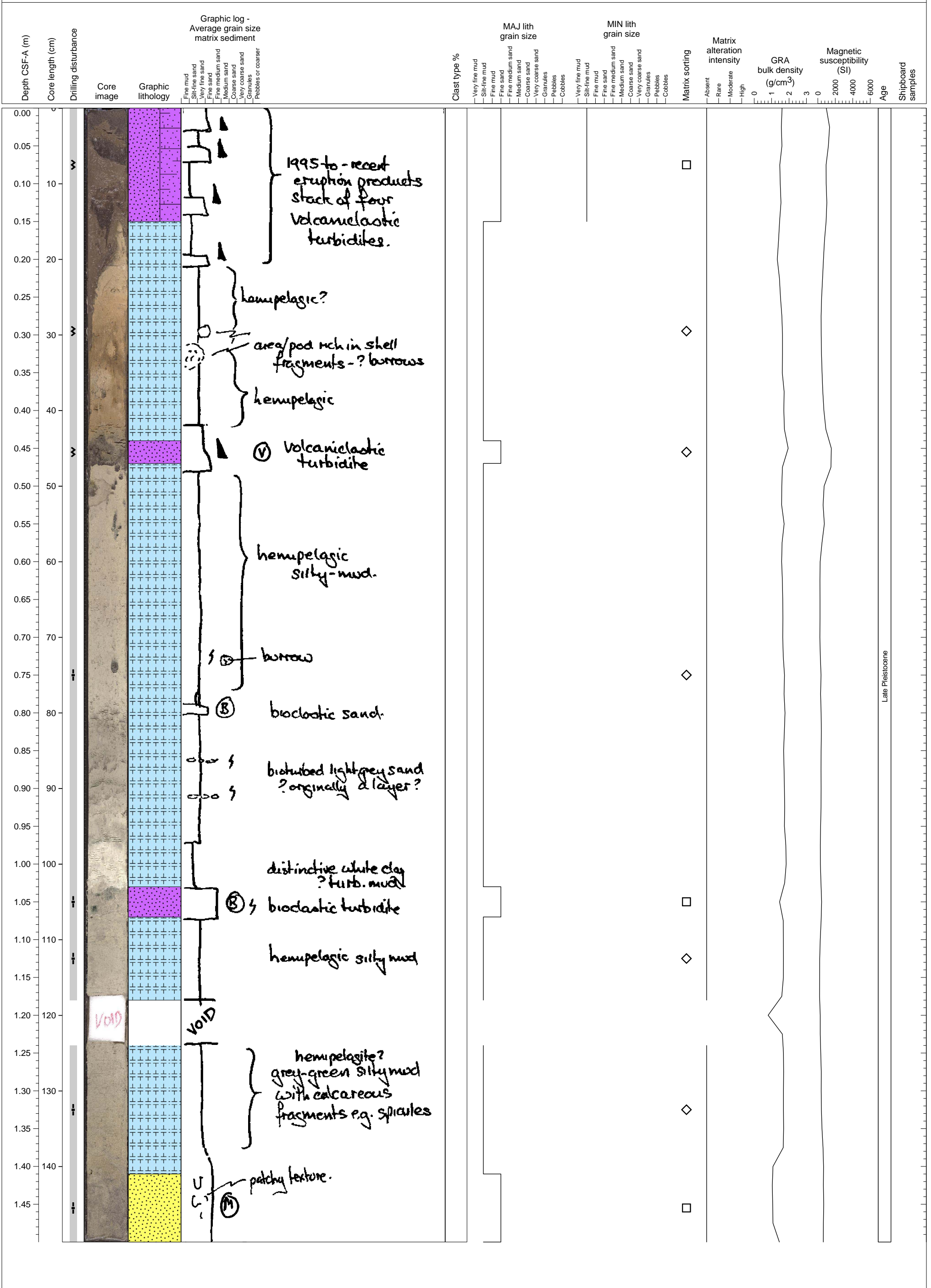
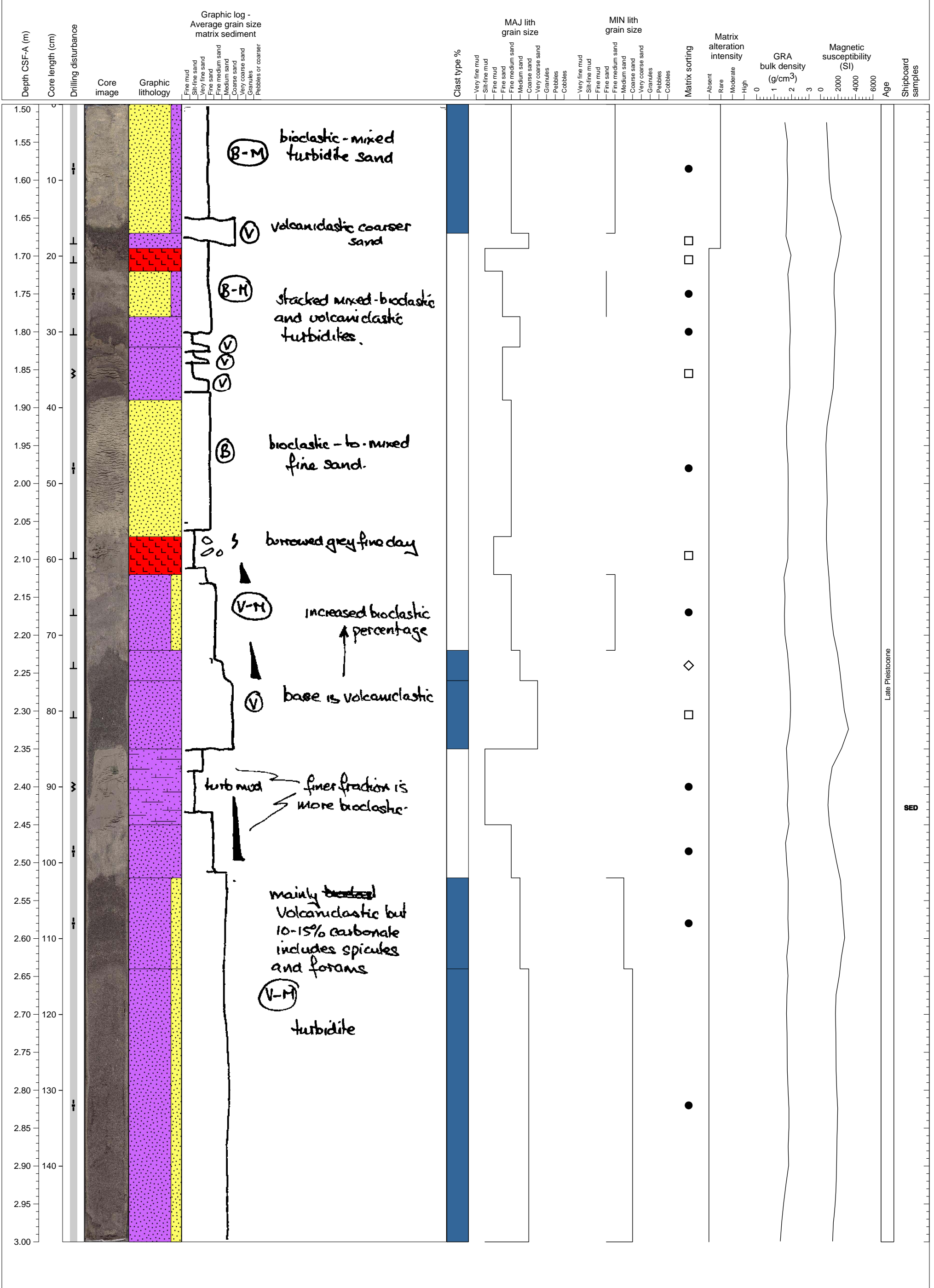


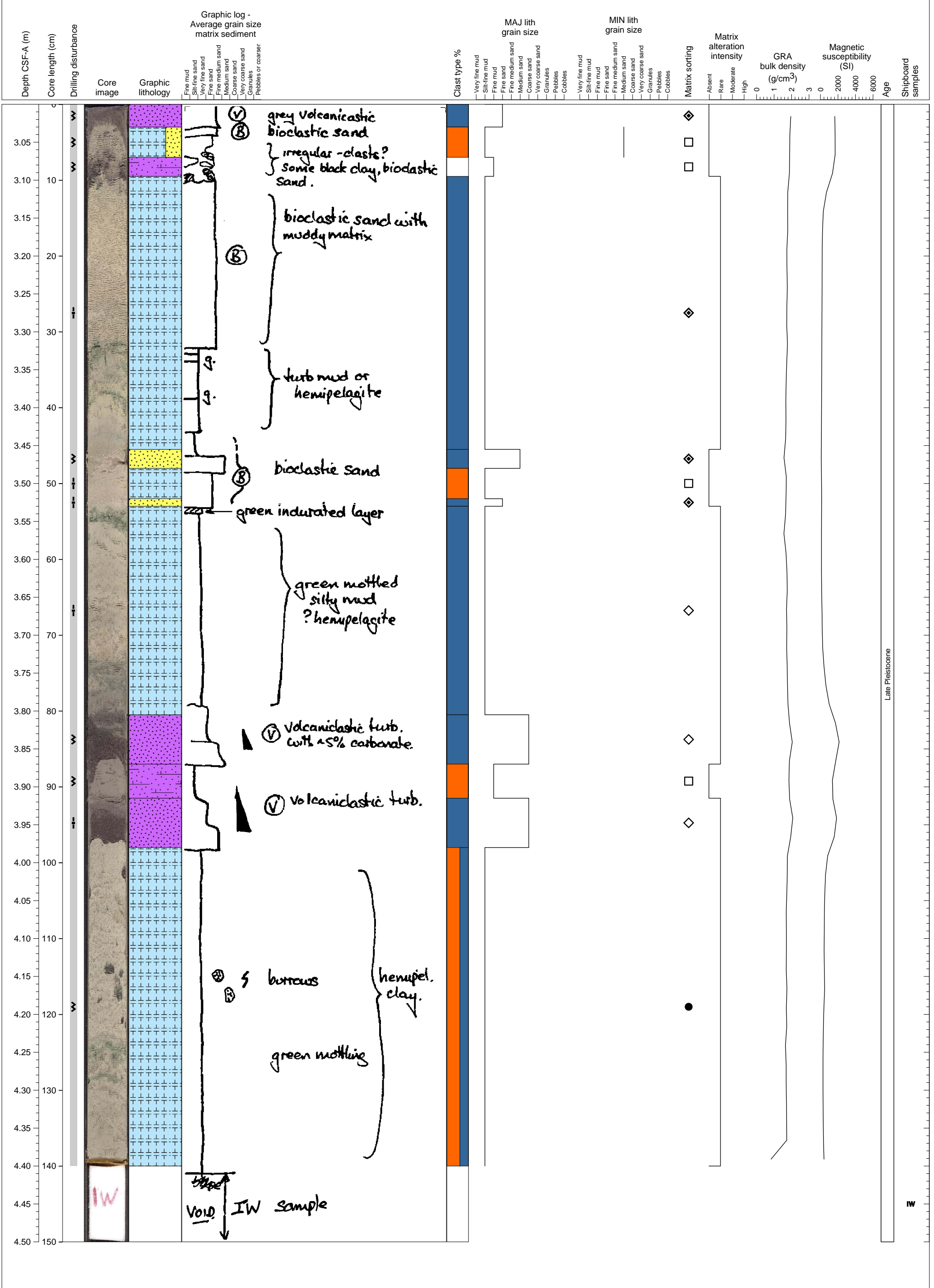
Upper part of this section (0-47 cm) contains volcanic sand and the lower part (47-150 cm) consists of calcareous ooze and sand.



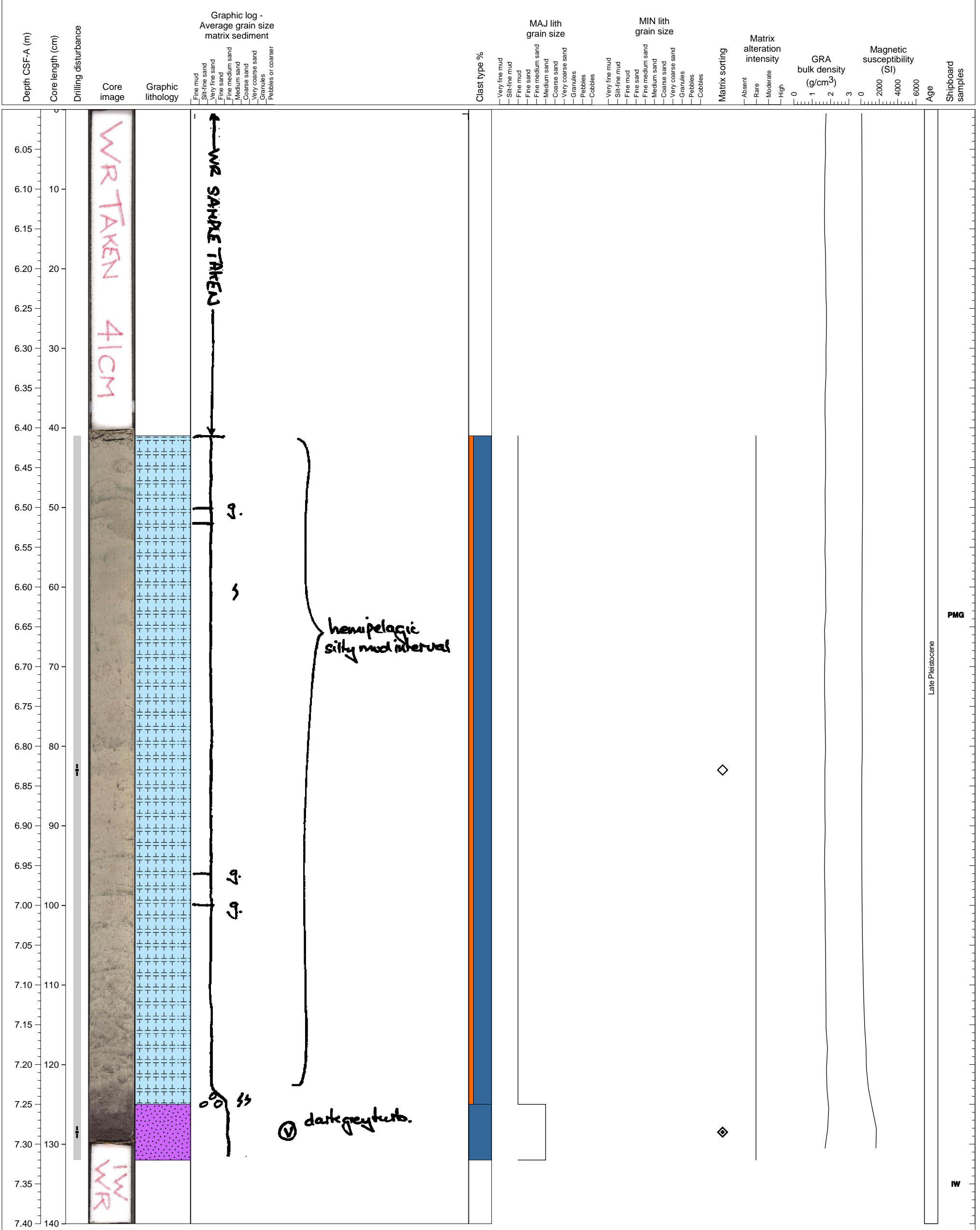
Well graded volcanoclastic & bioclastic series. with minor amount of bioclasts.
Grain size varies from coarse sand to fine mud. More than 2 disperse ash layers.



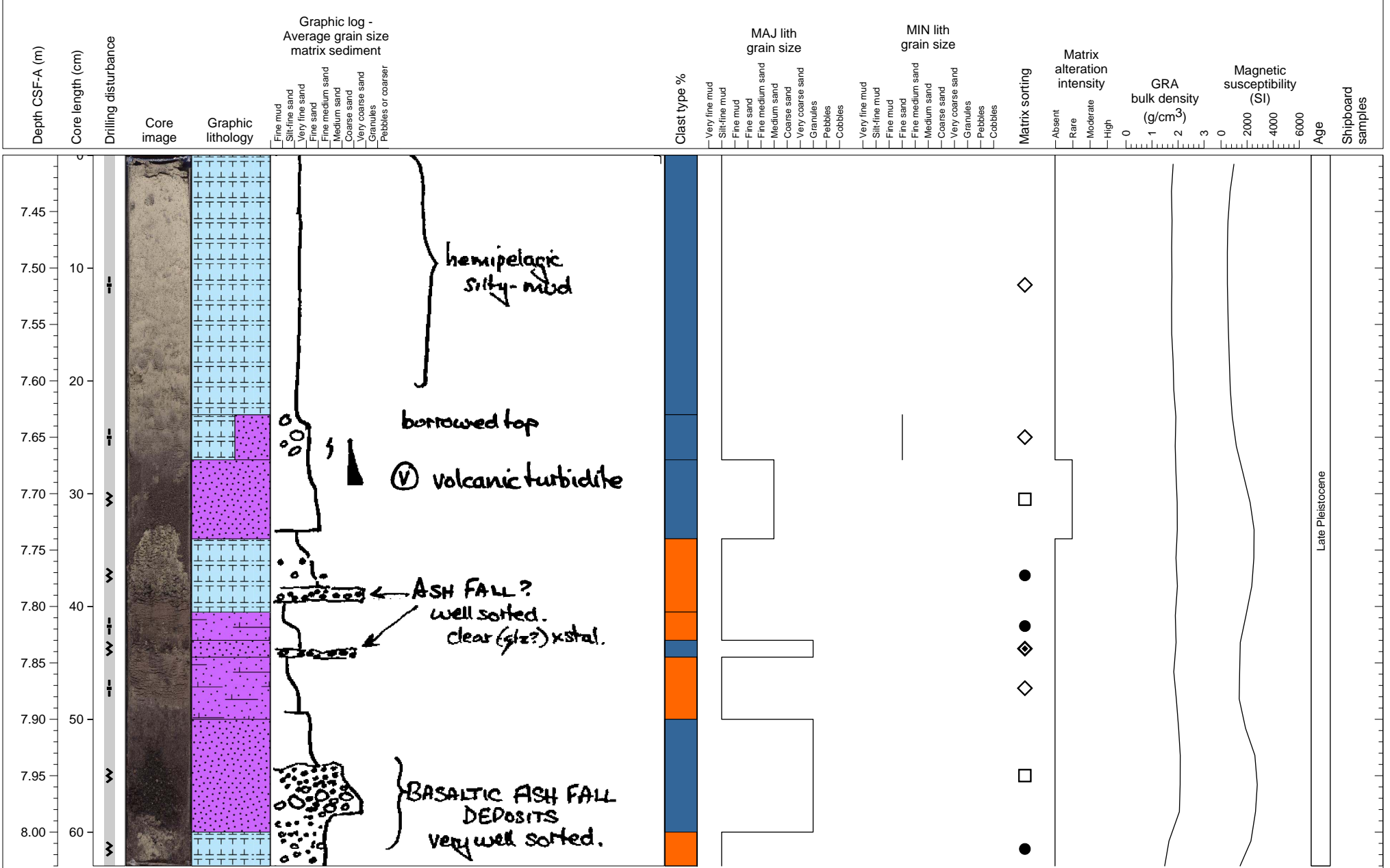
Volcaniclastic turbidite layers alternating with hemipelagic clay layers. IW sample from base.



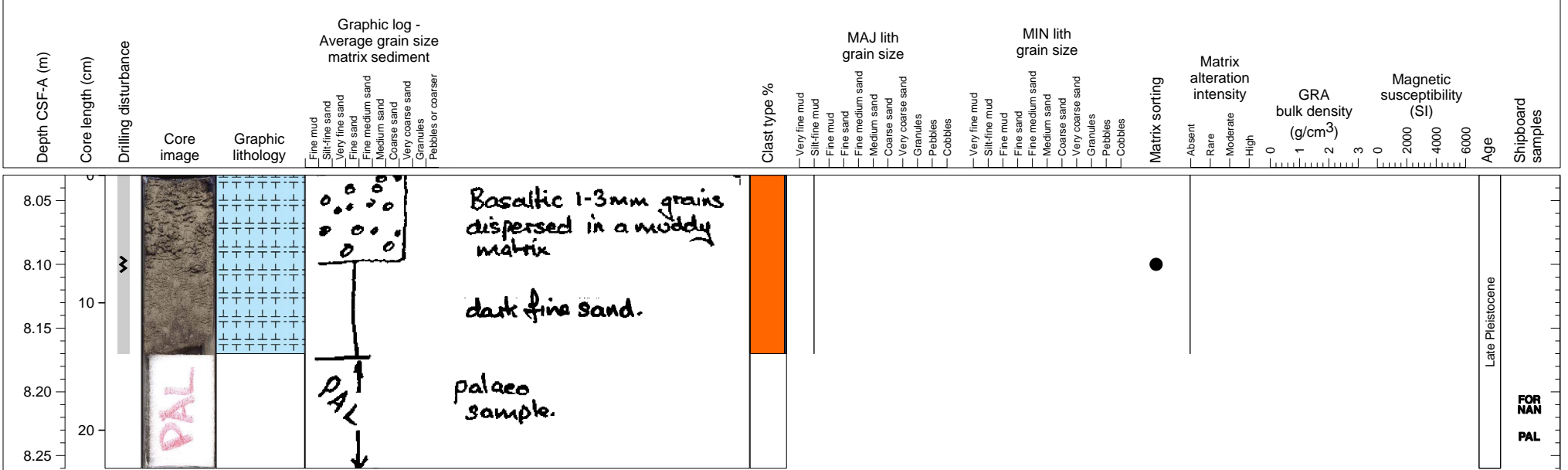
Hemipelagic clay with glauconite layers overlying volcanoclastic sand deposit. WR sample taken from top and IW WR samples taken from base.



Volcaniclastic turbidite deposits interlayered with hemipelagic clay.



Hemipelagic clay with a significant amount of granule-sized scoria clasts mixed into the upper portion. PAL sample taken from base.



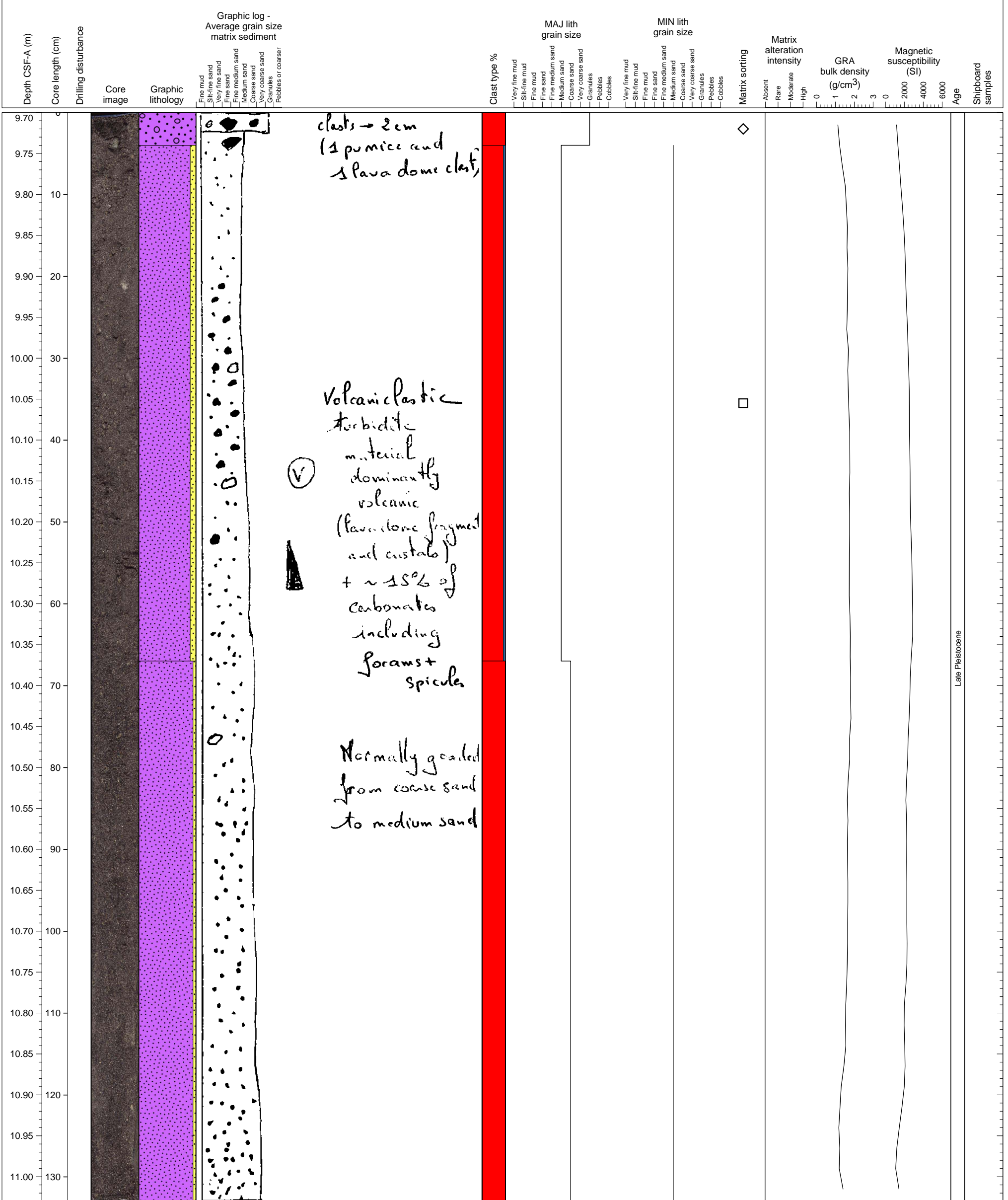
Late Pleistocene

FOR NAN PAL

Volcaniclastic turbidite containing minor (up to 20%) carbonate grains. Large proportion of pumice, ~ 40%.



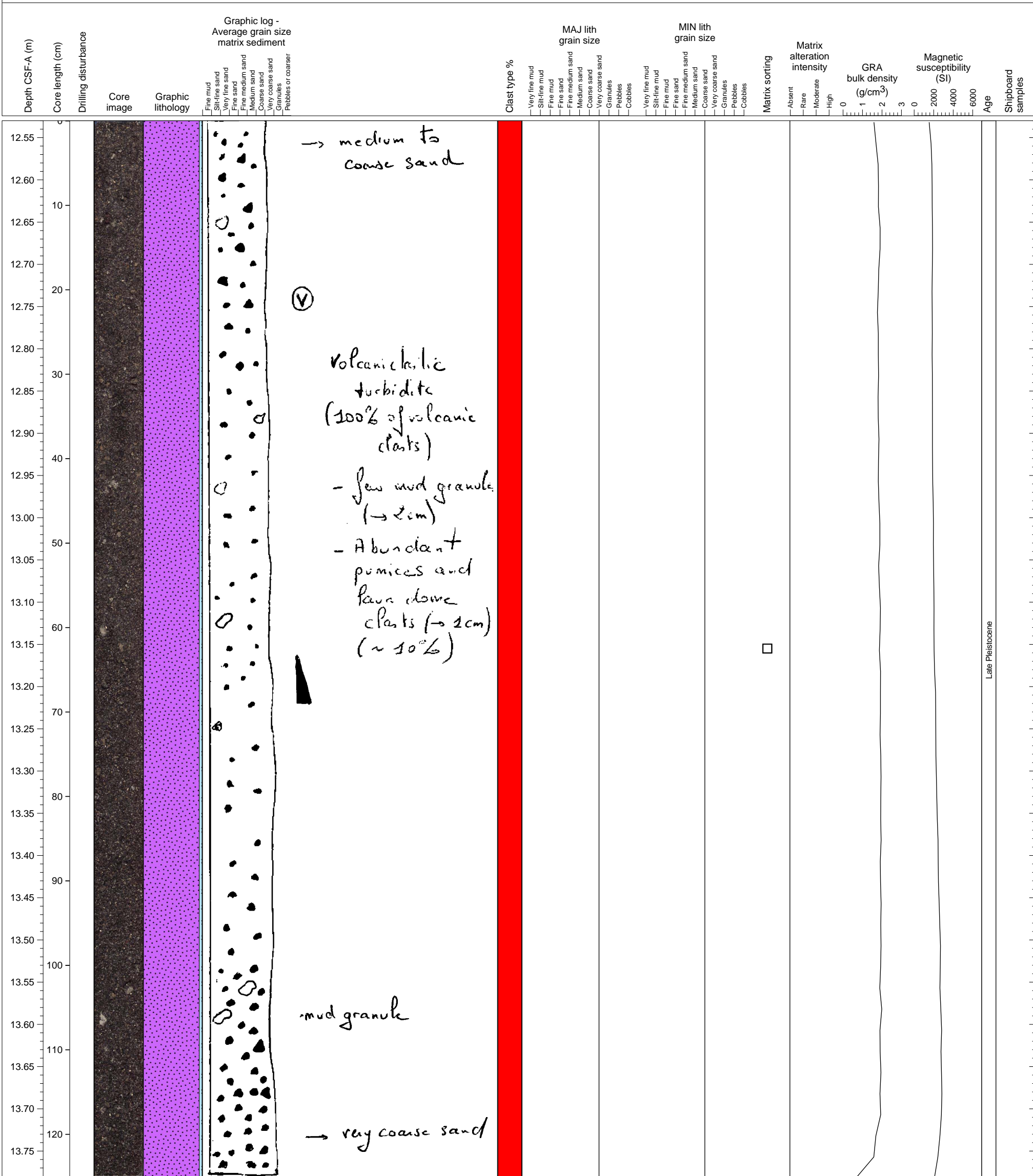
Volcaniclastic turbidite facies from the bottom to the top



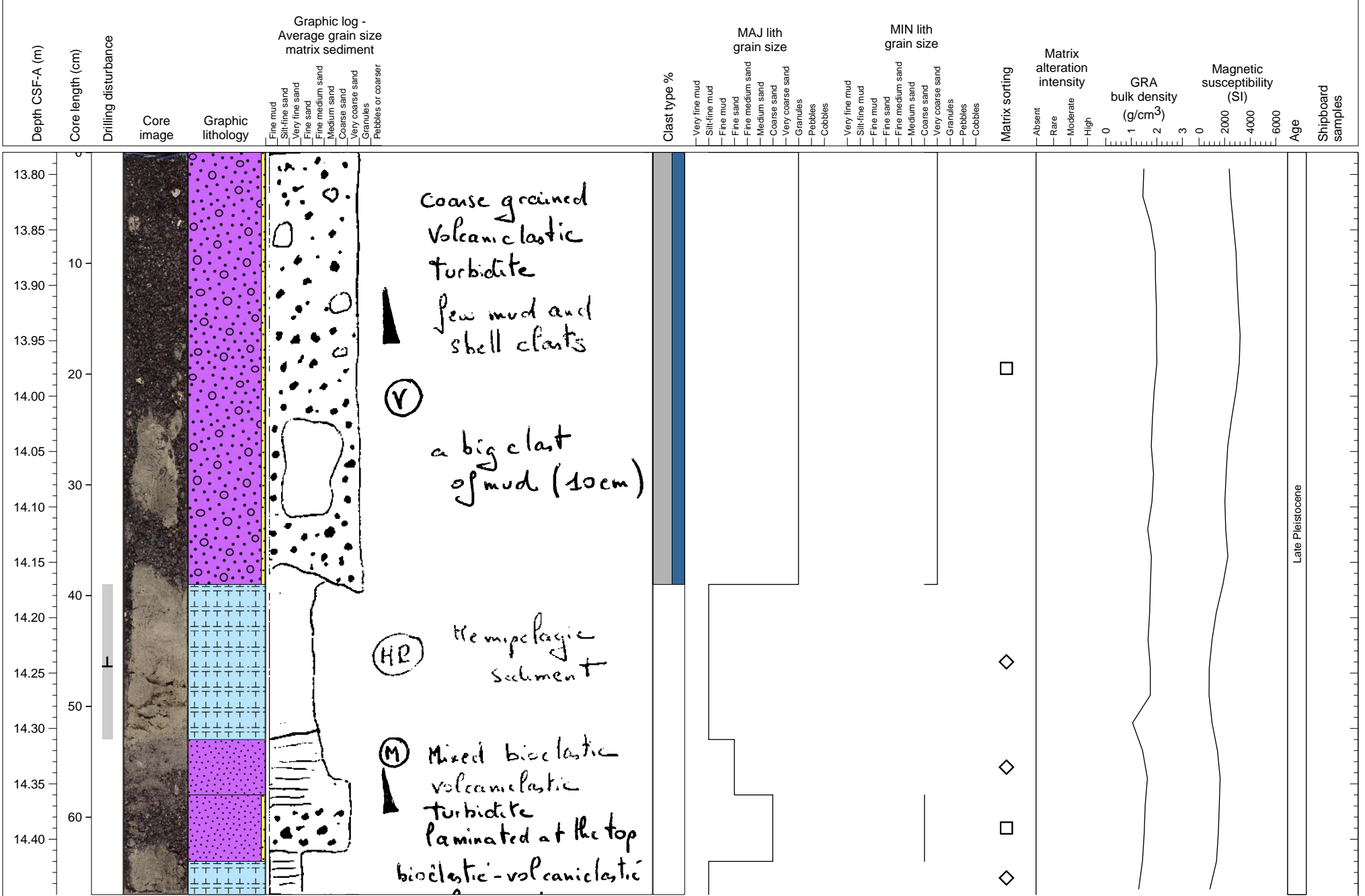
Volcaniclastic sand containing ~ 5% carbonate material. Pumice up to 8 mm. Some (~50%) oxidized.



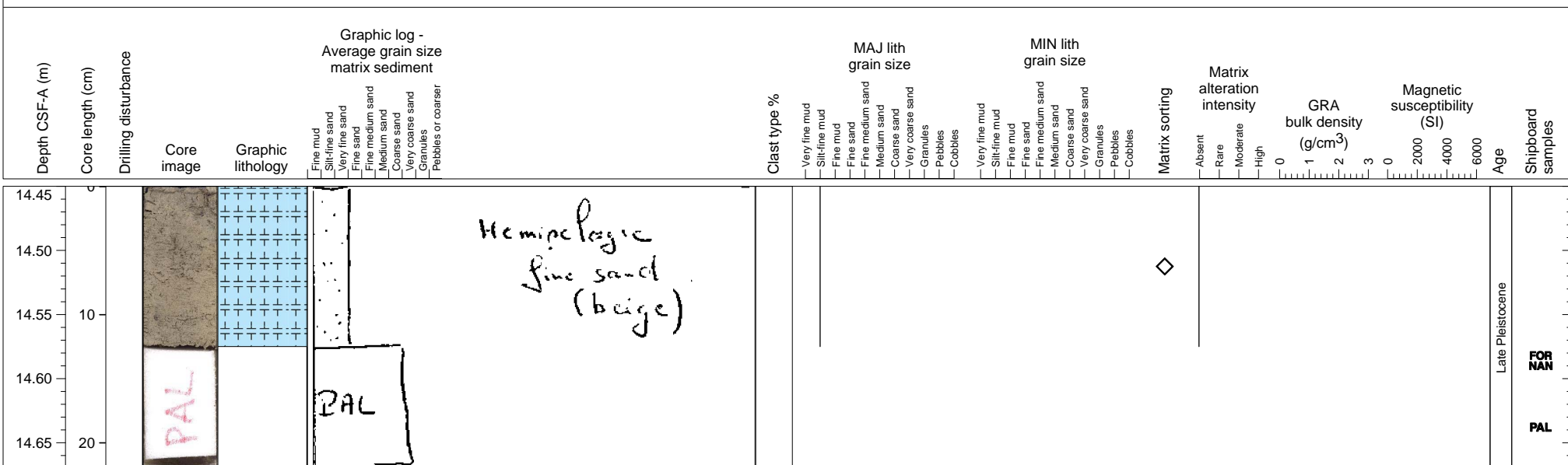
Single thick volcanoclastic sand unit with minor component of carbonate grains. Well sorted, slight normal grading.



