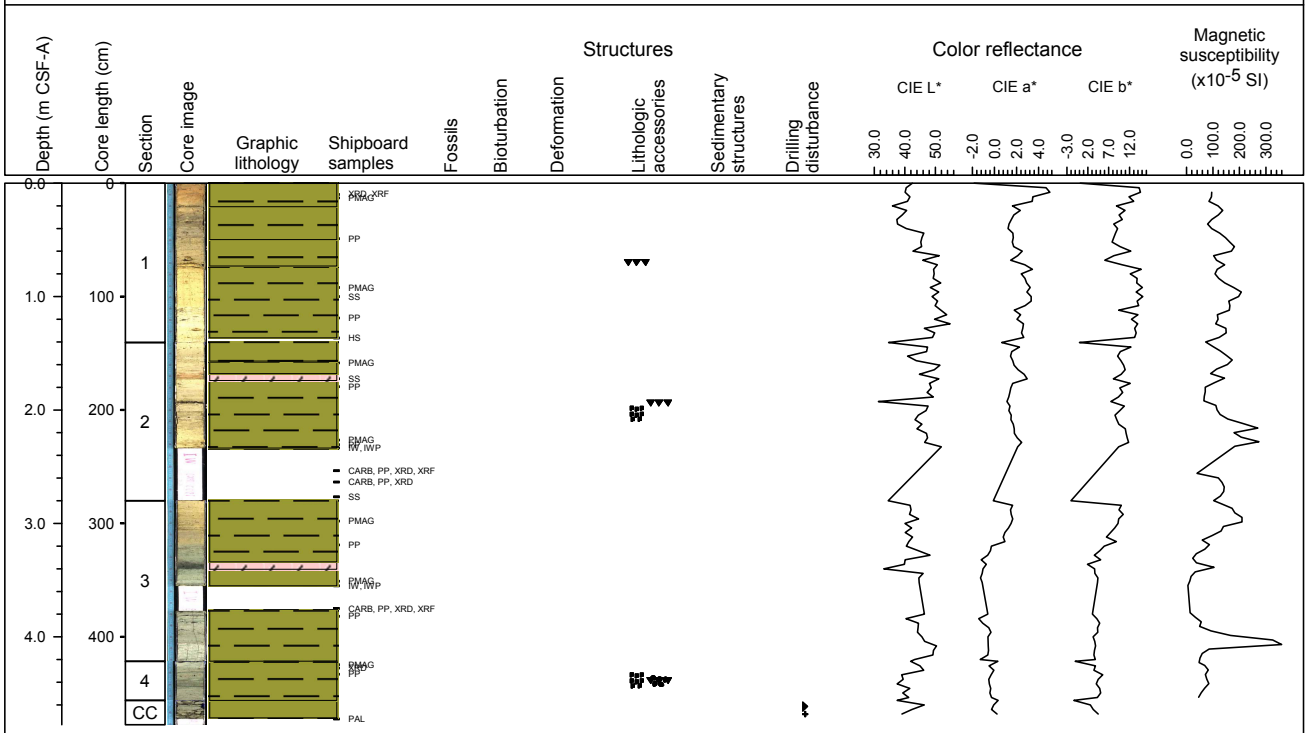
Core Photo

C0012A - See Expedition 322
C0012B - See Expedition 322

Hole C0012C Core 1H, interval 0-4.775 m (core depth below seafloor)

Mottled succession of clay (light brown) with two volcanic layers. Scattered clasts at three intervals in the core. Ash scattering in Section 4.

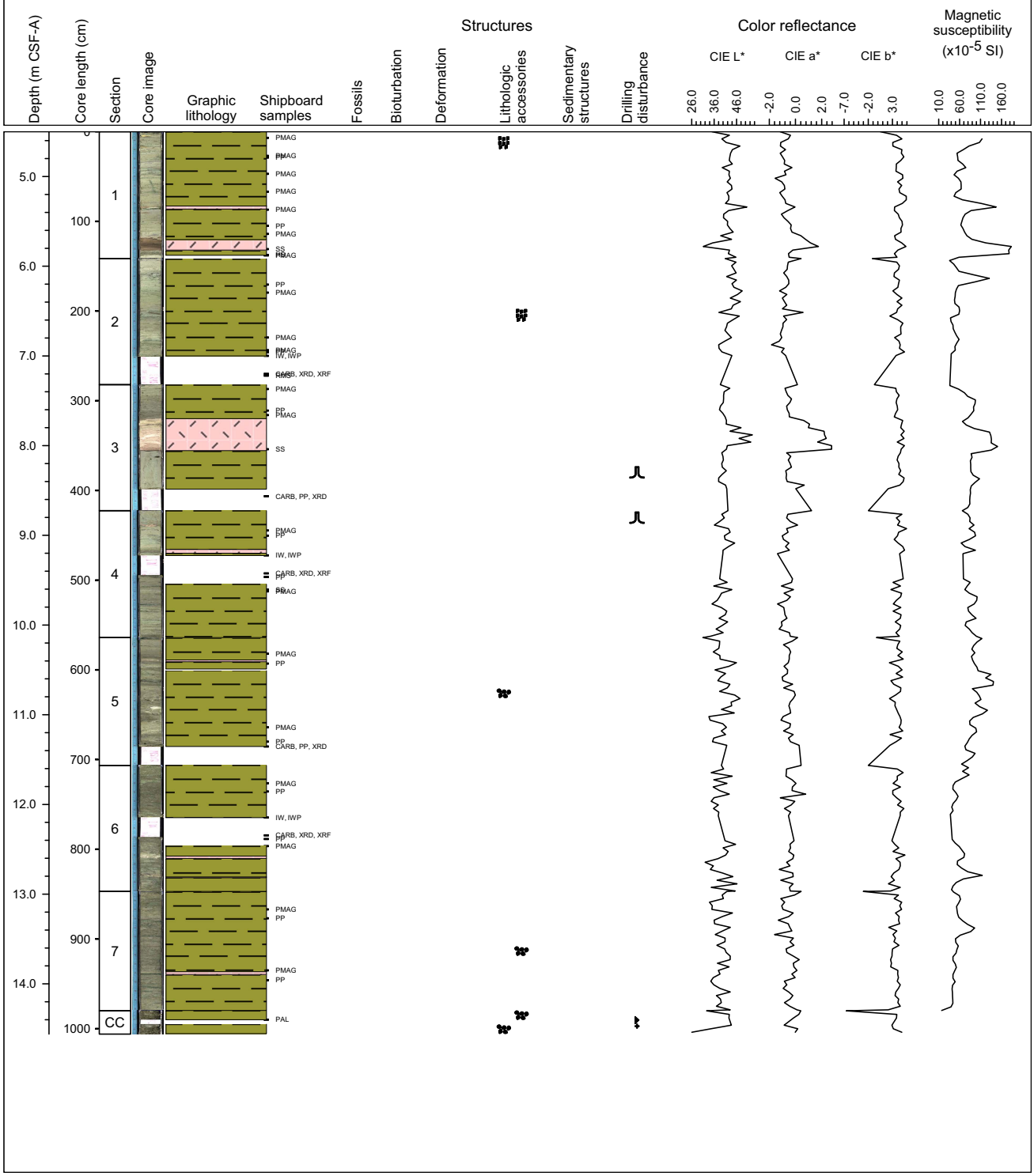
Bioturbation is intense.



Core Photo

Hole C0012C Core 2H, interval 4.5-14.56 m (core depth below seafloor)

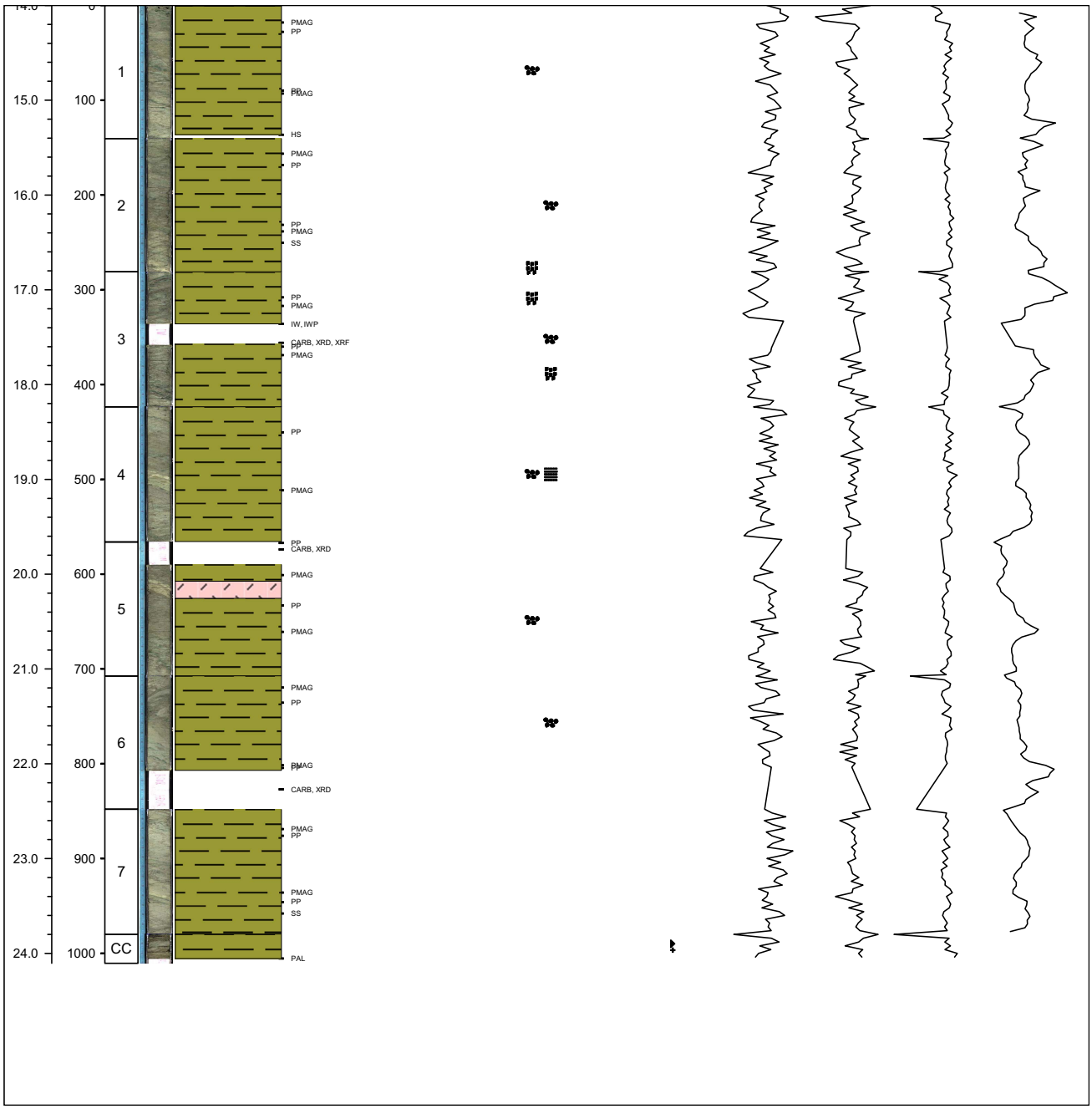
Greenish gray clay with scattered ash on top of the core. The sediment is mottled below 9.5 mbsf. Colour banding is intense at this level.



Core Photo

Hole C0012C Core 3H, interval 14-24.105 m (core depth below seafloor)

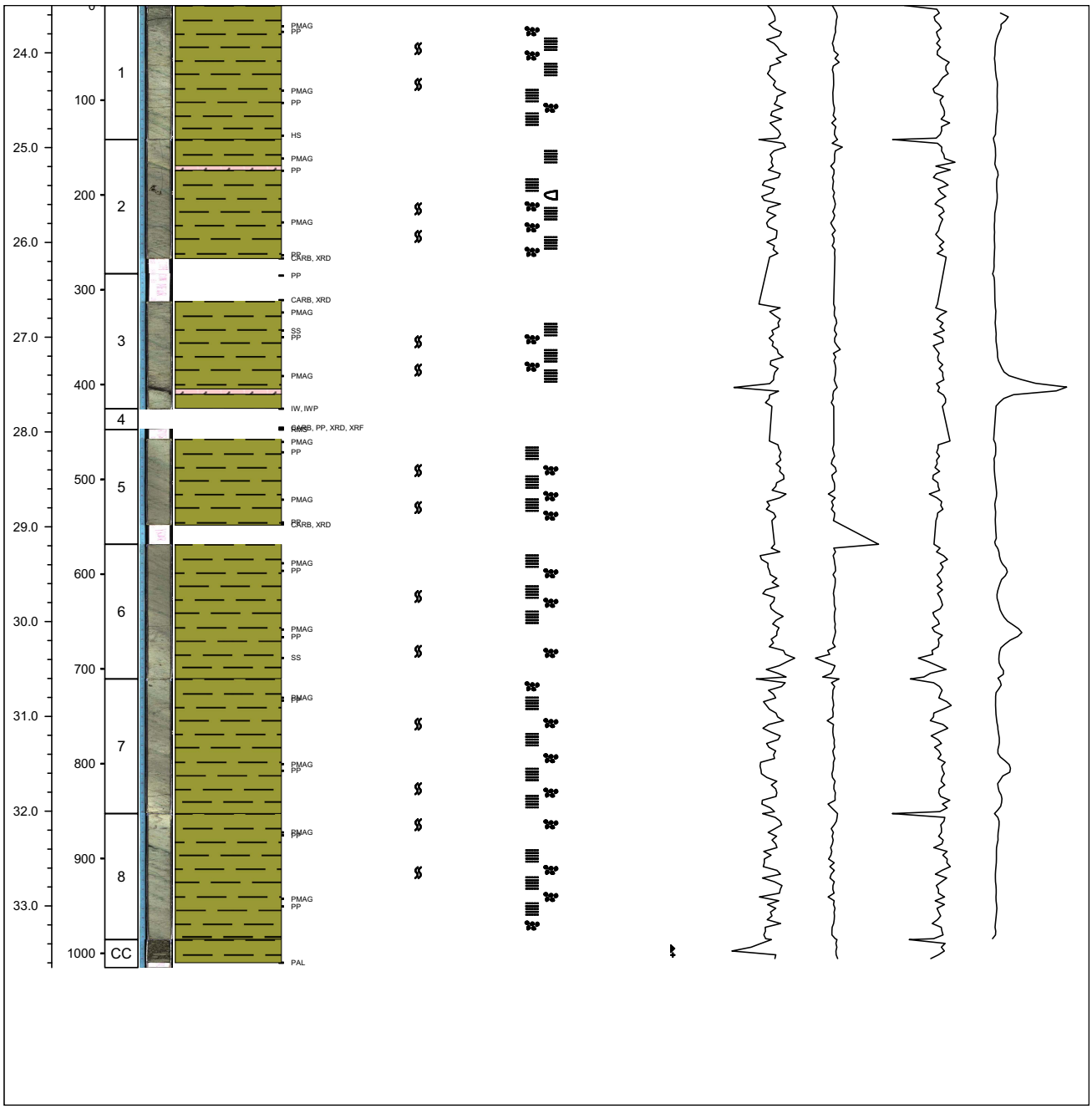
Mottled succession of clay. Some dispersed ash laminae. Colour mottling.



Core Photo

Hole C0012C Core 4H, interval 23.5-33.65 m (core depth below seafloor)

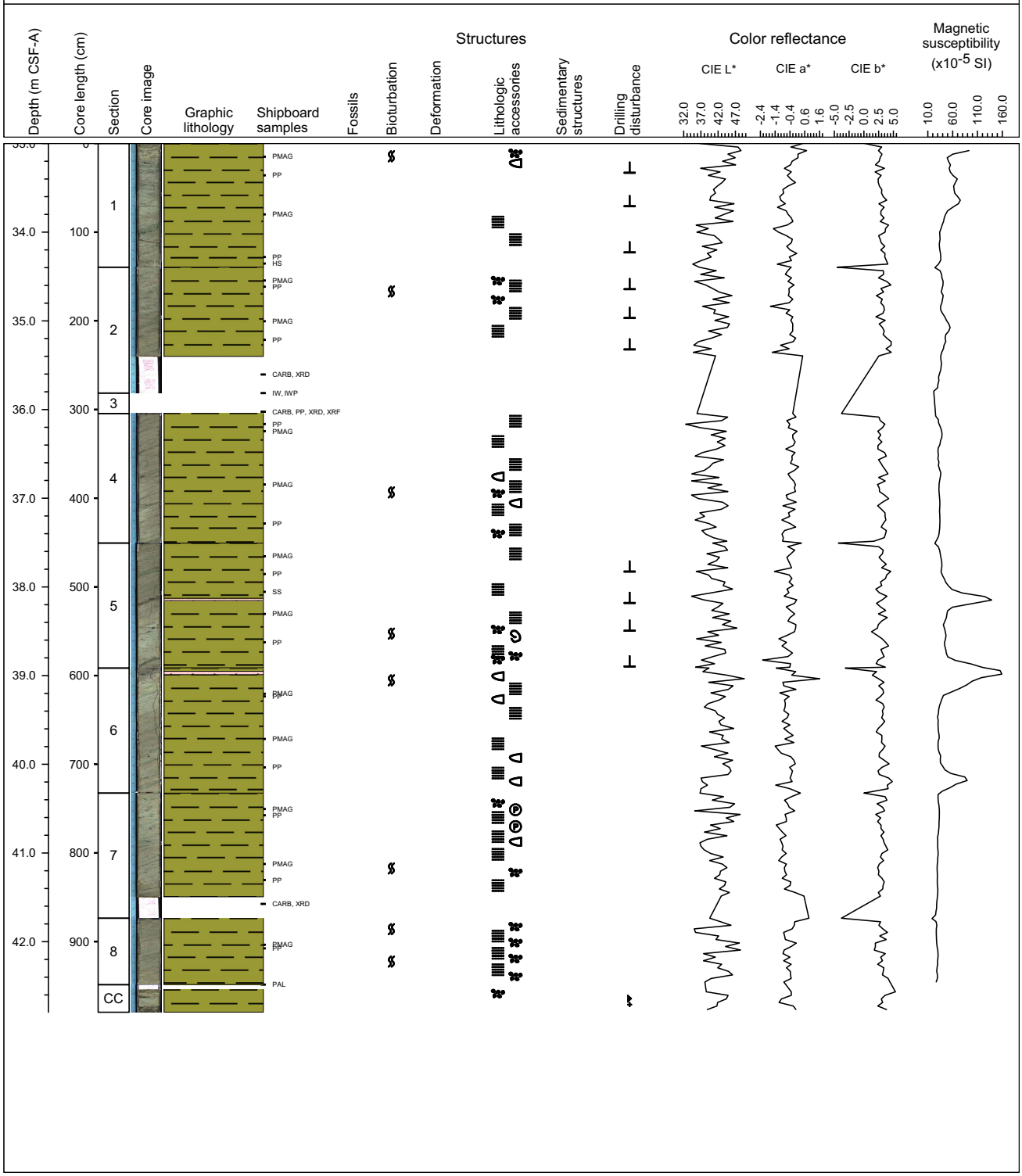
Dark greenish gray clay with some color mottling indicating moderate bioturbation, and some ash layers and green lamina, both of which are tilted.



Core Photo

Hole C0012C Core 5H, interval 33-42.795 m (core depth below seafloor)

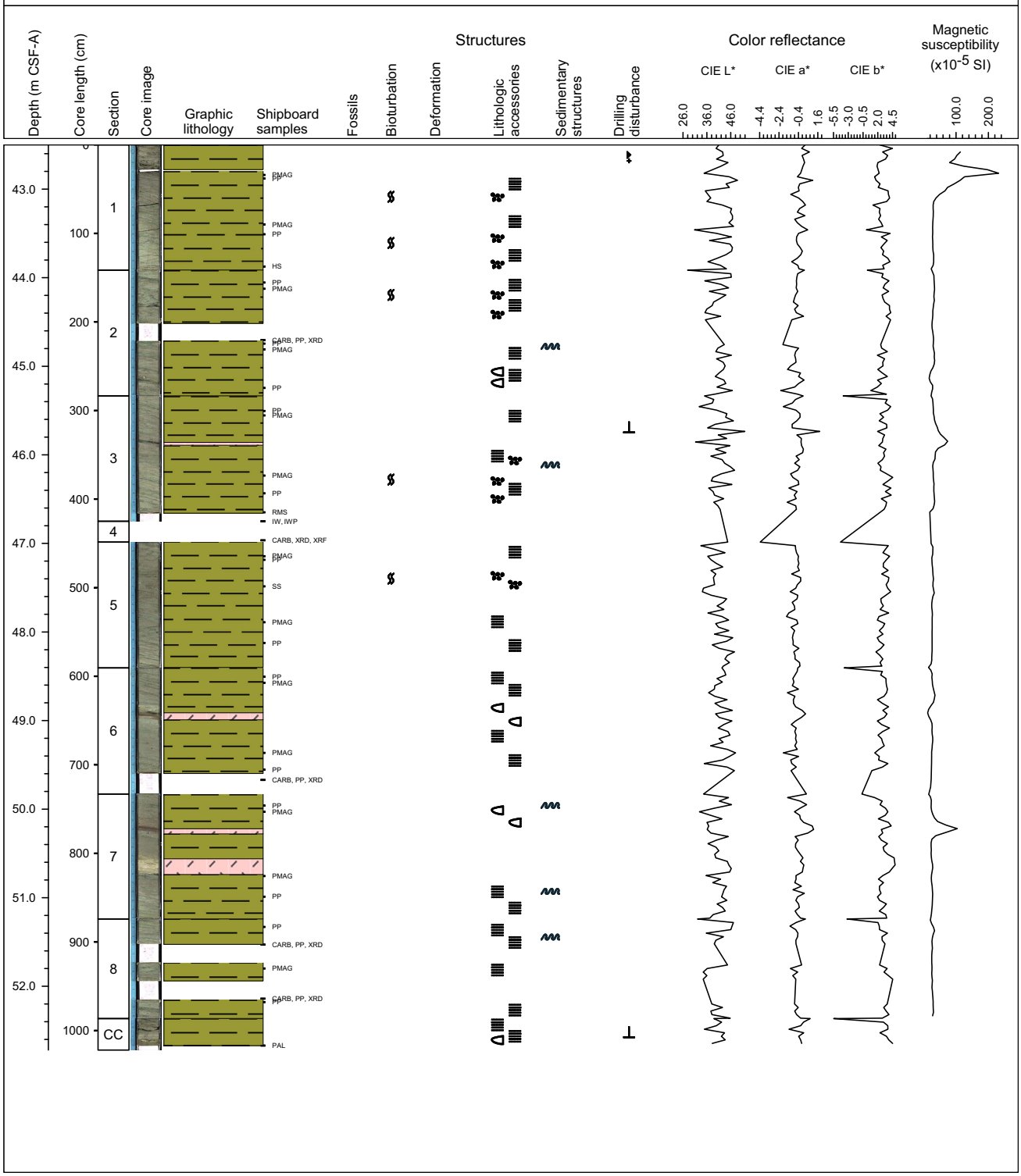
Dark greenish gray clay with some color mottling indicating bioturbation, patches of ash, and a few ash layers and green lamina, which are tilted.



Core Photo

Hole C0012C Core 6H, interval 42.5-52.72 m (core depth below seafloor)

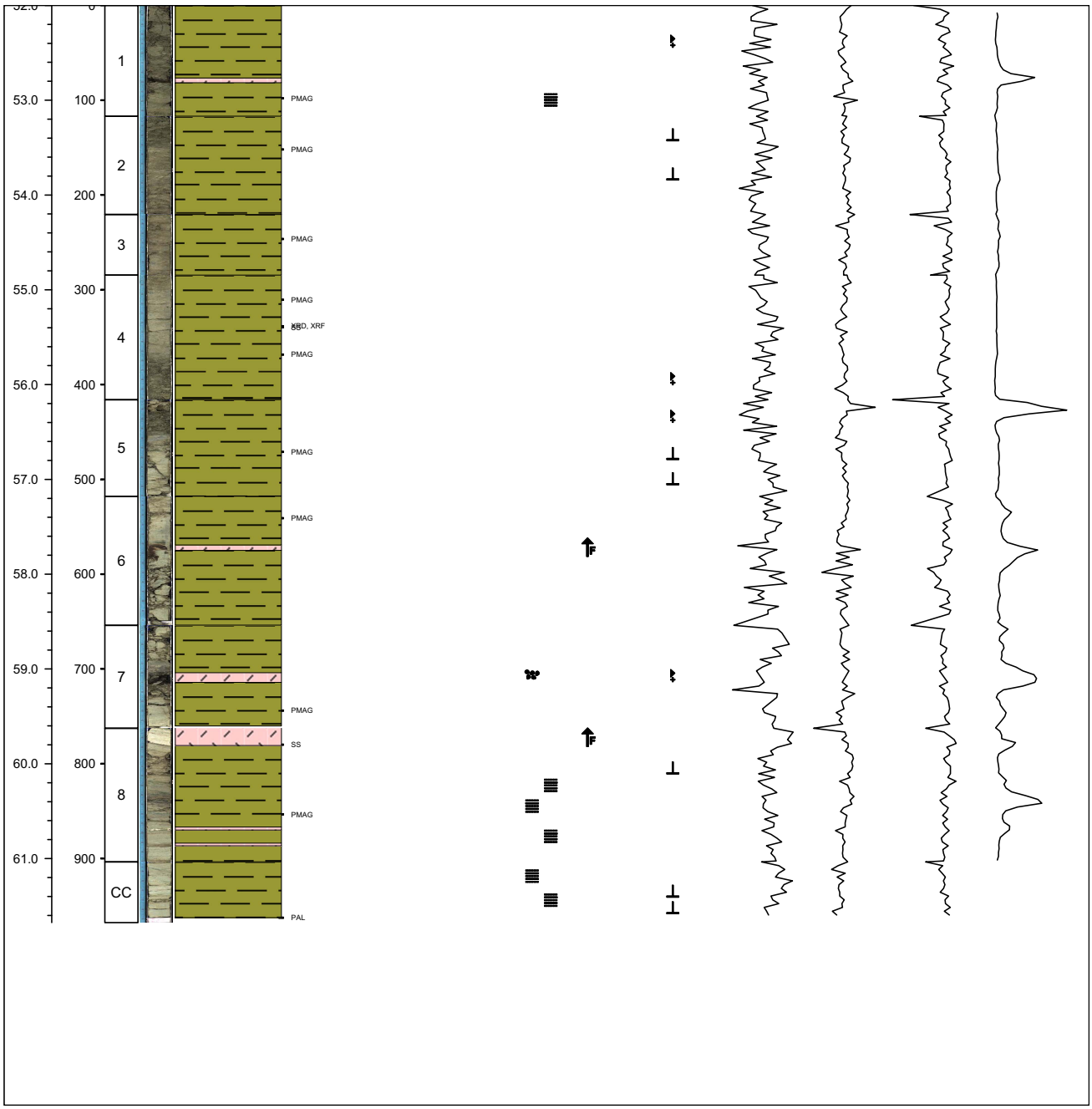
Dark greenish gray mud with some color mottling, patches and layers of ash. Bioturbation is minor to moderate.
Green lamina occur throughout this core, mostly tilted but folded and faulted lamina also occur.



Core Photo

Hole C0012C Core 7H, interval 52-61.675 m (core depth below seafloor)

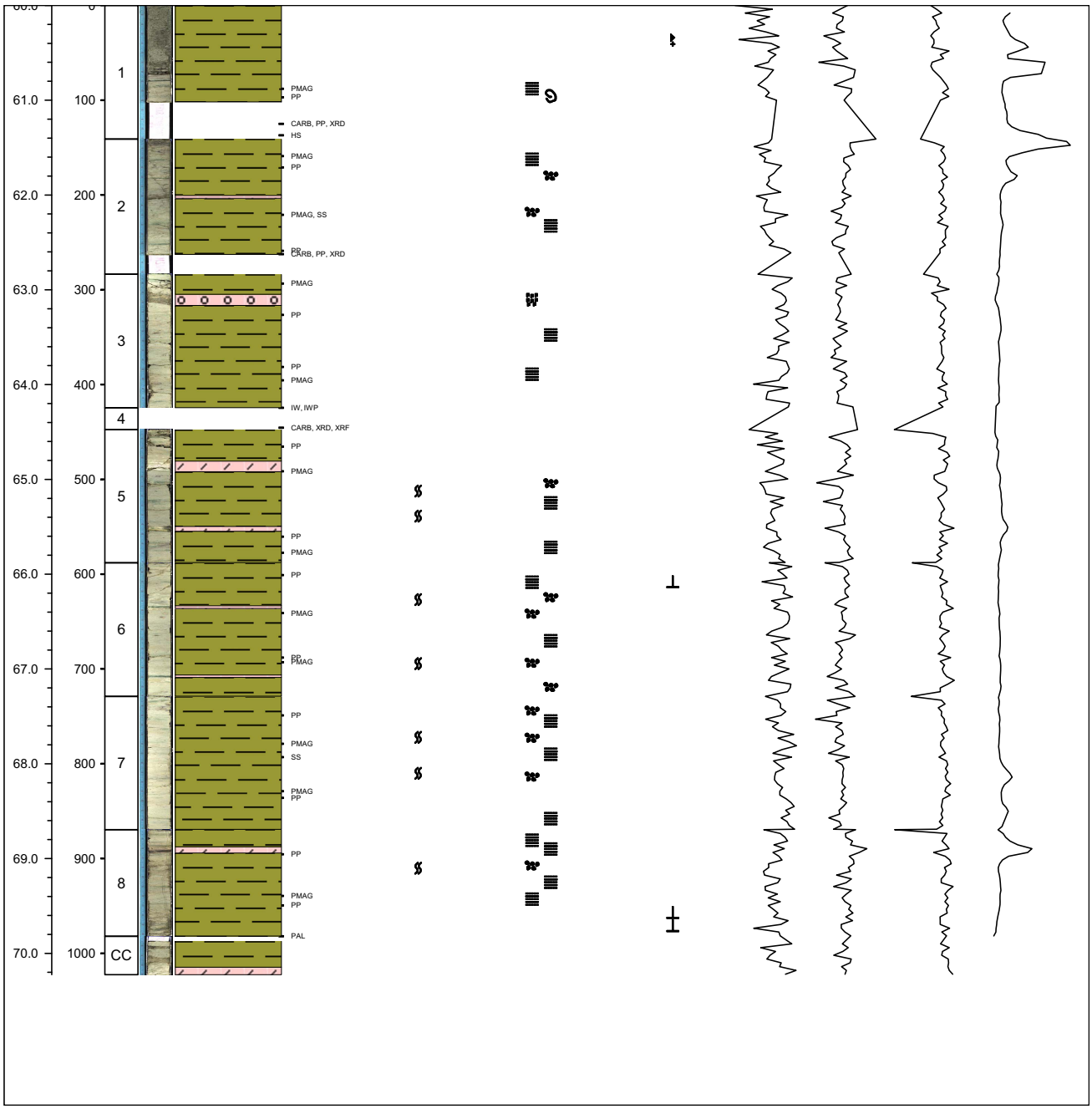
Dark greenish brown clay with some ash layers and some green lamina/layers mainly in the lower part of the core.



Core Photo

Hole C0012C Core 8H, interval 60-70.225 m (core depth below seafloor)

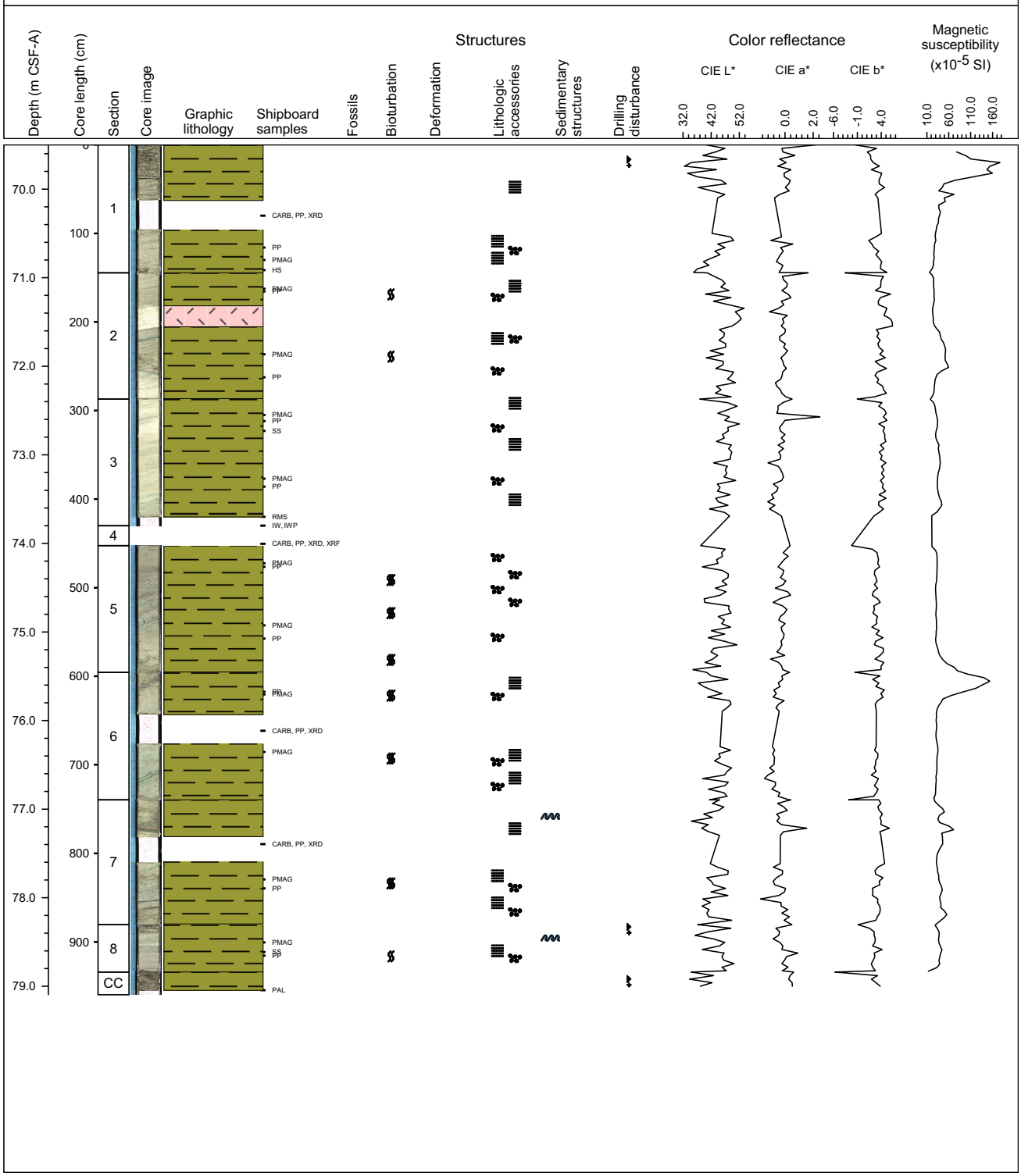
Dark greenish gray clay with some ash layers, color banding (green lamina/layers) and color mottling indicating moderate bioturbation.



