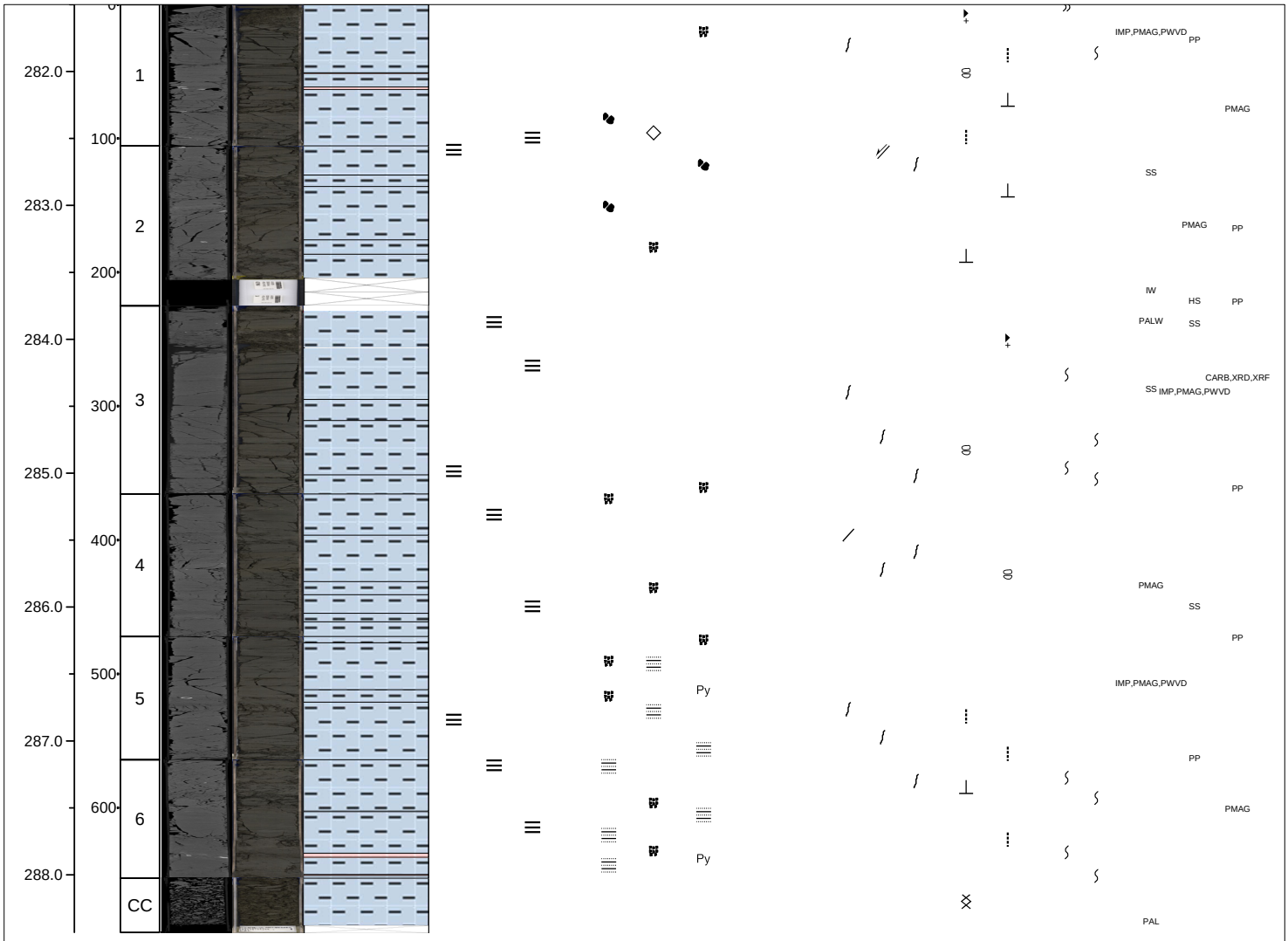
Minor lithology: Lots of pumaceous clasts throughout (Sec 1).Highly disturbed so lacking seds structures (CC).



Hole C0019J Core 22K, interval 281.5 to 288.43 m (core depth below seafloor)

Major lithology: Olive black to dark olive silicedous mudstone and siliceous ash - highly disturbed, colour banding throughout (black/greenish altered clay), burrows, ash granules, pyritized burrows, black clasts, ash (in bands and lenses), pumice.

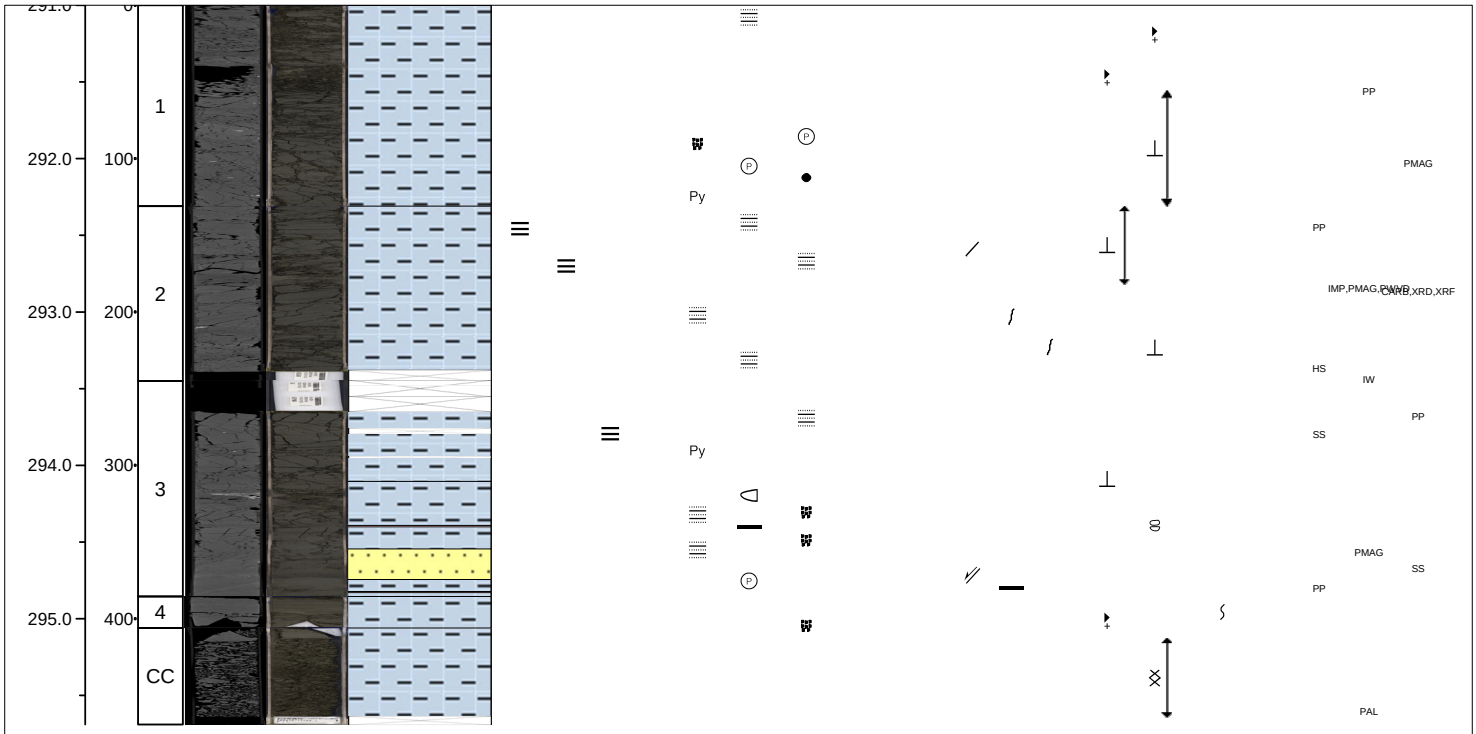
Minor lithology: A clast of crystalline quartz (Sec 1). One ash-rich region, altered to clay. Lots of bioturbation throughout - likely Planolites. Disseminated ash at the base (Sec 3). Sometimes in larger pieces with disseminated pumice. 3 distinct colours in the section (Sec 4). Olive black ashy mudstone with lots of disseminated ash granules, pebbles, intermixed ash and pyritised clasts (Sec 5 and Sec 6).



Hole C0019J Core 23K, interval 291 to 295.69 m (core depth below seafloor)

Major lithology: Olive black siliceous mud with interspersed colour banding, disseminated pumice throughout.

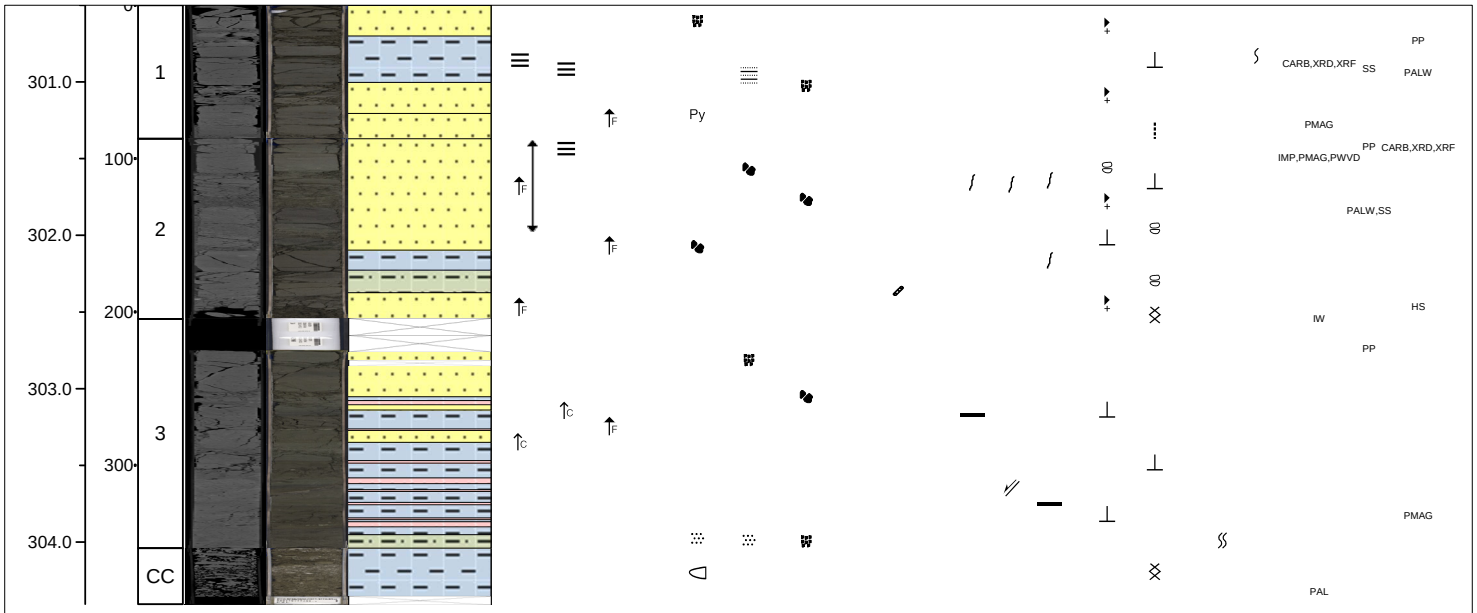
Minor lithology: Dark olive black siliceous mudstone with interspersed ash clasts and some bioturbation (Sec 4).



Hole C0019J Core 24K, interval 300.5 to 304.405 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone and grey fine sandstone to sandy silt with repeated fining upwards sequences.

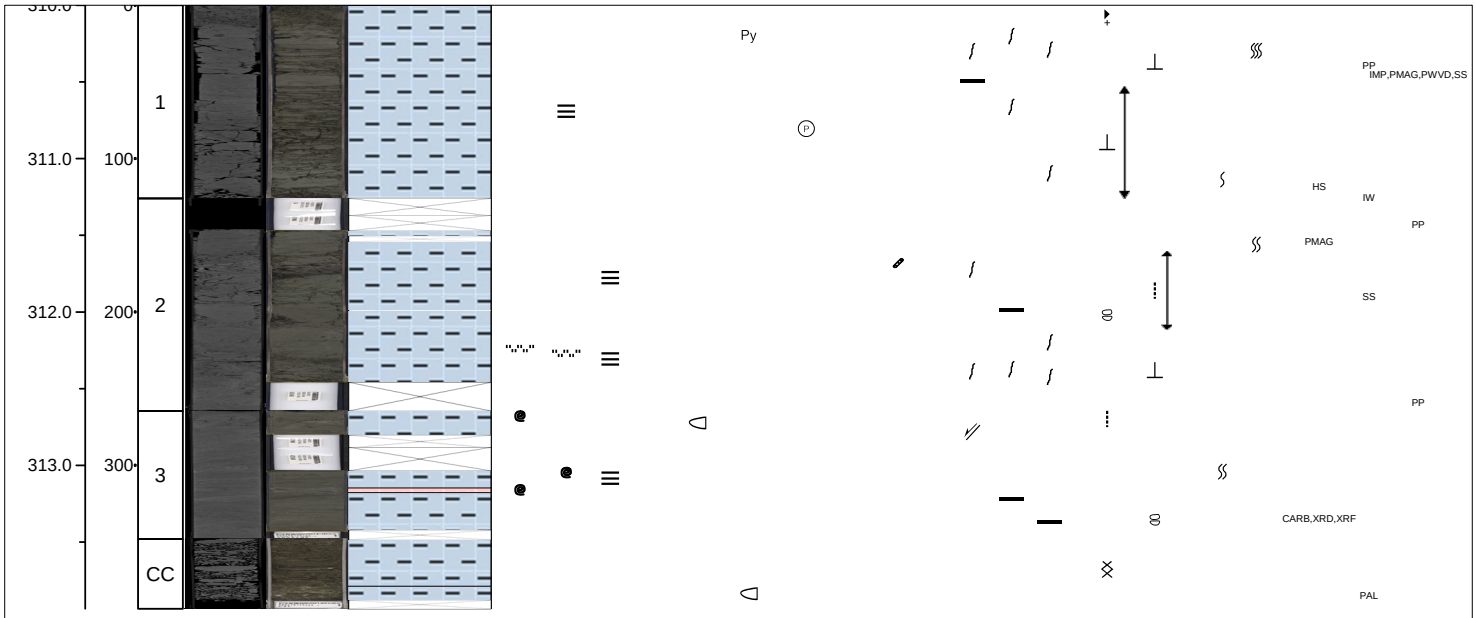
Minor lithology: Interbedded turbidites with pelagic sediment - possible evidence of soft sediment deformation. Disseminated pumice clasts throughout (Sec 1). Almost completely brecciated - abundant ash (CC).



Hole C0019J Core 25K, interval 310 to 313.935 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone and ash with overturned beds evidenced by upside down burrows (Sec 2 and Sec 3).

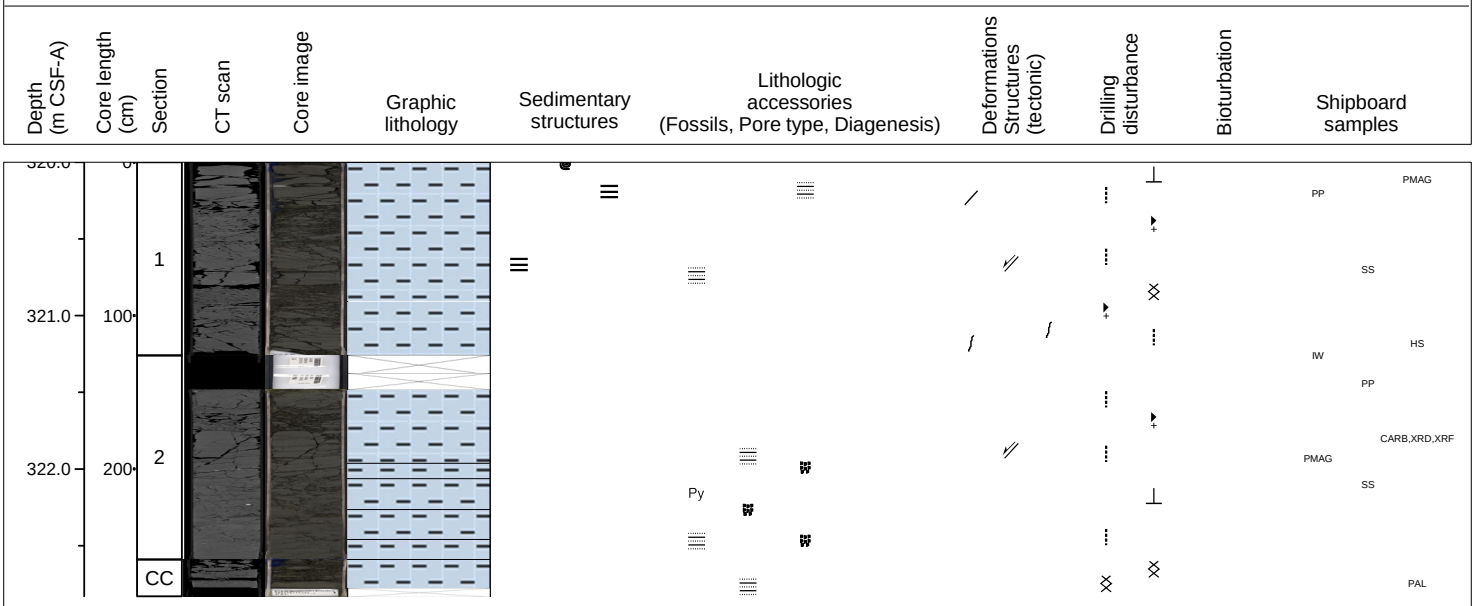
Minor lithology: Grey to dark grey mudstone with evidence of soft sediment deformation throughout (Sec 1).



Hole C0019J Core 26K, interval 320 to 322.83 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with green colour banding (very steeply dipping) and pumice and ash interspersed.

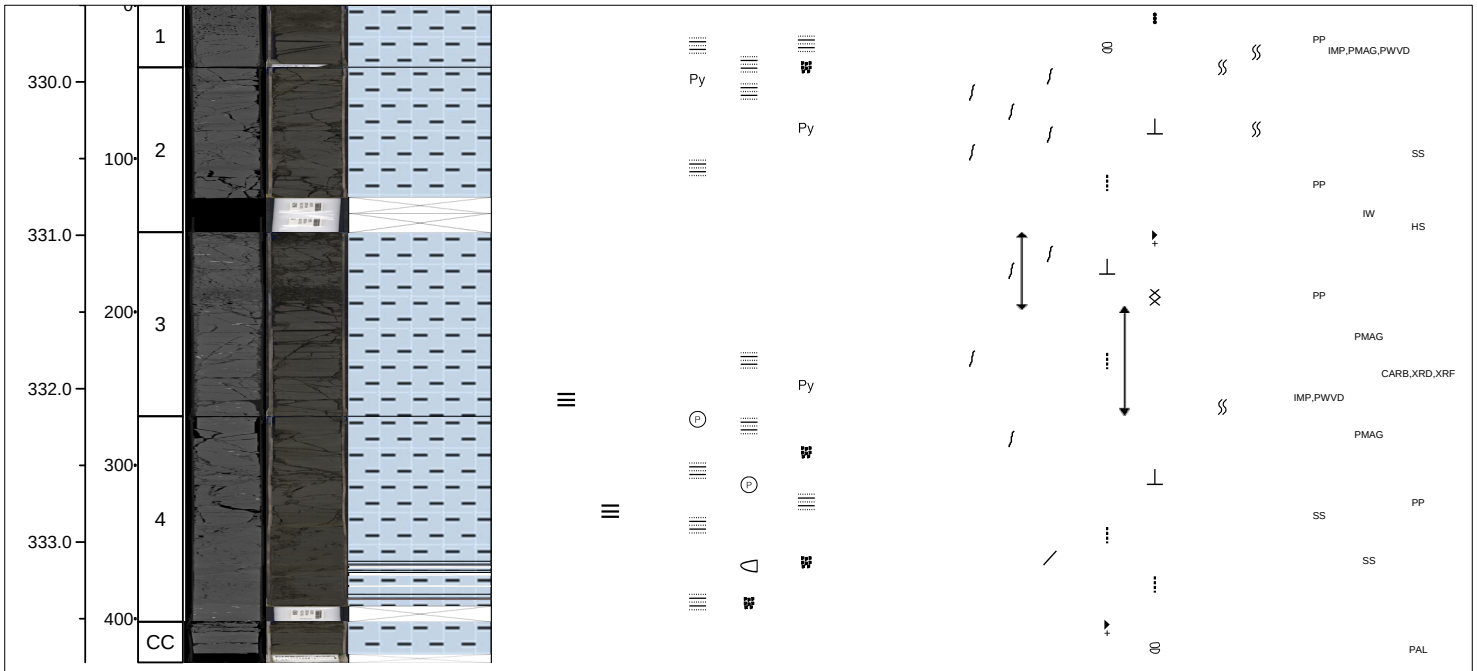
Minor lithology: Pyritised pebbles (Sec 2).



Hole C0019J Core 27K, interval 329.5 to 333.785 m (core depth below seafloor)

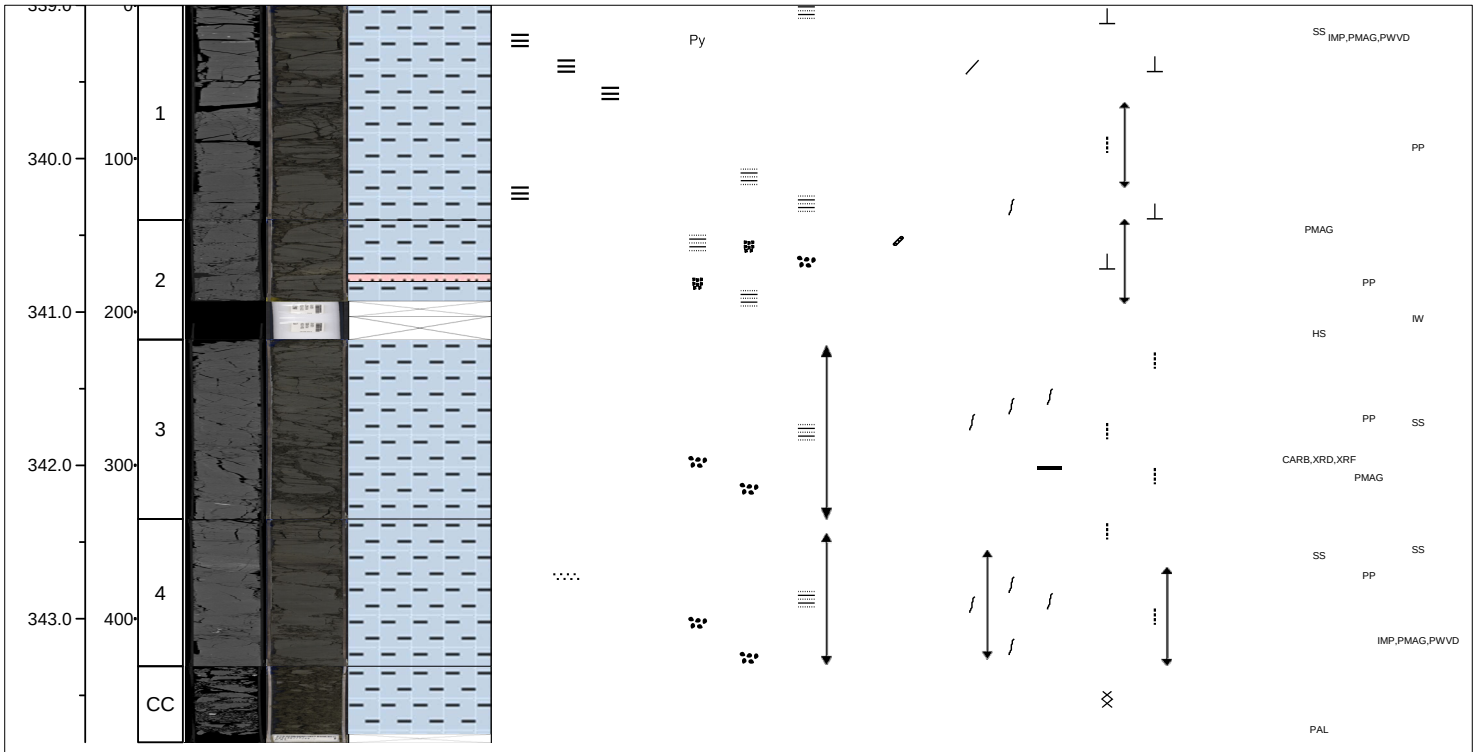
Major lithology: Olive black siliceous mud with intermittent black patched (likely burrows), colour banding, pyritised pebbles, and disseminated pumice.

Minor lithology: Slush at top due to drilling (Sec 1).Layer of brownish black mud (Sec 4). Compacted from drilling but some colour changes evident - changes from dark olive grey (2.5 gy 4/1), black and greenish (2.5 gy 2/1), yellow (10y 3/2), brown (10Y 3/1) (CC).



Hole C0019J Core 28K, interval 339 to 343.805 m (core depth below seafloor)

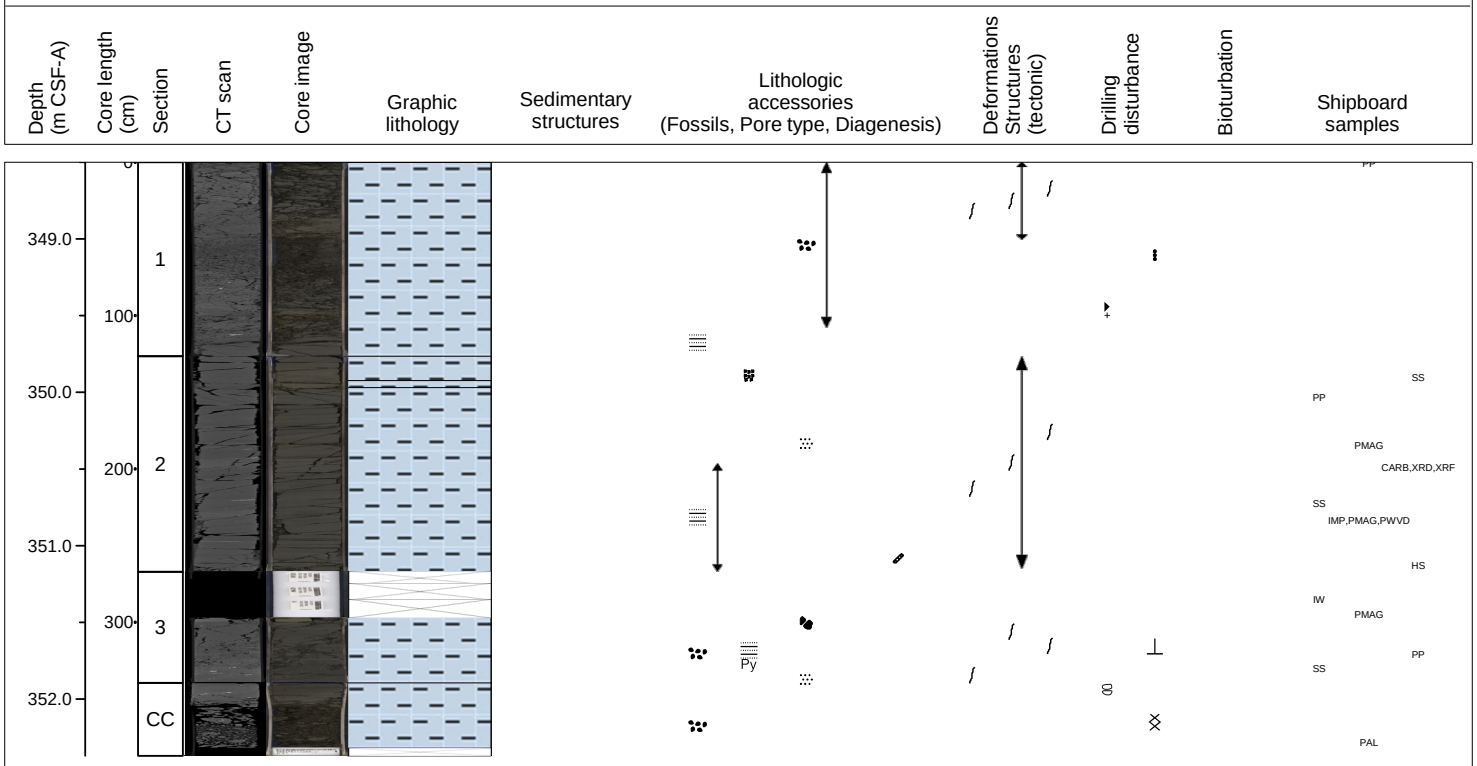
Major lithology: Olive black siliceous mud with lots of banding and disseminated ash and pyrite bands.



Hole C0019J Core 29K, interval 348.5 to 352.37 m (core depth below seafloor)

Major lithology: Olive black and black to gray siliceous mudstone and siliceous ooze with pumice clasts, intermixed ash, intermixed coarse grains, and color banding/patches (Sec 1 and Sec 2).

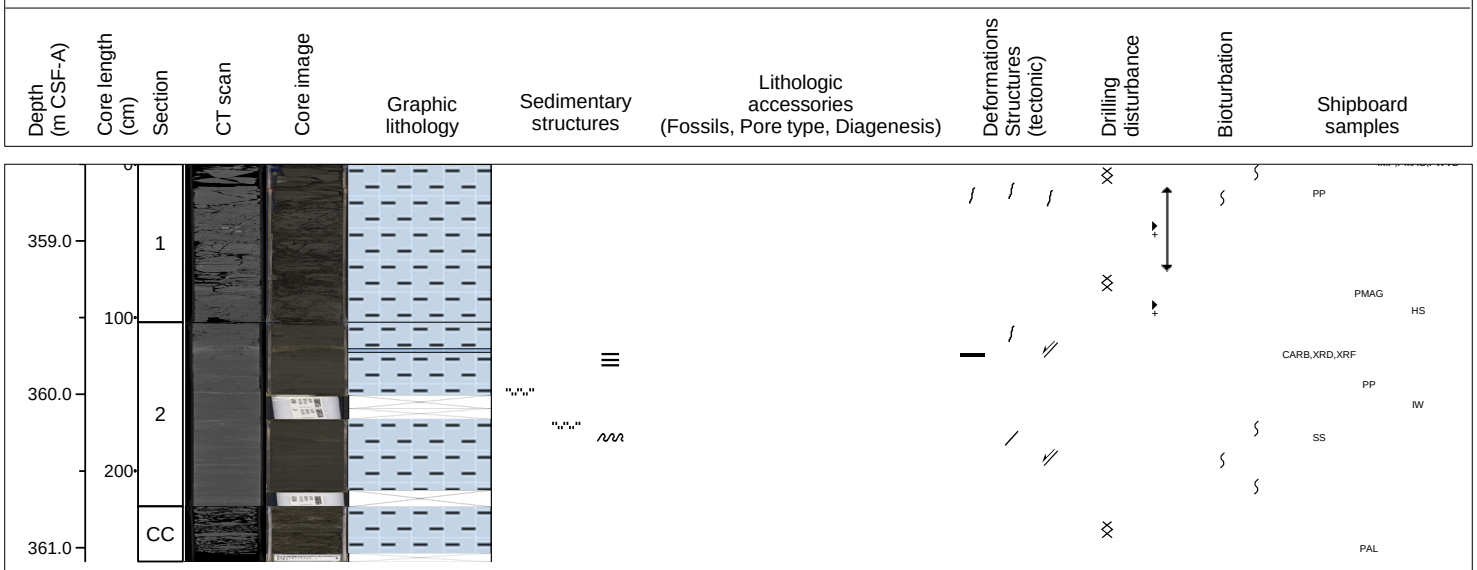
Minor lithology: Grayish Olive siliceous mudstone with mottled texture, intermixed pebbles and pyritized pebbles (Sec 3).



Hole C0019J Core 30K, interval 358.5 to 361.09 m (core depth below seafloor)

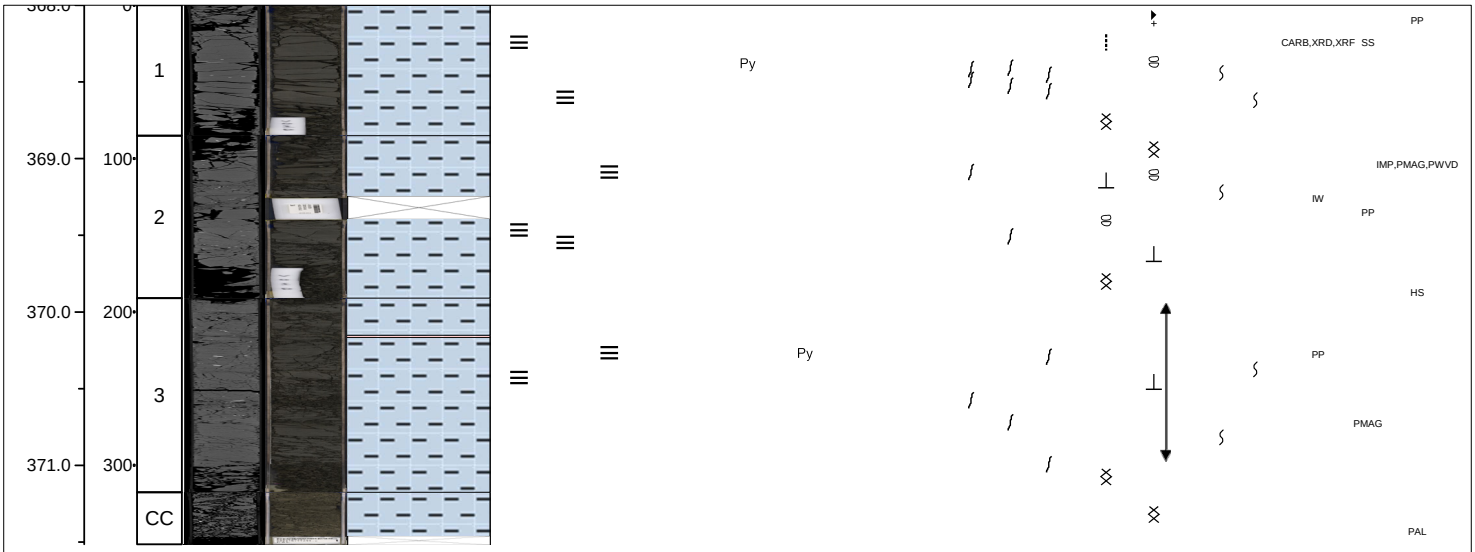
Major lithology: Olive black siliceous mudstone with minor clay and ash, minor syn-sedimentary (?) faulting.

Minor lithology: Olive gray silty mud almost completely disrupted by drilling (CC).



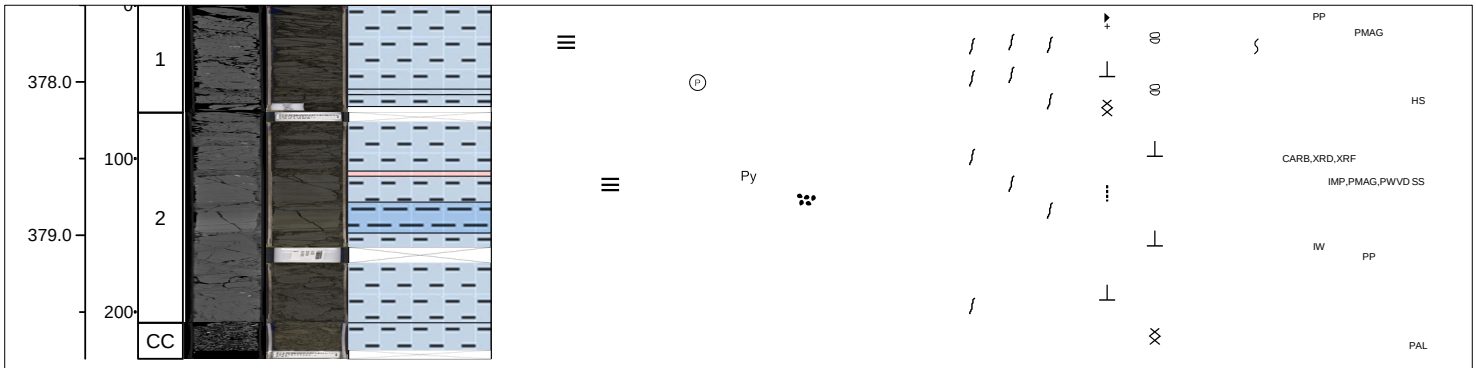
Hole C0019J Core 31K, interval 368 to 371.515 m (core depth below seafloor)

Major lithology: Olive black siliceous ooze and siliceous mudstone, with a thin ash layer, pyritized, burrowing, and mild bioturbation.



Hole C0019J Core 32K, interval 377.5 to 379.805 m (core depth below seafloor)

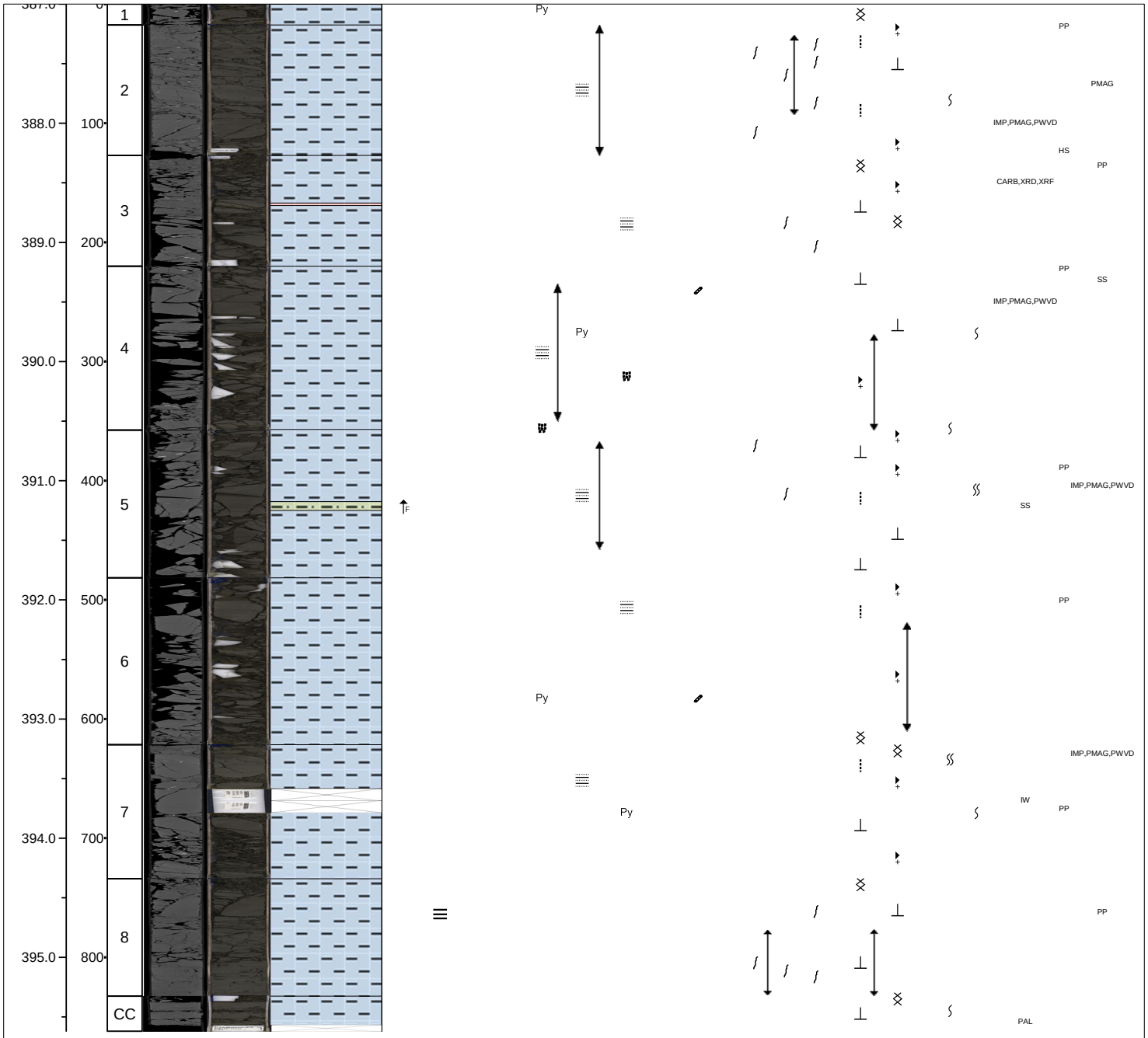
Major lithology: Olive-black mud with minor ash and bioturbation



Hole C0019J Core 33K, interval 387 to 395.62 m (core depth below seafloor)

Major lithology: Olive black siliceous ooze and siliceous mudstone, with minor ash and bioturbation -silty material with pyrite, green color banding that changes dip, bioturbation, and slight disturbances.