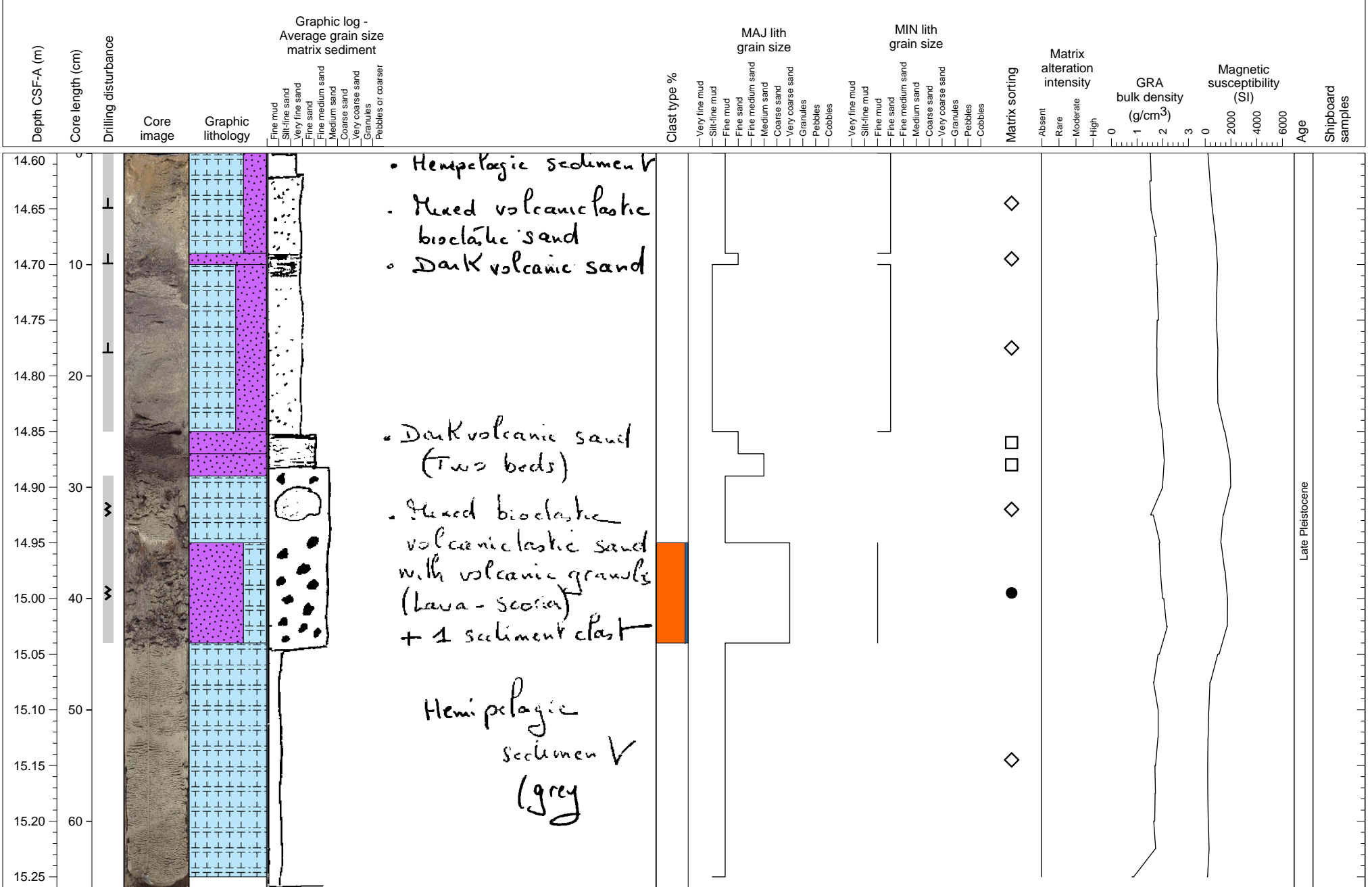
Upper half: base unit of volcanoclastic turbidite sequence; lower half: hemipelagic origin.



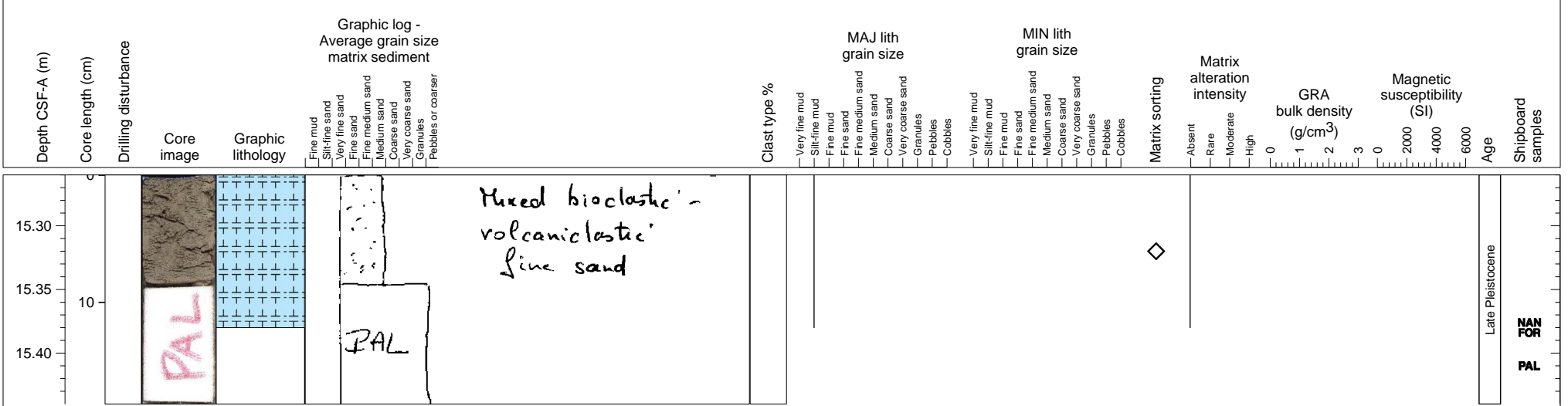
Hemipelagic sediments.



Hemipelagic muddy sediments with volcanoclastic sand layers.

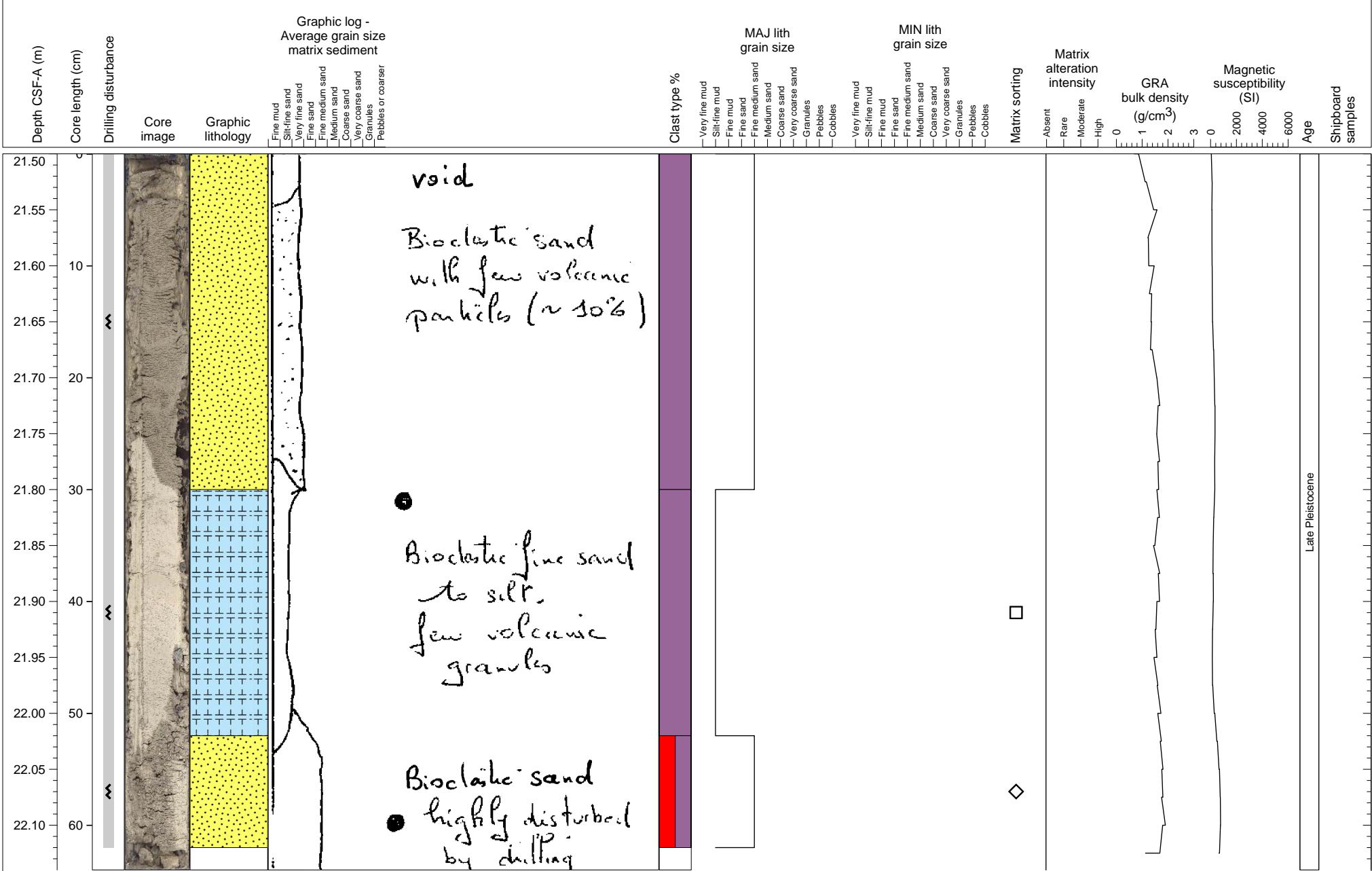


Hemipelagic sediments.

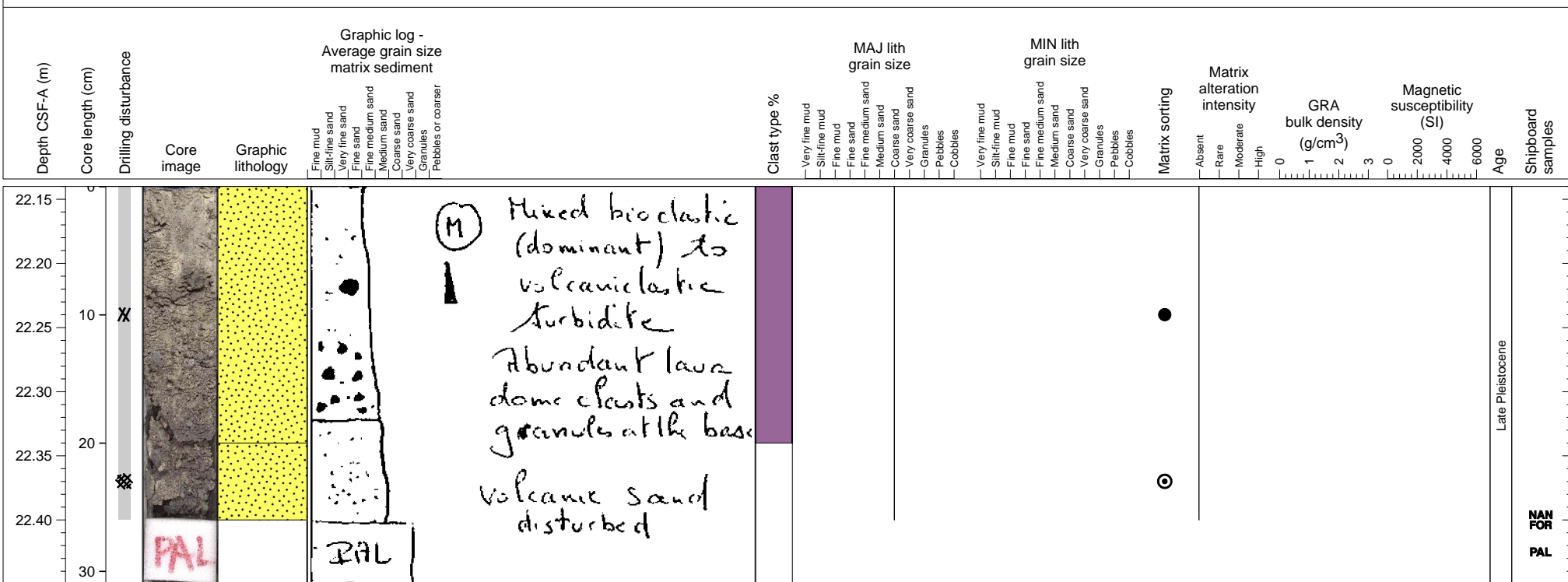


Late Pleistocene
NAN FOR
PAL

Highly disturbed calcareous sand with volcanoclastic clasts of pumice and andesite.



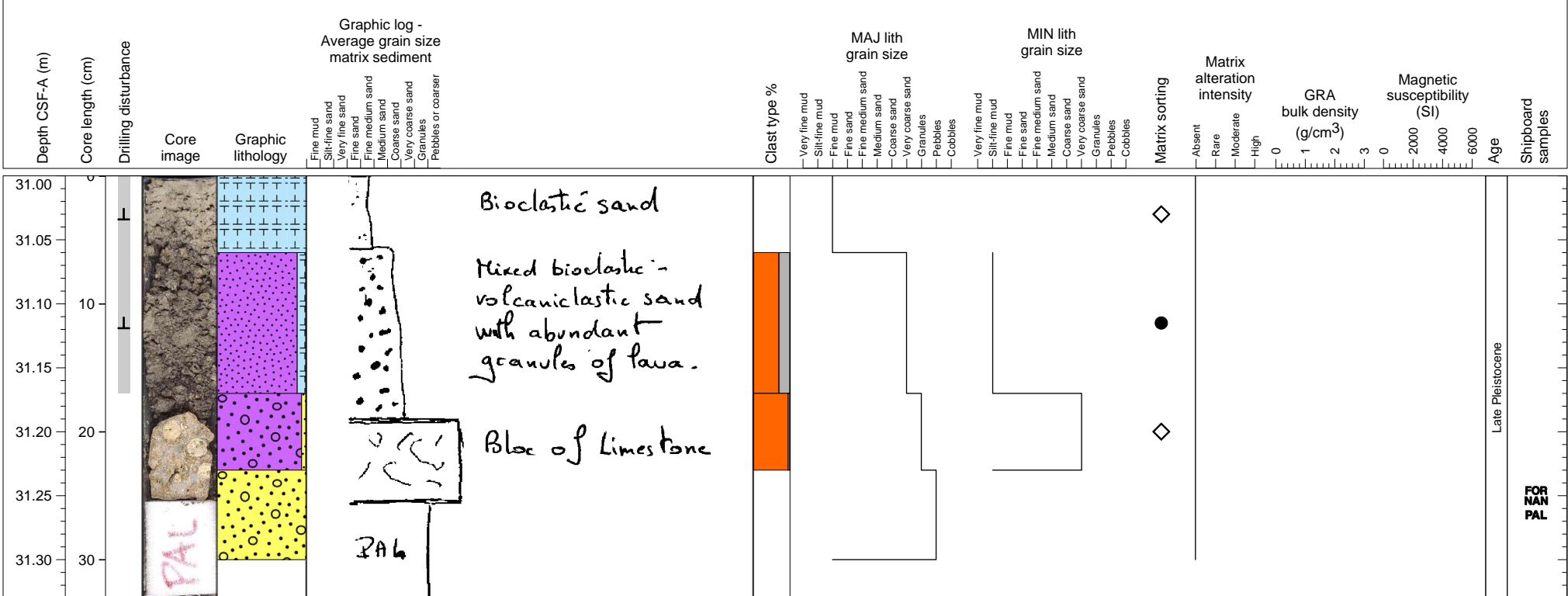
Carbonate sand with volcanoclastic clasts.



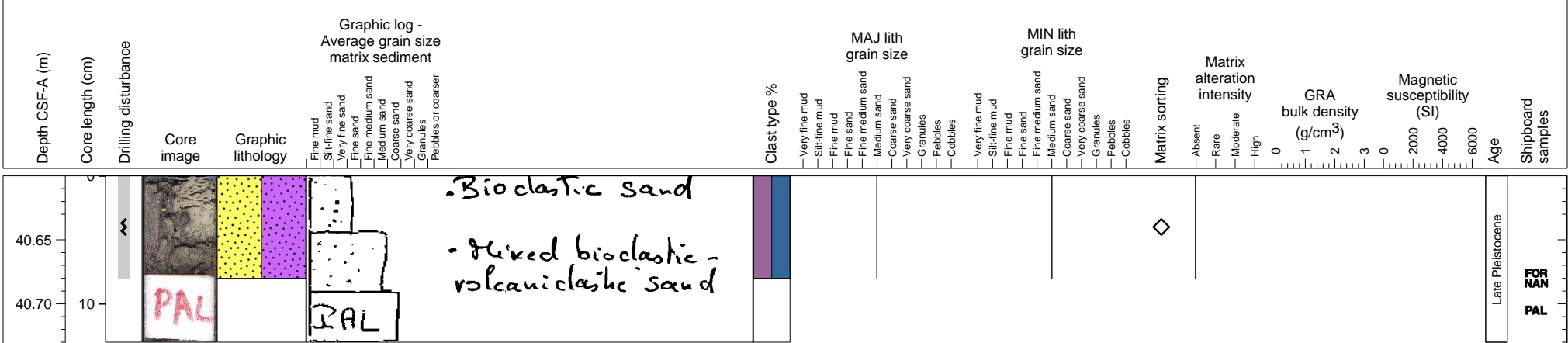
(M) Mixed bioclastic (dominant) to volcanoclastic turbidite
 Abundant lava dome clasts and granules at the base
 volcanic sand disturbed

Late Pleistocene
 NAN FOR
 PAL

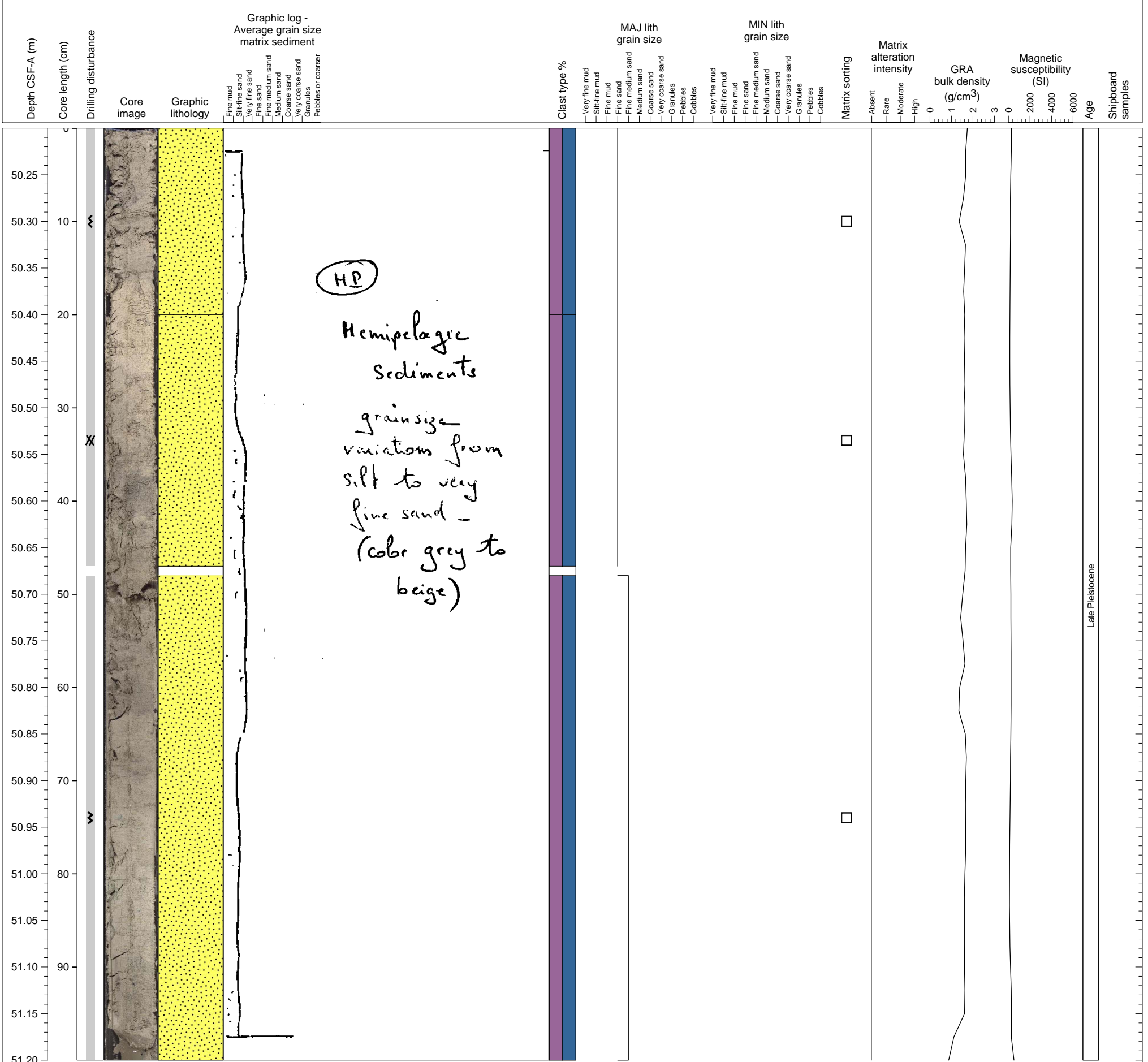
Hemipelagic sediment with scoriaceous sand. One limestone (packstone) pebble at the base.



Mix calcareous/volcaniclastic sand. Highly disturbed.



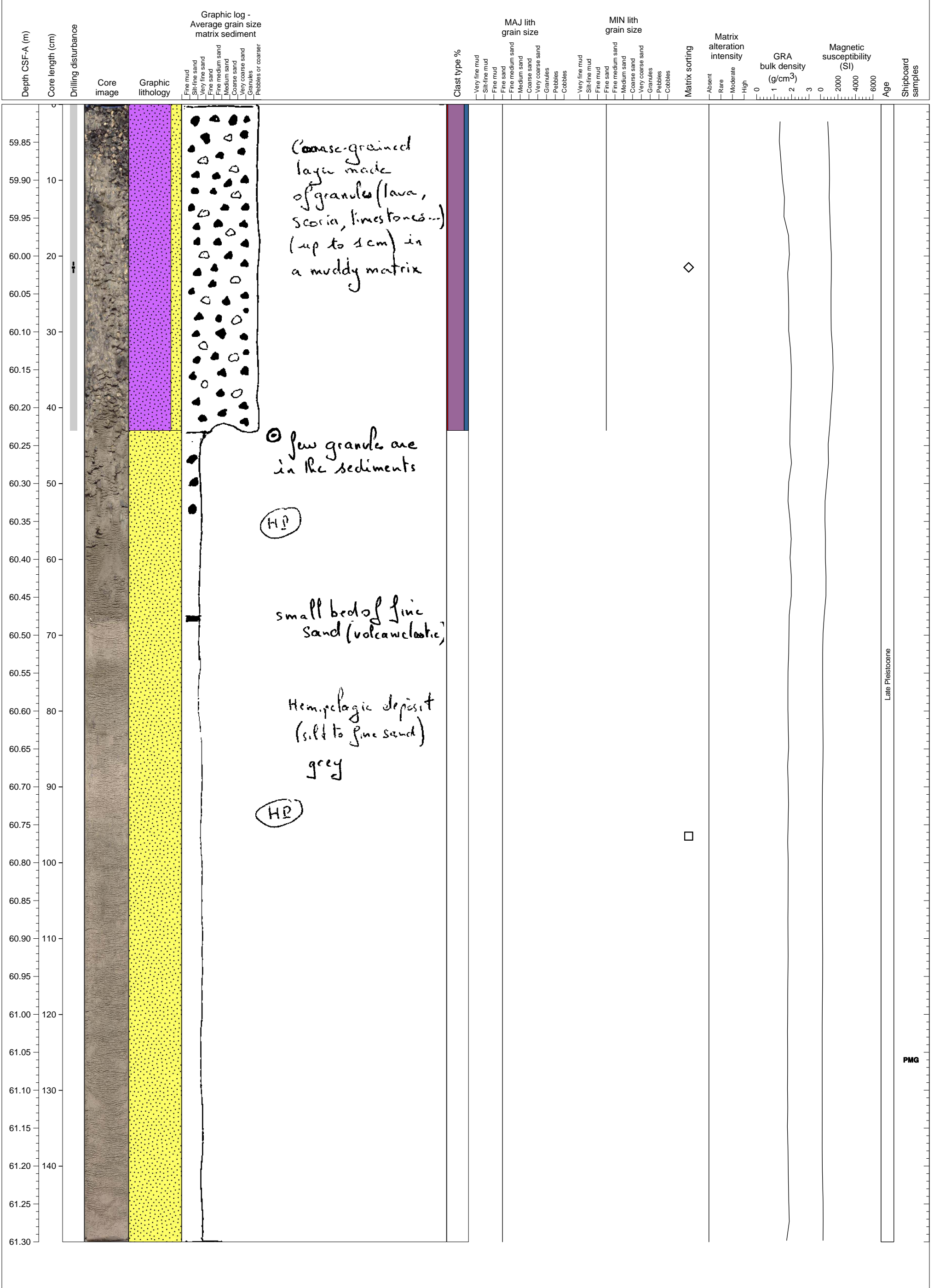
Well sorted carbonate sand with andesitic lava clasts.



Hemipelagic sediments dominated. Small amount of volcaniclastic/bioclastic sand.



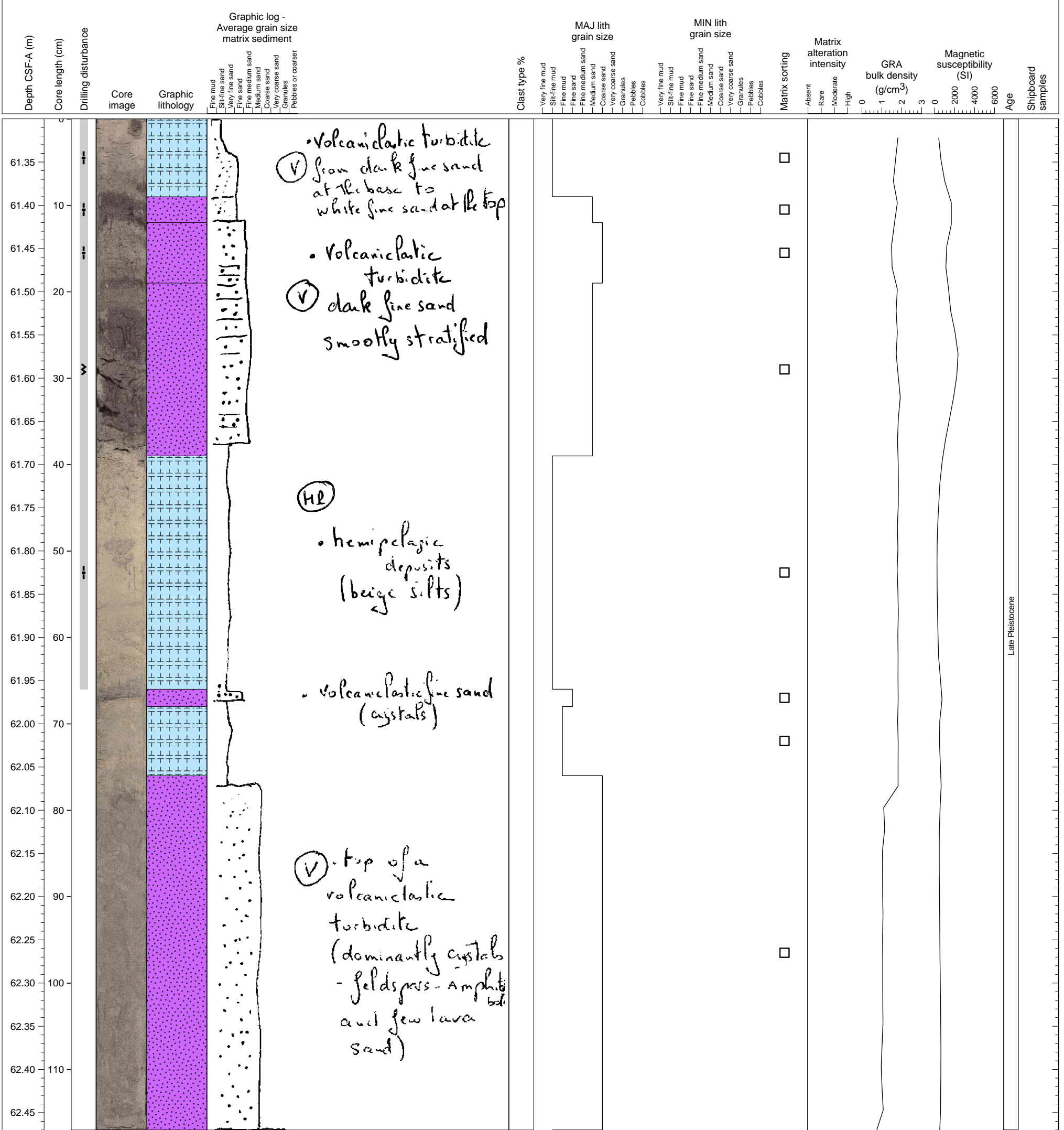
The top 43 cm of this section is probably material from higher up the hole that has fallen in, the rest is normal hemipelagic sediment.



Late Pleistocene

PMG

Alternating units of hemipelagic sediments and volcanoclastic sands with a single ash fall layer at 66-68 cm.



• Volcanoclastic turbidite
 (V) from dark fine sand at the base to white fine sand at the top

• Volcanoclastic turbidite
 (V) dark fine sand smoothly stratified

(HP)
 • hemipelagic deposits (beige silts)

• Volcanoclastic fine sand (crystals)

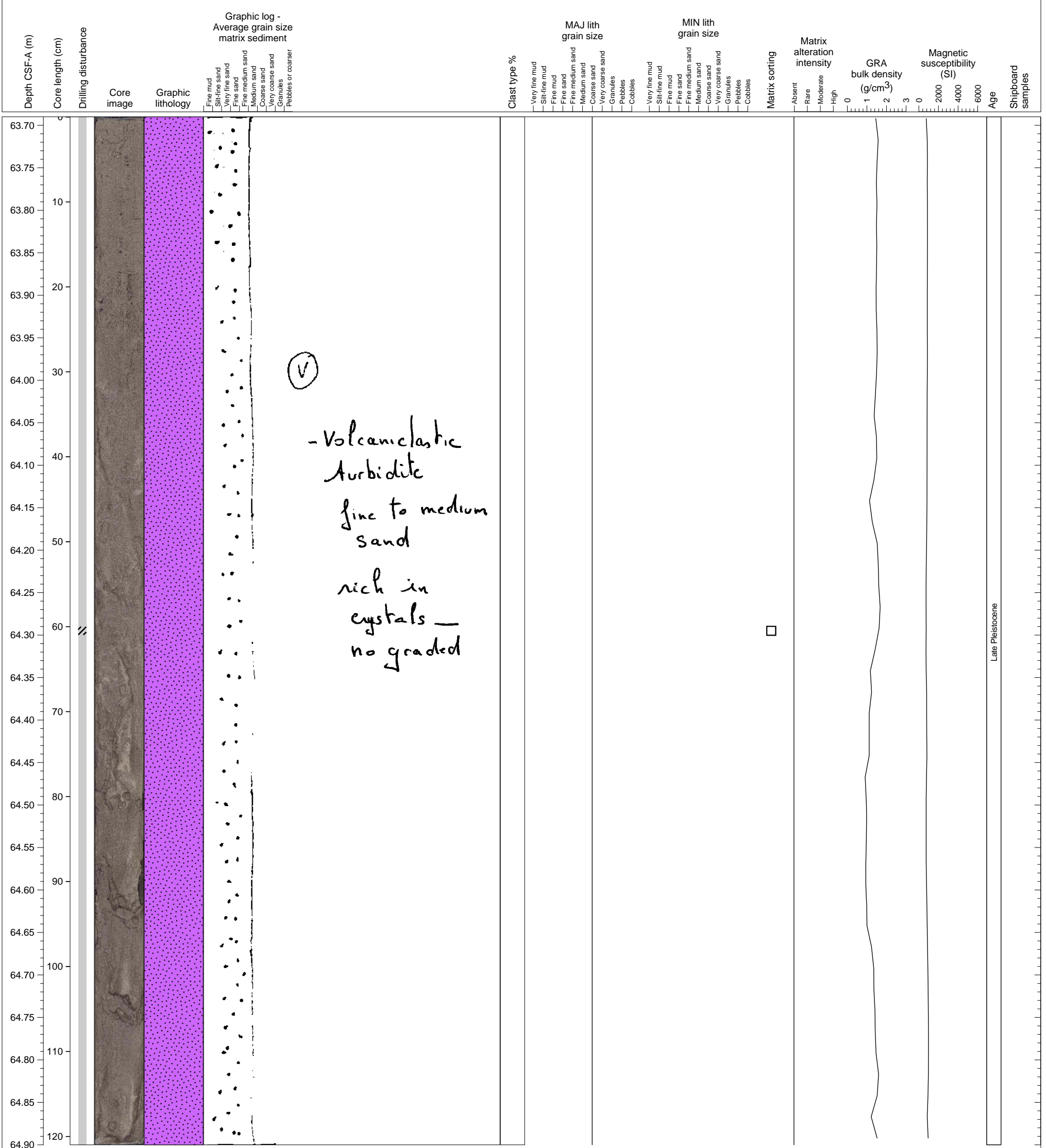
(V) • top of a volcanoclastic turbidite (dominantly crystals - feldspars - Amphibole and few lava sand)

Late Pleistocene

Volcaniclastic sand rich in crystals (feldspar, amphibole). Slight drilling disturbance due to draining of water.



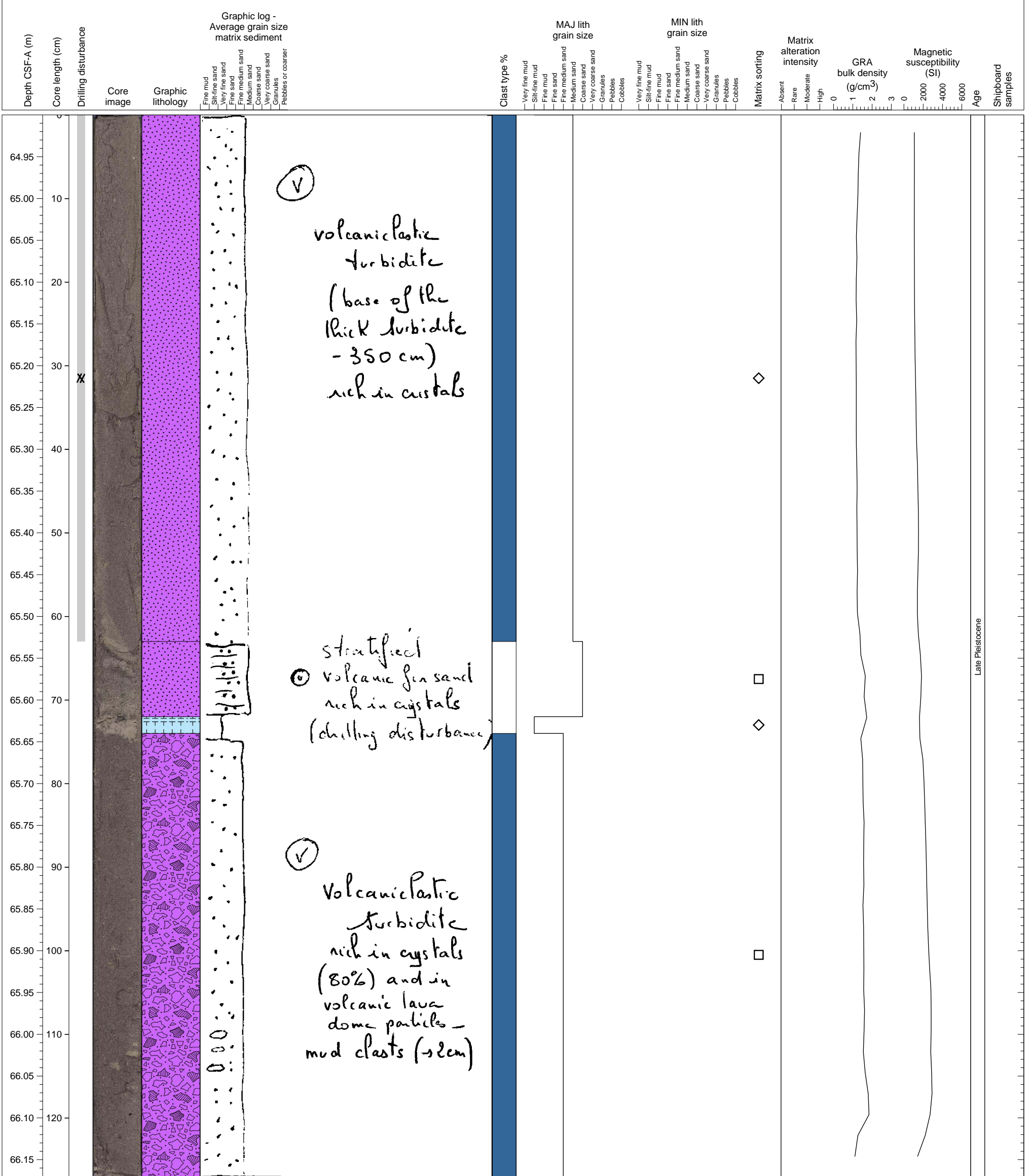
Volcaniclastic sand rich in crystals. Saturated with water. Slight to moderate disturbance due to draining of water.