Core Photo

Hole C0012C Core 9H, interval 69.5-79.095 m (core depth below seafloor)

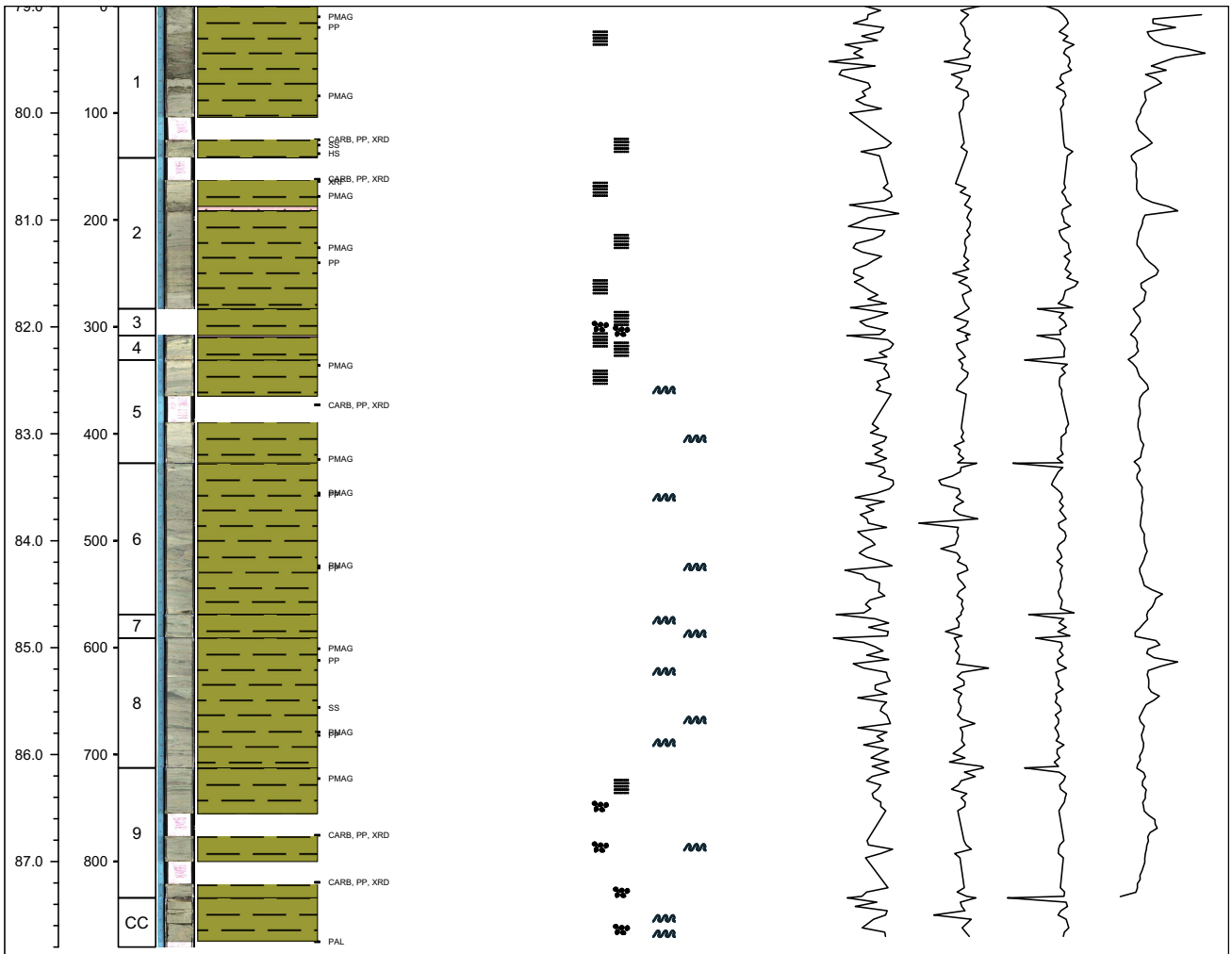
Dark greenish gray clay comprising some color bands (green lamina/layers) and color mottling indicating moderate to heavy bioturbation.
In the lower part, convolute lamination and dipping color bands are seen.



Core Photo

Hole C0012C Core 10H, interval 79-87.8 m (core depth below seafloor)

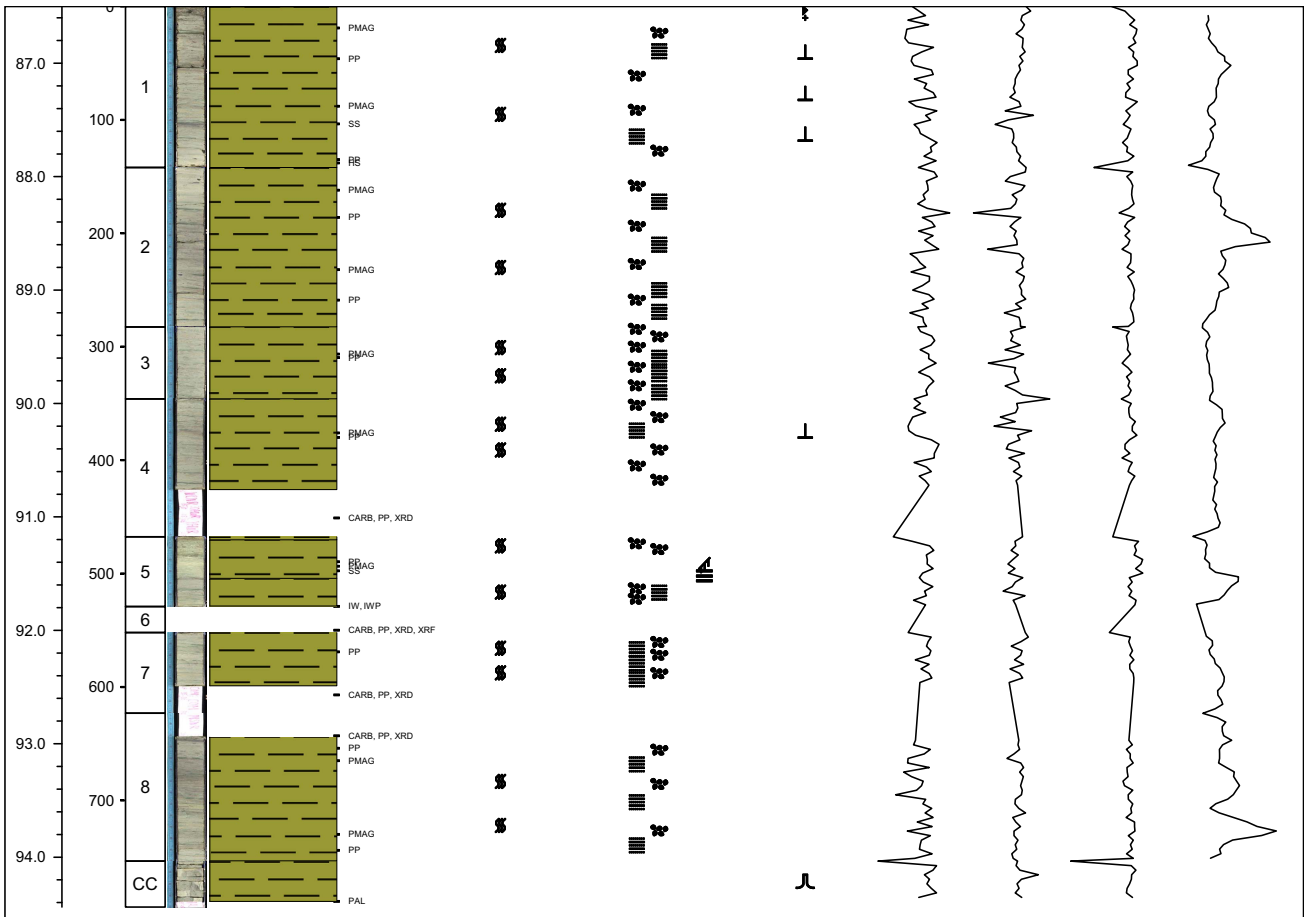
Dark greenish gray clay and a few ash layers, the middle and lower part of the core comprise various structures indicating profound sediment deformation.



Core Photo

Hole C0012C Core 11H, interval 86.5-94.44 m (core depth below seafloor)

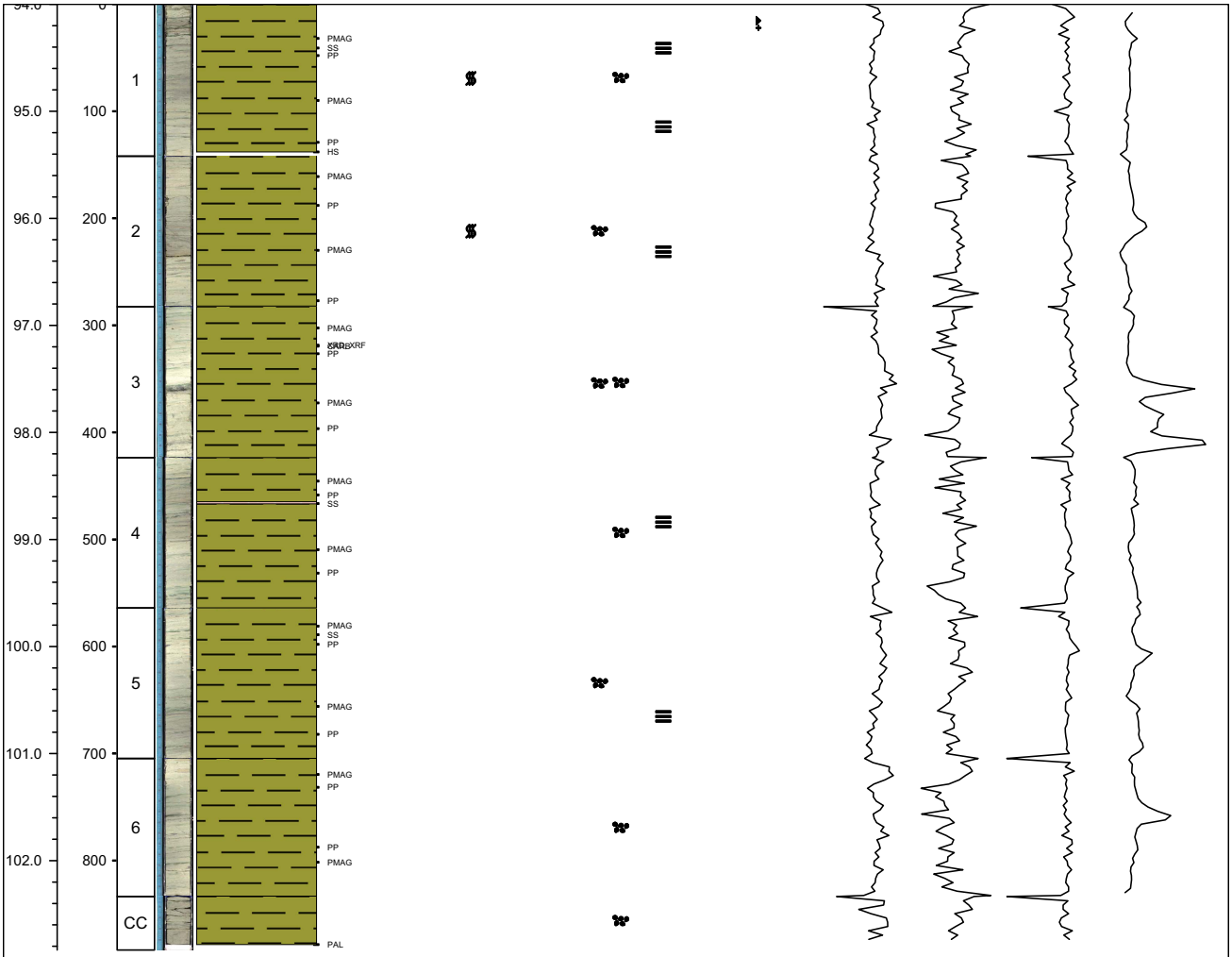
Dark greenish gray clay with some color banding (green lamina/layers) and profound color mottling indicating severe bioturbation.



Core Photo

Hole C0012C Core 12H, interval 94-102.835 m (core depth below seafloor)

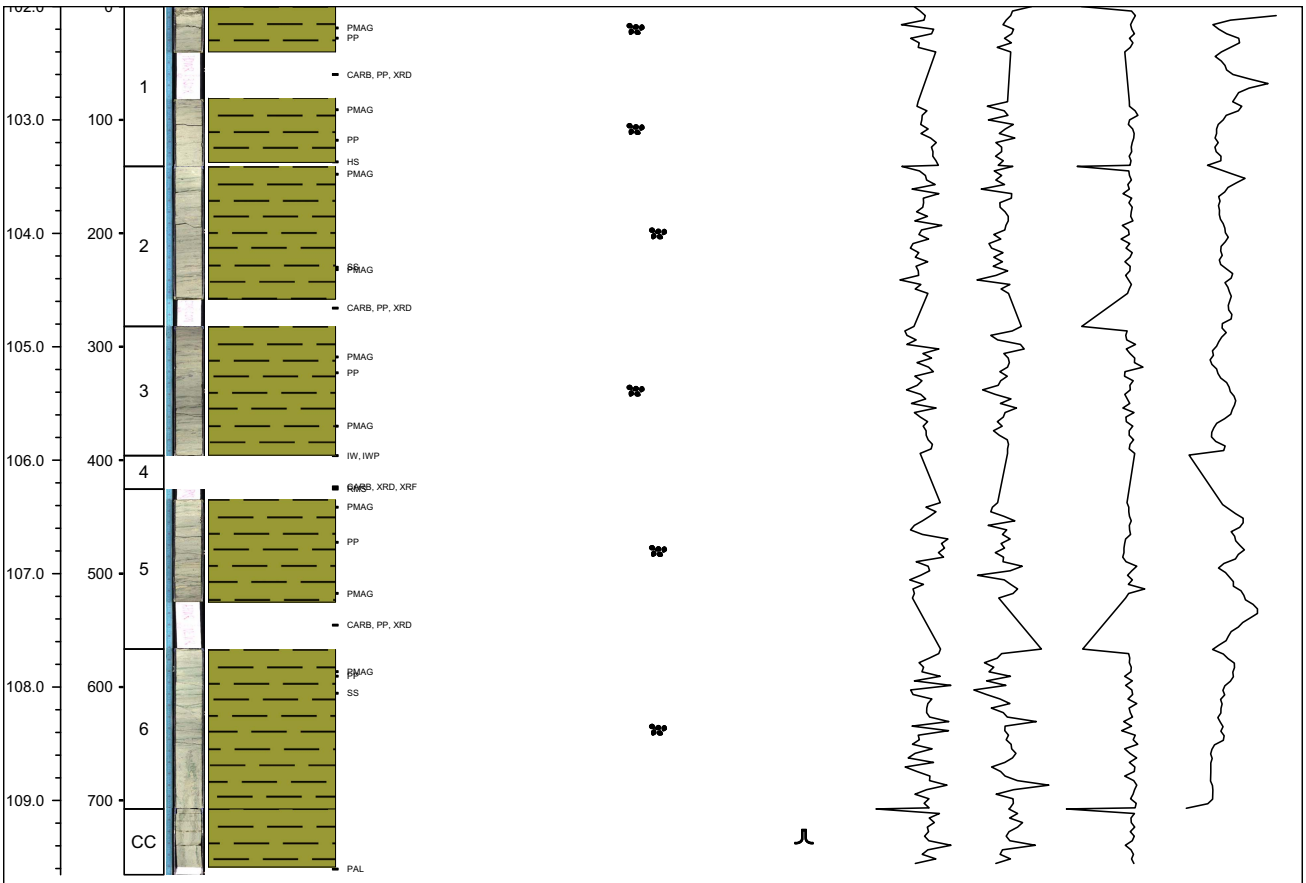
Greenish gray silty clay, with a few thin volcanis ash layers.
Severely deformed, with faults within the core.



Core Photo

Hole C0012C Core 13H, interval 102-109.655 m (core depth below seafloor)

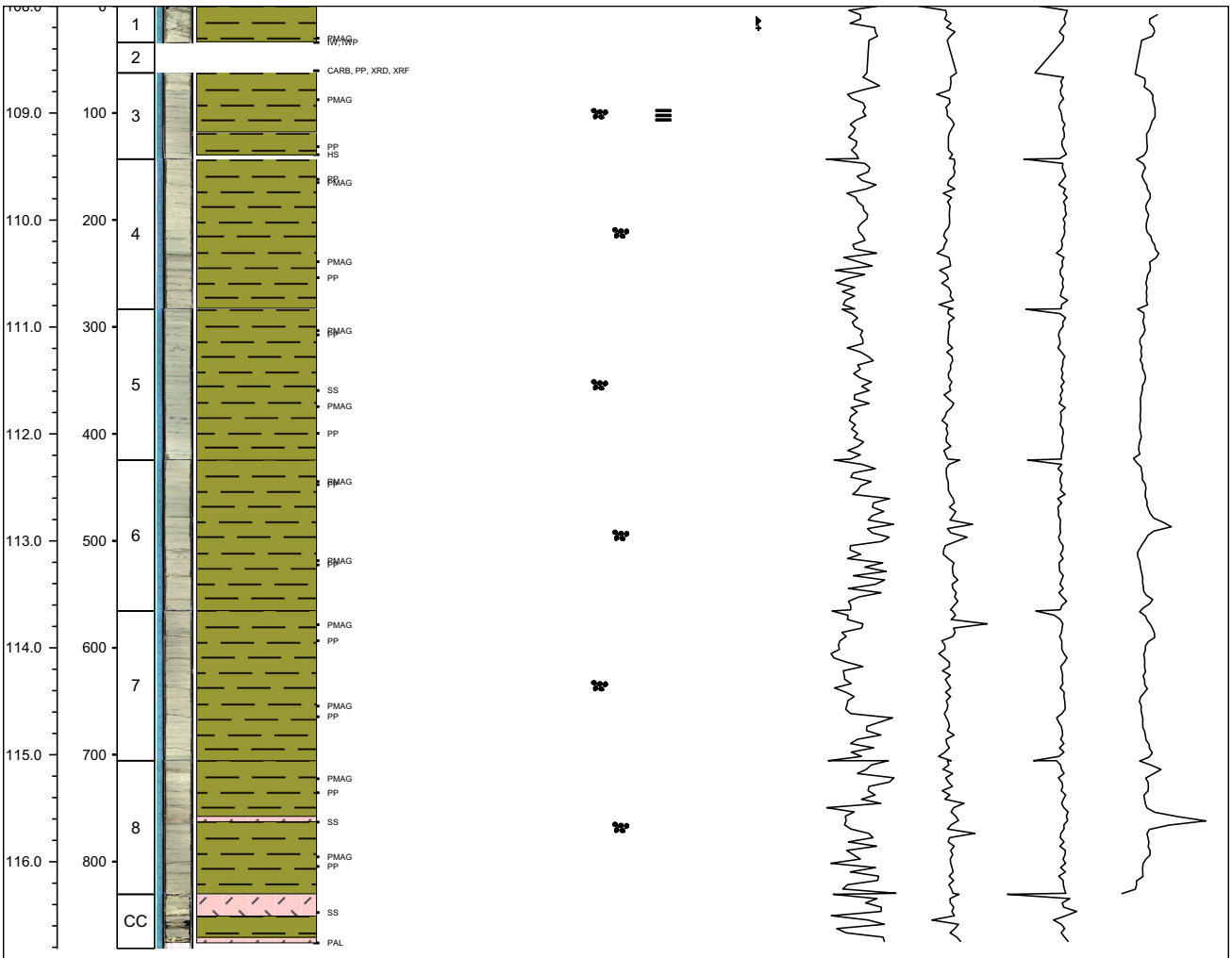
Greenish gray silt clay, with severe deformation and faults. There is "flow in" structure in the lower part of Sections 6 and CC, formed by driling.



Core Photo

Hole C0012C Core 14H, interval 108-116.81 m (core depth below seafloor)

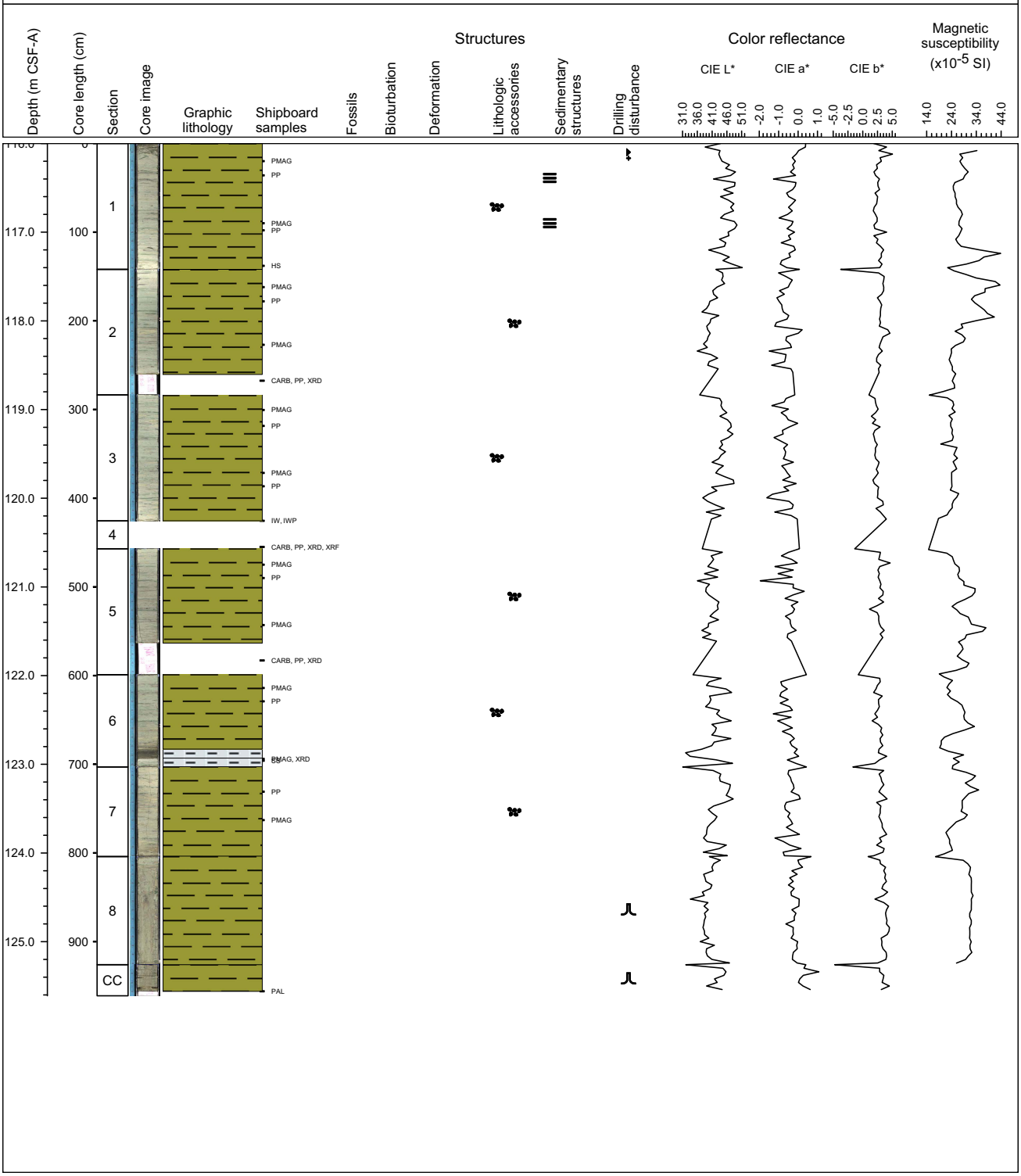
Greenish gray silt clay, with less severe deformation and faults than 13H.
Volcanic ash layers occur in the bottom part of the core, with a maximum thickness of 20cm.



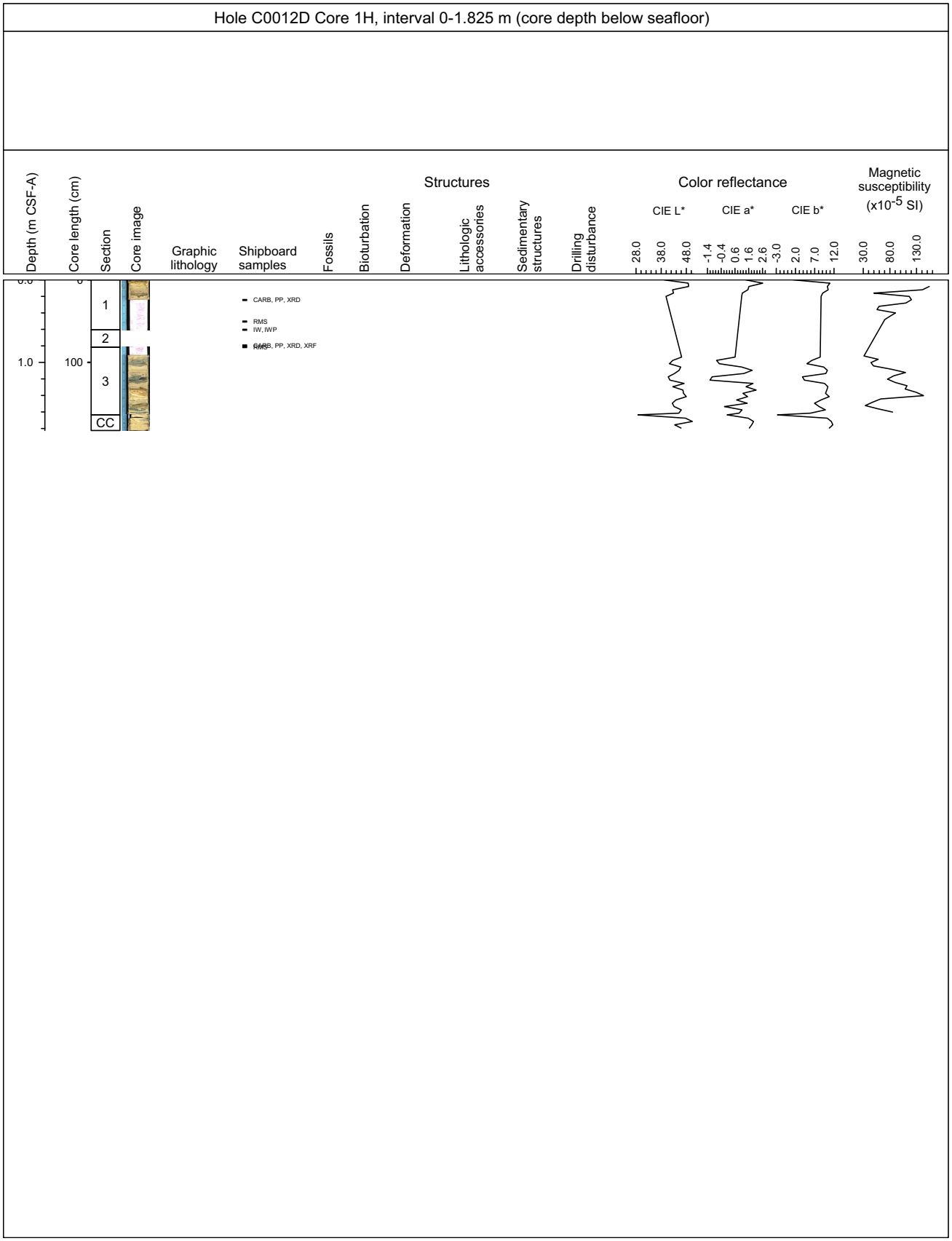
Core Photo

Hole C0012C Core 15H, interval 116-125.61 m (core depth below seafloor)

Greenish gray silt clay, with severe deformation and faults. "Flow in" structure caused by drilling occurs in Sections 8 and CC.