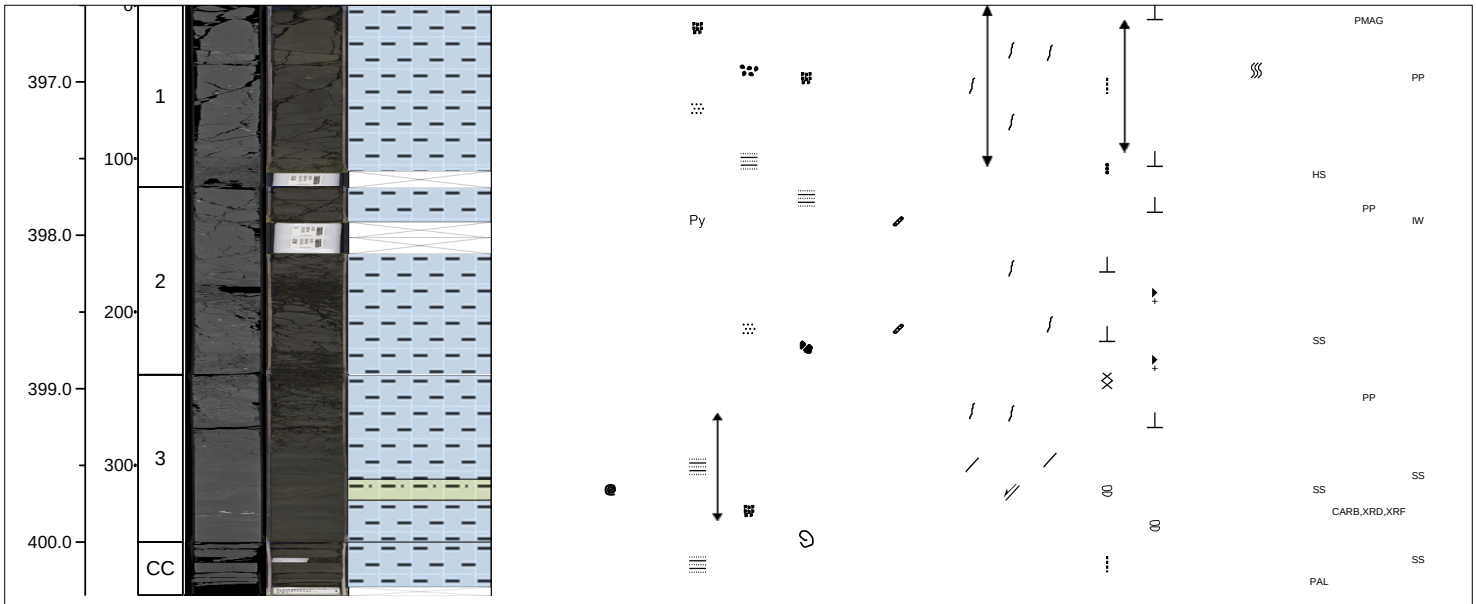
Minor lithology: Olive Black silty - siliceous ooze material with intermixed pumice and pyrite, slight bioturbation, and ash (Sec 4). Olive Black - Brown siliceous mudstone with possible alterations, green color banding, and bedding (?) (Sec 8).



Hole C0019J Core 34K, interval 396.5 to 400.345 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with wispy color banding, pyritized burrows, high angle color banding, squashed pumice and small pebbles.

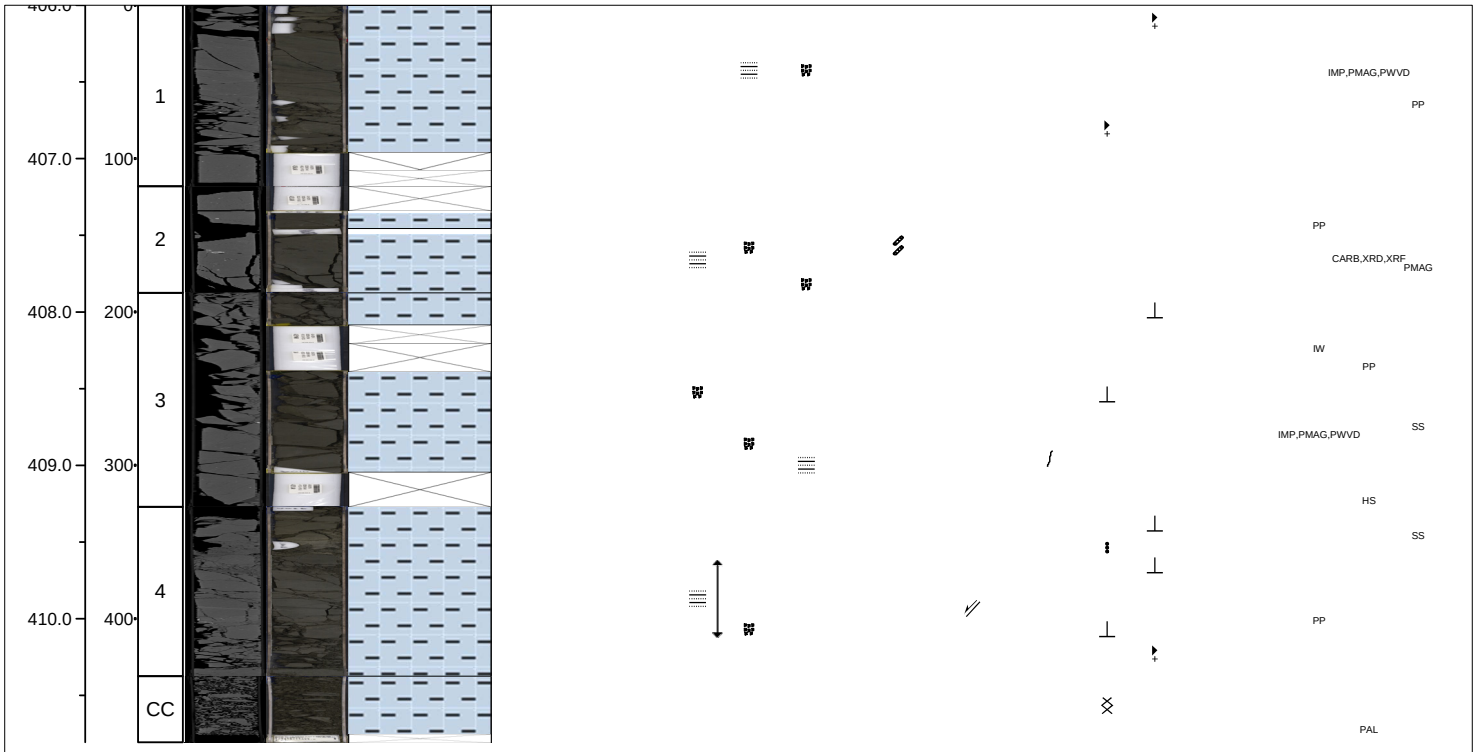
Minor lithology: Additionally, olive black siliceous ash and siliceous mudstone, with slump fracture (Sec 3 71- 81.5 cm), coarse layers, slumped with dark seams (Sec 3 and CC).



Hole C0019J Core 35K, interval 406 to 410.805 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone highly disturbed, intermixed ash, dark flecks, squashed clasts,pumice, colour banding (Sec 1 to Sec 3).

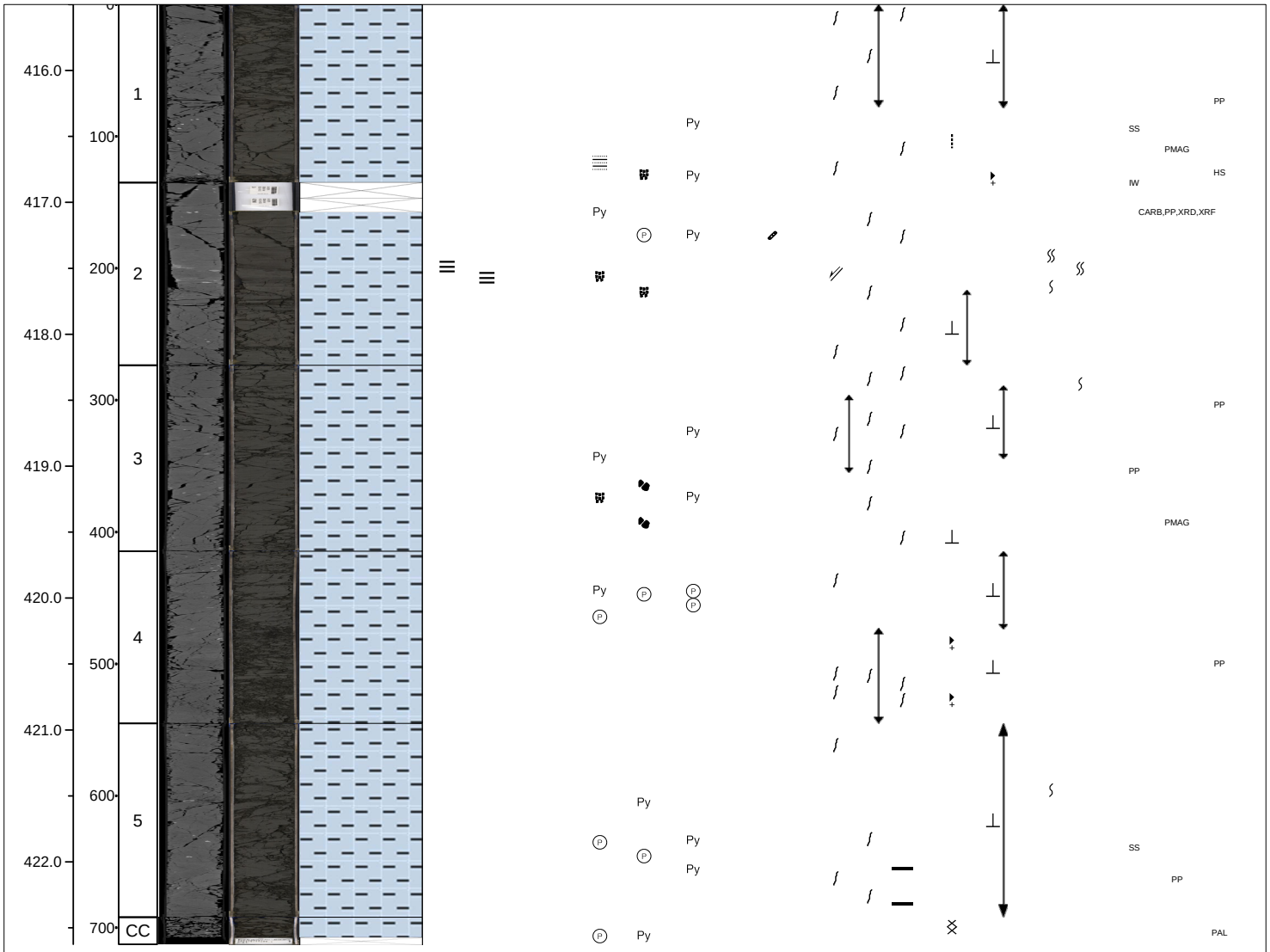
Minor lithology: Gray to Olive Black siliceous mudstone and ashy mudstone with green color banding (Sec 4).



Hole C0019J Core 36K, interval 415.5 to 422.625 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with pumice clasts (some pyritized) and bioturbation.

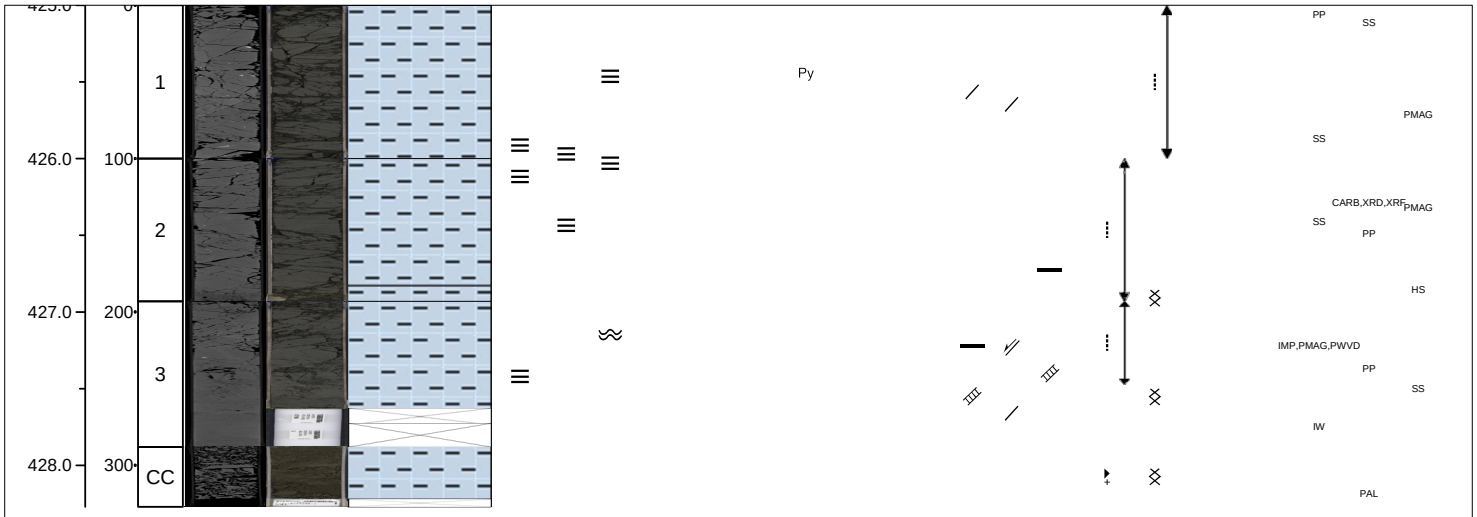
Minor lithology: Olive black mud with a mottled texture, moderate drilling disturance conceals somefeatures, green high angle colour banding (Sec 1).



Hole C0019J Core 37K, interval 425 to 428.27 m (core depth below seafloor)

Brittle fracures develop throughout the core.

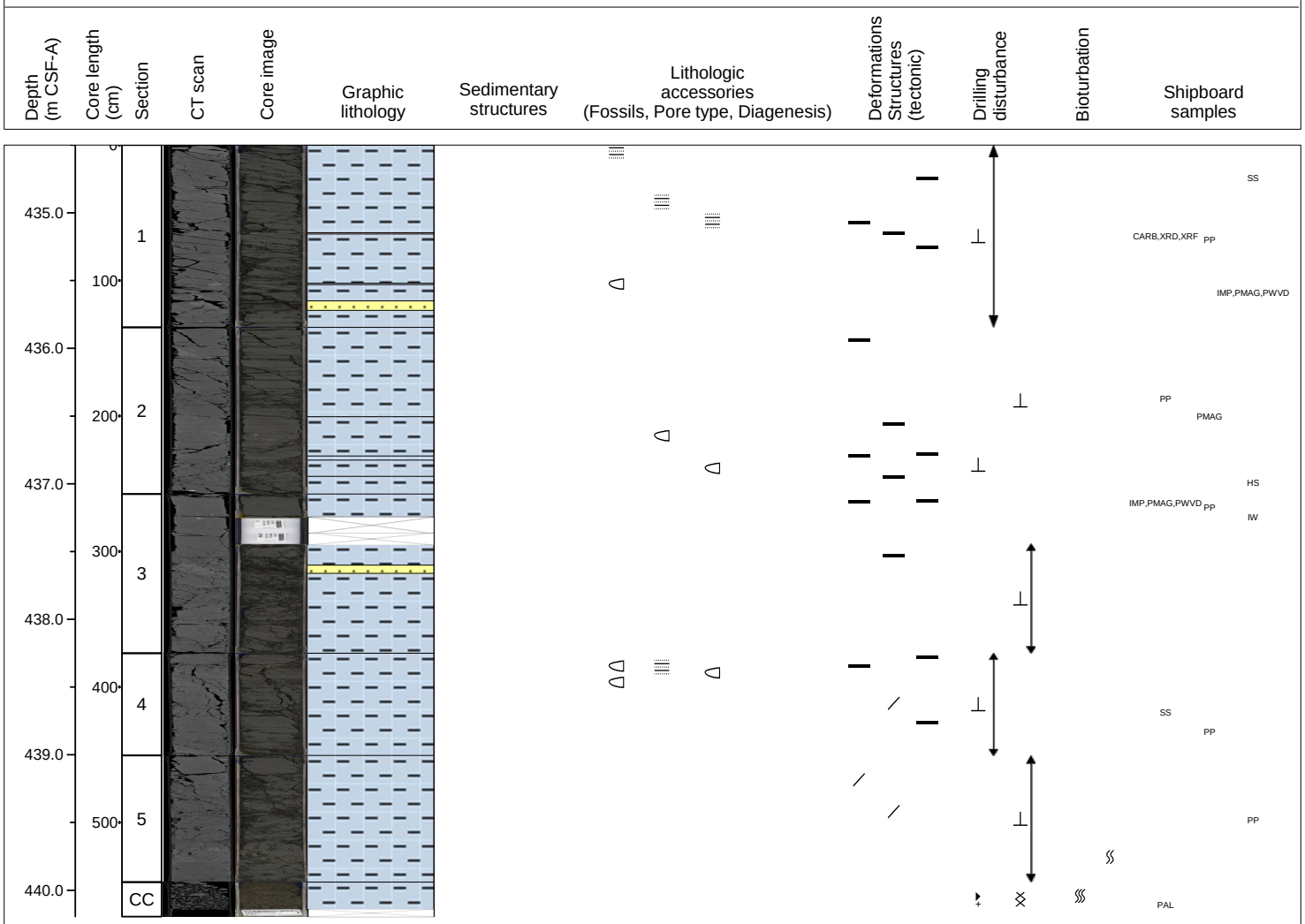
Fractured olive black silty claystone with steepy dipping silt beds.



Hole C0019J Core 38K, interval 434.5 to 440.195 m (core depth below seafloor)

Olibe black silty-clay stone with color banding steepy dipping.

Highly fractured interbedded ash layer.

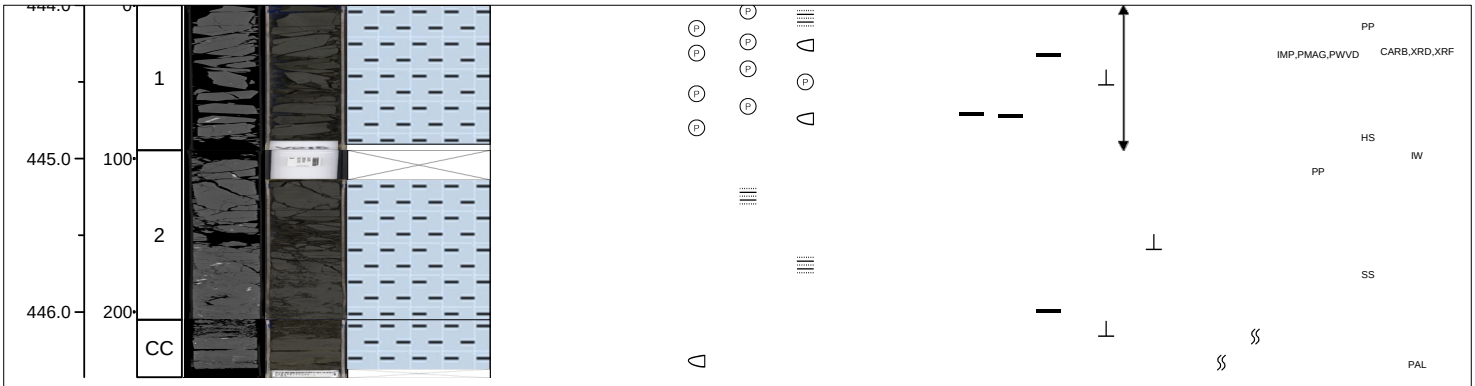


Hole C0019J Core 39K, interval 444 to 446.425 m (core depth below seafloor)

Summary: Silty claystone and clayey siltstone highly fractured interval due to drilling disturbance.

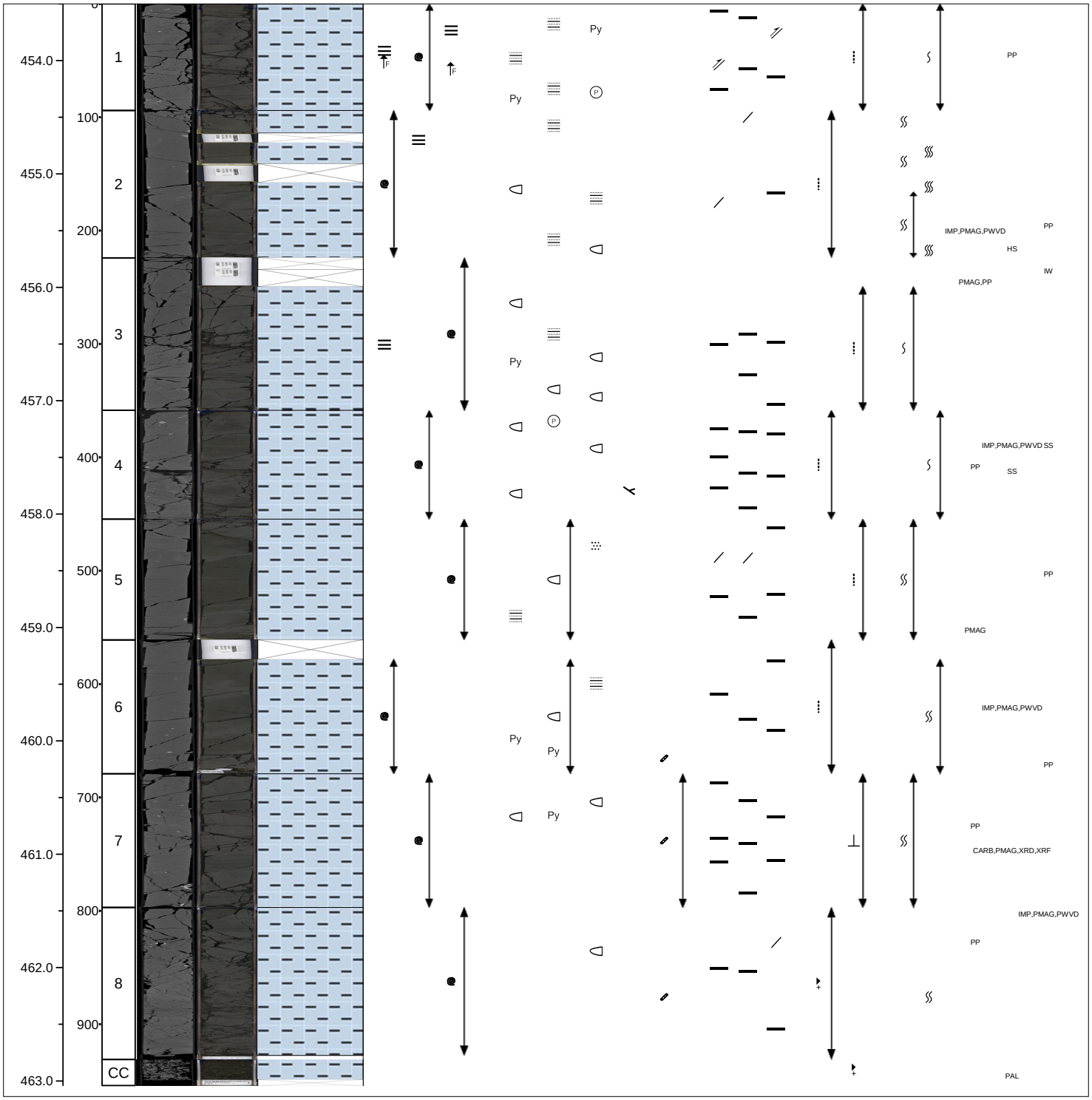
Structures: Scattered pumice, color banding.

Munshell color: 5Y 3/2



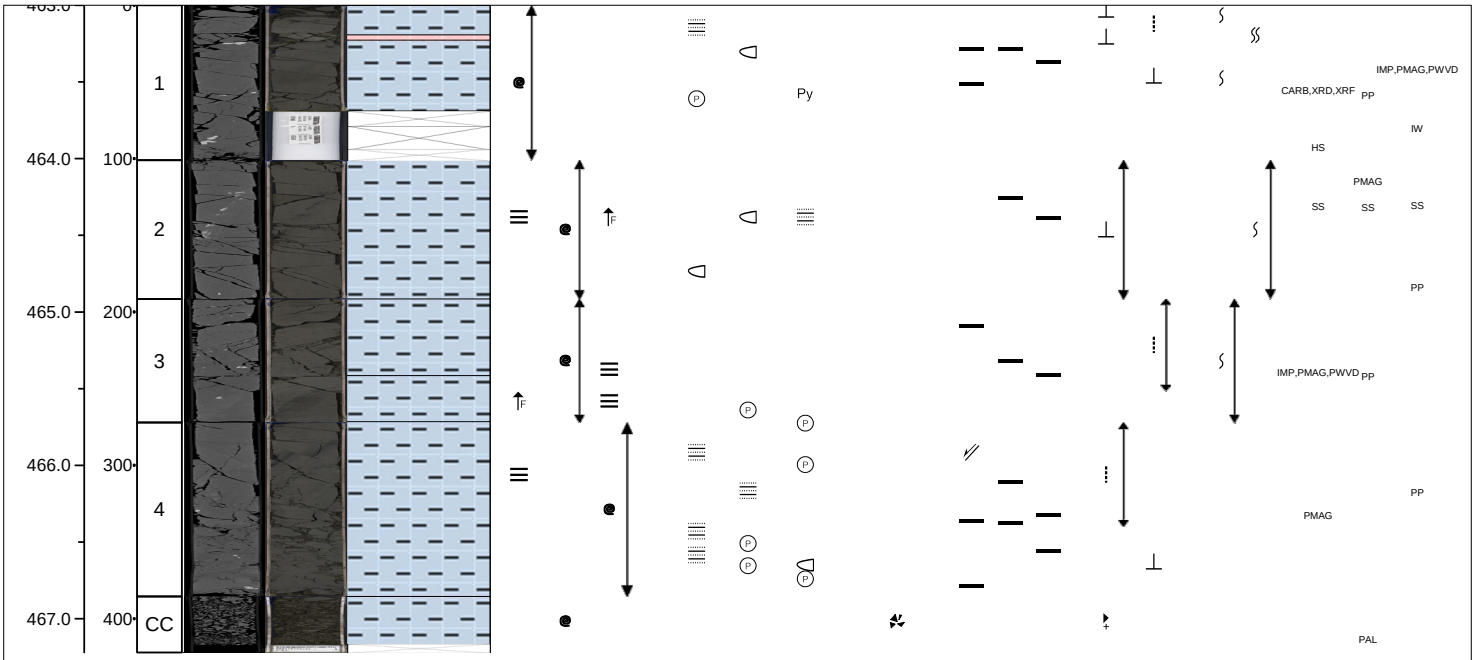
Hole C0019J Core 40K, interval 453.5 to 463.04 m (core depth below seafloor)

Summary: Olive black (7.5Y 3/2) bioturbated silty clay stone with steep dipping color banding, silt patches and burrows.



Hole C0019J Core 41K, interval 463 to 467.22 m (core depth below seafloor)

Summary: Olive black (7.5Y 3/1) silty claystone to clayey siltstone. with steeply dipping and overturned sand layer and dark green bandings.



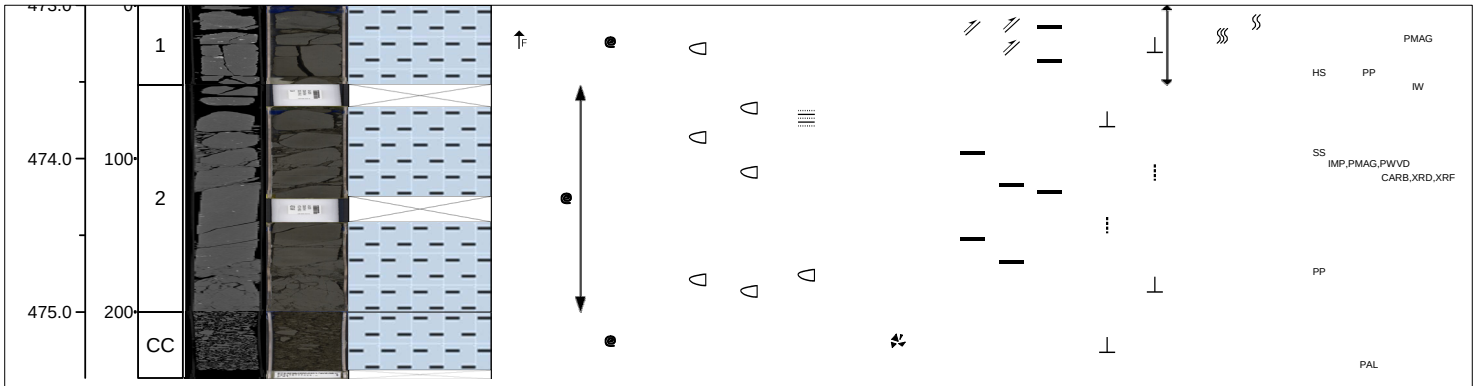
Hole C0019J Core 42K, interval 473 to 475.43 m (core depth below seafloor)

Summary: Olive black biotiurbated silty claystone.

Sturctures: Finging sequence, ash patches and color bandings.

Munshell color: 7.5Y 3/1 and 2/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



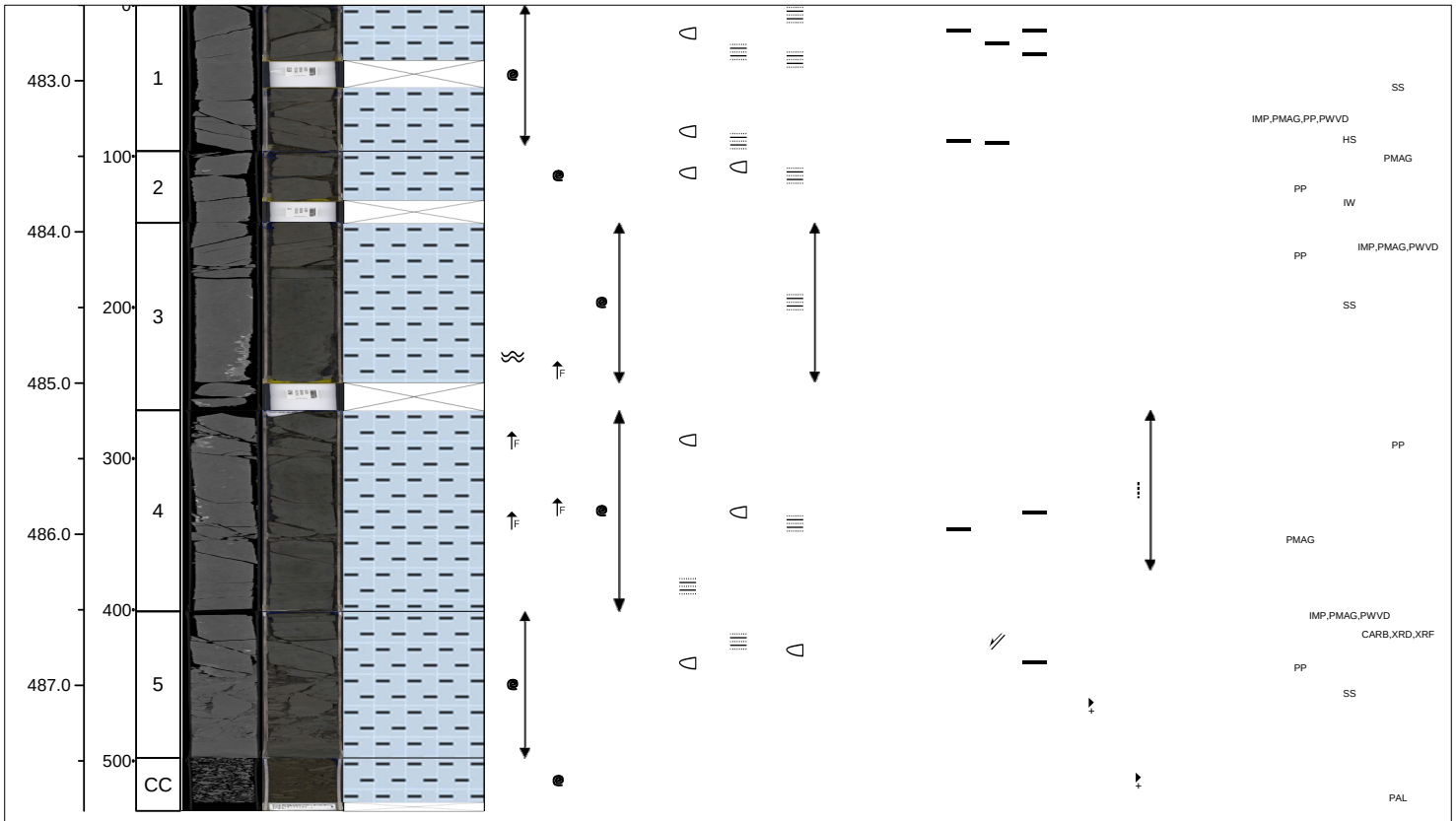
Hole C0019J Core 43K, interval 482.5 to 487.83 m (core depth below seafloor)

Summary: Olive black biotiurbated silty claystone.

Sturctures: Finging sequence, ash patches and color bandings.

Munshell color: 7.5Y 3/1 and 2/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



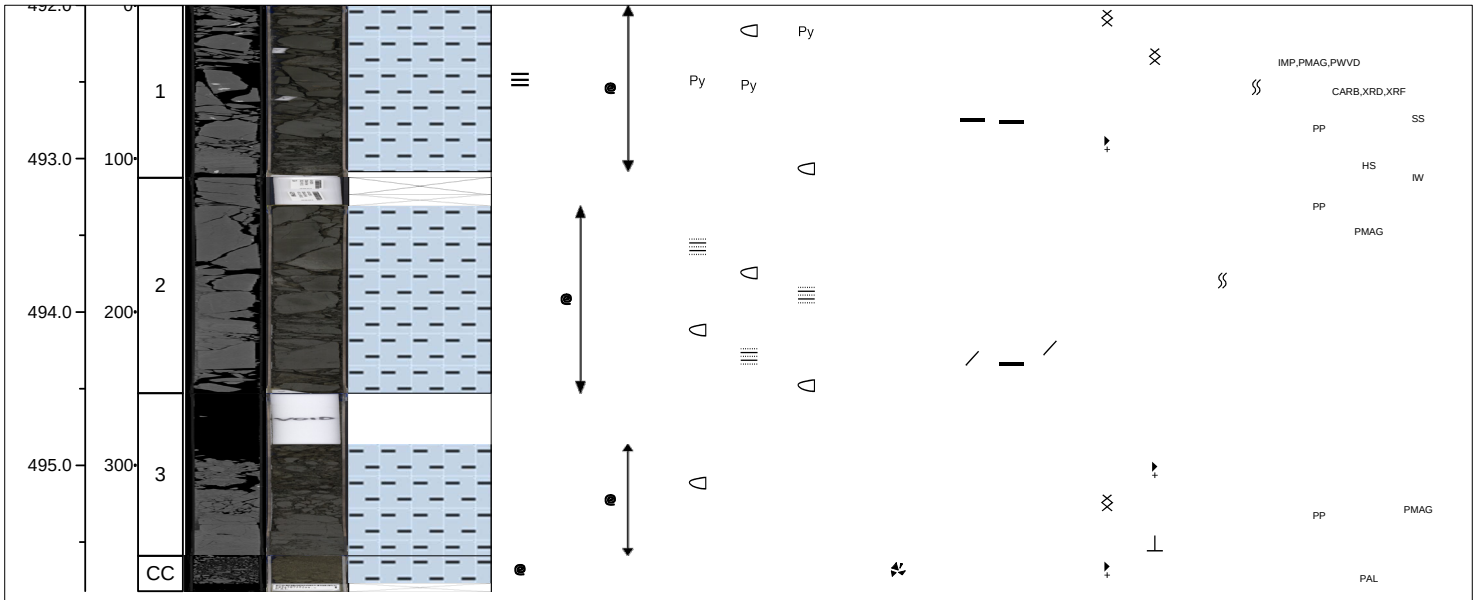
Hole C0019J Core 44K, interval 492 to 495.82 m (core depth below seafloor)

Summary: Olive black biotiurbated silty claystone with deformed ash layers and patches.

Sturctures: Finging sequence, ash patches and color bandings.

Munshell color: 7.5Y 3/1 and 2/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



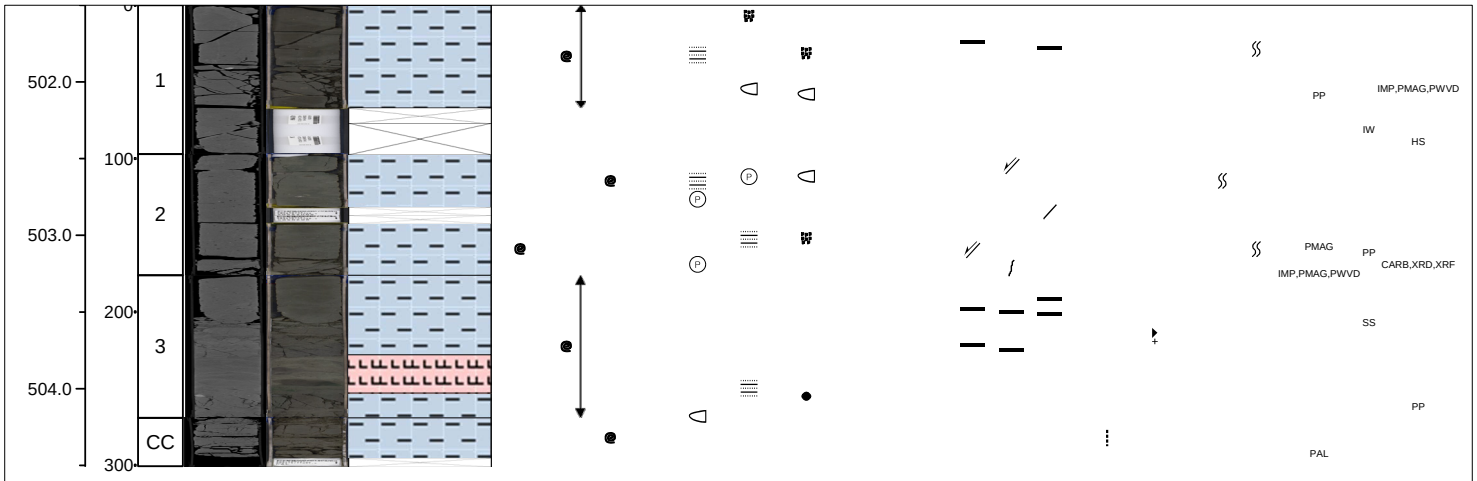
Hole C0019J Core 45K, interval 501.5 to 504.505 m (core depth below seafloor)

Summary: Olive black biotiurbated silty claystone with scattered pumice.

Sturctures: Finging sequence, ash patches and color bandings.

Munshell color: 7.5Y 3/1 and 2/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



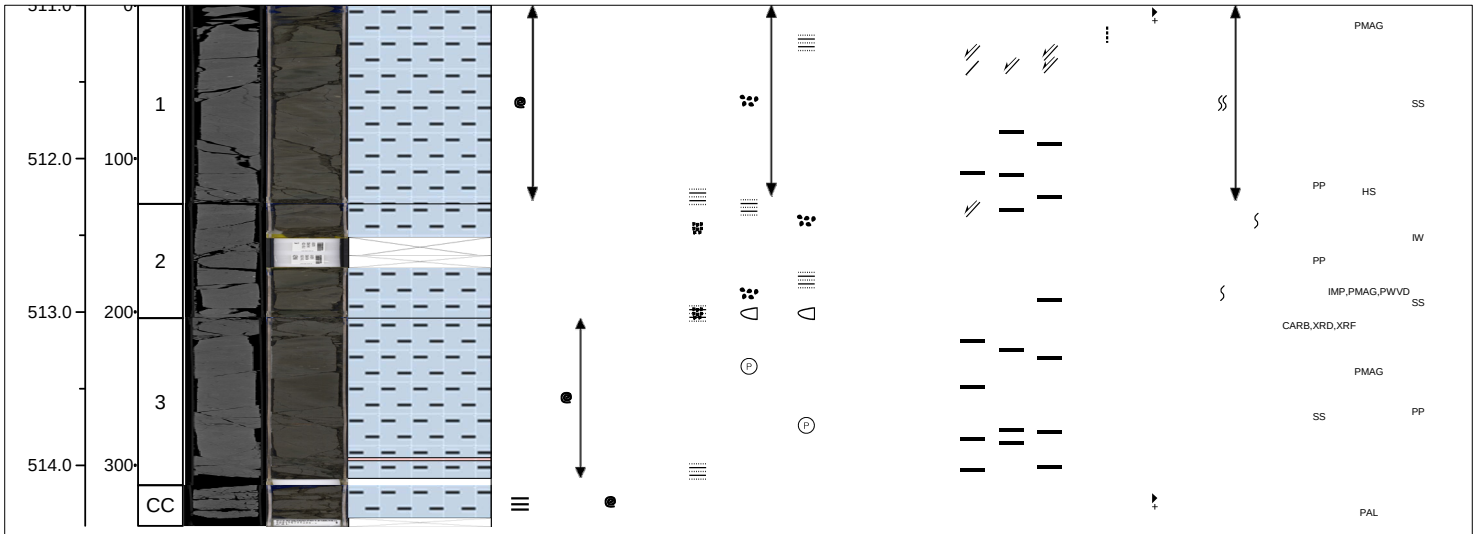
Hole C0019J Core 46K, interval 511 to 514.395 m (core depth below seafloor)

Summary: Gray clayey siltstone claystone with intervals of dark greenish gray separated by black seams with offsets.

Sturctures: Biotrubation, mottling, dispersed pumice fragments.