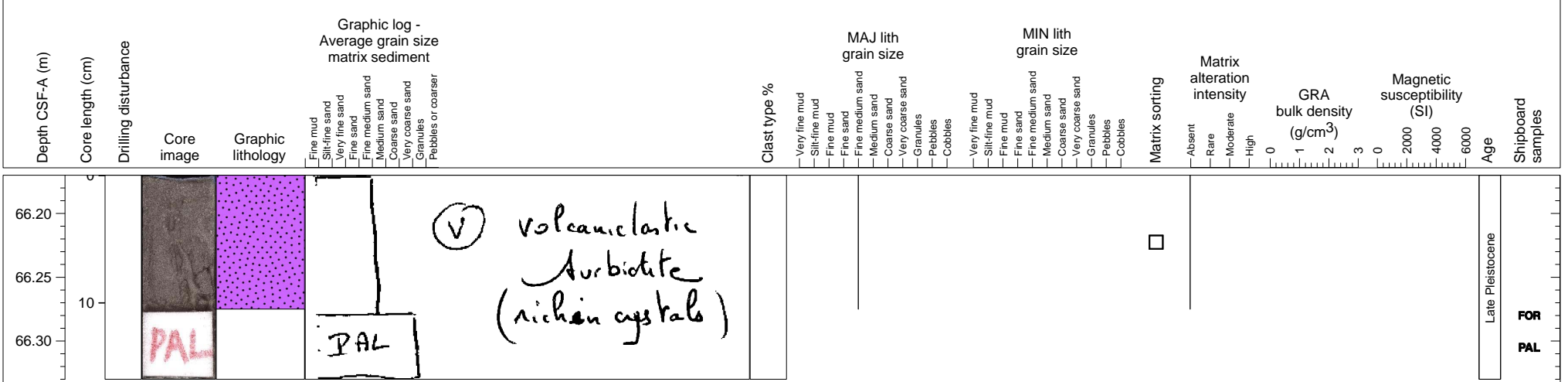
Ⓟ
 - Volcaniclastic
 turbidite
 fine to medium
 sand
 rich in
 crystals -
 no graded

Late Pleistocene

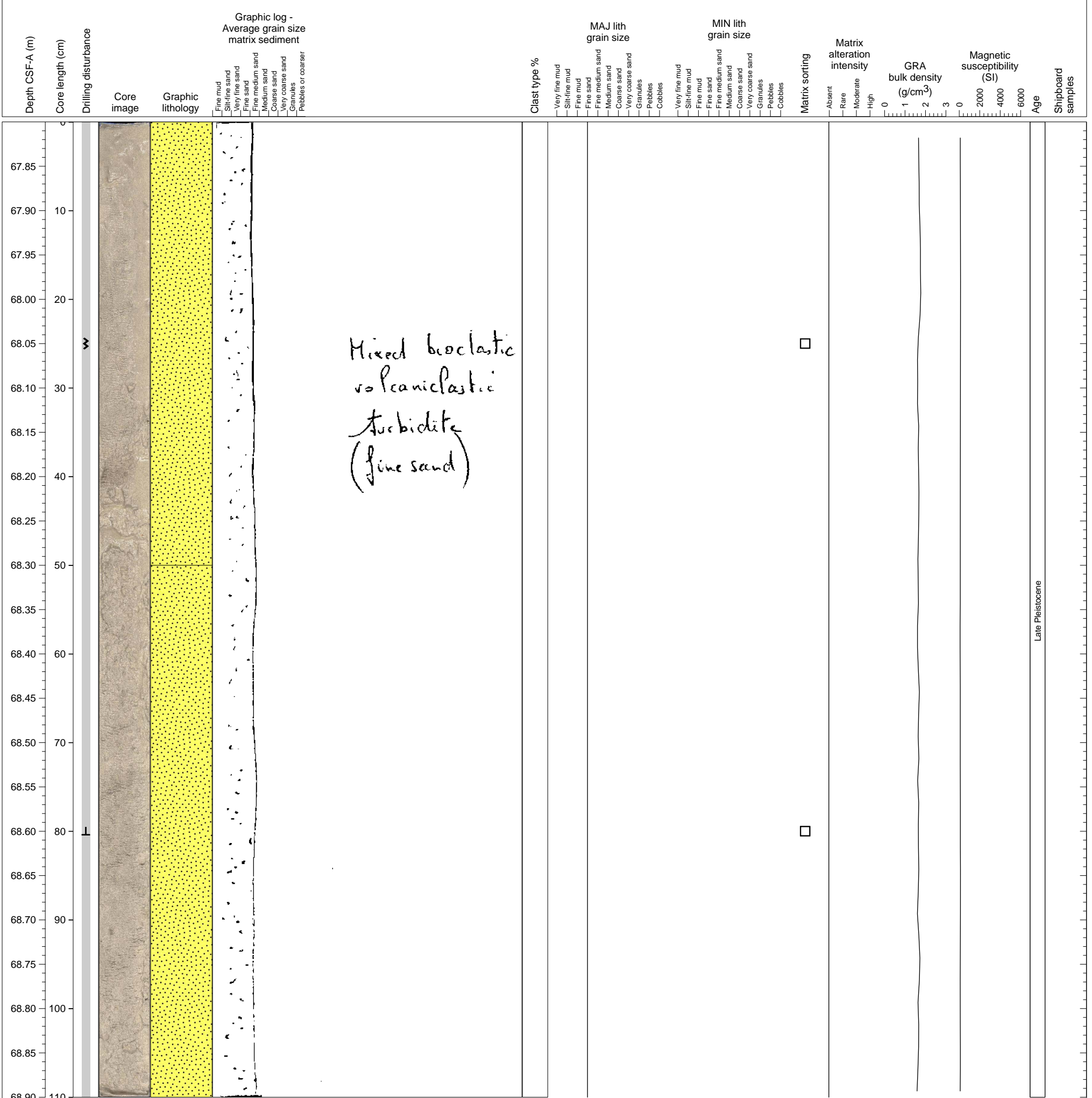
Soupy sediments; grey colored volcanoclastic turbidite sand with minor intercalation of hemipelagic sediments.



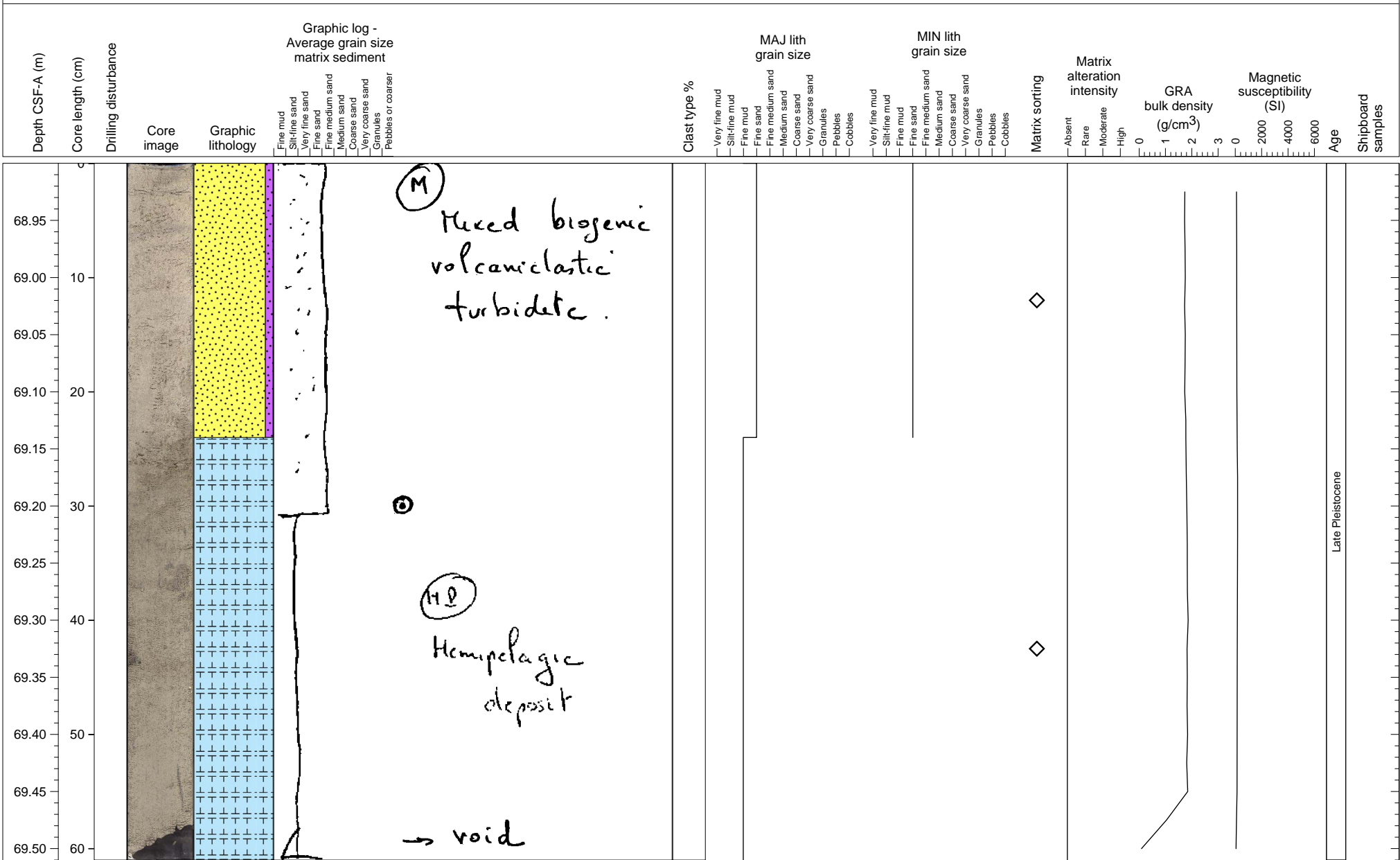
Volcaniclastic fine - medium sand.



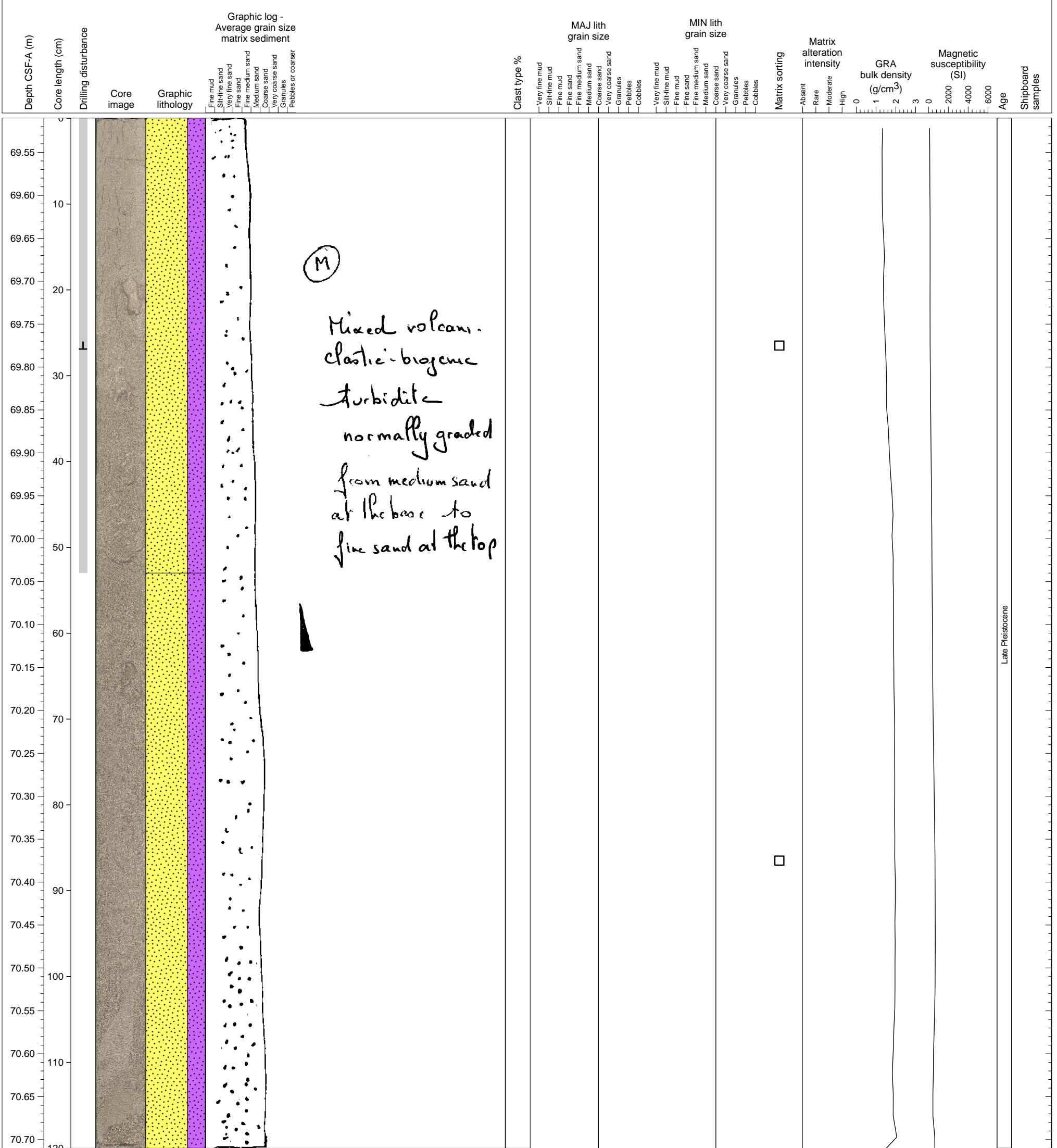
Bioclastic turbidite. Fine sand. Massive.



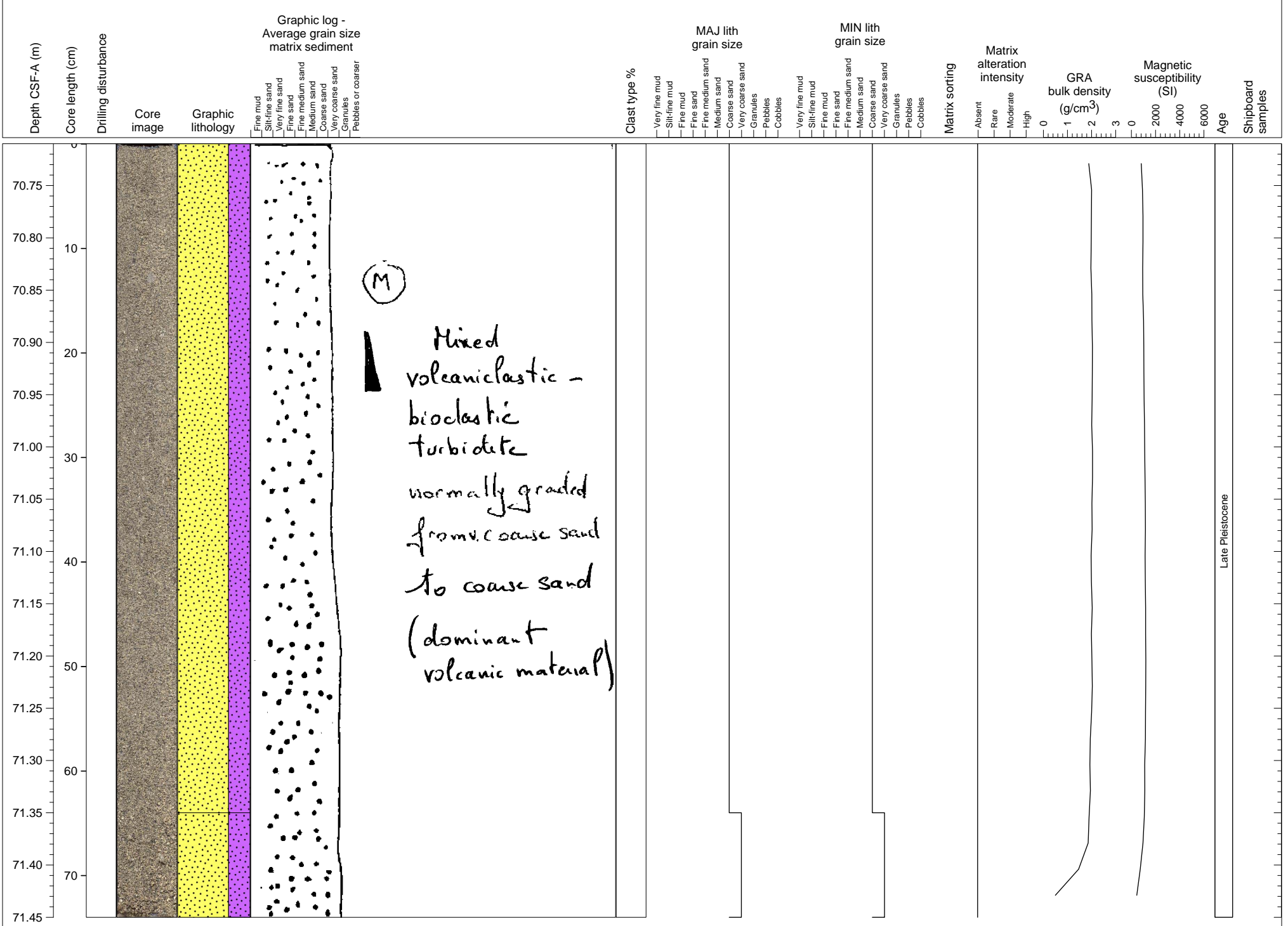
Upper half: bioclastic dominant turbidite facies; lower half: hemipelagic sediments.



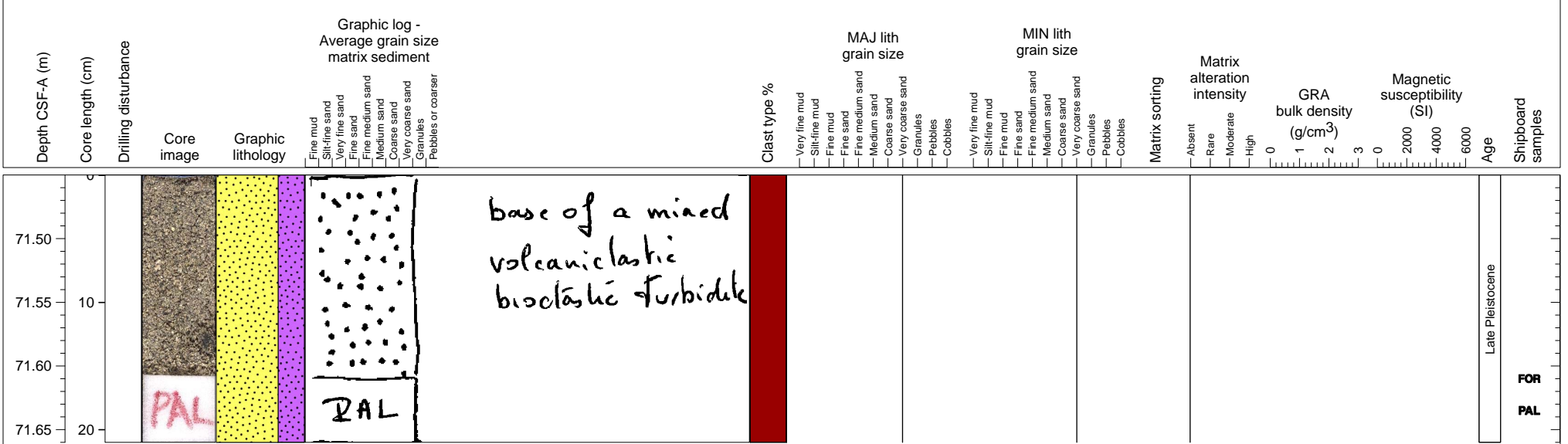
Mixed bioclasticlastic turbidite. well sorted, massive.



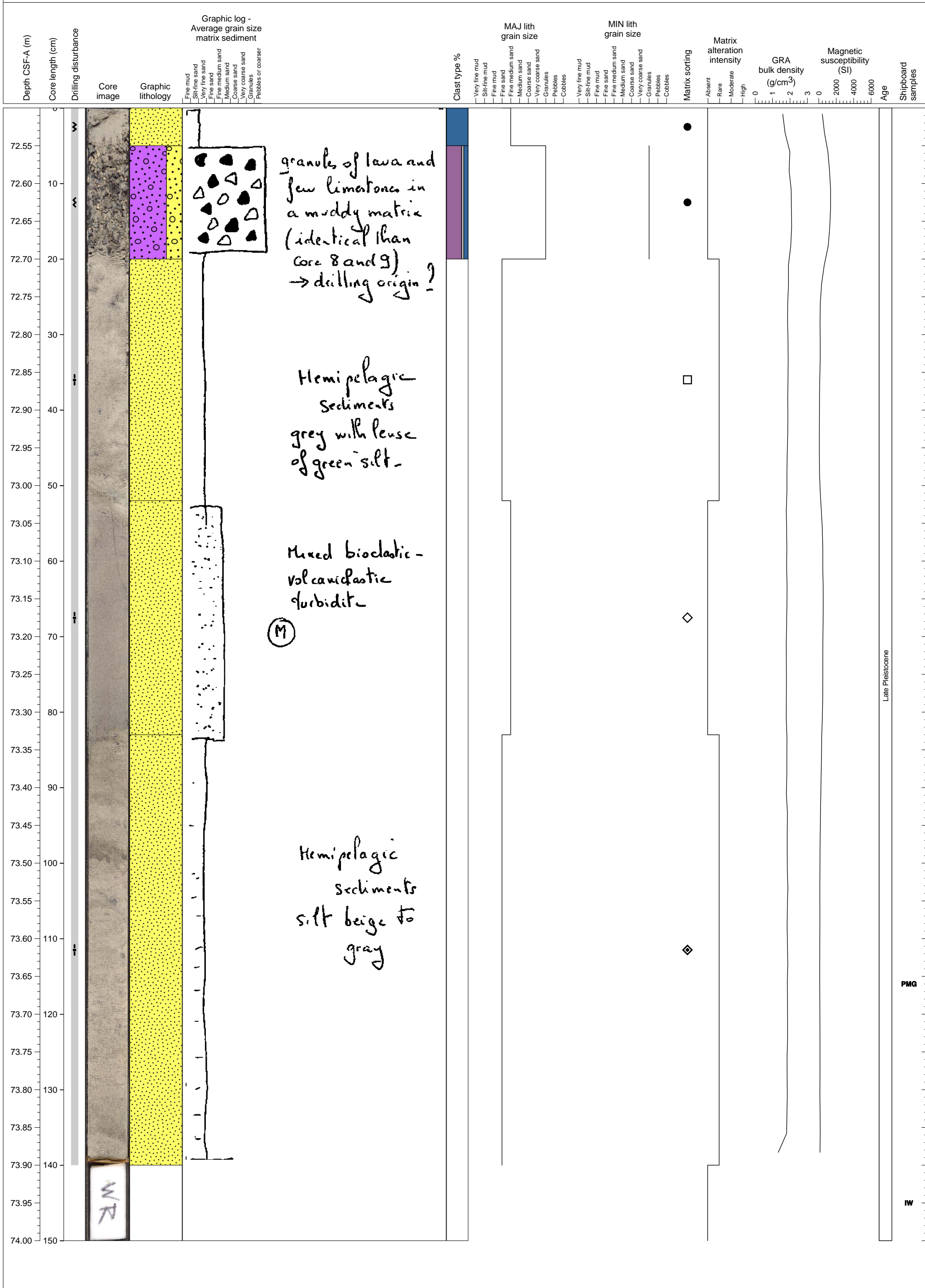
Normally graded bioclastic (dominant) + volcanoclastic turbidite.



Mixed bioclastic-volcaniclastic turbidite. Base of deposit.



Section with volcanoclastic gravel at top part, mainly light gray colored moderately sorted calcareous sand.



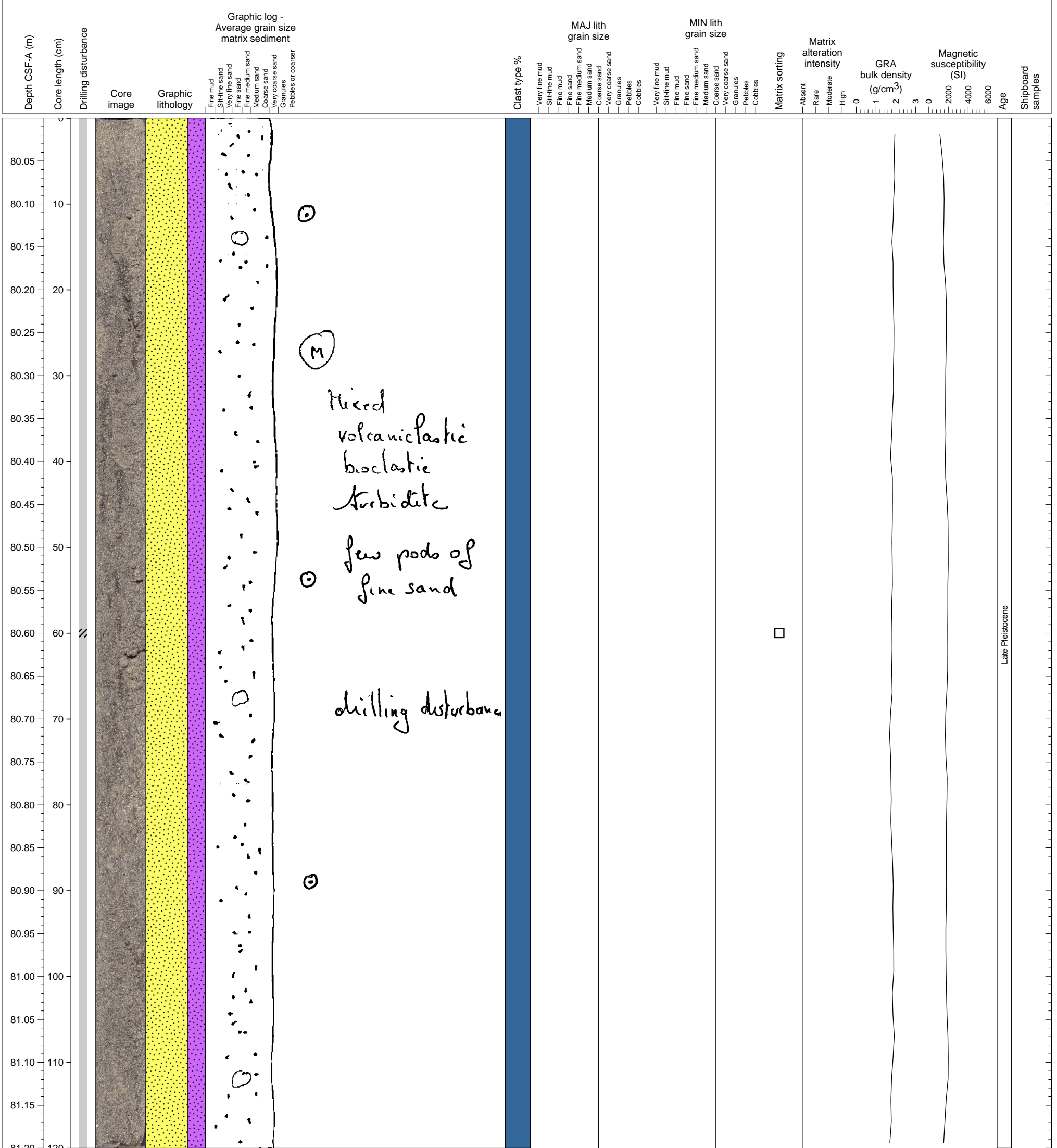
Mixture of bioclastic/volcaniclastic sand with small intercalation of hemipelagic mud.



This is a homogeneous section of poorly sorted coarse sand, mainly consisting of volcanic origin. Small pebbles of hornblende andesite (10% of the interval) are distributed throughout. These andesite pebbles are monolithologic and could be essential fragments of this deposit (debris avalanche?).



Mixed bioclastic/volcaniclastic turbidite sand. Well sorted, massive.



⊙

⊙ M

Mixed volcaniclastic bioclastic turbidite

⊙ few pods of fine sand

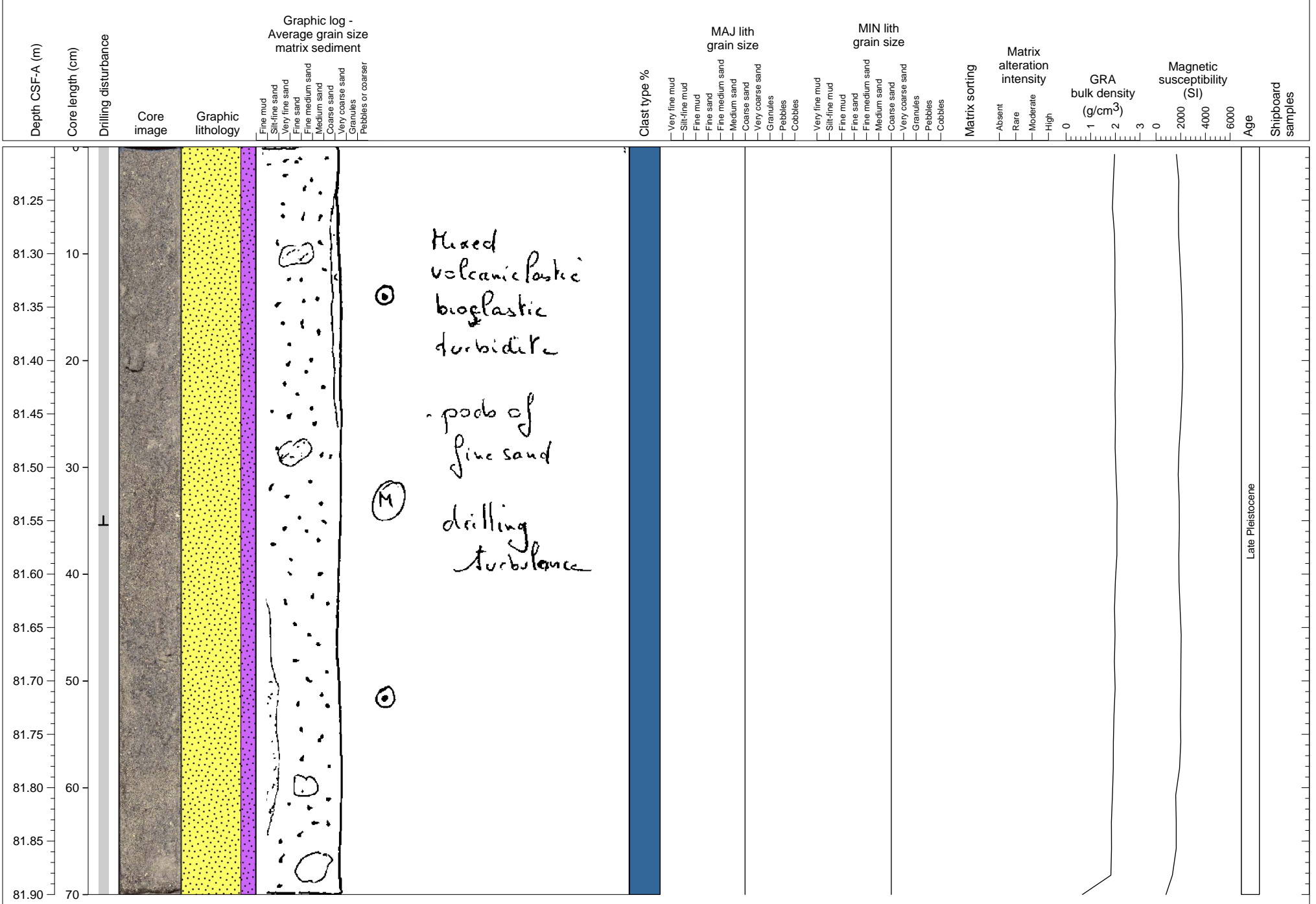
drilling disturbance

⊙

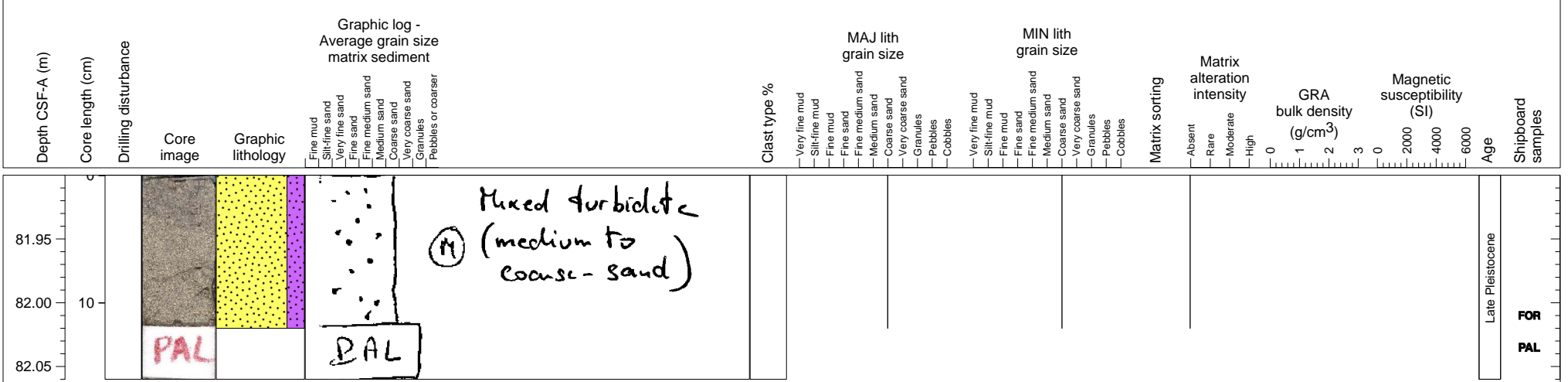
□

Late Pleistocene

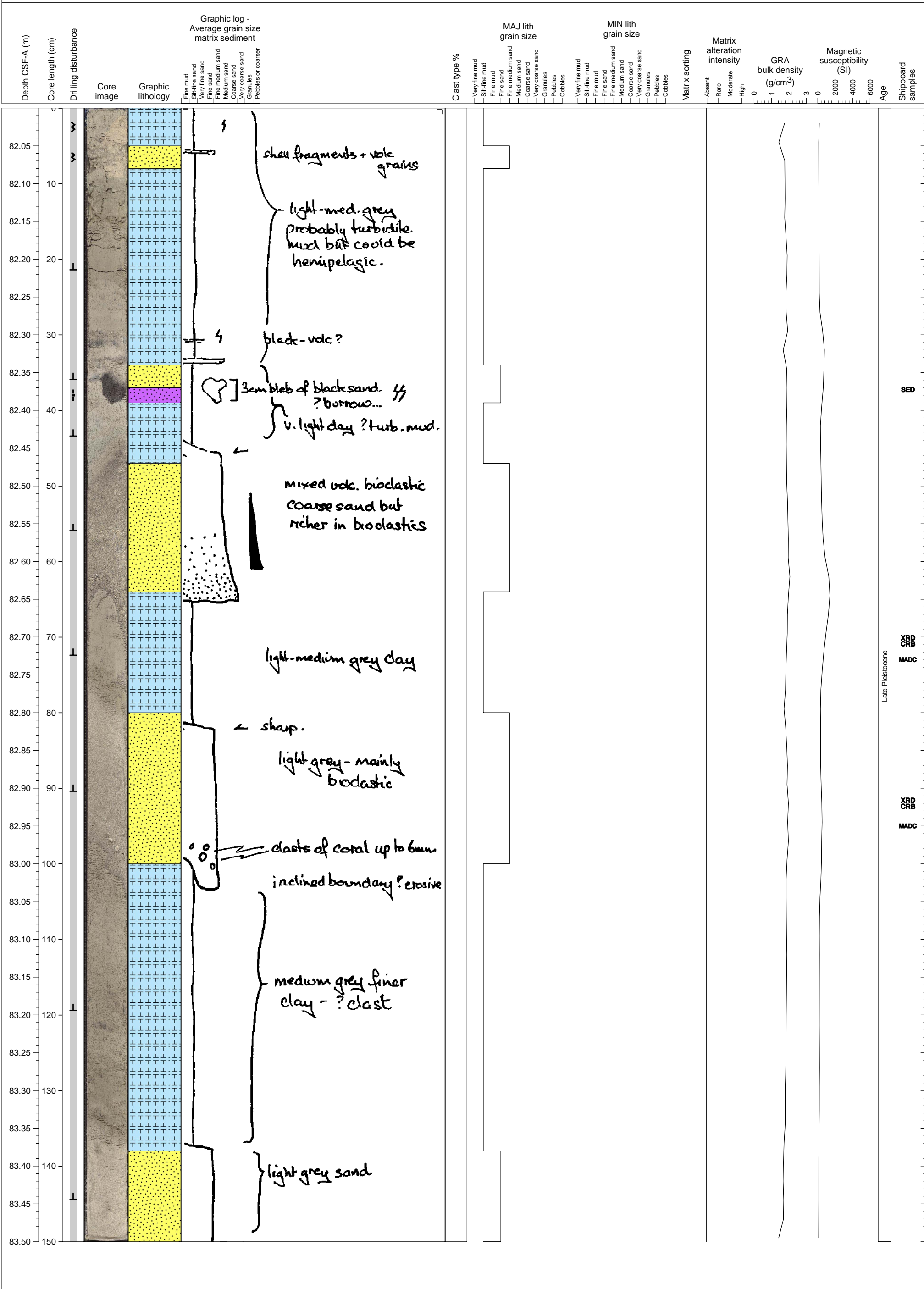
Mixed bio/volcaniclastic sand; fine sand clasts included.