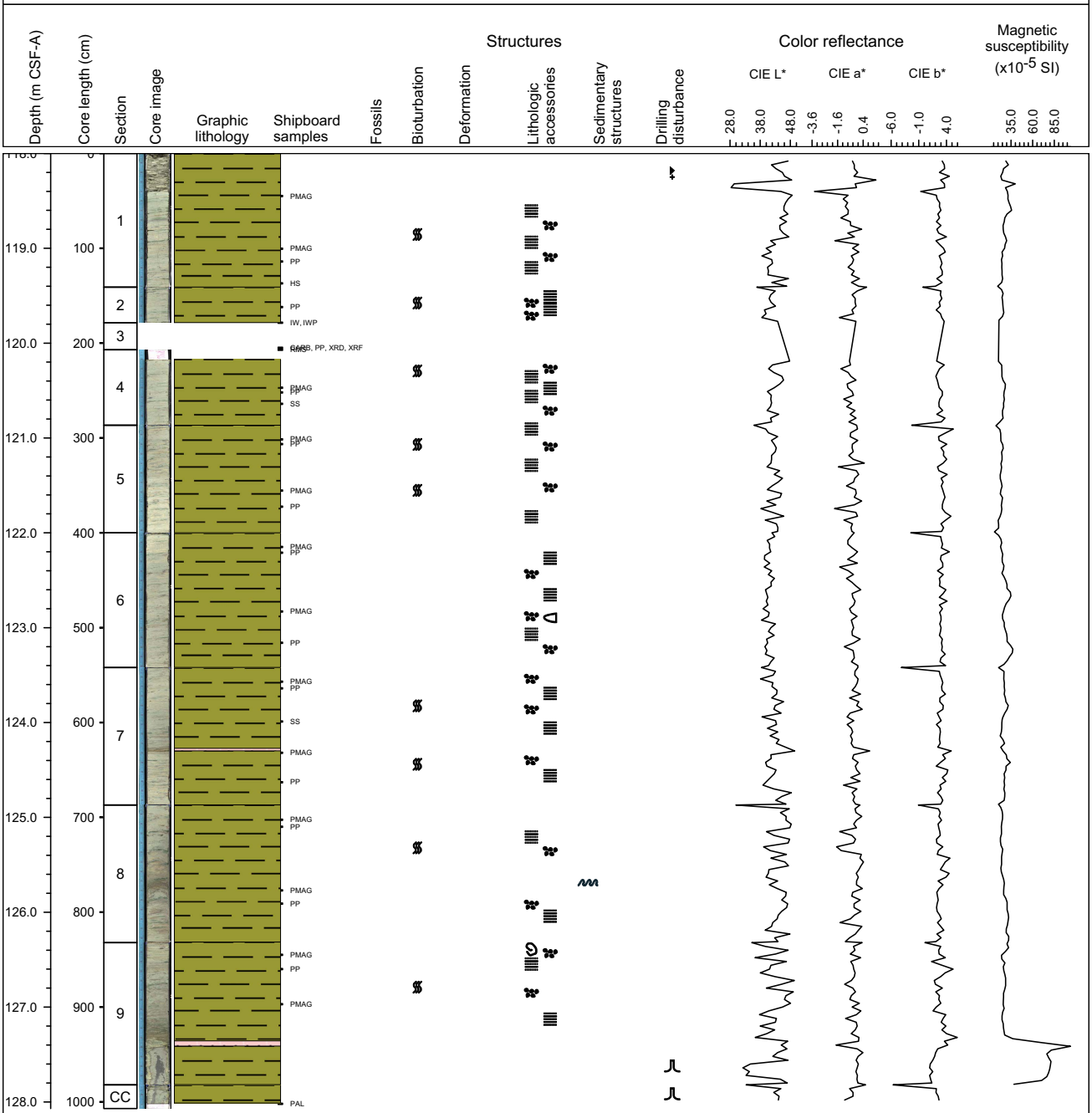
Core Photo


Hole C0012D Core 1H, interval 0-1.825 m (core depth below seafloor)
Depth (m CSF-A)
Core length (cm)
Section
Core image
Graphic lithology
Shipboard samples
Fossils
Bioturbation
Deformation
Structures
Lithologic accessories
Sedimentary structures
Drilling disturbance
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic susceptibility (x10-5 SI)
28.0
38.0
48.0
-1.4
-0.4
0.6
1.6
2.6
-3.0
2.0
7.0
12.0
30.0
80.0
130.0
1.0
100
1
2
3
CC
CARB, PP, XRD
RMS
IW, IWP
CARB, PP, XRD, XRF

Core Photo

Hole C0012D Core 2H, interval 118-128.07 m (core depth below seafloor)

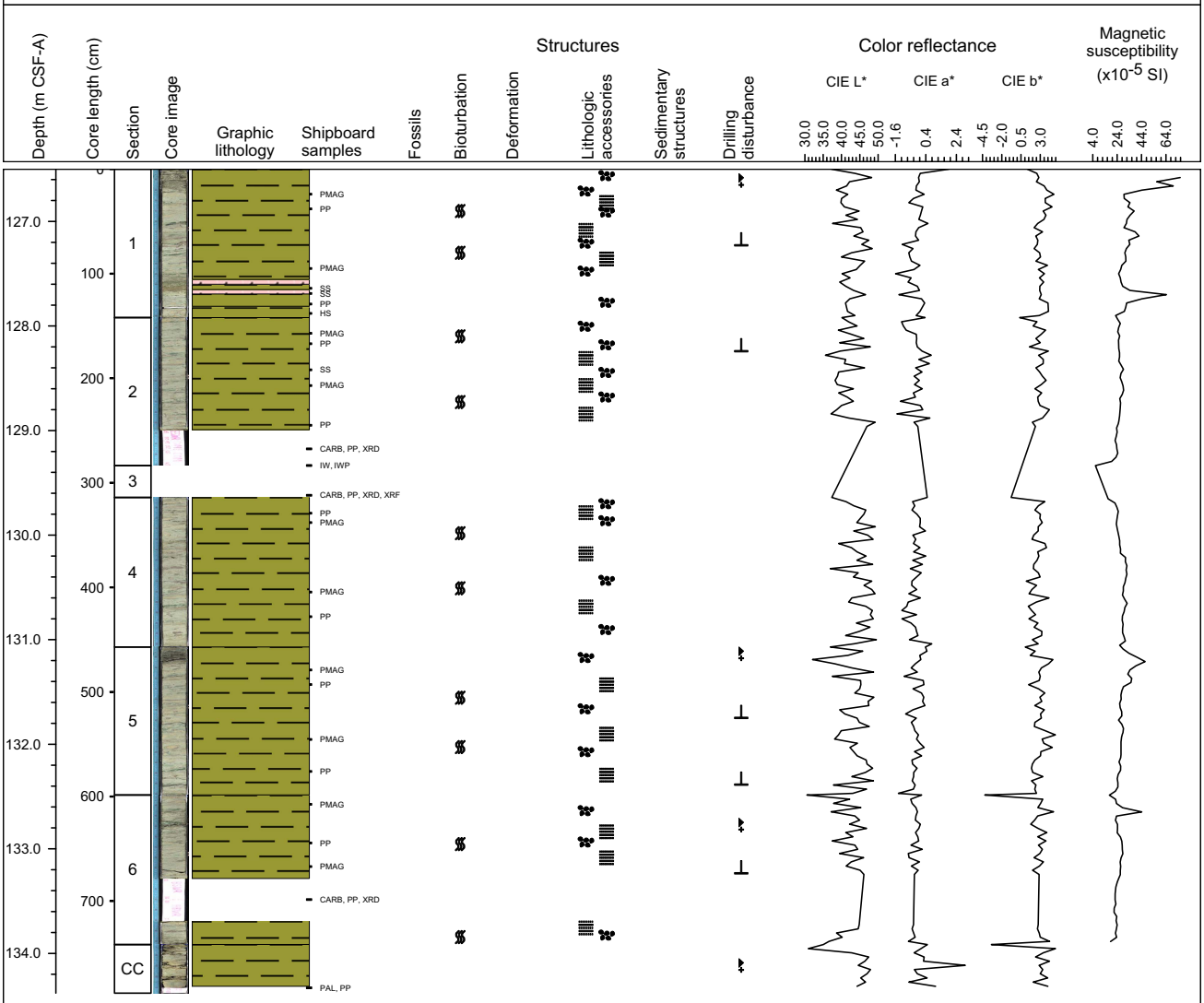
Dark greenish gray clay with some green band and color mottling, heavily bioturbated.
A few ash layers in the lower part of the core. Minor faulting and folding can be seen in some parts of the core



Core Photo

Hole C0012D Core 3H, interval 126.5-134.38 m (core depth below seafloor)

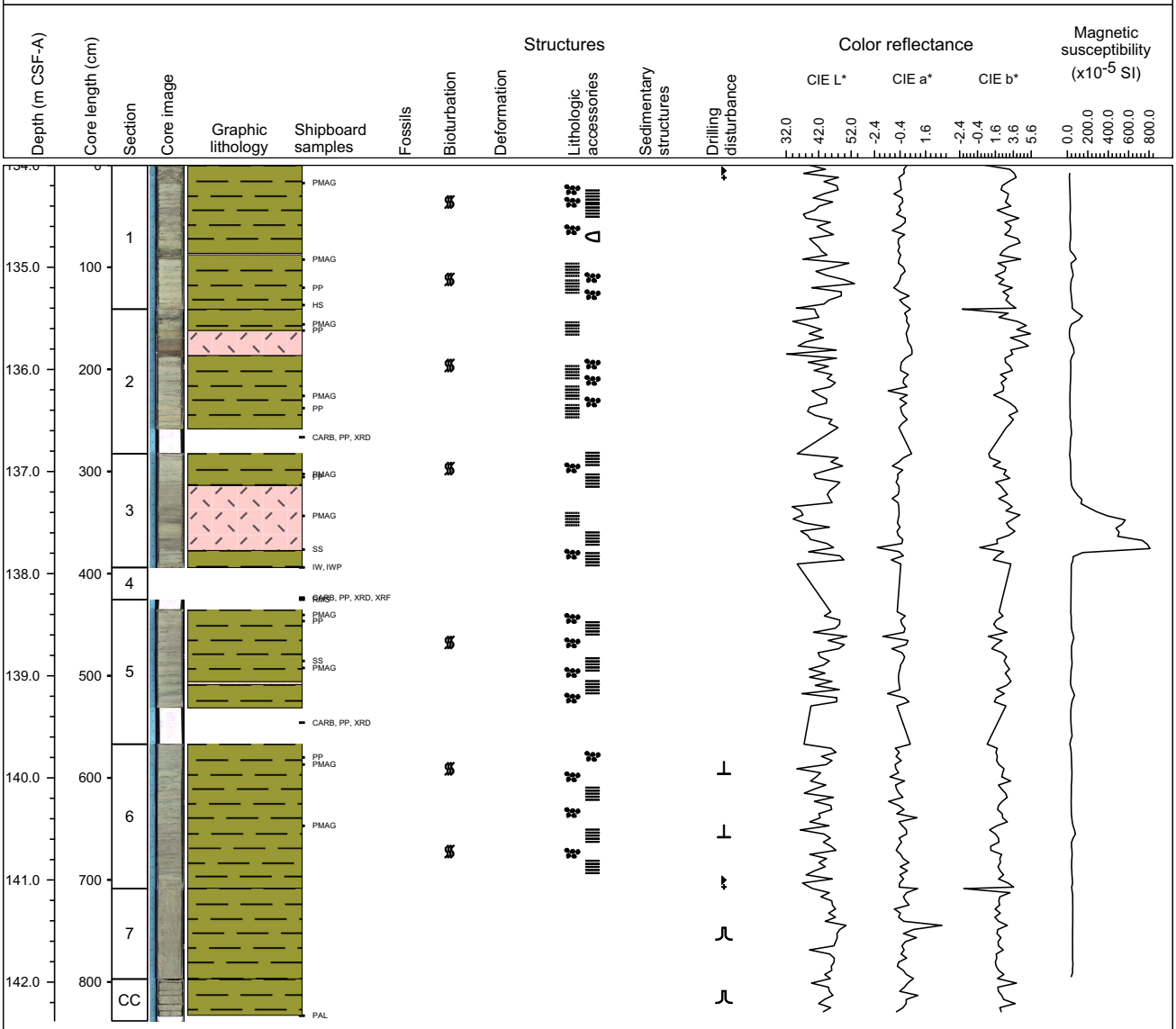
Dark greenish gray clay with some color banding (green) and profound color mottling - heavily bioturbated. Some thin ash layers occur and minor faults have been seen.



Core Photo

Hole C0012D Core 4H, interval 134-142.38 m (core depth below seafloor)

Darg greenish gray clay with green bands and bioturbation. Interbedded sre some ash layers.



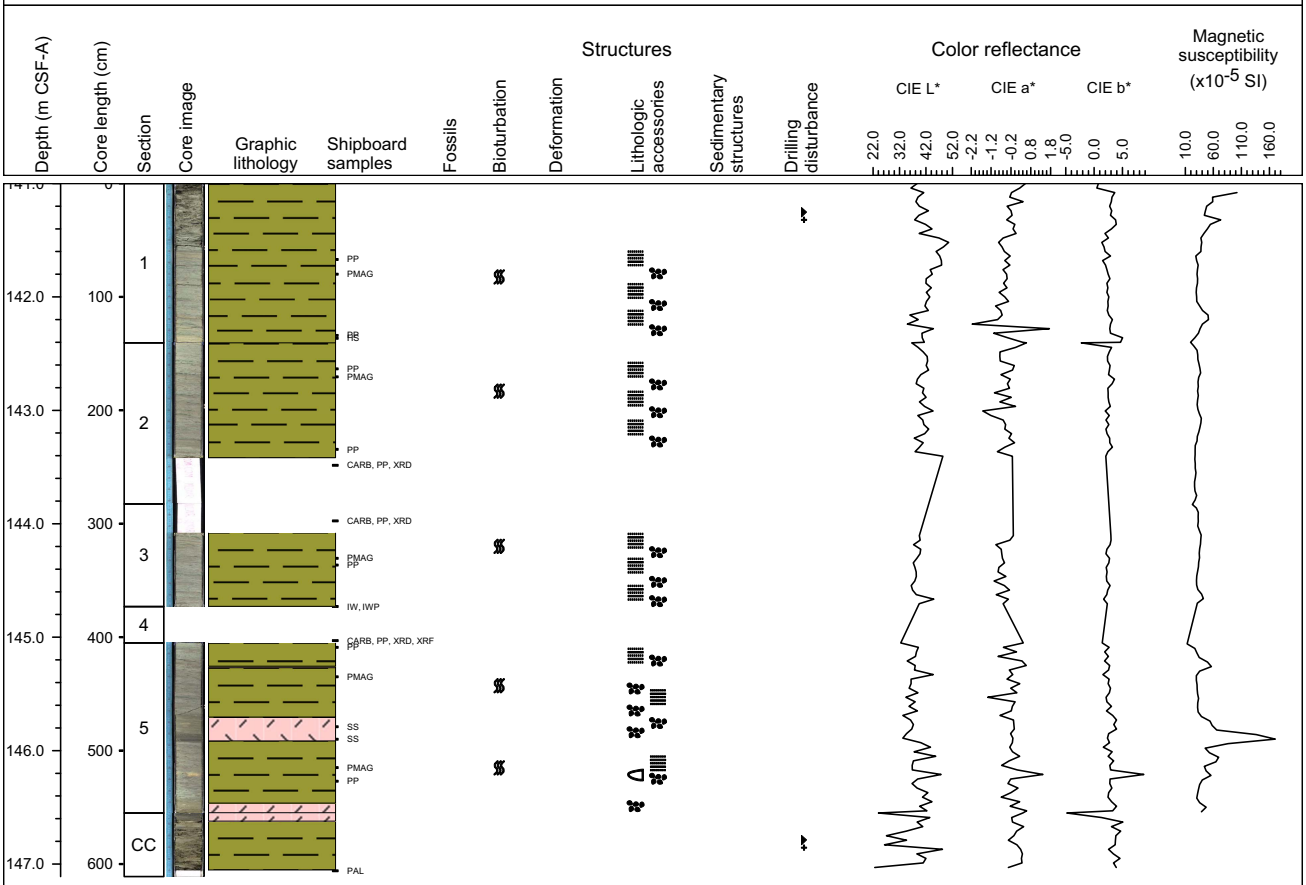
Core Photo

Hole C0012D Core 5H, interval 141-147.11 m (core depth below seafloor)

Dark greenish gray - gray clay with green bands and profound bioturbation.

Two ash layers overlain by a zone of ash and a thin ash layer is located in the lower part of the core.

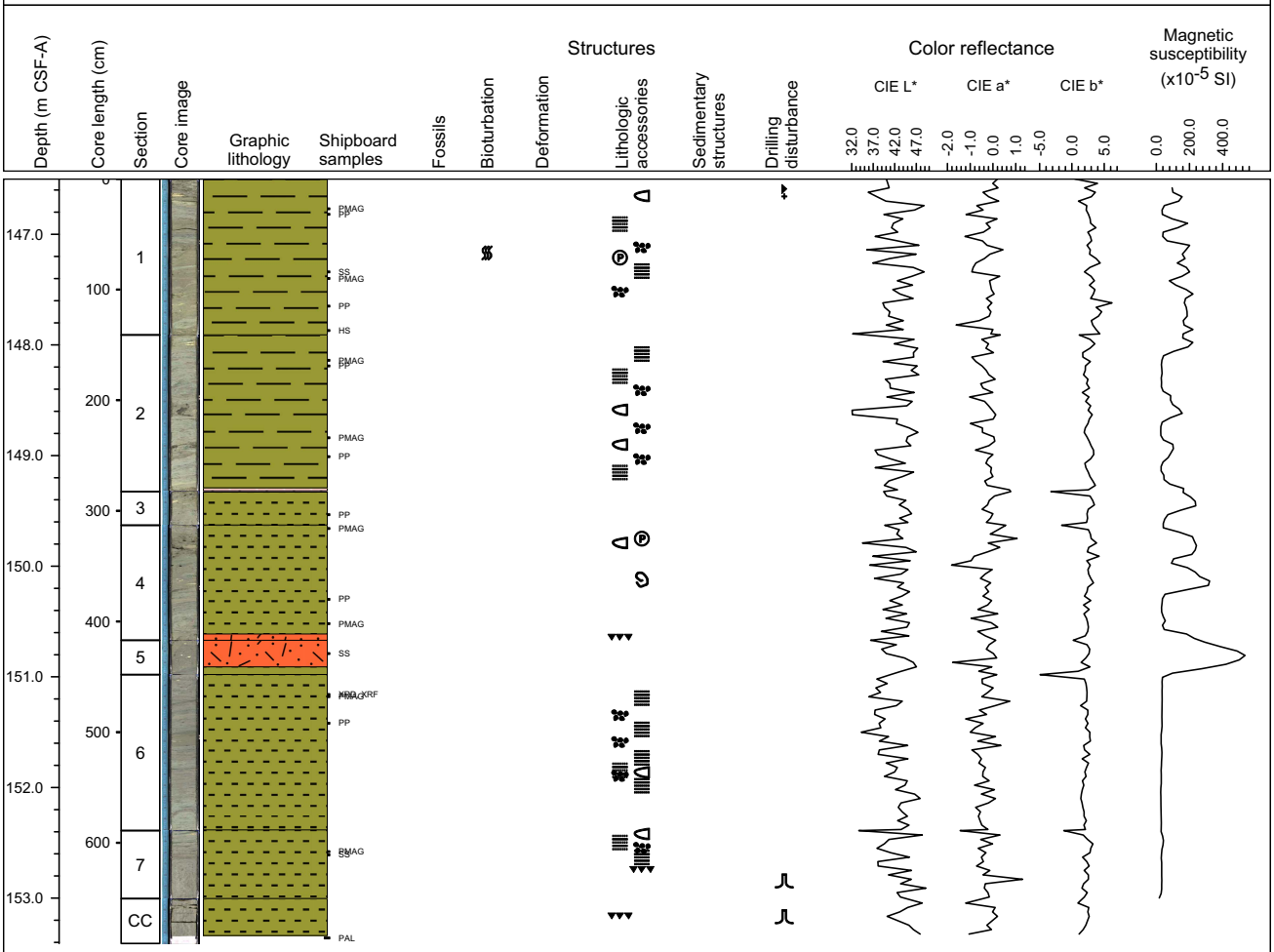
Part of the cored sediments have been affected by small scale faulting.



Core Photo

Hole C0012D Core 6H, interval 146.5-153.41 m (core depth below seafloor)

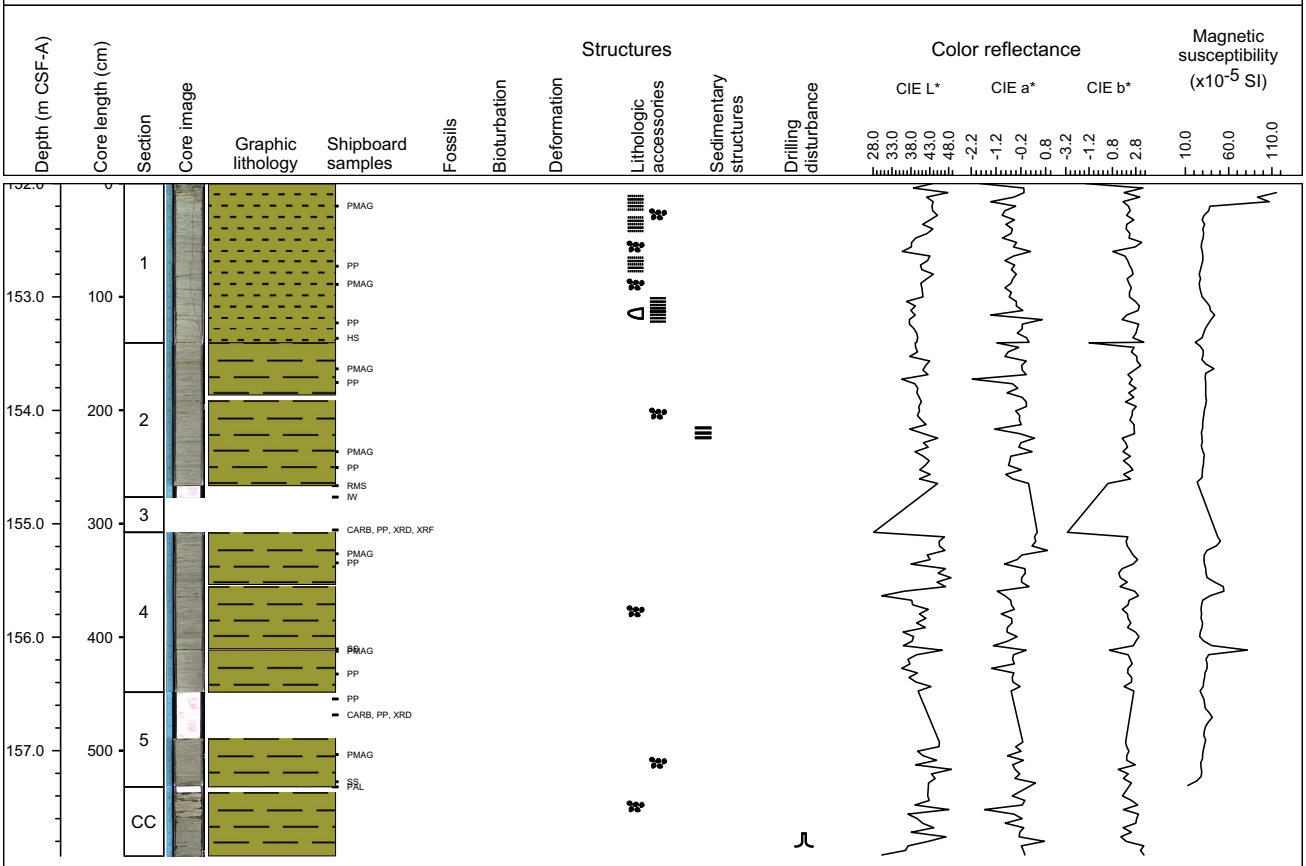
Greenish gray silty clay, with particles of pumice, wood fragments and volcanic clasts, layer of sandy sediment (a mixture of sand, silt, clay and gravelly-sized mud clasts). The sediment layers are severely deformed in the lower part of the core.



Core Photo

Hole C0012D Core 7H, interval 152-157.93 m (core depth below seafloor)

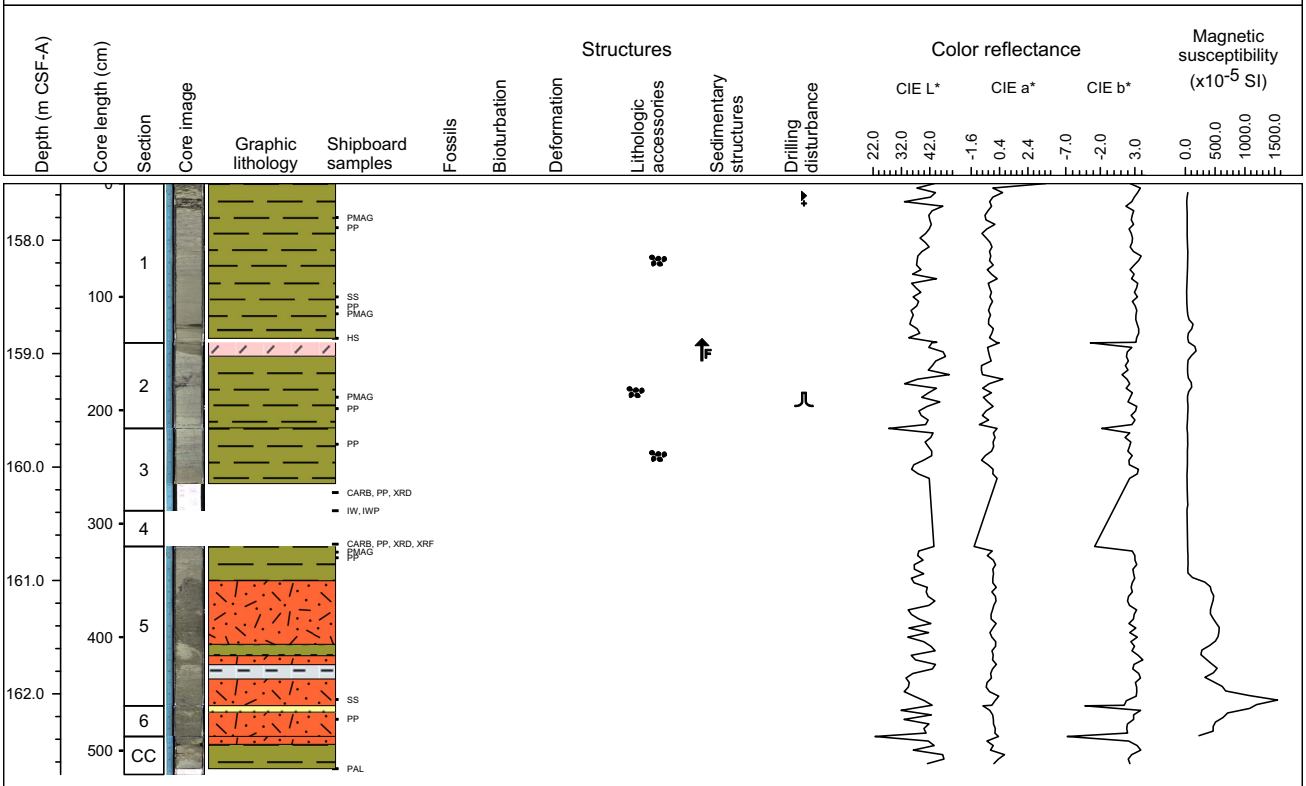
Greenish gray silt clay, with severe deformation and faults.



Core Photo

Hole C0012D Core 8H, interval 157.5-162.71 m (core depth below seafloor)

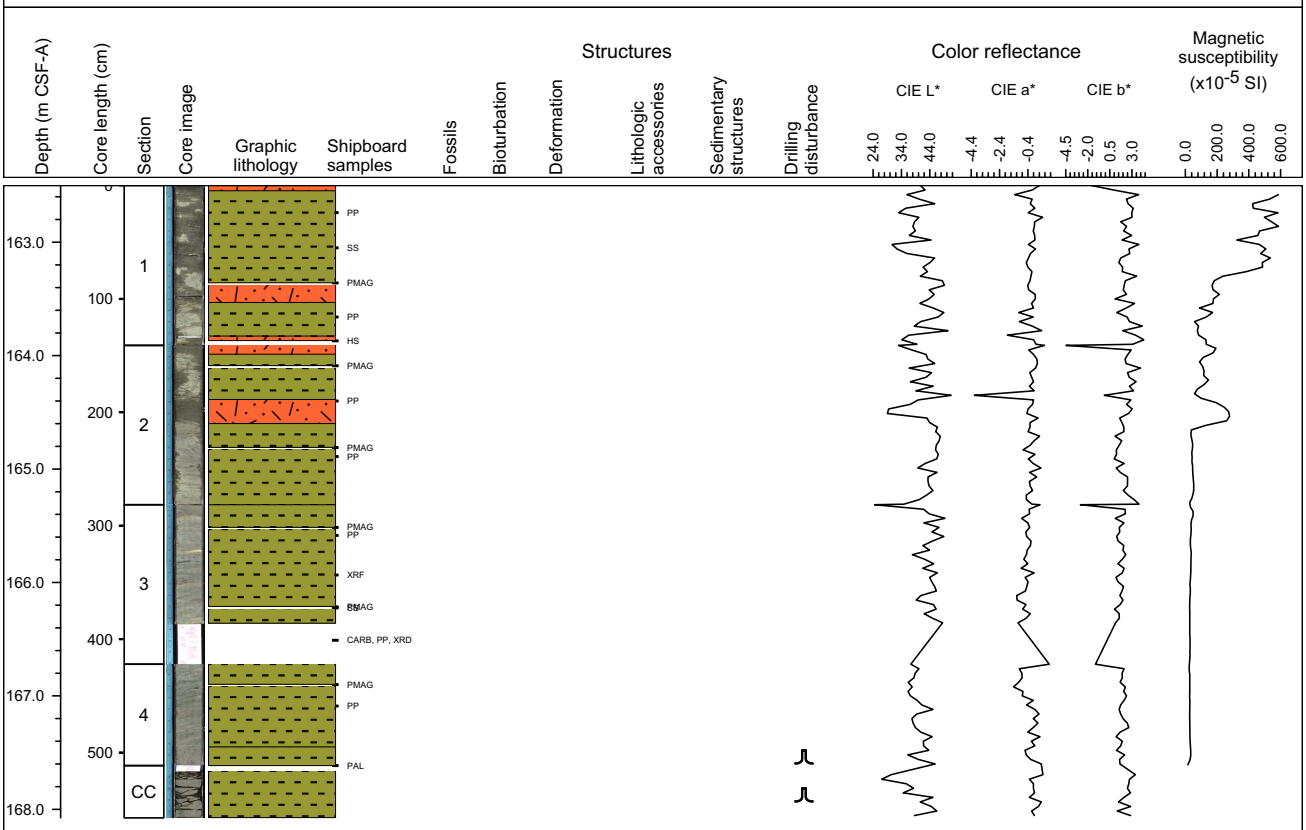
Greenish gray silt clay in the upper part, deformed, with volcanic ash layers.
In the lower part, there are several sand layers, highly deformed.
Large flat shaped nodules (1 to 2 cm in diameter) occur.



Core Photo

Hole C0012D Core 9H, interval 162.5-168.075 m (core depth below seafloor)

Sand layers with greenish gray silt clay in the upper part, severely deformed.
Greenish gray silt clay in the lower part, with severe deformation.
"Flow in" structure due to drilling occurs in Sections 4 and CC.

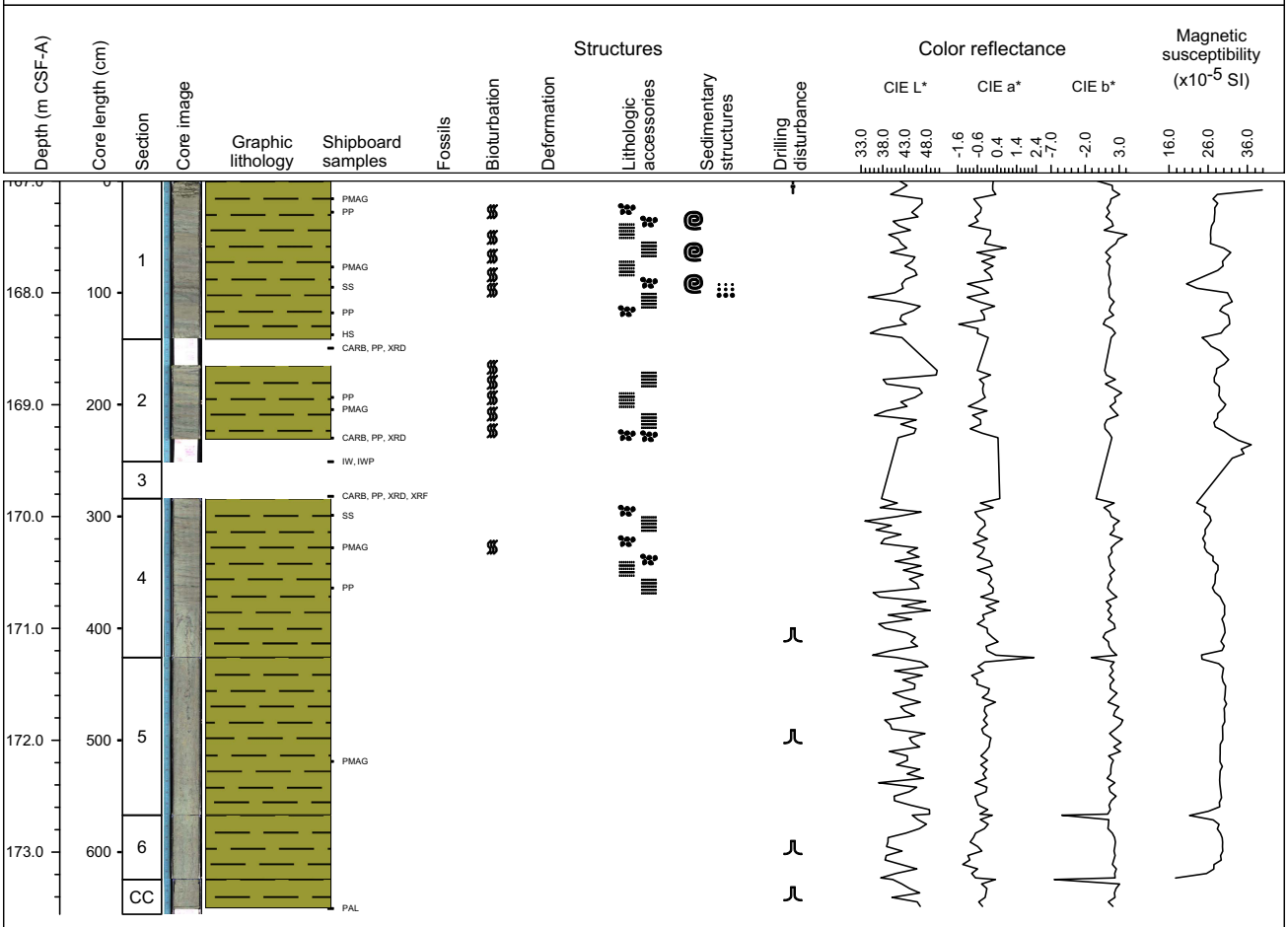


Core Photo

Hole C0012D Core 10H, interval 167-173.555 m (core depth below seafloor)

Dark greenish gray clay with color bands and mottling - profound bioturbation. Some parts are affected by minor faults.