Munshell color: 7.5Y 4/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



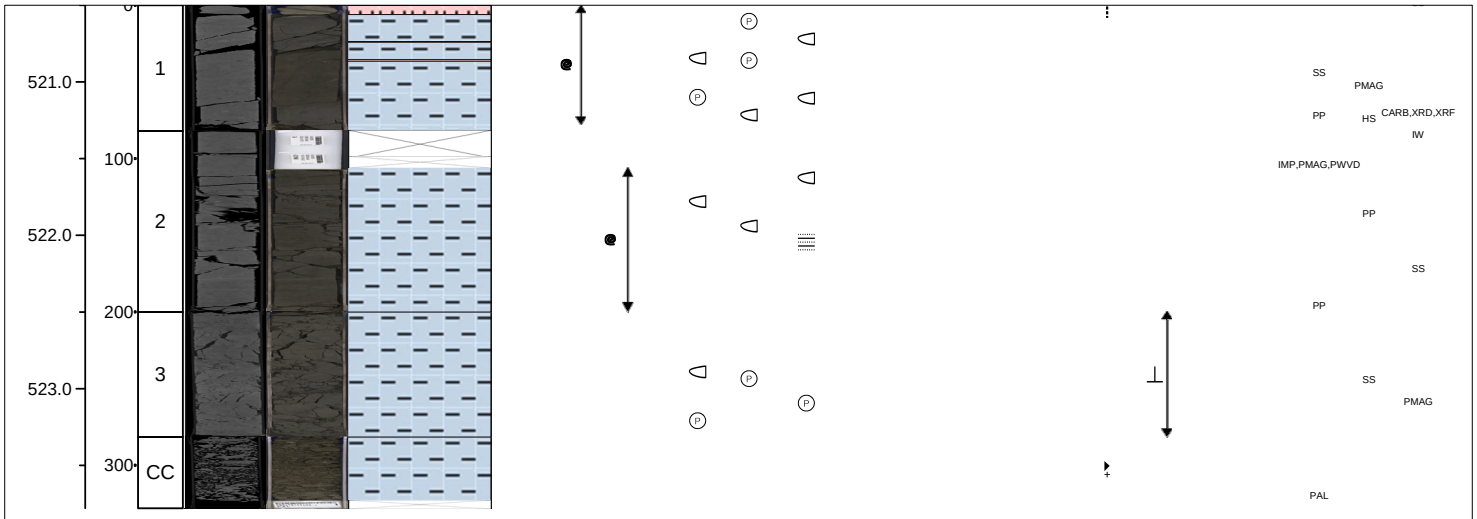
Hole C0019J Core 47K, interval 520.5 to 523.78 m (core depth below seafloor)

Summary: Deformed olive black silty clayeystone claystone.

Sturctures: Dark seams, silty to very fine sand patches.

Munshell color: 7.5Y 4/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



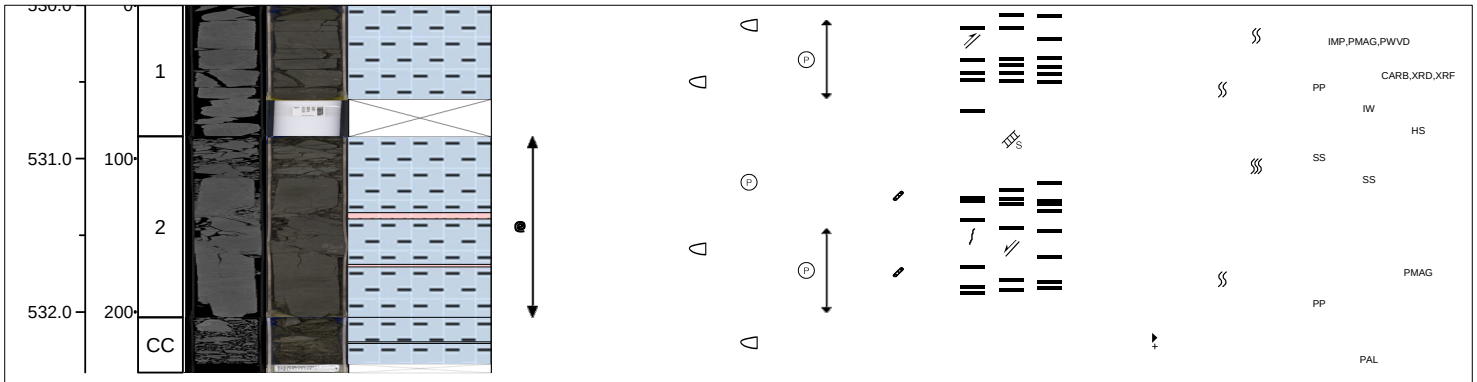
Hole C0019J Core 48K, interval 530 to 532.395 m (core depth below seafloor)

Summary: Olive black clayey siltstone and silty claystone.

Sturctures: Sediment-filled veins, deformed ash layers, patches, dark seams.

Munshell color: 7.5Y 3/1

Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



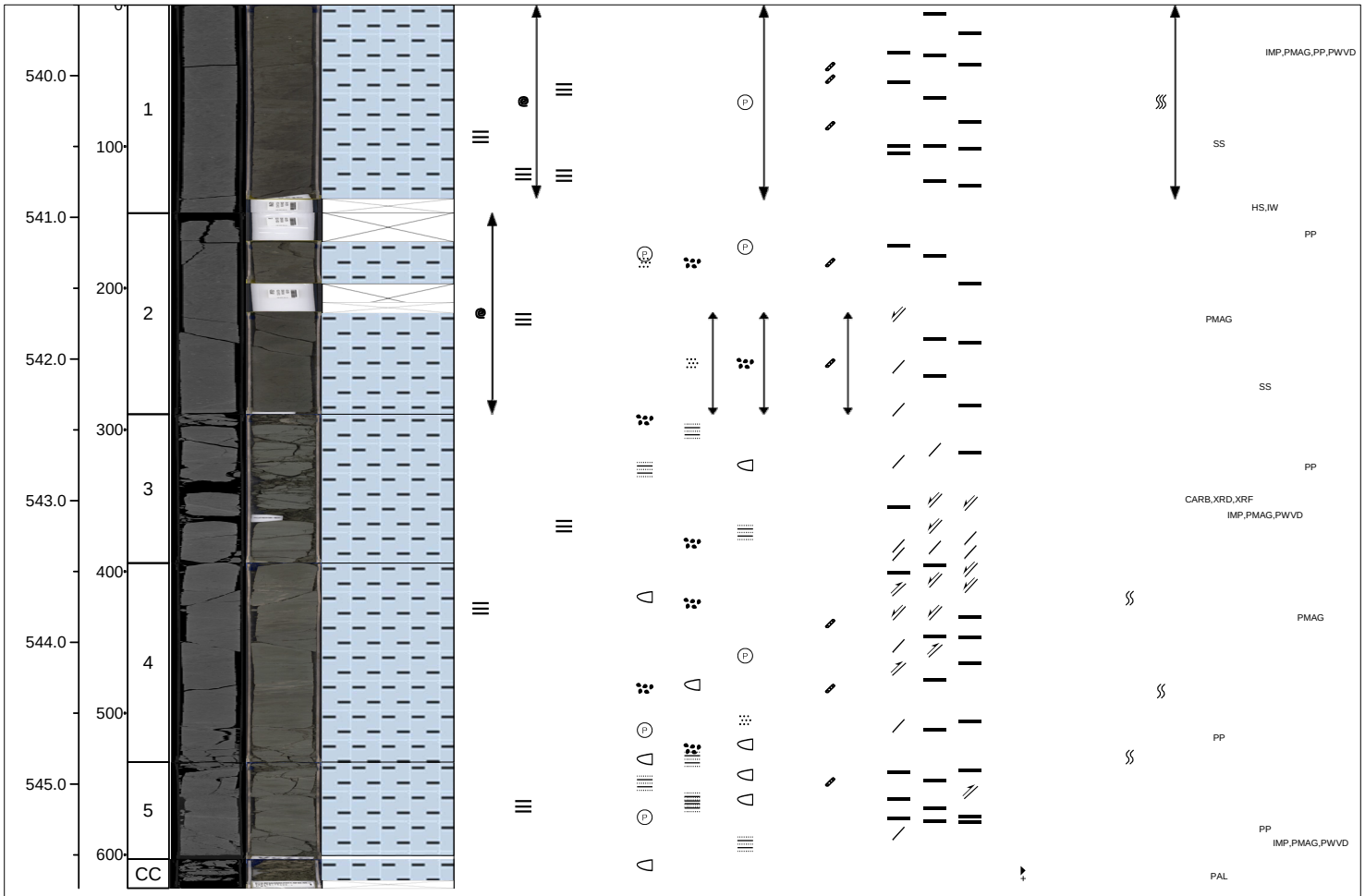
Hole C0019J Core 49K, interval 539.5 to 545.735 m (core depth below seafloor)

Summary: Gray clayey siltstone. The bedding angle becomes flat from the lower part of the third or the upper part of the fourth sections.

Sturctures: Sediment-filled veins, mottled structures, color banding, ash patches are sheared by dark seams.

Munshell color: 7.5Y 4/1

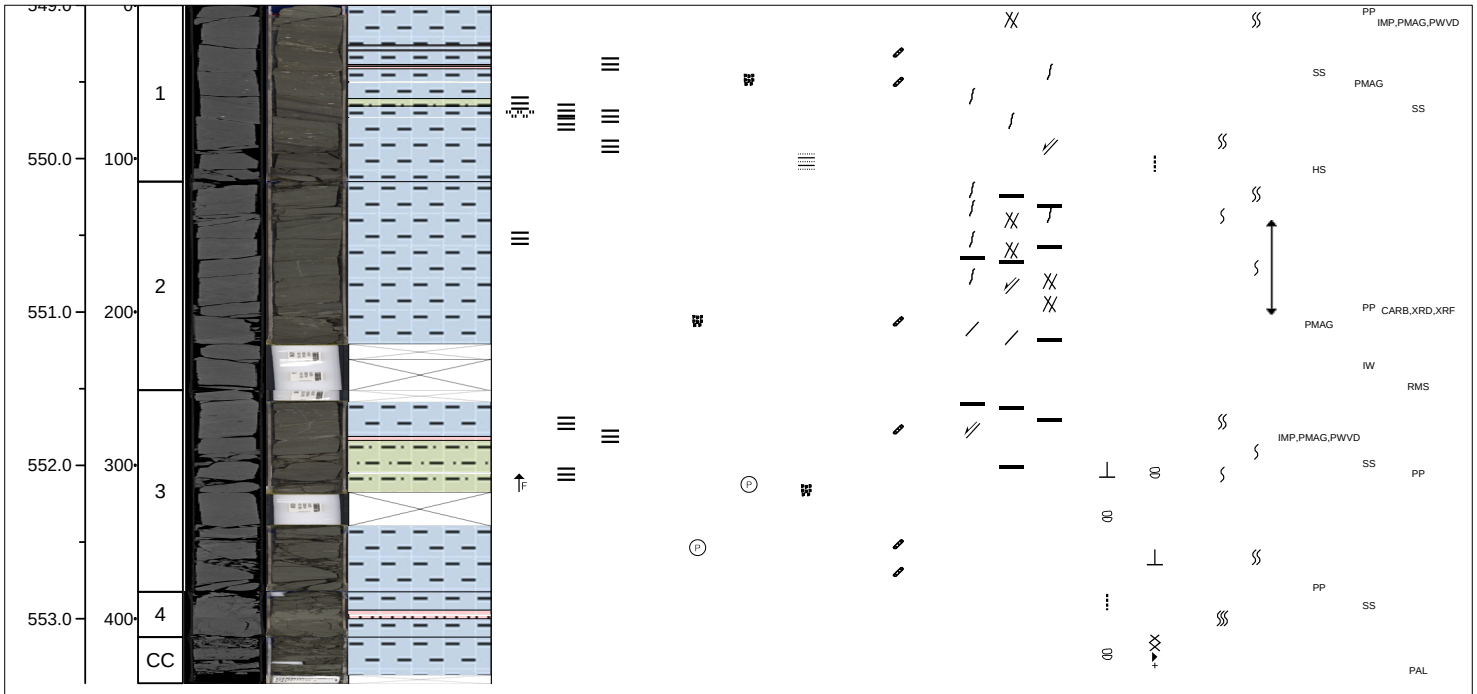
Features: Beddings are likely subvertial to vertical, so the changes in sedimentary structures are sub-horizontal to horizontal. The subvertical beddings are more apparant at where colour banding appear and/or patches with coares particles are aligned linearly. Noted that the term *chaotic bedding* used here does not represent no physical pattern or propeties can be found within the intervals. Instead, it was used to highligt the vertical to subvertial bedding.



Hole C0019J Core 50K, interval 549 to 553.42 m (core depth below seafloor)

Major lithology: Grey mudstone with ash layer, dark mm scale lamination in places, and heavily burrowed.

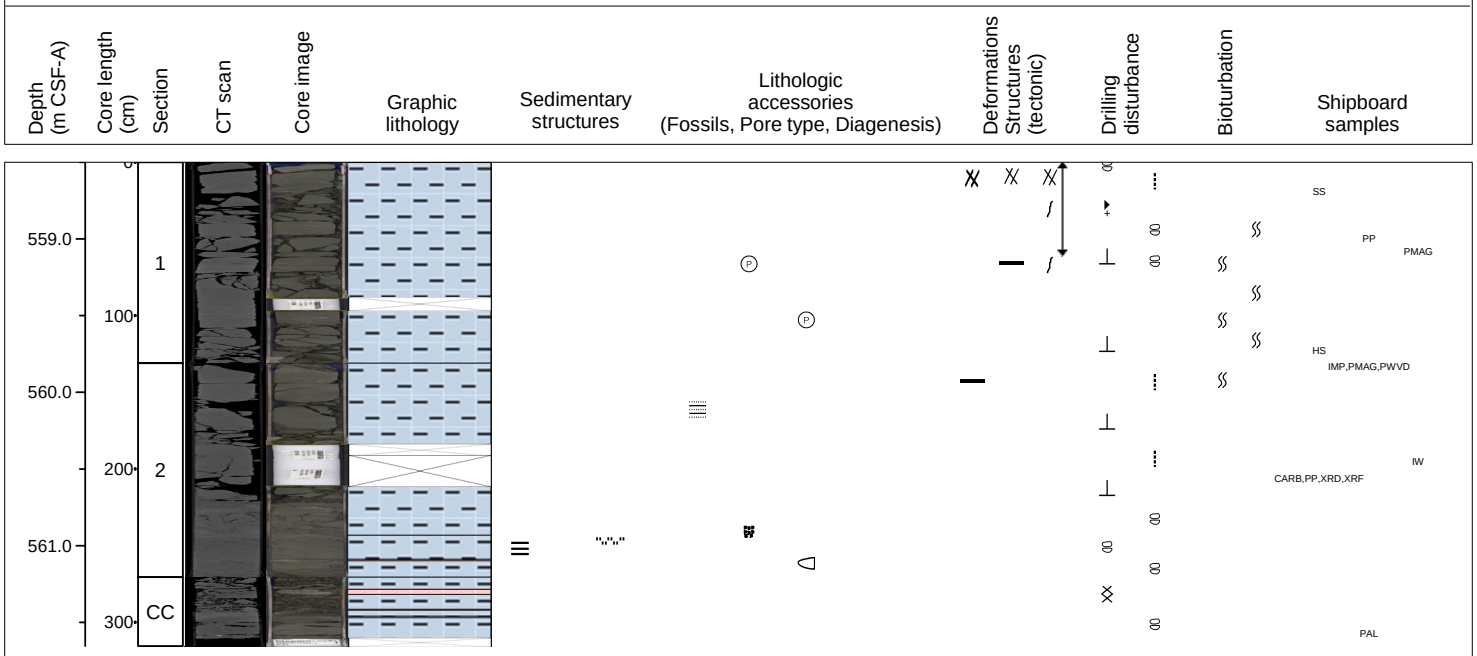
Minor lithology: Some evidence of soft sediment deformation (Sec 1). Light grey mudstone at base overlain by light grey ash which is heavily bioturbated (Sec 3 and 4). Top of the section is olive grey mudstone (Sec 4).



Hole C0019J Core 51K, interval 558.5 to 561.655 m (core depth below seafloor)

Major lithology: Grey mudstone with modelate bioturbation, lots of scattered ash and pumice (Sec 1 and 2).

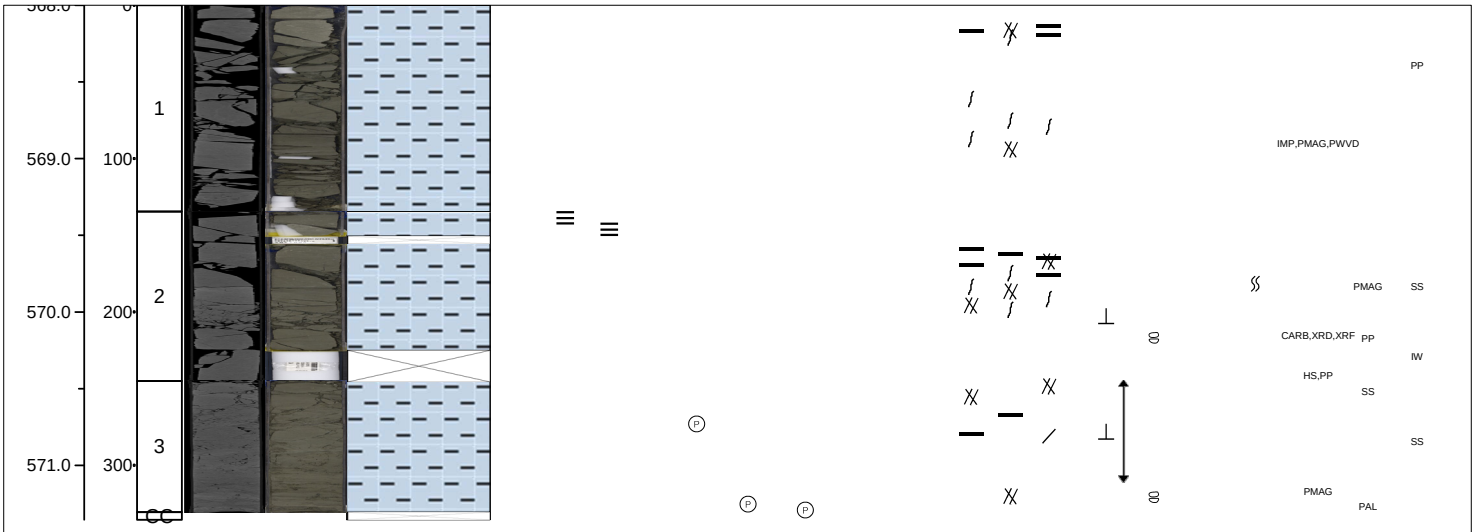
Minor lithology: Dark grey to light grey interlaminated mudstone with grey ash interbeds. Quite heavily disturbed due to being from the core catcher (CC).



Hole C0019J Core 52K, interval 568 to 571.355 m (core depth below seafloor)

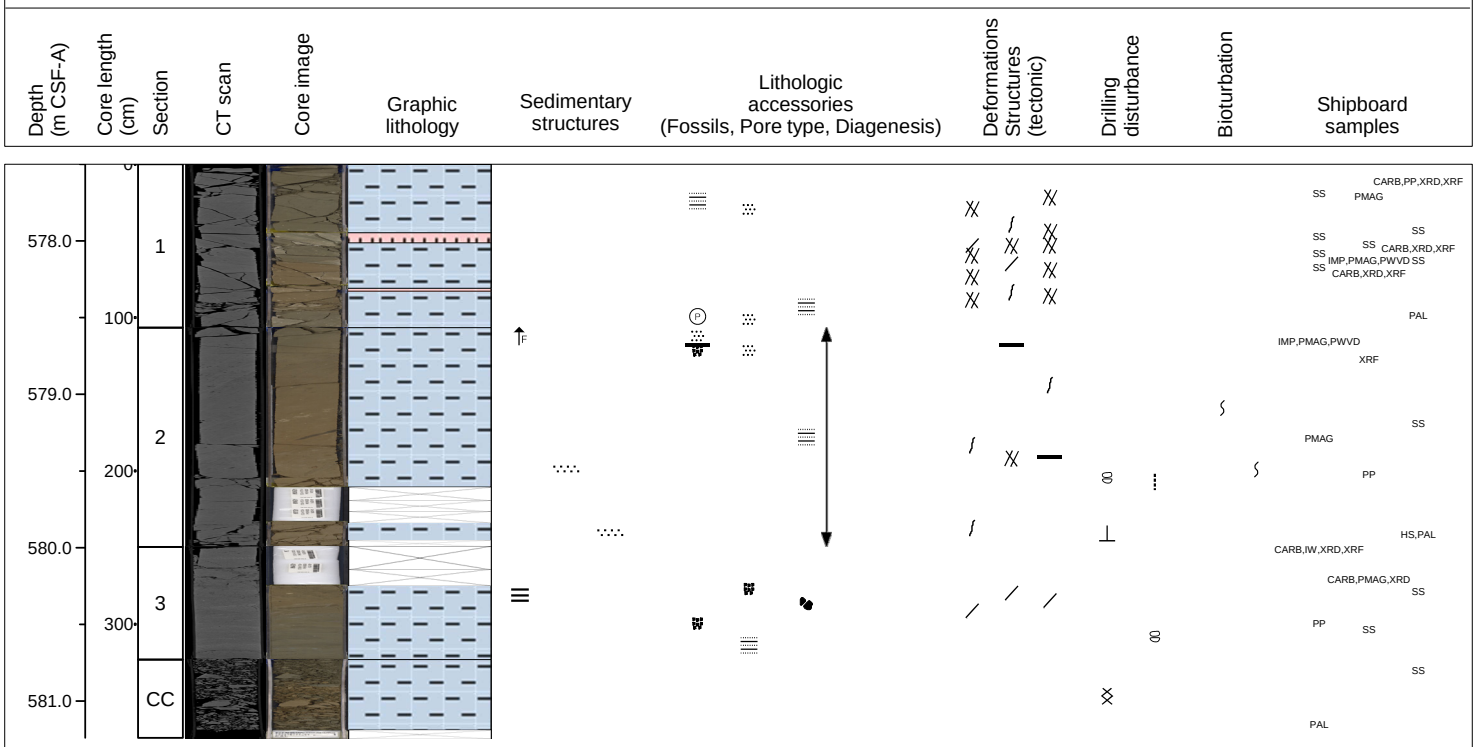
Major lithology: Gray mudstone with black lamina, ash and pumice.

Minor lithology: Yellowish gray mudstone with deformed black seam, very fine to fine sand bedding, mottled texture (Sec 2).



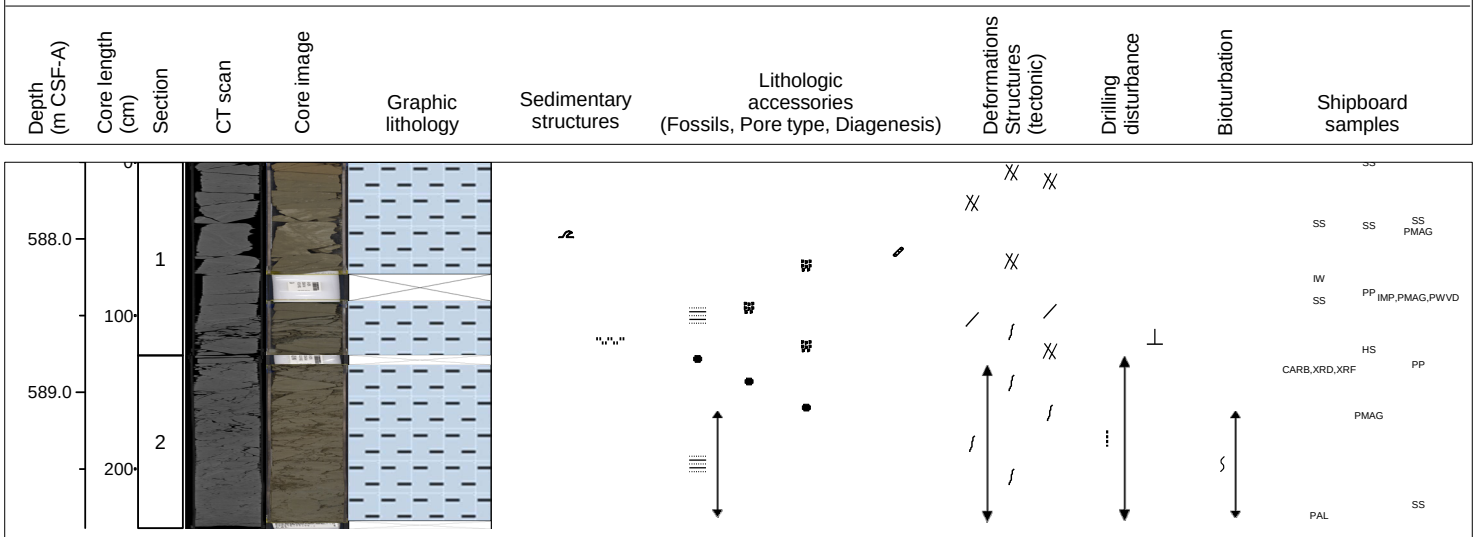
Hole C0019J Core 53K, interval 577.5 to 581.24 m (core depth below seafloor)

Major lithology: Dull yellowish brown ashy mudstone with dull brown intermixed sand-silty layers, fining upward, green to black color banding, scaterred pumice.



Hole C0019J Core 54K, interval 587.5 to 589.885 m (core depth below seafloor)

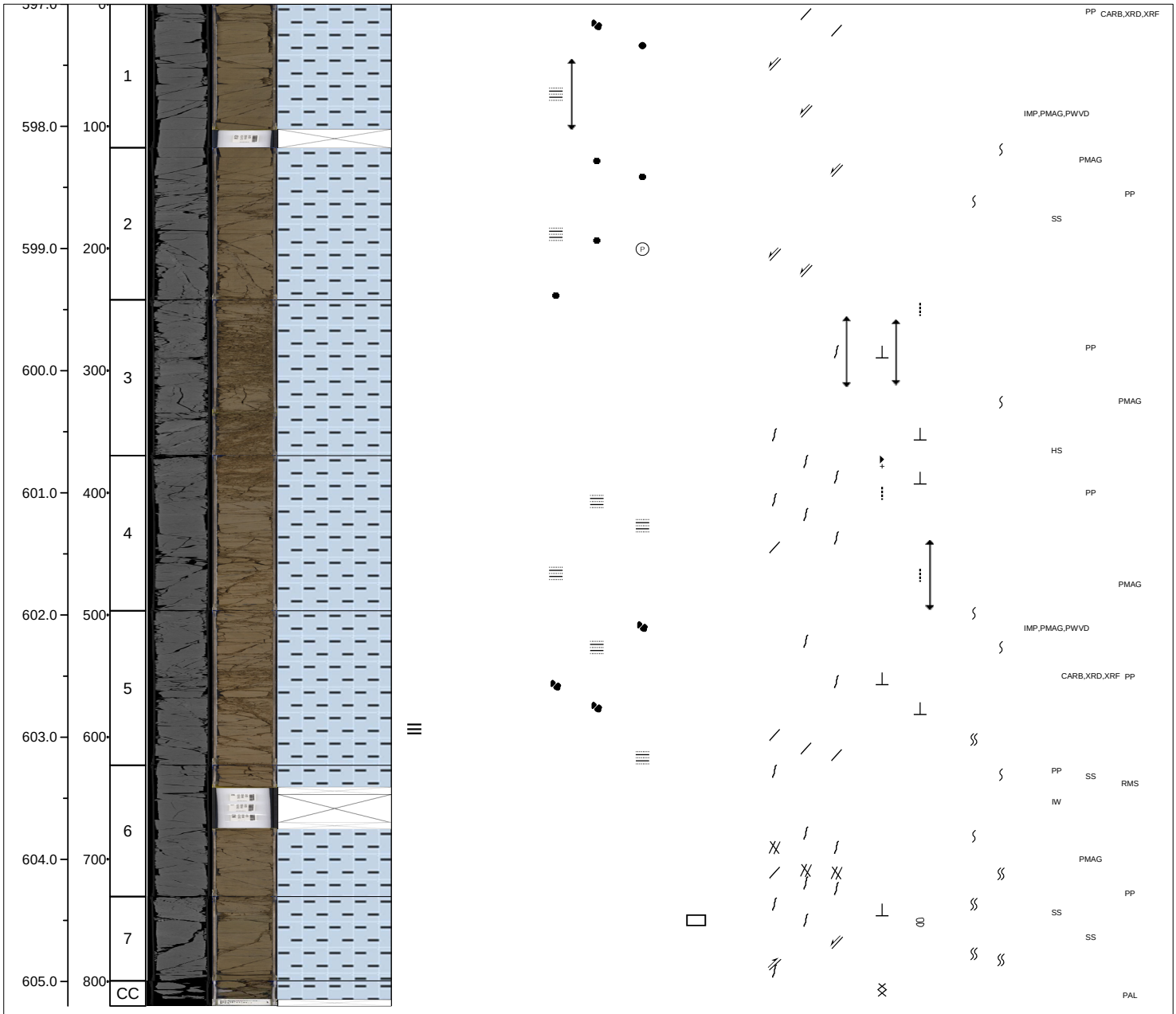
Major lithology: Yellow/Gray/Brown and olive brown ashy mudstone with a flame structure, silt layering, multicolors with depth, burrowing, and intermixed pumice/ash. Color banding green-brown present.



Hole C0019J Core 55K, interval 597 to 605.2 m (core depth below seafloor)

Major lithology: Olive brown ashy mudstone, with black patches (burrows), large variation in volcaniclastic and siliciclastic component.

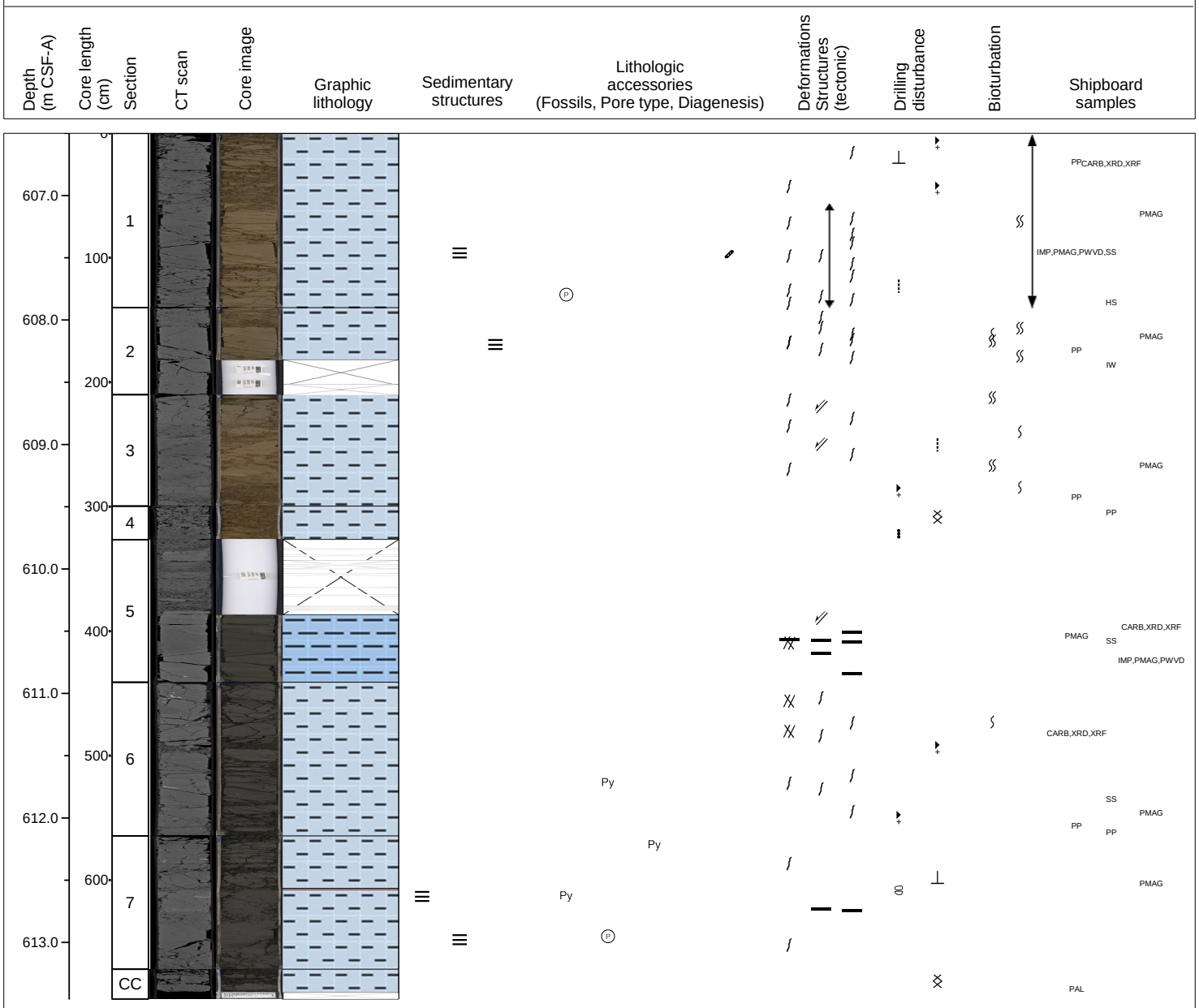
Minor lithology: Olive brown siliceous ooze with mild bioturbation, possible deformation bands (Sec 6), calcite vein, and black patches/burrows (Sec 7).



Hole C0019J Core 56K, interval 606.5 to 613.455 m (core depth below seafloor)

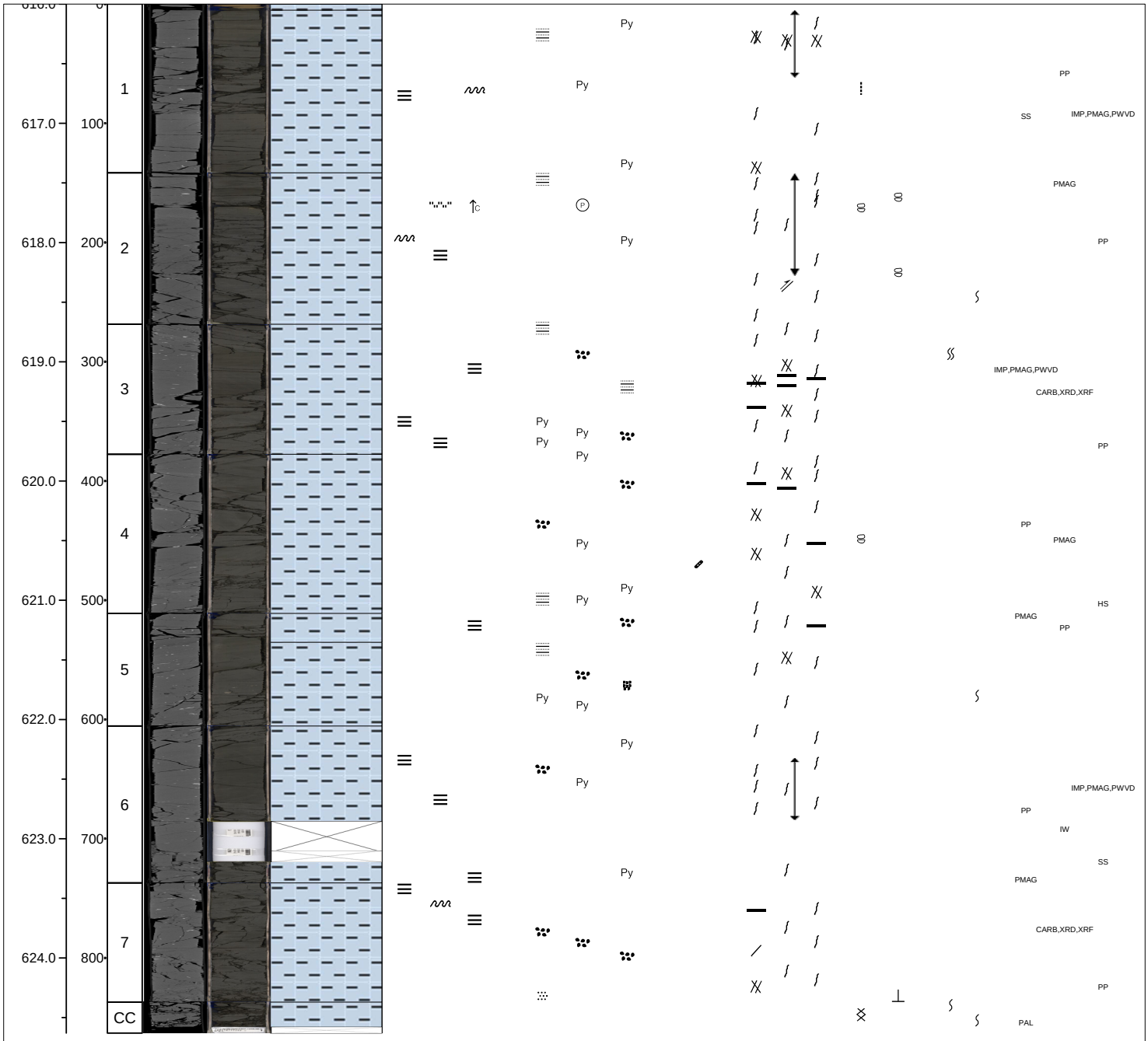
Major lithology: Olive brown mudstone (mostly ashy mudstone) with variable bioturbation throughout.

Minor lithology: Very fractured as close to fault zone - see Strutural section (Sec 5). Olive black siliceous mudstone material, bioturbated in places, pyritized burrows and pumice (from Sec 6).



Hole C0019J Core 57K, interval 616 to 624.63 m (core depth below seafloor)

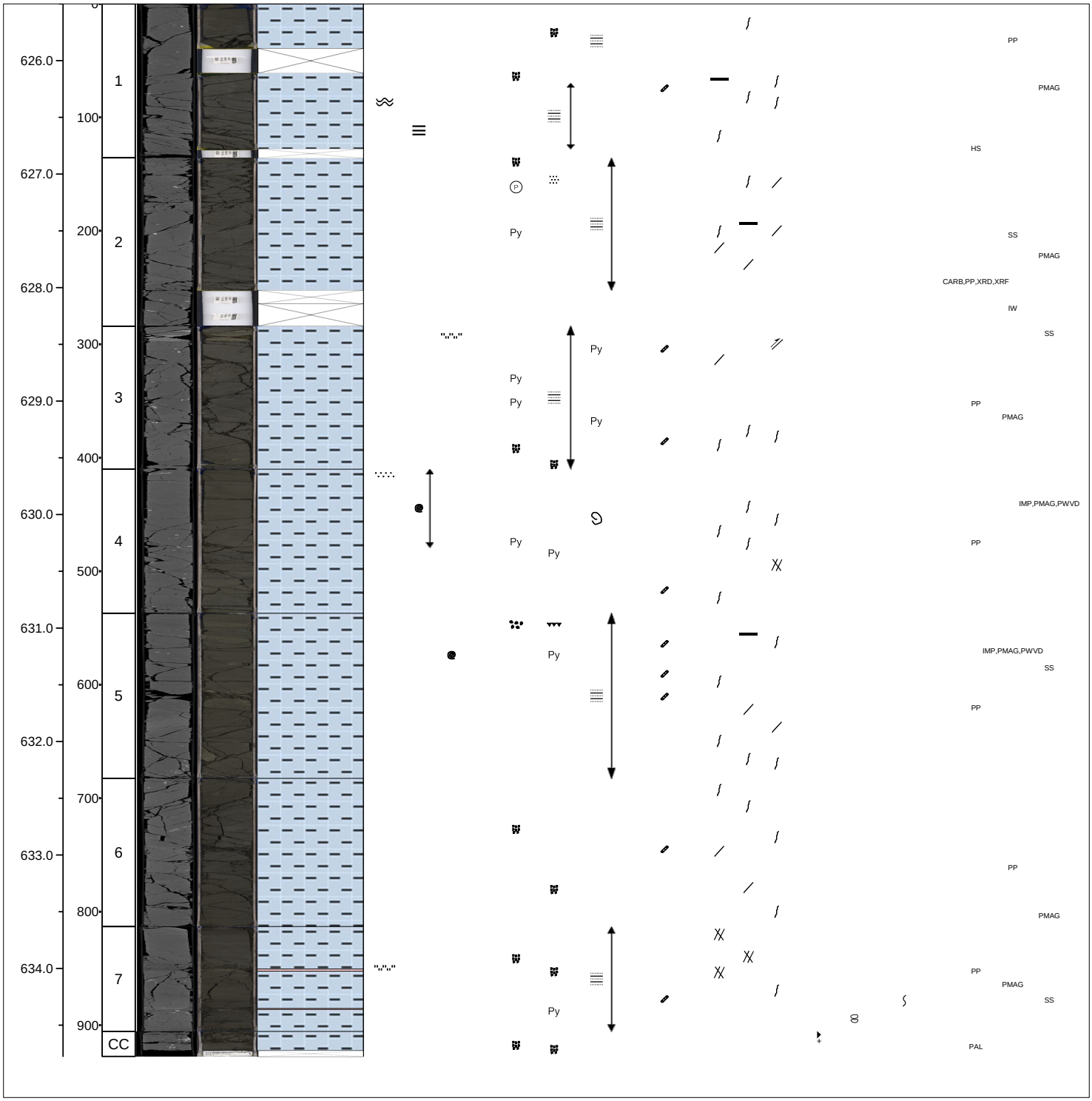
Major lithology: Olive black siliceous mudstone with subtle green banding of black lamination, pyritized burrows, inverse grading, pumice clasts, convolute bedding, high angle laminae, bioturbation, intermixed ash, and horizontal lamina sections.



Hole C0019J Core 58K, interval 625.5 to 634.775 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone material with pumice/ash intermixed, green-black banding/alterations, convolute bedding, burrows, and pyritized alterations.