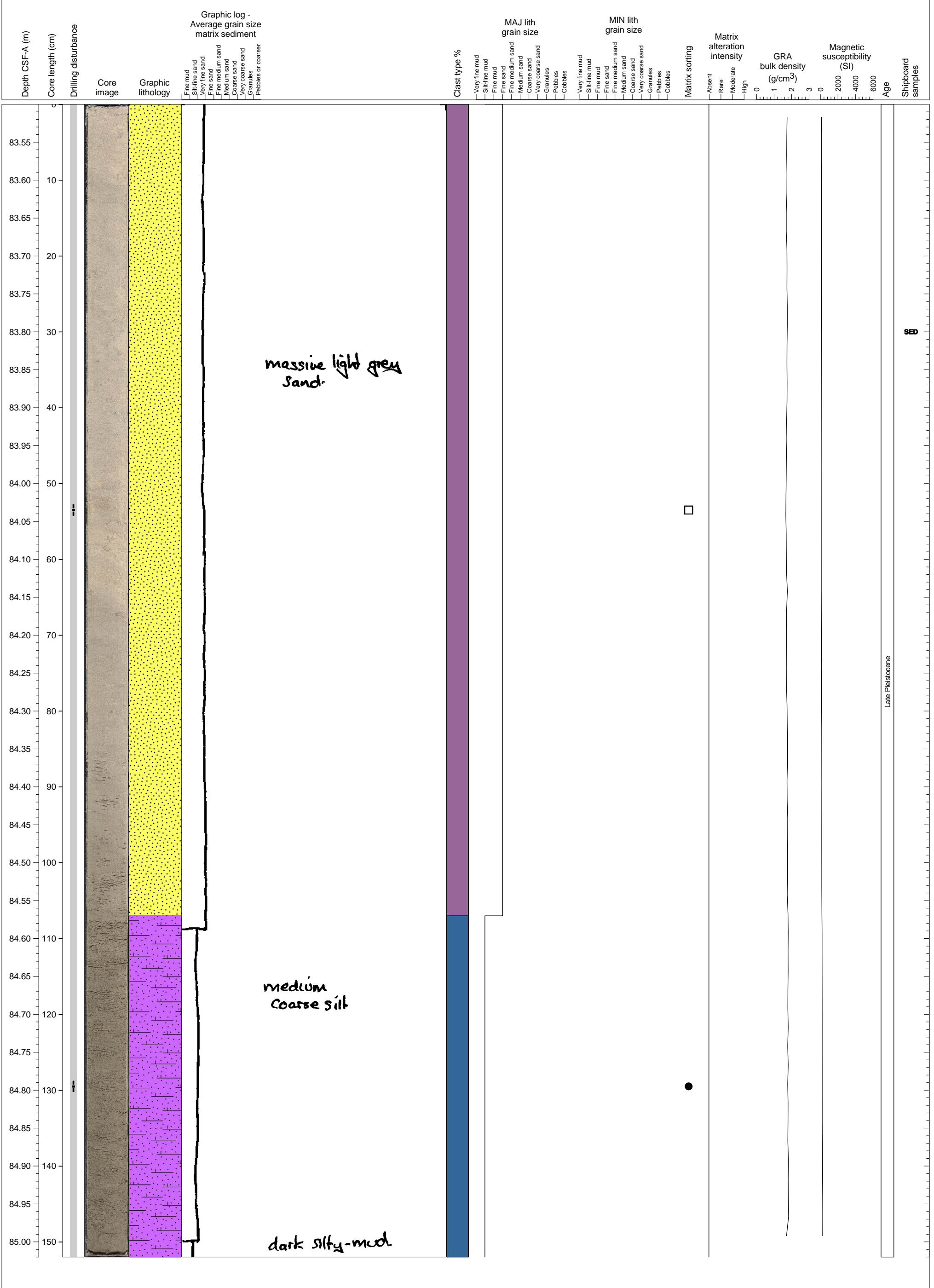
Mixed bioclastic-volcaniclastic turbidite sand, well sorted, massive.



This section consists of five cycles of turbidite grading upward from fine-medium sand to silt-fine mud. These are background calcareous sand and ooze. In the upper part between 37-39 cm, ash layer (volcanic sand) sits sandwiched between turbidites. This ash layer consists of fresh mafic mineral (hornblende or pyroxene) and plagioclase. It also contains sulfide grains.

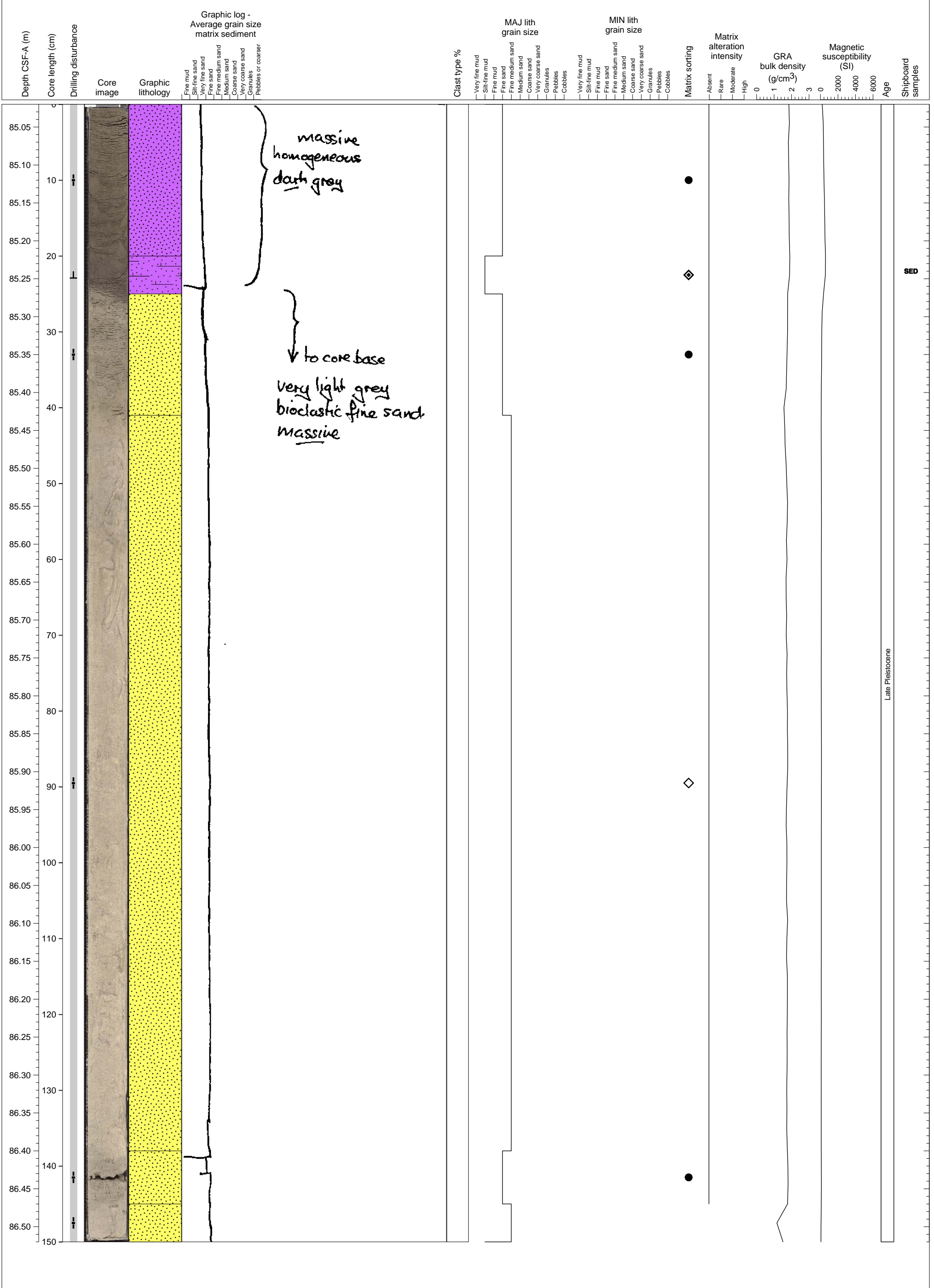


Massive fine-grained bioclastic sand overlying volcanoclastic mud - turbidite sequence.



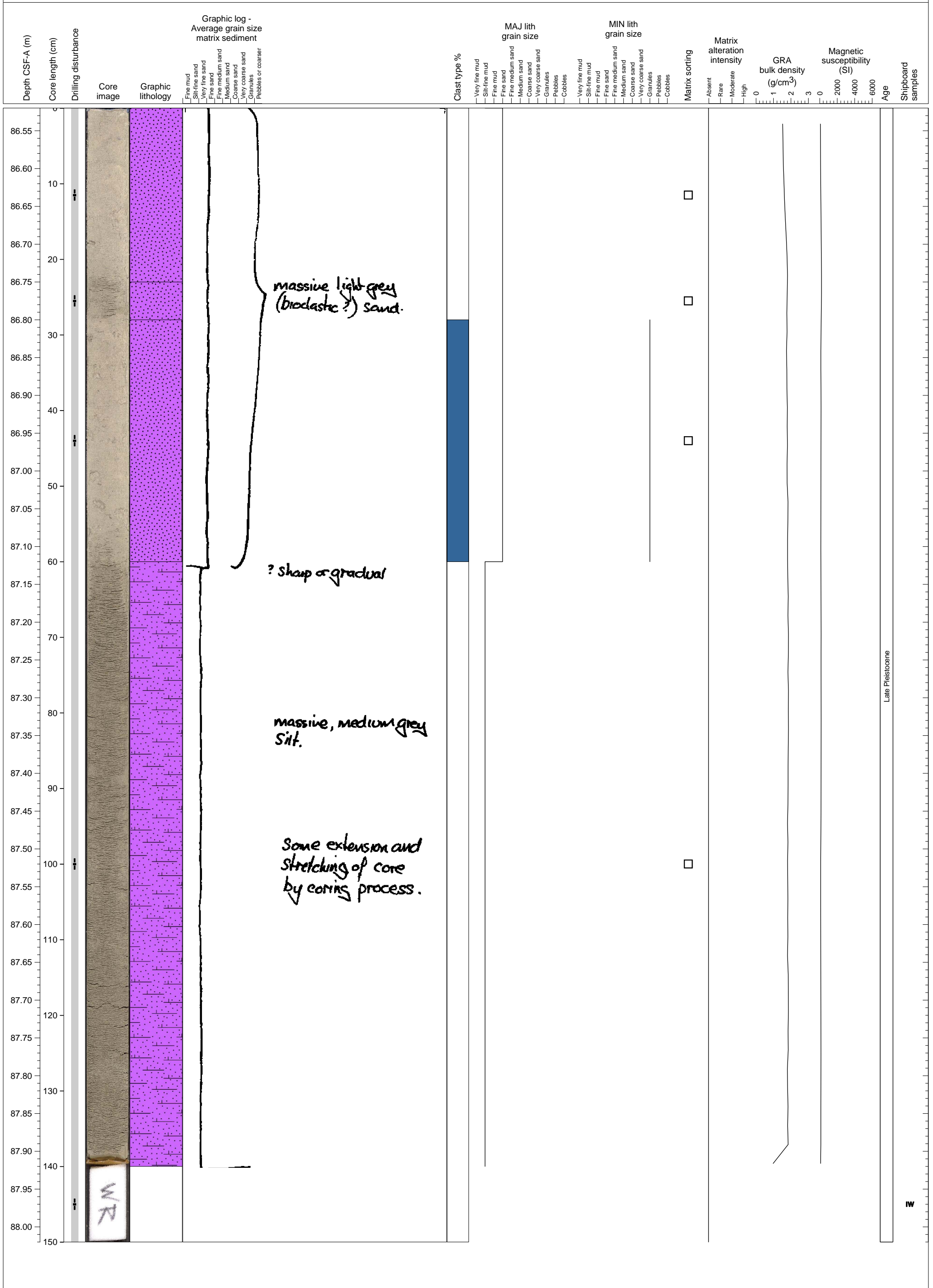
Hole 340-U1394B-11H Section 3, Top of Section: 85.02 CSF-A (m)

The upper part (0-25 cm) is volcanoclastic sand/mud (possibly ash), and lower part is calcareous sand without biogenic clasts.

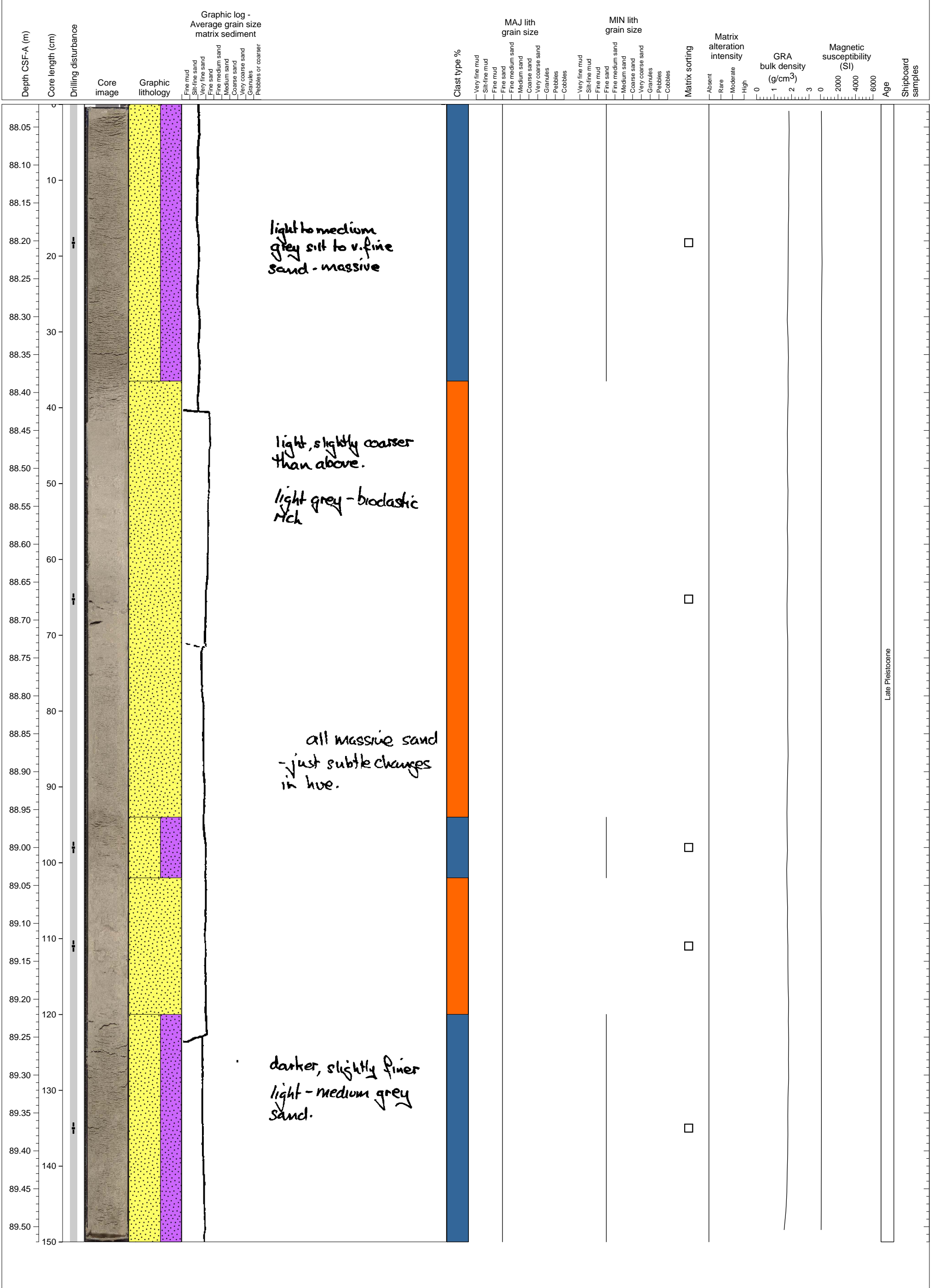


Hole 340-U1394B-11H Section 4, Top of Section: 86.52 CSF-A (m)

The upper 60 cm is a fine volcanoclastic sand with quite a few biogenic clasts up to granule size. The lower part is a silty-muddy volcanoclastic sand.



Bioclastic/volcaniclastic sand mixture interlayered with bioclastic sand.



light to medium grey silt to v. fine sand - massive

light, slightly coarser than above.

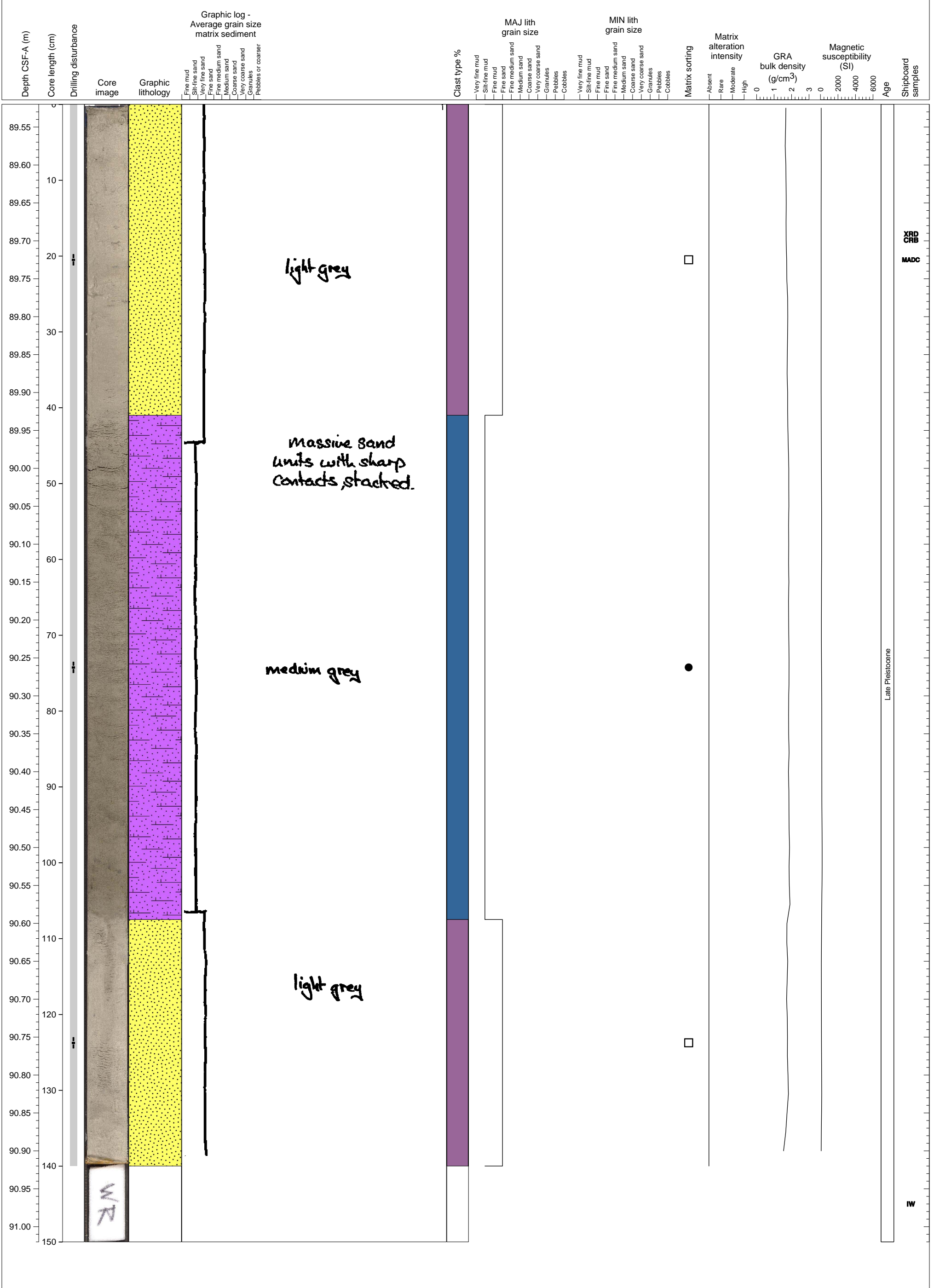
light grey - bioclastic Mch

all massive sand - just subtle changes in hue.

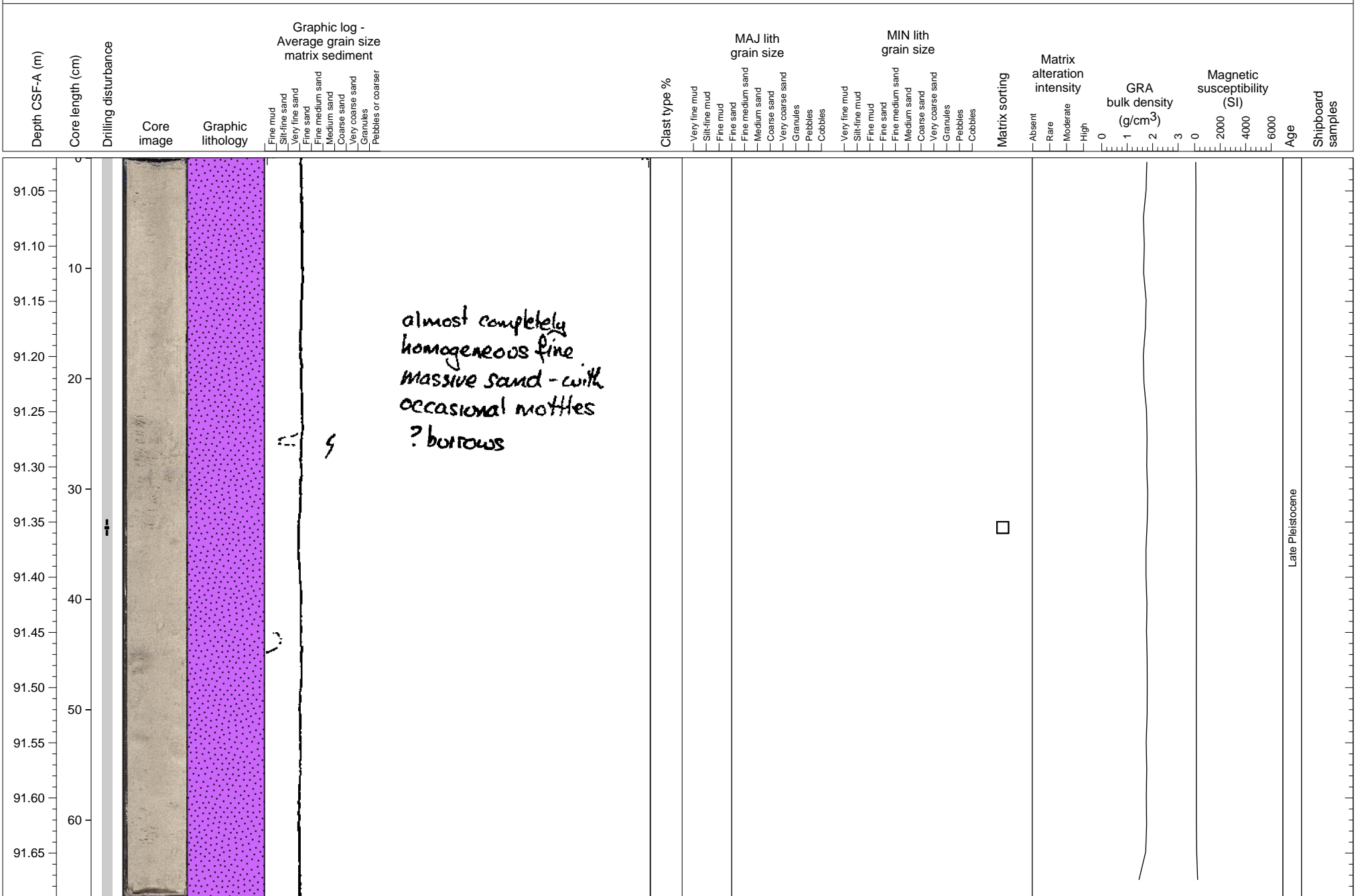
darker, slightly finer light - medium grey sand.

Late Pleistocene



Interlayered bioclastic fine-grained sand with volcanoclastic mud. WR sample taken from base.



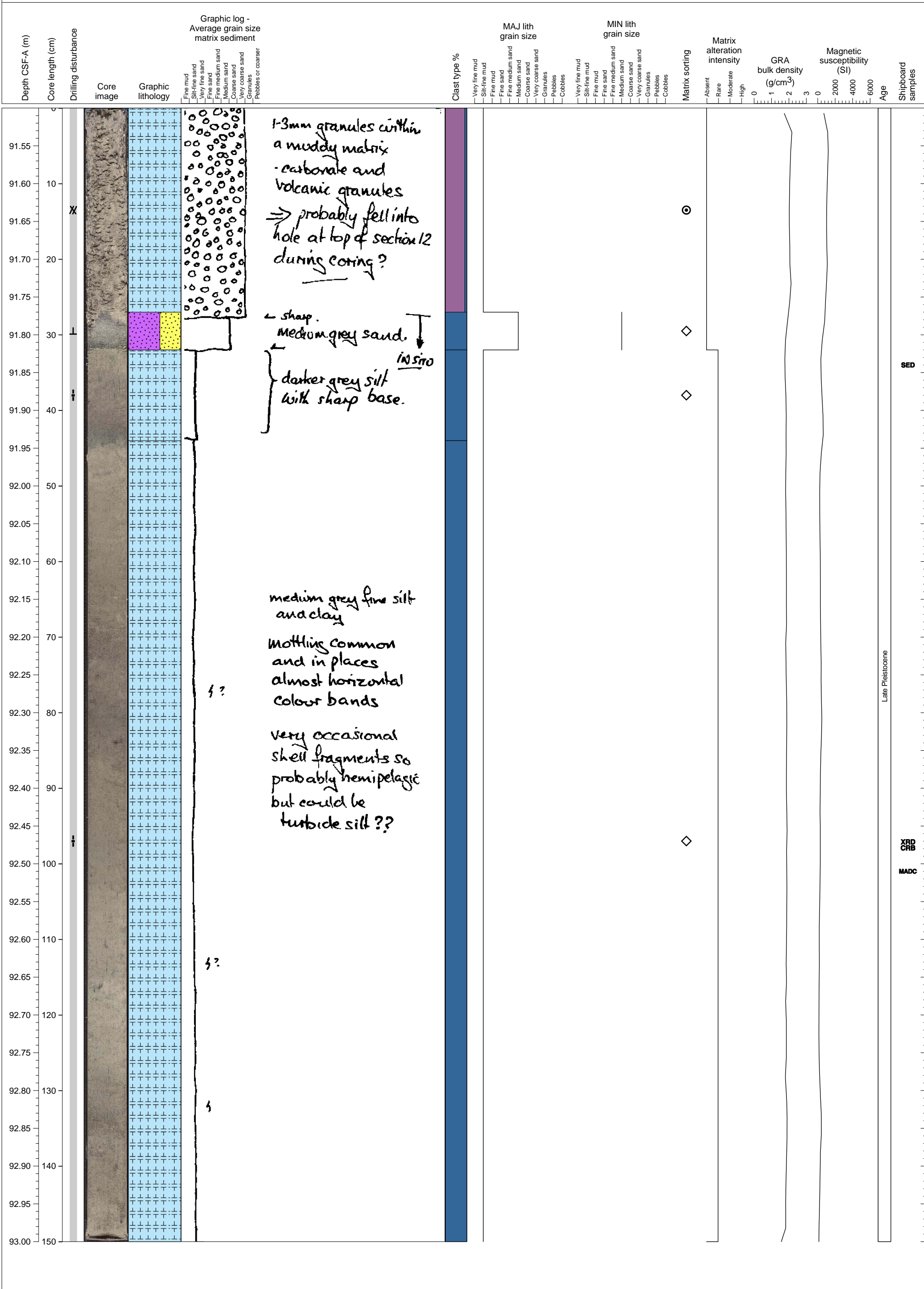
Weakly stratified light gray colored fine sand with minor biogenic fragments. There are silty-muddy patches in the lower part..



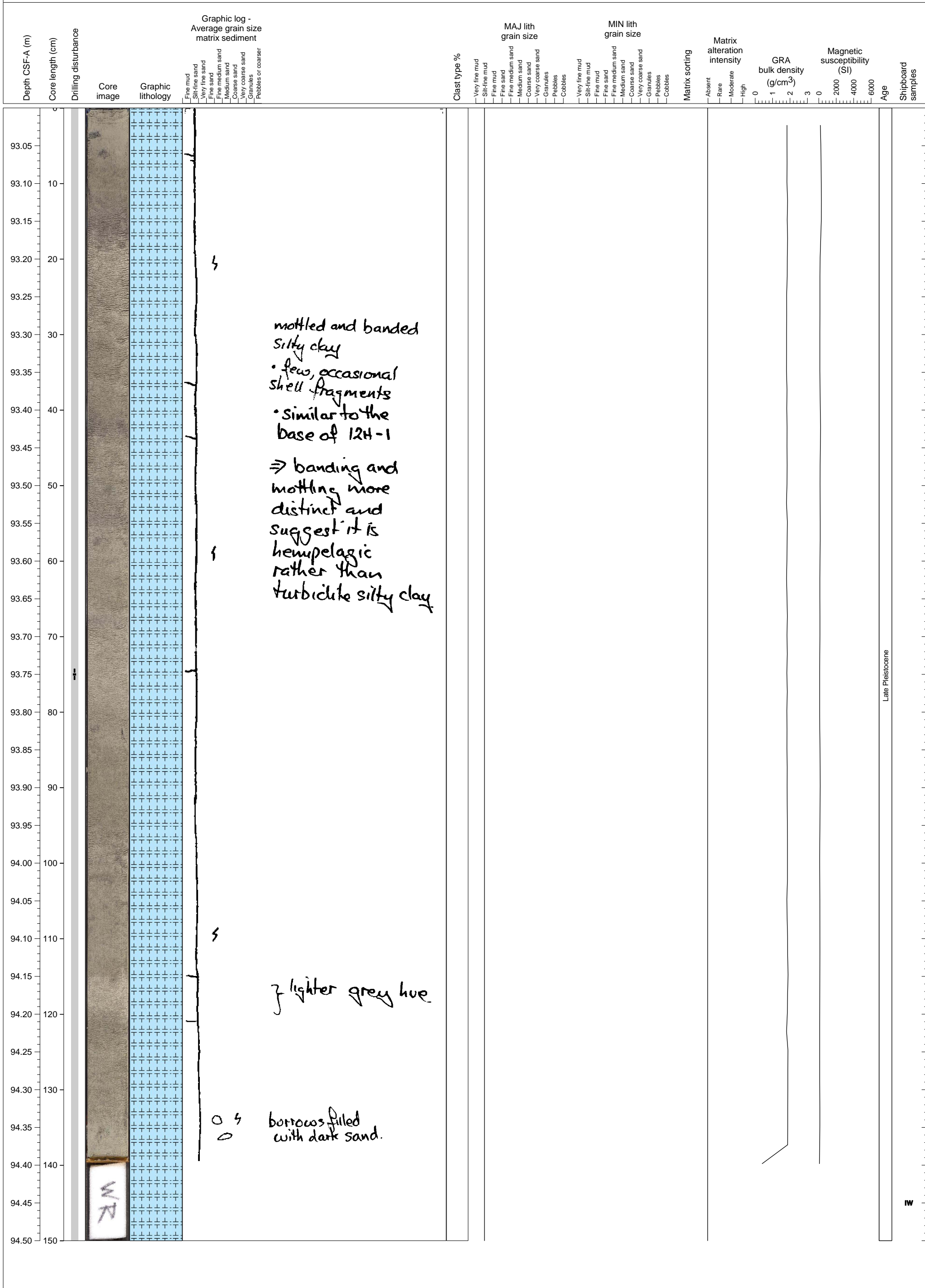
Volcaniclastic sand

Depth CSF-A (m)	Core length (cm)	Drilling disturbance	Core image	Graphic lithology	Graphic log - Average grain size matrix sediment	Clast type %	MAJ lith grain size	MIN lith grain size	Matrix sorting	Matrix alteration intensity	GRA bulk density (g/cm ³)	Magnetic susceptibility (SI)	Age	Shipboard samples																		
															Fine mud	Silt-fine sand	Very fine sand	Fine sand	Fine medium sand	Medium sand	Coarse sand	Very coarse sand	Granules	Pebbles or coarser	Very fine mud	Silt-fine mud	Fine mud	Fine sand	Fine medium sand	Medium sand	Coarse sand	Very coarse sand
91.70	10				light colored (bioclastic?) fine sand. PAL. paleo sample				<input type="checkbox"/>																							
91.75																																
91.80																																

Top 27 cm could be disturbed by drilling as with 8, 9 and 11H 1-A cores. Light - dark gray colored hemipelagic carbonate ooze consists (fine silt - mud grain size) with dark greenish thin layers. Minor amount of biogenic clasts.