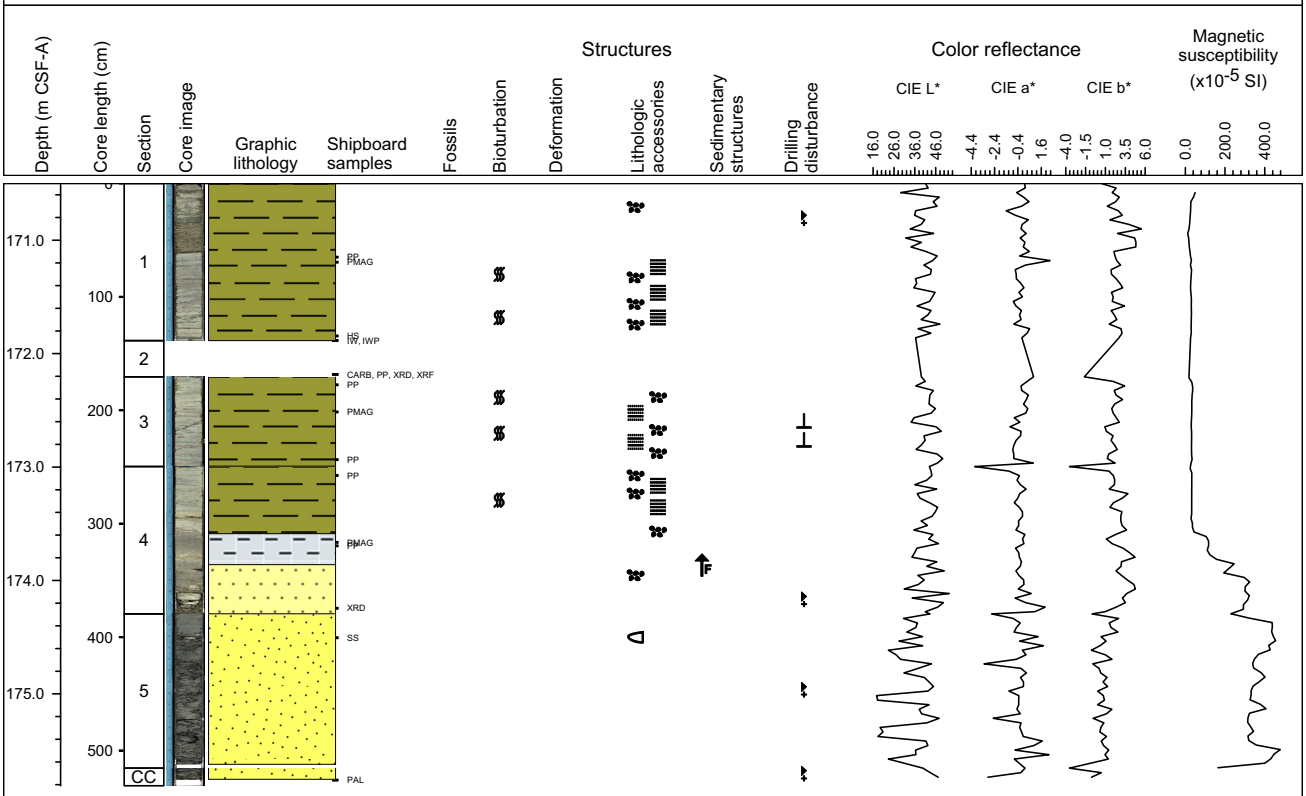
The lower part of this core is heavily disturbed by flow in.



Core Photo

Hole C0012D Core 11H, interval 170.5-175.81 m (core depth below seafloor)

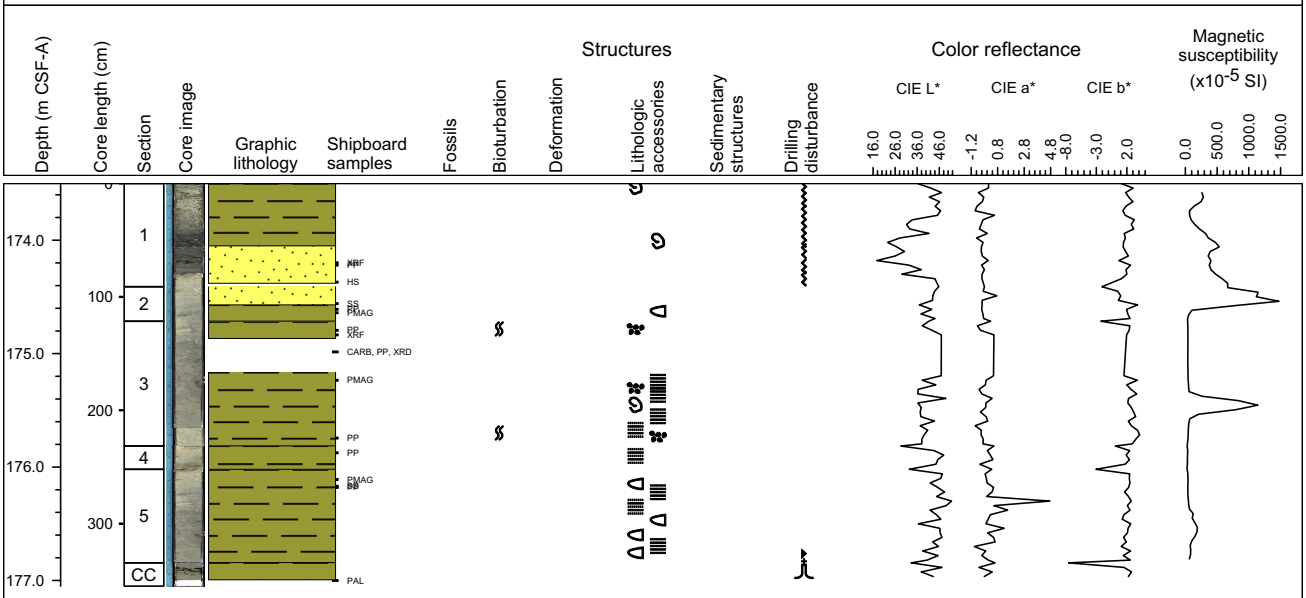
The upper part of the core comprise dark greenish gray clay with some color banding and bioturbation. In the lower part a severely disturbed sandstone with normal g



Core Photo

Hole C0012D Core 12H, interval 173.5-177.05 m (core depth below seafloor)

The core is dominated by dark greenish gray clay. Interbeddded is a sandstone layer.
A large patch of sandstone is seen in the middle part of the core, surrounded by folded and faulted color banding.
An area of folded color banding is also seen in the lower part of the core.

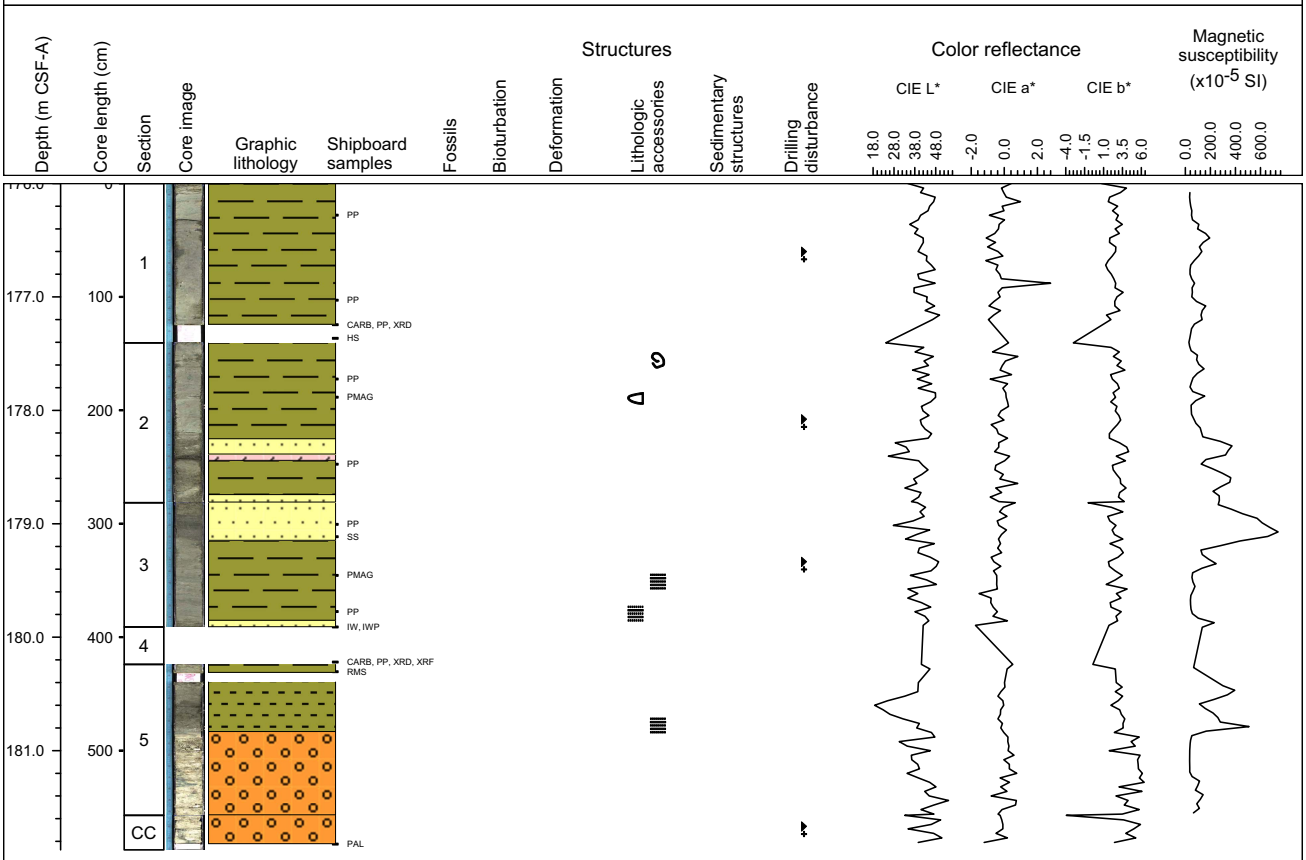


Core Photo

Hole C0012D Core 13H, interval 176-181.875 m (core depth below seafloor)

Dark greenish gray mud at the top, then some sand layers/sandy mud/muddy sand, light gray conglomerate at the base.

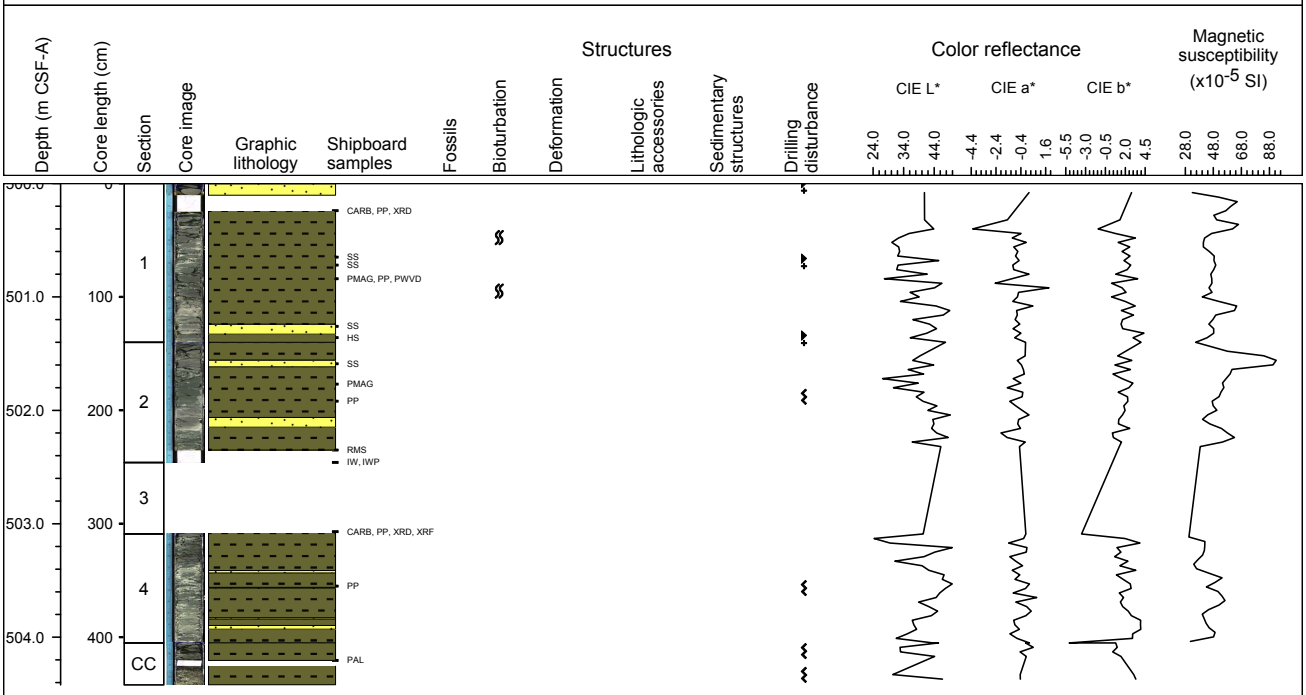
Most of this core is probably affected by drilling disturbance/inflow.



Core Photo

Hole C0012E Core 1X, interval 500-504.42 m (core depth below seafloor)

Interbedded mudstone and sandstone beds. The core is heavily disturbed by drilling.



Core Photo

Hole C0012E Core 2X, interval 509.5-510.575 m (core depth below seafloor)

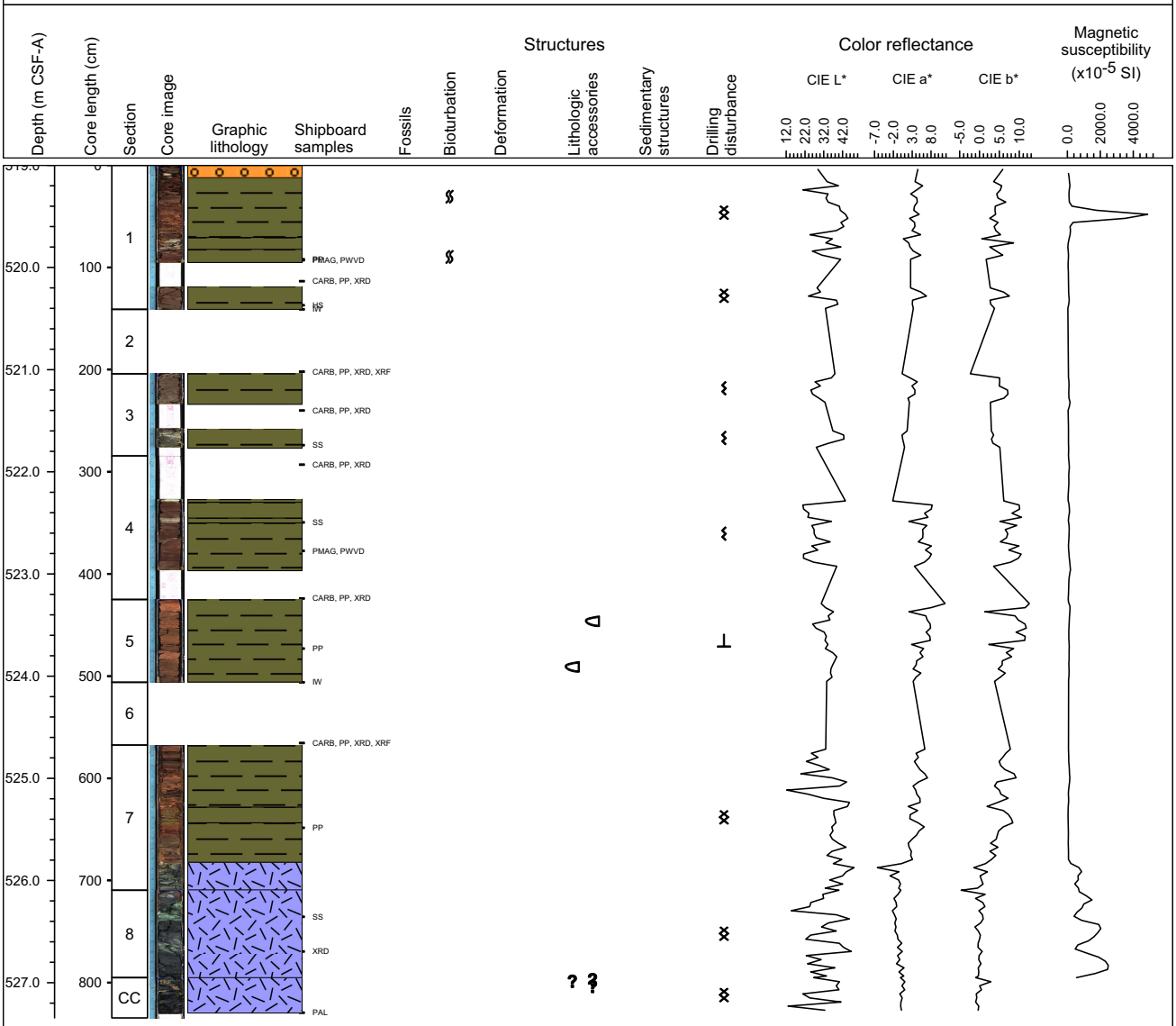
Mudstone, heavily fractured by drilling.

Core Photo

Hole C0012E Core 3X, interval 519-527.345 m (core depth below seafloor)

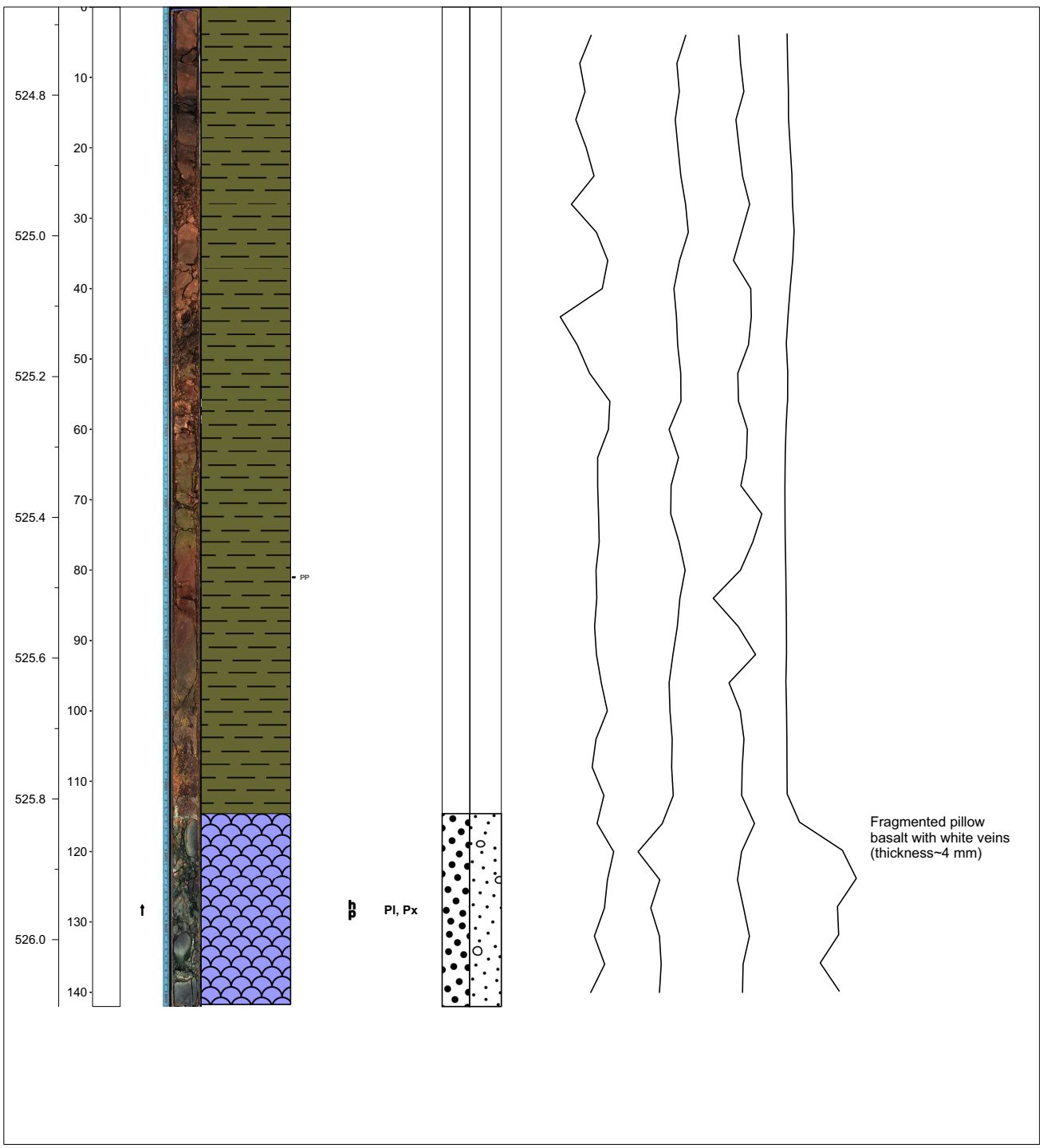
Dark reddish brown - brown claystone, partly bioturbated, overlying bluish black basalt.

The core is heavily fractured by drilling.



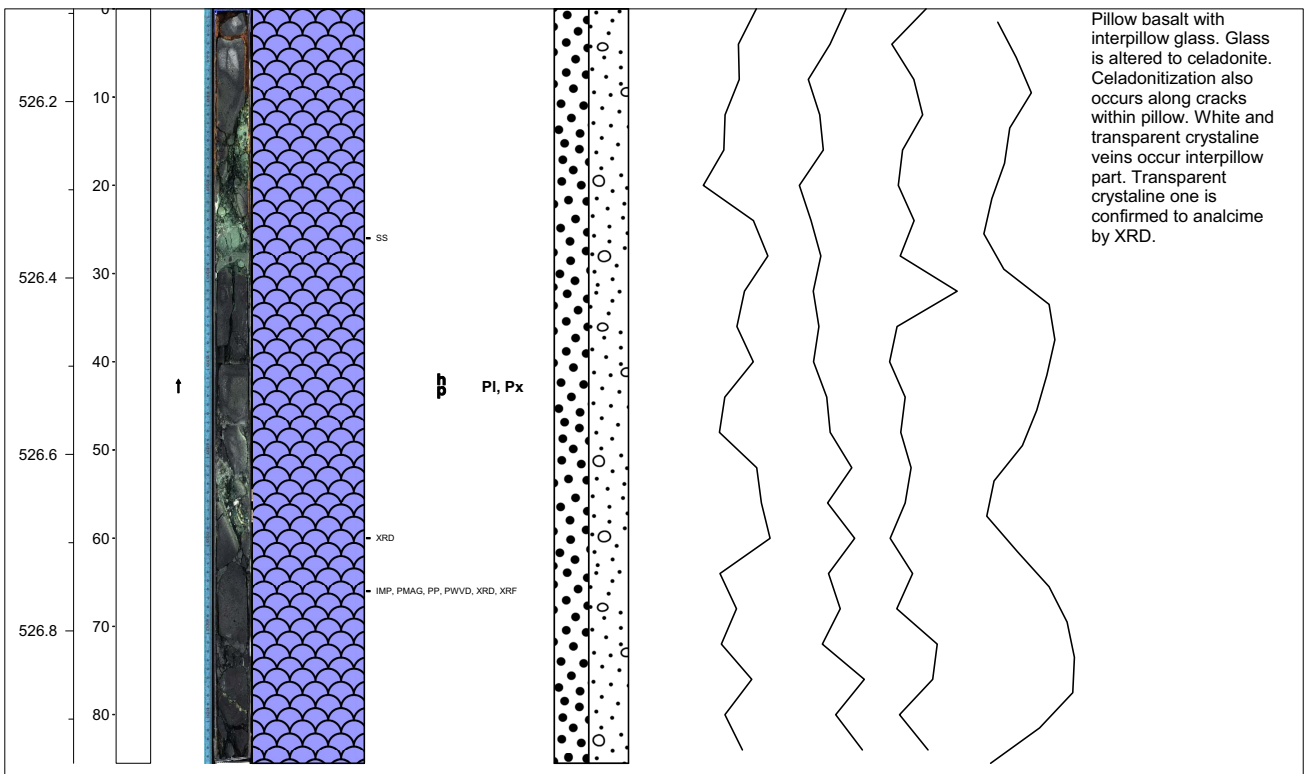
Core Photo

Hole C0012E Core 3X Section 7, interval 524.675-526.095 m (core depth below seafloor)



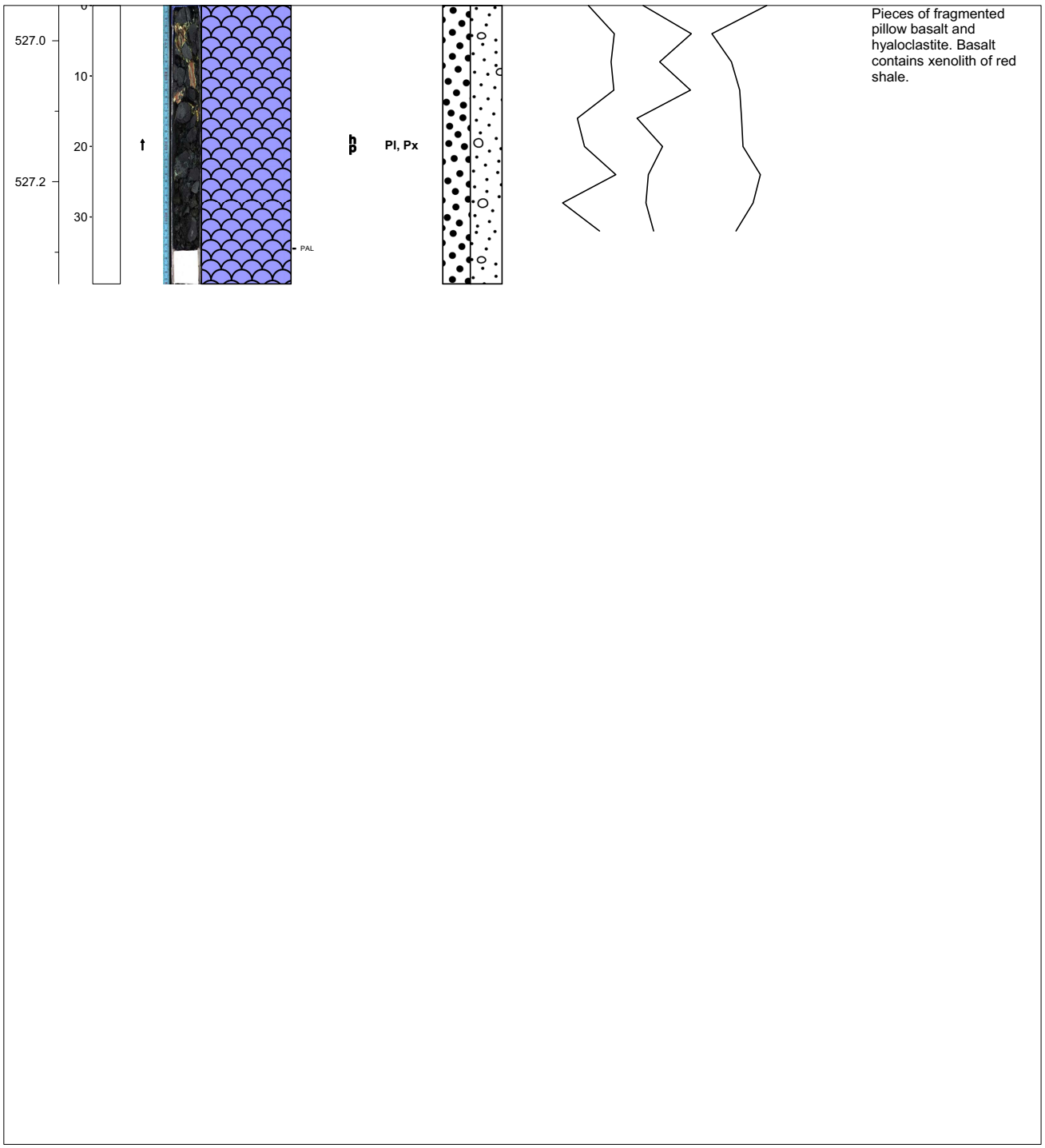
Core Photo

Hole C0012E Core 3X Section 8, interval 526.095-526.95 m (core depth below seafloor)



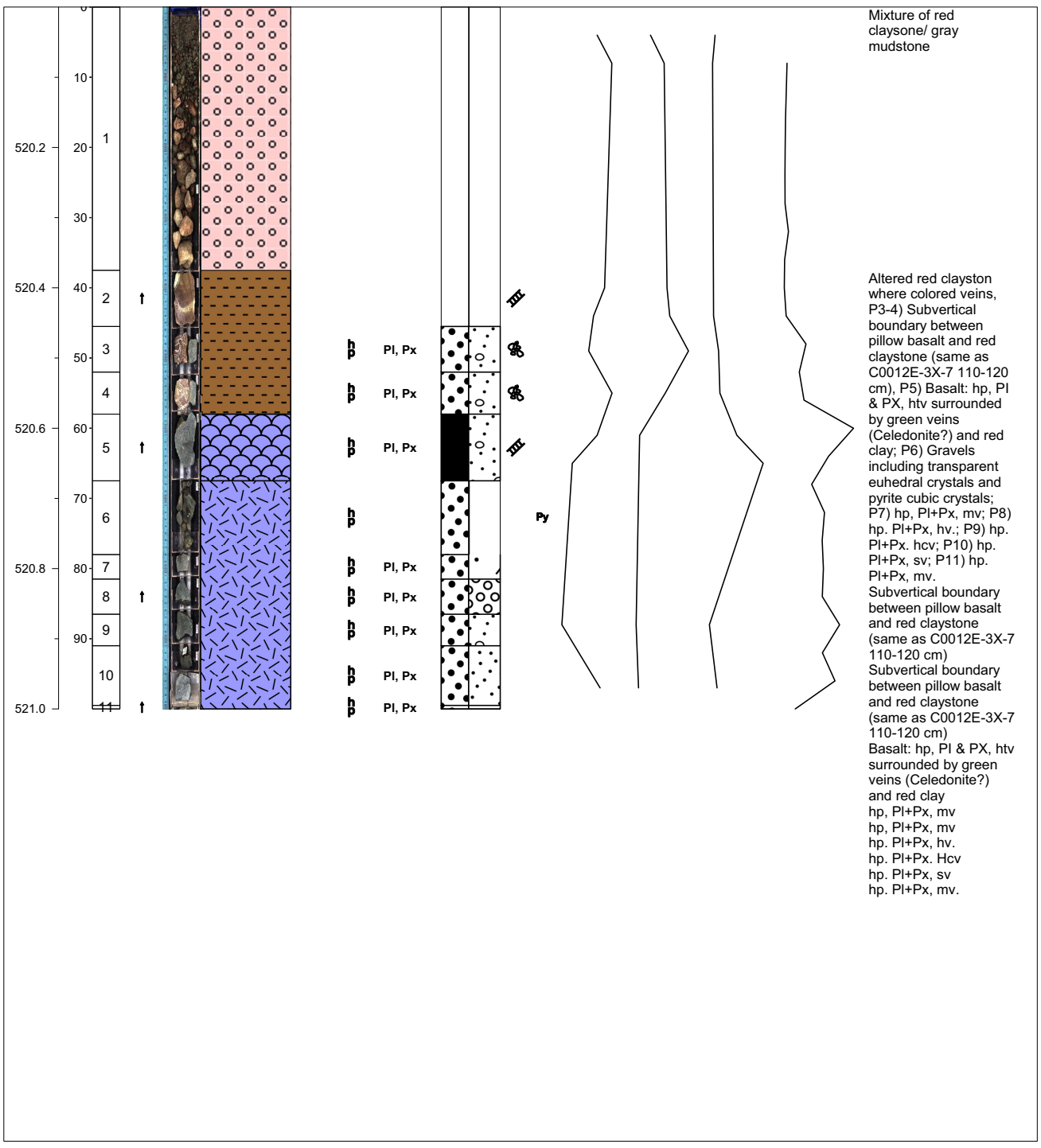
Core Photo

Hole C0012E Core 3X Section CC, interval 526.95-527.345 m (core depth below seafloor)



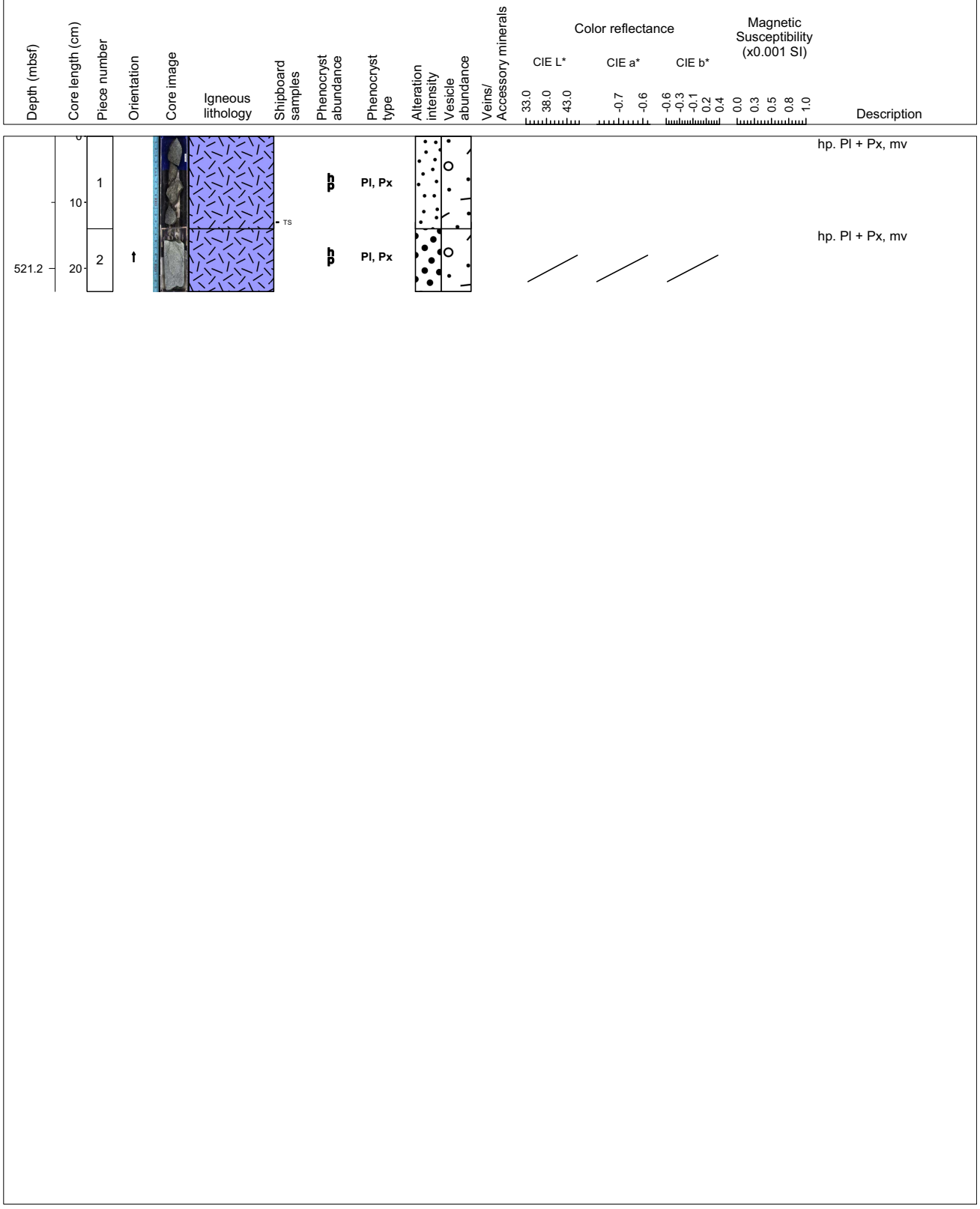
Core Photo

Hole C0012F Core 1R Section 1, interval 520-521 m (core depth below seafloor)