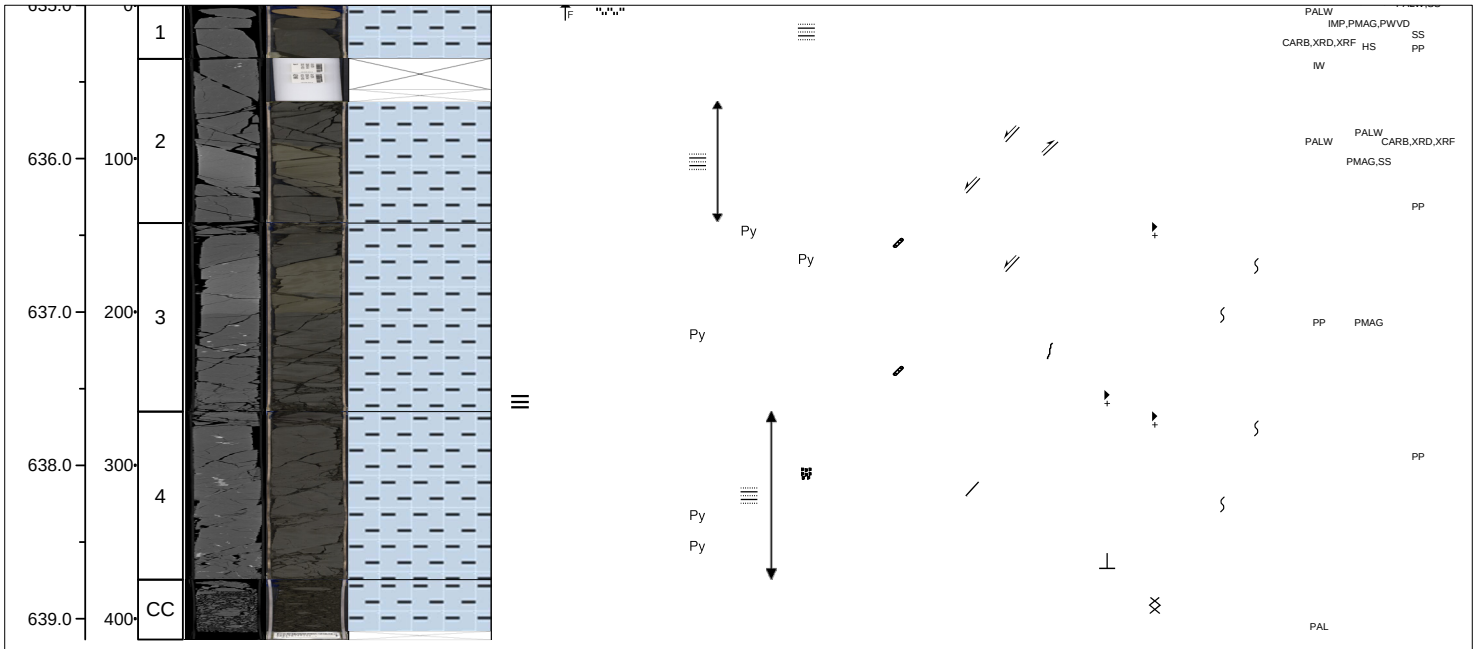
Minor lihology: Olive gray calcareous mudstone material with clay, black-green colorbanding, burrows, pyritized pebbles, and pumice (Sec 3).



Hole C0019J Core 59K, interval 635 to 639.135 m (core depth below seafloor)

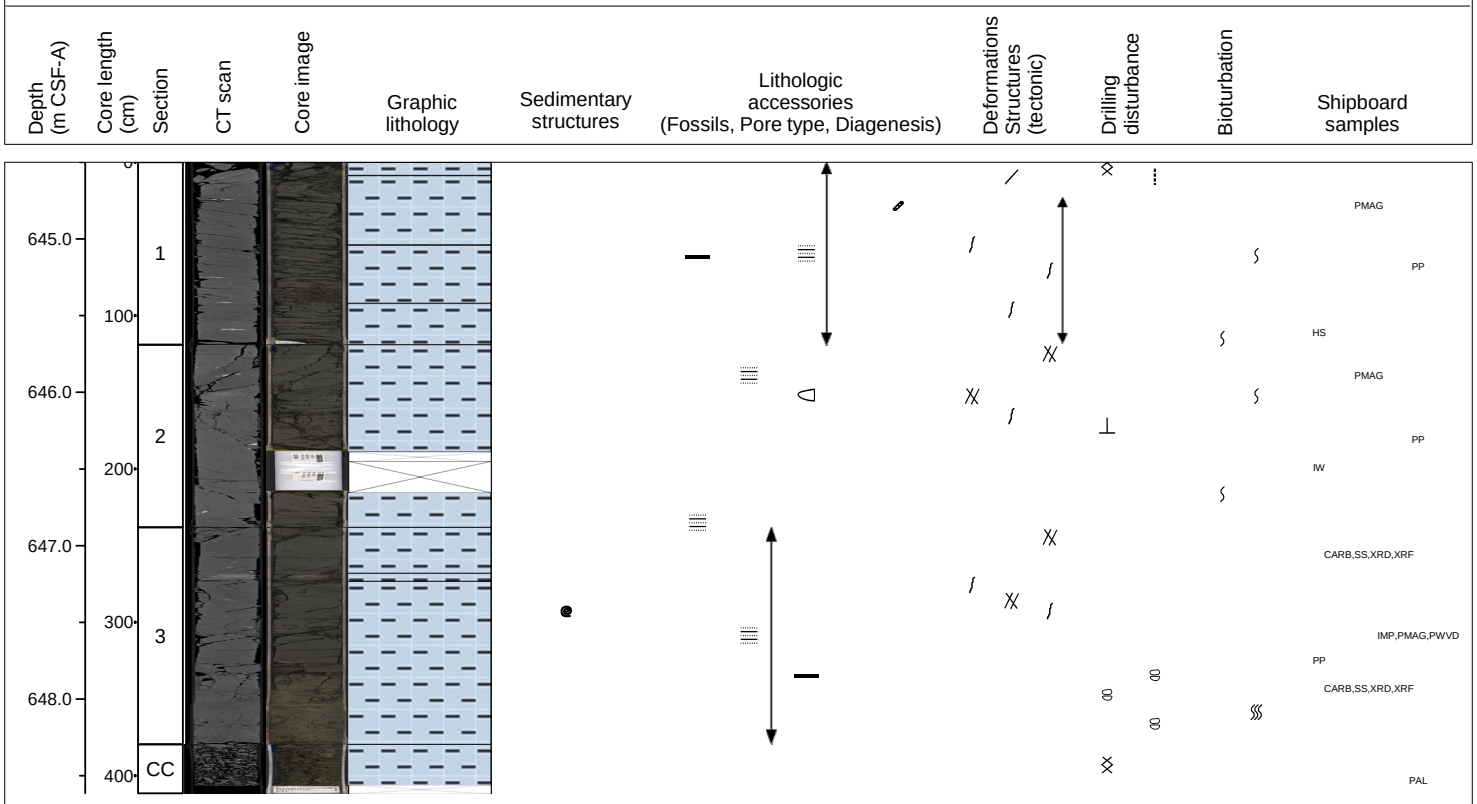
Major lithology: Olive black mudstone with green-black color banding, pumice, ash intermixed.

Minor lithology: Dull orange mudstone with sandy-silty sections, sub vertical bedding, black deformation bands, many colors, green-black color banding, fining upward grains (Sec 1). Olive gray calcareous ooze with folding ashy faults (Sec 2 and 3).



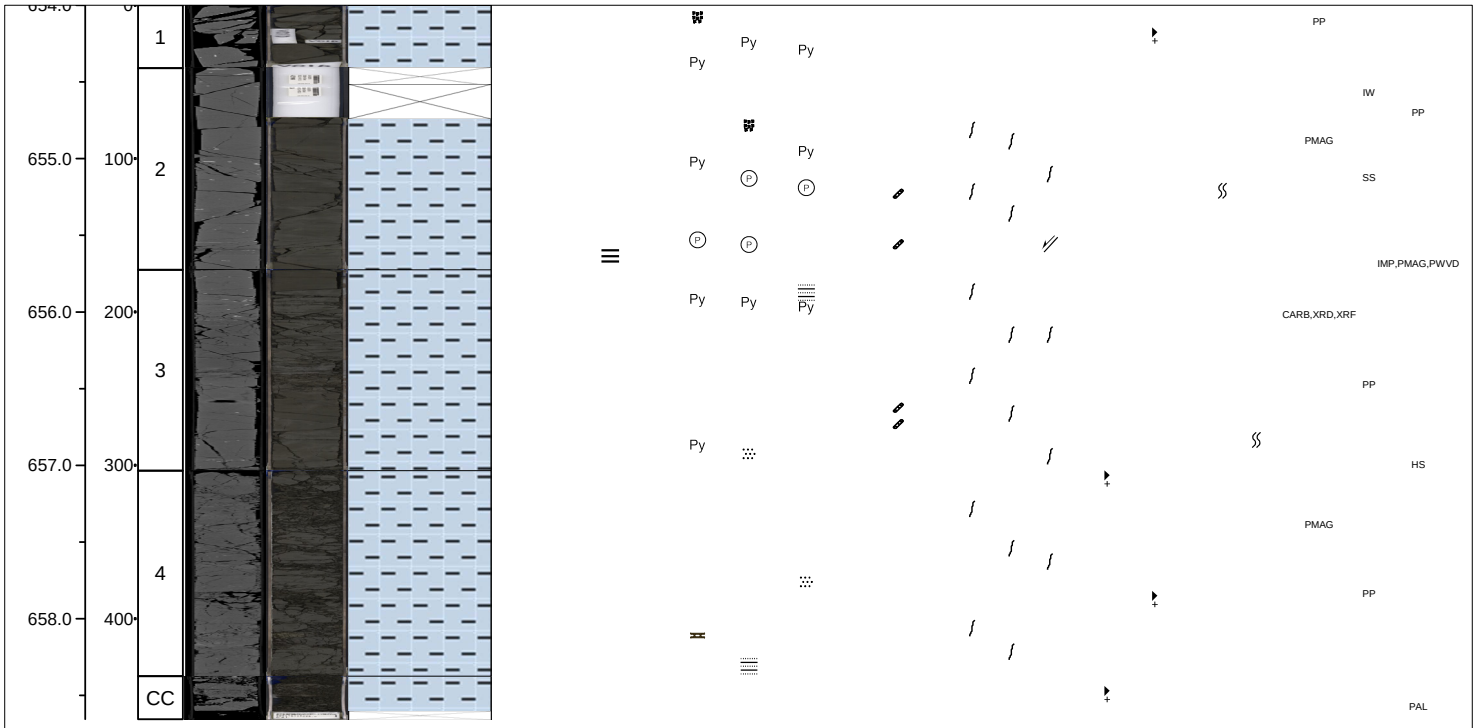
Hole C0019J Core 60K, interval 644.5 to 648.615 m (core depth below seafloor)

Major lithology: Olive black mudstone with high distubance, slight bioturbation, green-black color banding/alterations, ash, soft deformation.



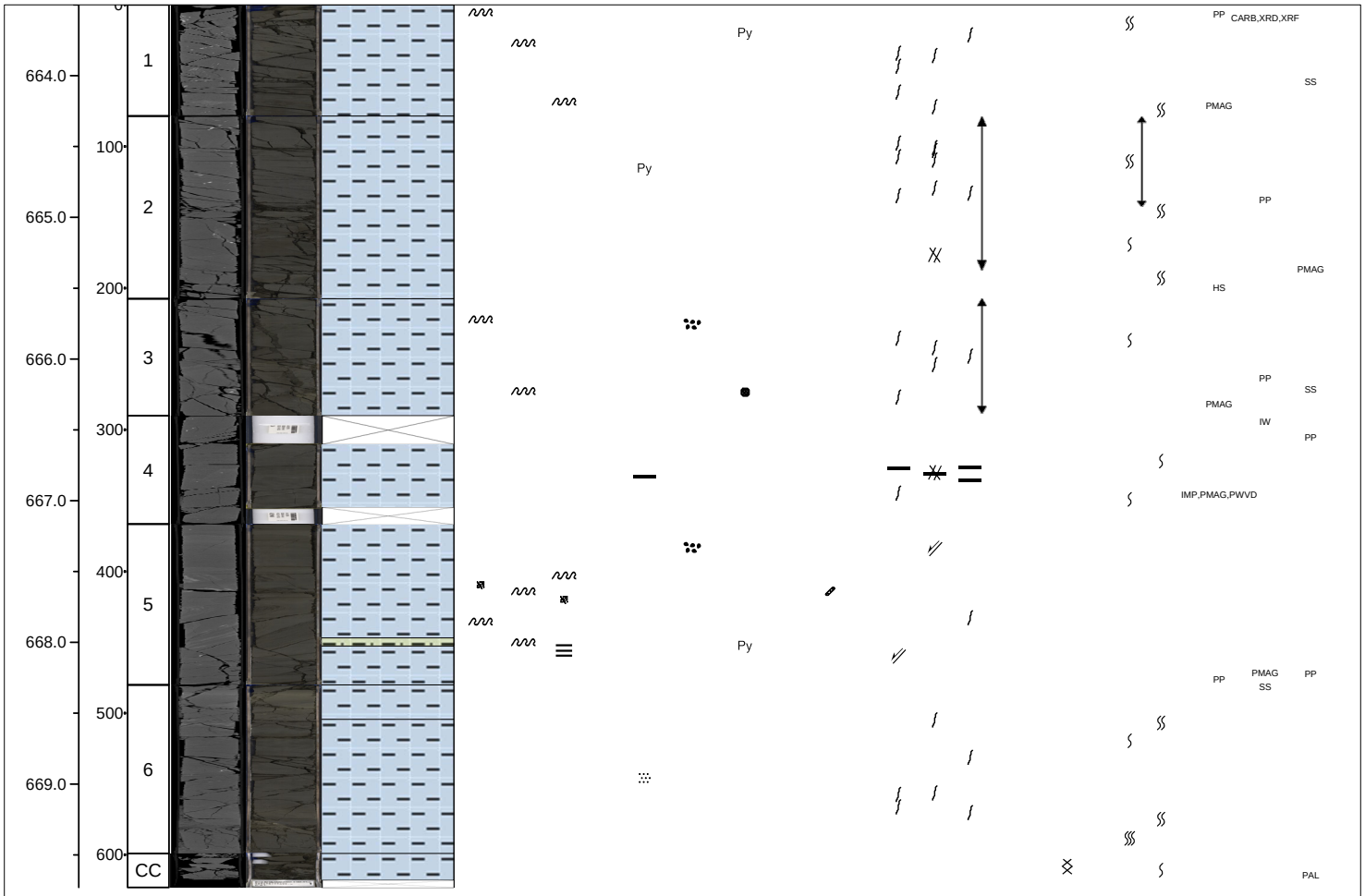
Hole C0019J Core 61K, interval 654 to 658.655 m (core depth below seafloor)

Major lithology: Olive black mudstone with disseminated pumice, pyritized clasts, some isolated burrows/bioturbation, and some deformation bands thoughout.



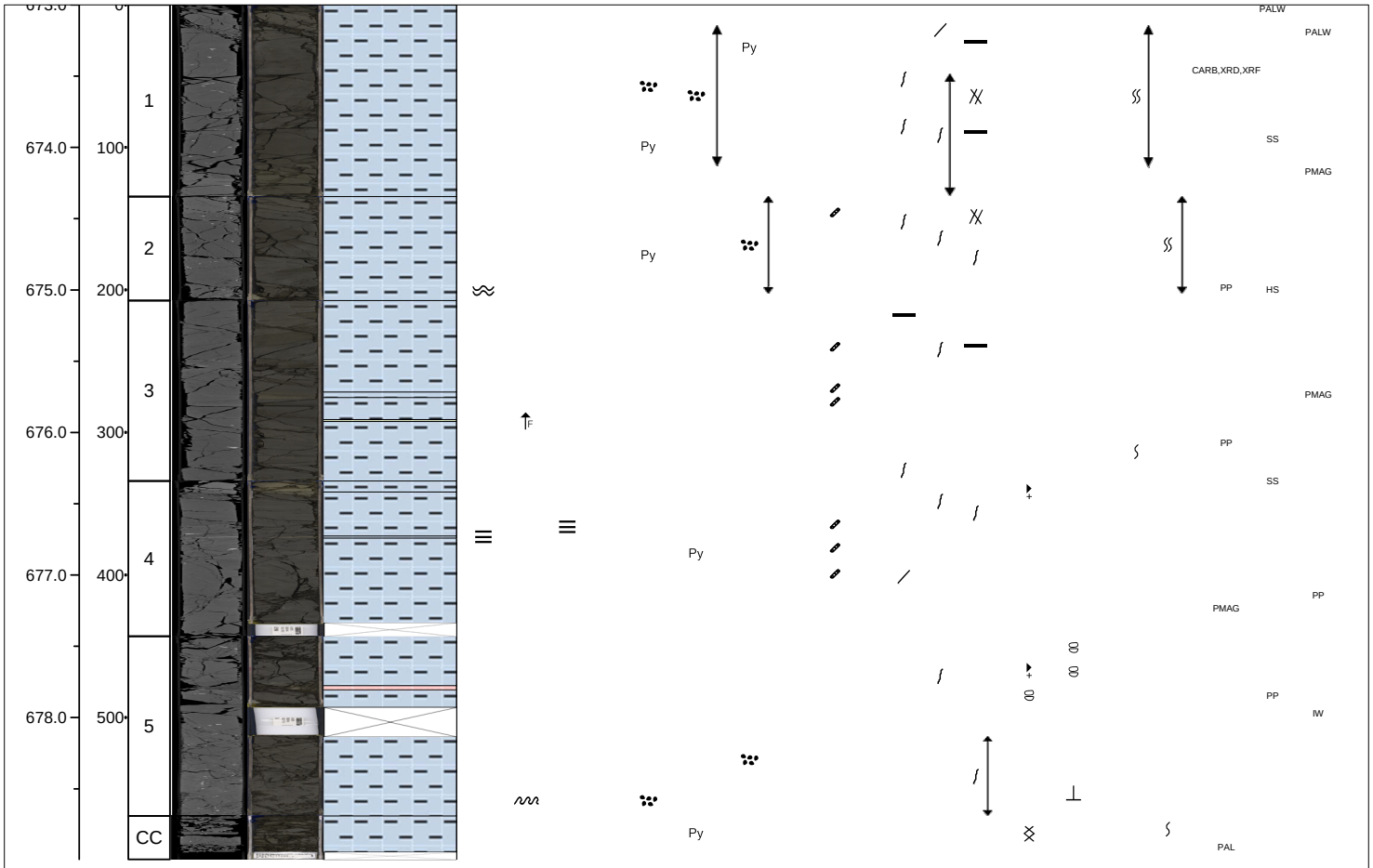
Hole C0019J Core 62K, interval 663.5 to 669.73 m (core depth below seafloor)

Major lithology: Olive gray to olive black siliceous mudstone material with bioturbation, bedding, convolute laminae, and calcareous clasts - probable slump deposit.



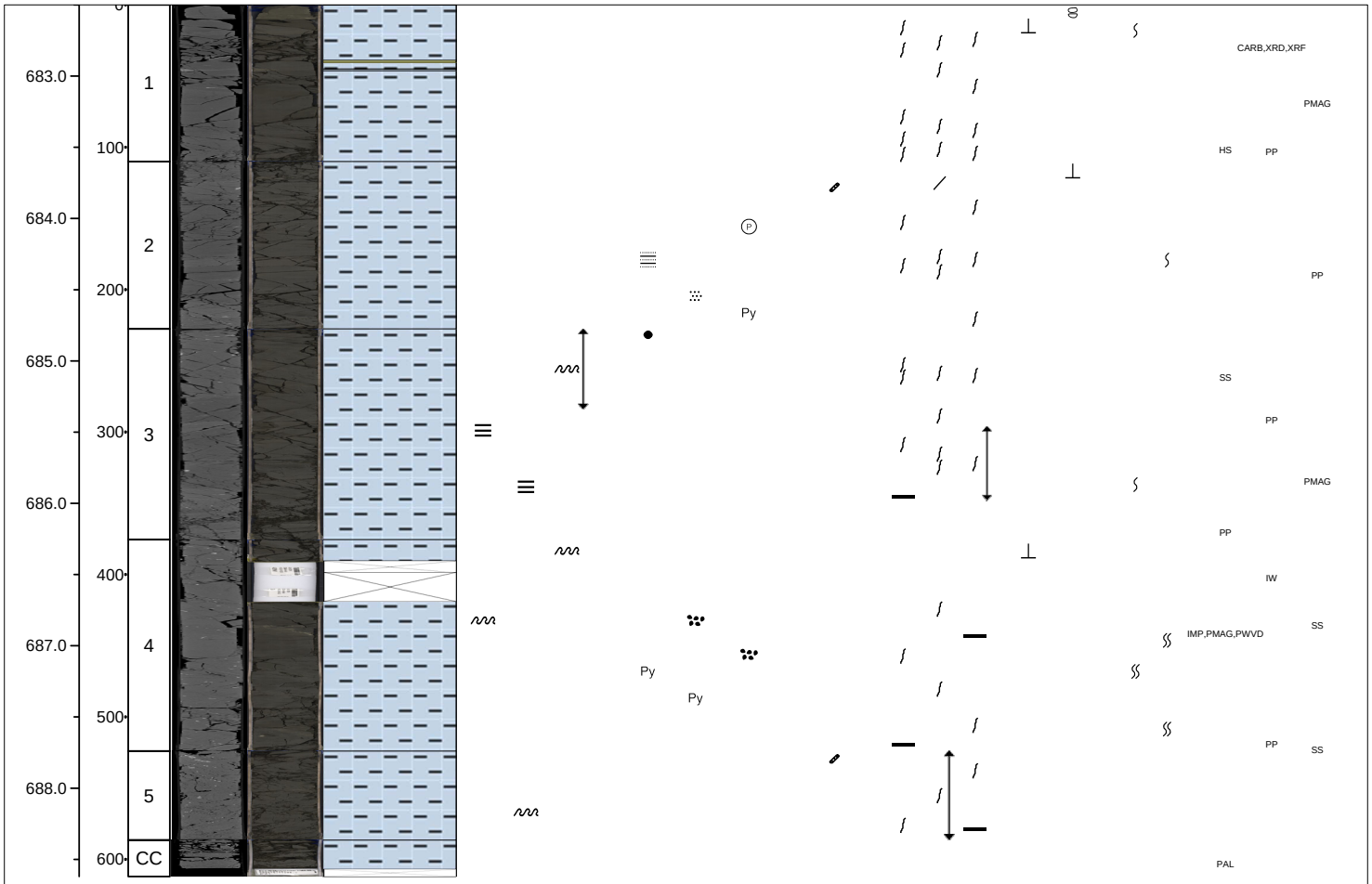
Hole C0019J Core 63K, interval 673 to 678.995 m (core depth below seafloor)

Major lithology: Olive black mudstone with moderate bioturbation and mottling throughout, occ. , pyritized burrows.



Hole C0019J Core 64K, interval 682.5 to 688.62 m (core depth below seafloor)

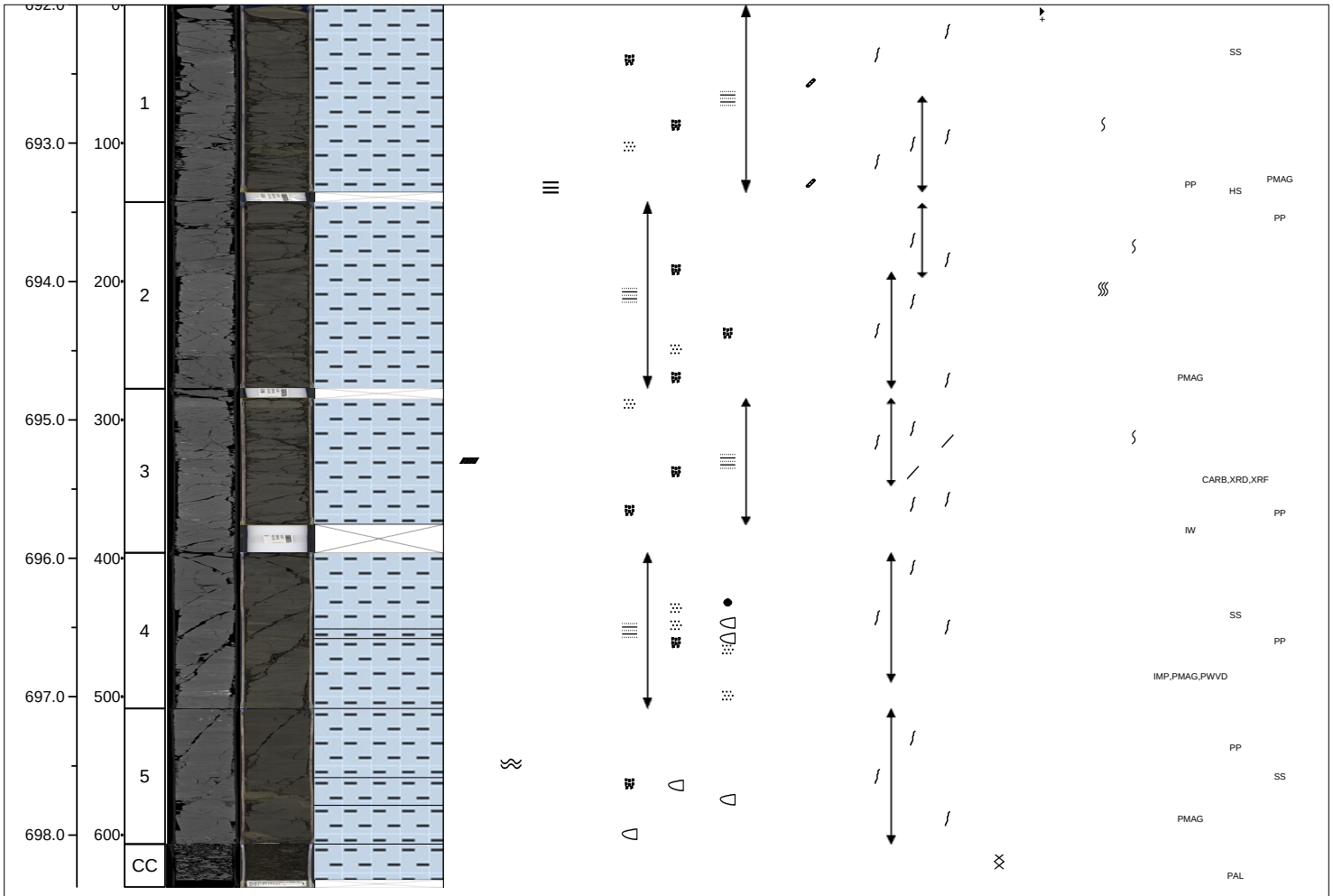
Major lithology: Olive-black mudstone, convolute bedding through most of the core, some of which is offset by possible syn-depositional (soft-sediment) faulting, variable bioturbation.



Hole C0019J Core 65K, interval 692 to 698.375 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with green-black color banding/alterations, slight bioturbation and burrows.

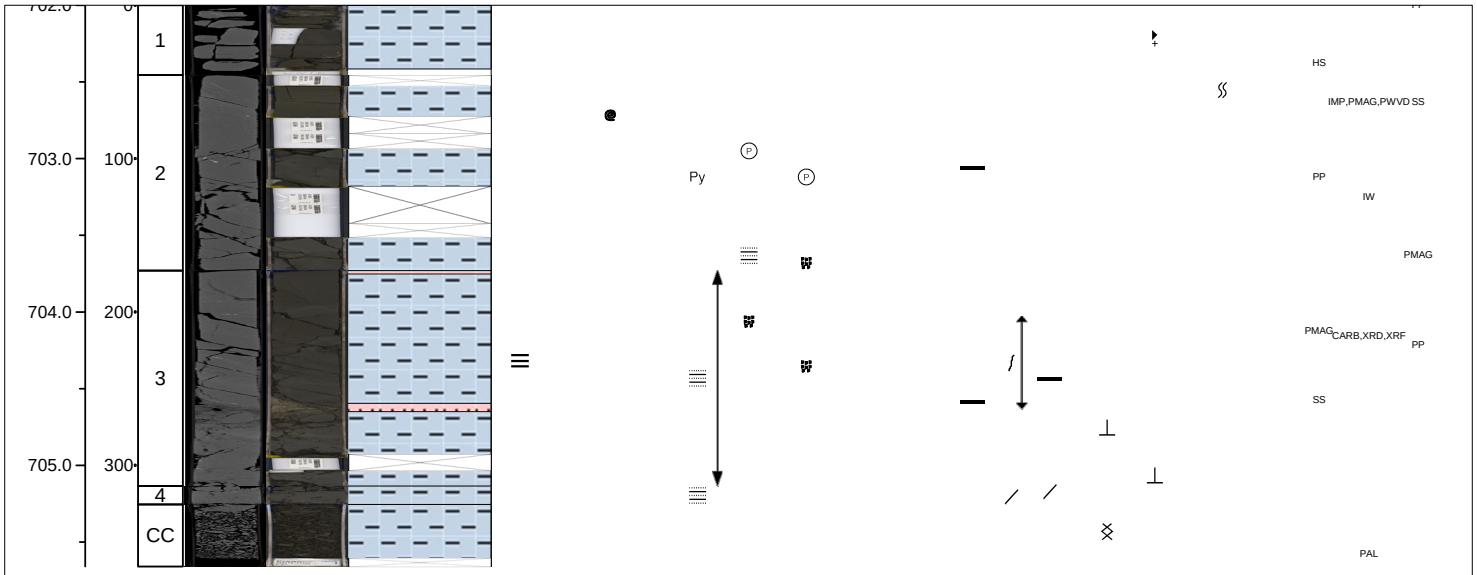
Minor lithology: Gray to Olive black clay layer (Sec 1 103-110cm, Sec 2 103-110 cm). Squached pumice layer, crystal filled fracture sections.



Hole C0019J Core 66K, interval 702 to 705.66 m (core depth below seafloor)

Major lithology: Olive black to black siliceous mudstone with high-angle black bedding and color banding, some pumice layers, and bioturbation.

Minor lithology and specify features: Highly disturbed olive black, subangular disaggregated pieces with pummice and clay intermixed (Sec 1). Ash layer (Sec 3 84-93 cm). Black mudstone with color banding/deformation (Sec 4).

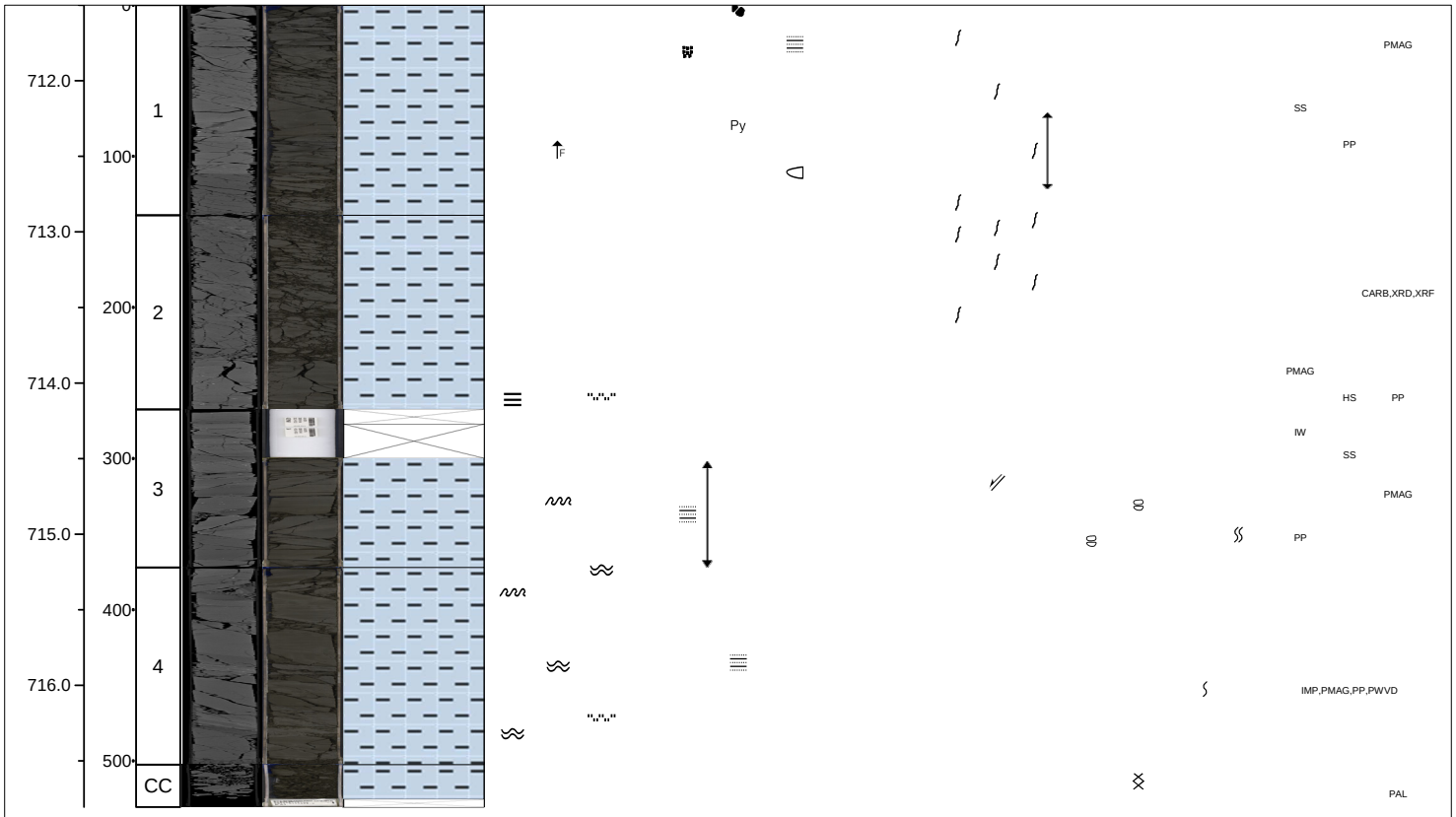


Hole C0019J Core 67K, interval 711.5 to 716.805 m (core depth below seafloor)

Mass Tranport Deposits(MTD)

Major lithology: Olive black mudstone with silight bioturebation, subhorizontal to medium-angle wavy laminae and bedding which are composed of the coarer sandstones, wispy black bands, and wispy disseminated ash (+slumping structure).

Minor lithology: Granule grade clasts of black material(Sec 1). Heavily disturbed from drilling(Sec 2). Slumping(Sec 3 64-70 cm, Sec 4 10-22 cm).

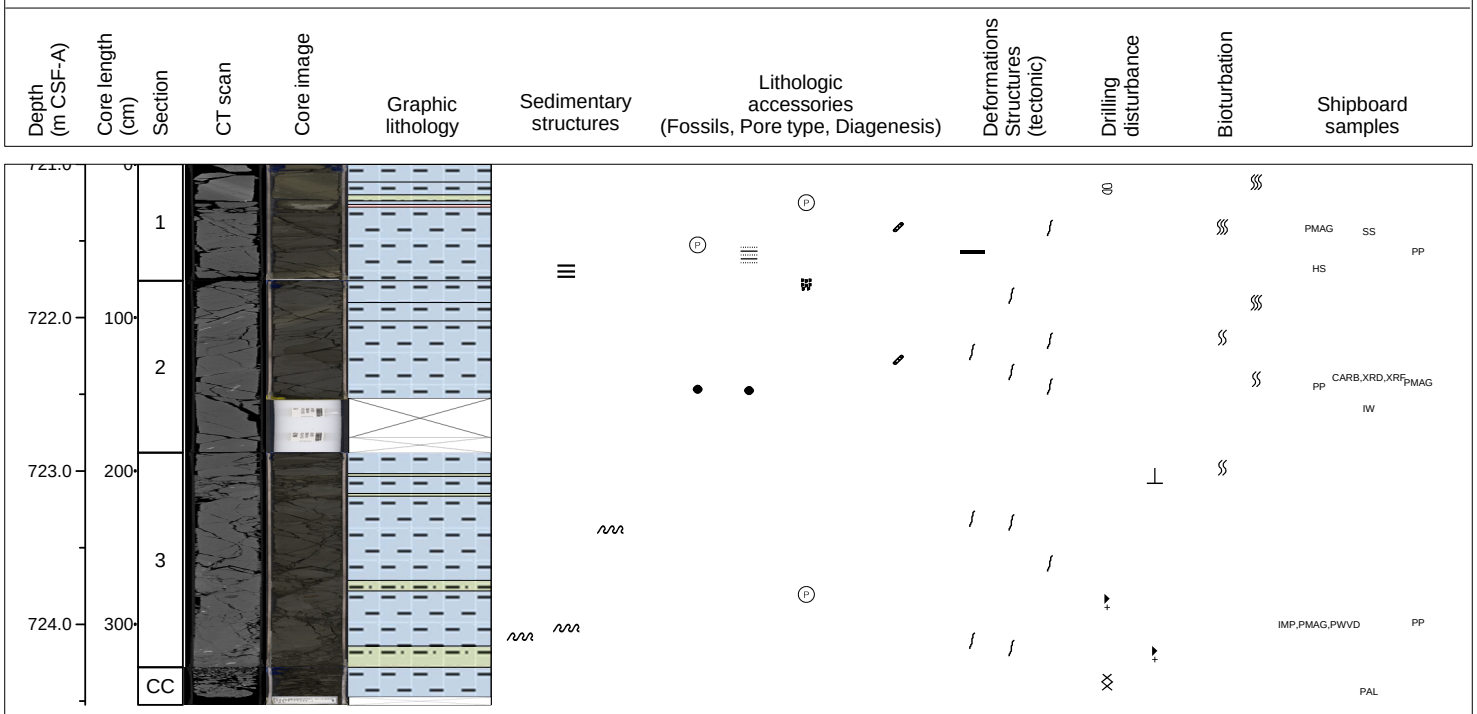


Hole C0019J Core 68K, interval 721 to 724.525 m (core depth below seafloor)

Mass Tranport Deposits(MTD)

Major lithology: Olive black siliceous mudstone with medium-angle wispy bedding and significant bioturbation throughout.

Minor lithology: An inclined band of grayish olive mudstone (Sec 1at 10-20 cm). Band of greenish olive mudstone (inclined). Inclined bedding (Sec 2 at around 13-25cm). Convolute laminations in places (Sec 3 at ~30-70 cm).

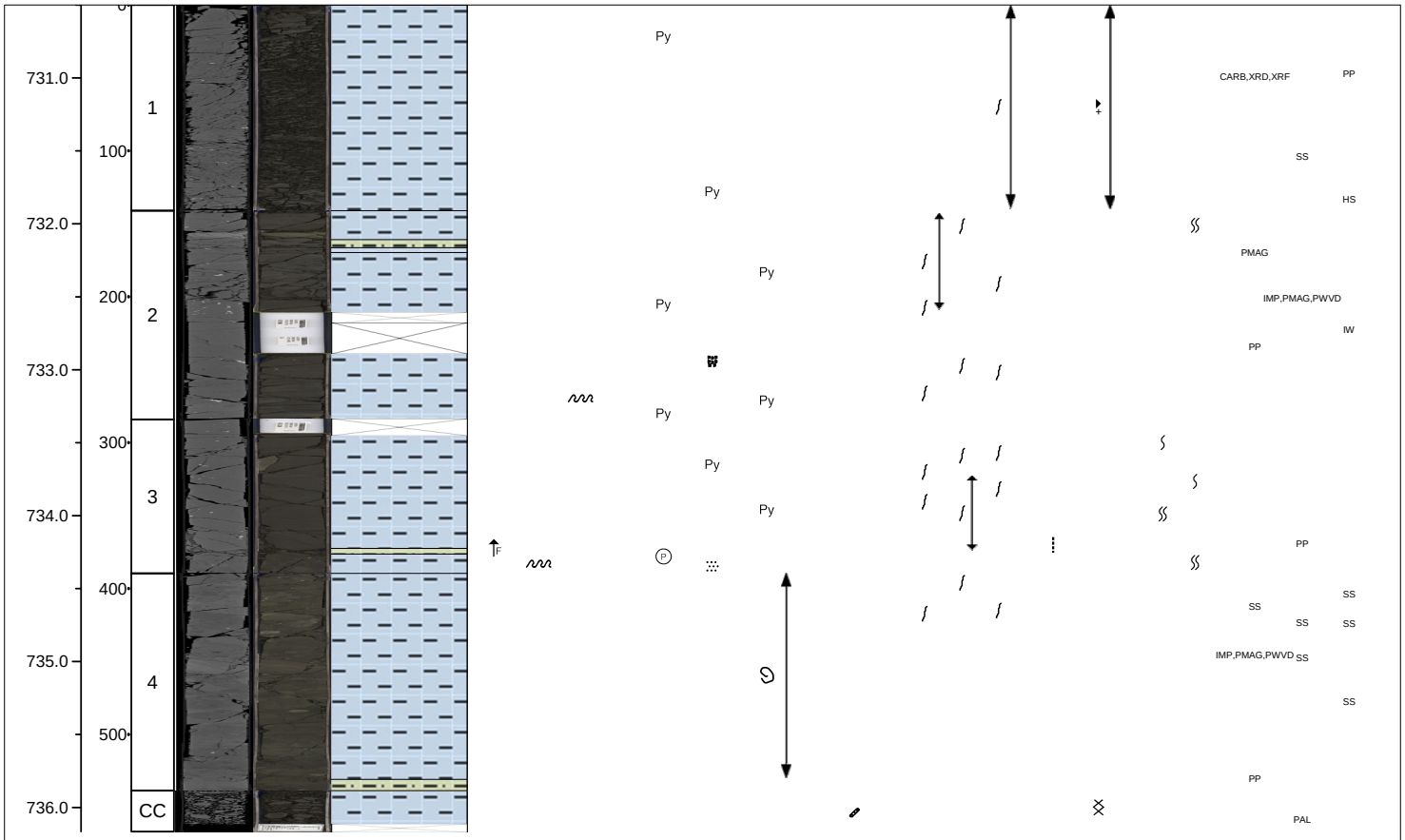


Hole C0019J Core 69K, interval 730.5 to 736.165 m (core depth below seafloor)

Mass Tranport Deposits(MTD)

Major lithology: Olive black siliceous mudstone with convolute bedding, medium to high angle bedding w/pyritized and/or aligned burrows. Completely obscured by drilling brecciation (Sec 1).