This section is hemipelagic calcareous ooze which contains shell fragments (rare).



mottled and banded silty clay
 • few, occasional shell fragments
 • similar to the base of 12H-1
 ⇒ banding and mottling more distinct and suggest it is hemipelagic rather than turbidite silty clay

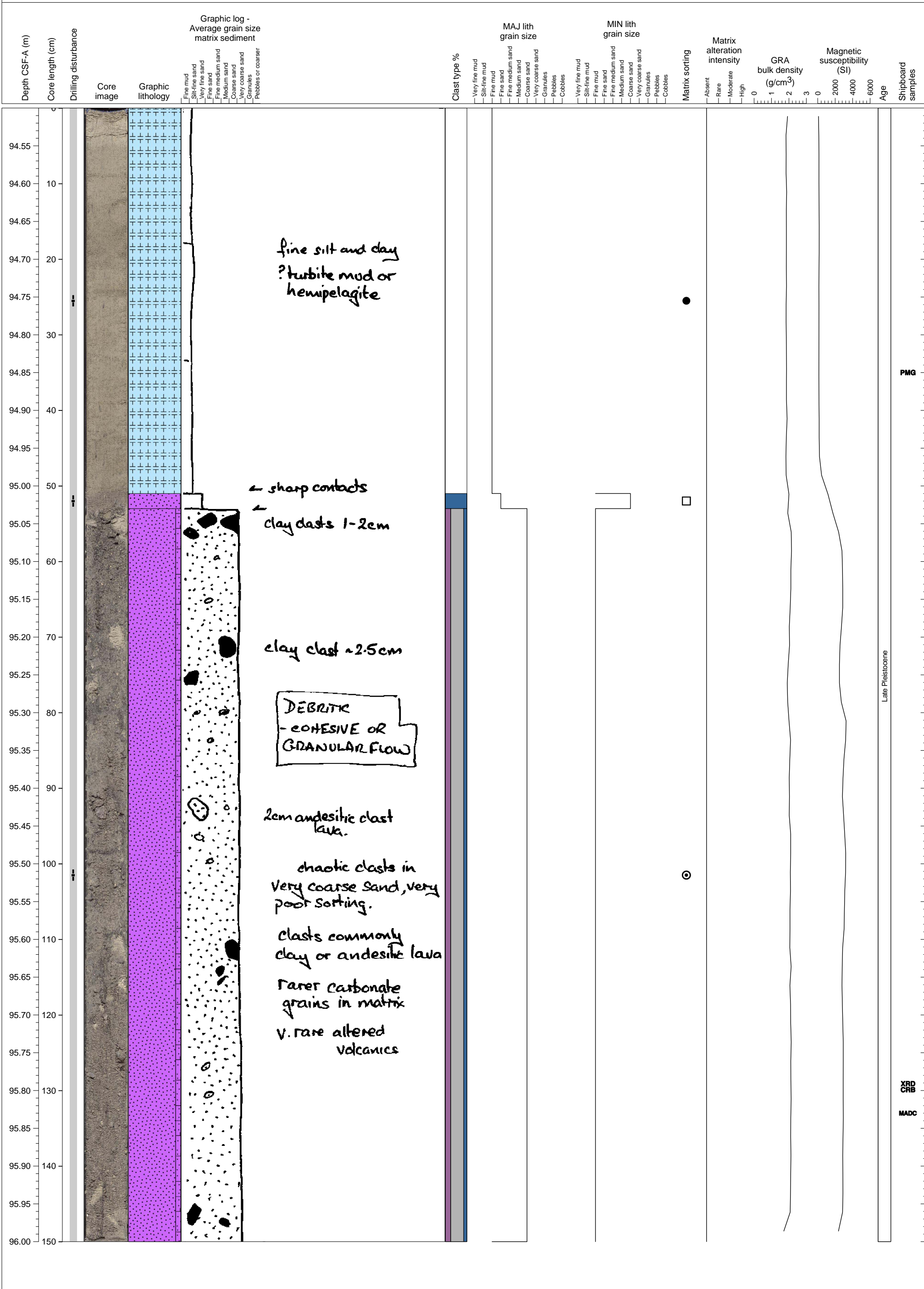
lighter grey hue

borrows filled with dark sand.

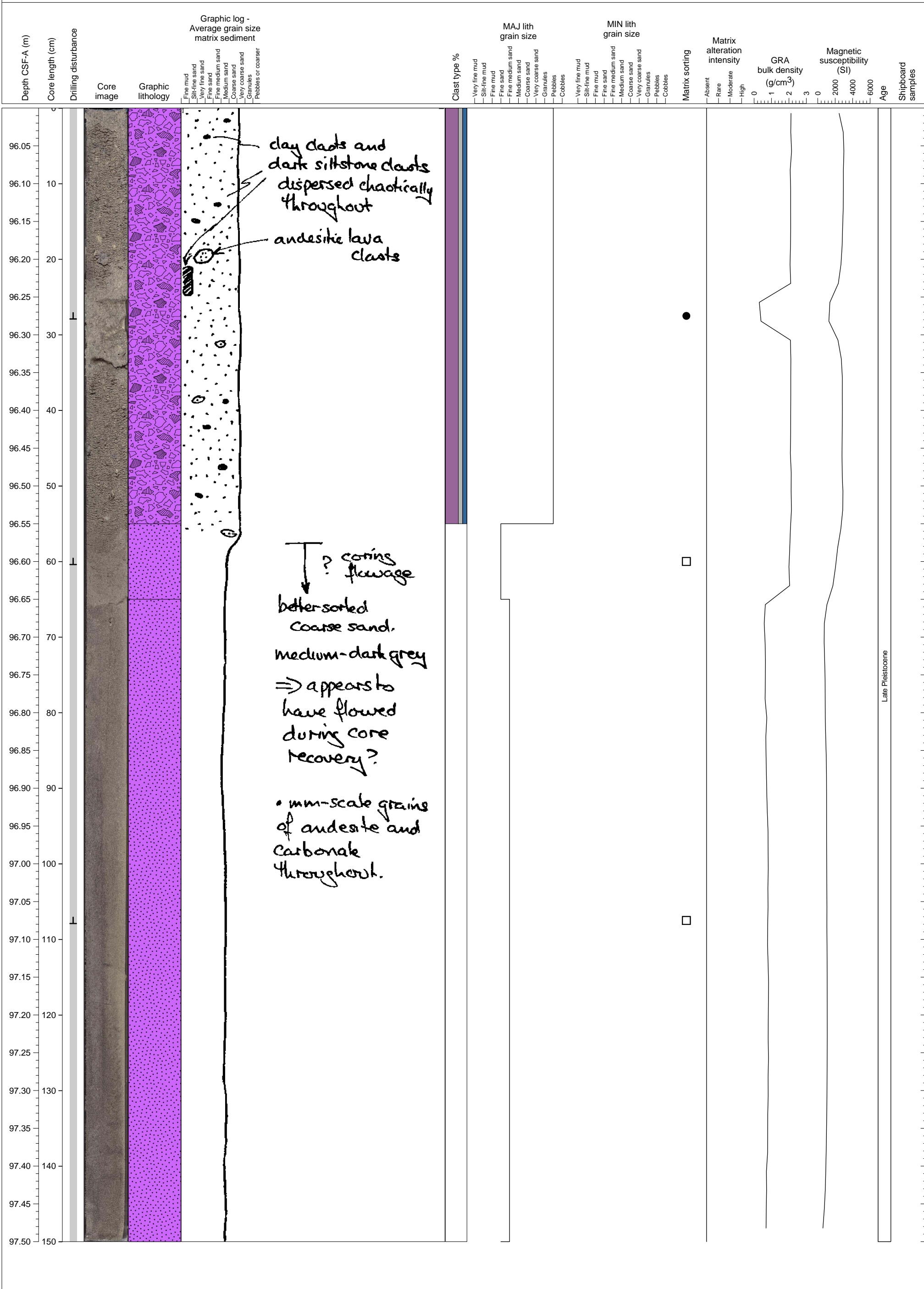
Late Pleistocene

1W

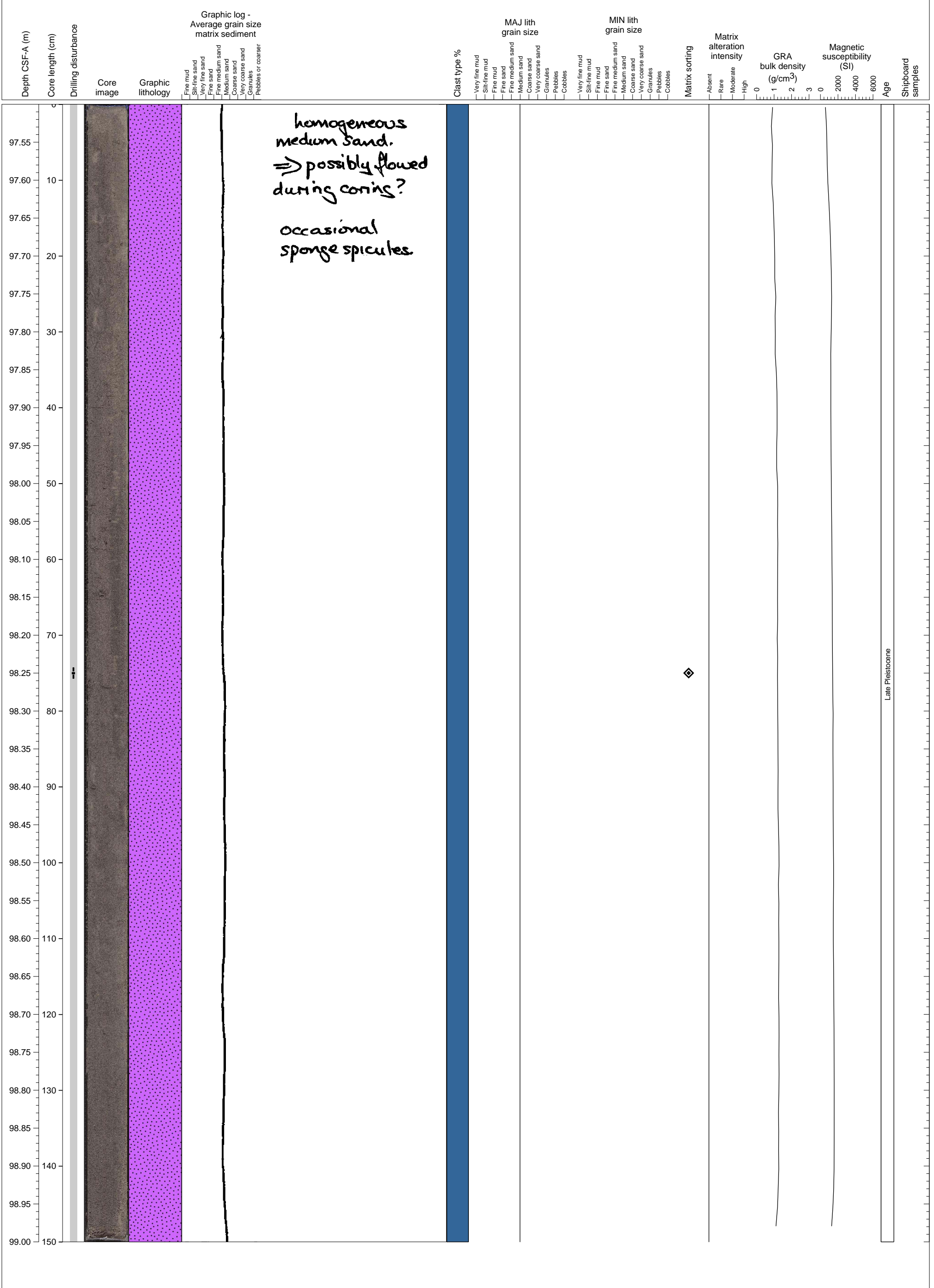
Coarse to very coarse volcanoclastic sand with mud clasts up to 3 cm, andesitic massive lava clasts, and biogenic clasts up to 4 mm. Mud clasts are composed of light grey fine mud. Biogenic fragments are also present.



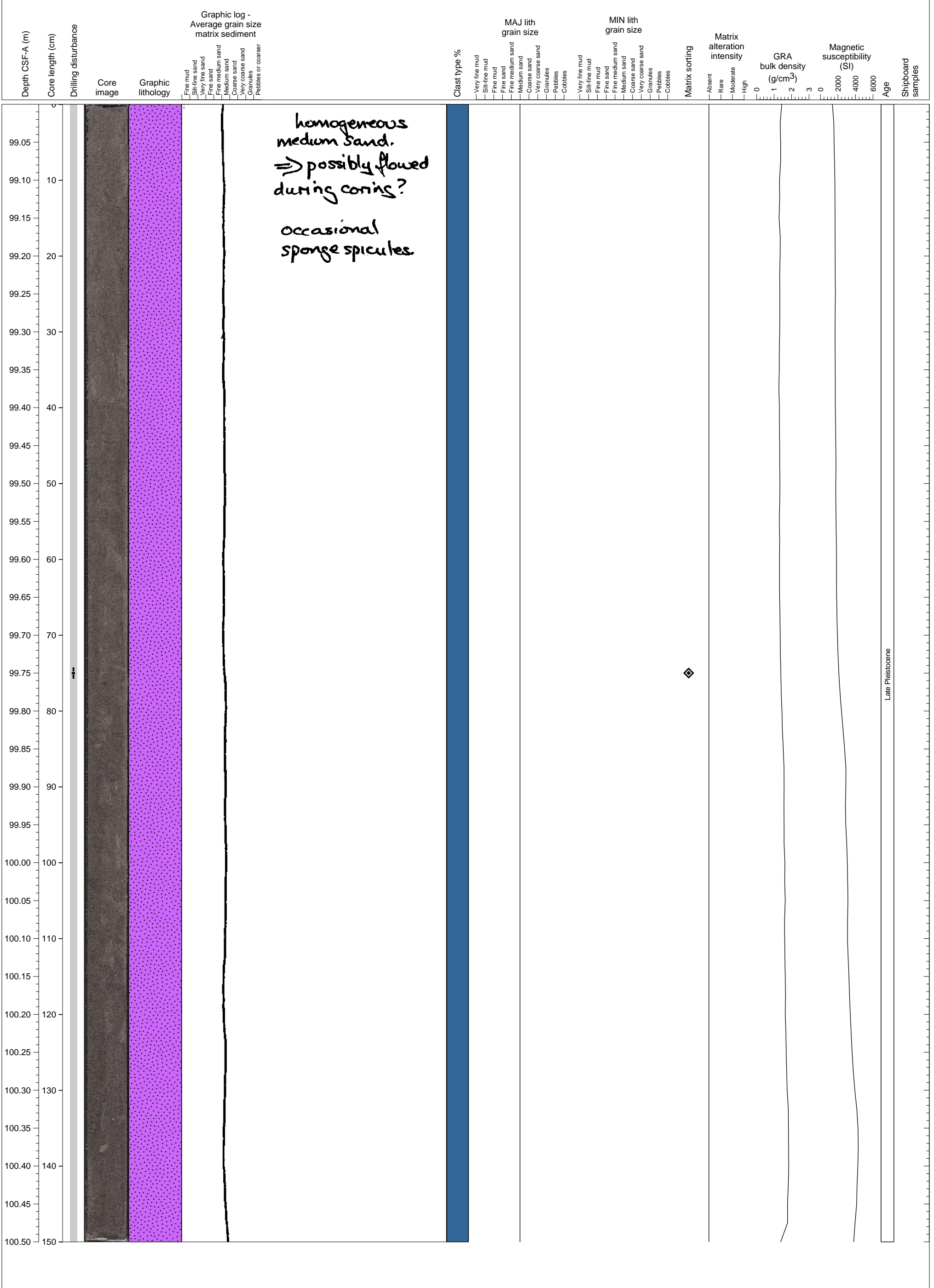
The upper part of this section is a volcanic breccia, which continues from the upper section 12H-3. However, clasts contained in this section are smaller than those of the upper section, suggesting reverse grading in terms of clasts. This volcanic breccia overlies fine volcanic sand and medium-coarse volcanic sand. Andesitic clasts in the volcanic breccia seem to be essential fragments.



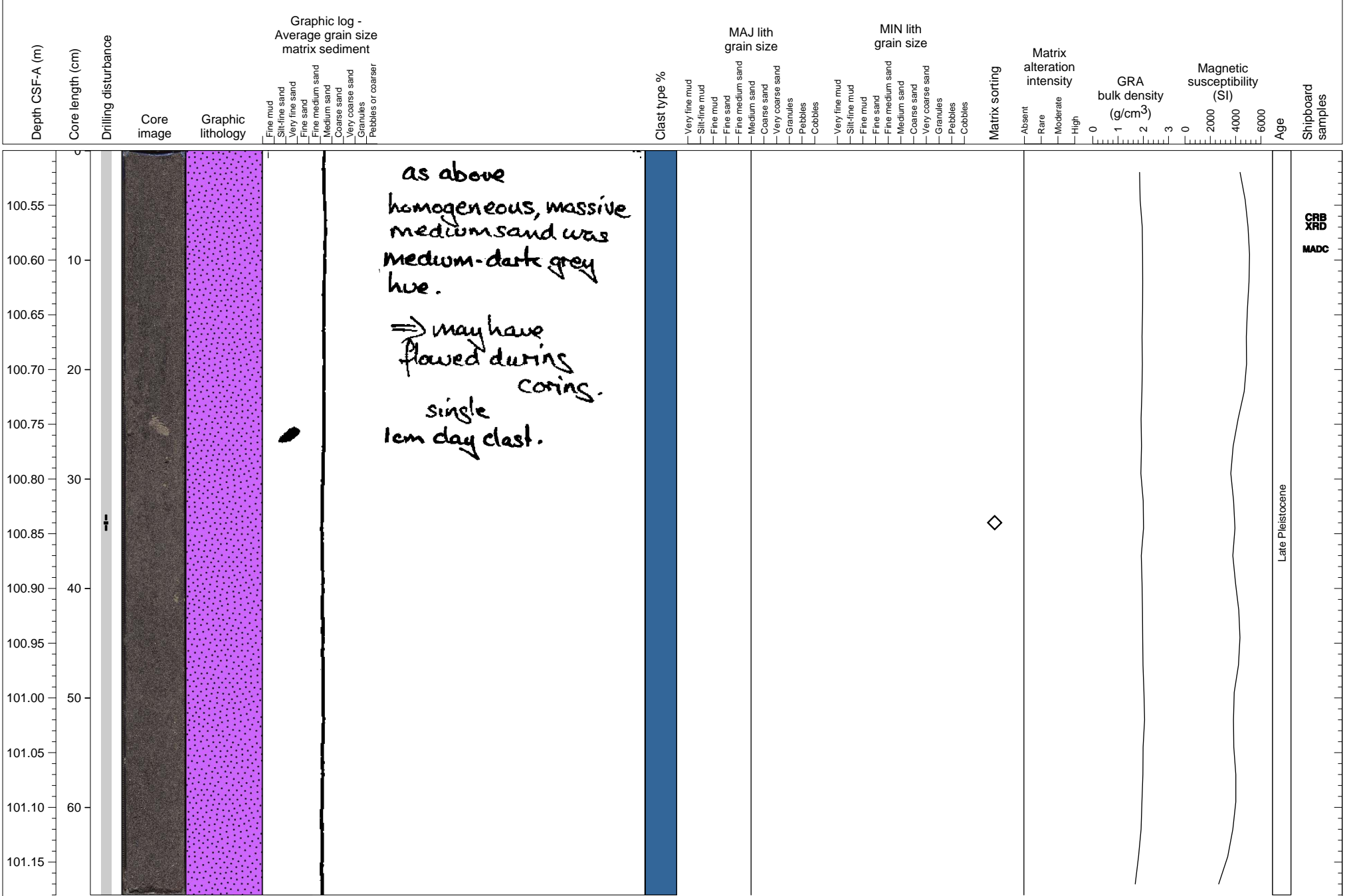
Volcaniclastic sand with biogenic clasts.



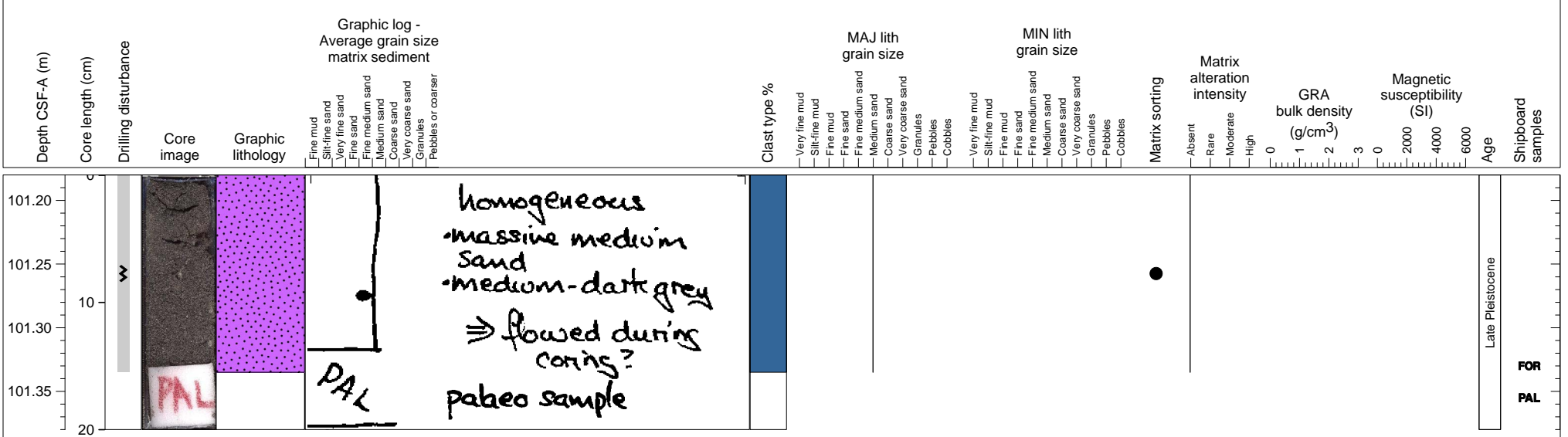
Volcaniclastic sand with biogenic clasts.



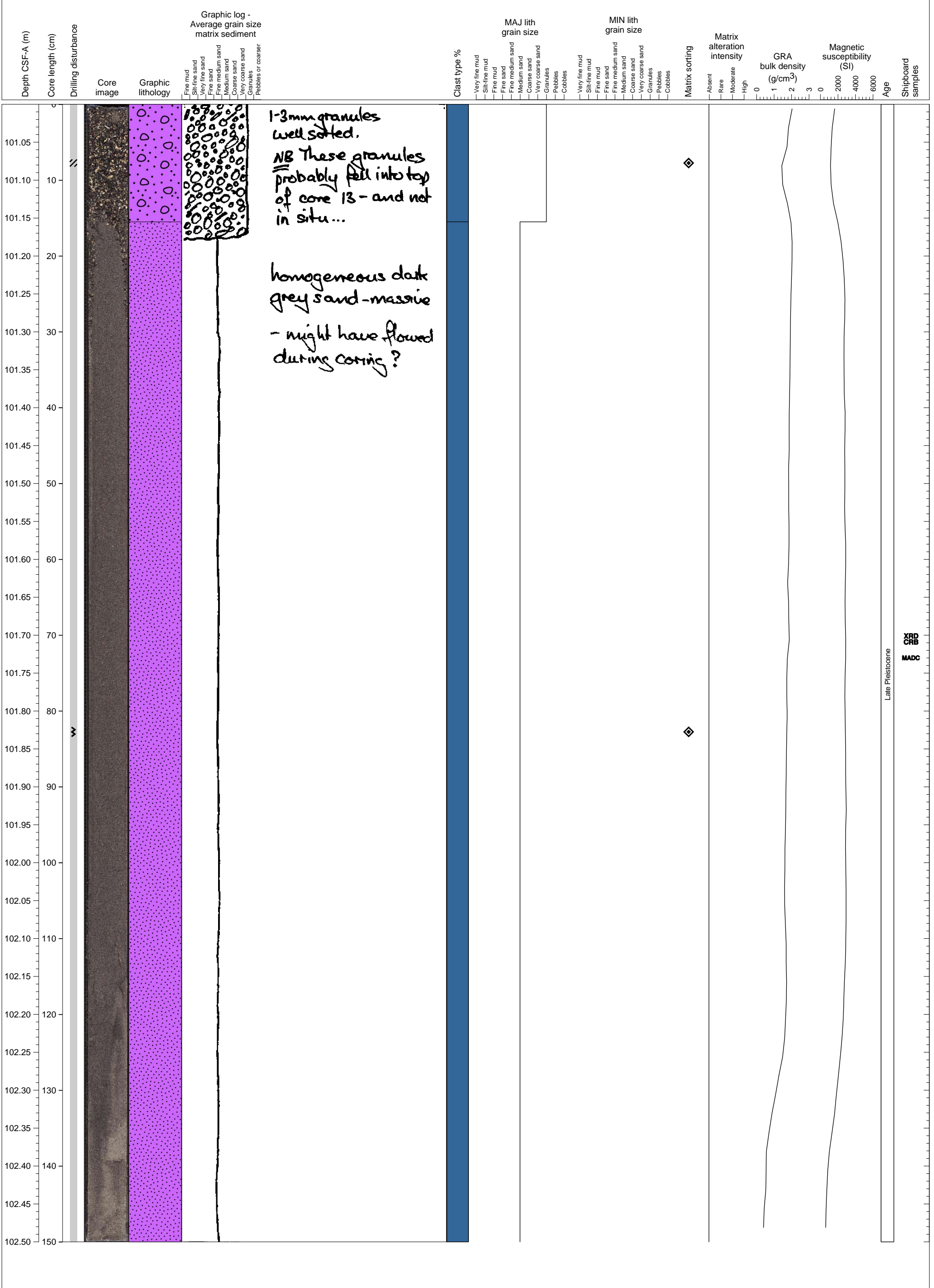
Volcaniclastic sand with biogenic clasts.



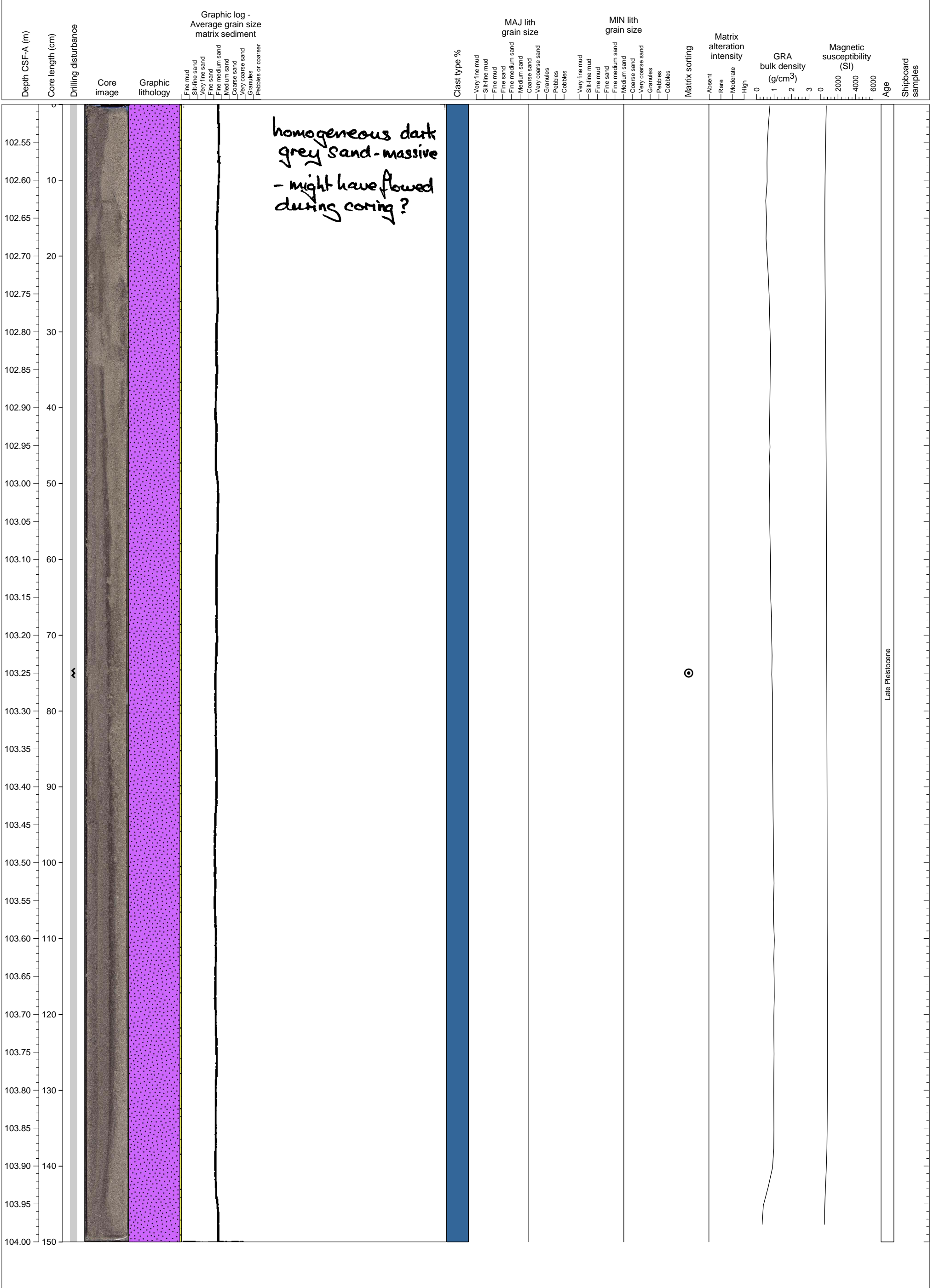
Volcaniclastic sand with biogenic clasts. PAL sample from base.



Volcaniclastic sand with biogenic clasts. Volcaniclastic/bioclastic conglomerate on top is fall-in layer from drilling disturbance.



Minor amount of biogenic clasts contain andesitic volcanoclastic sand, with highly disturbed surface (by drilling sea water).



Homogeneous dark grey medium sand with occasional carbonate grains. Massive and may have flowed during coring.



homogeneous dark grey massive sand
 - note that it may have flowed in or been deformed during coring.

Late Pleistocene

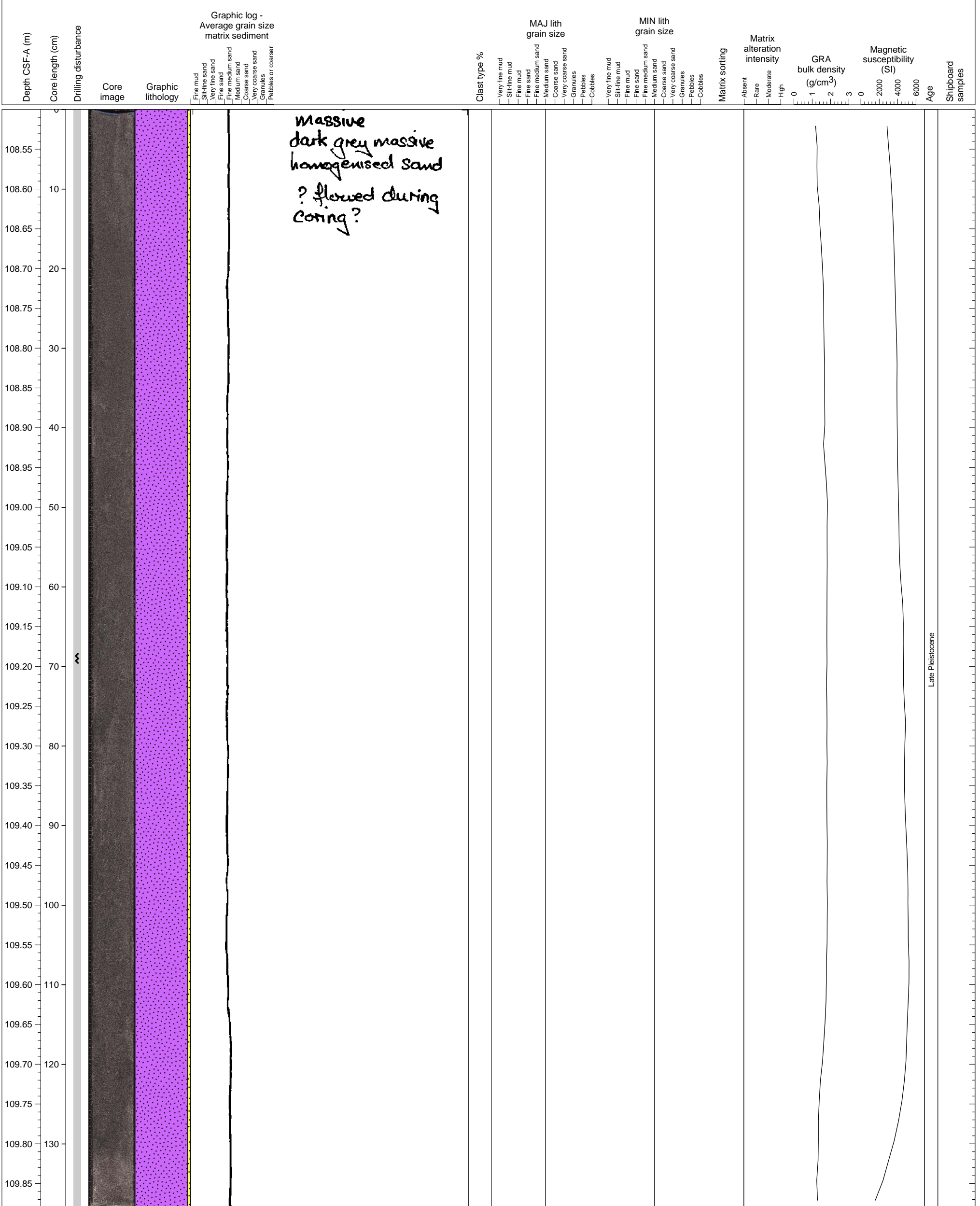
Homogeneous dark grey medium sand with occasional carbonate grains. Massive and may have flowed during coring.



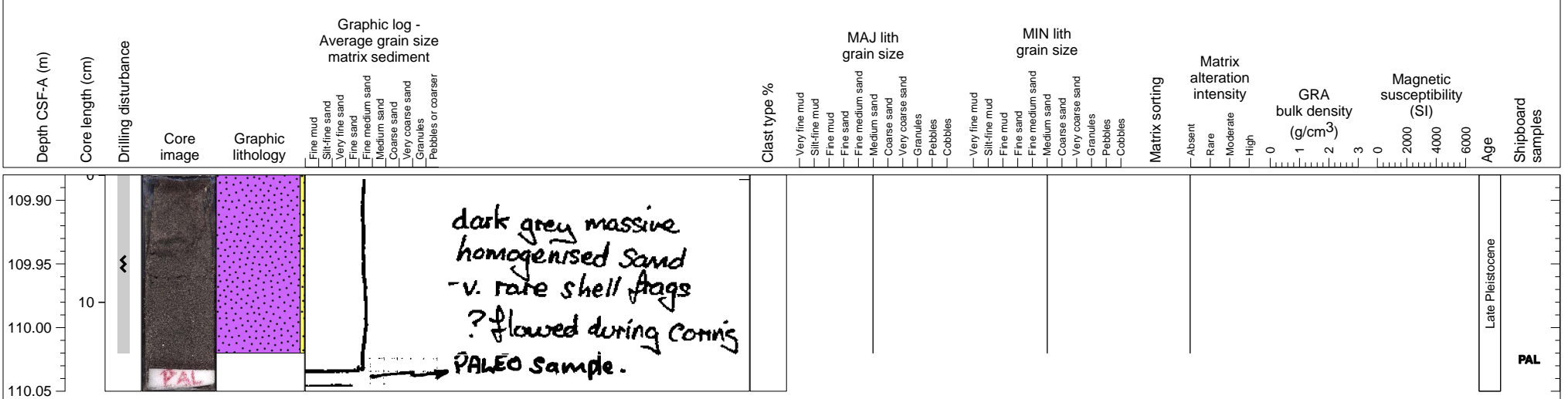
homogeneous dark grey massive sand.
 => very likely that this sand is heavily disturbed during drilling.

Late Pleistocene

Homogeneous dark grey medium sand with occasional carbonate grains. Massive and may have flowed during coring.