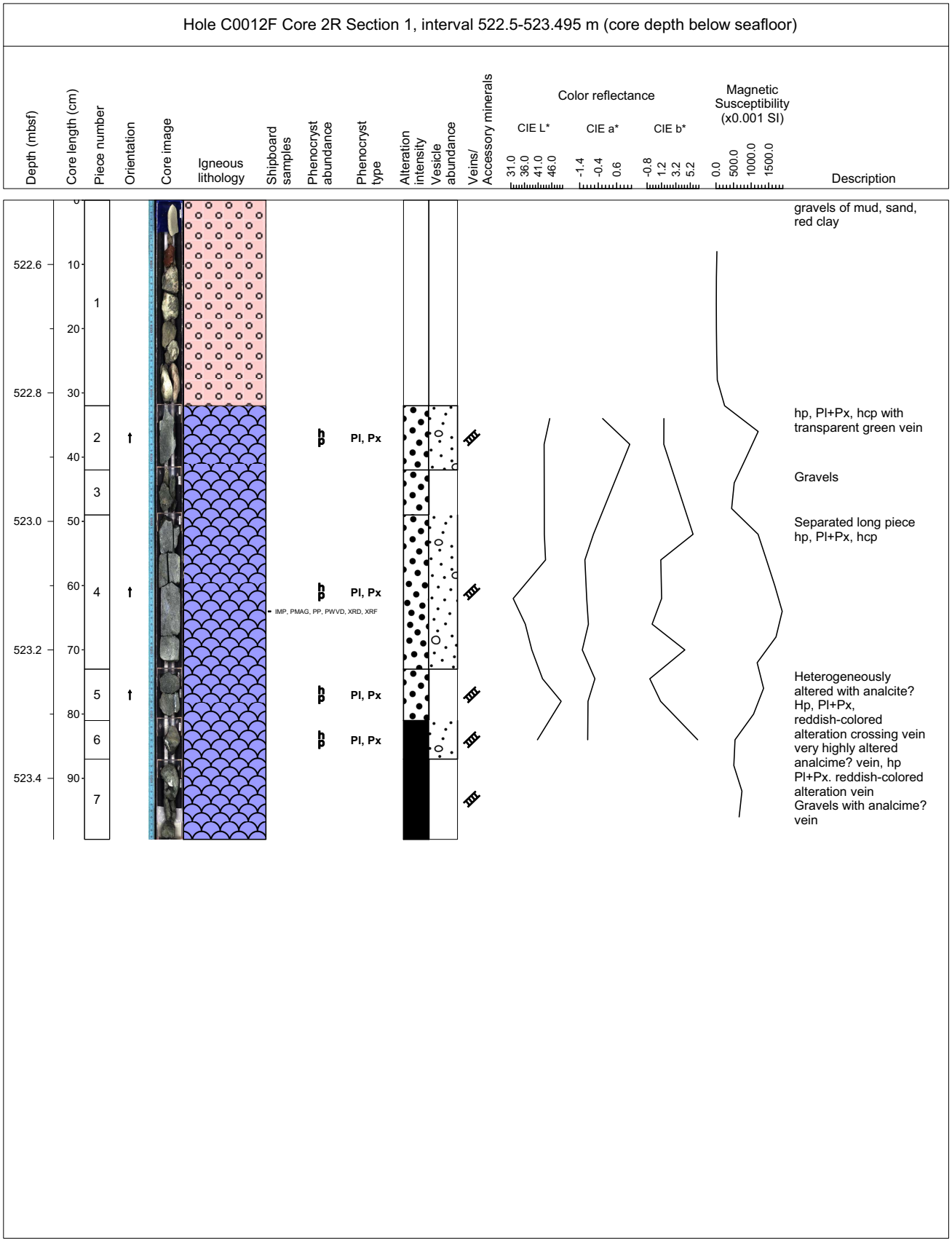


Core Photo

Hole C0012F Core 1R Section CC, interval 521-521.235 m (core depth below seafloor)

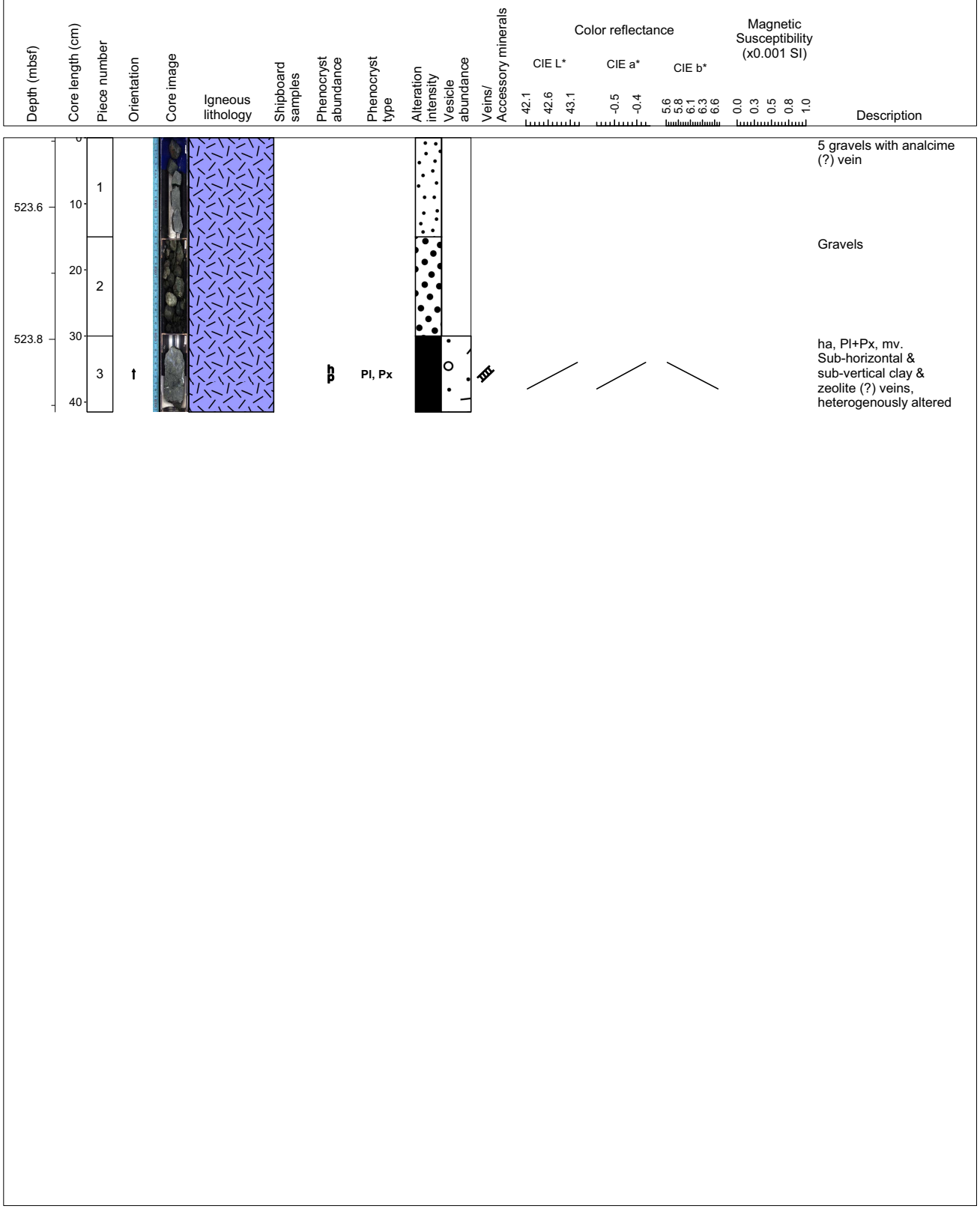


Core Photo


Hole C0012F Core 2R Section 1, interval 522.5-523.495 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
522.6
522.8
523.0
523.2
523.4
Pl, Px
IMP, PMAG, PP, PWVD, XRD, XRF
gravels of mud, sand, red clay
hp, Pl+Px, hcp with transparent green vein
Gravels
Separated long piece hp, Pl+Px, hcp
Heterogeneously altered with analcite? Hp, Pl+Px, reddish-colored alteration crossing vein very highly altered analcime? vein, hp Pl+Px. reddish-colored alteration vein
Gravels with analcime? vein

Core Photo

Hole C0012F Core 2R Section CC, interval 523.495-523.91 m (core depth below seafloor)



Core Photo

Hole C0012G Core 1R, interval 515-519.345 m (core depth below seafloor)

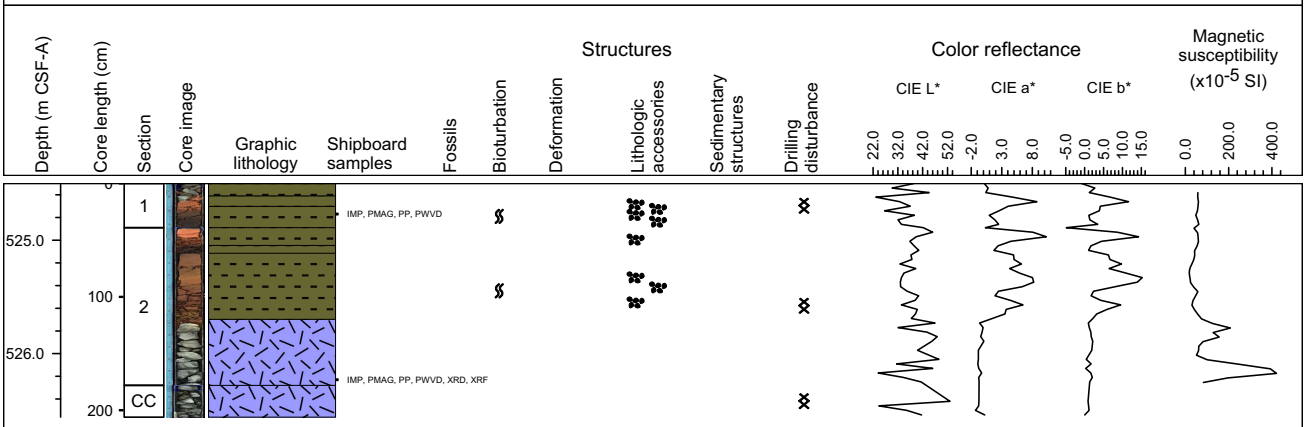
Dark reddish brown mudstone, partly bioturbated.
Interbedded is light gray - gray layers < 10 cm in thickness.

The core is heavily disturbed by coring.

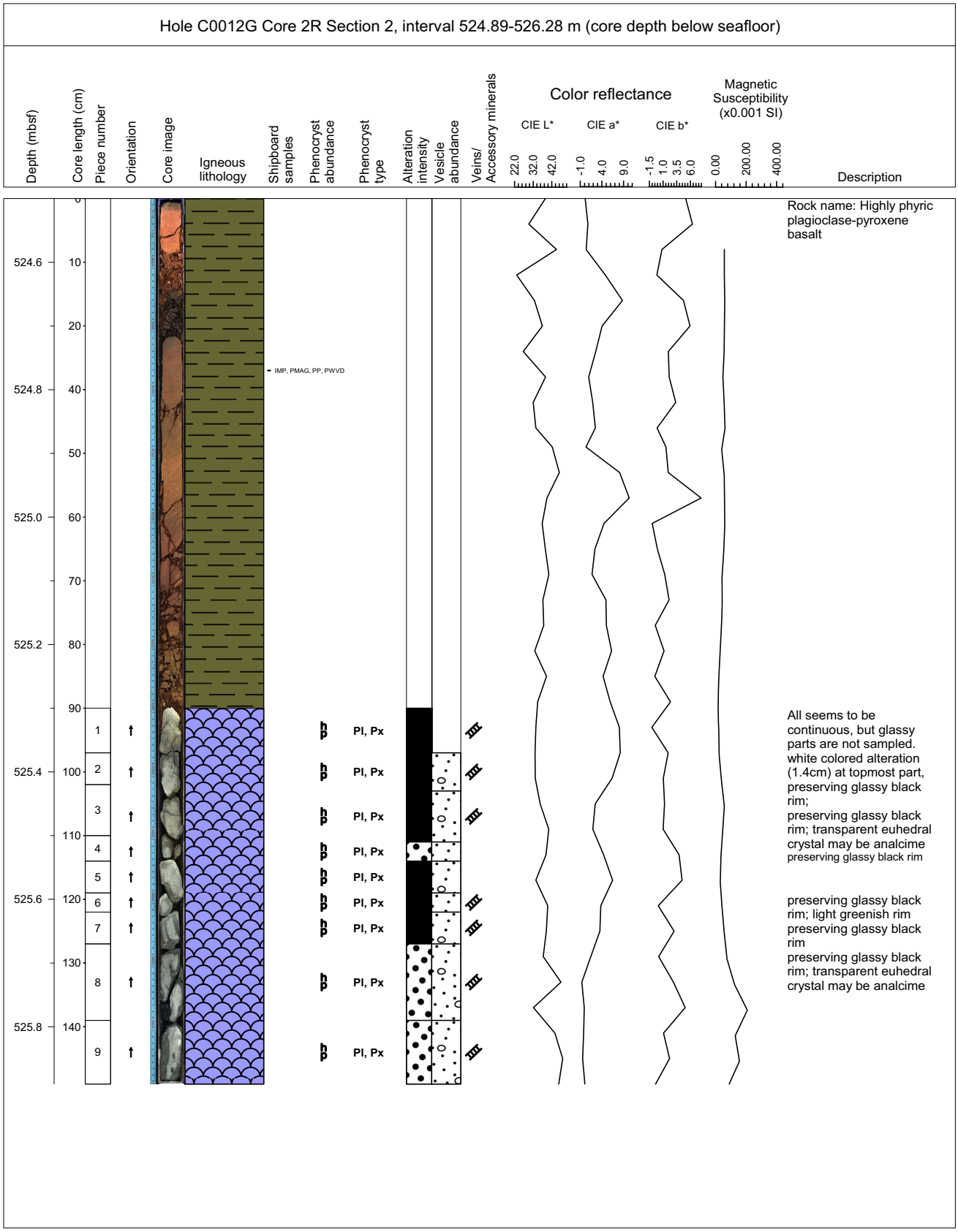
Core Photo

Hole C0012G Core 2R, interval 524.5-526.56 m (core depth below seafloor)

Mudstone, dark gray in the uppermost part, then reddish brown, dull reddish brown or brownish black with some bioturbation.
At the base of the core is dark gray basalt with some veins.

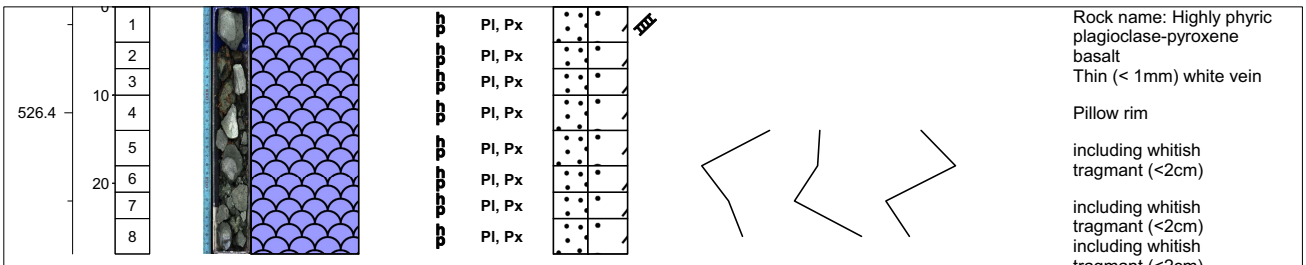


Core Photo


Hole C0012G Core 2R Section 2, interval 524.89-526.28 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
IMP, PMAG, PP, PWVD
PI, Px
Rock name: Highly phyric plagioclase-pyroxene basalt
All seems to be continuous, but glassy parts are not sampled.
white colored alteration (1.4cm) at topmost part, preserving glassy black rim;
preserving glassy black rim; transparent euhedral crystal may be analcime
preserving glassy black rim
preserving glassy black rim; light greenish rim
preserving glassy black rim
preserving glassy black rim; transparent euhedral crystal may be analcime

Core Photo

Hole C0012G Core 2R Section CC, interval 526.28-526.56 m (core depth below seafloor)



Rock name: Highly phyric plagioclase-pyroxene basalt
Thin (< 1mm) white vein

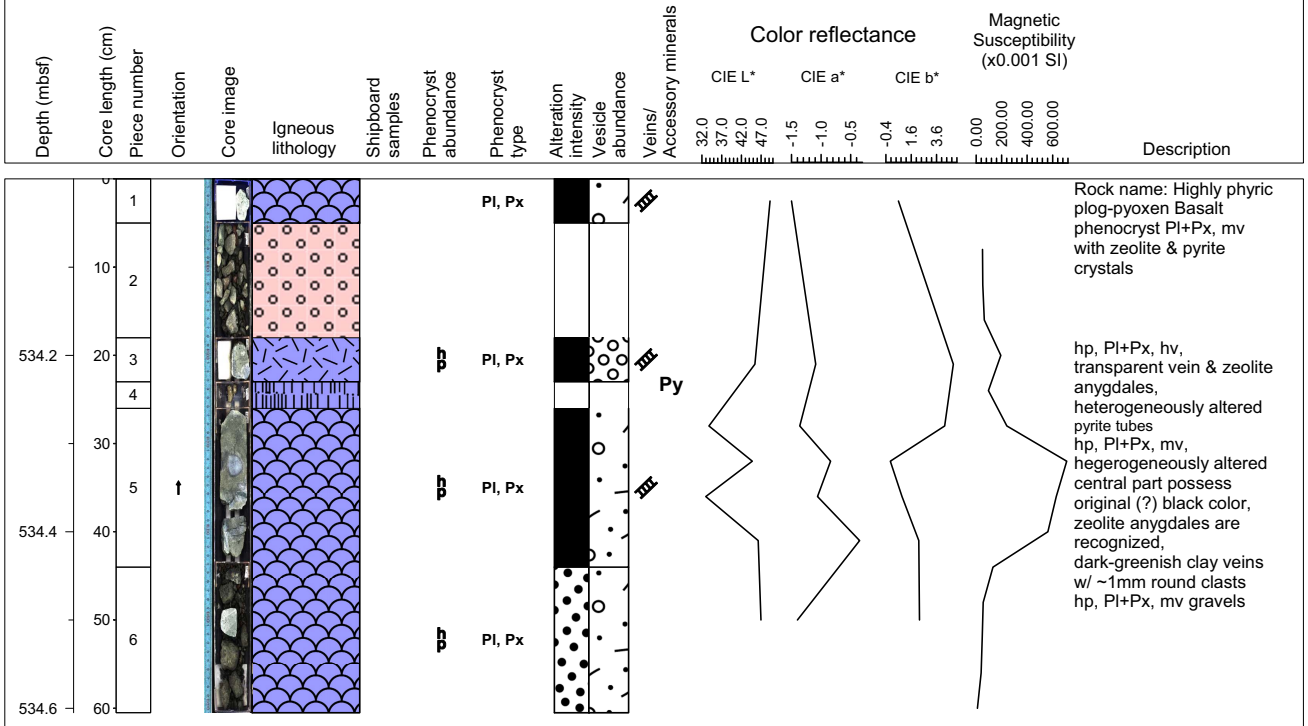
Pillow rim

including whitish tragmant (<2cm)

including whitish tragmant (<2cm)
including whitish tragmant (<2cm)

Core Photo

Hole C0012G Core 3R Section 1, interval 534-534.605 m (core depth below seafloor)



Rock name: Highly phyric plog-pyoxen Basalt phenocryst Pl+Px, mv with zeolite & pyrite crystals

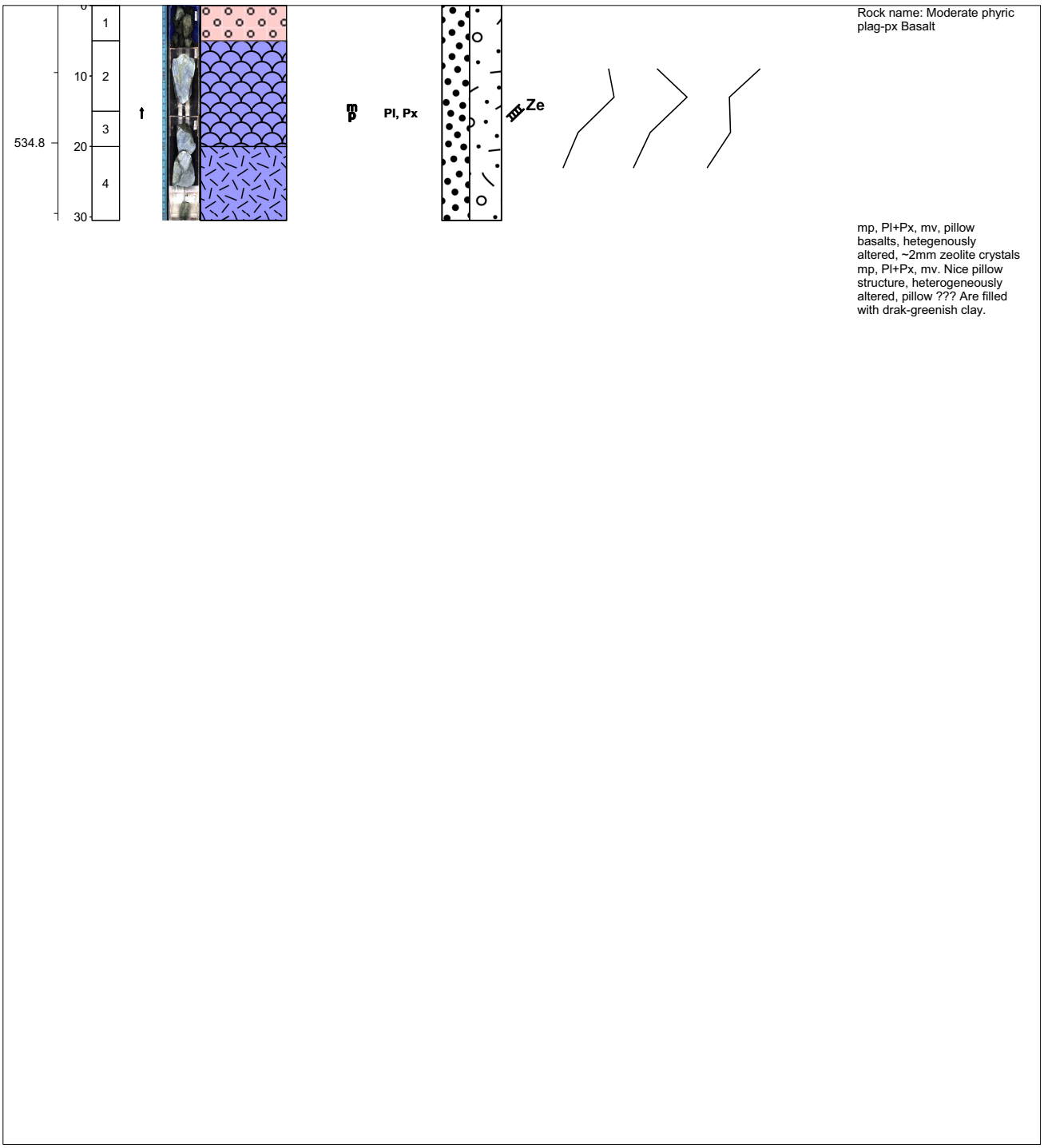
hp, Pl+Px, hv, transparent vein & zeolite anygdales, heterogeneously altered pyrite tubes

hp, Pl+Px, mv, hegerogeneously altered central part possess original (?) black color, zeolite anygdales are recognized, dark-greenish clay veins w/ ~1mm round clasts

hp, Pl+Px, mv gravels

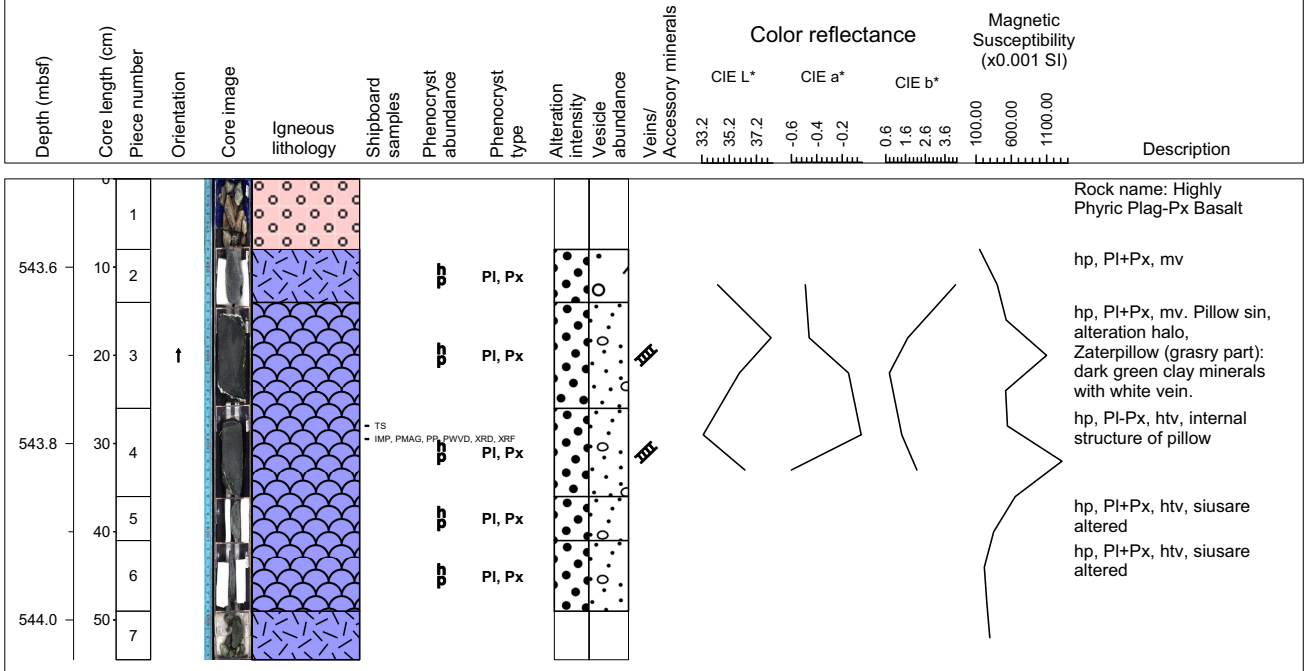
Core Photo

Hole C0012G Core 3R Section CC, interval 534.605-534.91 m (core depth below seafloor)



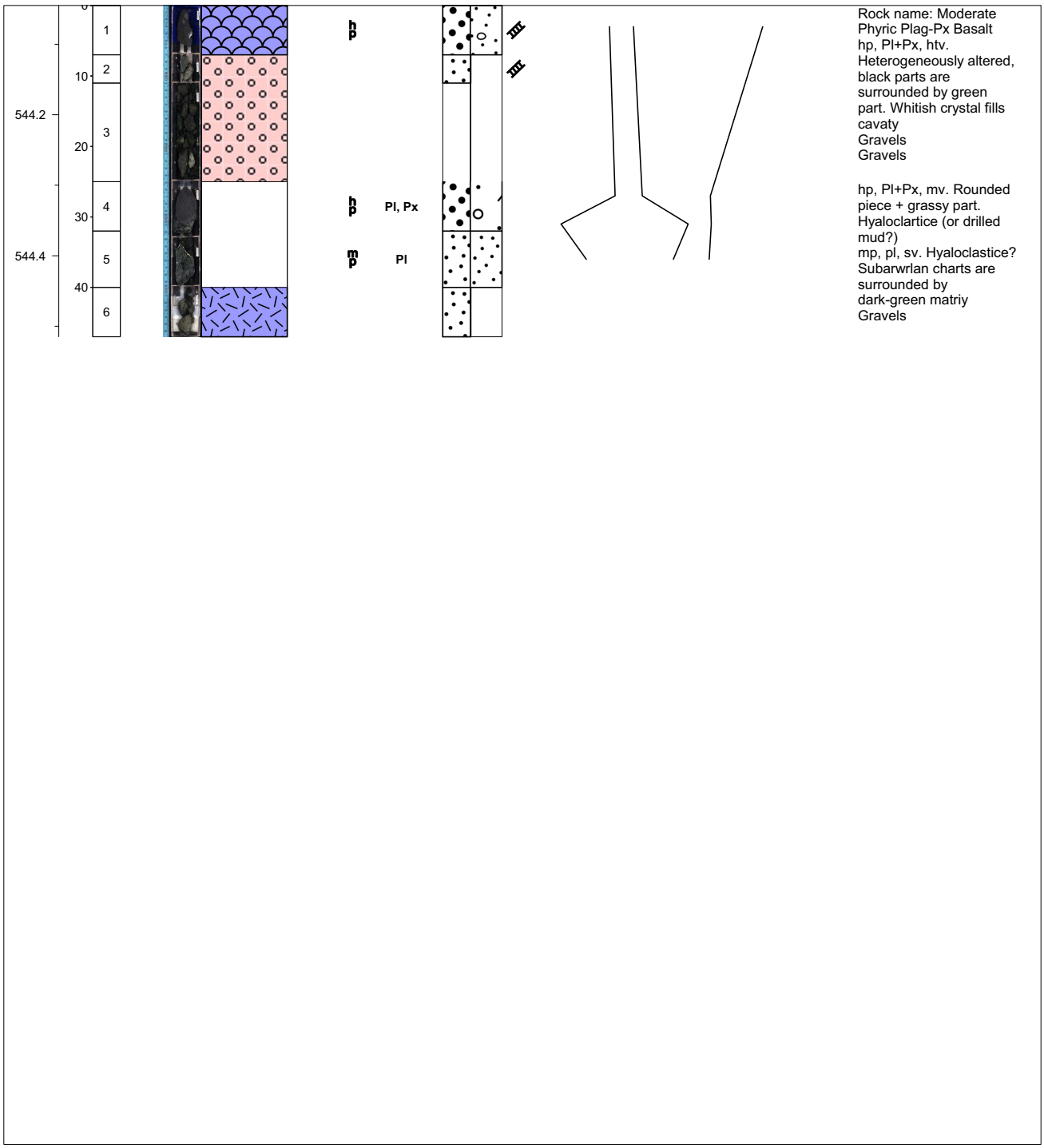
Core Photo

Hole C0012G Core 4R Section 1, interval 543.5-544.045 m (core depth below seafloor)



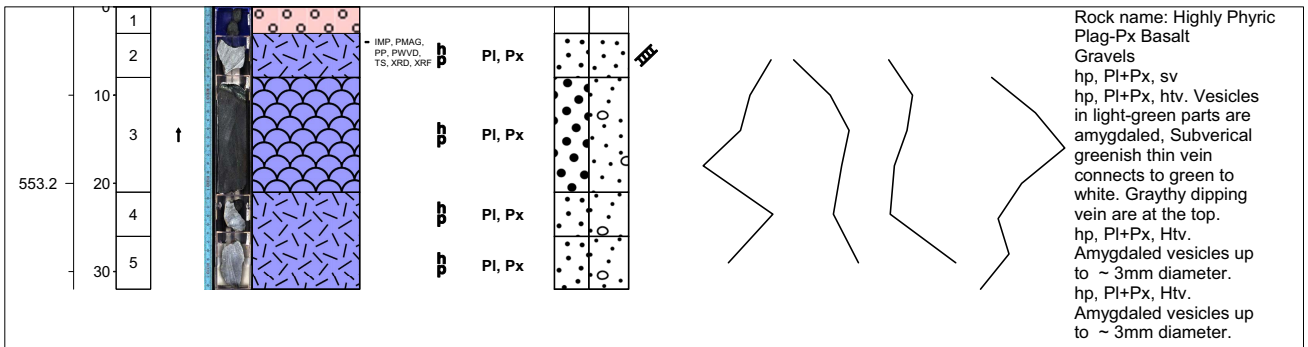
Core Photo

Hole C0012G Core 4R Section CC, interval 544.045-544.515 m (core depth below seafloor)