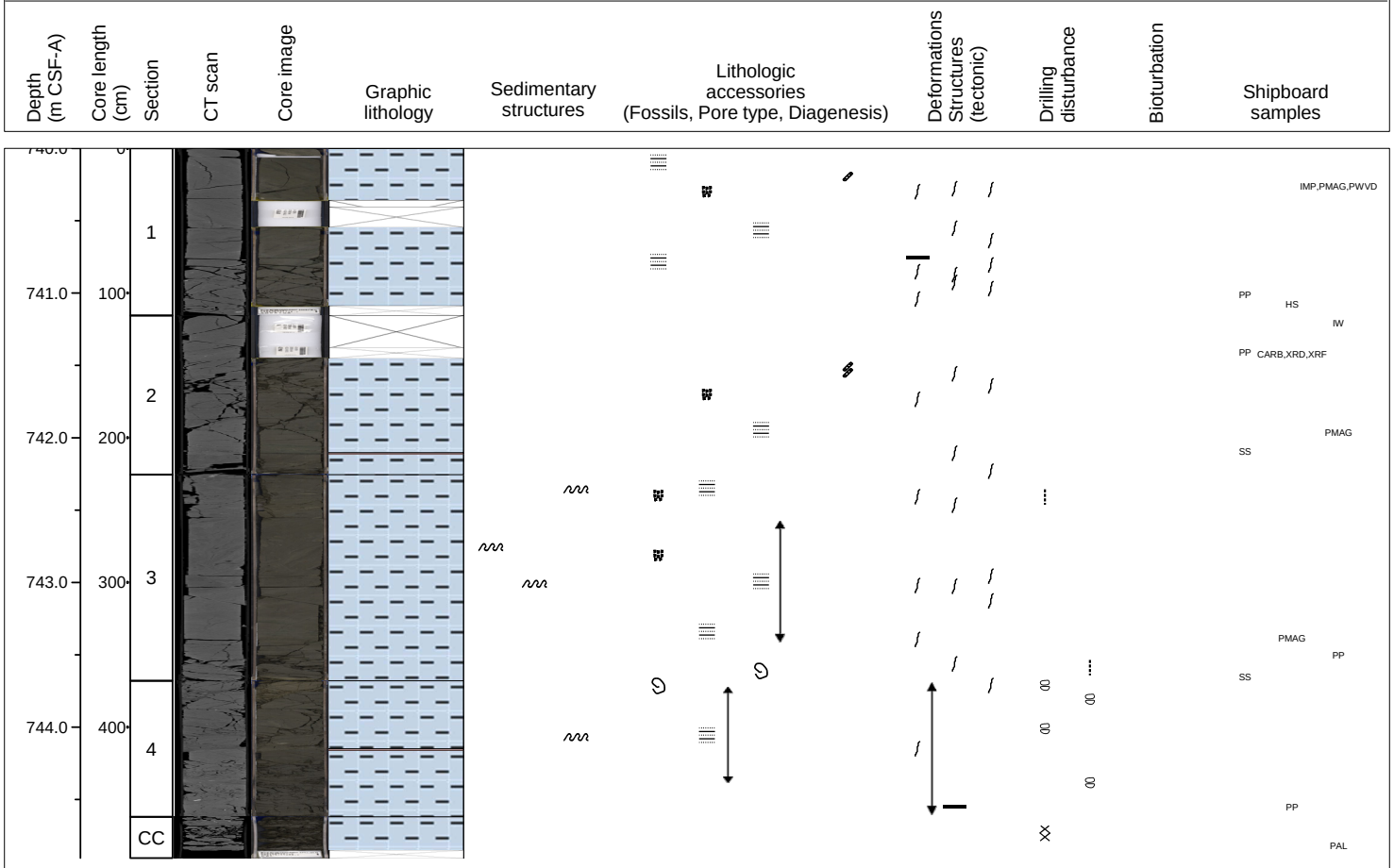
Minor lithology: Muddy silt (coaser than major lithology; Sec 2 19.8 cm). Greenish olive calcareous mudstone (probably a clast; Sec 2 25.3 cm). Conglomerate, with a range of sub-rounded to angular clasts up to 20 cm diameter, in a muddy matrix. Clasts include a range of marine sedimentary rocks, similar to those observed in the units above, but also a small chert granule, among other rock types. This is interpreted as a muddy debrite (Sec 4).



Hole C0019J Core 70K, interval 740 to 744.905 m (core depth below seafloor)

Major lithology: Olive black siliceous mudstone with scattered pumice clasts throughout, color banding, bioturbation.

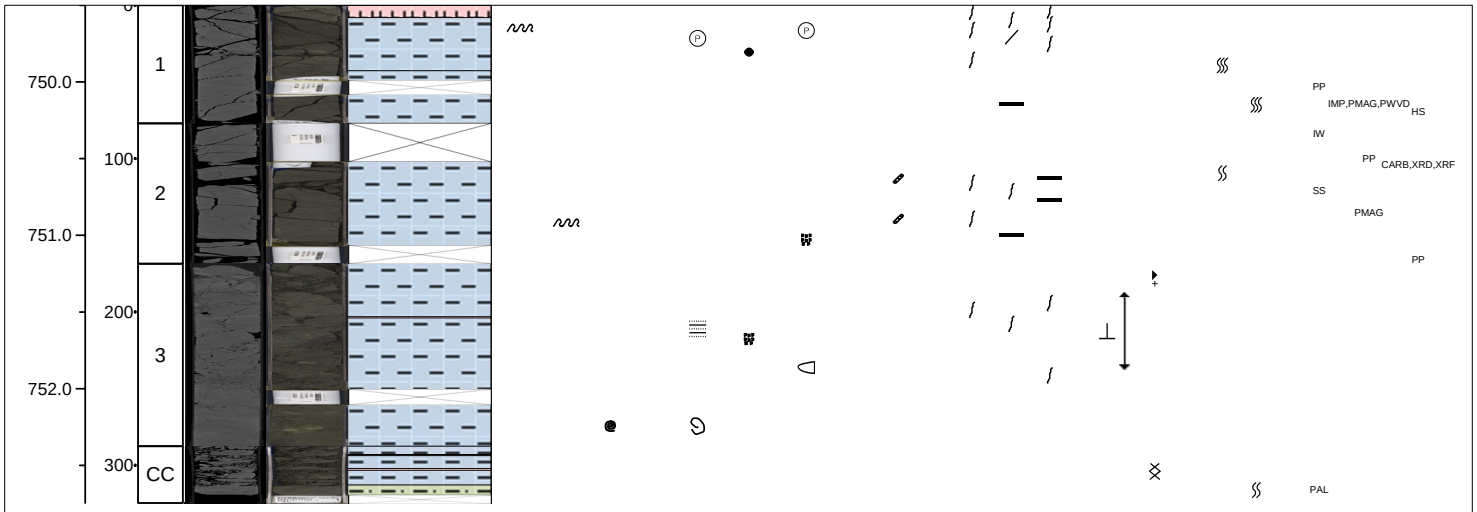
Minor Lithology: Occasionally features significant convolute and overturned bedding, indicative of slumping.



Hole C0019J Core 71K, interval 749.5 to 752.745 m (core depth below seafloor)

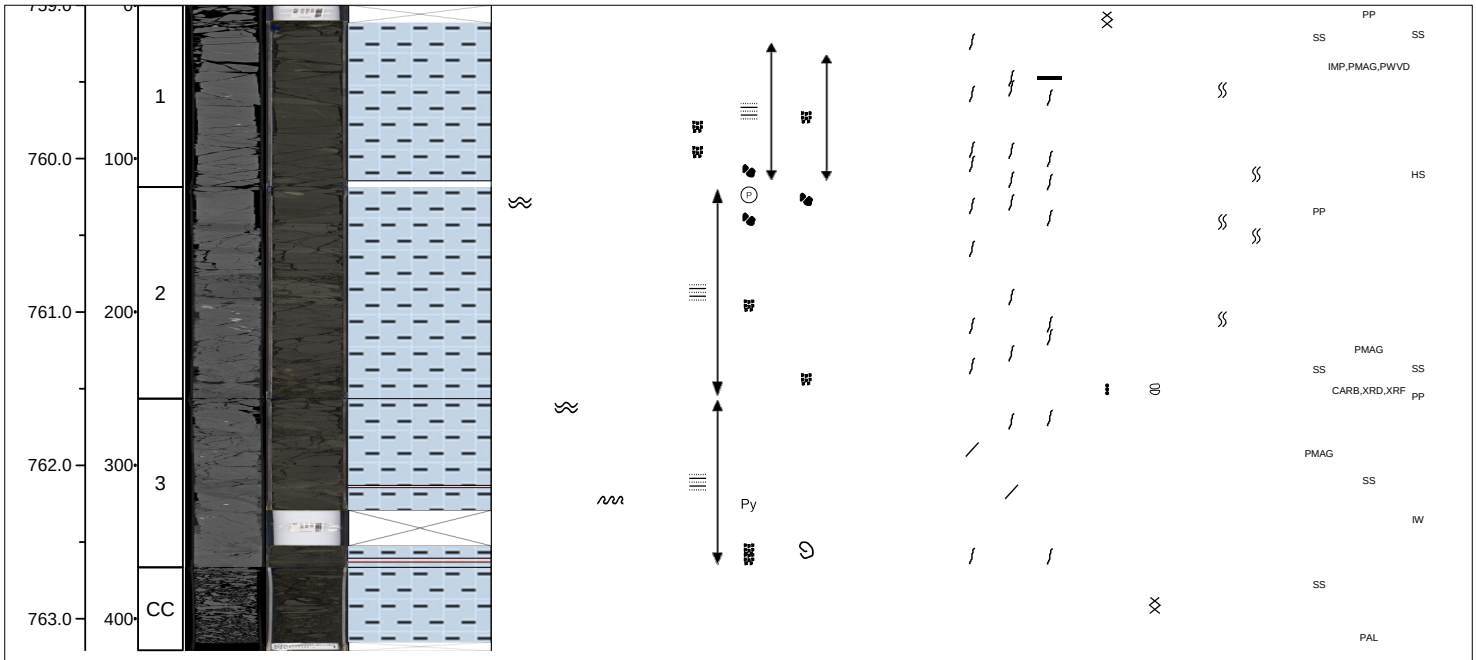
Major lithology: Olive black and gray siliceous mudstone with color banding (greenish gray and brown) mainly in burrows, silt bedding and convolute bedding - slump.

Minor lithology: Congolmerate with squashed ash clasts/layers, often altered to chlorite (Sec 3 form 92.3 cm).



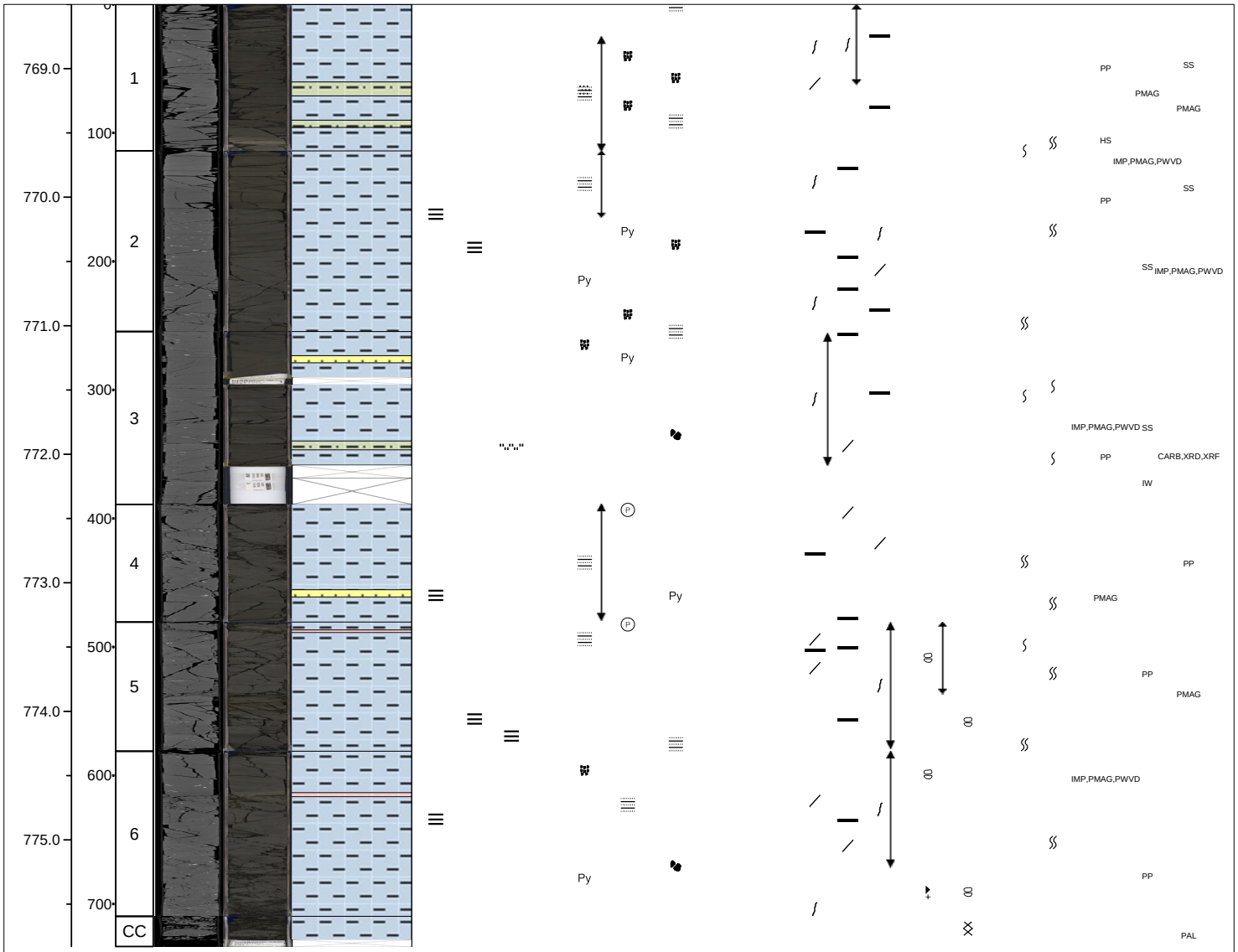
Hole C0019J Core 72K, interval 759 to 763.205 m (core depth below seafloor)

Major lithology: Olive black mustone with wavy or convolute bedding with black-green colour banding, intermixed ash, crystallised granules, pebbles, pumice and bioturbation.



Hole C0019J Core 73K, interval 768.5 to 775.83 m (core depth below seafloor)

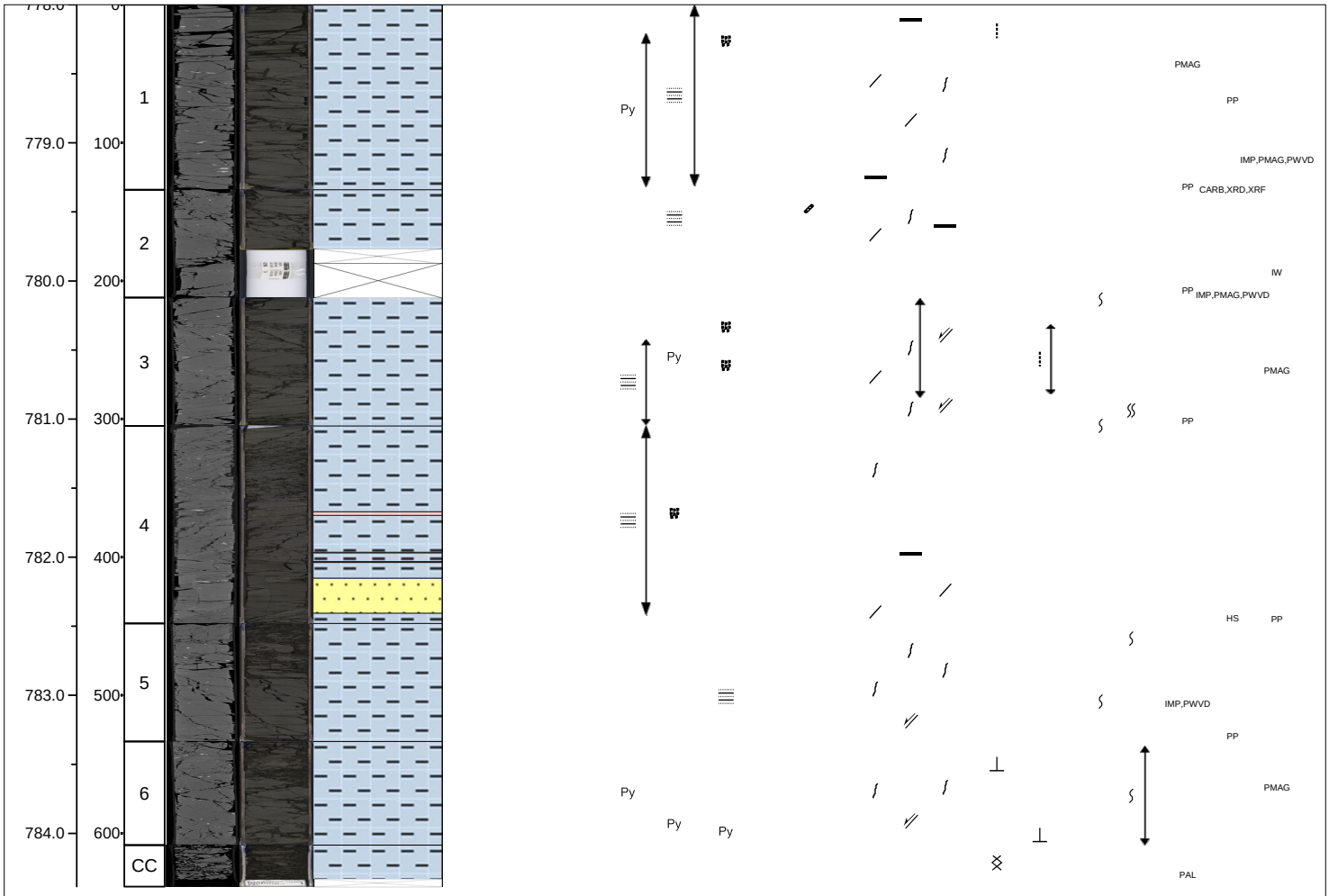
Major lithology: Olive black - olive gray mudstne material with bioturbation, green-black colour banding, coarse laering, squashed or pyritized pumice and ash intermixed.



Hole C0019J Core 74K, interval 778 to 784.385 m (core depth below seafloor)

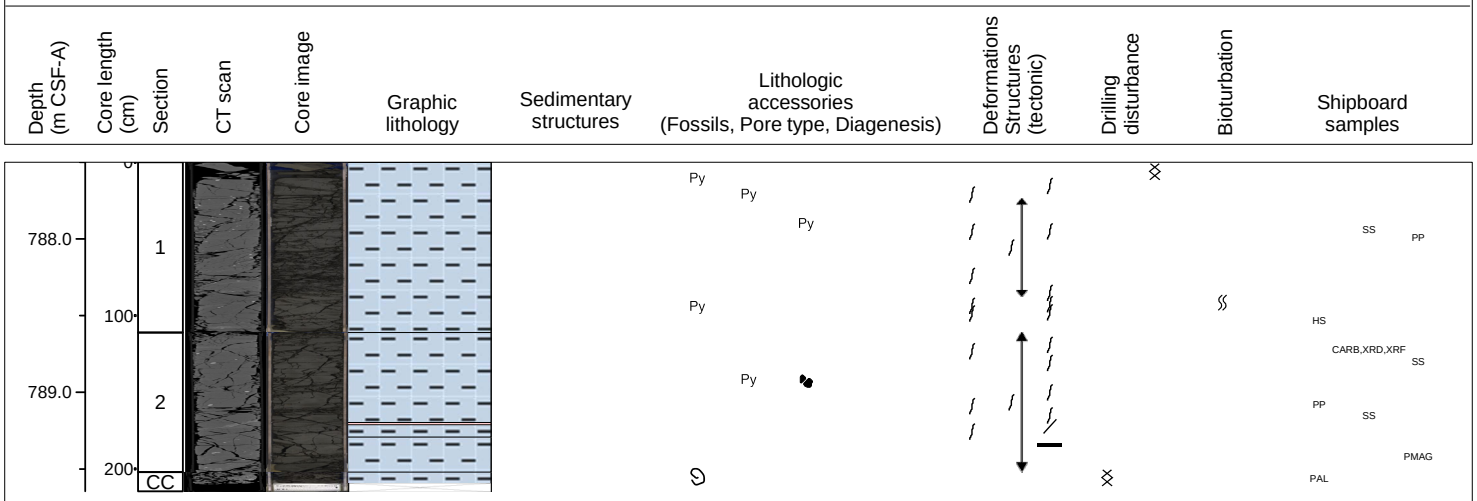
Major lithology: Olive black mudstone with green-black colour banding/alterations, pyritizing pumice clasts, bioturbation patches.

Minor lithology: Black mudstone with colour banding, bioturbation, pyritized pebbles, coarse laminae (from Sec 5).



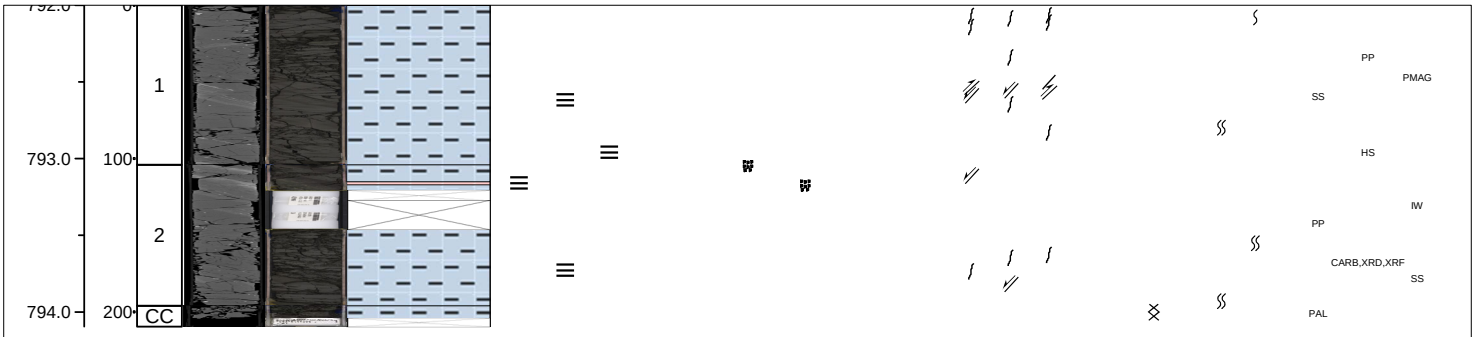
Hole C0019J Core 75K, interval 787.5 to 789.645 m (core depth below seafloor)

Major lithology: Olive black mudstone with brownish pyriteized clasts and greenish sandy layer.



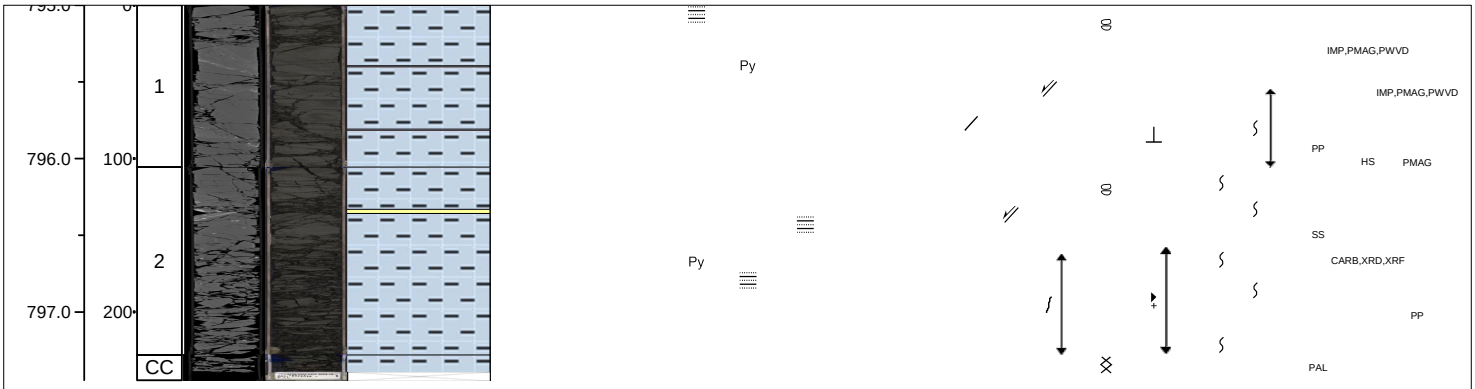
Hole C0019J Core 76K, interval 792 to 794.095 m (core depth below seafloor)

Major lithology: Olive black mudstone with faulted patches of silt with laminations at the top - some mild to moderate bioturbation towards top, and green clays.



Hole C0019J Core 77K, interval 795 to 797.445 m (core depth below seafloor)

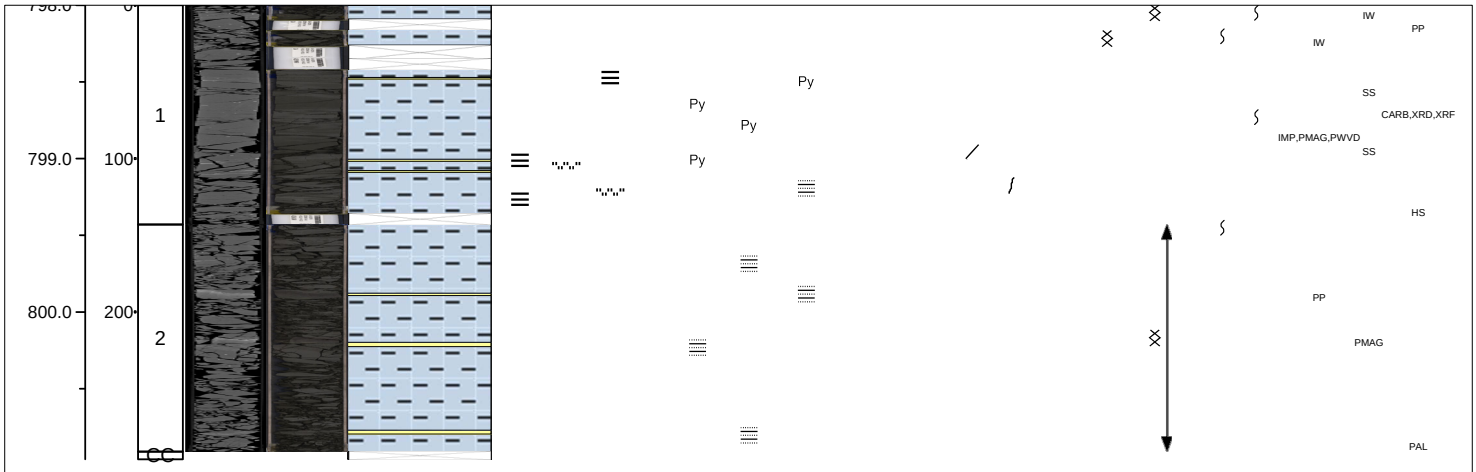
Major lithology: Olive black mudstone with coarse (basically sandy) bedding, black-green color banding, bioturbation, pyrite, and some dispersed ash.



Hole C0019J Core 78K, interval 798 to 800.96 m (core depth below seafloor)

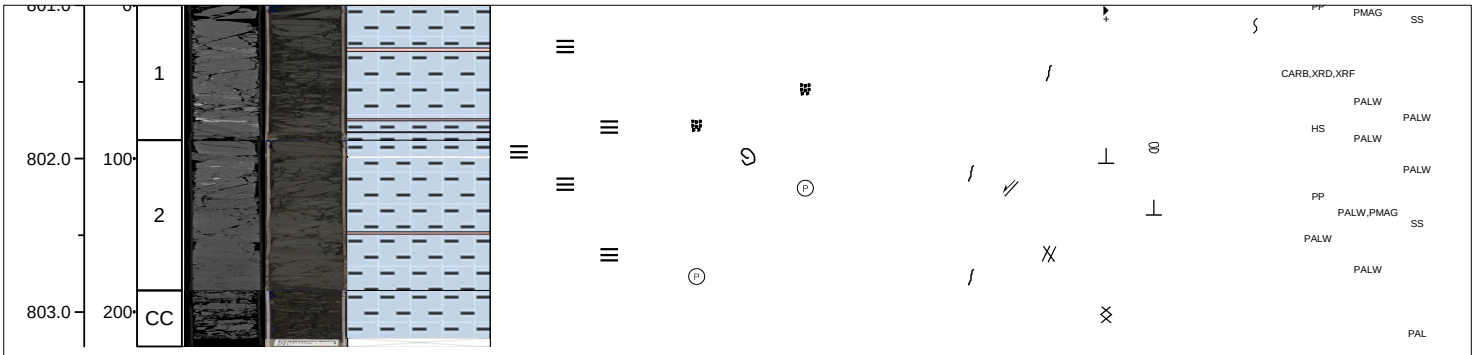
Major lithology:Olive black mudstone with coarse-fine sand laminae, bioturbation, pumice, and ash layers.

Minor lithology: Gray ashy mud with laminae.



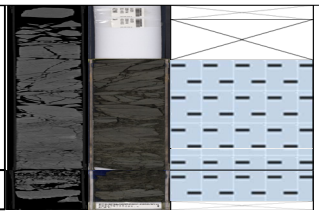
Hole C0019J Core 79K, interval 801 to 803.225 m (core depth below seafloor)

Major lithology: Olive black mudstone with intermixed sandy laminae, colour banding, pumice and ash.



Hole C0019J Core 80K, interval 804 to 805.33 m (core depth below seafloor)

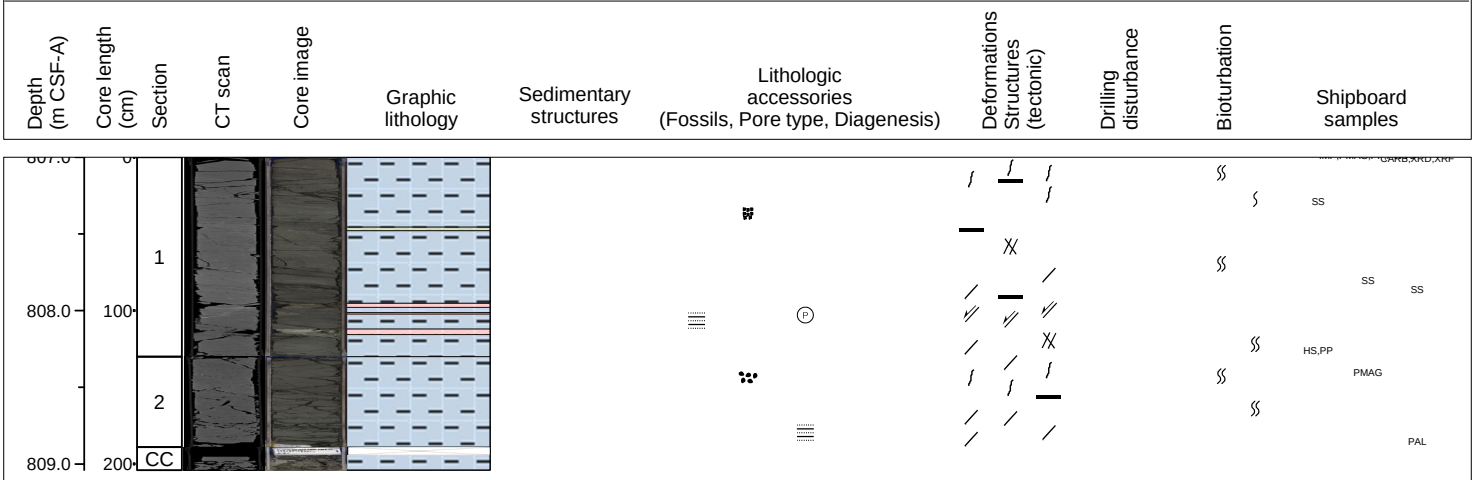
Major lithology: Olive black mudstone with intermixed sandy laminae, colour banding, pumice and ash.

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
804.0	0	1									IW
											PP CARB,XRD,XRF
											PMAG
											SS
805.0	100	CC									HS
											PAL

Hole C0019J Core 81K, interval 807 to 809.04 m (core depth below seafloor)

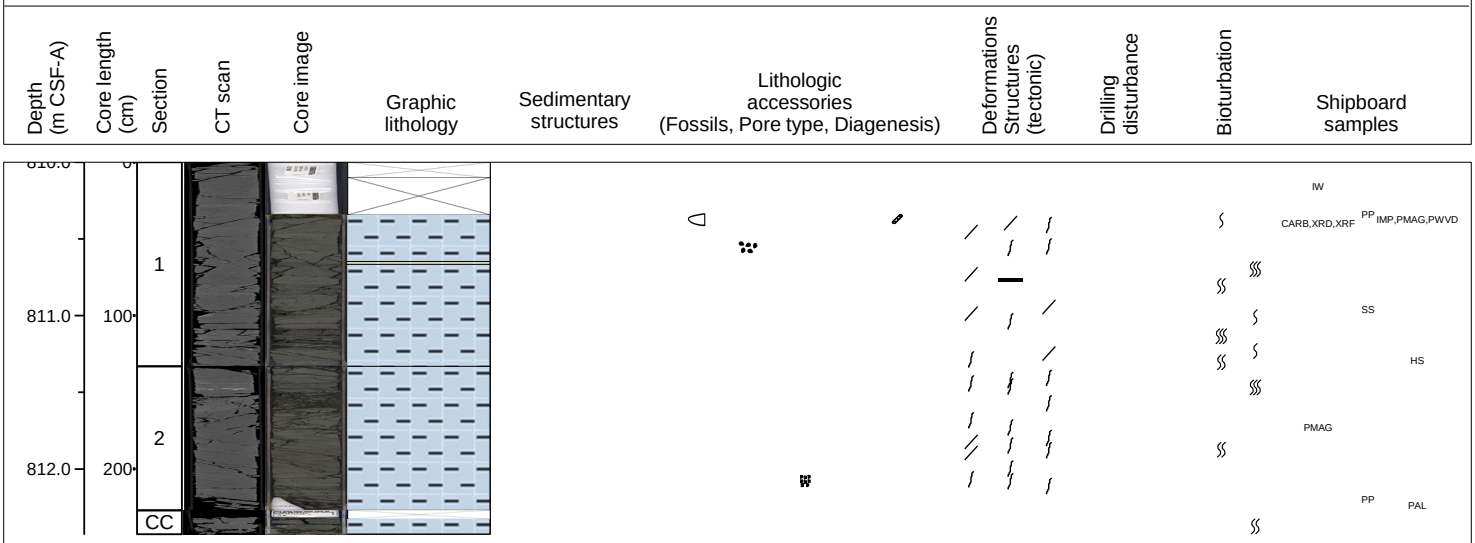
Major lithology: Dark greenish gray to gray mudstone, darker beds with higher silt content, heavily bioturbated in some areas, mottled olive black mudstone and greenish color banding.

Minor lithology: Black mudstone.



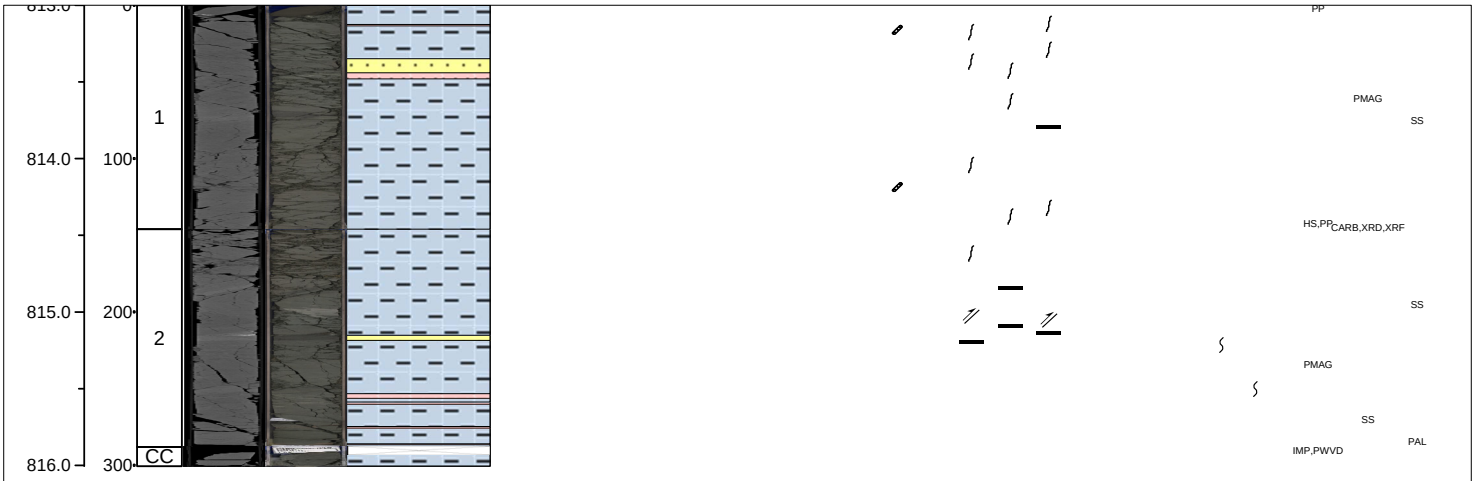
Hole C0019J Core 82K, interval 810 to 812.425 m (core depth below seafloor)

Major lithology: Greenish gray to gray mudstone, extensively bioturbated, significant ash components (ash ebeds, pumice, dispersed ash).



Hole C0019J Core 83K, interval 813 to 816.005 m (core depth below seafloor)

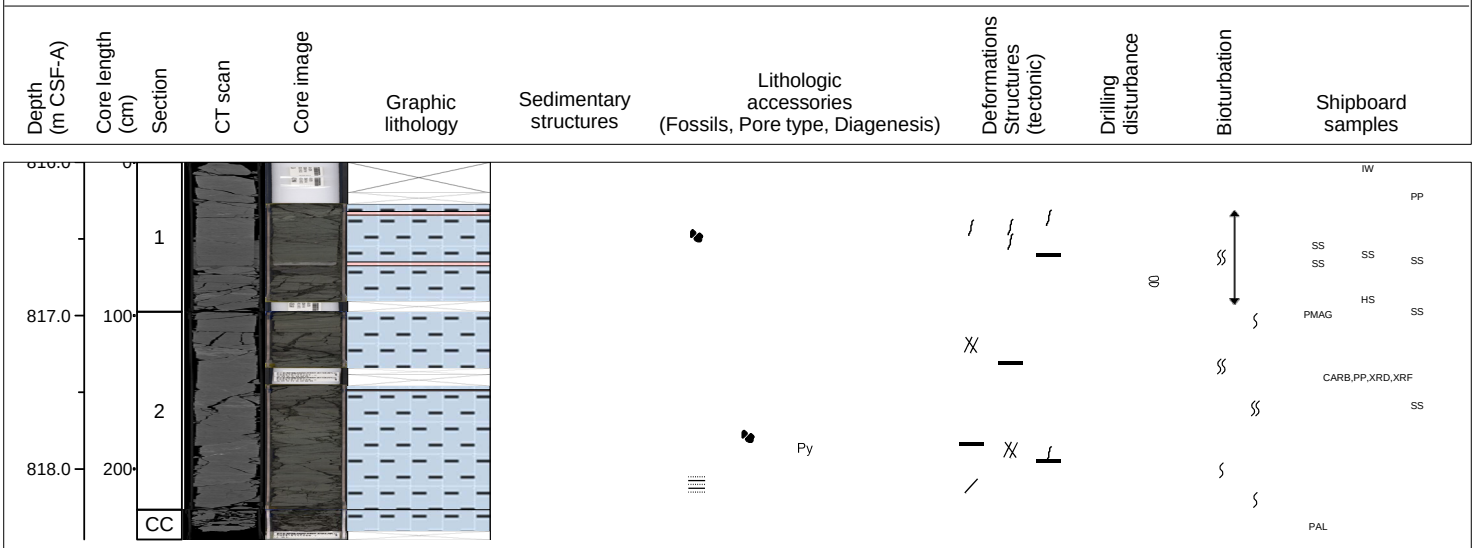
Major lithology: Gray to gray green mudstone with ash, bioturbation, burrows, color banding and fine sandy laminae.



Hole C0019J Core 84K, interval 816 to 818.46 m (core depth below seafloor)

Major lithology: Gray mudstone with clasts, pyrite, lenses and greenish color banding.