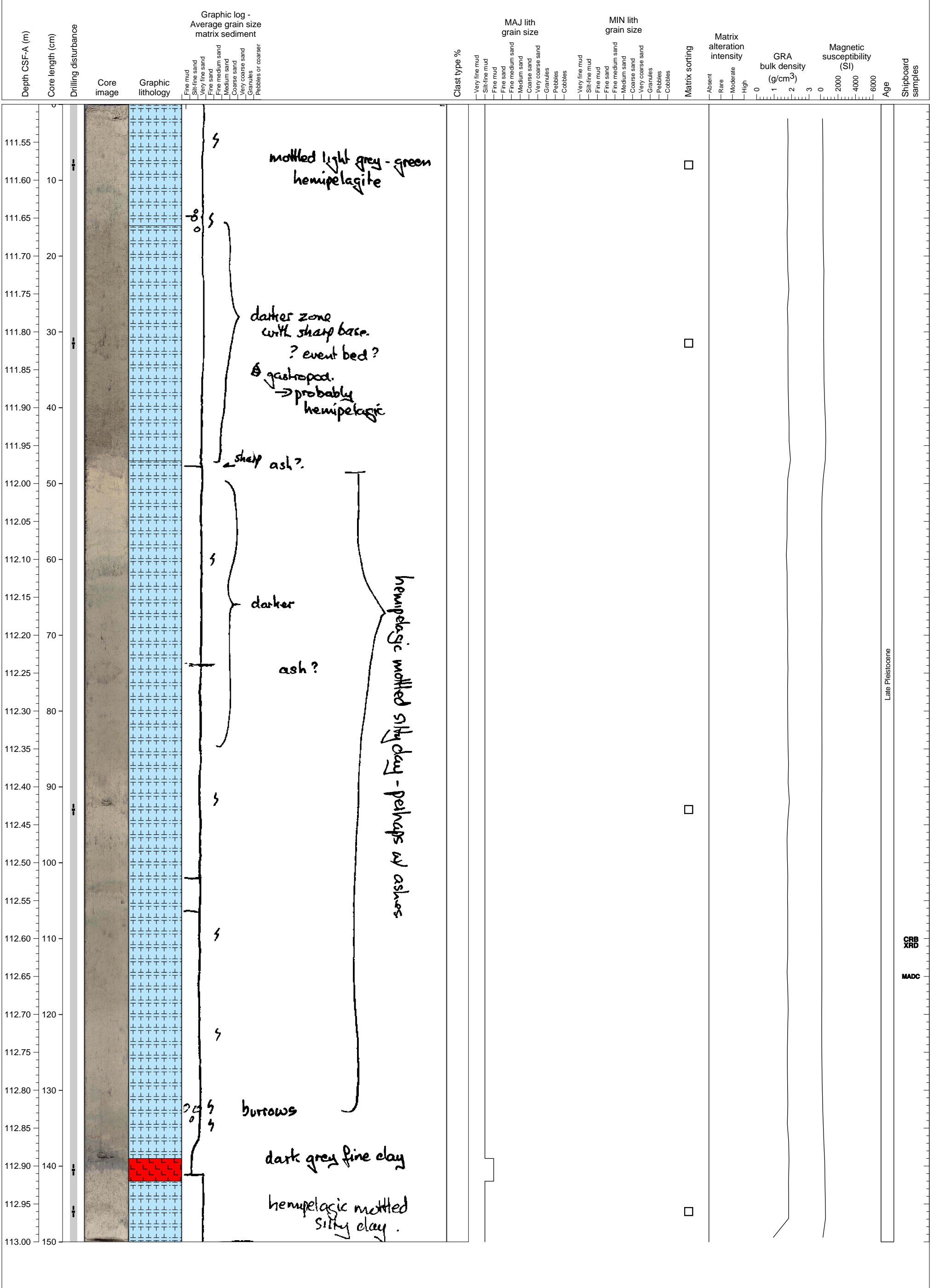


Homogeneous dark grey medium sand with occasional carbonate grains. Massive and may have flowed during coring.

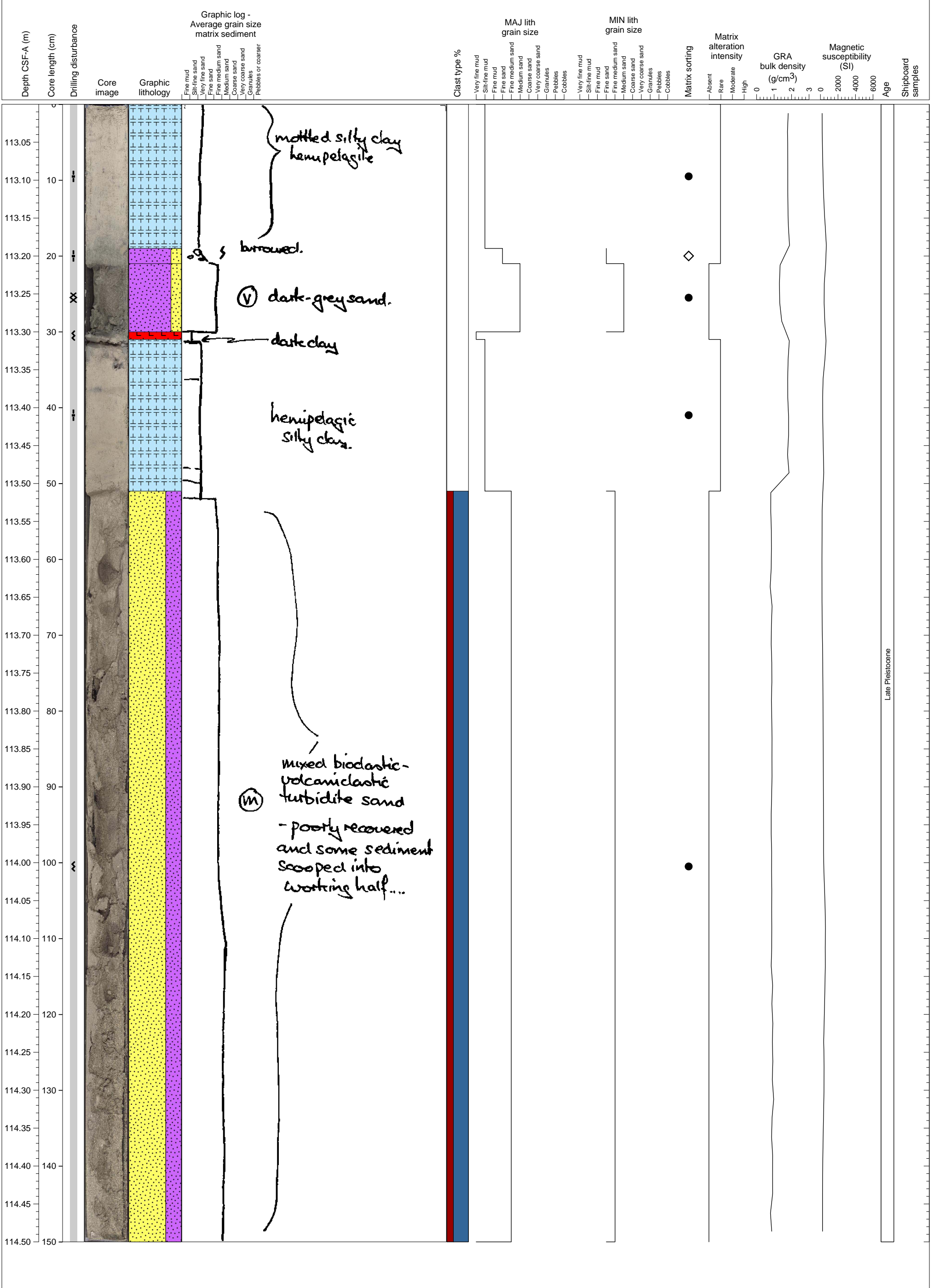


Hole 340-U1394B-14H Section 2, Top of Section: 111.5 CSF-A (m)

This section consist of mostly hemipelagic carbonate ooze, but one possible ash layer in the lower part from 139-142 cm. The layer is very well-sorted fine mud with dark grey in color. Gastropod is found in the layer from 16-47 cm, which confirms hemipelagic origin, not volcanic origin.

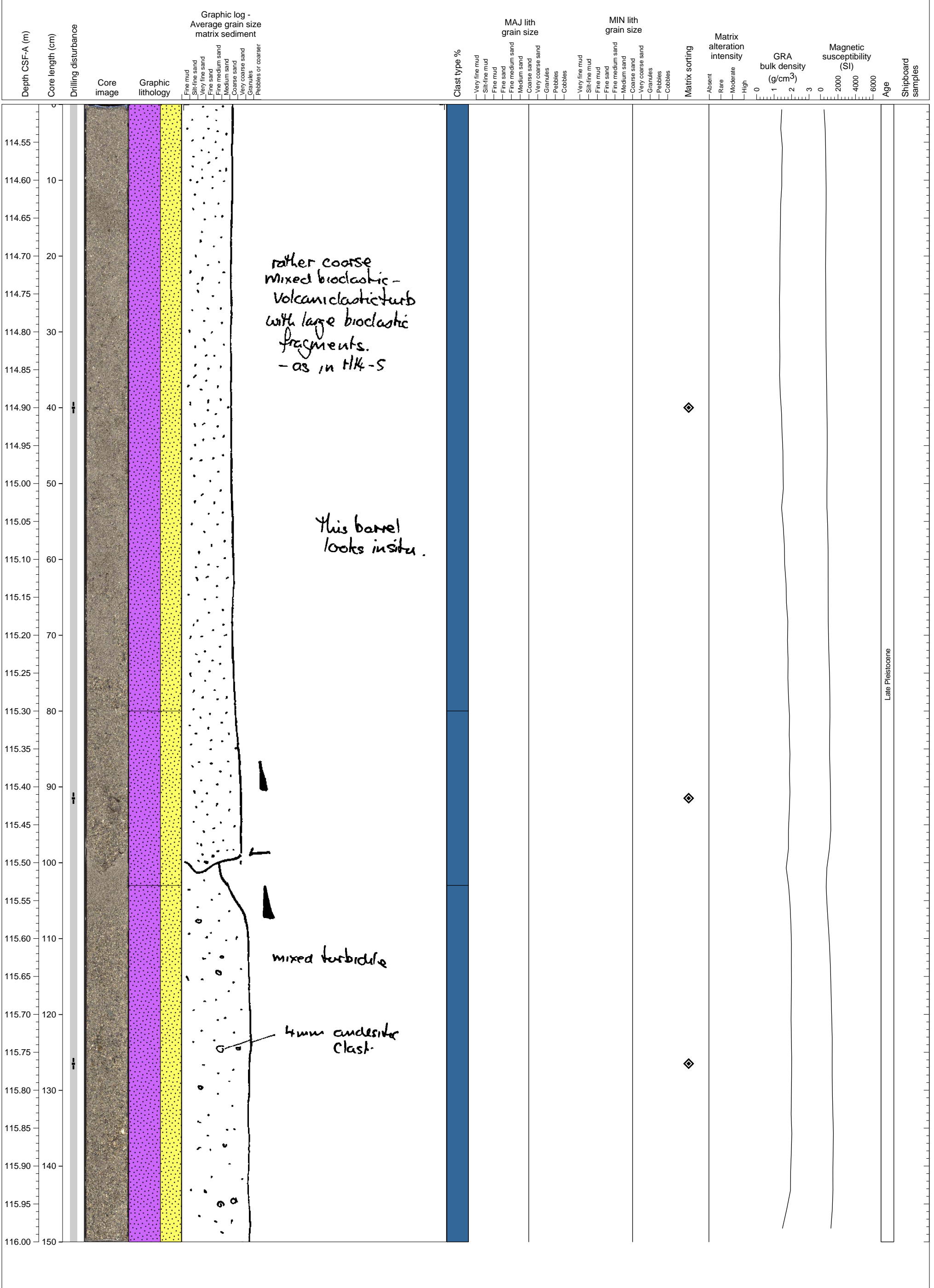


Gradual succession of bio-volcaniclastic sand, vary from medium sand to silt-fine sand in grain size. Well sorted thin gray muddy layer (ash ?) is present at 30 cm.



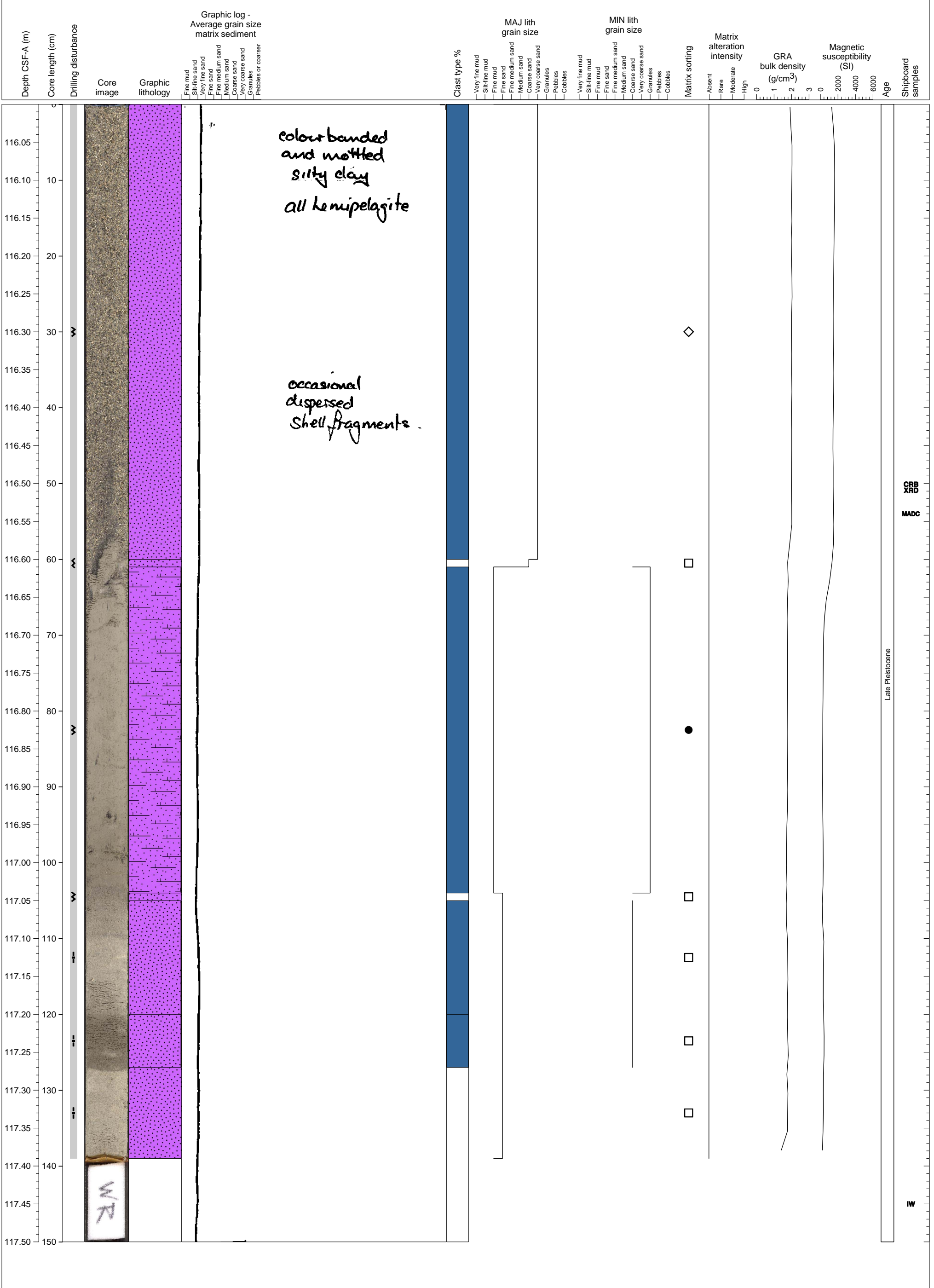
Hole 340-U1394B-14H Section 4, Top of Section: 114.5 CSF-A (m)

Alternating layers of volcanoclastic/bioclastic sand fining upward from coarse-grained at the base of the unit to fine-grained at the top of the unit.



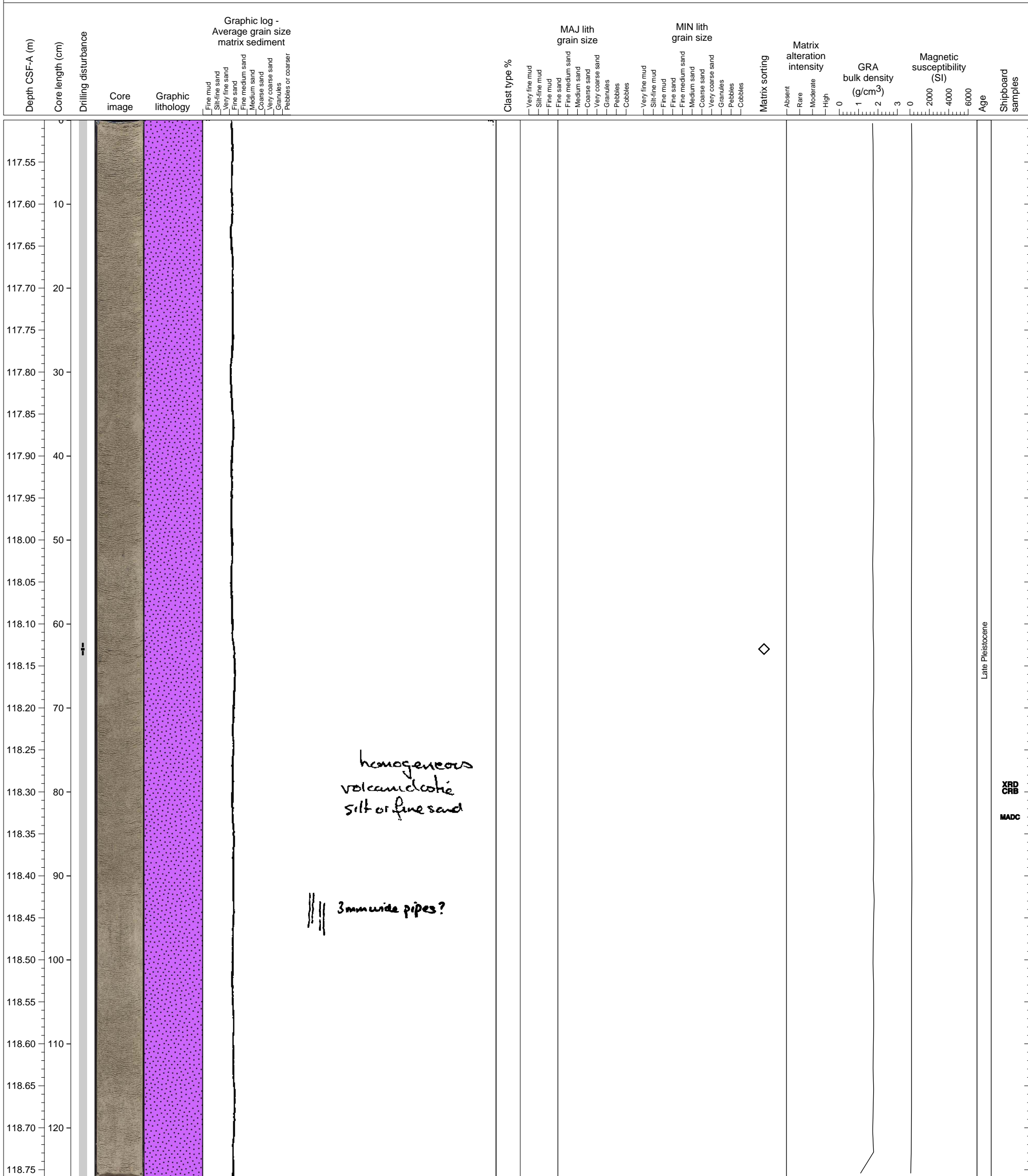
Hole 340-U1394B-14H Section 5, Top of Section: 116.0 CSF-A (m)

The upper 60 cm is massive coarse to very coarse sand with normal grading composed of mixture of volcanoclastics and biogenic clasts up to granule size. The lower part is composed of layered gray colored volcanoclastic mud and fine sand. The upper and lower parts of this section are separated by black colored tephra layer and the boundary is sharp and heavily disturbed.

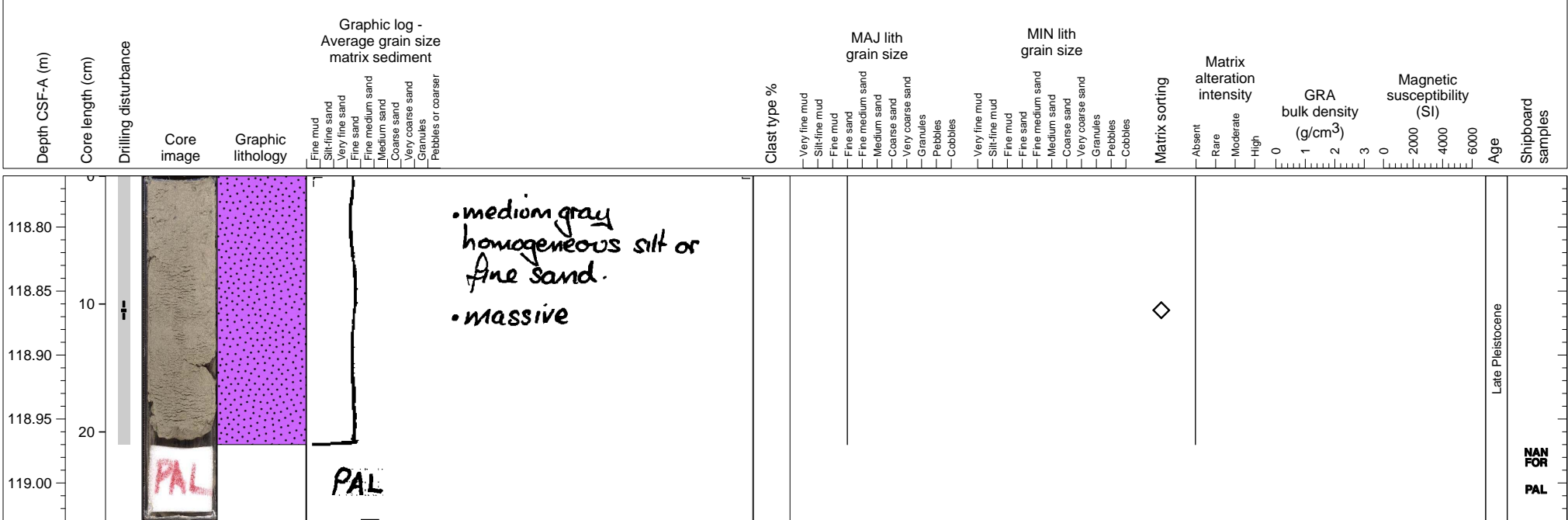


Hole 340-U1394B-14H Section 6, Top of Section: 117.5 CSF-A (m)

Homogeneous massive volcanoclastic fine sand.

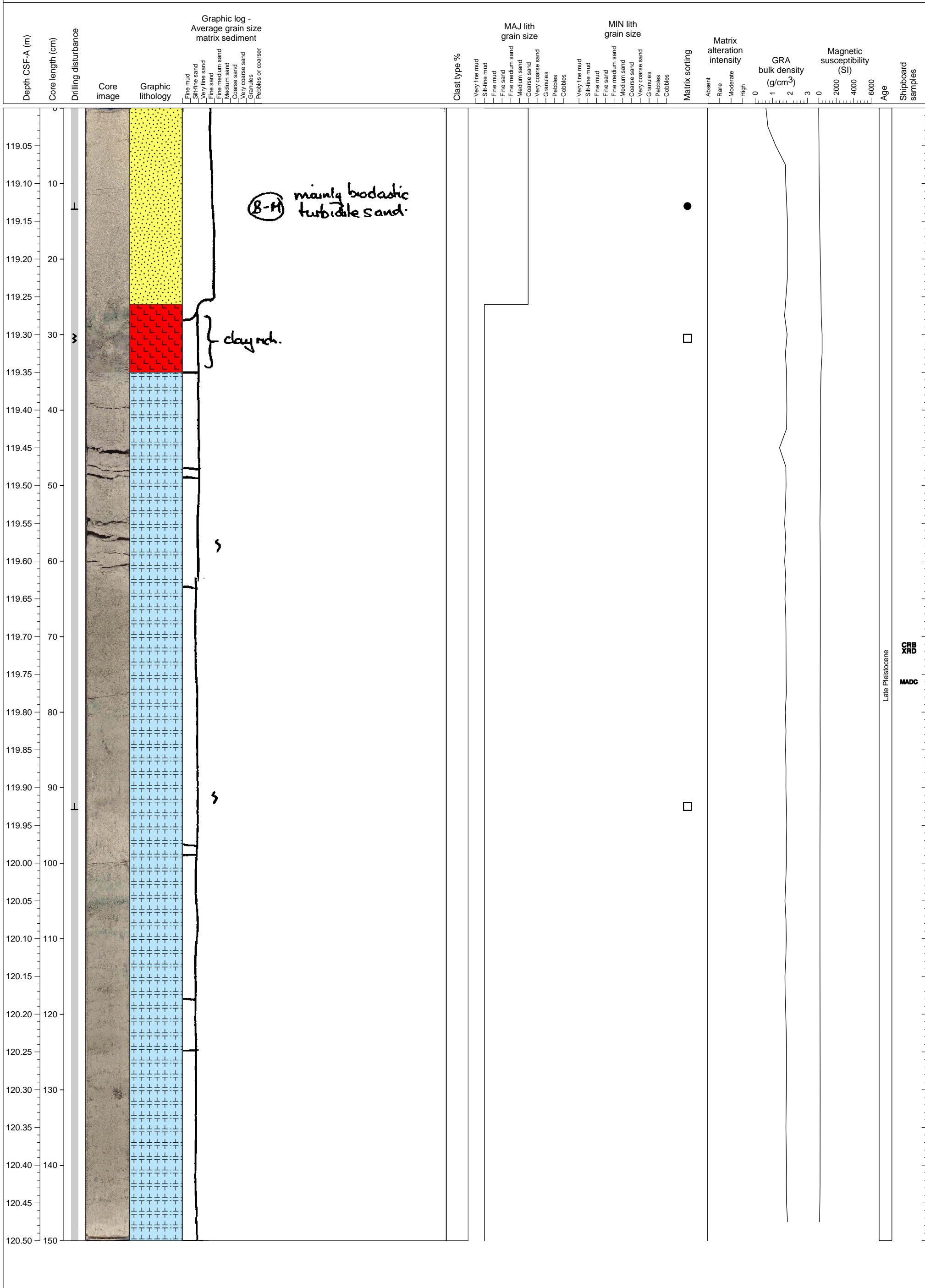


Massive volcanoclastic fine sand.

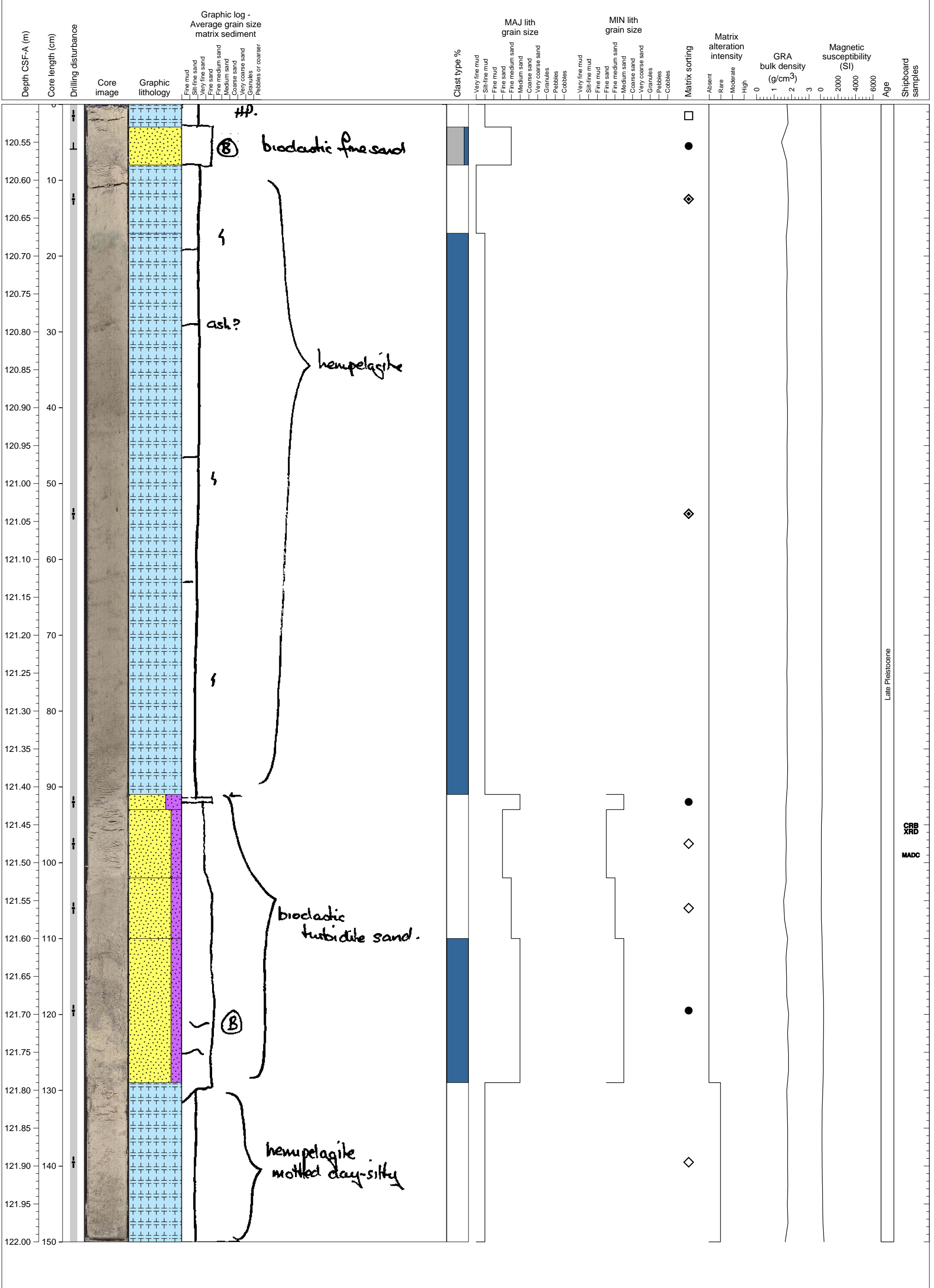


Hole 340-U1394B-15H Section 1, Top of Section: 119.0 CSF-A (m)

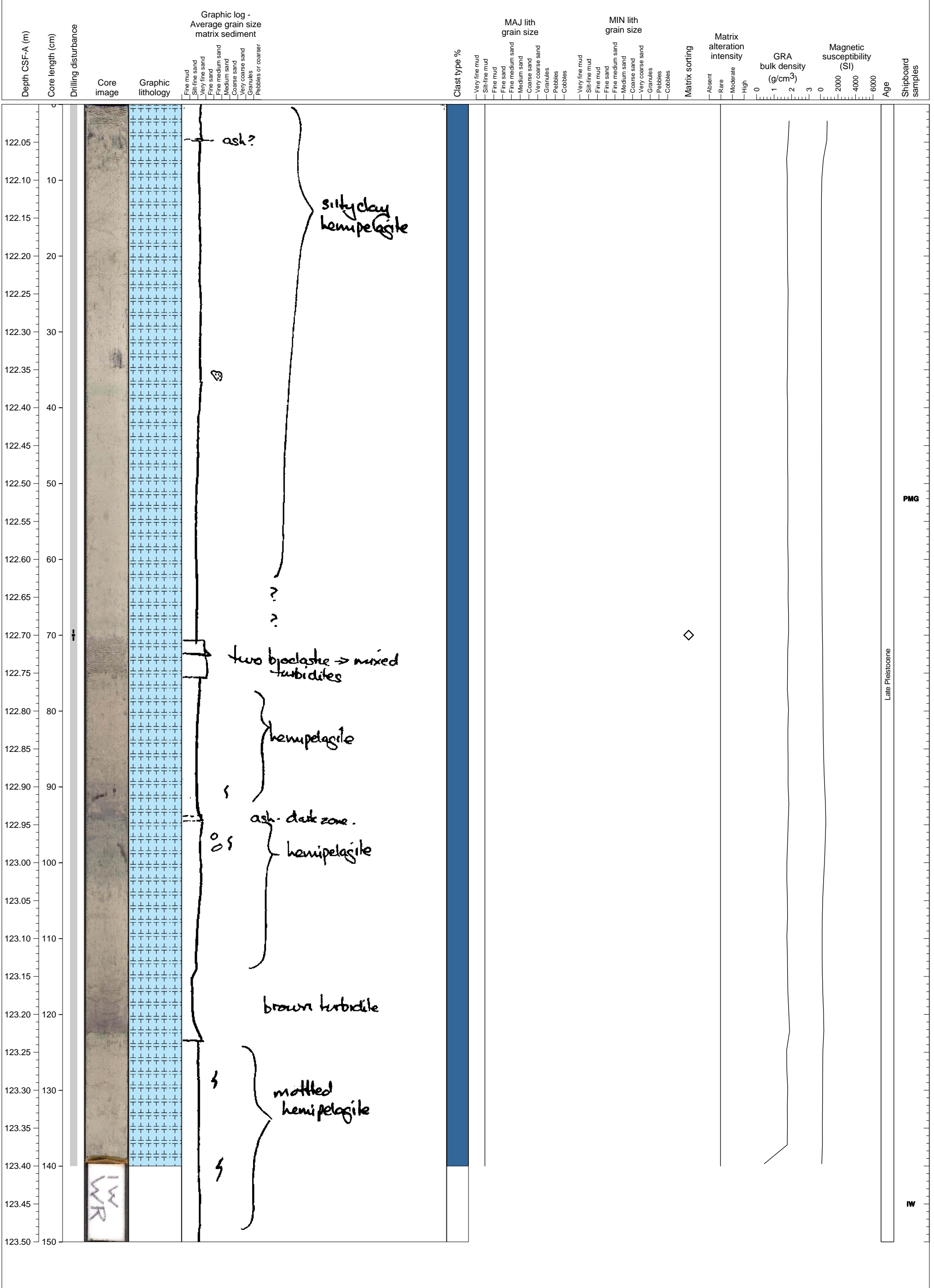
Most part of this section is background hemipelagic clay, but in the upper 26-35 cm volcanic ash appears and it suddenly changes upward into poorly sorted coarse sand.



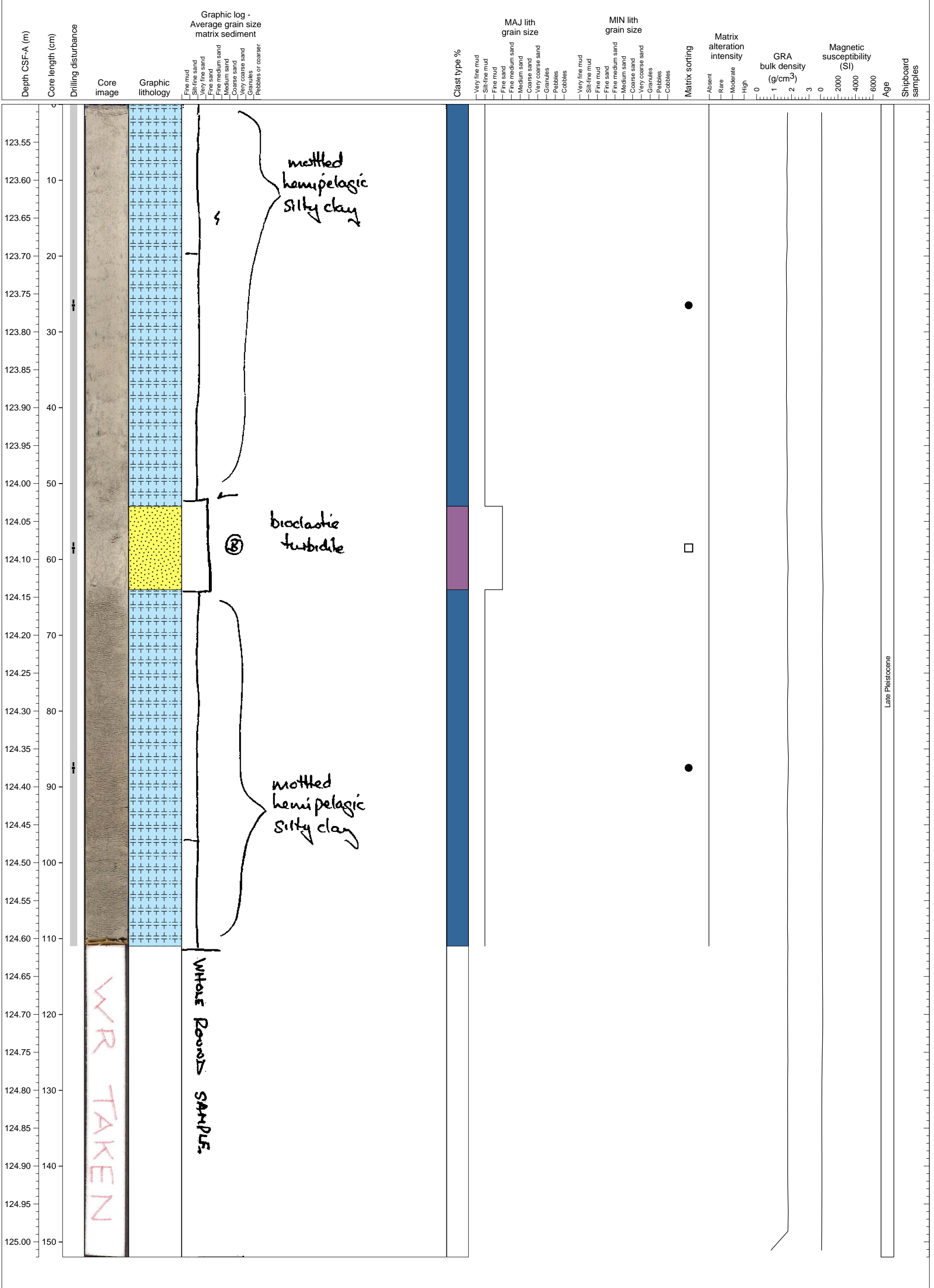
Succession of graded hemipelagic carbonate sand-mud alternation with minor amount of biogenic clast.