Core Photo

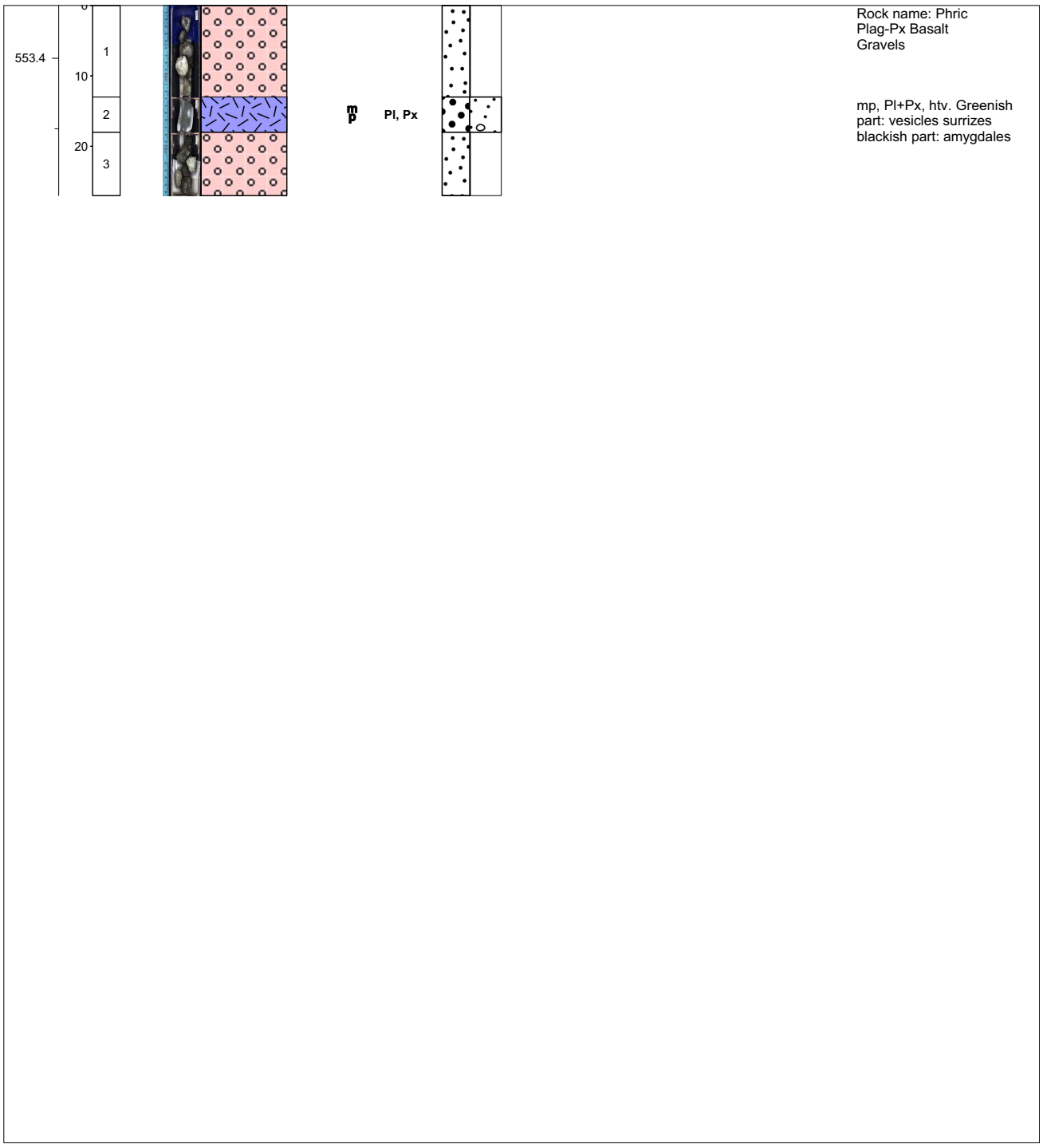
Hole C0012G Core 5R Section 1, interval 553-553.325 m (core depth below seafloor)



Rock name: Highly Phyric Plag-Px Basalt
Gravels
hp, Pl+Px, sv
hp, Pl+Px, htv. Vesicles in light-green parts are amygdaled, Subverical greenish thin vein connects to green to white. Graythy dipping vein are at the top.
hp, Pl+Px, Htv. Amygdaled vesicles up to ~ 3mm diameter.
hp, Pl+Px, Htv. Amygdaled vesicles up to ~ 3mm diameter.

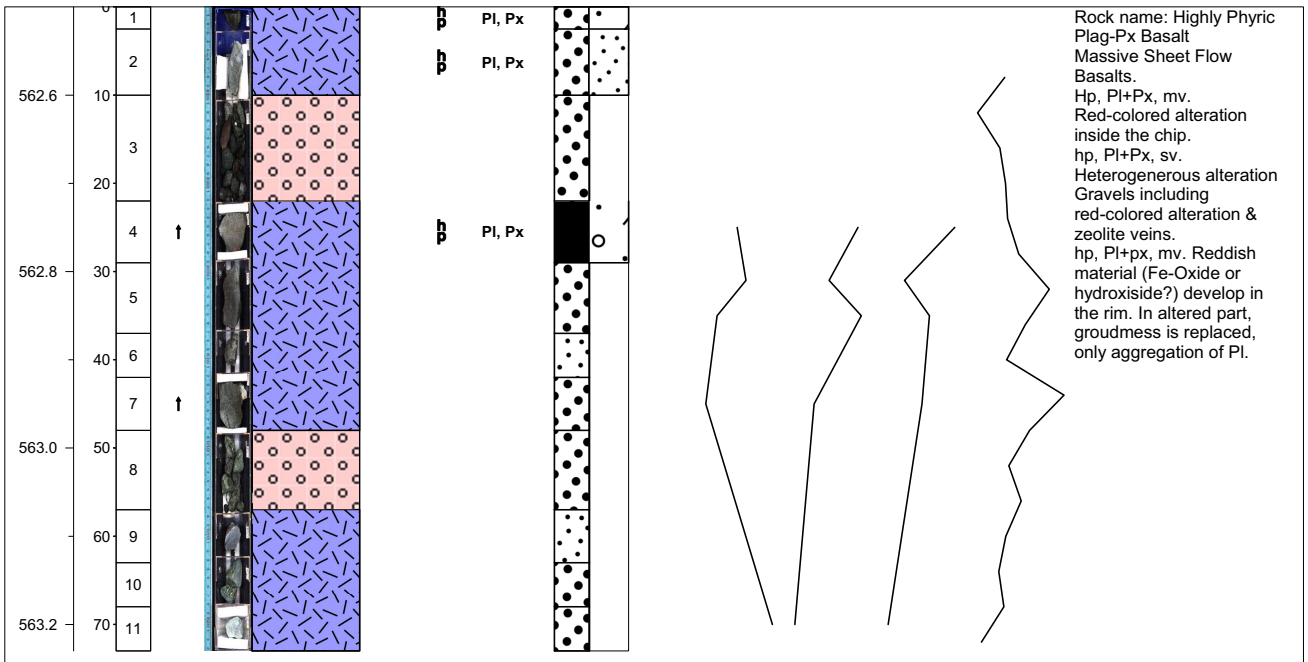
Core Photo

Hole C0012G Core 5R Section CC, interval 553.325-553.595 m (core depth below seafloor)



Core Photo

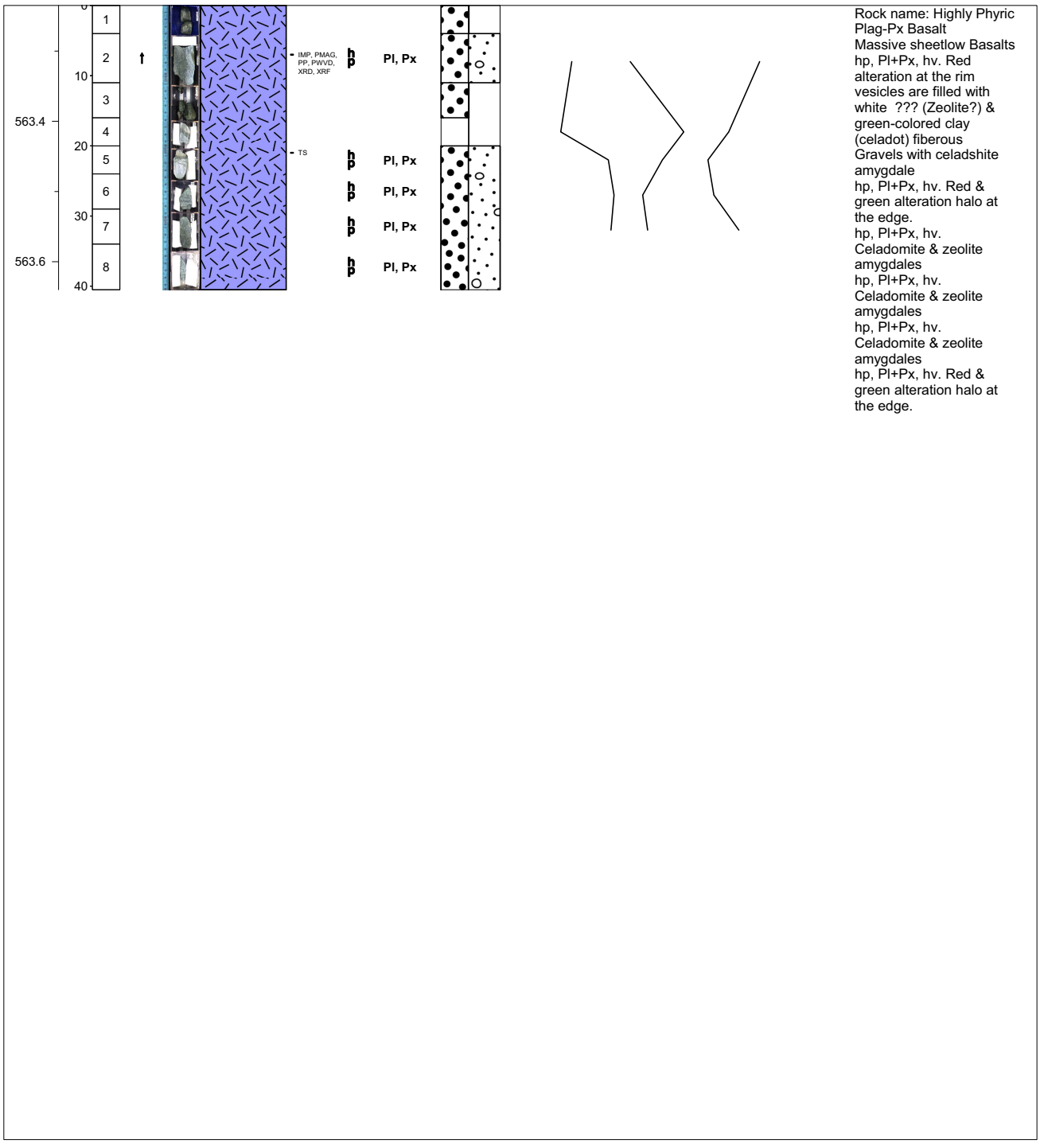
Hole C0012G Core 6R Section 1, interval 562.5-563.235 m (core depth below seafloor)



Rock name: Highly Phyric Plag-Px Basalt
Massive Sheet Flow Basalts.
Hp, Pl+Px, mv.
Red-colored alteration inside the chip.
hp, Pl+Px, sv.
Heterogenerous alteration Gravels including red-colored alteration & zeolite veins.
hp, Pl+px, mv. Reddish material (Fe-Oxide or hydroxiside?) develop in the rim. In altered part, groudmess is replaced, only aggregation of Pl.

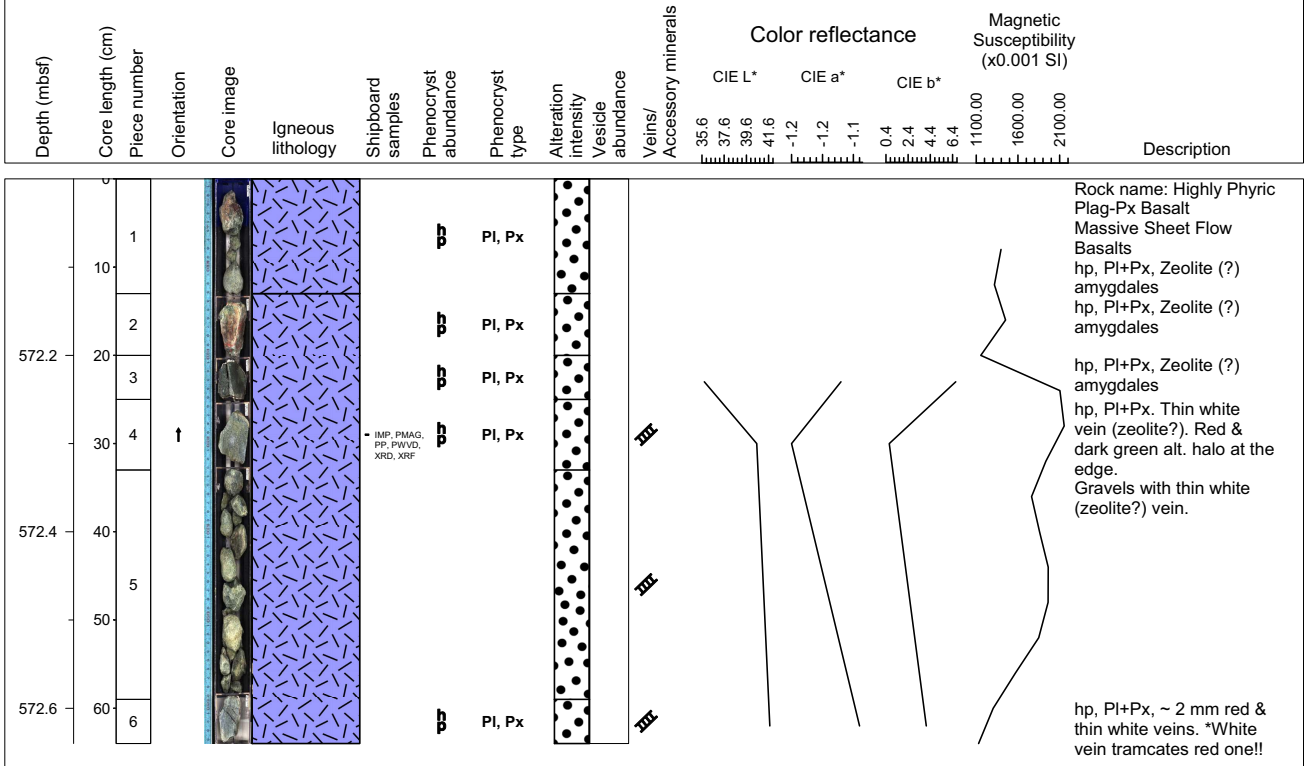
Core Photo

Hole C0012G Core 6R Section CC, interval 563.235-563.64 m (core depth below seafloor)



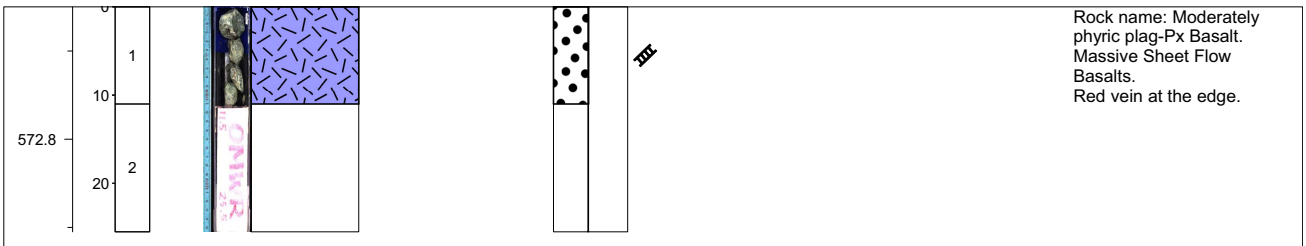
Core Photo

Hole C0012G Core 7R Section 1, interval 572-572.65 m (core depth below seafloor)



Core Photo

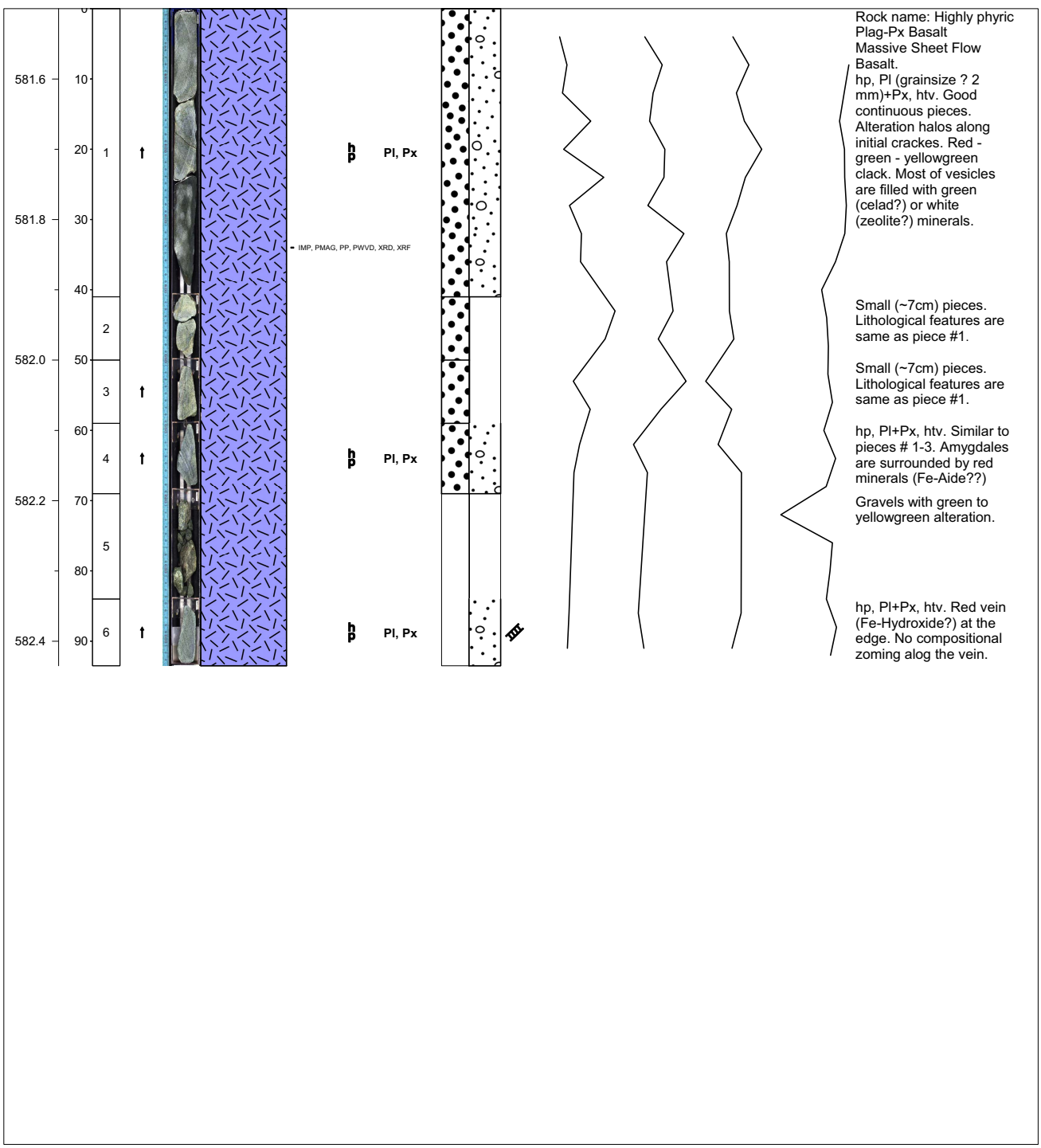
Hole C0012G Core 7R Section CC, interval 572.65-572.905 m (core depth below seafloor)



Rock name: Moderately phyric plag-Px Basalt.
Massive Sheet Flow Basalts.
Red vein at the edge.

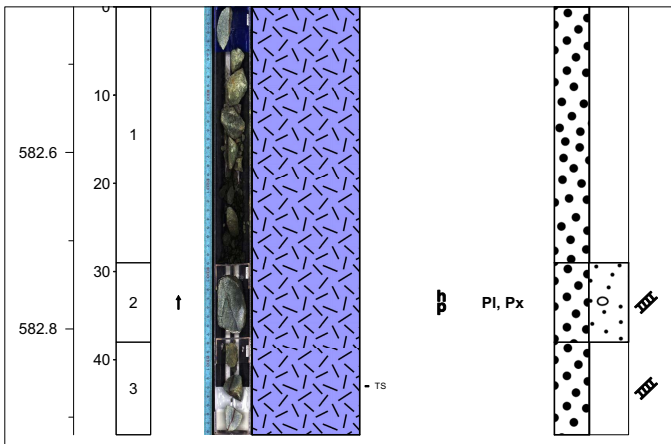
Core Photo

Hole C0012G Core 8R Section 1, interval 581.5-582.435 m (core depth below seafloor)



Core Photo

Hole C0012G Core 8R Section CC, interval 582.435-582.92 m (core depth below seafloor)

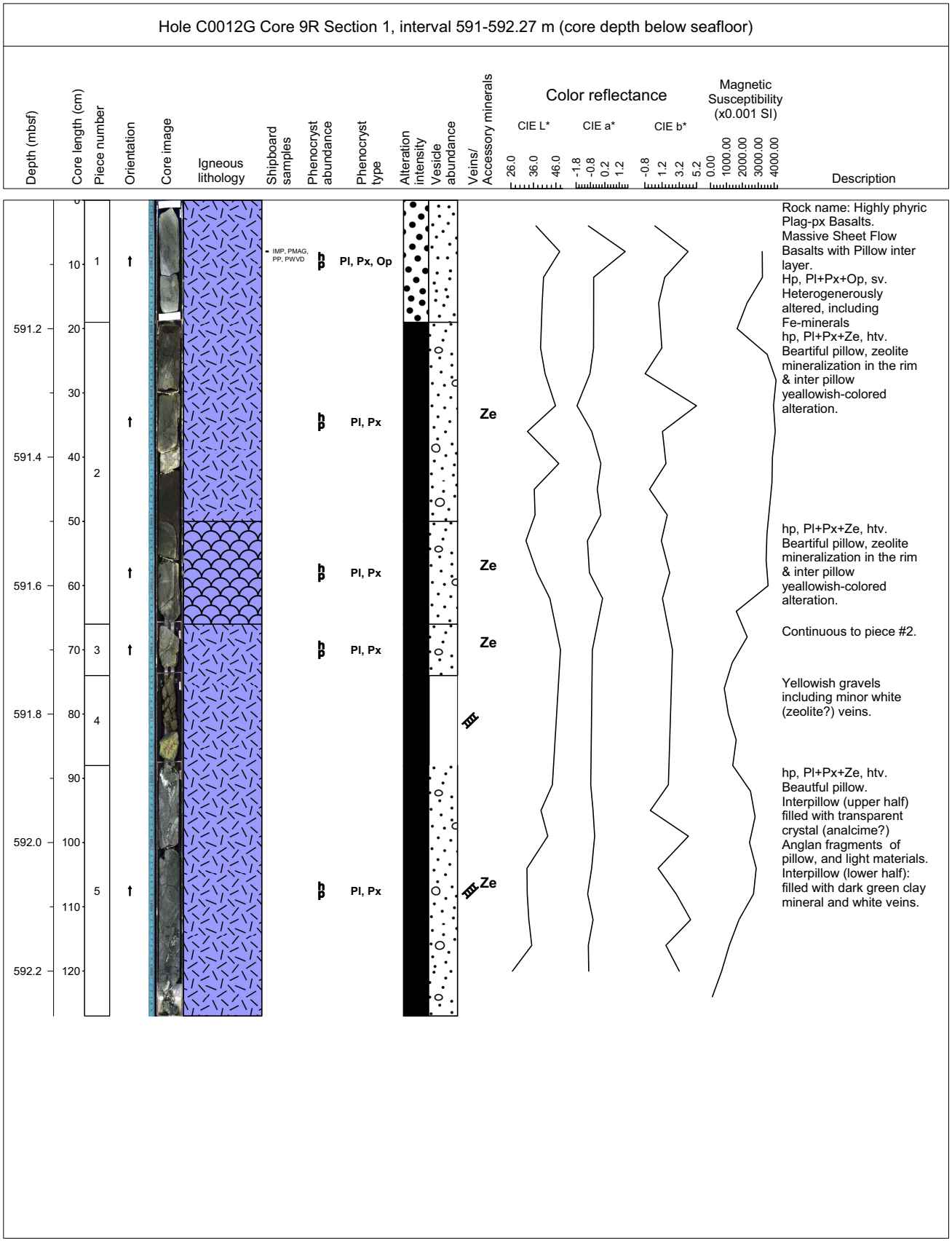


Description

Rock name: Highly Phyric Plag-Px Basalt.
Massive Sheet Flow Flow Basalt.
Gravels with yellowith alteration.

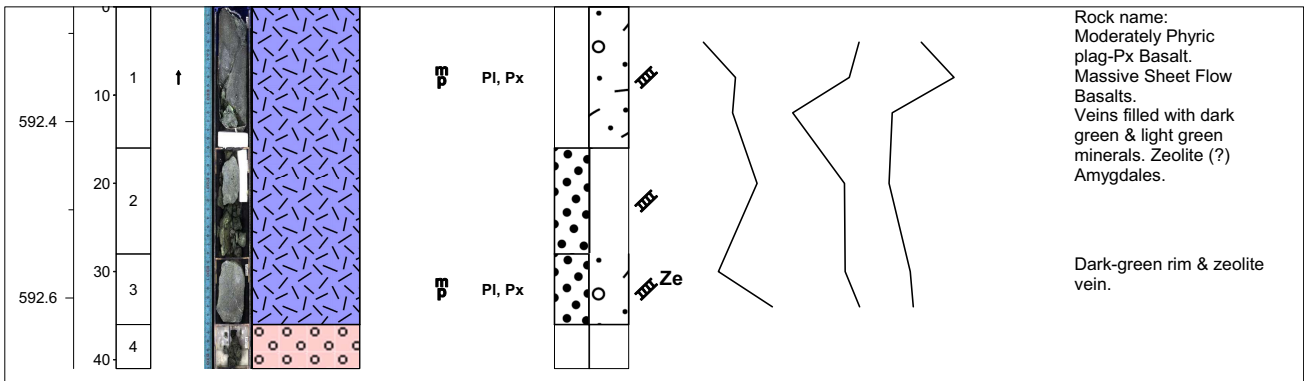
hp, Pl+Px, mv. Greenish & reddish altered rock cut by red vein. Vein wallorock shows irregular shape. Vein includes small fragments of wall rock.
Same as piece #2. 2 small pieces including red veins.

Core Photo


Hole C0012G Core 9R Section 1, interval 591-592.27 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
591.2
591.4
591.6
591.8
592.0
592.2
IMP, PMAG, PP, PWVD
PI, Px, Op
PI, Px
PI, Px
PI, Px
PI, Px
Ze
Ze
Ze
Ze
Rock name: Highly phyric Plag-px Basalts. Massive Sheet Flow Basalts with Pillow inter layer.
Hp, Pl+Px+Op, sv. Heterogenerously altered, including Fe-minerals
hp, Pl+Px+Ze, htv. Beartiful pillow, zeolite mineralization in the rim & inter pillow yeallowish-colored alteration.
hp, Pl+Px+Ze, htv. Beartiful pillow, zeolite mineralization in the rim & inter pillow yeallowish-colored alteration.
Continuous to piece #2.
Yellowish gravels including minor white (zeolite?) veins.
hp, Pl+Px+Ze, htv. Beautful pillow. Interpillow (upper half) filled with transparent crystal (analcime?) Anglan fragments of pillow, and light materials. Interpillow (lower half): filled with dark green clay mineral and white veins.

Core Photo

Hole C0012G Core 9R Section CC, interval 592.27-592.68 m (core depth below seafloor)

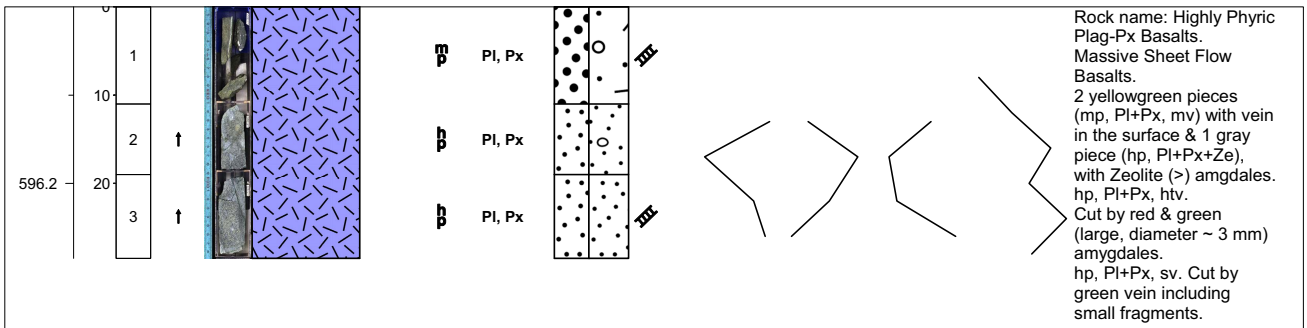


Rock name:
Moderately Phyric plag-Px Basalt.
Massive Sheet Flow Basalts.
Veins filled with dark green & light green minerals. Zeolite (?) Amygdales.

Dark-green rim & zeolite vein.

Core Photo

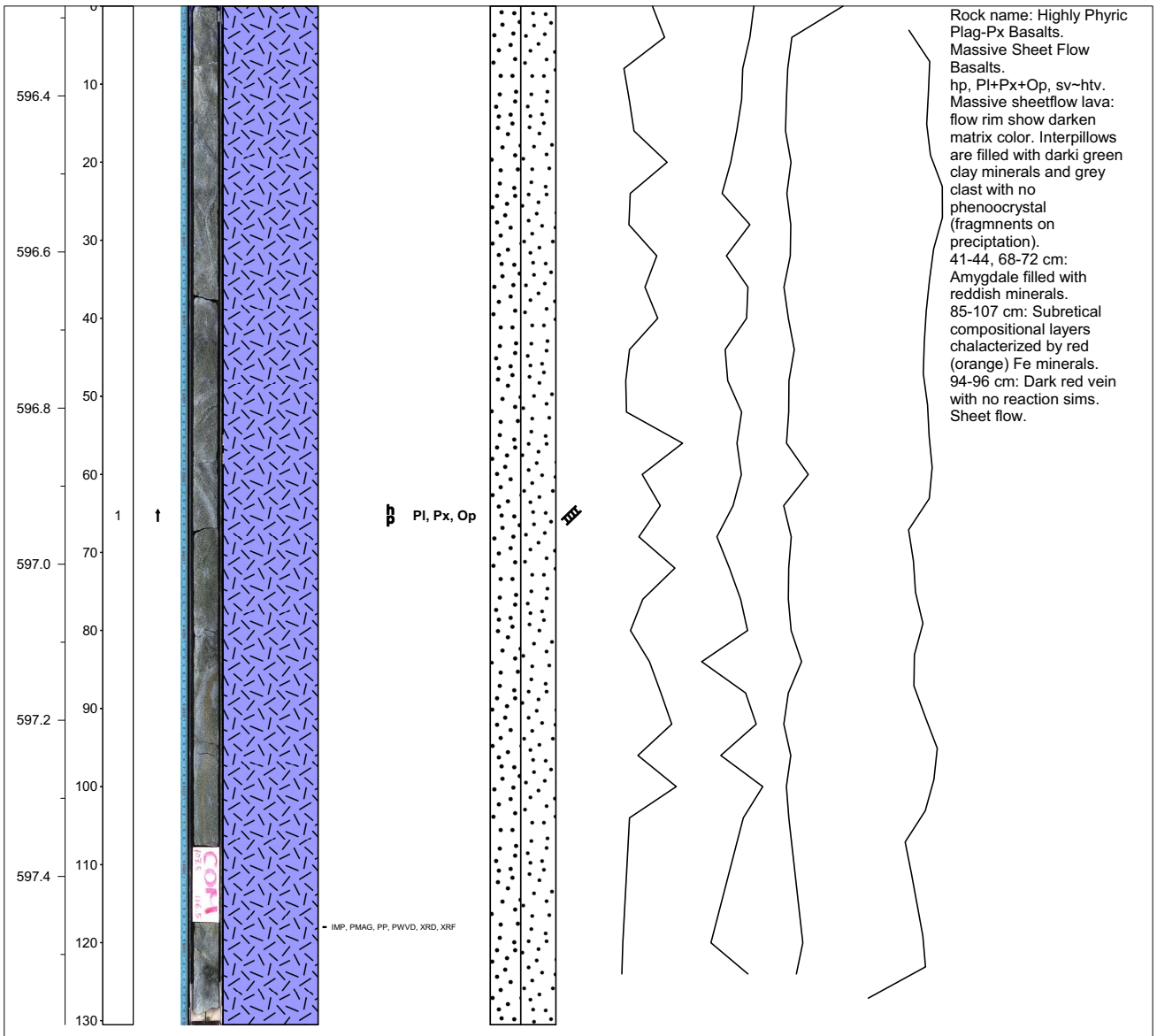
Hole C0012G Core 10R Section 1, interval 596-596.285 m (core depth below seafloor)



Rock name: Highly Phyric Plag-Px Basalts.
Massive Sheet Flow Basalts.
2 yellowgreen pieces (mp, Pl+Px, mv) with vein in the surface & 1 gray piece (hp, Pl+Px+Ze), with Zeolite (>) amgdales.
hp, Pl+Px, htv.
Cut by red & green (large, diameter ~ 3 mm) amygdales.
hp, Pl+Px, sv. Cut by green vein including small fragments.