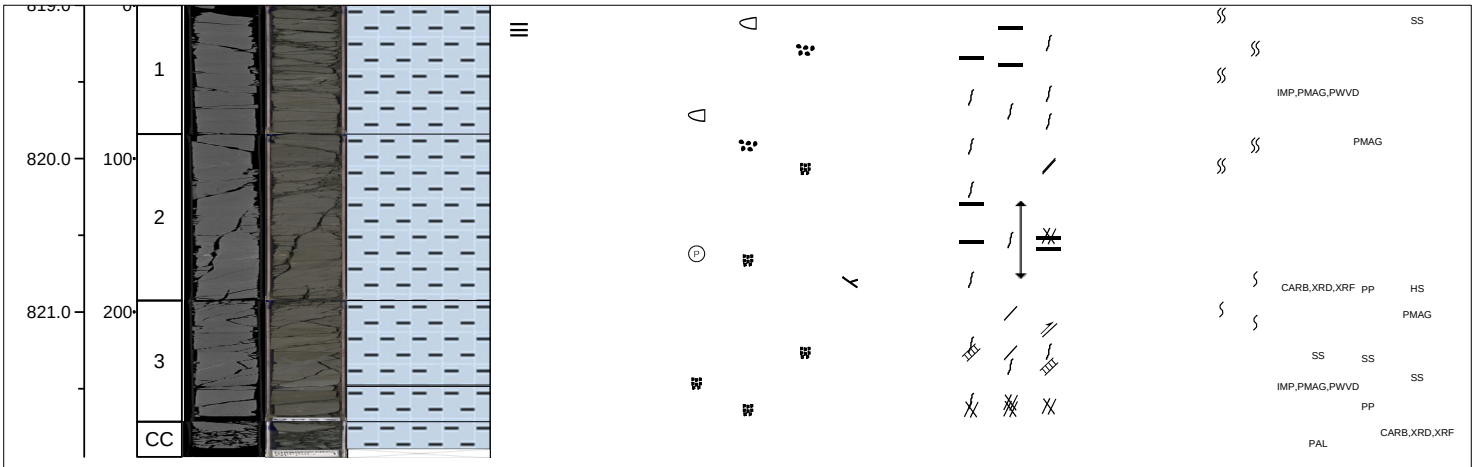
Minor lithology: Olive black mudstone with moderate bioturbated ash layering.



Hole C0019J Core 85K, interval 819 to 821.945 m (core depth below seafloor)

Major lithology:Greenish gray (occ. bluish gray) to gray mudstone.

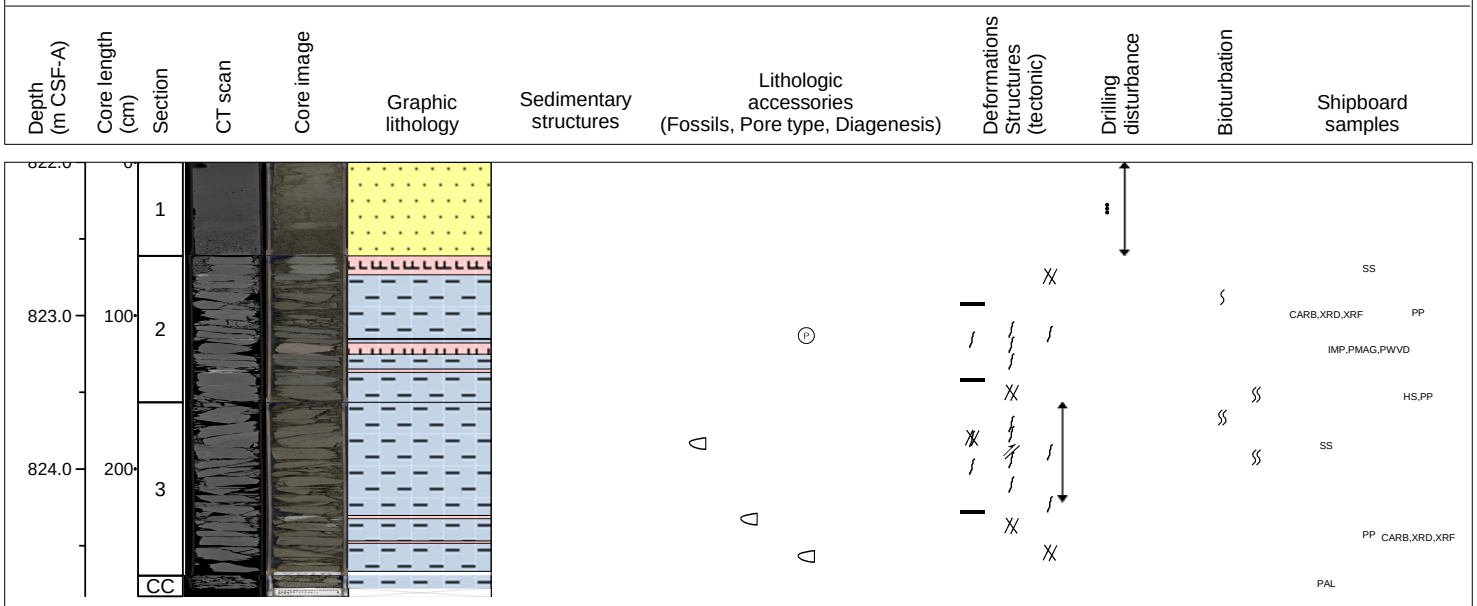
Minor lithology: Abundant veins and mineral filled fractures of a green-blue colour, which are at least partly calcite (Sec 3).



Hole C0019J Core 86K, interval 822 to 824.83 m (core depth below seafloor)

Major lithology: Grayish olive loose mudstone at Sec 1 and greenish gray mudstone Sec 2, and dark grayish yellow mudstone with burrows from Sec 3.

Minor lithology: Appears as coarse grained to fine grained sandstone sequence but this is almost certainly fine drilling breccia/material collapsed into the hole (Sec 1). Light browish ash patch or layer (Sec 2).



Hole C0019J Core 87K, interval 825 to 827.03 m (core depth below seafloor)

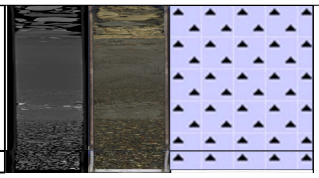
Major lithology: Color banded clay and chert.

Detail features: Brown-gray and bluish gray mudstone (0-59 cm), overlying dark brown, orange, yellow and black clays (59-110 cm) and pale yellow, laminated chert. The clay and chert show extensive evidence of shear deformation (Sec 2). Brown gray and bluish gray mudstone(Sec 2).

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
825.0	0										
		1									SS PALW PP
											PP IW PMAG HS
826.0	100	2									CARB,XRD,XRF SS PALW SS XRD SS PALW XRD PP PALW XRD CARB,XRD,XRF SS PALW PALW SS CARB,XRD,XRF CARB,XRD,XRF CARB,XRD,XRF PAL SS PALW
827.0	200	CC									

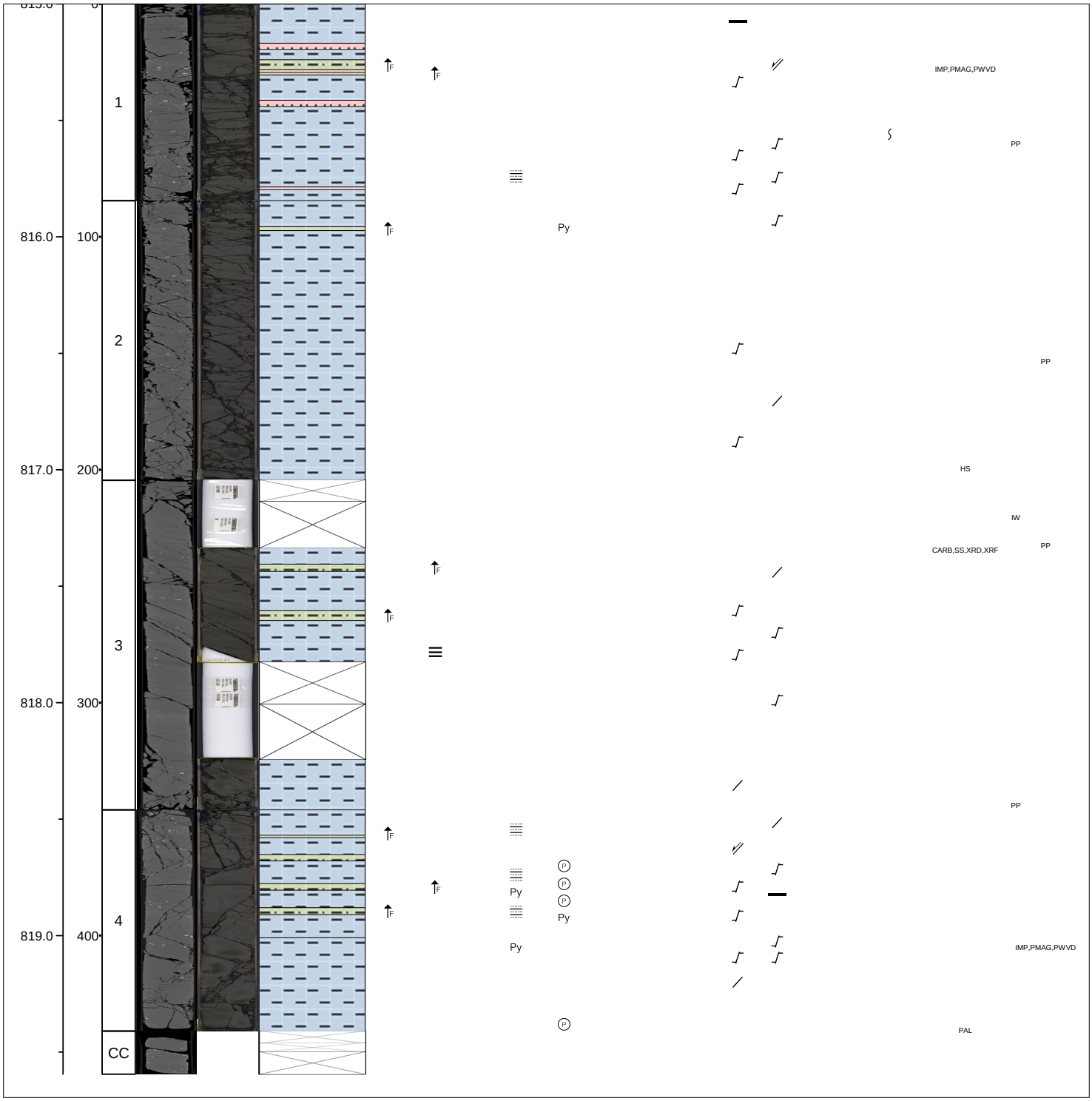
Hole C0019J Core 88K, interval 828 to 829.09 m (core depth below seafloor)

Rest of section - rubble

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
828.0	0	1									HS,PP SS SS SS
829.0	100	CC									PAL

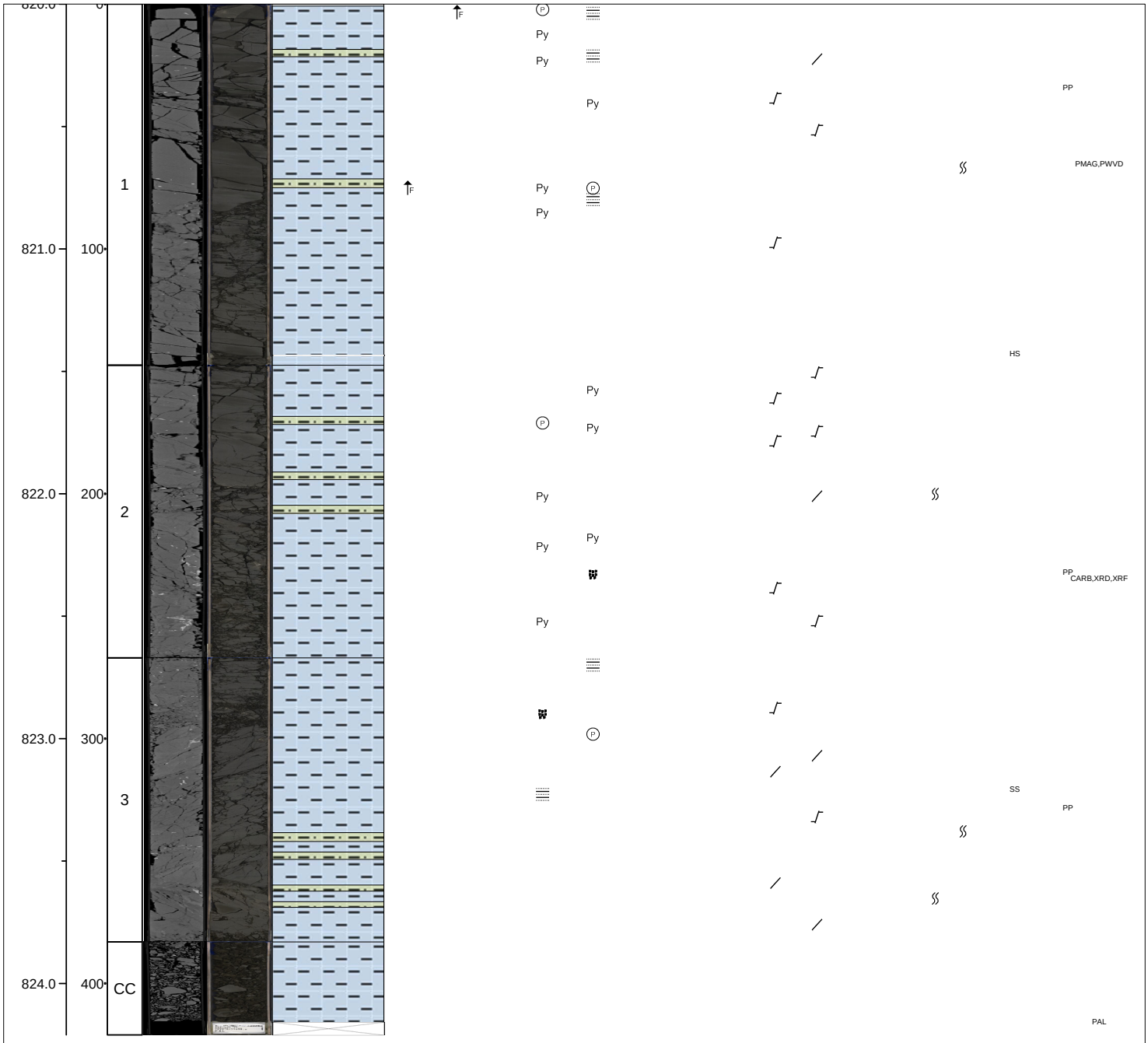
Hole C0019K Core 1K, interval 815 to 819.595 m (core depth below seafloor)

Summary: Olive black mudstone with fining upwards silt bands, and green colour banding.



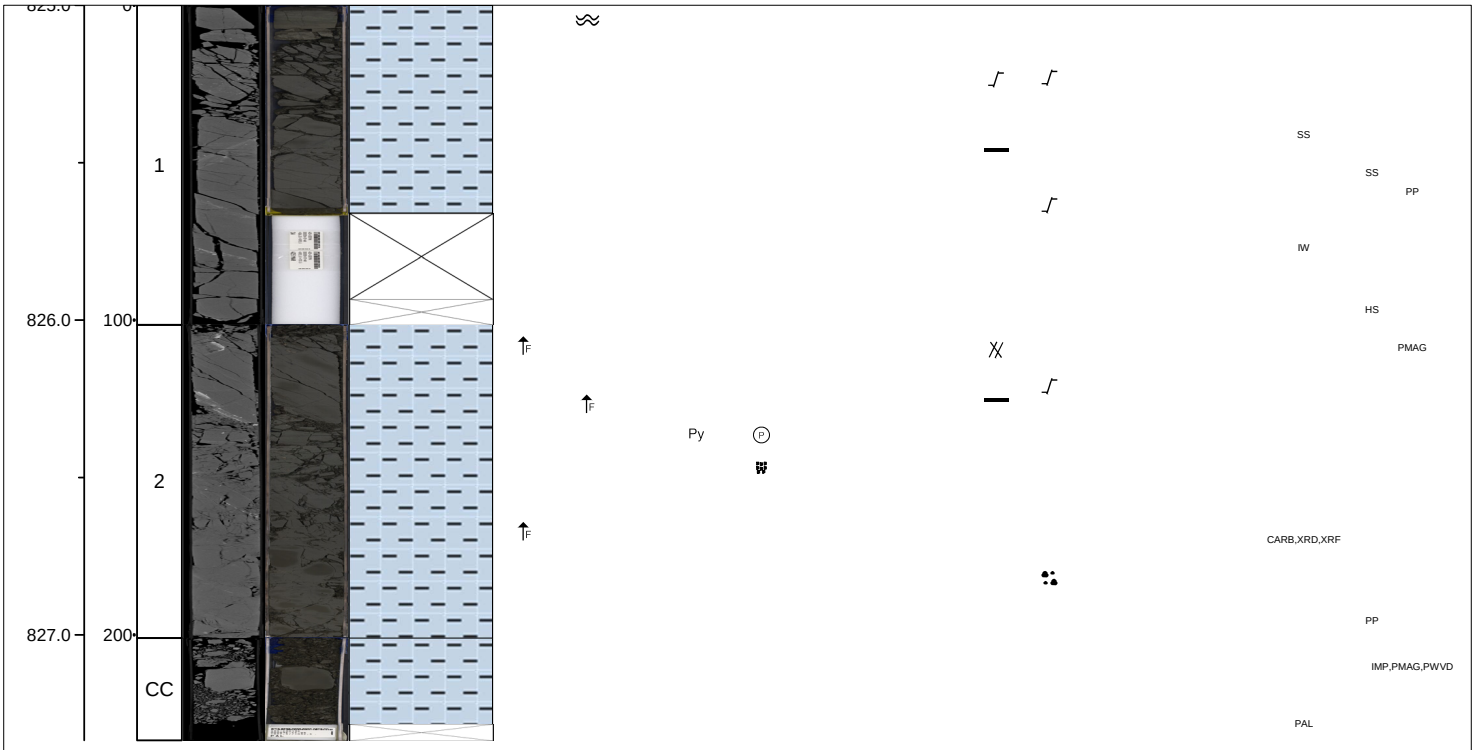
Hole C0019K Core 2K, interval 820 to 824.21 m (core depth below seafloor)

Summary: Olive black mudstone with small isolated turbidity currents, burrows, scattered pumice and pyrite .



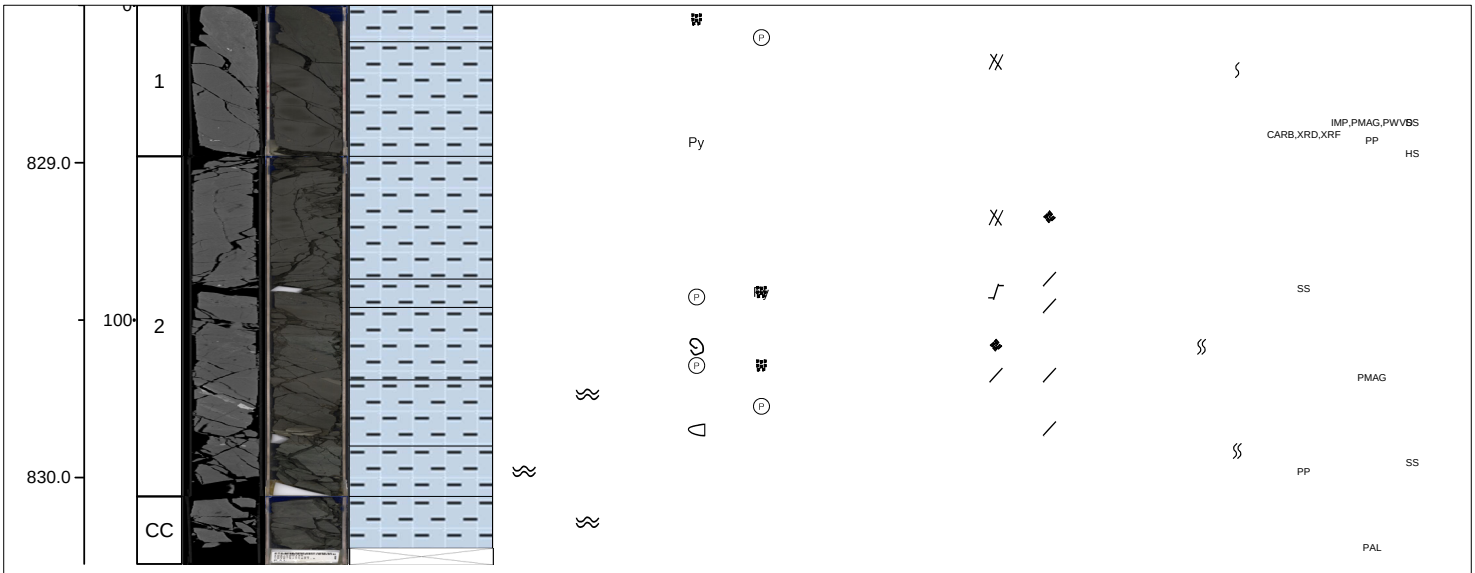
Hole C0019K Core 3K, interval 825 to 827.335 m (core depth below seafloor)

Summary: Olive black mudstone with small turbidites, pumice dissemination, and some pyrite.



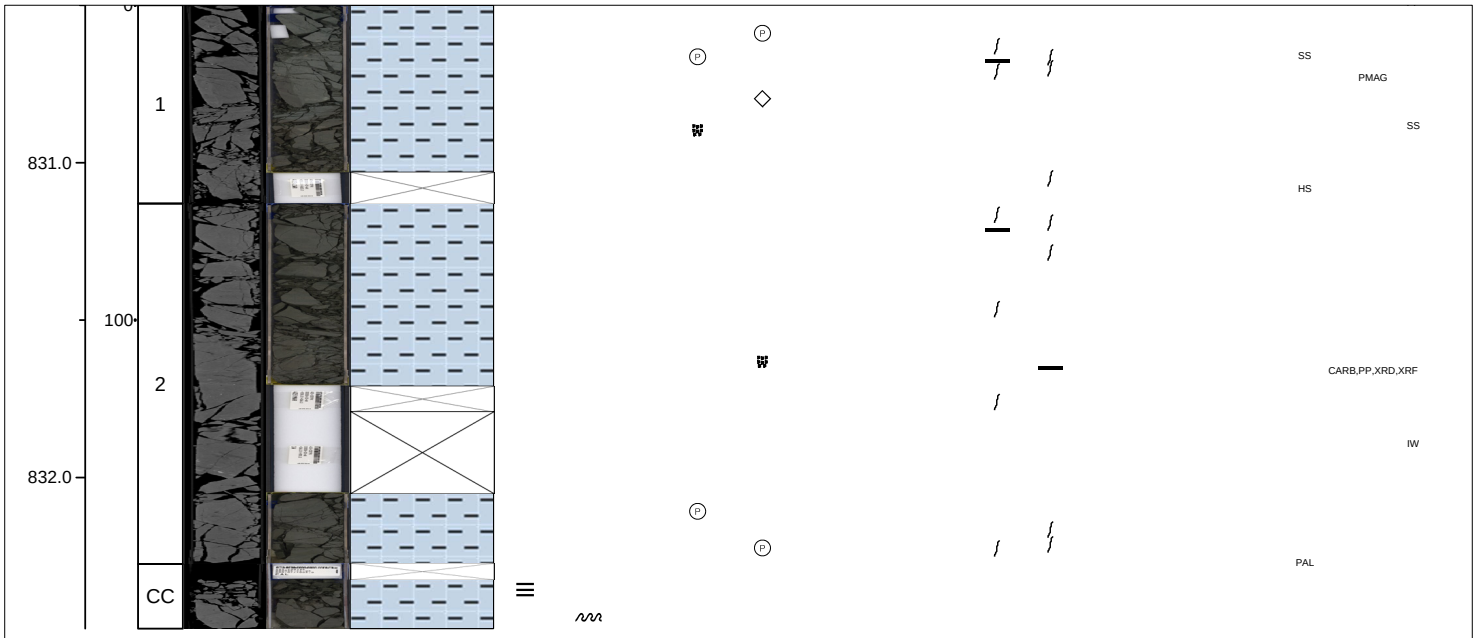
Hole C0019K Core 4K, interval 828.5 to 830.275 m (core depth below seafloor)

Olive black mudstone with steeply inclined (overturned) and convolute bedding, minor pyrite and bioturbation.



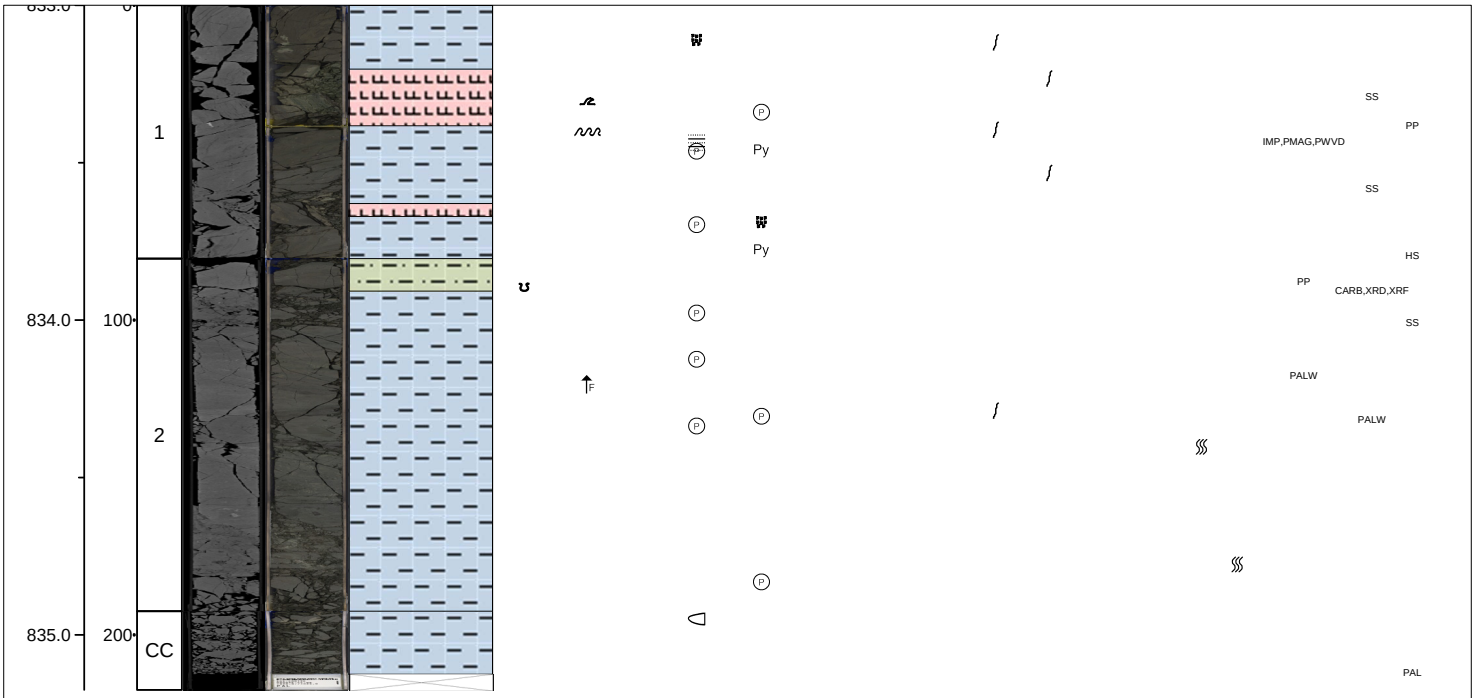
Hole C0019K Core 5K, interval 830.5 to 832.48 m (core depth below seafloor)

Summary: Dark greenish grey mudstone, olive black mudstone with some very fine grained sand, some disseminated ash.



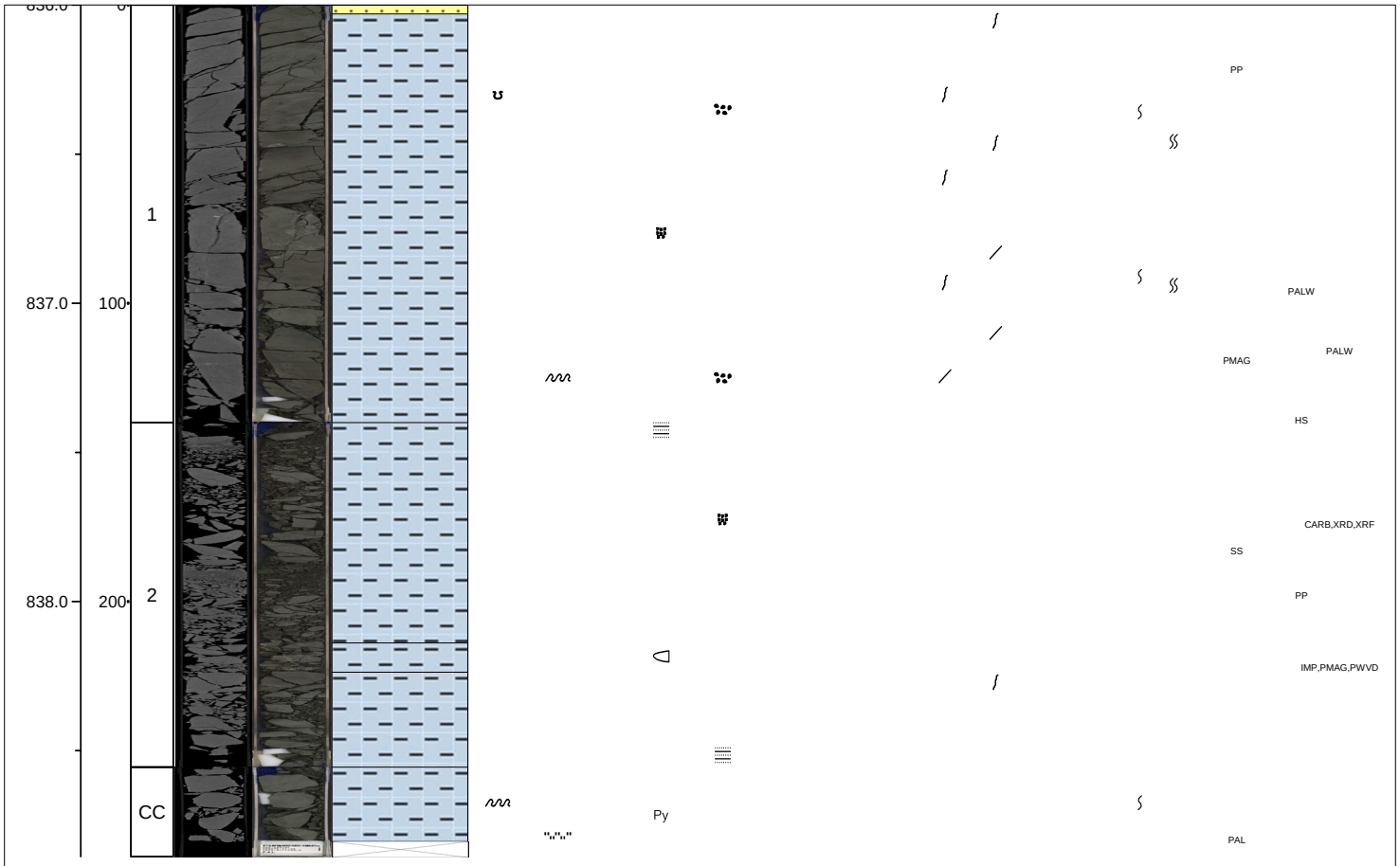
Hole C0019K Core 6K, interval 833 to 835.175 m (core depth below seafloor)

Heavilychaotic bedding formed from olive black ashy mudstone with lots of intercalated ash and some clear flame structures.



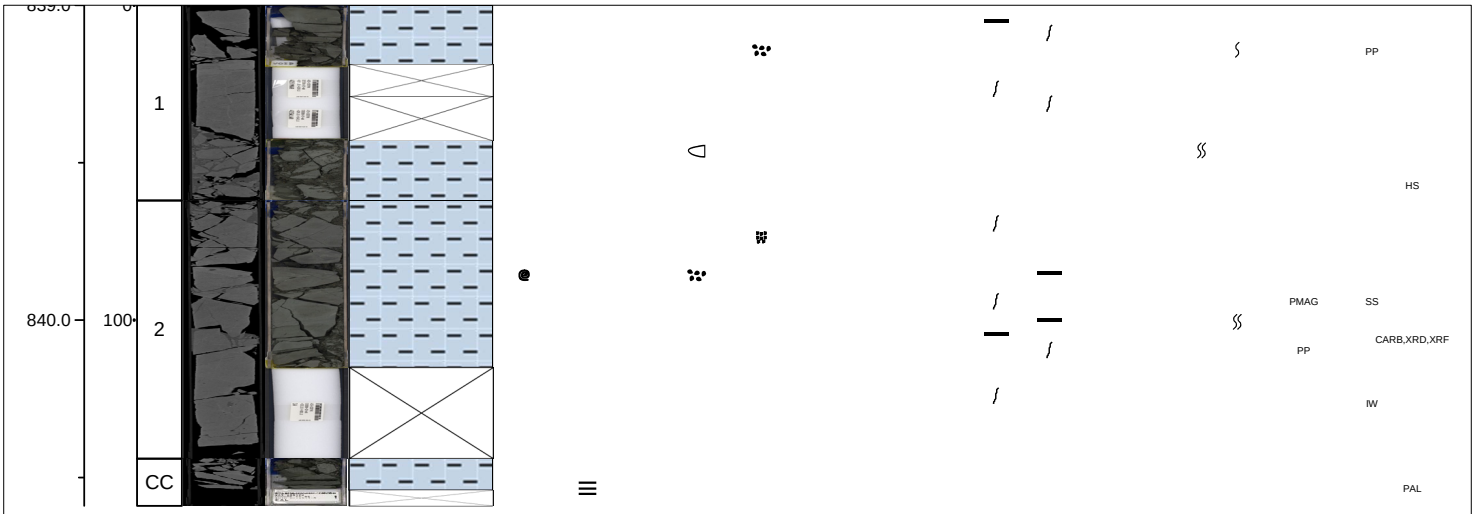
Hole C0019K Core 7K, interval 836 to 838.855 m (core depth below seafloor)

Summary: Grey-green ashy mudstone with LOTS of convoluted and chaotic bedding + .



Hole C0019K Core 8K, interval 839 to 840.59 m (core depth below seafloor)

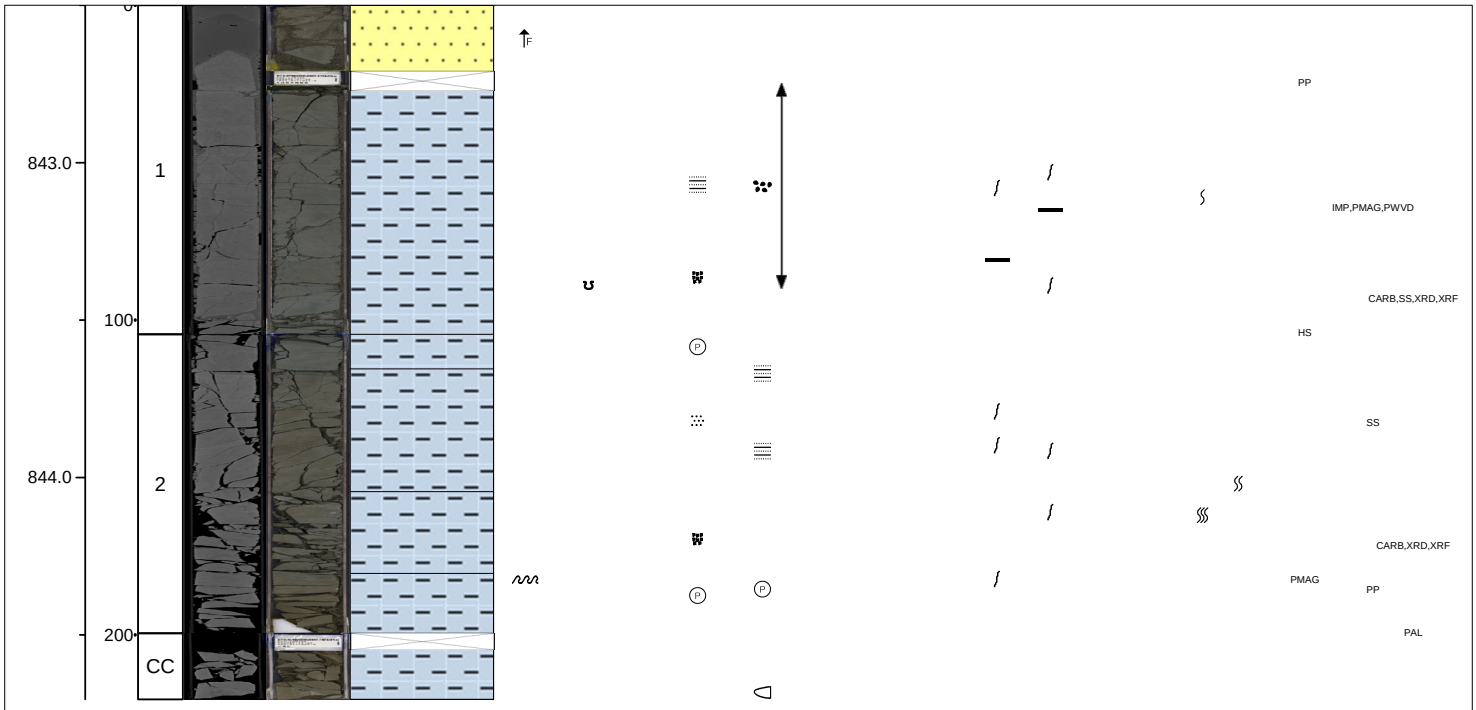
Summary: Dark olive gray to dark greenish gray mudstone, ash patches and moderate bioturbation.



Hole C0019K Core 9K, interval 842.5 to 844.705 m (core depth below seafloor)

Summary: Olive black (5Y 4/2) mudstone highly mottled/marble with scattered pumices and ash filled burrows.

Specific features/structures: Load structure, deformed and sharp mudstone color change, scattered pumice.

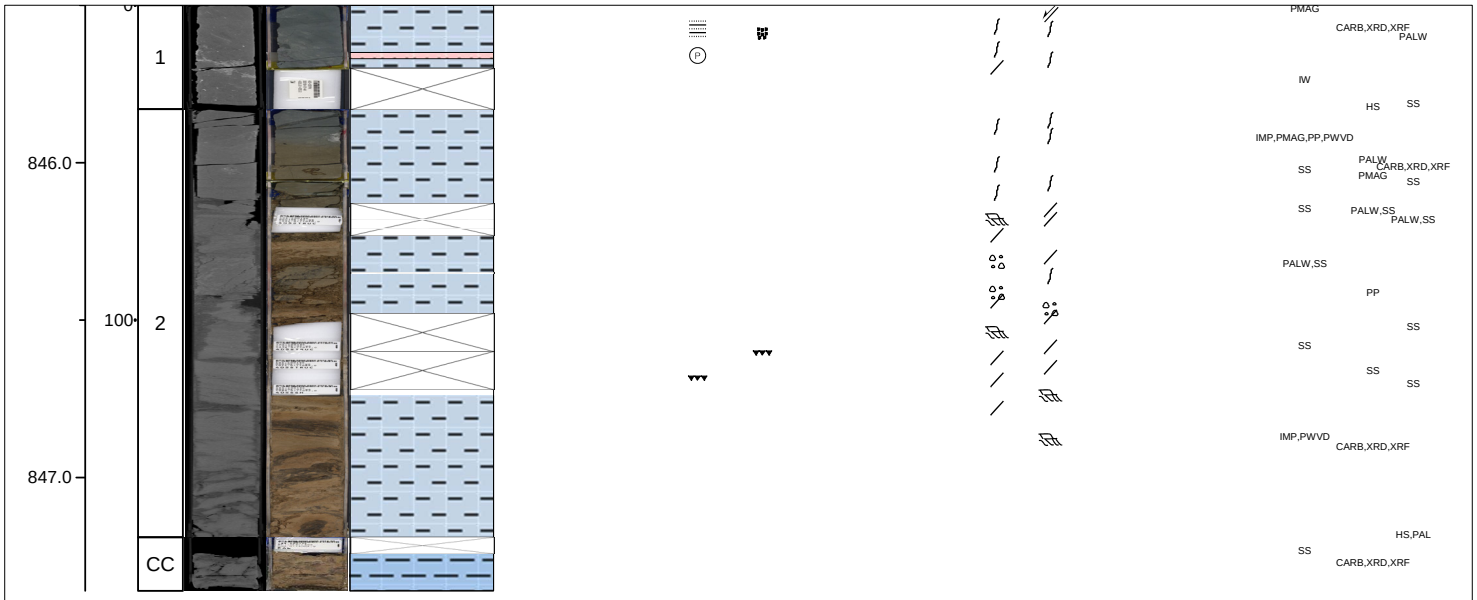


Hole C0019K Core 10K, interval 845.5 to 847.36 m (core depth below seafloor)

Summary:greenish gray mudstone with chaotic mottled bedding. high inudurated pumice clast with green alteration and scattered pummice. plate boundary appear at this core (section 2). Diverse colour variations and deformation structures developed around the fault zone.

Specific structure/feature: Multiple micro normal faults (in echelon). Scattered ash patches, highly deformed, and oblique.

Munsell color: 10GY 5/1 (greenish gray). Ash patch (5GY 6/1). Olive gray.