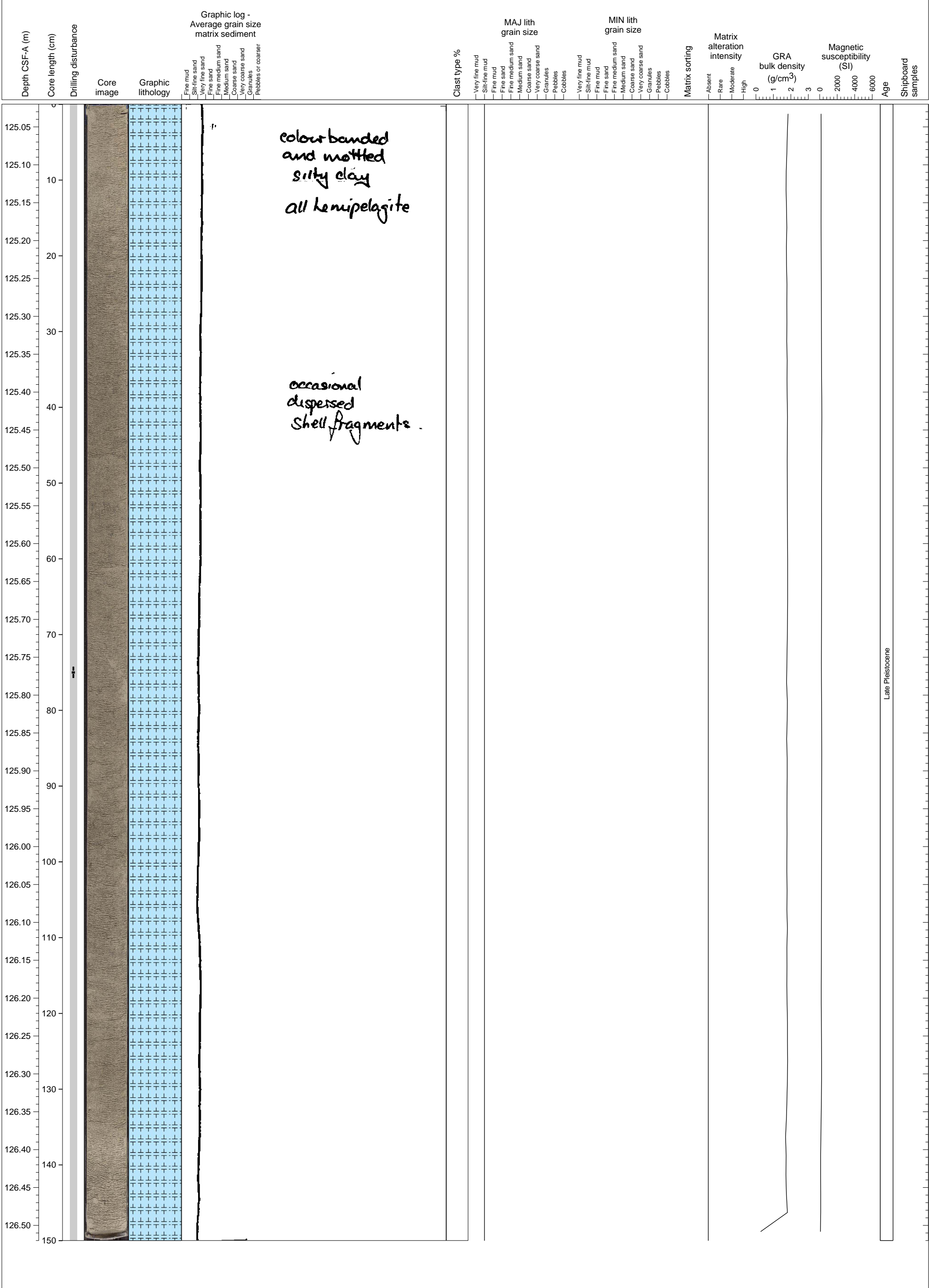
Hemipelagic clay with minor biogenic clasts. IW WR taken from base.



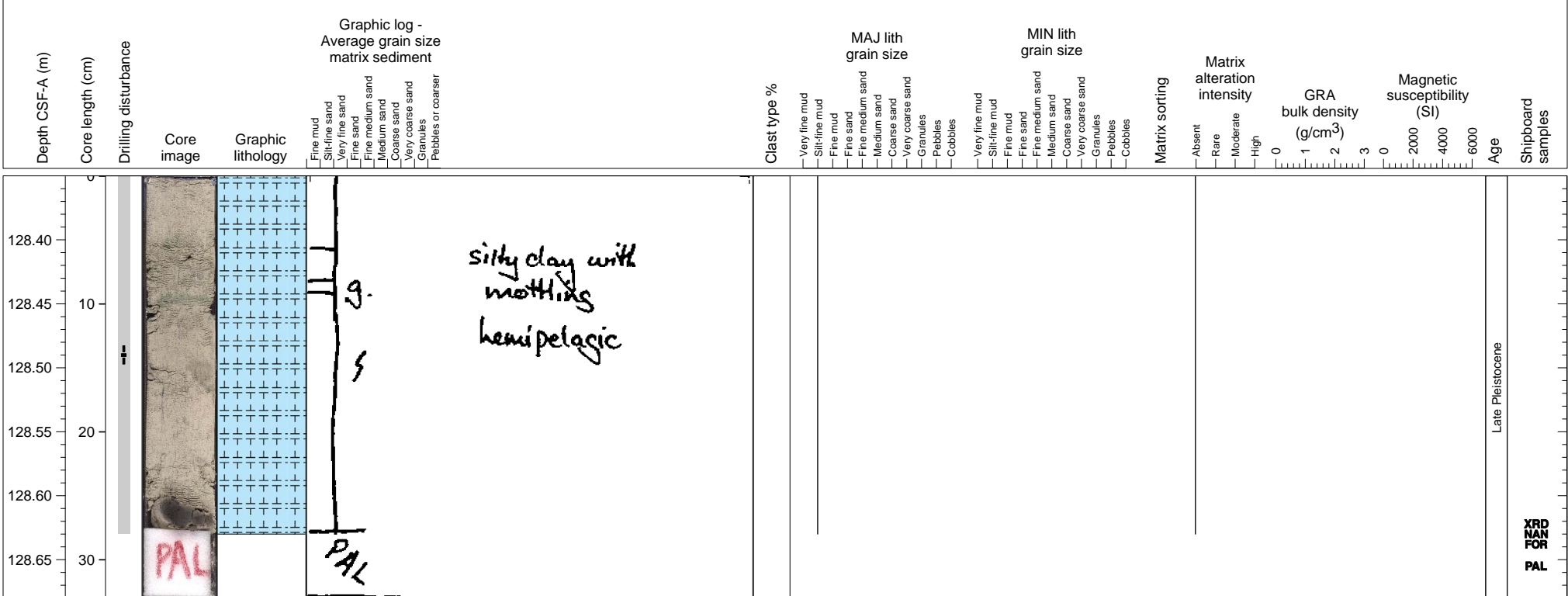
Interlayered hemipelagic clay and bioclastic sand layers. The bioclastic sand contains a significant amount of fine-grained lava clasts.



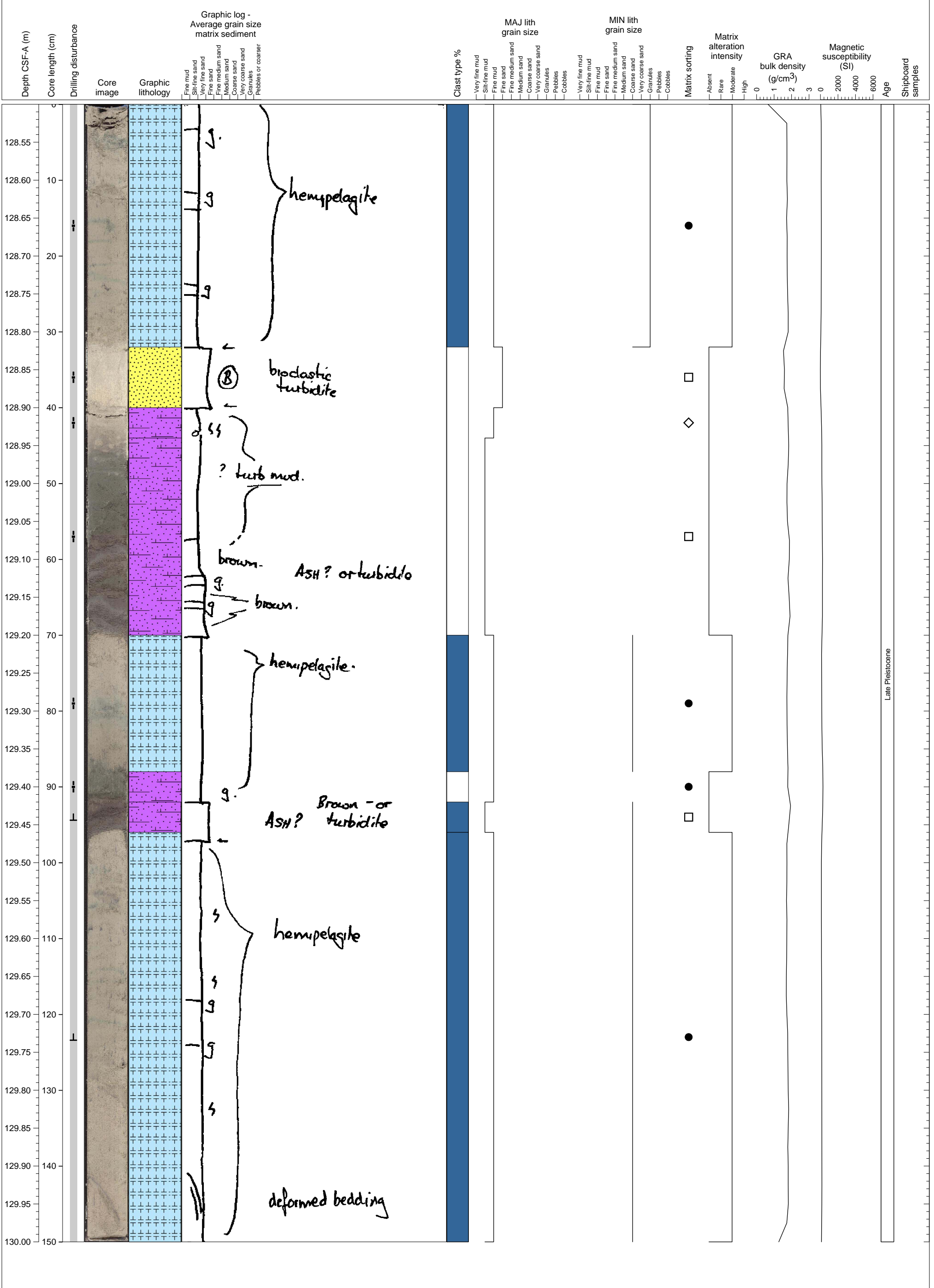
Hemipelagic silty clay.



Hemipelagic silty clay

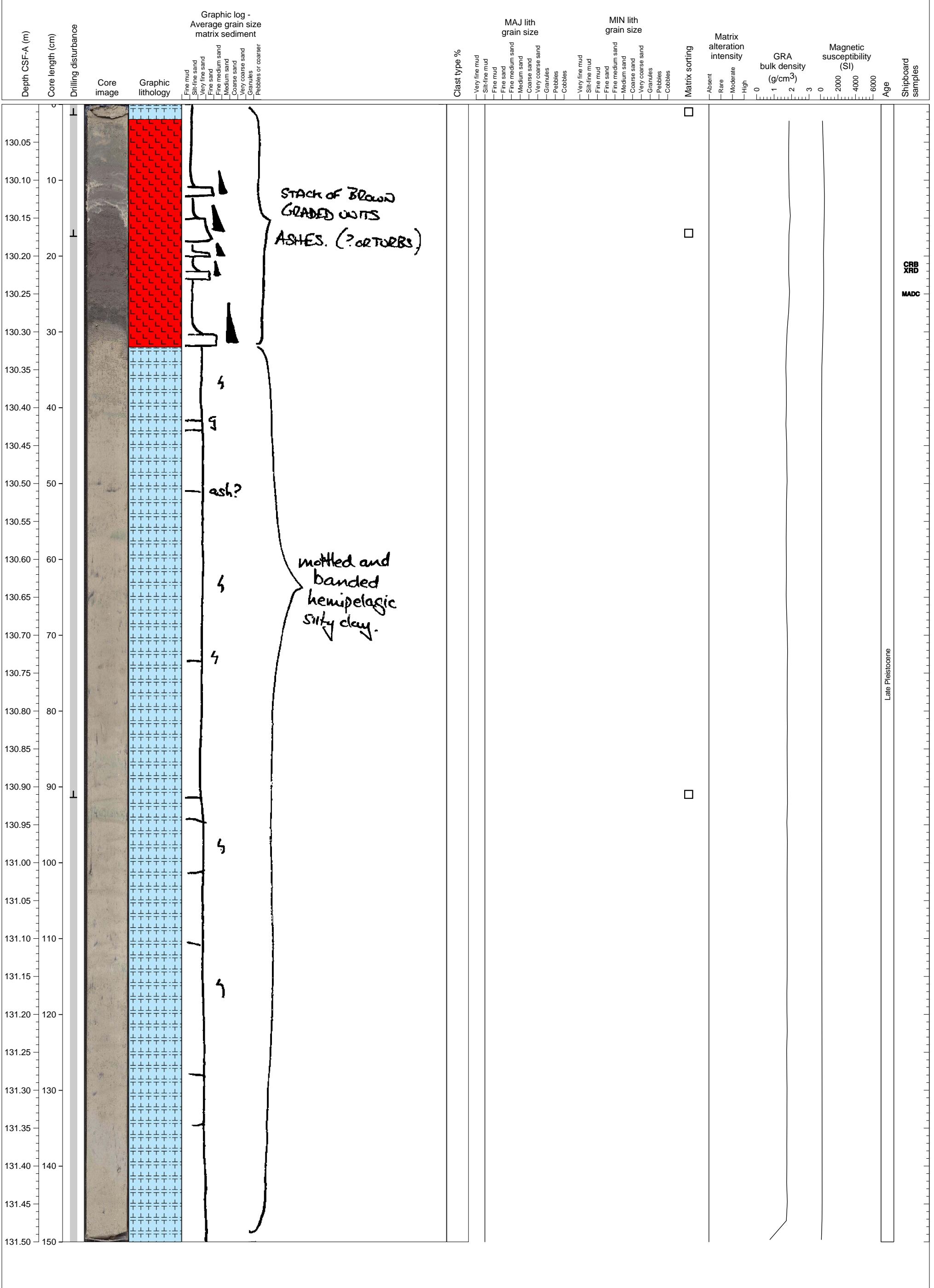


Alternating of light gray colored muddy hemipelagic sediments and dark gray colored. Well sorted potential tephra layers present.

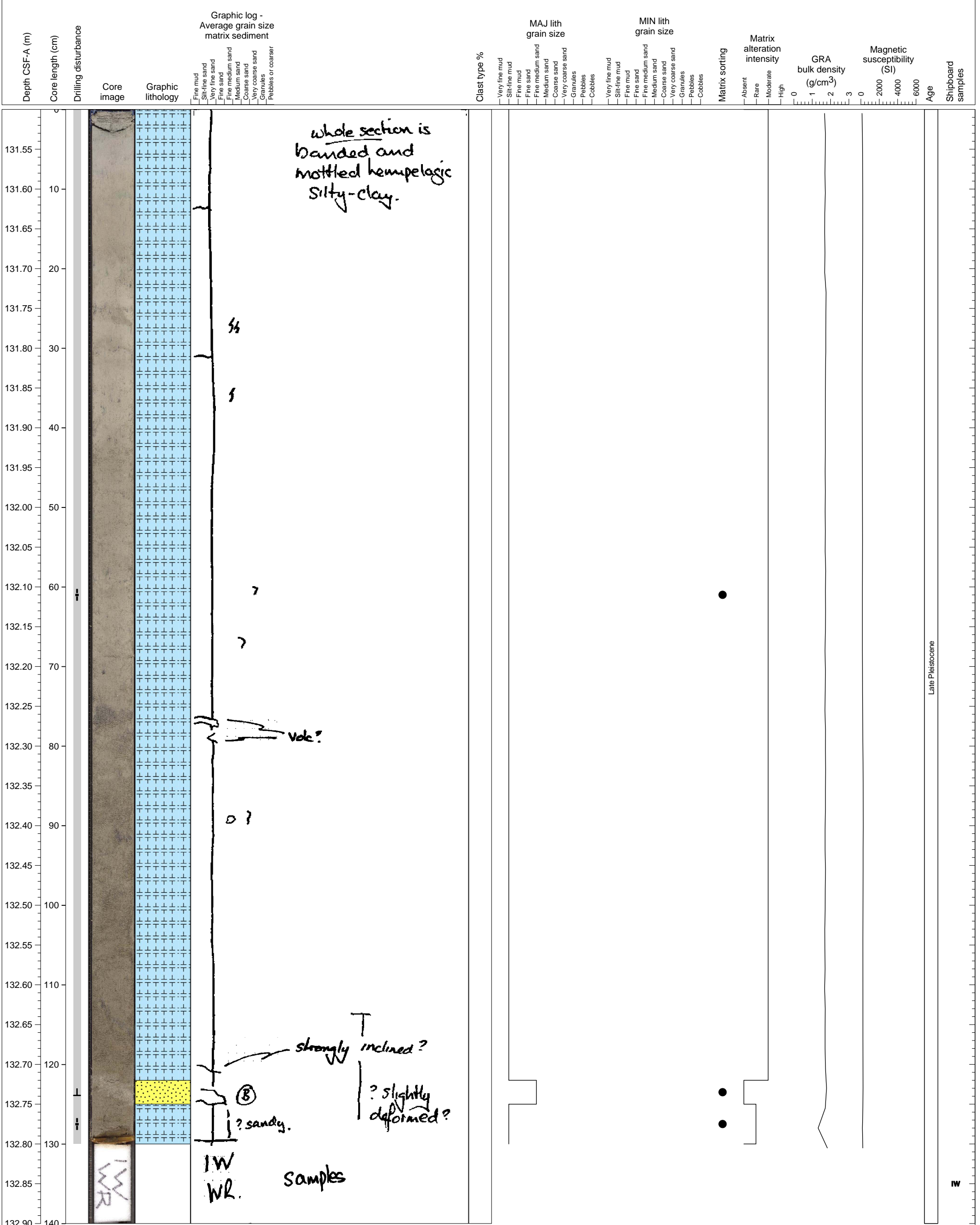


Hole 340-U1394B-16H Section 2, Top of Section: 130.0 CSF-A (m)

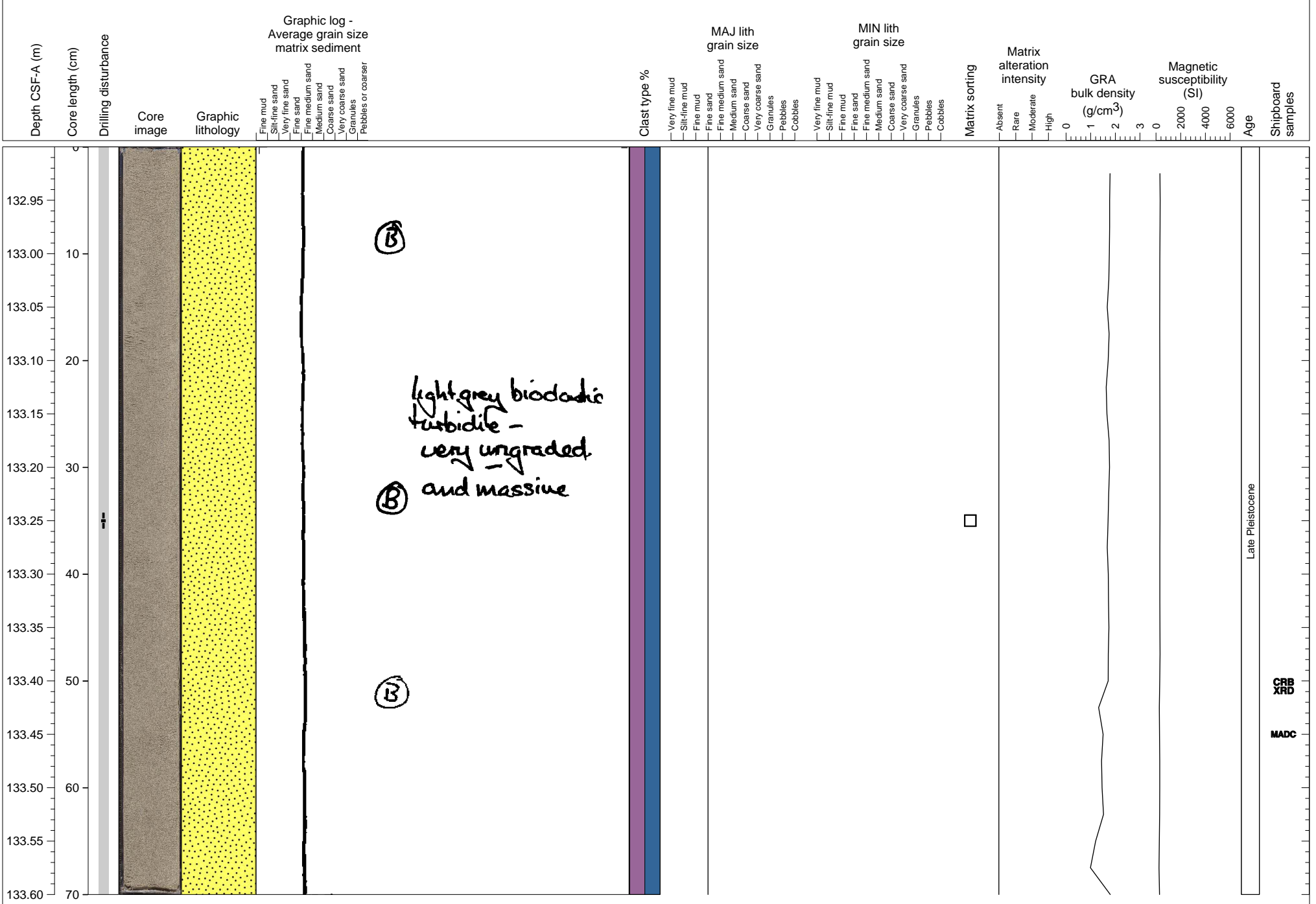
Volcanic ash layers (2-32 cm) sit sandwiched between hemipelagic carbonate ooze. Ash layers are alternation of silt and fine mud, which have no carbonate ooze among them, thus they may be derived from continuous volcanic eruptions.



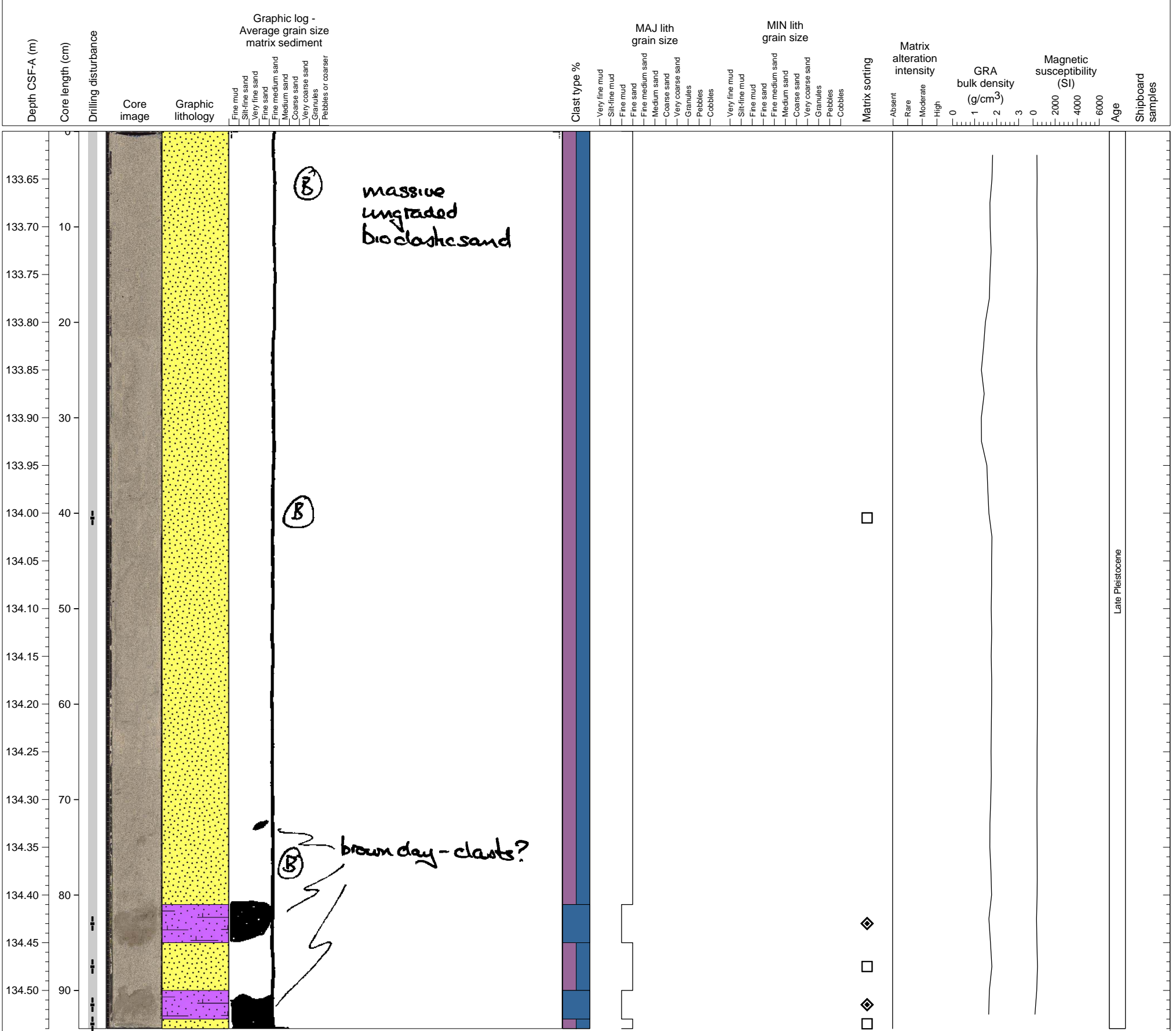
Slightly heterogeneous hemipelagic carbonate clay with very poorly sorted dark gray colored (andesitic) volcanoclastic sandy patches (ash ?).



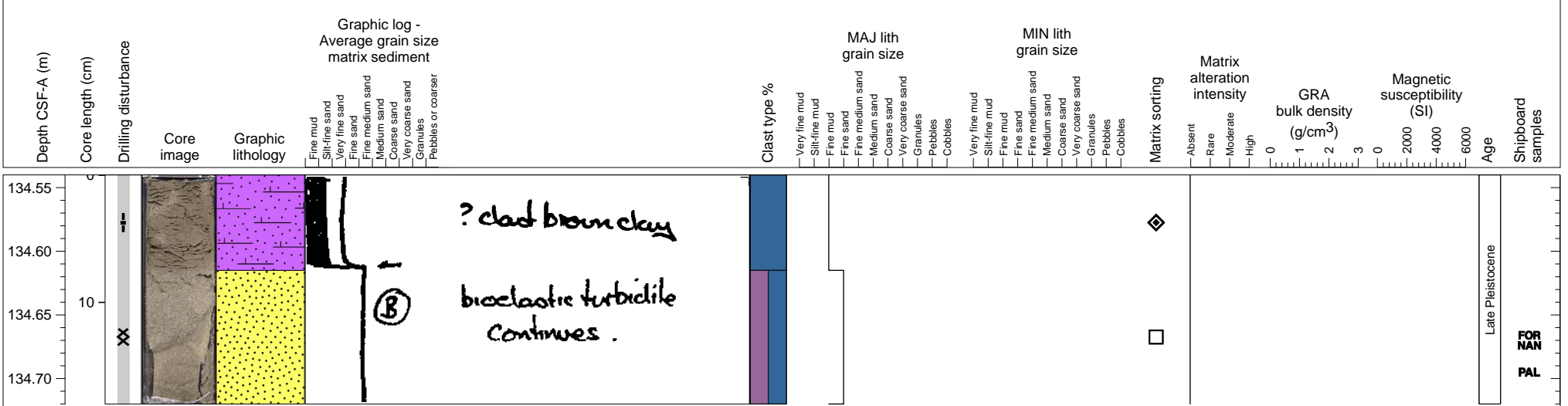
Massive bioclastic sand with igneous and biogenic clasts.



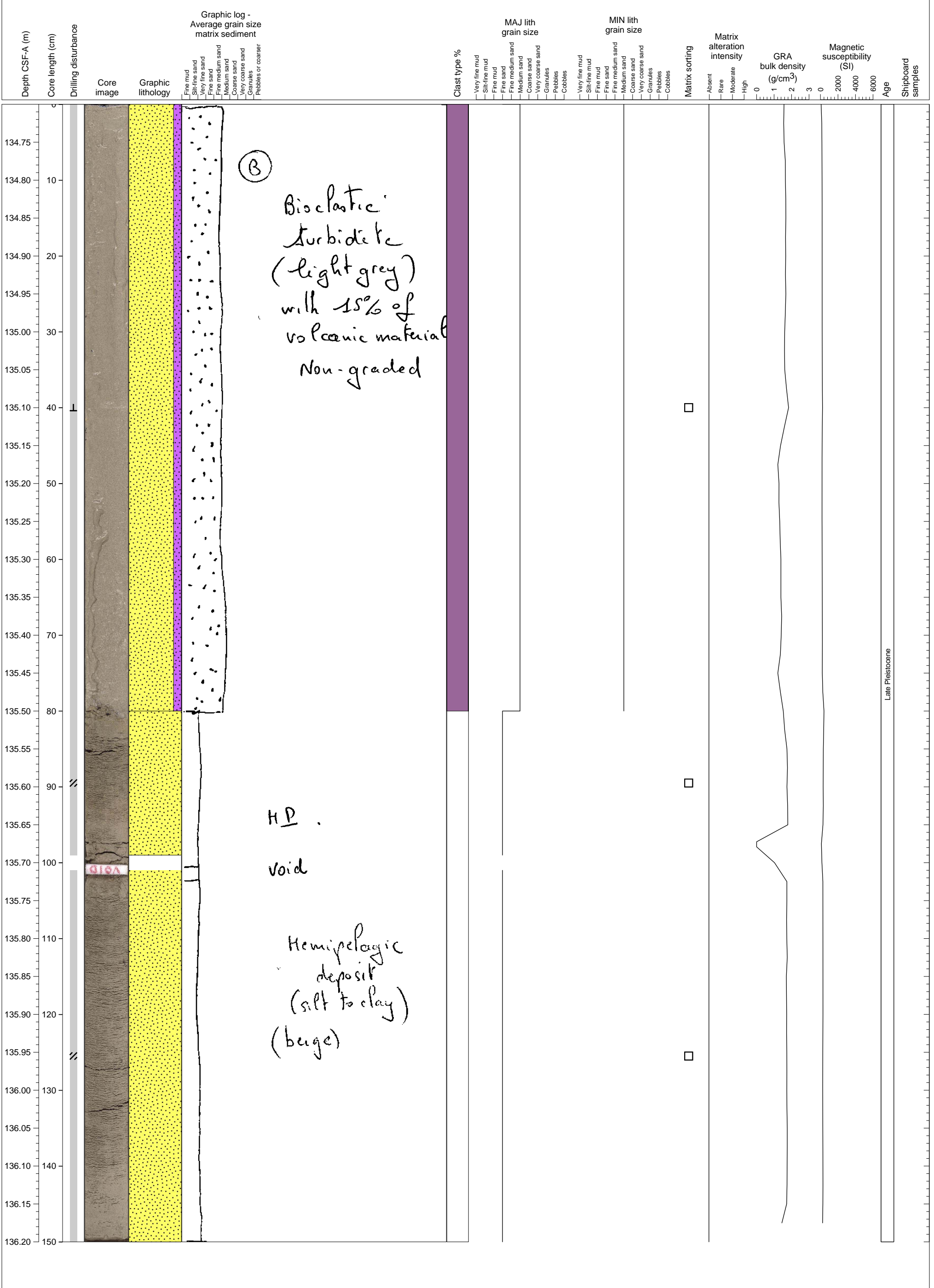
Alternating layers of bioclastic sand and volcanoclastic mud.



Interlayered volcanoclastic mud and bioclastic sand.



Upper 80 cm is a mixed bioclastic/volcaniclastic sand. Rest is calcareous sand/hemipelagic sediment. Both massive, well sorted.



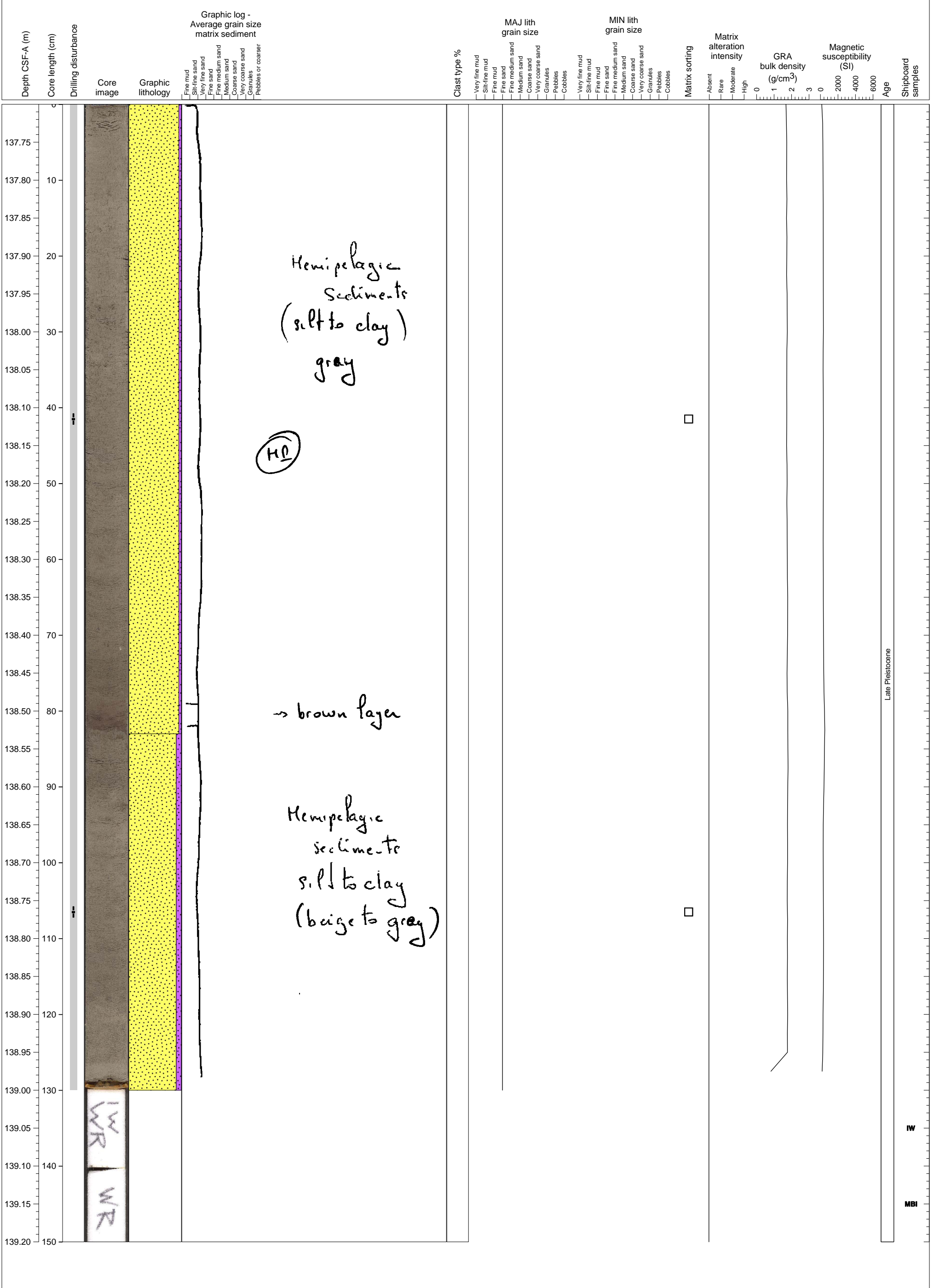
③
 Bioclastic
 turbidite
 (light grey)
 with 15% of
 volcanic material
 Non-graded

HP
 void

Hemipelagic
 deposit
 (silt to clay)
 (beige)

Late Pleistocene

Mix bioclastic/volcaniclastic sands, predominantly bioclastic.