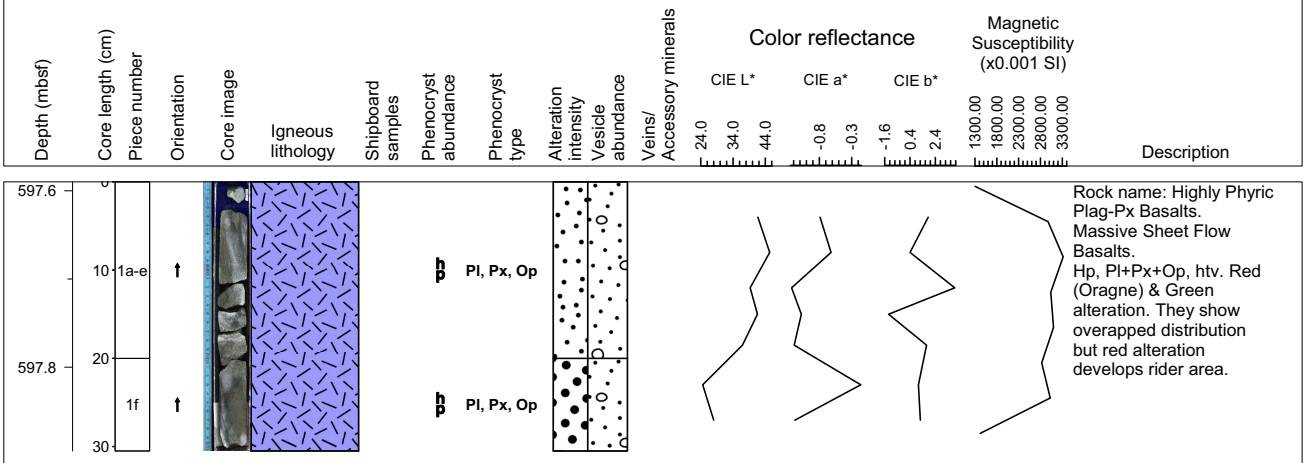
Core Photo

Hole C0012G Core 10R Section 2, interval 596.285-597.59 m (core depth below seafloor)



Core Photo

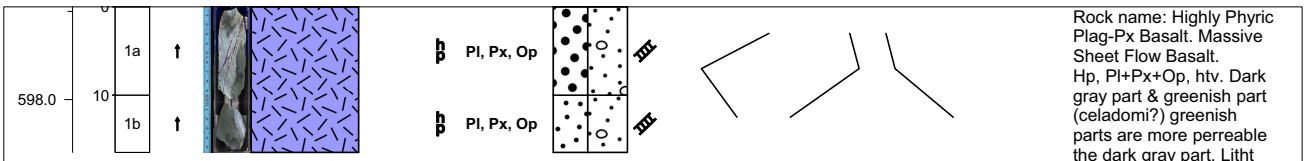
Hole C0012G Core 10R Section 3, interval 597.59-597.895 m (core depth below seafloor)



Rock name: Highly Phyric Plag-Px Basalts.
Massive Sheet Flow Basalts.
Hp, Pl+Px+Op, htv. Red (Oragne) & Green alteration. They show overapped distribution but red alteration develops rider area.

Core Photo

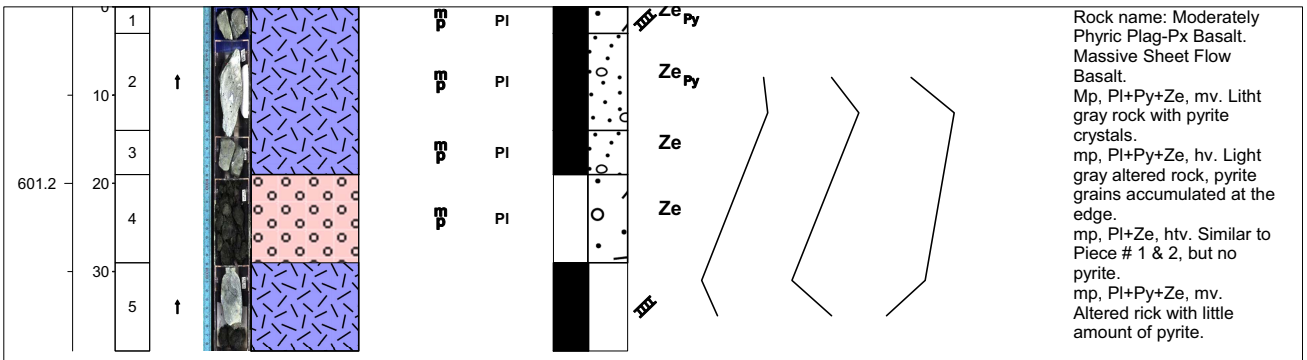
Hole C0012G Core 10R Section CC, interval 597.895-598.06 m (core depth below seafloor)



Rock name: Highly Phyric Plag-Px Basalt. Massive Sheet Flow Basalt. Hp, Pl+Px+Op, htv. Dark gray part & greenish part (celadomi?) greenish parts are more perreable the dark gray part. Litht red (or orage) often develops amast slightly in the grad mass of dark gray part. Dark red vein occurs in D.G part.

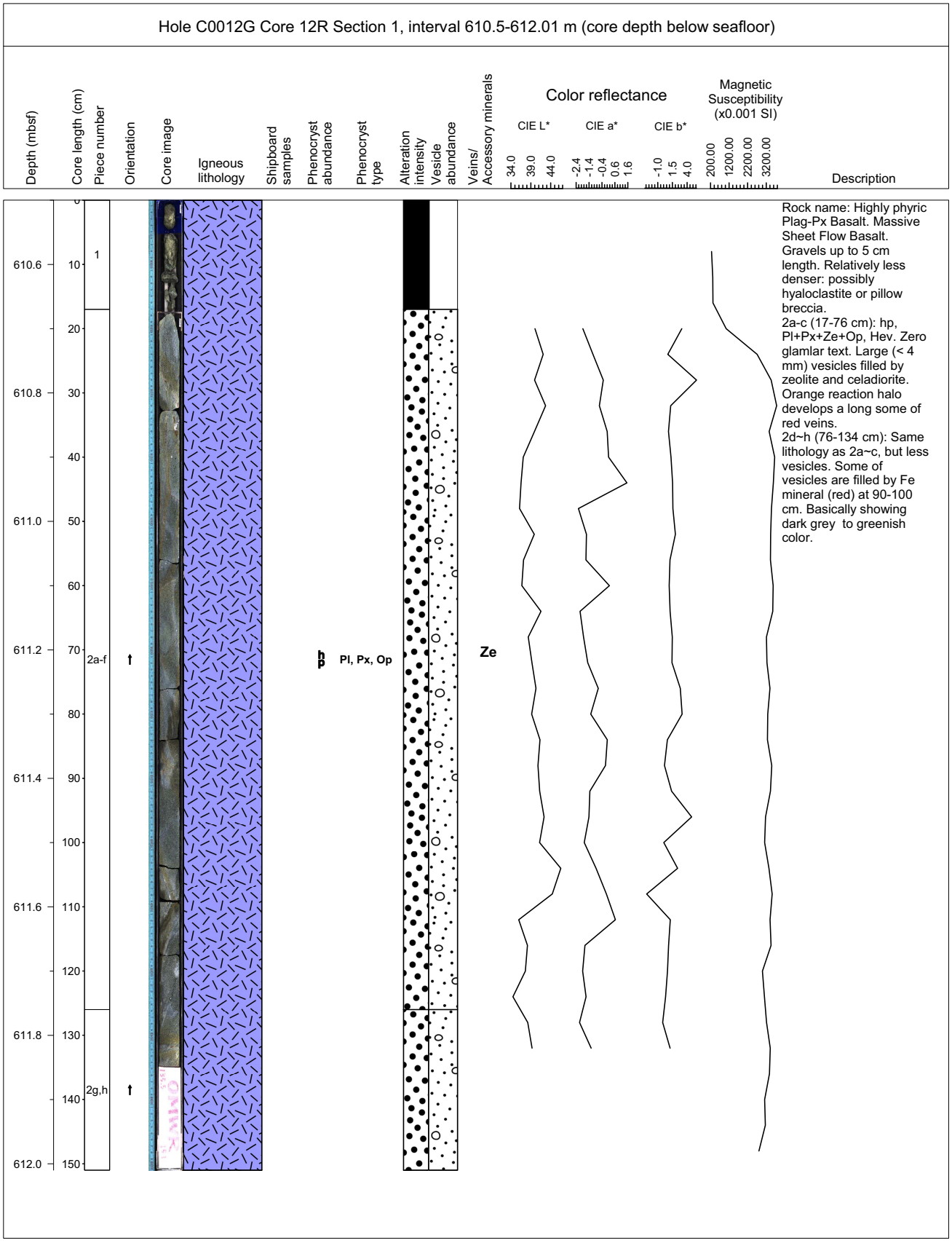
Core Photo

Hole C0012G Core 11R Section CC, interval 601-601.39 m (core depth below seafloor)

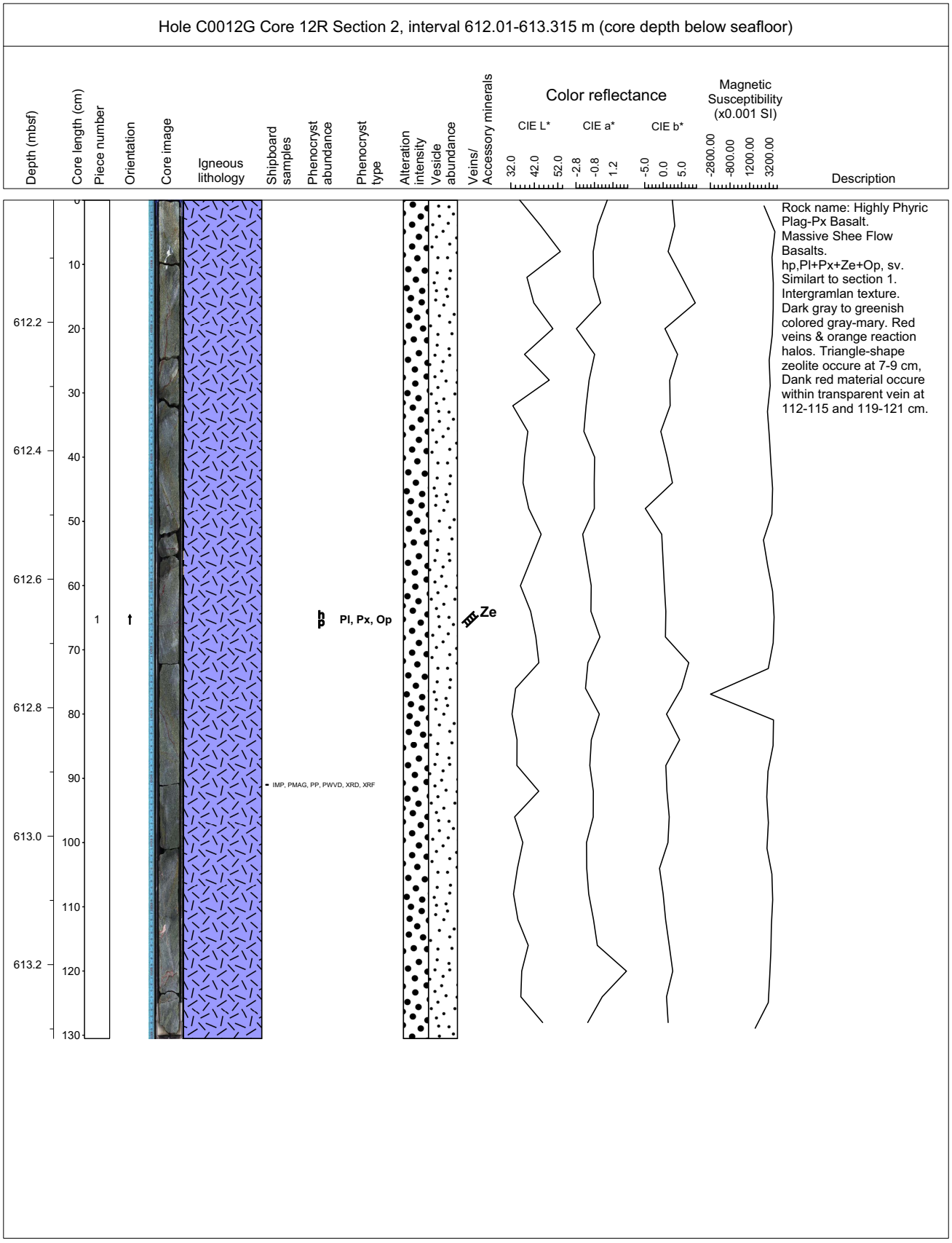


Rock name: Moderately Phyric Plag-Px Basalt. Massive Sheet Flow Basalt.
Mp, Pl+Py+Ze, mv. Litht gray rock with pyrite crystals.
mp, Pl+Py+Ze, hv. Light gray altered rock, pyrite grains accumulated at the edge.
mp, Pl+Ze, htv. Similar to Piece # 1 & 2, but no pyrite.
mp, Pl+Py+Ze, mv. Altered rick with little amount of pyrite.

Core Photo

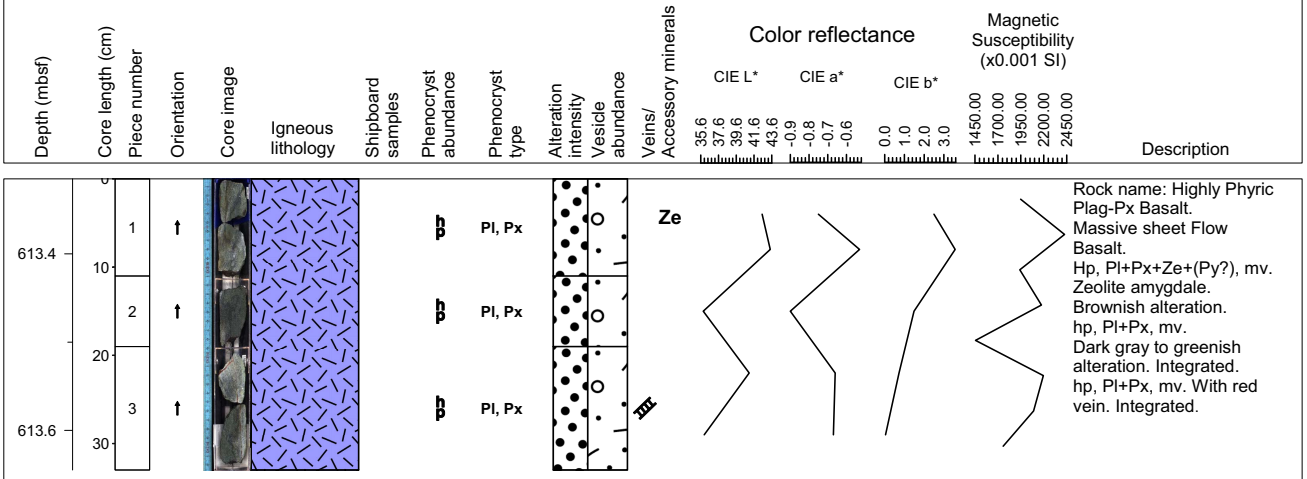

Hole C0012G Core 12R Section 1, interval 610.5-612.01 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
610.6
610.8
611.0
611.2
611.4
611.6
611.8
612.0
1
2a-f
2g,h
hp
PI, Px, Op
Ze
Rock name: Highly phyric Plag-Px Basalt. Massive Sheet Flow Basalt. Gravels up to 5 cm length. Relatively less denser: possibly hyaloclastite or pillow breccia.
2a-c (17-76 cm): hp, Pl+Px+Ze+Op, Hev. Zero glamlar text. Large (< 4 mm) vesicles filled by zeolite and celadiorite. Orange reaction halo develops a long some of red veins.
2d~h (76-134 cm): Same lithology as 2a~c, but less vesicles. Some of vesicles are filled by Fe mineral (red) at 90-100 cm. Basically showing dark grey to greenish color.

Core Photo


Hole C0012G Core 12R Section 2, interval 612.01-613.315 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
612.2
612.4
612.6
612.8
613.0
613.2
hp
Pl, Px, Op
Ze
IMP, PMAG, PP, PWVD, XRD, XRF
Rock name: Highly Phyric Plag-Px Basalt.
Massive Shee Flow Basalts.
hp,Pl+Px+Ze+Op, sv.
Similart to section 1.
Intergramlan texture.
Dark gray to greenish colored gray-mary. Red veins & orange reaction halos. Triangle-shape zeolite occure at 7-9 cm, Dank red material occure within transparent vein at 112-115 and 119-121 cm.

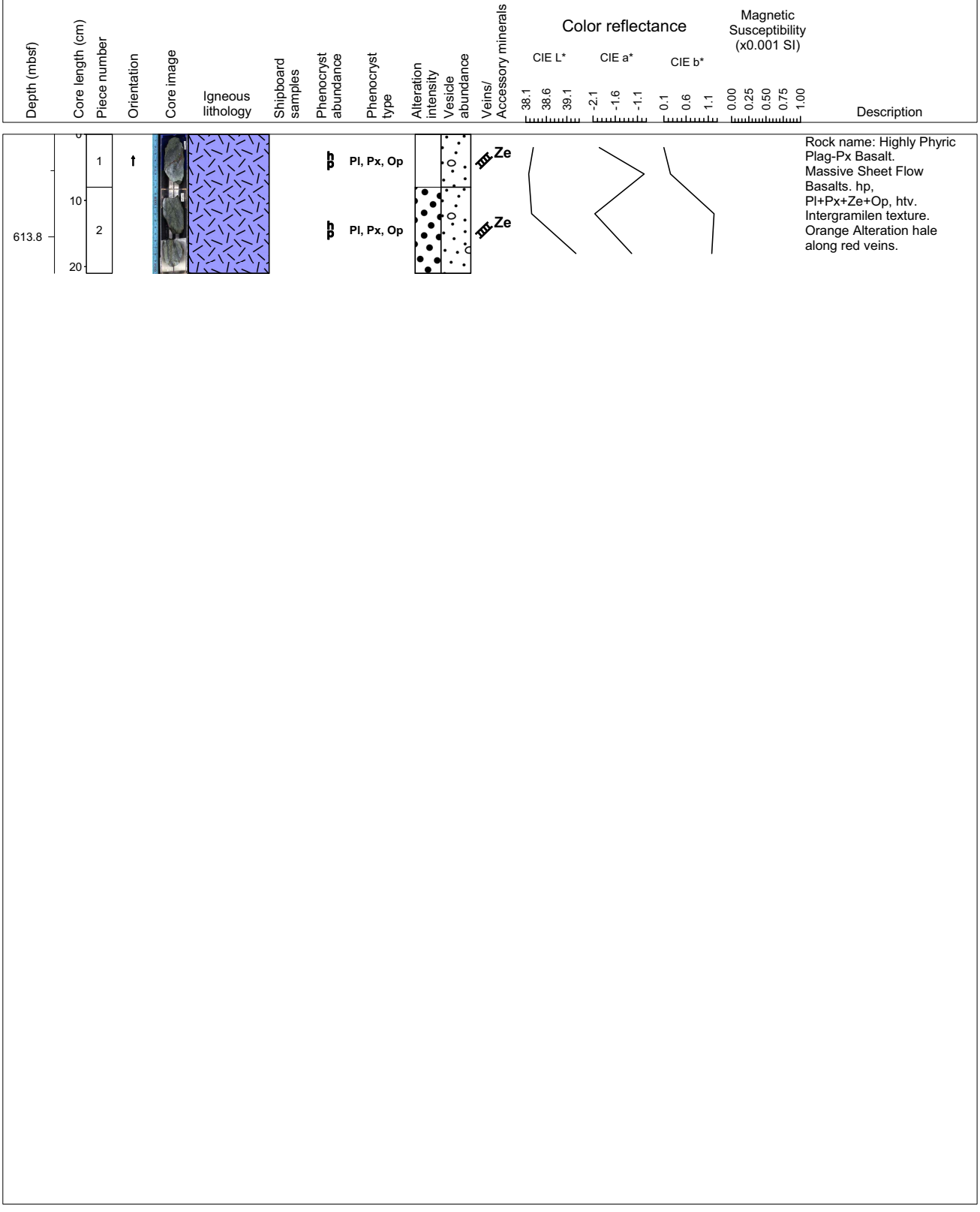
Core Photo

Hole C0012G Core 12R Section 3, interval 613.315-613.645 m (core depth below seafloor)



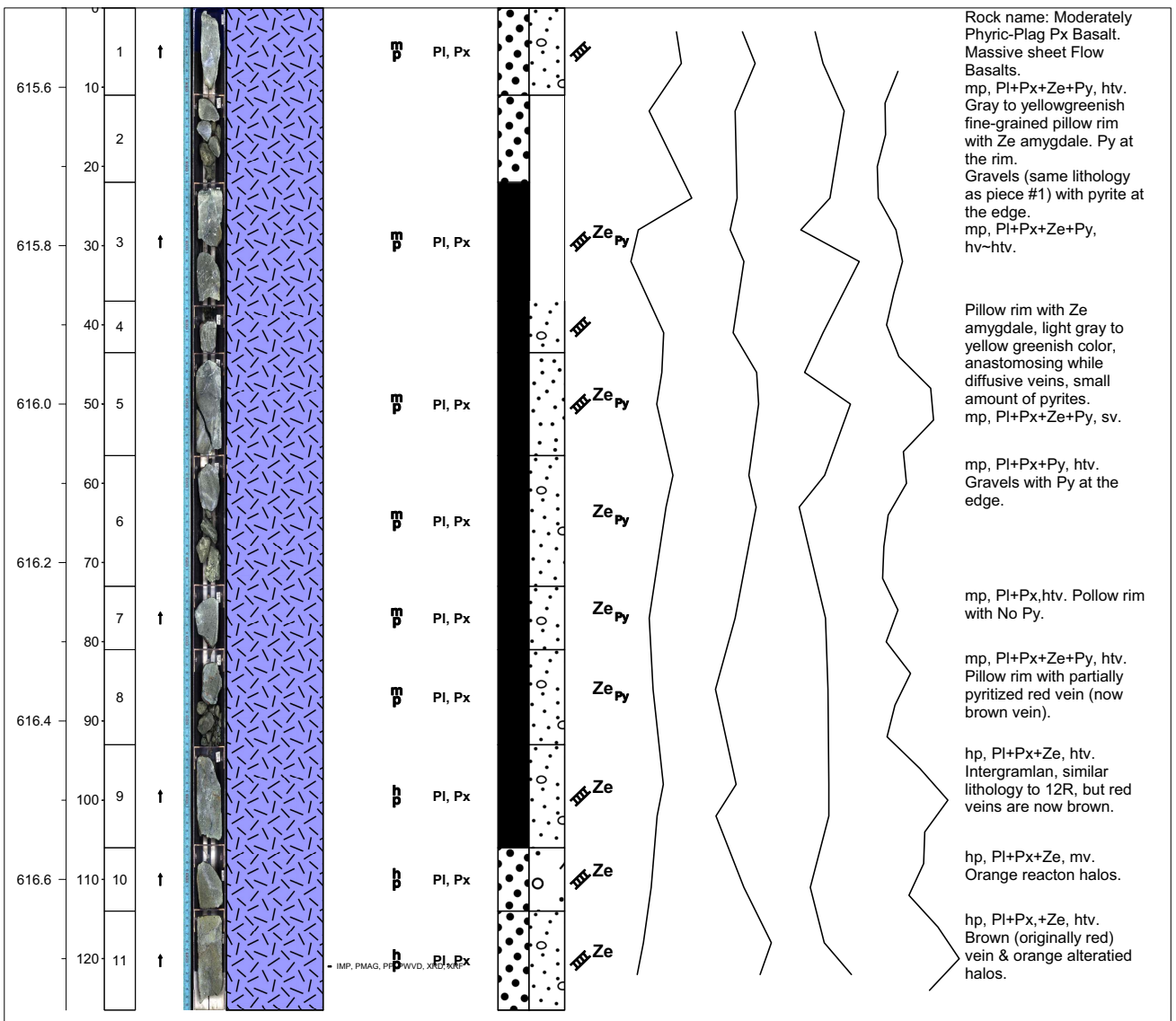
Core Photo

Hole C0012G Core 12R Section CC, interval 613.645-613.855 m (core depth below seafloor)



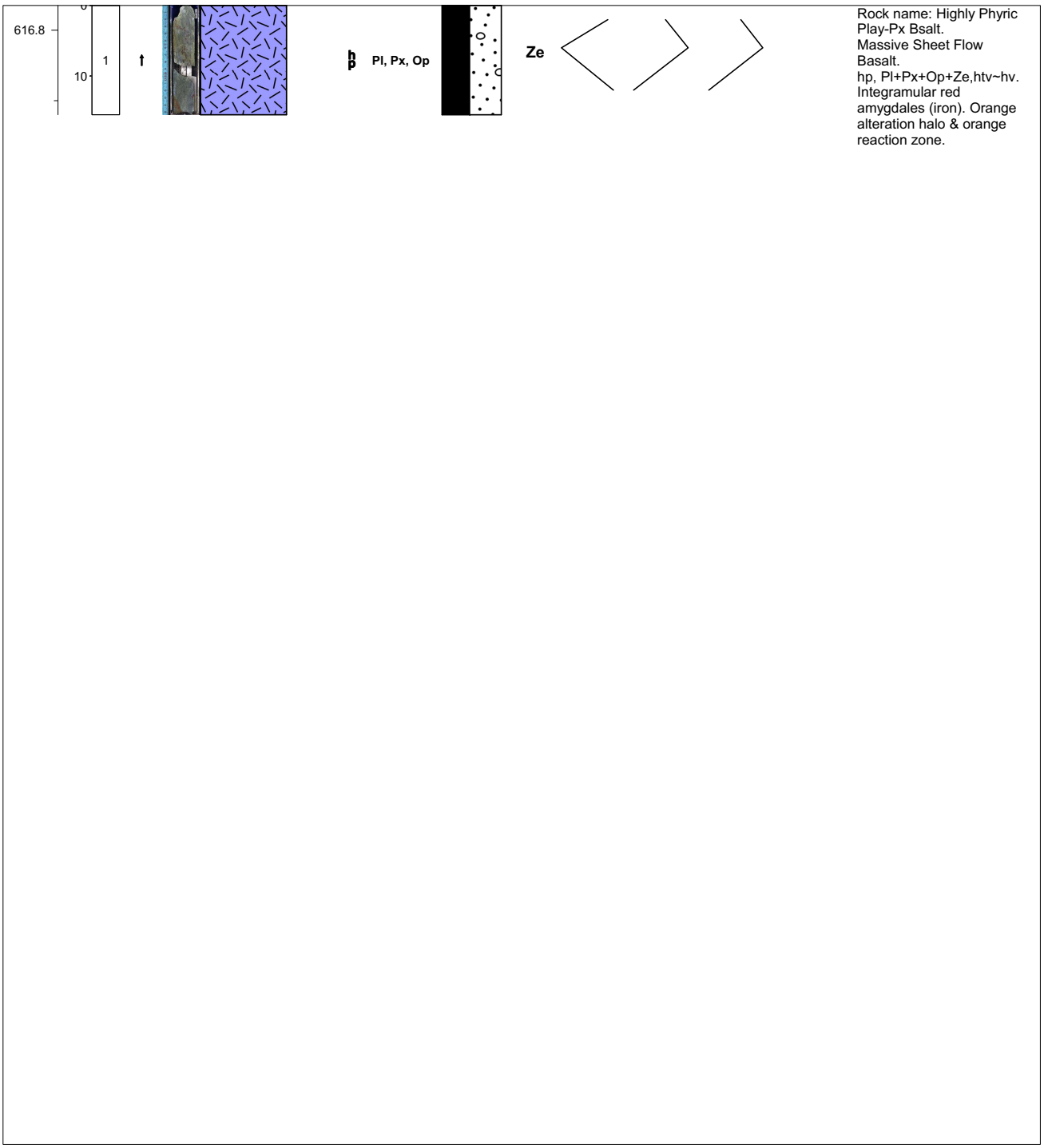
Core Photo

Hole C0012G Core 13R Section 1, interval 615.5-616.765 m (core depth below seafloor)