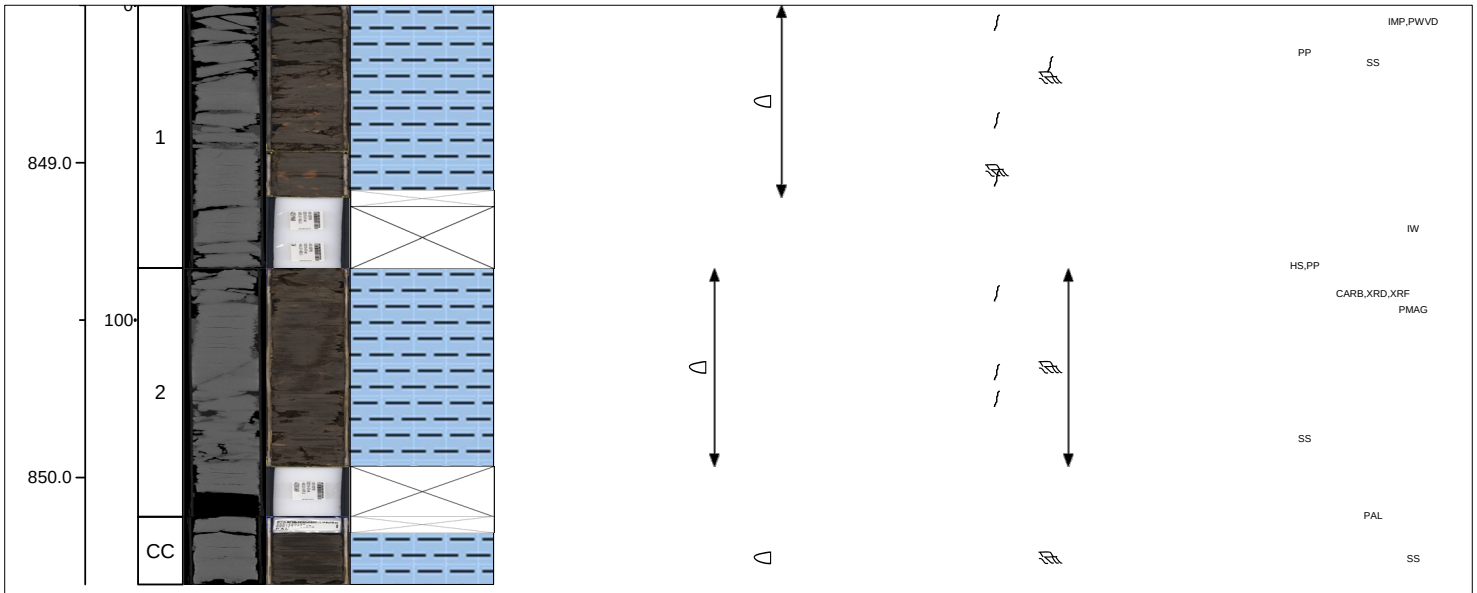


Hole C0019K Core 11K, interval 848.5 to 850.34 m (core depth below seafloor)

Summary: Browinish black scaly clay.

Specific structures/features: Sclay fabric, patches.

Munshell
Matrix: Brownish black 5YR 2/1
Patches: Dull redisih brownb 5YR 5/4

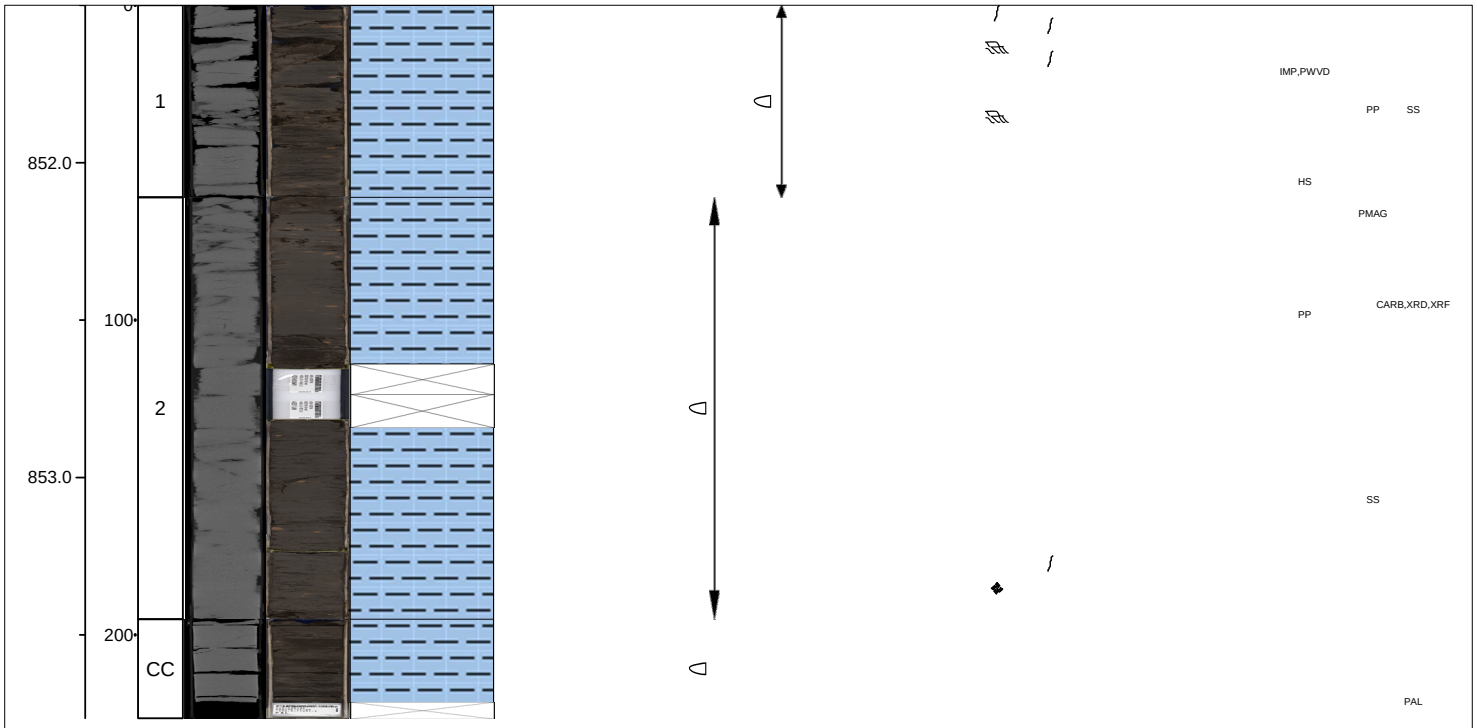


Hole C0019K Core 12K, interval 851.5 to 853.765 m (core depth below seafloor)

Summary: Browinish black scaly clay.

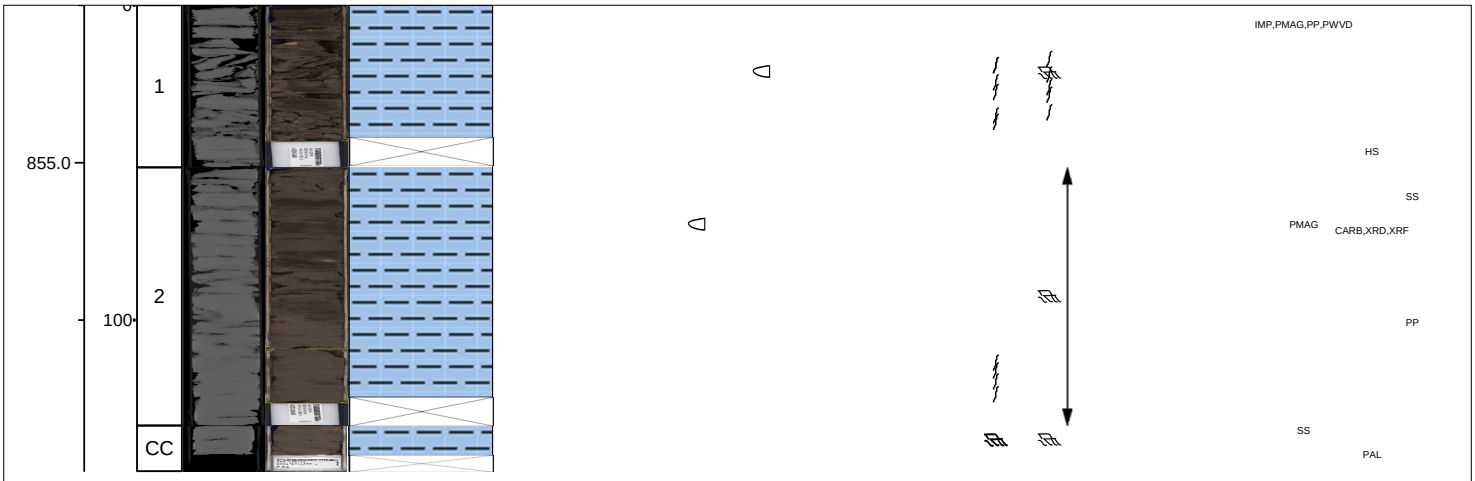
Specific structures/features: Sclay fabric, patches.

Munshell
Matrix: Brownish black 5YR 2/1
Patches: Dull redisih brownb 5YR 5/4



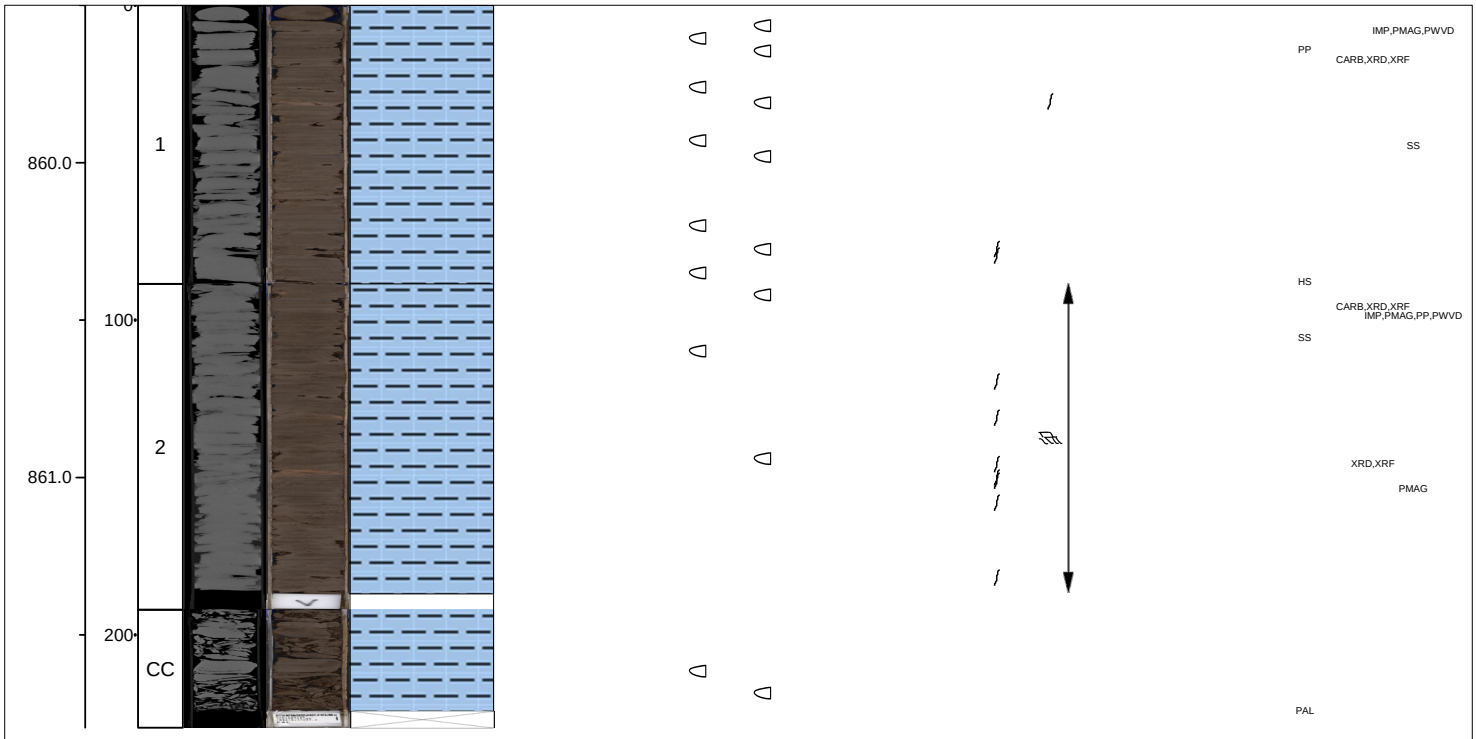
Hole C0019K Core 13K, interval 854.5 to 855.98 m (core depth below seafloor)

Summary: Brownish black to dark reddish brown scaly clay with dull reddish brown patches.



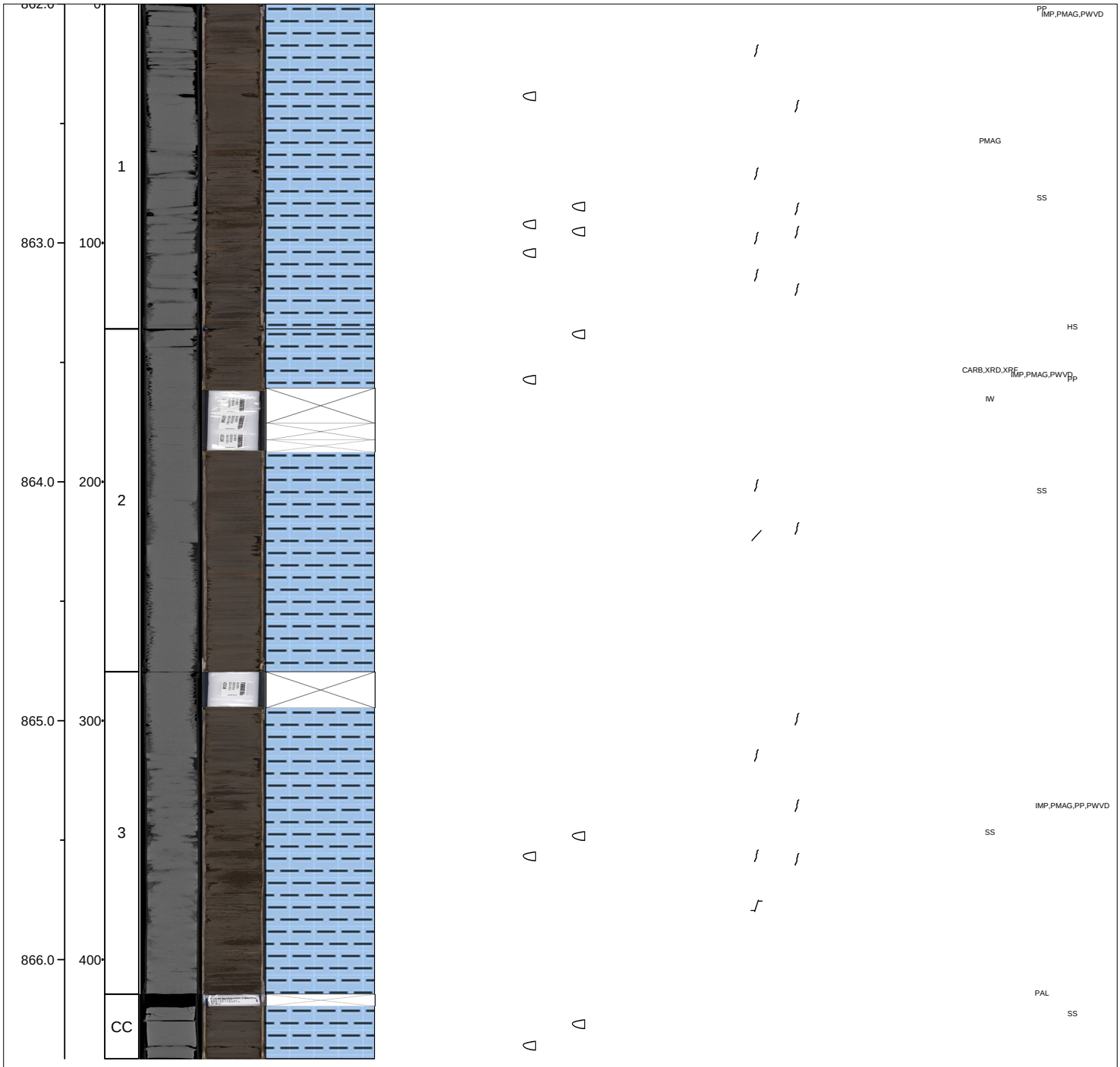
Hole C0019K Core 14K, interval 859.5 to 861.795 m (core depth below seafloor)

Summary: Dark reddish brown clay with few dull reddish brown and brownish black clay patches and layers.



Hole C0019K Core 15K, interval 862 to 866.415 m (core depth below seafloor)

summary: Massive brownish black clay with scattered patches, dots and inclined contact of oxidised clay.

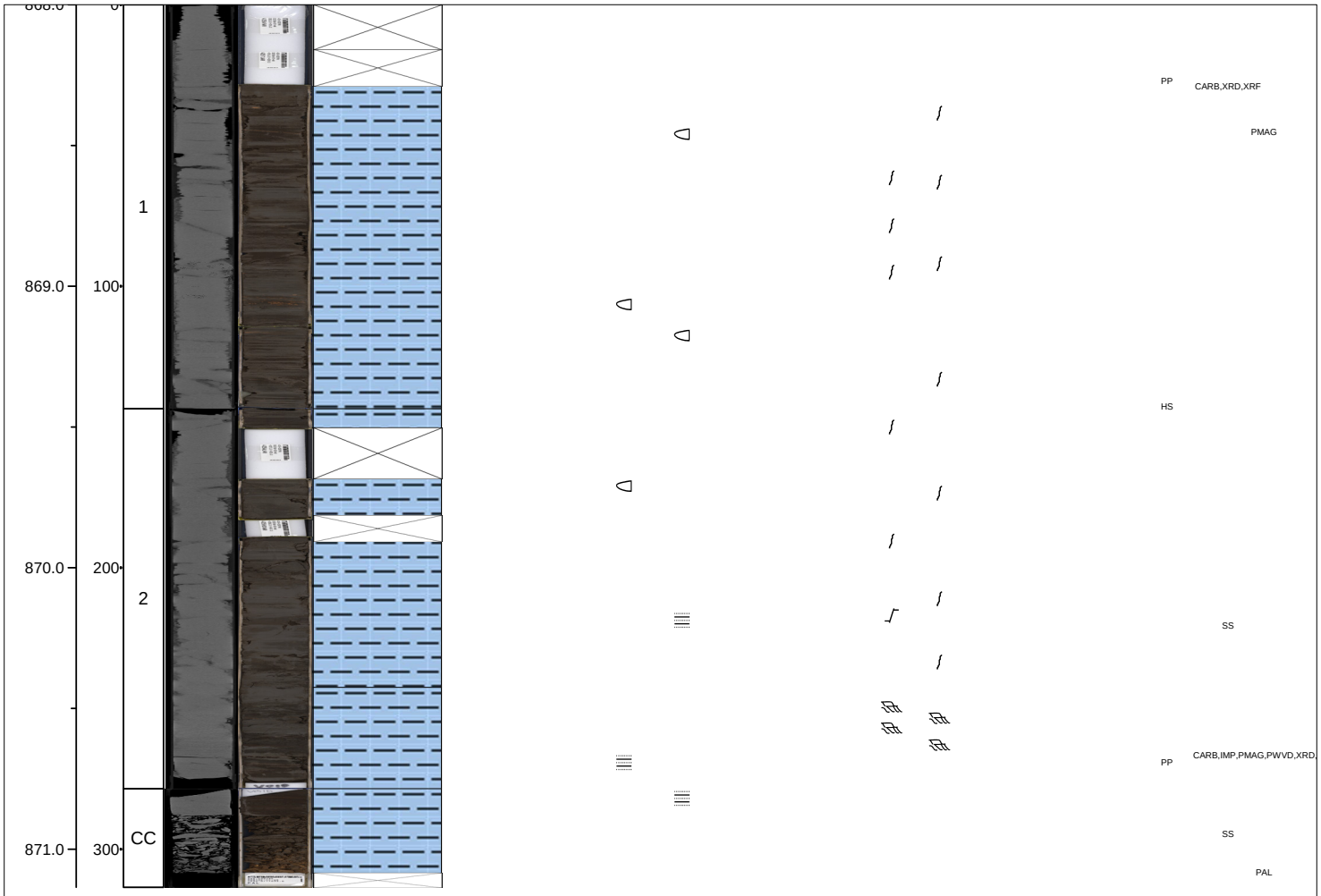


Hole C0019K Core 16K, interval 868 to 871.135 m (core depth below seafloor)

Summary: Brownish black clay with reddish brownish patches and layers.

Specific structures/features: Patches and color banding.

Munshell
Matrix: 5YR 2/1
Patches: 5YR 3/3
Banding; 5YR 2/2, 7/1, 2/1

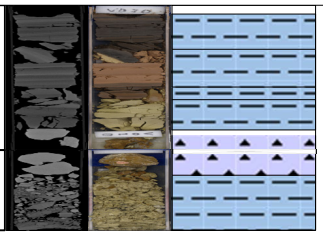


Hole C0019K Core 17K, interval 873 to 873.715 m (core depth below seafloor)

Summary: Various color-banded clay with fragmented chert due to drilling disturbance.

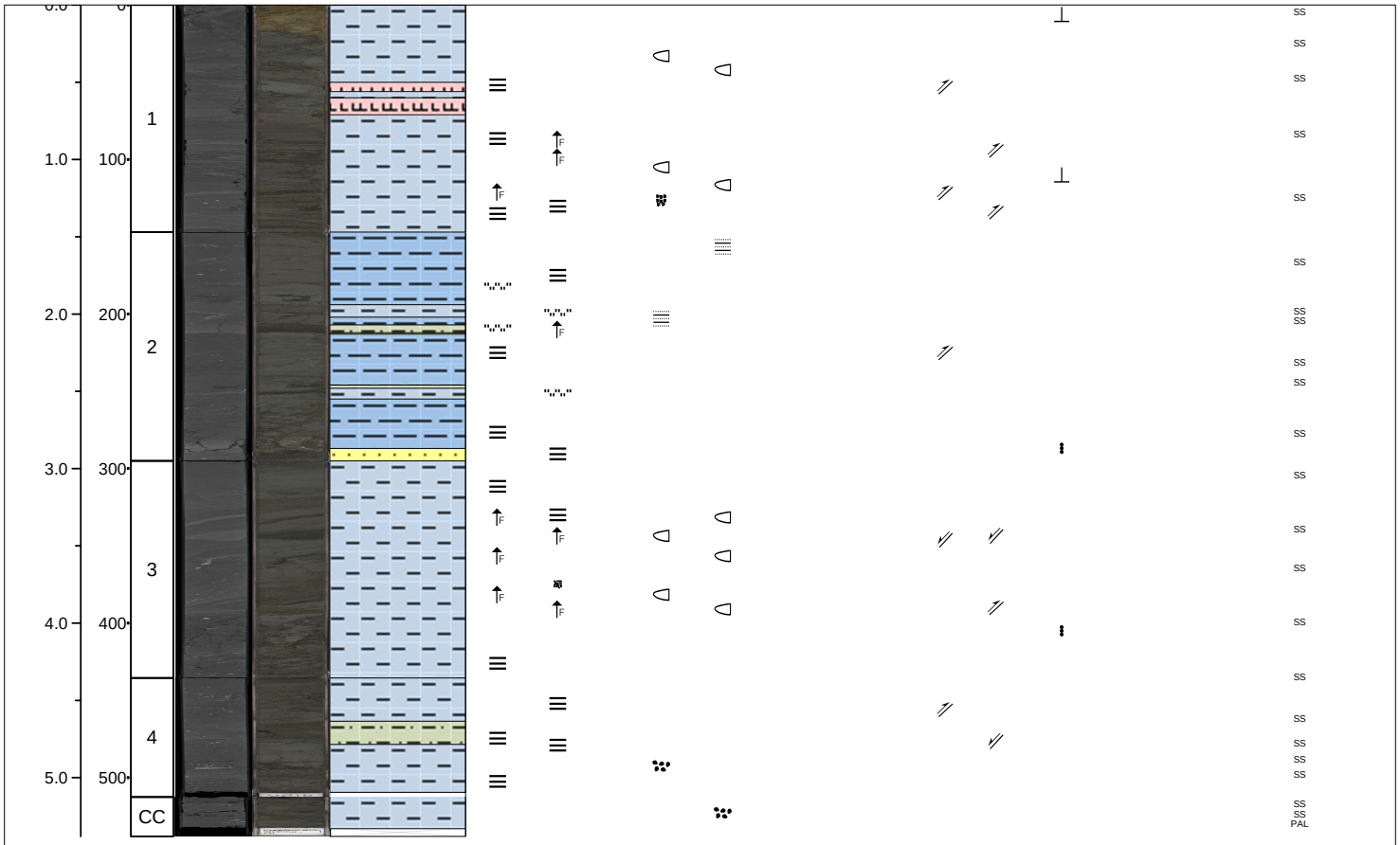
Specific structures/features: Laminated clay beds.

Munshell
Dark color to light color.
7.5YR 5/6, 2/2,7/1 --> 7.5 YR 3/4, 2/1 --> 2.5Y 7/3

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
873.0	0	1				≡	≡				CARB,XRD,XRF; PMAG; IMP,PP,PWVD; SS; SS; PMAG,PP,PWVD; SS; SS; CARB,PP,XRD,XRF; SS; IMP,PMAG,PP,PWVD; SS; SS; CARB,PP,XRD,XRF; IMP,PMAG,PP,PWVD; CARB,XRD,XRF; PAL; SS
		CC									

Hole C0019L Core 1H, interval 0 to 5.38 m (core depth below seafloor)

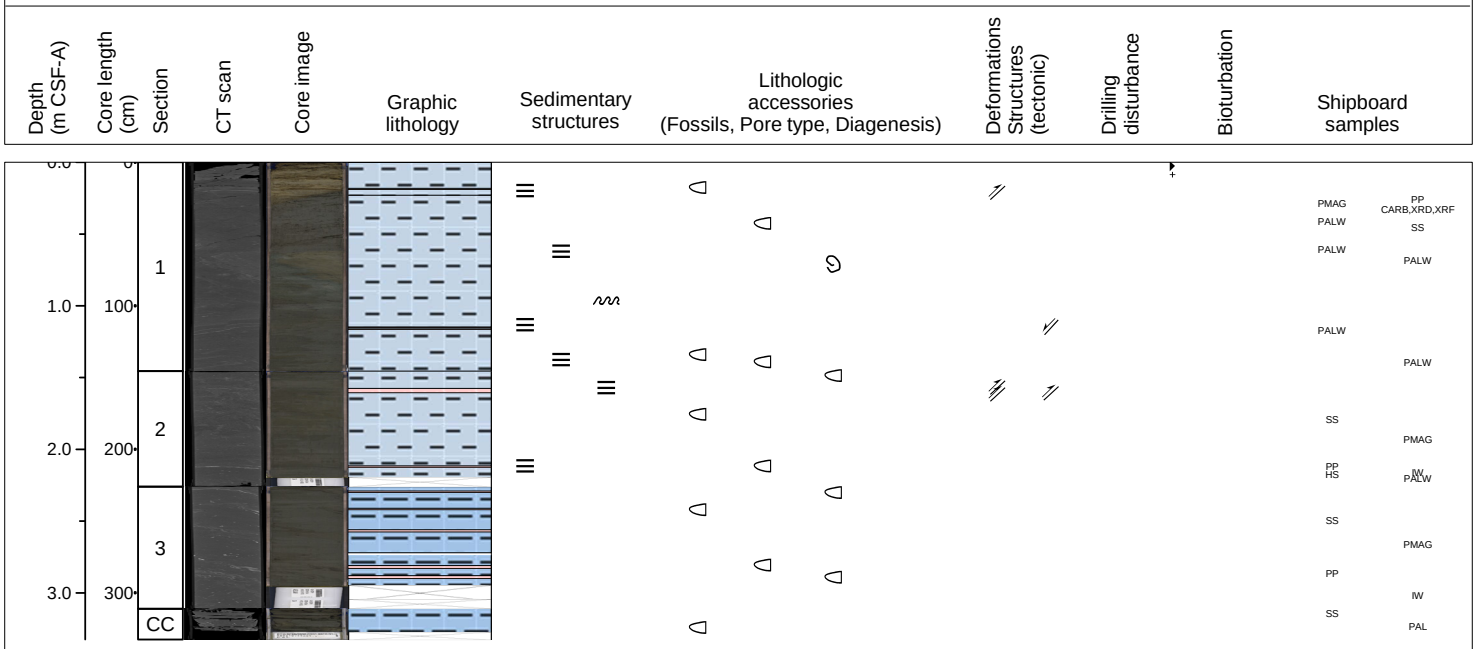
Summary: Olive black (2.5 GY 3/1) silty clay with clayey silt and ash intervals -Contains sequences of very fine sand to silt fining upward sequences.



Hole C0019M Core 1H, interval 0 to 3.325 m (core depth below seafloor)

Summary: distorted mud and clay beds interbedding with diverse color (grayish olive (5Y4/2), olive gray, olive black (5Y 2/1) to black (7.5 Y 3/2)).

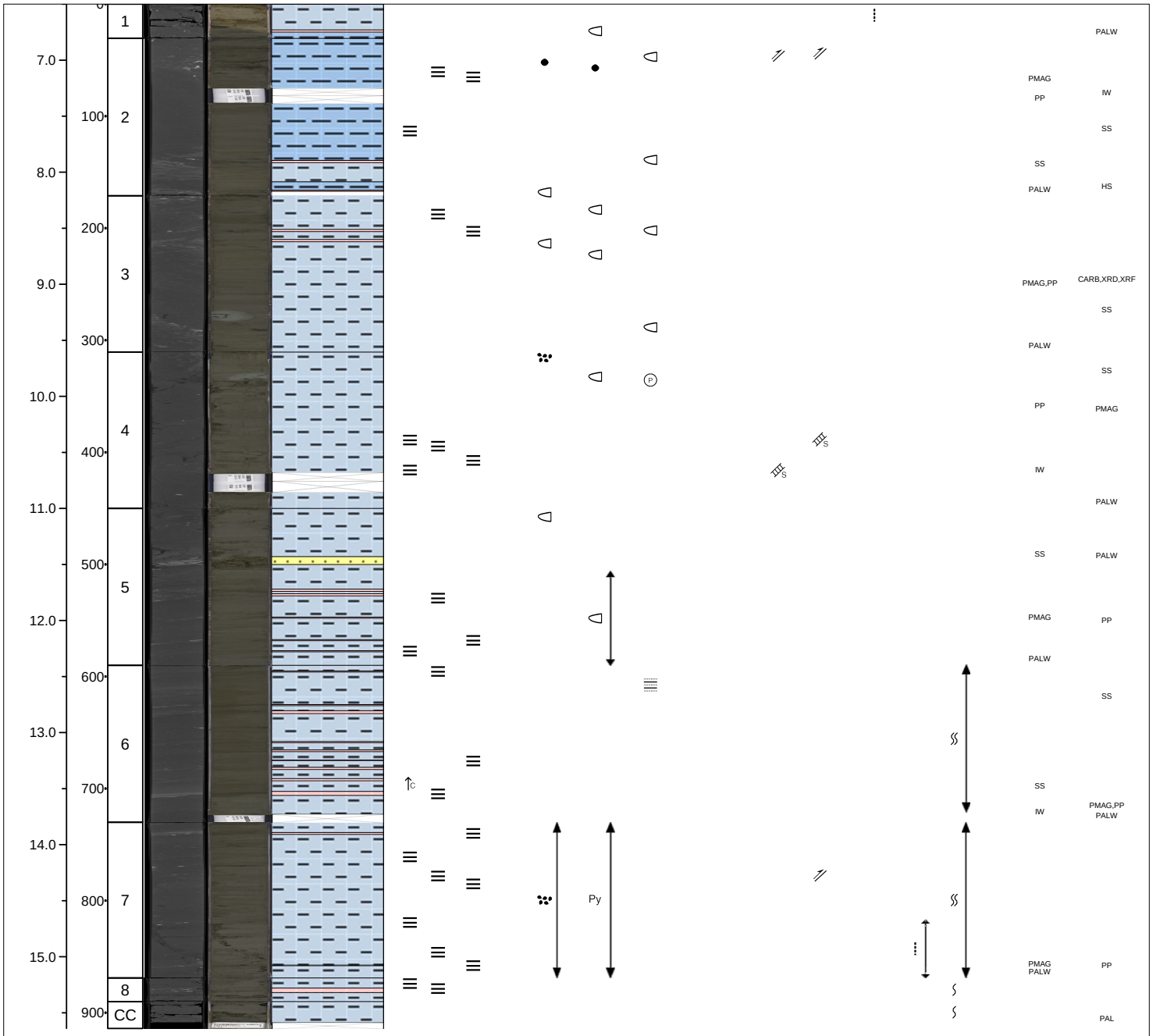
Specific features/strucutres: patches, subvertical to vertical bedding.



Hole C0019M Core 2H, interval 6.5 to 15.64 m (core depth below seafloor)

Summary:Chaotic silty clay/clayey silt (7.5 Y 4/2) with silt beds+silt (black) filled veins.

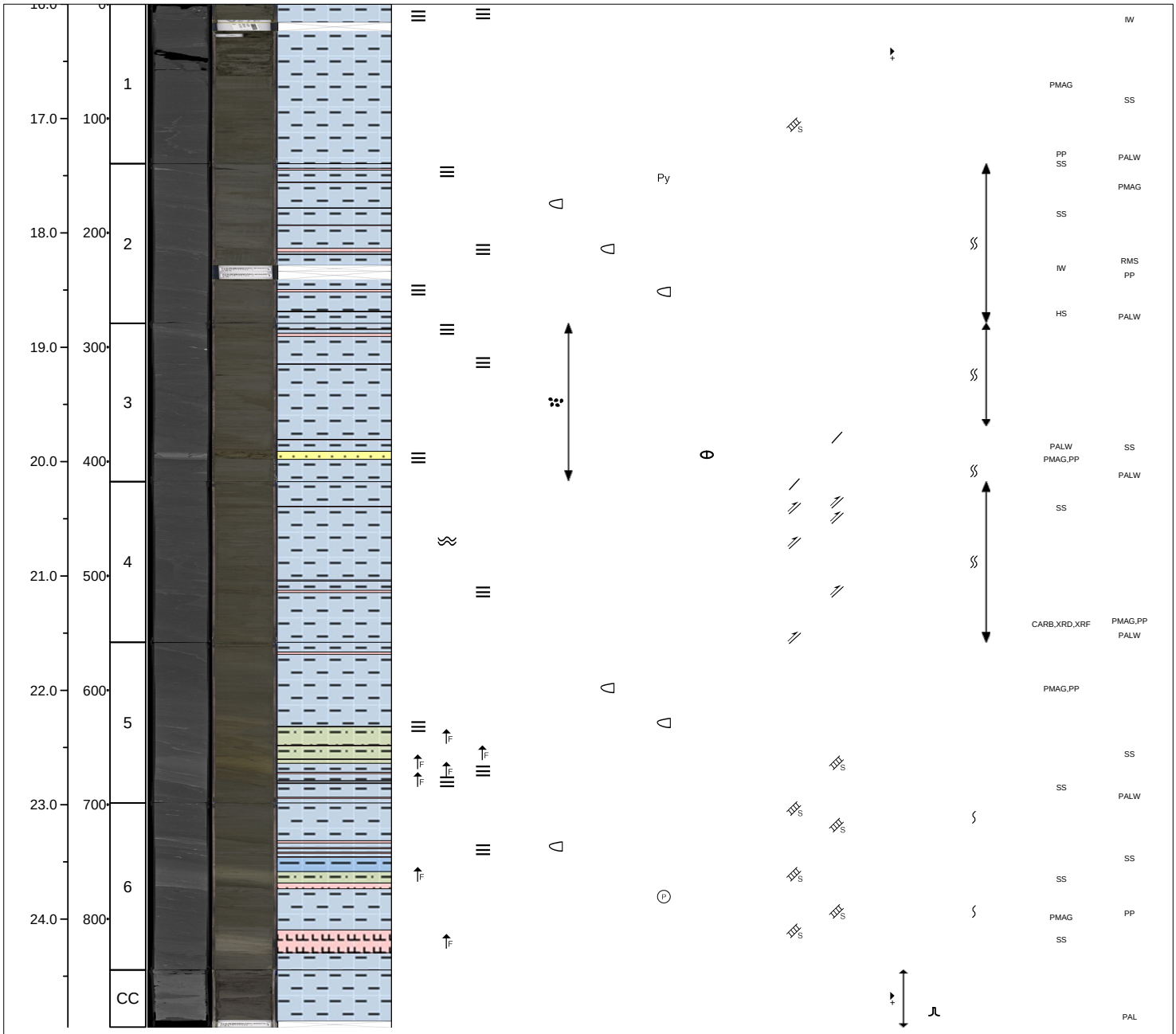
Specific features/strucutres: patches, sediment-filled veins, subvertical to vertical bedding.



Hole C0019M Core 3H, interval 16 to 24.945 m (core depth below seafloor)

Summary: Olive gray (7.5 Y 4/2) silty clay with sequences of brown, fining-upward silt-rich layers.

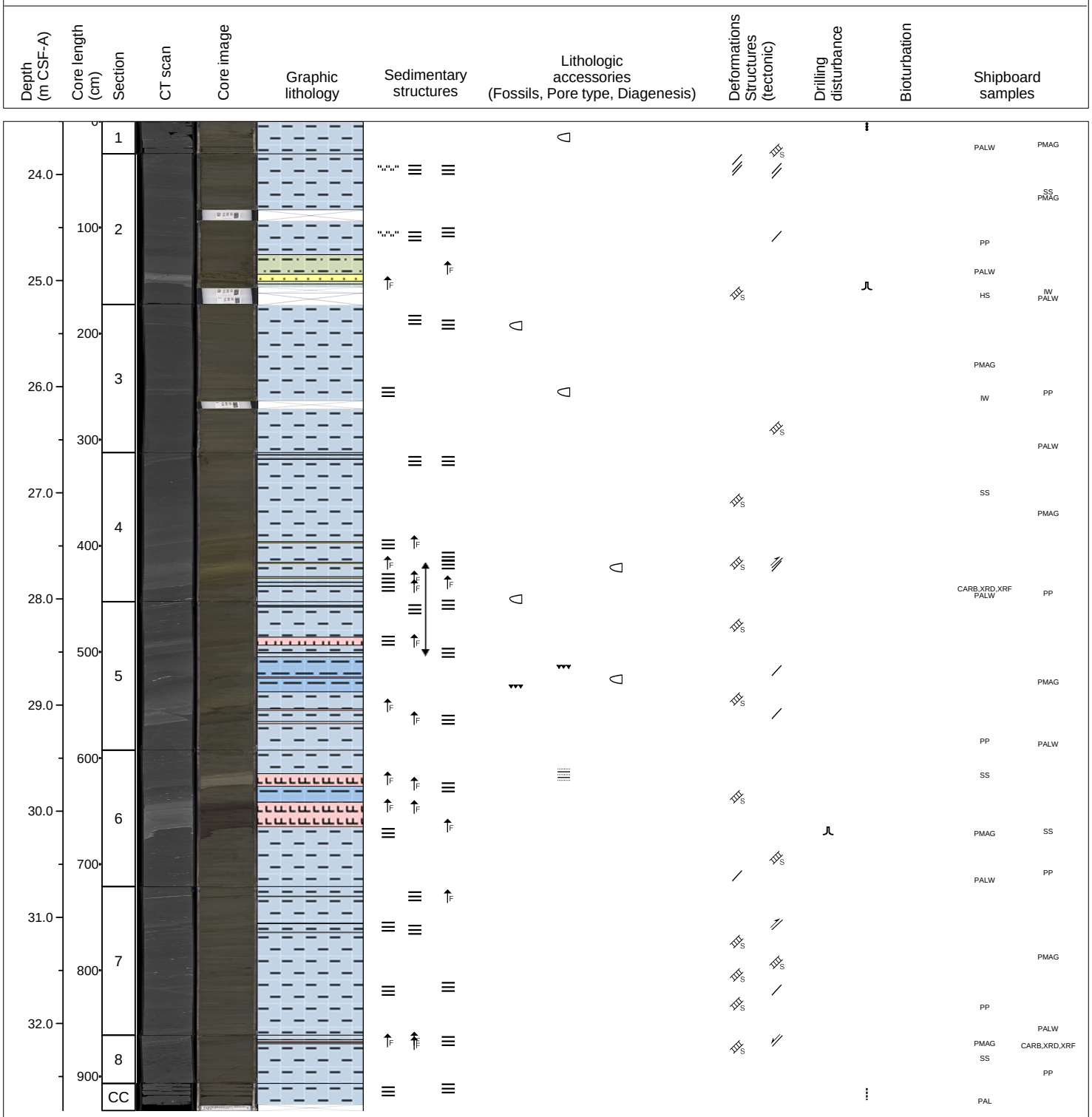
Specific features/structures:Sediment filled veins, possible faults with offsets



Hole C0019M Core 4H, interval 23.5 to 32.82 m (core depth below seafloor)

Summary: olive black (10Y 3/1) silty clay and clayey silt.