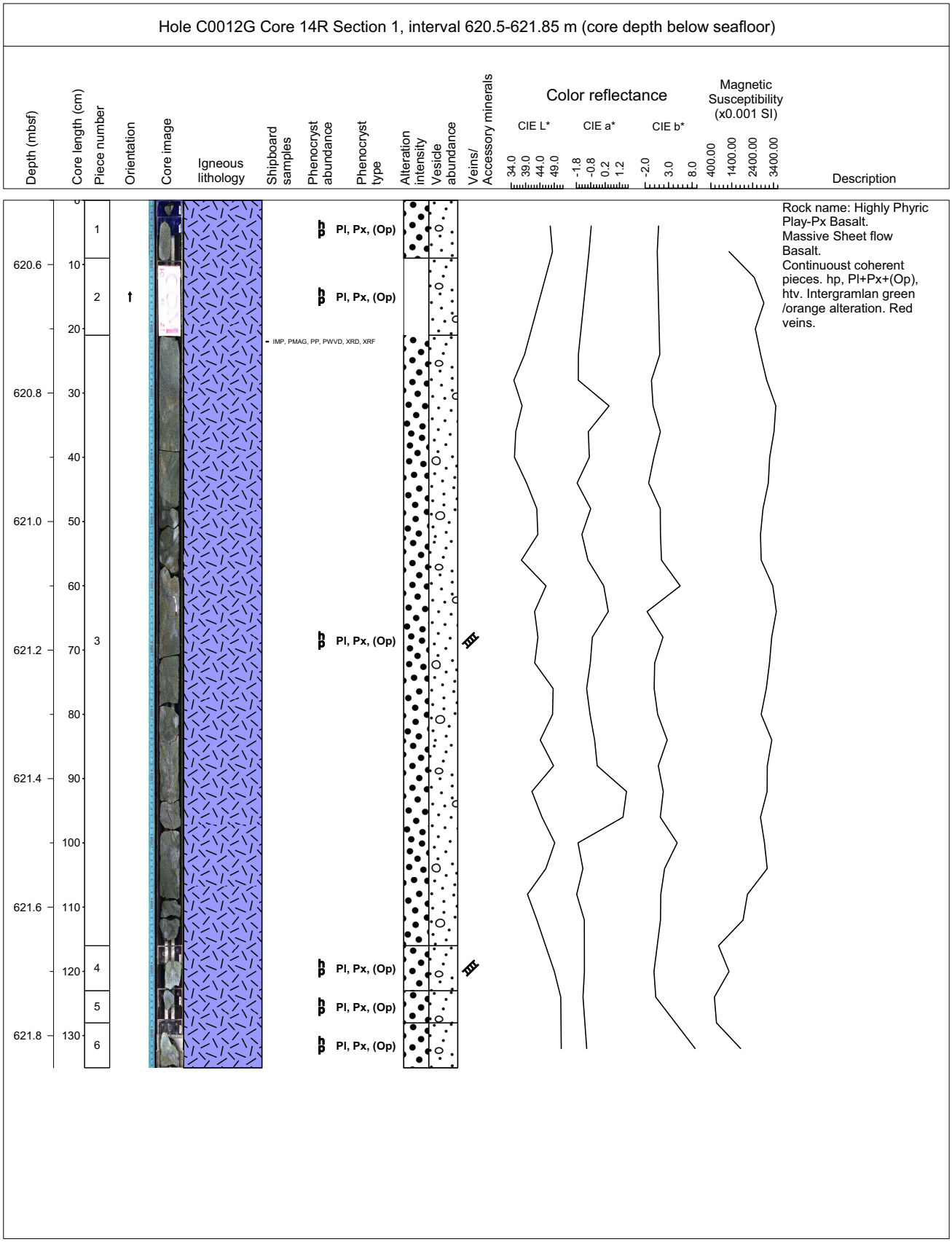


Core Photo

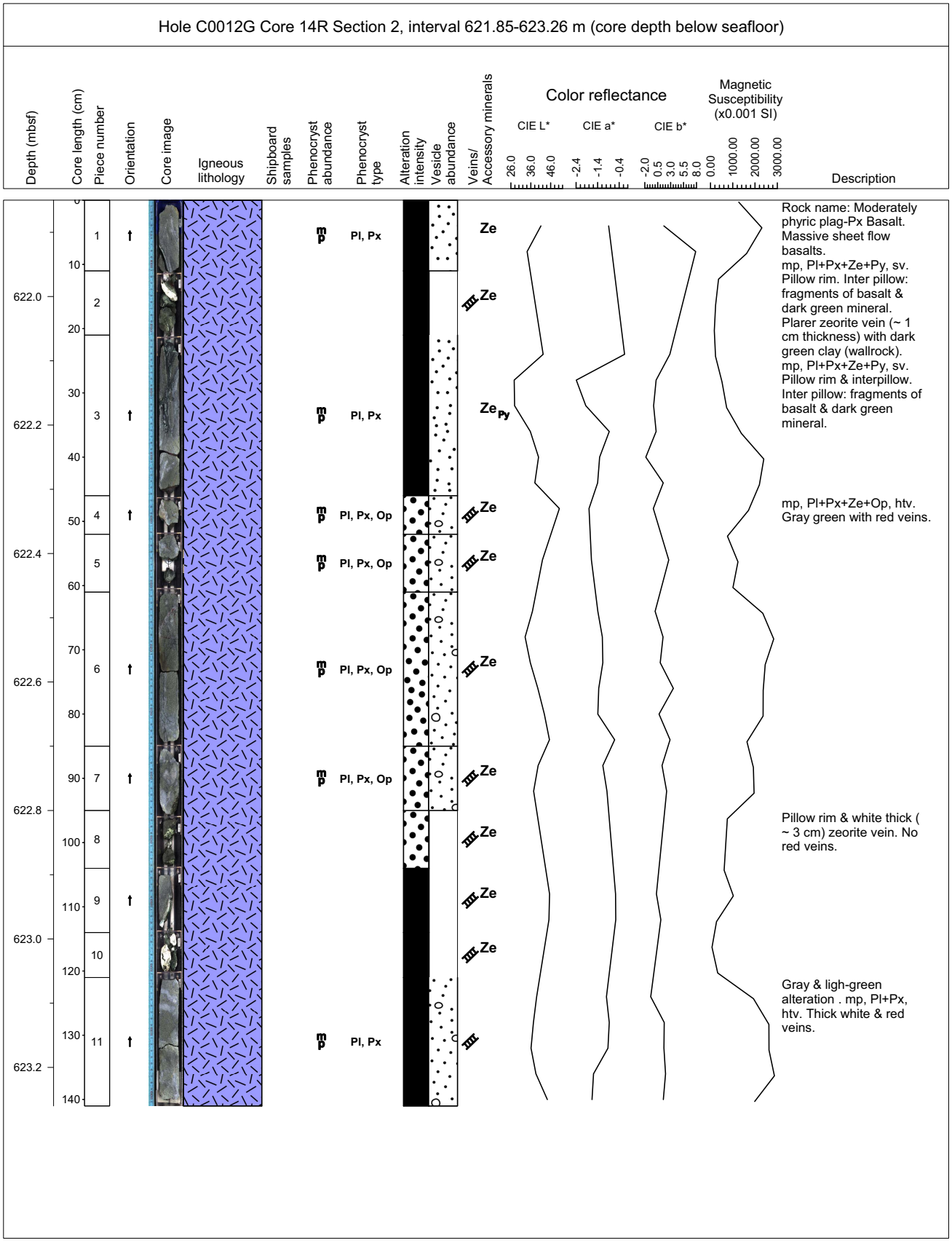
Hole C0012G Core 13R Section CC, interval 616.765-616.92 m (core depth below seafloor)



Core Photo

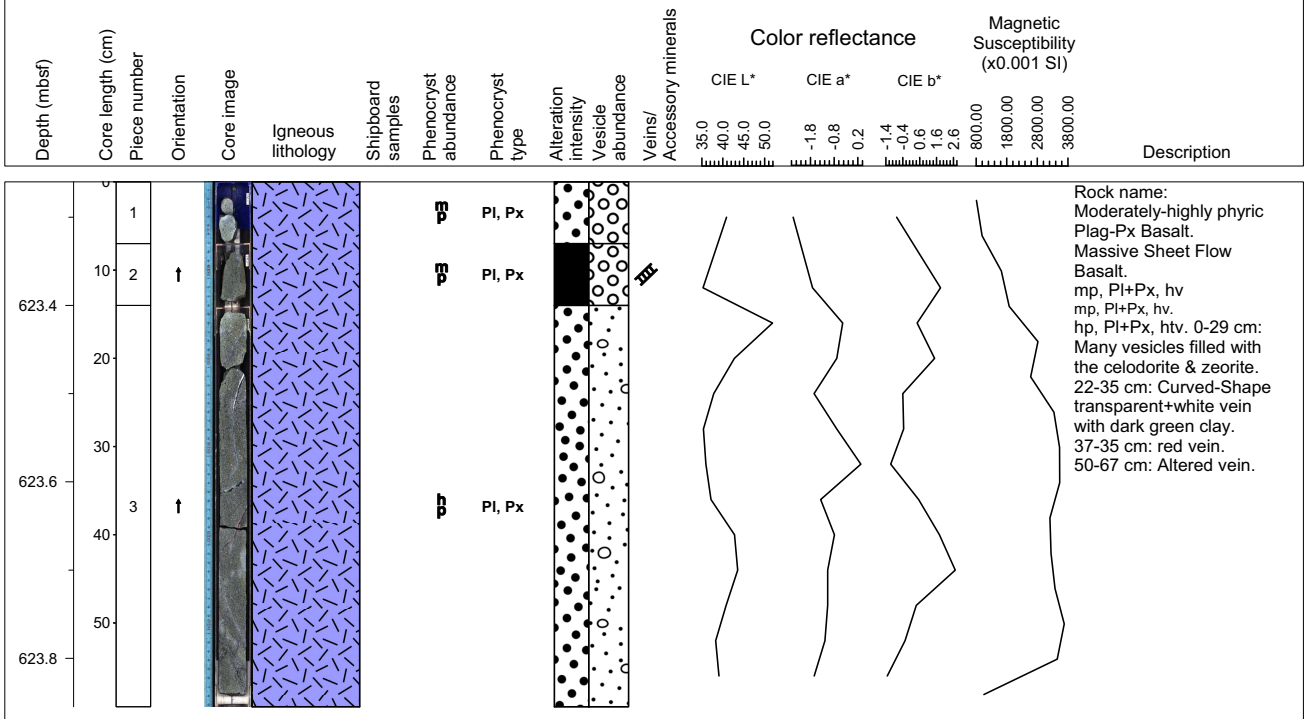

Hole C0012G Core 14R Section 1, interval 620.5-621.85 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
620.6
620.8
621.0
621.2
621.4
621.6
621.8
Pl, Px, (Op)
IMP, PMAG, PP, PWVD, XRD, XRF
Rock name: Highly Phyric Play-Px Basalt.
Massive Sheet flow Basalt.
Continuoust coherent pieces. hp, Pl+Px+(Op), htv. Intergramlan green /orange alteration. Red veins.

Core Photo


Hole C0012G Core 14R Section 2, interval 621.85-623.26 m (core depth below seafloor)
Depth (mbsf)
Core length (cm)
Piece number
Orientation
Core image
Igneous lithology
Shipboard samples
Phenocryst abundance
Phenocryst type
Alteration intensity
Vesicle abundance
Veins/ Accessory minerals
Color reflectance
CIE L*
CIE a*
CIE b*
Magnetic Susceptibility (x0.001 SI)
Description
622.0
622.2
622.4
622.6
622.8
623.0
623.2
mp Pl, Px
mp Pl, Px, Op
Ze
Zepy
Rock name: Moderately phyric plag-Px Basalt. Massive sheet flow basalts.
mp, Pl+Px+Ze+Py, sv. Pillow rim. Inter pillow: fragments of basalt & dark green mineral. Plarer zeorite vein (~ 1 cm thickness) with dark green clay (wallrock).
mp, Pl+Px+Ze+Py, sv. Pillow rim & interpillow. Inter pillow: fragments of basalt & dark green mineral.
mp, Pl+Px+Ze+Op, htv. Gray green with red veins.
Pillow rim & white thick (~ 3 cm) zeorite vein. No red veins.
Gray & ligh-green alteration . mp, Pl+Px, htv. Thick white & red veins.

Core Photo

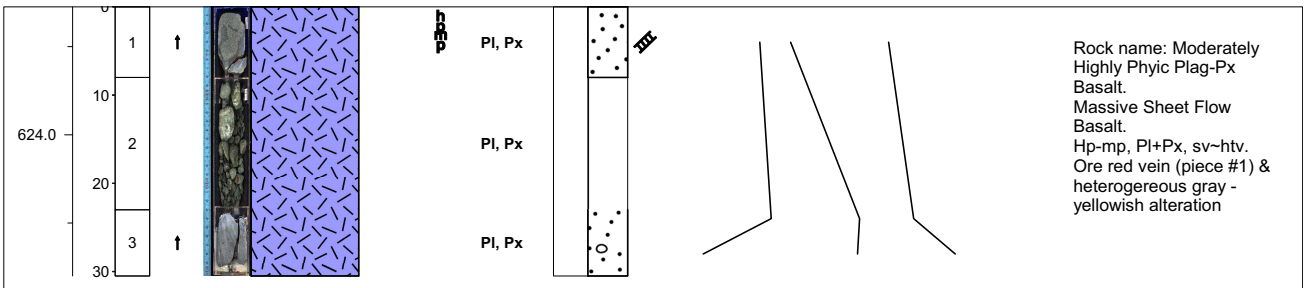
Hole C0012G Core 14R Section 3, interval 623.26-623.855 m (core depth below seafloor)



Rock name:
Moderately-highly phyric Plag-Px Basalt.
Massive Sheet Flow Basalt.
mp, Pl+Px, hv
mp, Pl+Px, hv.
hp, Pl+Px, htv. 0-29 cm: Many vesicles filled with the celodorite & zeorite.
22-35 cm: Curved-Shape transparent+white vein with dark green clay.
37-35 cm: red vein.
50-67 cm: Altered vein.

Core Photo

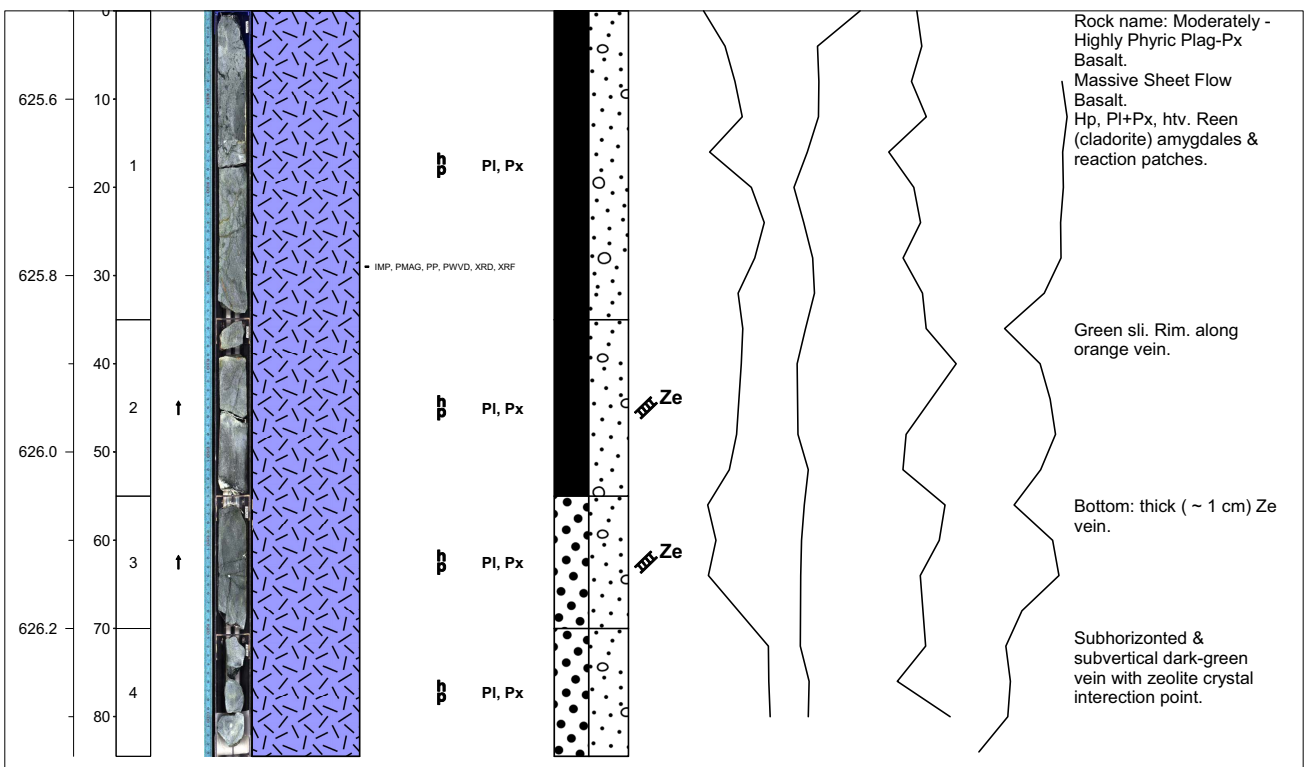
Hole C0012G Core 14R Section CC, interval 623.855-624.16 m (core depth below seafloor)



Rock name: Moderately Highly Phyic Plag-Px Basalt.
Massive Sheet Flow Basalt.
Hp-mp, Pl+Px, sv~htv.
Ore red vein (piece #1) & heterogereous gray - yellowish alteration

Core Photo

Hole C0012G Core 15R Section 1, interval 625.5-626.345 m (core depth below seafloor)



Core Photo

Hole C0012G Core 15R Section CC, interval 626.345-626.44 m (core depth below seafloor)

Depth (mbsf)	Core length (cm)	Piece number	Orientation	Core image	Igneous lithology	Shipboard samples	Phenocryst abundance	Phenocryst type	Alteration intensity	Vesicle abundance	Veins/ Accessory minerals	Color reflectance: CIE L*	Color reflectance: CIE a*	Color reflectance: CIE b*	Magnetic Susceptibility (x0.001 SI)	Description
626.4		1														Gravels including two large pieces (length ~ 3 cm).

Exp: 333
Site: C0012

[Legend] D: dominant (>50%), A: abundant (>20-50%), C: common (>5-20%), P: present (>1-5%), R: rare (>0.1-1%), T: trace (<0.1%)

Hole-Core-Sec	Int. (cm)	Depth (msf)	Lithology	Texture			Siliclastic Grain									Lithic Grains or Ash					Pelagic Grains						Other		Coments
				Sand	Silt	Clay	Quartz	Feldspar	Mica Group	Opaque Min.	Glauconite	Clay Min.	Zeolite	Heavy Min.	Calcite/Carbo. Min.	Sed. Lithic	Ign. Lithic	Meta. Lithic	Volcanic Lithic	Volcanic Glass	Nannofossils	Foraminifers	Diatoms	Radiolarians	Silicoflagellates	Sponge spicules	Clay Mins.	Zeolithe	[Legend] Ap: Apatite, Bt: Biotite, Chl: Chlorite, Cpx: Clinopyroxene, Cum: Cumingtonite, Fel: Feldspar, Hbl: Hornblende, Ogn: Organic materials, Opx: Orthopyroxene, Pyr: Pyrite, Zr: Zircon
C0012C-1H-1	100.0	0.941	Silty clay	1	5	94	T			T		P		T						R	D	T	C	R		P			
C0012C-1H-2	32.0	1.624	Volcanic ash	80	15	5	T	T	T	T		T		T						D	T		T	T					Opx, Bt
C0012C-1H-3	136.0	3.916	Silty clay	1	5	94			T	T		A		T						T	D	R	T			R			Chl
C0012C-2H-1	131.0	5.737	Volcanic ash	30	60	10	T	T		T		R		R						D									Opx, Cpx, Hbl, Obsidian
C0012C-2H-3	72.0	7.843	Volcanic ash	60	30	10	T	T	T	T		T		R						D									Bt, Hbl, Opx
C0012C-2H-4	88.0	9.321	Clay	1	5	94	T			R		A		T						R	A	R	T	T		R			Ap
C0012C-3H-2	110.0	16.356	Silty clay	1	10	89	T	T	T	R		A								R	D				T	R			Bt
C0012C-3H-7	110.0	23.011	Silty clay	0	5	95	T		T			A								R	D		T	T		T			Bt
C0012C-4H-3	60.0	26.710	Silty clay	1	9	90	P	R		T		D		T						R	R		R			R			Discoaster
C0012C-4H-6	120.0	29.944	Silty clay	1	9	90	R	R		R		D		R						R			R	T		R			Ogn
C0012C-5H-5	55.0	37.900	Clay	0	10	90	R	T		R		D		R						R	R	T	T	R	T	R			Chl, Discoaster
C0012C-6H-5	50.0	47.134	Clay	0	20	80	R		T	T		A		T						C	C		R	T		R			Bt, Chl
C0012C-7H-4	55.0	55.157	Silty clay	0	5	95	T	T				D		T							C		R			T			
C0012C-7H-8	17.5	59.252	Volcanic ash	40	50	10	T	T	T	T		R		T						D	A	T							Chl
C0012C-8H-2	80.0	62.054	Silty clay	0	5	95	T	R				A		T						R	A					R			Hbl
C0012C-8H-7	64.0	67.371	Silty clay	0	2	98			T	T		C		T						T	D	T				R			Bt
C0012C-9H-3	36.0	72.700	Silty clay	0	2	98	T					C								T	D	T	T						
C0012C-9H-8	31.0	78.530	Silty clay	0	2	98	T		T	T		A								T	D					T			Bt
C0012C-10H-1	130.0	80.108	Silty clay	0	5	95	P	R	T	R		D		T						R			T	T		T			Chl, Hbl
C0012C-10H-8	65.0	84.591	Silty clay	0	2	98	R	T	T	T		D		T							T								Chl, Hbl, Discoaster
C0012C-11H-1	103.5	87.478	Clay	0	2	98	T	T	T	T		D		T							P								
C0012C-11H-5	30.0	91.199	Volcanic ash (altered)	40	50	10	T					T		T						D	P								Altered vol.glass, Opx, Discoaster
C0012C-12H-1	41.0	94.371	Clay	0	5	95	R		T	R		A								T	A								Bt, Chl
C0012C-12H-4	43.0	98.227	Clay	1	4	95	R	T		R		D									P								Pyr?
C0012C-12H-5	25.0	99.336	Silty clay	0	2	98	T		T	R		A		T							A	T							Bt, Chl
C0012C-13H-2	89.0	103.802	Silty clay	0	2	98	T		T	R		A									A	T							
C0012C-13H-6	39.0	106.743	Silty clay	0	5	95	R		T	R		A		T							D	T							Chl
C0012C-14H-5	76.0	111.265	Silty clay	0	5	95	P		T	T				T								T							Bt
C0012C-14H-8	57.0	114.924	Volcanic ash (altered)	0	60	40	T			R		A								A									Altered vol.glass, Ap, Pyr
C0012C-14H-CC	17.0	115.696	Volcanic ash (altered)	0	50	50	R					A								A	T								Altered vol.glass, Ap
C0012C-15X-6	97.0	121.432	Silty clay	0	2	98	T	R	T			A									A	T							Bt, Chl
C0012D-2H-4	57.0	120.228	Silty clay	0	5	95	T		T	T		D		T						T	T								Discoaster, Chl
C0012D-2H-7	57.0	123.056	Silty clay	0	5	95	P		T	P		D		T							T								Discoaster, Chl, Fish teeth?
C0012D-3H-1	114.0	127.585	Clay	0	3	97	T		T			D		T							A								oxygen Hbl, Discoaster
C0012D-3H-1	119.0	127.633	Volcanic ash (altered)	10	85	5	T		T			P		T						D	T								Bt, Altered vol.glass
C0012D-3H-2	50.0	128.327	Clay	0	3	97				T		D		T						P									Chl, Ap
C0012D-4H-3	94.0	137.145	Volcanic ash (altered)	10	20	70	R	R				D		T						R									Opx, Hbl
C0012D-4H-5	60.0	138.055	Clay	0	5	95	R		T	R		D								R									Bt
C0012D-5H-5	74.0	145.312	Clay (with volcanic ash)	0	10	90	R		T			D		T						P	R	T							Disc, Chl, Fresh&alterd vol.glass
C0012D-5H-5	85.0	145.411	Volcanic ash (altered)	20	70	10	P	P	T	R		C		T						D	T	T							Altered glass, Ap, Disco, Hbl, Ogn
C0012D-6H-1	84.0	147.169	Silty clay	5	15	80	P	R	T	T		A		R							P								Bt, Hbl
C0012D-6H-5	12.0	149.915	Silty clay	5	10	85	C	R		P		A		R							C								Hbl, Opx, Cpx
C0012D-6H-7	22.0	151.363	Silty clay	0	5	95	R			P		A		T							P								Ap

Hole-Core-Sec	Int. (cm)	Depth (msf)	Lithology	Texture			Siliclastic Grain									Lithic Grains or Ash					Pelagic Grains						Other		Coments
				Sand	Silt	Clay	Quartz	Feldspar	Mica Group	Opaque Min.	Glauconite	Clay Min.	Zeolite	Heavy Min.	Calcite/Carbo. Min.	Sed. Lithic	Ign. Lithic	Meta. Lithic	Volcanic Lithic	Volcanic Glass	Nannofossils	Foraminifers	Diatoms	Radiolarians	Silicoflagellates	Sponge spicules	Clay Mins.	Zeolithe	[Legend] Ap: Apatite, Bt: Biotite, Chl: Chlorite, Cpx: Clinopyroxene, Cum: Cumingtonite, Fel: Feldspar, Hbl: Hornblende, Ogn: Organic materials, Opx: Orthopyroxene, Pyr: Pyrite, Zr: Zircon
C0012D-7H-4	103.0	155.807	Volcanic ash?	1	80	19	T			D				T															Pyr
C0012D-7H-5	79.0	156.893	Silty clay	0	3	97	T		T	T		D								T	A								Bt, Chl
C0012D-8H-1	100.0	158.460	Silty clay	0	3	97	T			T		A									A								Ogn
C0012D-8H-5	135.0	161.867	Sand	5	15	80	R	T		T		D		R							P	T							Hbl, Ap, Cum?
C0012D-9H-1	55.0	162.943	Sandy silt	10	50	40	C	R		P				R						D									Hbl, Ap, Opx, altered vol.glass
C0012D-9H-3	91.0	165.504	Silty clay	0	3	97	R	T		R		D		T							T								Ap
C0012D-10H-1	95.0	167.508	Volcanic ash (altered)	1	90	9	T	T		D										A									Pyr, Altered vol.glass
C0012D-10H-4	15.0	168.598	Clay	0	4	96	R	T	T	P		D		T	T						A	T							Discoaster, Hbl, Bt
C0012D-11H-5	21.0	172.763	Sandstone	75	17	8	C	C						P	P					D	T	T							Altered glass, Hbl, Zr, Ap
C0012D-12H-2	15.0	174.247	Sandstone	50	30	20	C	P	T	R	T	C		R						D	T								Altered & fresh glass, Hbl, Opx, Cpx, Ap
C0012D-12H-5	15.0	175.380	Clay	2	5	93	T	T		R		P		T	P					P	D								Discoaster
C0012D-13H-3	30.0	178.119	Volcanic ash (altered)	55	30	15	P	C		R		P		R	T					D	T								Altered vol.glass, Hbl, oxygen-Hbl, Ap
C0012E-1X-1	65.0	500.650	Mudstone	0	2	98	T	T	T	T		A									D								Bt
C0012E-1X-1	72.0	500.720	Mudstone	0	2	98	T		T	T		A									A								Bt
C0012E-1X-1	126.0	501.260	Sandstone	90	5	5	A	R	T			P		T						R									Bt, Chl, Altered vol.glass, Hbl, Opx
C0012E-1X-2	19.0	501.590	Sandstone	1	85	14	R	R		T		A		T						D									Hbl, Ap, Altered vol.glass
C0012E-2X-CC	28.0	510.350	Mudstone	0	1	99	T					D		T															
C0012E-3X-3	70.0	521.740	Claystone	0	1	99	T		T			D																	Chl
C0012E-3X-4	65.0	522.495	Claystone	0	40	60		T				D		T	T					A									Ap, Cpx, Hbl, Altered vol.glass

Basement thin section description

Sample Identification:

Site	C0012	Hole	F
Core	**1R**	Section	**CC**
Piece	**1A**	Interval	**13** - **15**

Rock name: **Pl-Px phyric altered basalt**

Vesicularity:

Nonvesicular (<1% vesicules)	
Sparsely vesicular (1 - 5% vesicules)	
Moderately vesicular (5 - 20% vesicules)	
Highly vesicular (>20% vesicules)	**X**
Heterogeneous	

Degree of crystallinity:

Holohyaline (90 - 100% glass)	
Hypohyaline (>50% glass)	
Hypocrystalline (>50% crystals)	**X**
Holocrystalline (90 - 100% crystals)	

Constituents of basalt:

	Phenocrysts					Groundmass				Secondary					
	Plagioclase	Clinopyroxene	Orthopyroxene	Olivine	Opaque	Plagioclase	Pyroxene	Opaque	Glass	Saponite	Celadonite	Zeolite	Quartz	Calcite	Iddingsite
%	3	2	No	No	No	1	1	1	40	1		1	No	1	No
Size*	0.100	0.100				0.010	0.005	0.001		0.001				0.010	
Shape**	El	Seq				El	Seq	Eq		Tab				Seq	
Habit***	Eu	SEu				Eu	SEu	SEu	In	Eu				In	

Description and mineralogy of vein:

Comments:
Clinopyroxene-plagioclase phyric altered basalts

Observer: Asuka Yamaguchi & Teruaki Ishii
Note:
* Size = average in mm
** Shape = Eq (Equant), Seq (SubEquant), Tab (Tabular), El (Elongated)
*** Habit = Eu (Euhedral), SEu (Sub-Euhadral), An (Anhedral), In (Interstitial)

Basement thin section description

Sample Identification:

Site	C0012	Hole	G
Core	**4R**	Section	**1**
Piece	**4A**	Interval	**28** - **29**

Rock name: **Pl-Px phyric altered basalt**

Vesicularity:

Nonvesicular (<1% vesicules)	
Sparsely vesicular (1 - 5% vesicules)	X
Moderately vesicular (5 - 20% vesicules)	
Highly vesicular (>20% vesicules)	
Heterogeneous	

Degree of crystallinity:

Holohyaline (90 - 100% glass)	
Hypohyaline (>50% glass)	**X**
Hypocrystalline (>50% crystals)	
Holocrystalline (90 - 100% crystals)	

Constituents of basalt:

	Phenocrysts					Groundmass				Secondary					
	Plagioclase	Clinopyroxene	Orthopyroxene	Olivine	Opaque	Plagioclase	Pyroxene	Opaque	Glass	Saponite	Celadonite	Zeolite	Quartz	Calcite	Iddingsite
%	2.000	5.000	No	Y	No	Y		No	85.000		No	No	No	No	No
Size*	0.050	0.050	No			0.010	0.005			0.005					
Shape**	Tab	Seq	No			Tab	Seq			Tab					
Habit***	Eu	SEu	No			Eu	SEu			Eu					

Description and mineralogy of vein:

Comments:
Clinopyroxcene (Titanaugite) plagioclase phyric altered basalt.

Observer: Asuka Yamaguchi & Teruaki Ishii
Note:
* Size = average in mm
** Shape = Eq (Equant), Seq (SubEquant), Tab (Tabular), El (Elongated)
*** Habit = Eu (Euhedral), SEu (Sub-Euhadral), An (Anhedral), In (Interstitial)

Basement thin section description

Sample Identification:

Site	C0012	Hole	G
Core	**5R**	Section	**1**
Piece	**2A**	Interval	**4** - **5**

Rock name: **Pl-Px altered**

Vesicularity:

Nonvesicular (<1% vesicules)	
Sparsely vesicular (1 - 5% vesicules)	
Moderately vesicular (5 - 20% vesicules)	X
Highly vesicular (>20% vesicules)	
Heterogeneous	

Degree of crystallinity:

Holohyaline (90 - 100% glass)	
Hypohyaline (>50% glass)	**X**
Hypocrystalline (>50% crystals)	
Holocrystalline (90 - 100% crystals)	

Constituents of basalt:

	Phenocrysts					Groundmass				Secondary					
	Plagioclase	Clinopyroxene	Orthopyroxene	Olivine	Opaque	Plagioclase	Pyroxene	Opaque	Glass	Saponite	Celadonite	Zeolite	Quartz	Calcite	Iddingsite
%	2.000	3.000			1.000	3.000	1.000	1.000	40.000				No		
Size*	0.400	0.400			0.100	0.010	0.005	0.003		0.001		0.001			
Shape**	Tab	Seq			Eq	El	Seq	Seq		Tab		Tab			
Habit***	Eu	SEu			SEu	Eu	SEu	SEu		Eu		In			

Description and mineralogy of vein:
Thin vein of calcite (~ 0.4 mm wide)

Comments:
Highly altered to sapolite (~90%)
Plagioclase-clinopyroxene (=titanaugite) -alterted basalt.

Observer: Asuka Yamaguchi & Teruaki Ishii
Note:
* Size = average in mm
** Shape = Eq (Equant), Seq (SubEquant), Tab (Tabular), El (Elongated)
*** Habit = Eu (Euhedral), SEu (Sub-Euhadral), An (Anhedral), In (Interstitial)

Basement thin section description

Sample Identification: Site C0012 Hole G
Core **6R** Section **CC**
Piece **5A** Interval **21** - **23**

Rock name: **Highly Pl-Px phyric basalt**

Vesicularity:

Nonvesicular (<1% vesicules)	
Sparsely vesicular (1 - 5% vesicules)	
Moderately vesicular (5 - 20% vesicules)	X
Highly vesicular (>20% vesicules)	
Heterogeneous	

Degree of crystallinity:

Holohyaline (90 - 100% glass)	
Hypohyaline (>50% glass)	
Hypocrystalline (>50% crystals)	**X**
Holocrystalline (90 - 100% crystals)	

Constituents of basalt:

	Phenocrysts					Groundmass				Secondary					
	Plagioclase	Clinopyroxene	Orthopyroxene	Olivine	Opaque	Plagioclase	Pyroxene	Opaque	Glass	Saponite	Celadonite	Zeolite	Quartz	Calcite	Iddingsite
%	30.000	30.000	No	No	No	10.000	10.000	1.000	10.000		X	10.000			
Size*	0.200	0.200				0.020	0.020	0.005							
Shape**	Tab	Seq				Tab	Seq	Seq							
Habit***	Eu	SEu				Eu	SEu	SEu							

Description and mineralogy of vein:
Thin vein of calcite (~ 0.4 mm wide)

Comments:
Plagioclase are replaced by Zeolites?
Fe-hydroxide to caladomite to zeolite?
Clinopyroxene-plagioclase?

Observer: Asuka Yamaguchi & Teruaki Ishii
Note:
* Size = average in mm
** Shape = Eq (Equant), Seq (SubEquant), Tab (Tabular), El (Elongated)
*** Habit = Eu (Euhedral), SEu (Sub-Euhadral), An (Anhedral), In (Interstitial)

Basement thin section description

Sample Identification:

Site	C0012	Hole	G
Core	**8R**	Section	**CC**
Piece	**3A**	Interval	**43** - **49**

Rock name: **Highly Pl-Px phyric basalt**

Vesicularity:

Nonvesicular (<1% vesicules)	X
Sparsely vesicular (1 - 5% vesicules)	
Moderately vesicular (5 - 20% vesicules)	
Highly vesicular (>20% vesicules)	
Heterogeneous	

Degree of crystallinity:

Holohyaline (90 - 100% glass)	
Hypohyaline (>50% glass)	
Hypocrystalline (>50% crystals)	**X**
Holocrystalline (90 - 100% crystals)	

Constituents of basalt:

	Phenocrysts					Groundmass				Secondary					
	Plagioclase	Clinopyroxene	Orthopyroxene	Olivine	Opaque	Plagioclase	Pyroxene	Opaque	Glass	Saponite	Celadonite	Zeolite	Quartz	Calcite	Iddingsite
%	30	20			10			X		X					
Size*	0.200	0.200			0.100										
Shape**	Tab	Seq			Eq										
Habit***	Eu	SEu			SEu										

Description and mineralogy of vein:
Thin vein of calcite (~ 0.4 mm wide)

Comments:
Plagioclase-Clinopyroxene-Dolomite

Observer: Asuka Yamaguchi & Teruaki Ishii
Note:
* Size = average in mm
** Shape = Eq (Equant), Seq (SubEquant), Tab (Tabular), El (Elongated)
*** Habit = Eu (Euhedral), SEu (Sub-Euhadral), An (Anhedral), In (Interstitial)