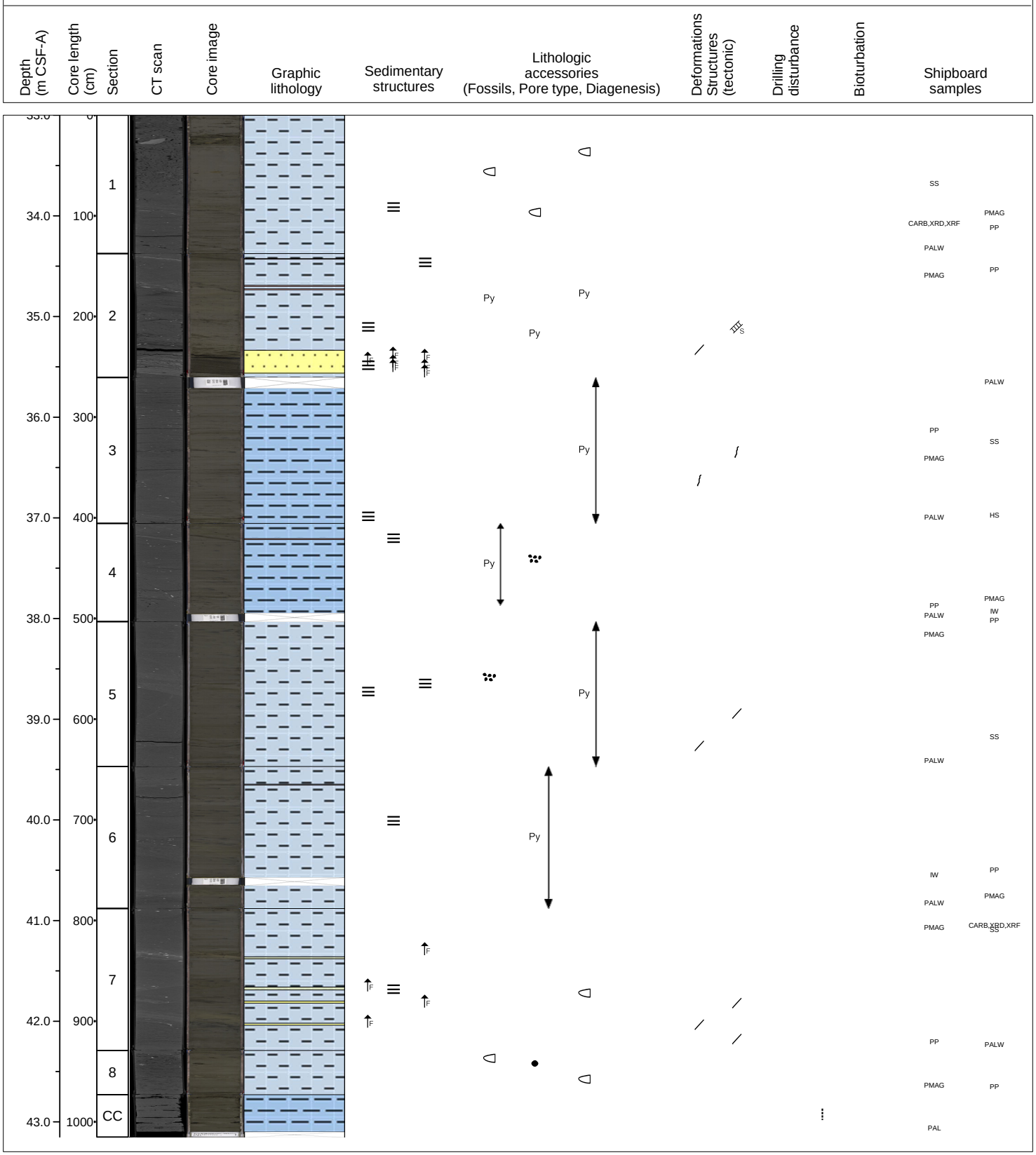
Speicific features/structures: Interbedded with dark silty tephra laminae. fining upward layers. Inclined angles of bedding is between 20 and 50 degrees.



Hole C0019M Core 5H, interval 33 to 43.15 m (core depth below seafloor)

Summary: olive black silty clay, and clay.

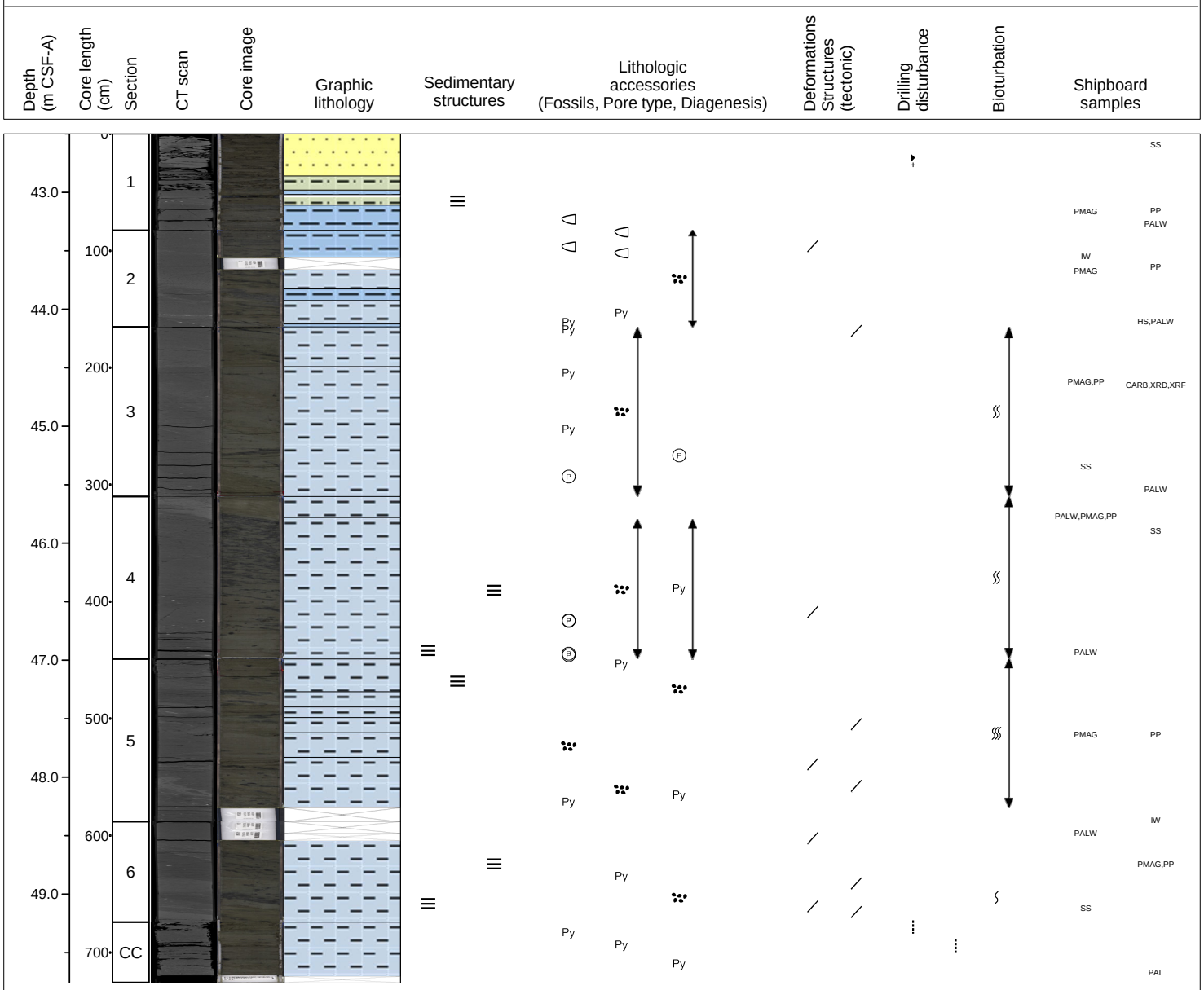
Specific features/structures: scattered pyrite patches and lineation, several fining-upward turbidite beds.



Hole C0019M Core 6H, interval 42.5 to 49.755 m (core depth below seafloor)

Summary: olive grey (10Y 3/1) silty clay.

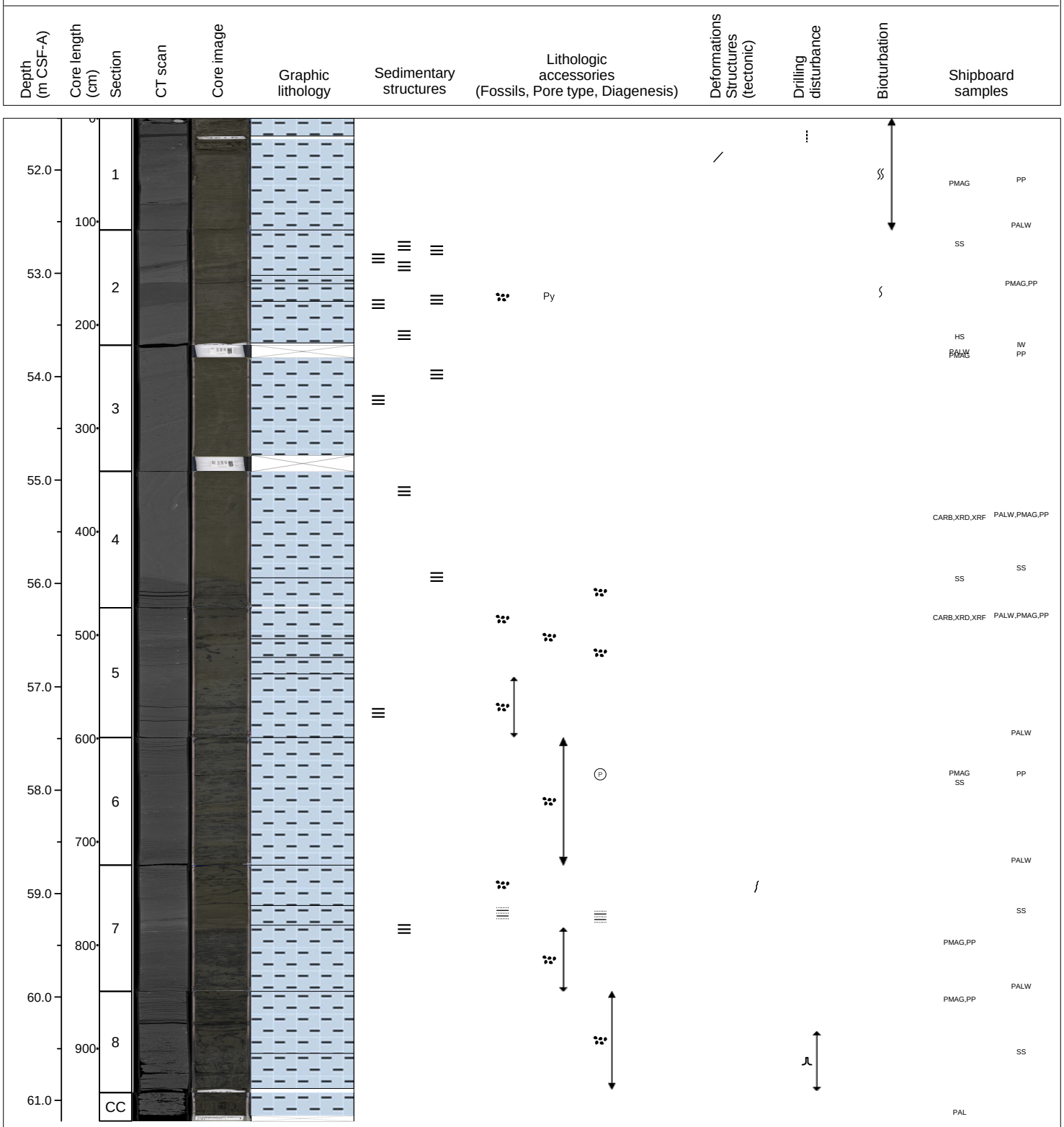
Specific features/structures: dark grey mottles and scattered pyrite and pumice.



Hole C0019M Core 7H, interval 51.5 to 61.2 m (core depth below seafloor)

Summary:olive black (10Y 3/1) silty clay with dark grey/green mottles. Internal of silty part has banding.

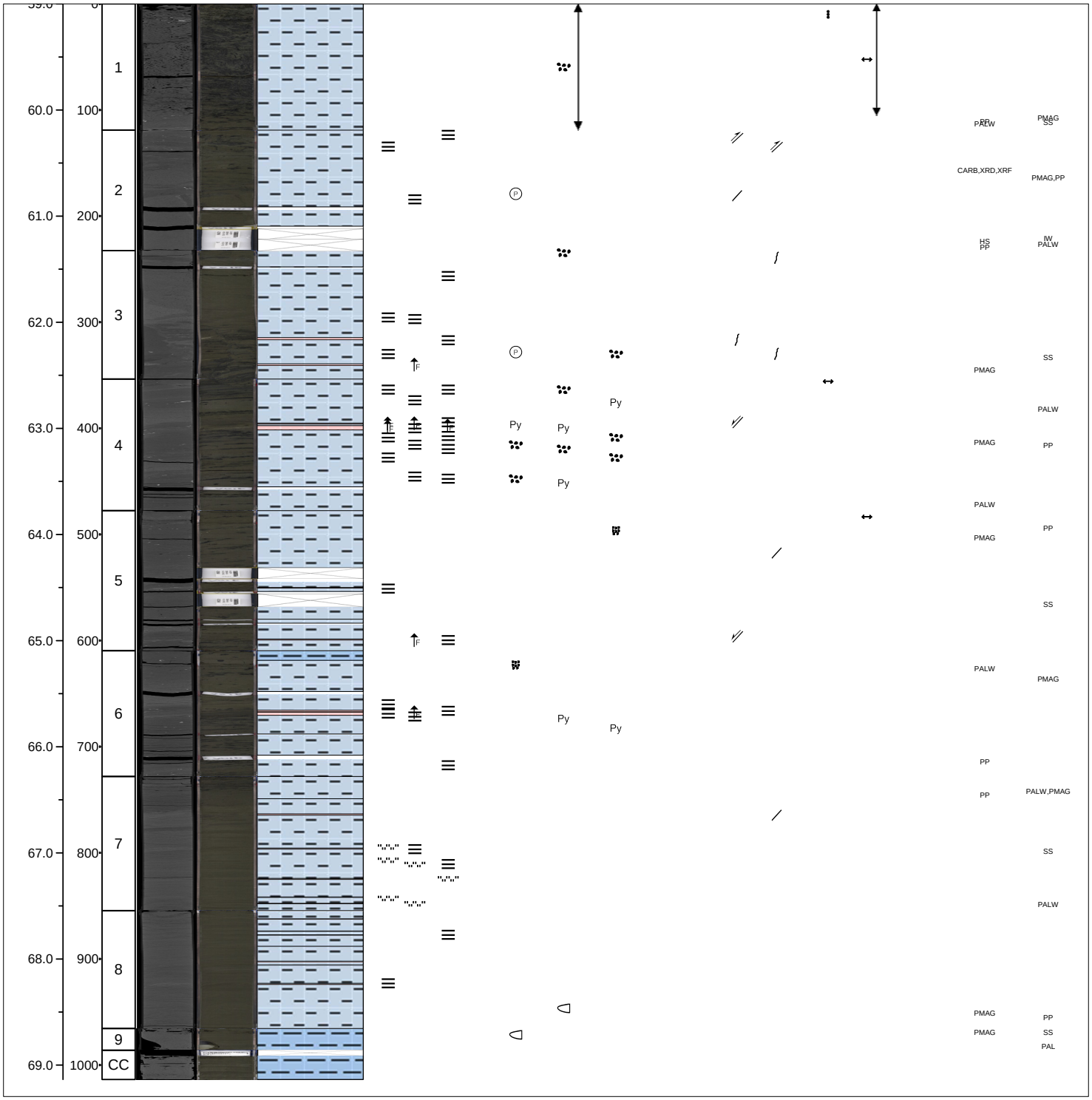
Specific features/structures: mottled sturctures, color banding.



Hole C0019M Core 8H, interval 59 to 69.135 m (core depth below seafloor)

Summary: olive black (7.5 Y 3/2) silty clay with many thin (<0.2cm) ashy beds in some sections.

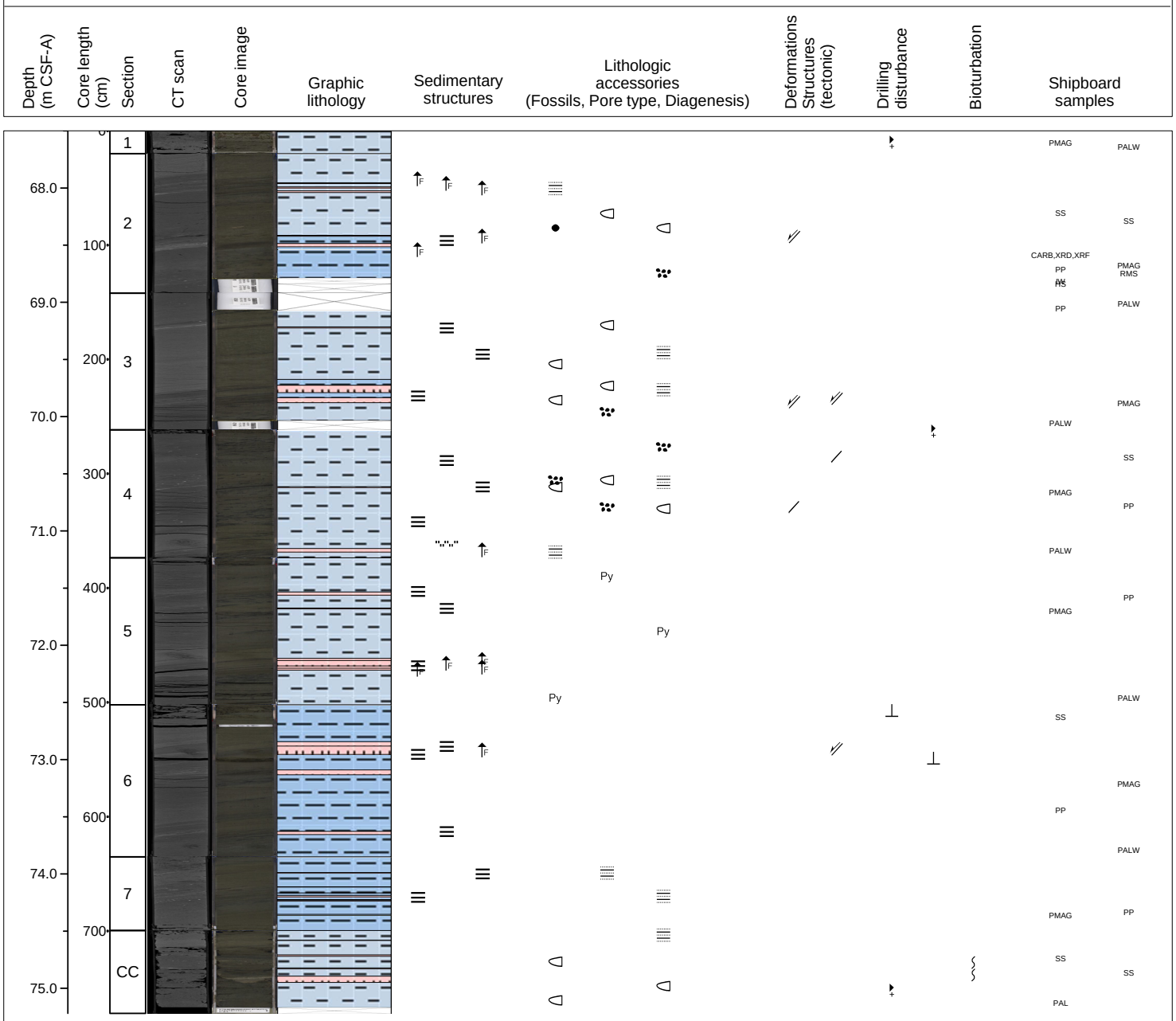
Specific features/structures: fining-upward layers, mottled structures, scattered pumice, ashy patches.



Hole C0019M Core 9H, interval 67.5 to 75.22 m (core depth below seafloor)

Summary: olive black (7.5Y 3/2) clayey silt to silty clay with inclined ashy beds fining upward.

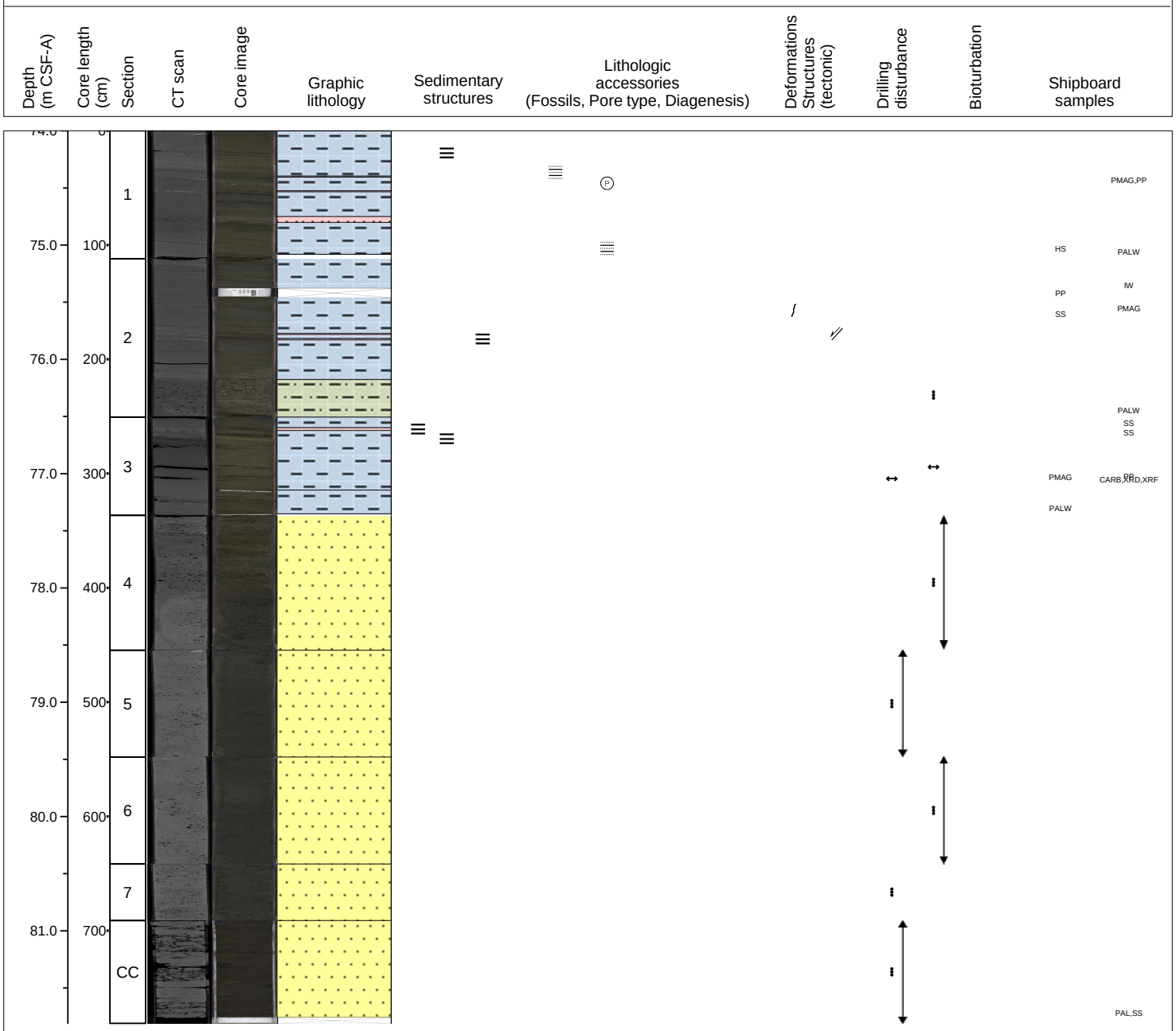
Specific features/structures: Interbedded tephra layers, patches, color banding and mottling.



Hole C0019M Core 10H, interval 74 to 81.81 m (core depth below seafloor)

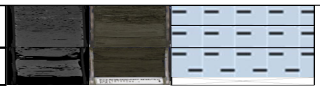
Summary: olive black (7.5Y 3/2) clayey silt with black bands and light gray ash layers.

Specific features/structures: Flow-in sandy sediments appear since section 4.



Hole C0019M Core 11X, interval 76.5 to 77.055 m (core depth below seafloor)

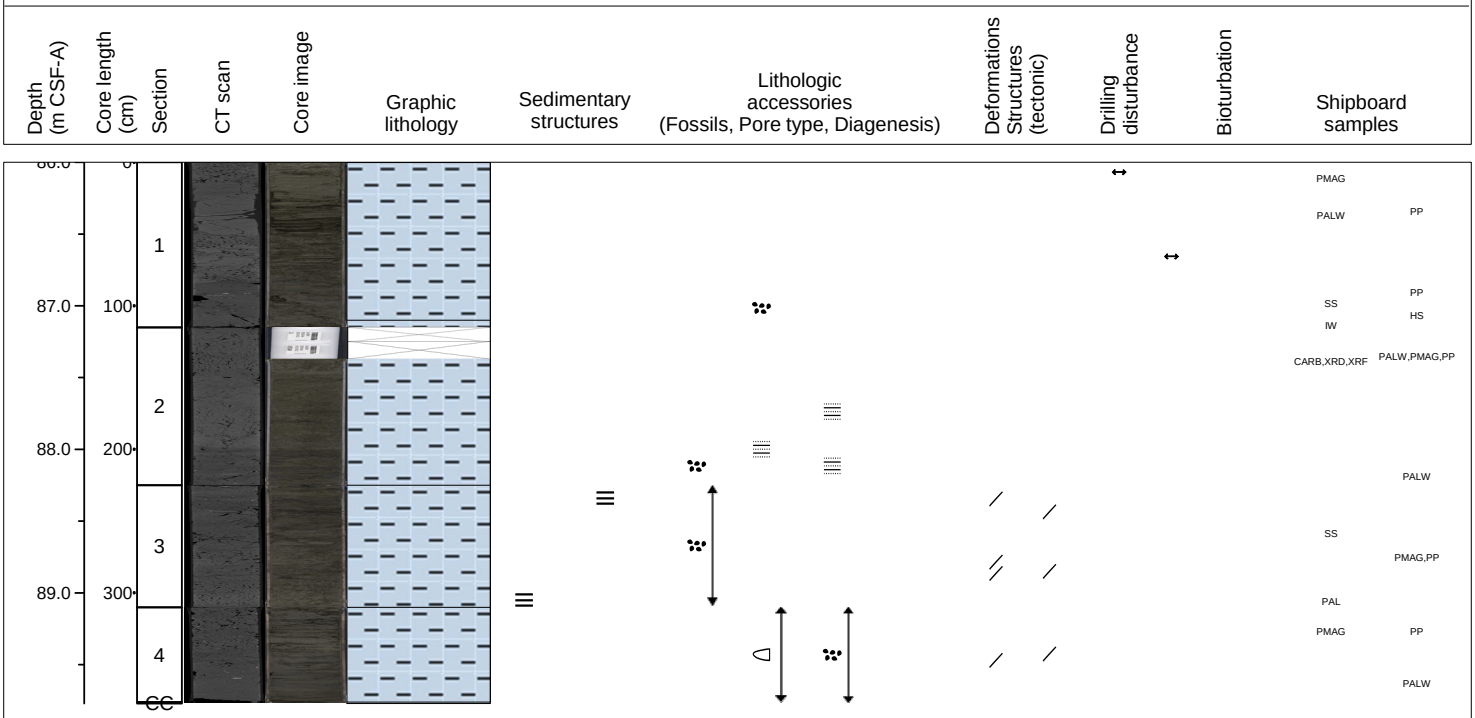
Summary: heavily disturbed olive black silty clay.

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
77.0	0	1									CARB,NRD,XRF PAND SS PAL PALW
		CC									

Hole C0019M Core 12X, interval 86 to 89.77 m (core depth below seafloor)

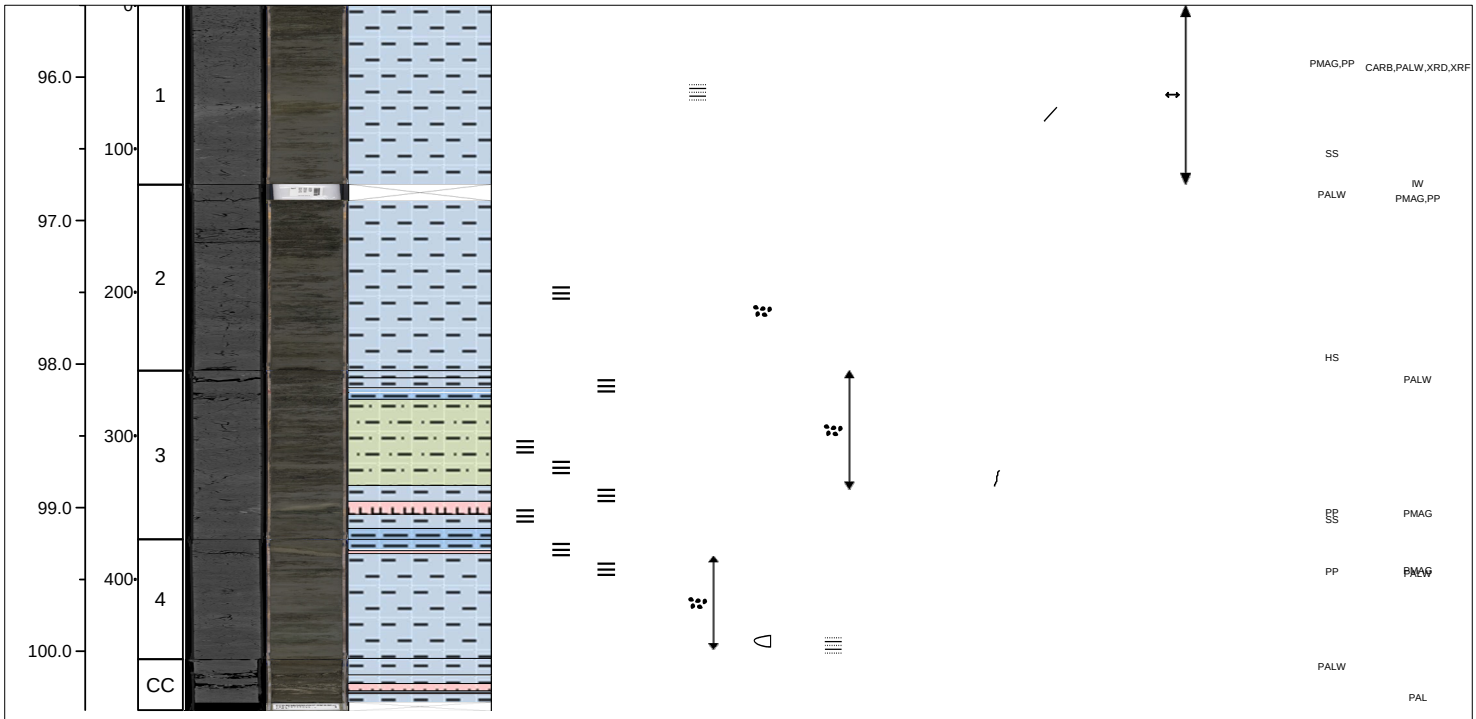
Summary: olive black silty clay disturbed by gas cracks.

Specific features/structures: Black mottles, pathches, gas-caused cracking.



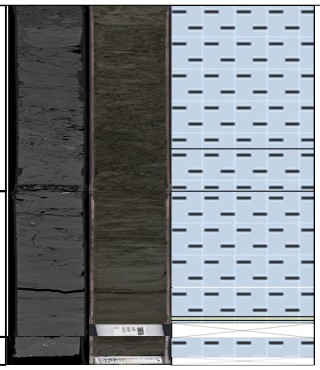
Hole C0019M Core 13X, interval 95.5 to 100.41 m (core depth below seafloor)

Summary: olive black (10Y 3/1) silty clay with dark and light patches. Streak of grey green contacts of colour change are gradational



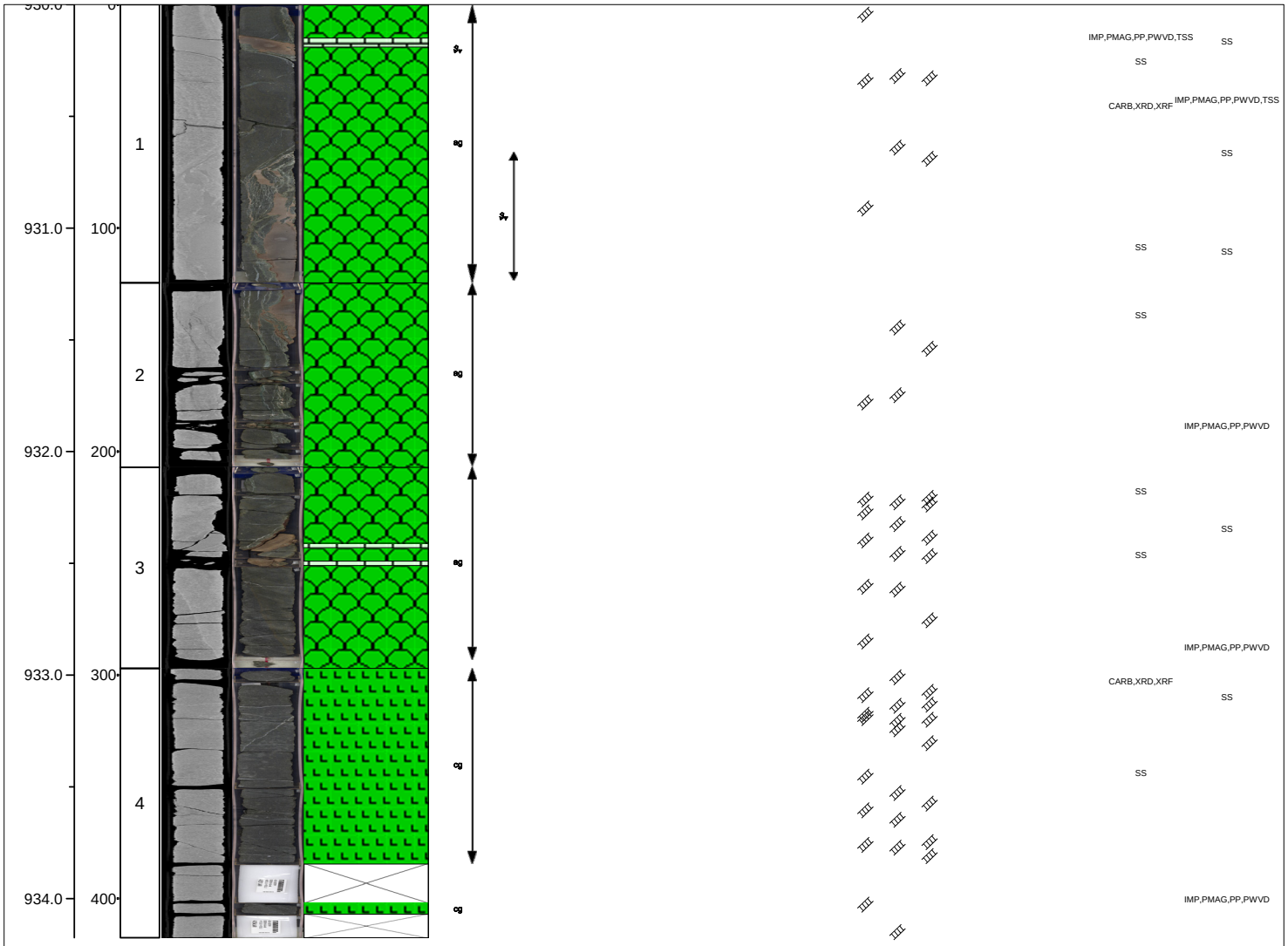
Hole C0019M Core 14X, interval 105 to 107.505 m (core depth below seafloor)

Summary: dark olive black clayey silty. Very brittle so heavily disturbed by coring.

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Sedimentary structures	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
105.0 106.0 107.0	0 100 200	1 2 CC				≡	Py		⊥		SS HS IW PMAG CARB,XRD,XRF PMAG PP PALW PP SS PAL

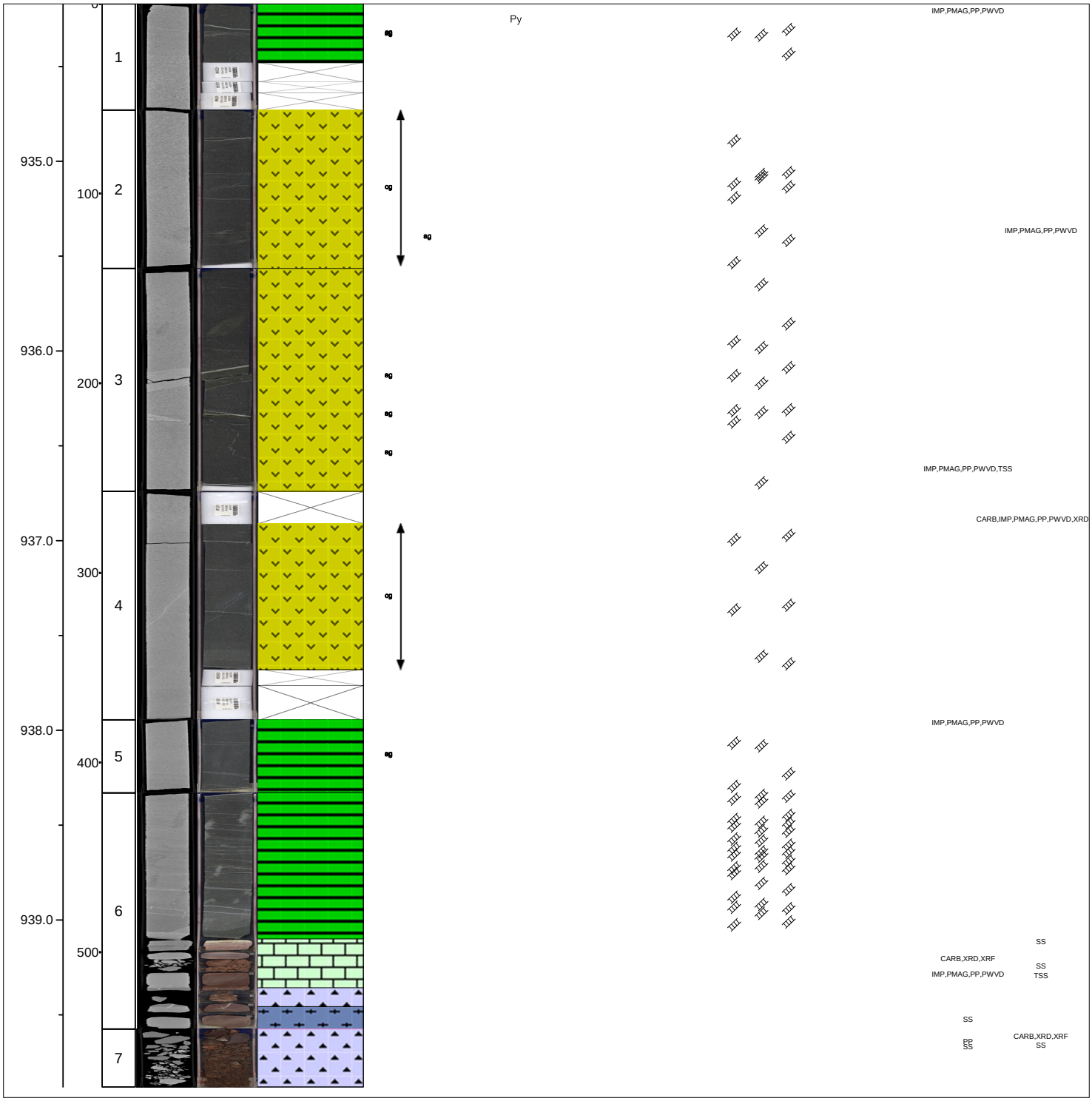
Hole C0019P Core 1K, interval 930 to 934.175 m (core depth below seafloor)

Summary: sec1-3, highly altered pillow basalt with brown carbonate and interpillow, sec4, gray crystal-rich massive basalt.



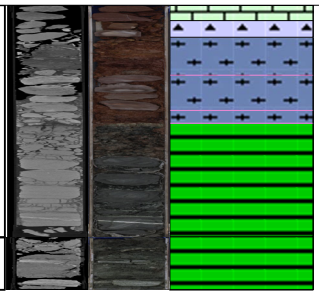
Hole C0019P Core 2K, interval 934.17 to 939.88 m (core depth below seafloor)

Summary: sec1-6 crystal-rich altered basalt sill, sec 6-7 reddish pelagic sediments (limestone, chert, siliceous mudstone), Intrusive boundary at sec 6, 77cm.



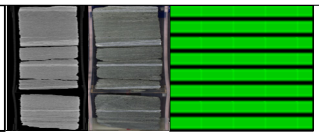
Hole C0019P Core 3K, interval 940 to 941.11 m (core depth below seafloor)

Summary: upperhalf chert and carbonaceous mud, lowerhalf basalt sill with subhorizontal veins, brecciated by drilling.

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Volcaniclastic texuture	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
940.0	0	1									SS SS SS IMP,PMAG,PP,PWVD CARB,XRD,XRF SS SS SS PMAG IMP,PP,PWVD
941.0	100	CC									SS

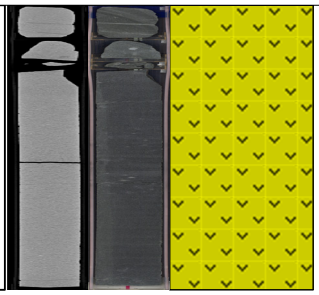
Hole C0019P Core 4K, interval 944 to 944.49 m (core depth below seafloor)

Summary: altered, crystal-rich basalt sill with numerous subhorizontal veins.

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Volcaniclastic texuture	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
944.0	0	1									CARB,IMP,PMAG,PP,PWVD,XRD,XRF

Hole C0019P Core 5K, interval 945.5 to 946.61 m (core depth below seafloor)

Summary: crystal-rich basalt sill.

Depth (m CSF-A)	Core length (cm)	Section	CT scan	Core image	Graphic lithology	Volcaniclastic texuture	Lithologic accessories (Fossils, Pore type, Diagenesis)	Deformations Structures (tectonic)	Drilling disturbance	Bioturbation	Shipboard samples
946.0	0 100	1									IMP,PMAG,PP,PWVD CARB,XRD,XRF