Hemipelagic
Sediments
(silt to clay)
gray

HP

→ brown layer

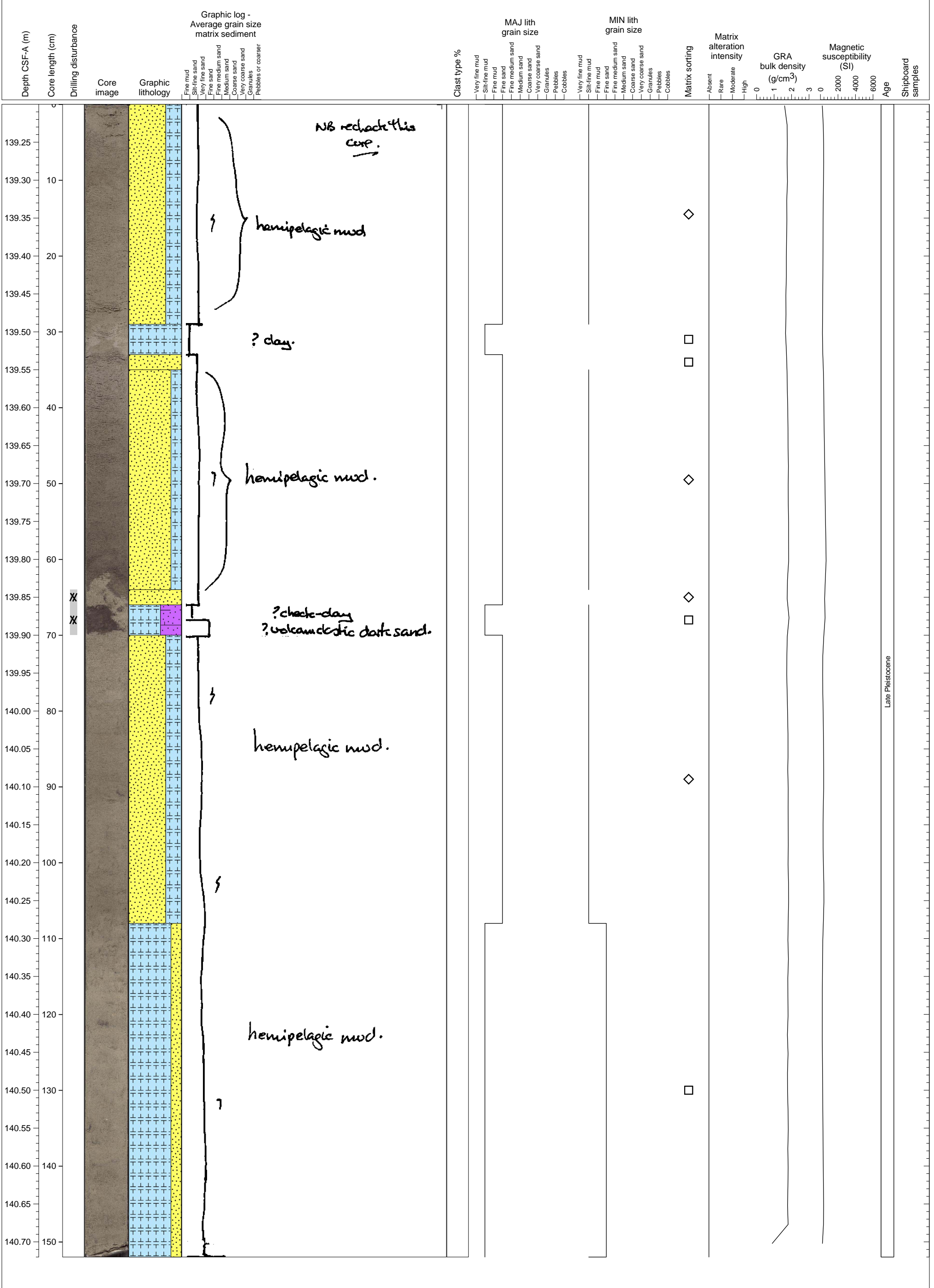
Hemipelagic
sediments
silt to clay
(beige to gray)

Late Pleistocene

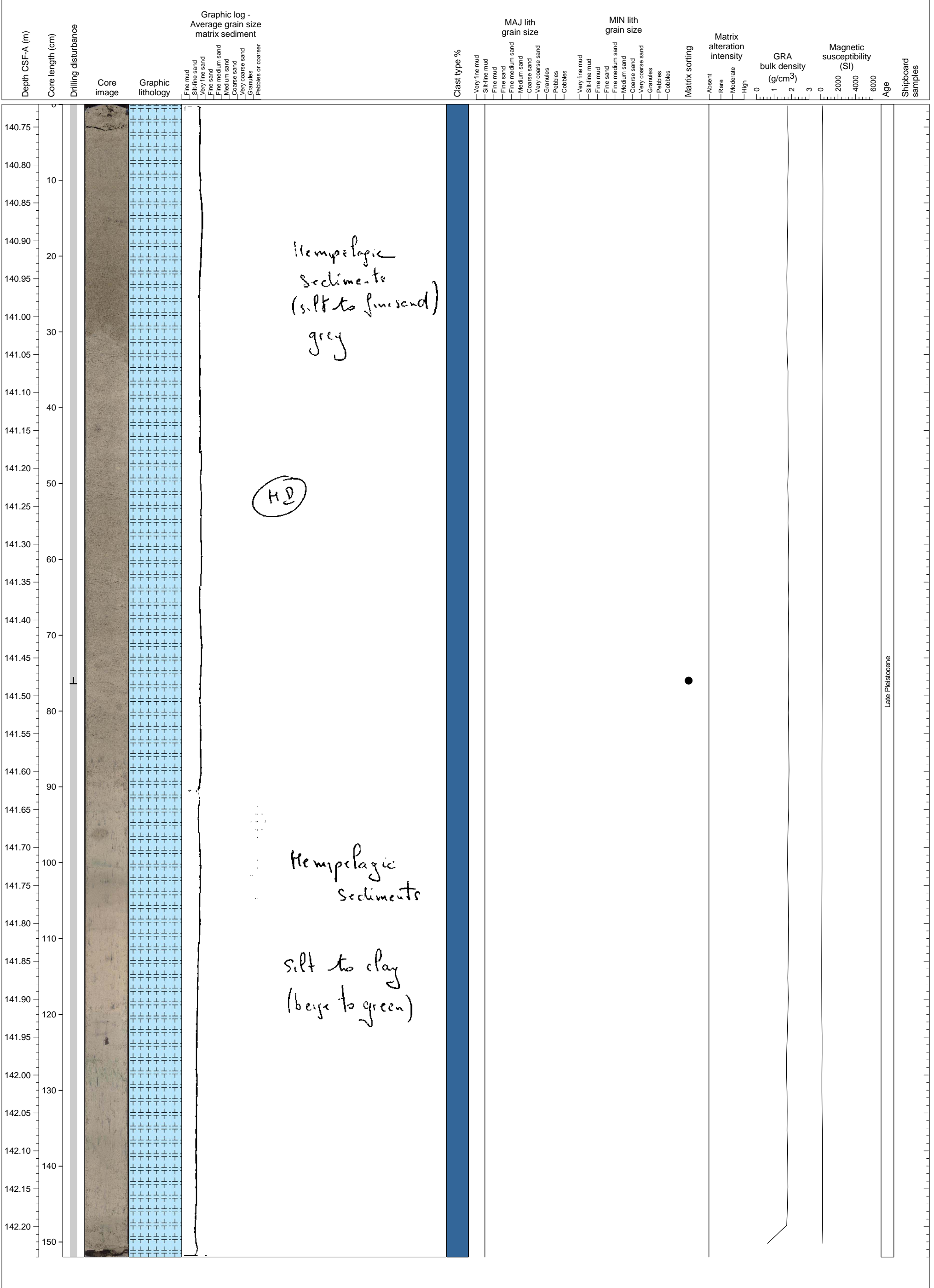
IW

MBI

Hemipelagic sediments; diffuse laminae, thin alternation of sand and silt.



Hemipelagic sediment.



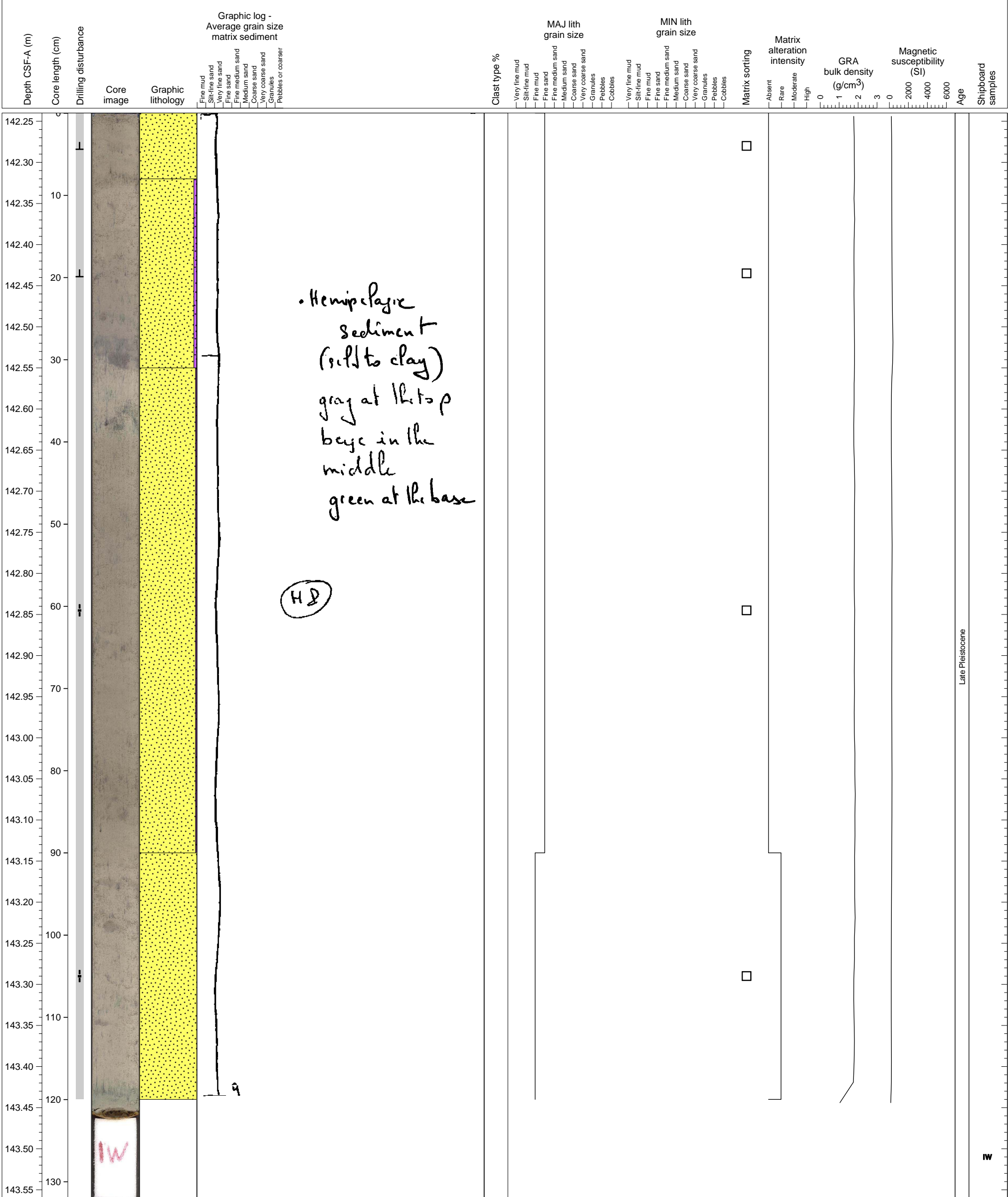
Hemipelagic
Sediments
(silt to fine sand)
grey

HD

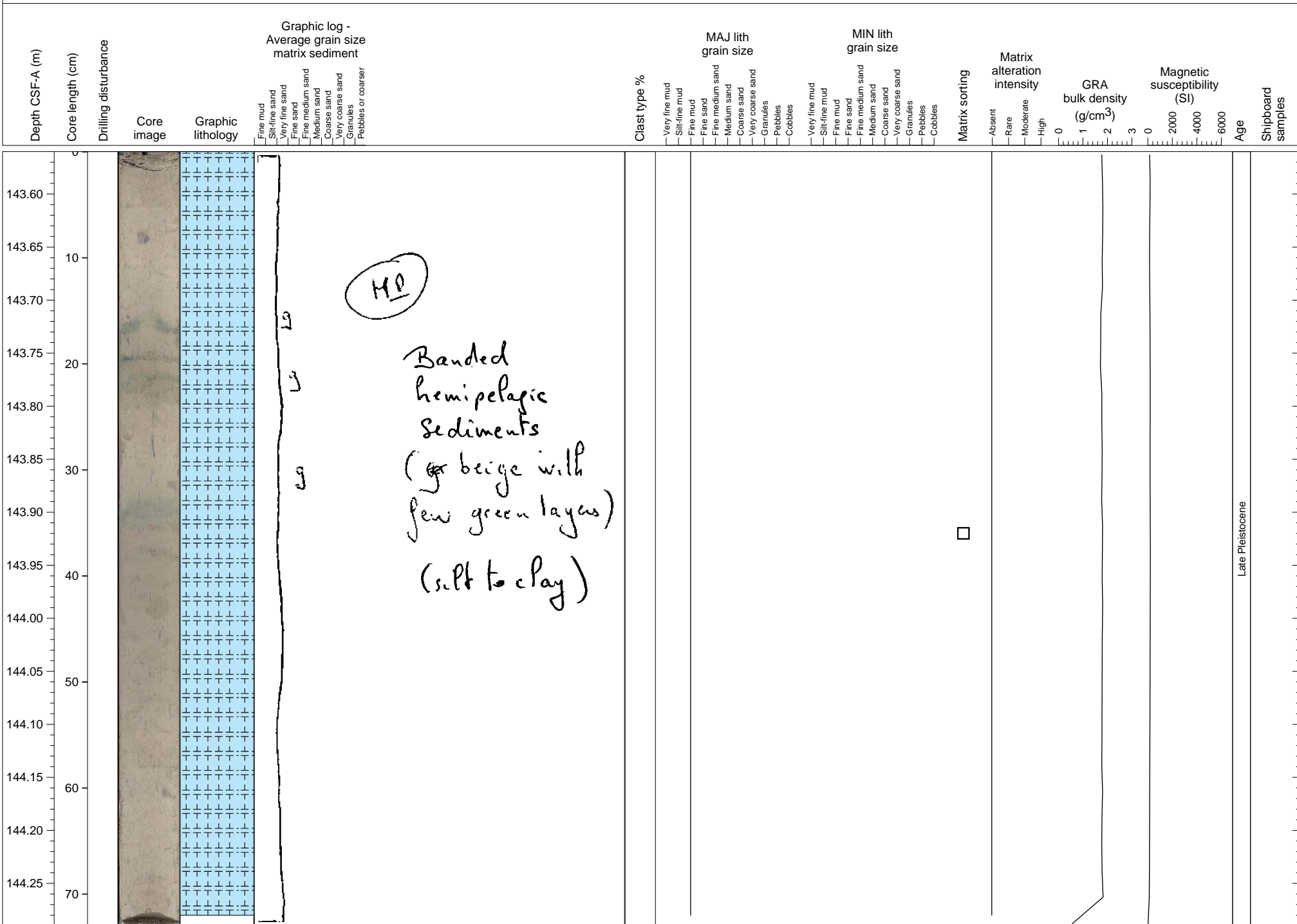
Hemipelagic
Sediments
silt to clay
(beige to green)

Late Pleistocene

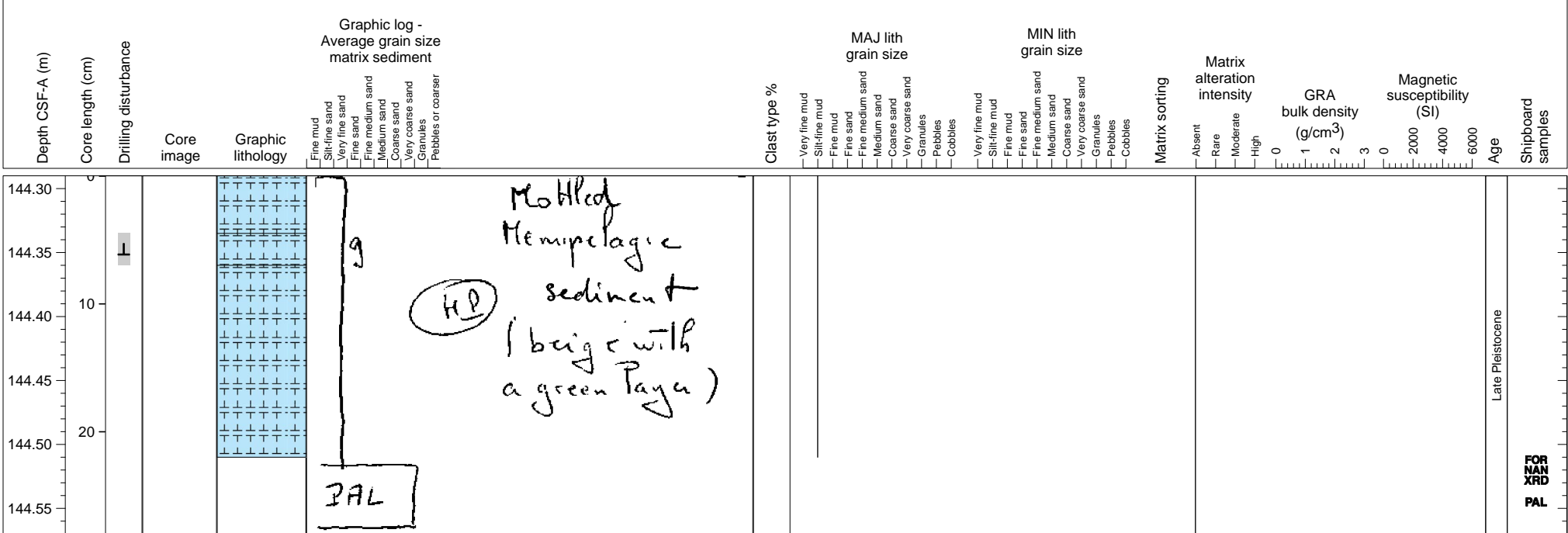
Mostly sandy hemipelagic sediments with two mixed bio/volcaniclastic sands in middle.



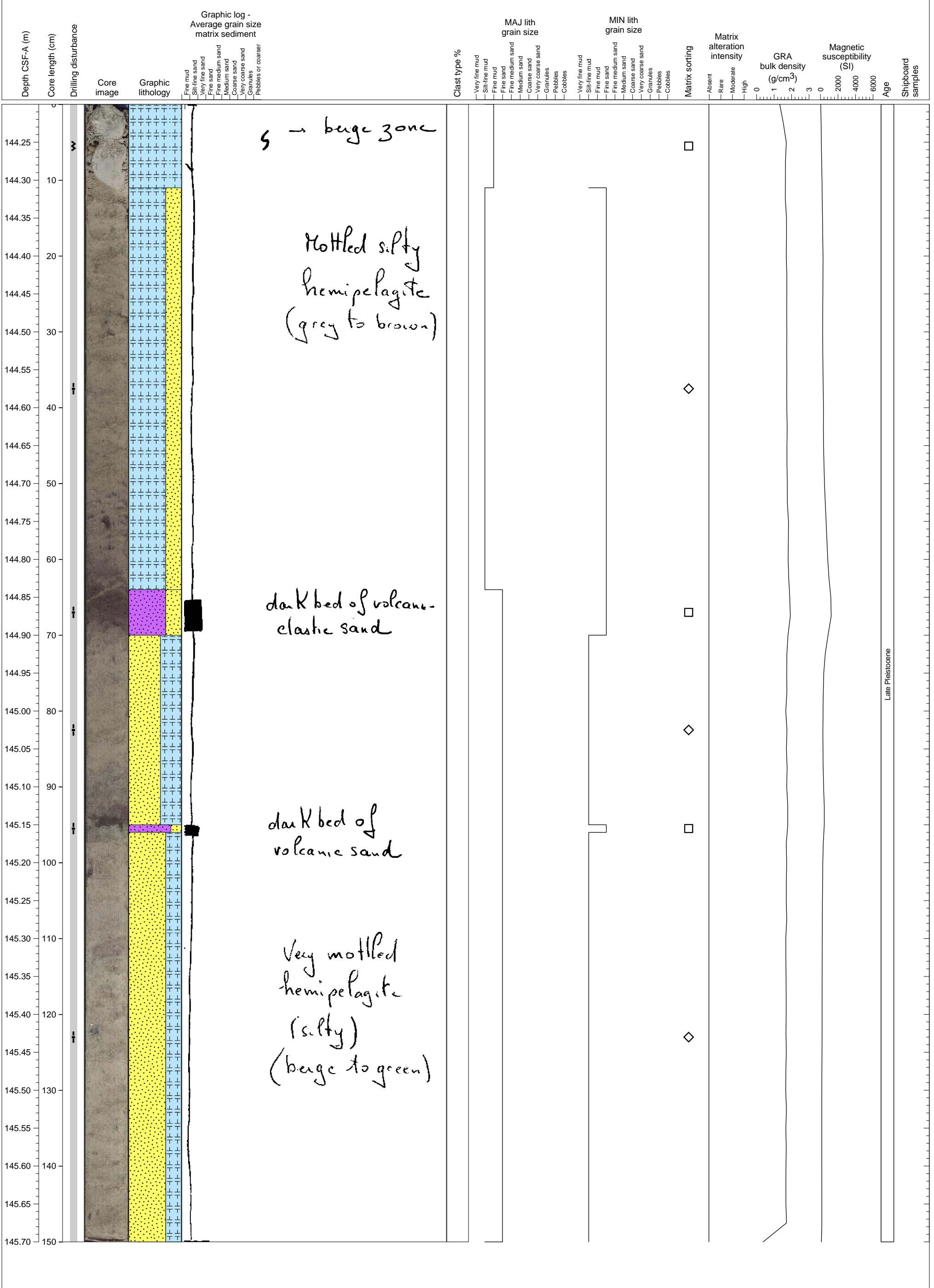
Hemipelagic ooze with several thin green layers intercalation at horizon of 17 cm, 19.5 cm, 22 cm, 34 cm.



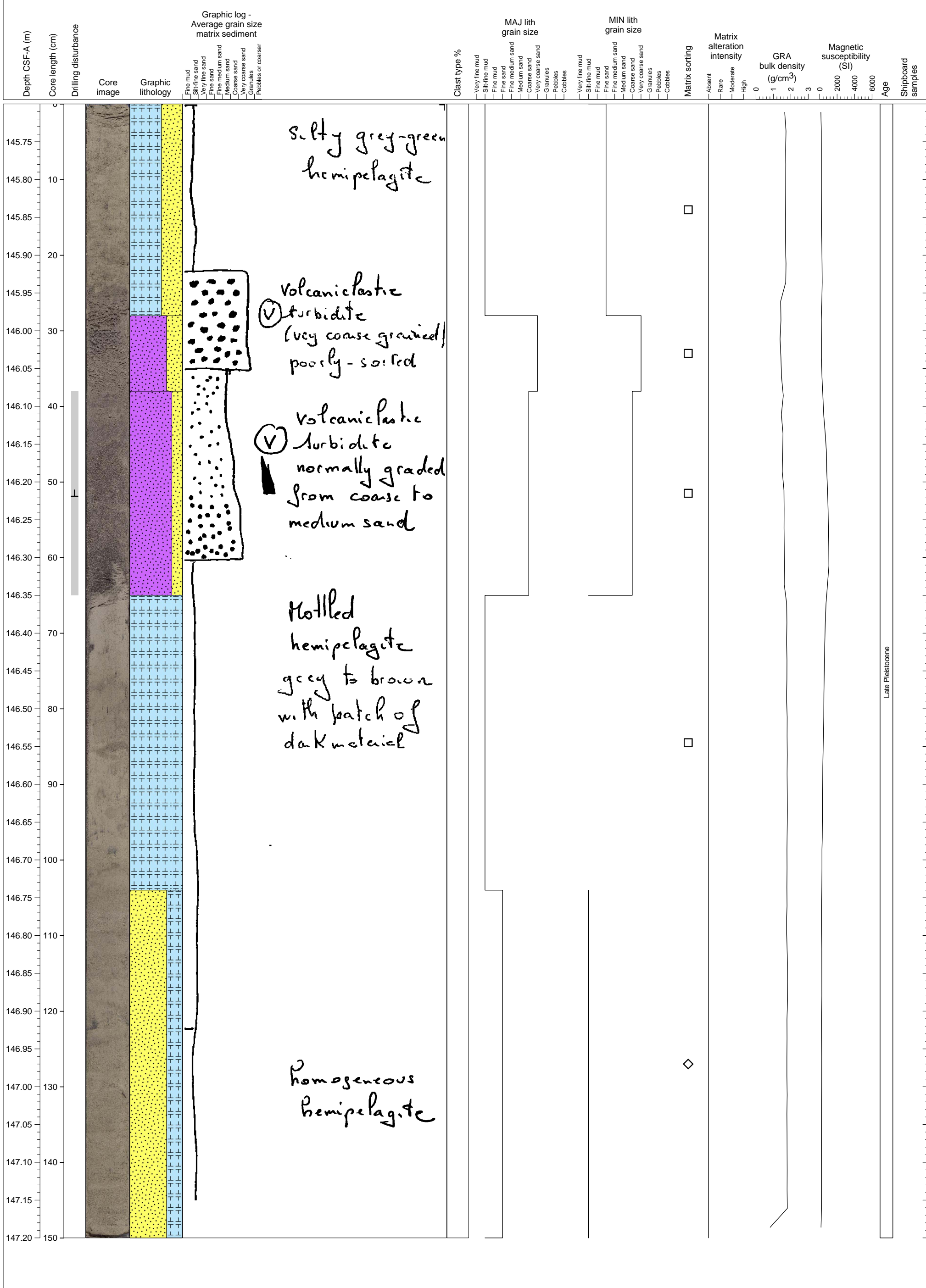
Hemipelagic sediment with some thin black streaks on surface. Slight disturbance due to cutting.



Weakly laminated hemipelagic sediments with thin (less than 6 cm thick) volcanoclastic sediment layers.

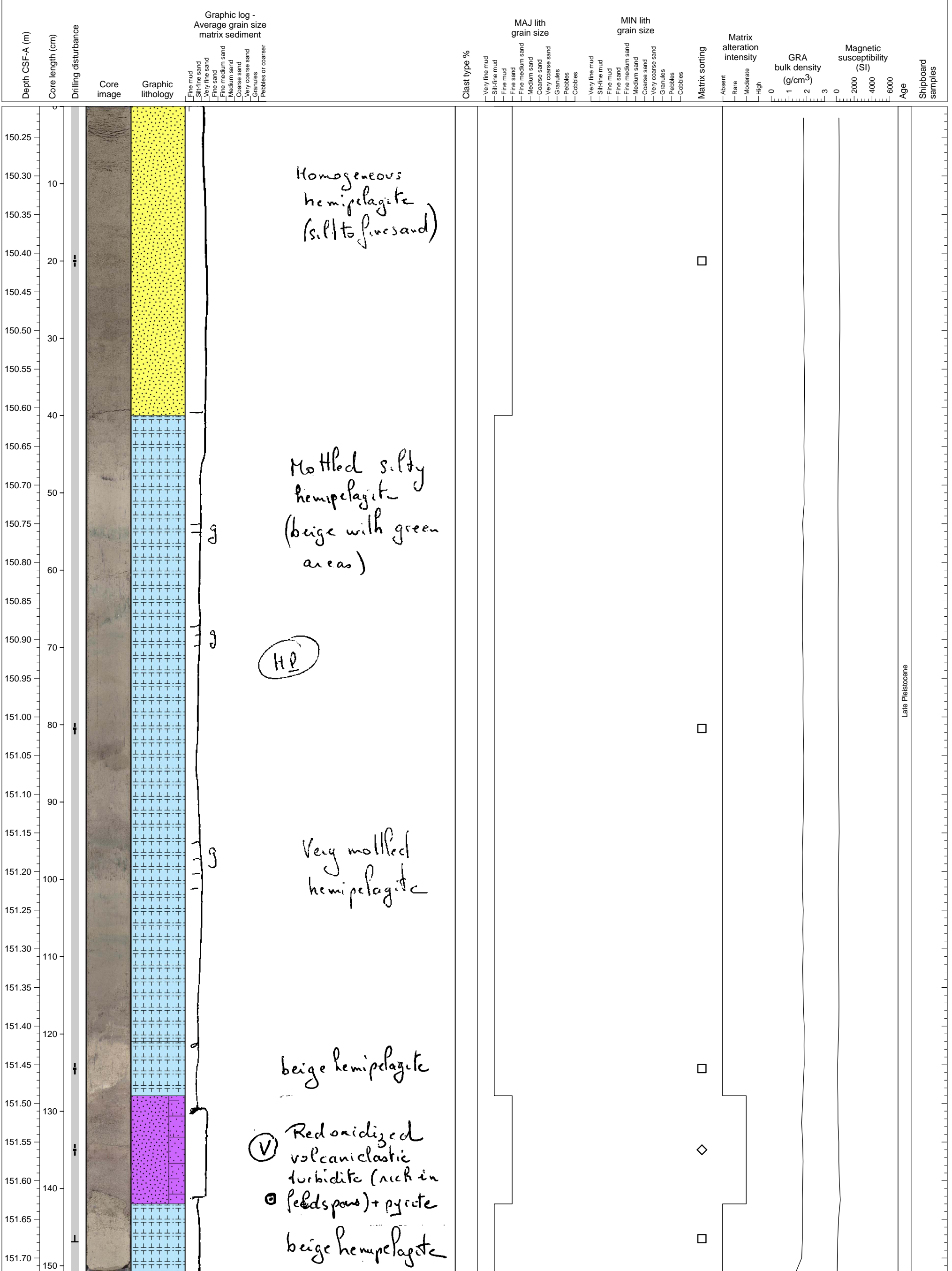


Hemipelagic sediments, diffuse alternation of silt and sand, intercalated with turbidite.



Late Pleistocene

Weakly laminated hemipelagic sediments intercalated by oxidized volcanoclastic turbidite layer (14 cm thick).



Homogeneous hemipelagite (silt to finesand)

Mottled silty hemipelagite (beige with green areas)

HP

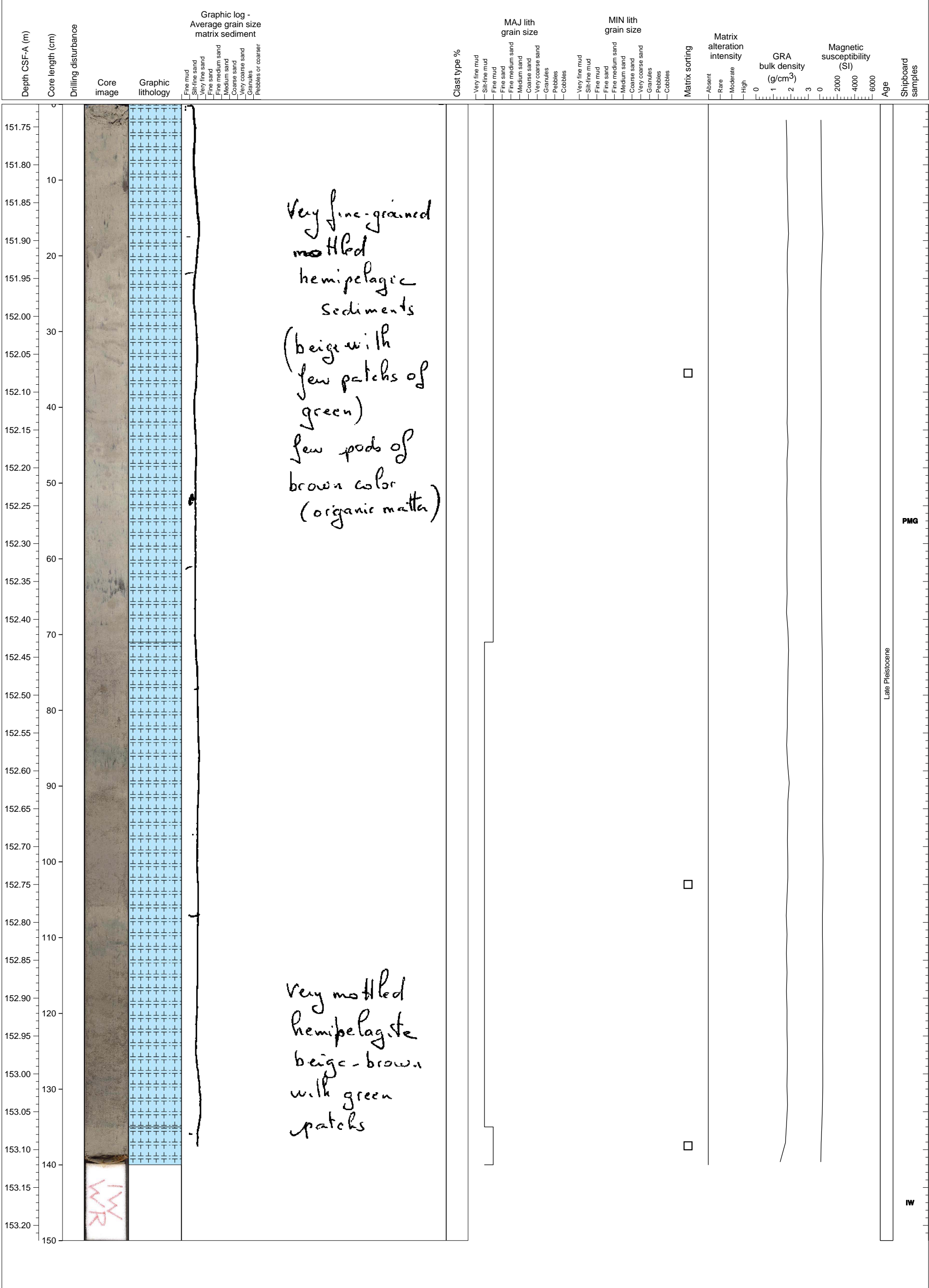
Very mottled hemipelagite

beige hemipelagite

Ⓟ Red oxidized volcanoclastic turbidite (rich in pebbles) + pyrite
beige hemipelagite

Late Pleistocene

Grey colored hemipelagic sediments with intercalations of green patch or layers.



Very fine-grained mottled hemipelagic sediments (beige with few patches of green) few pods of brown color (organic matter)

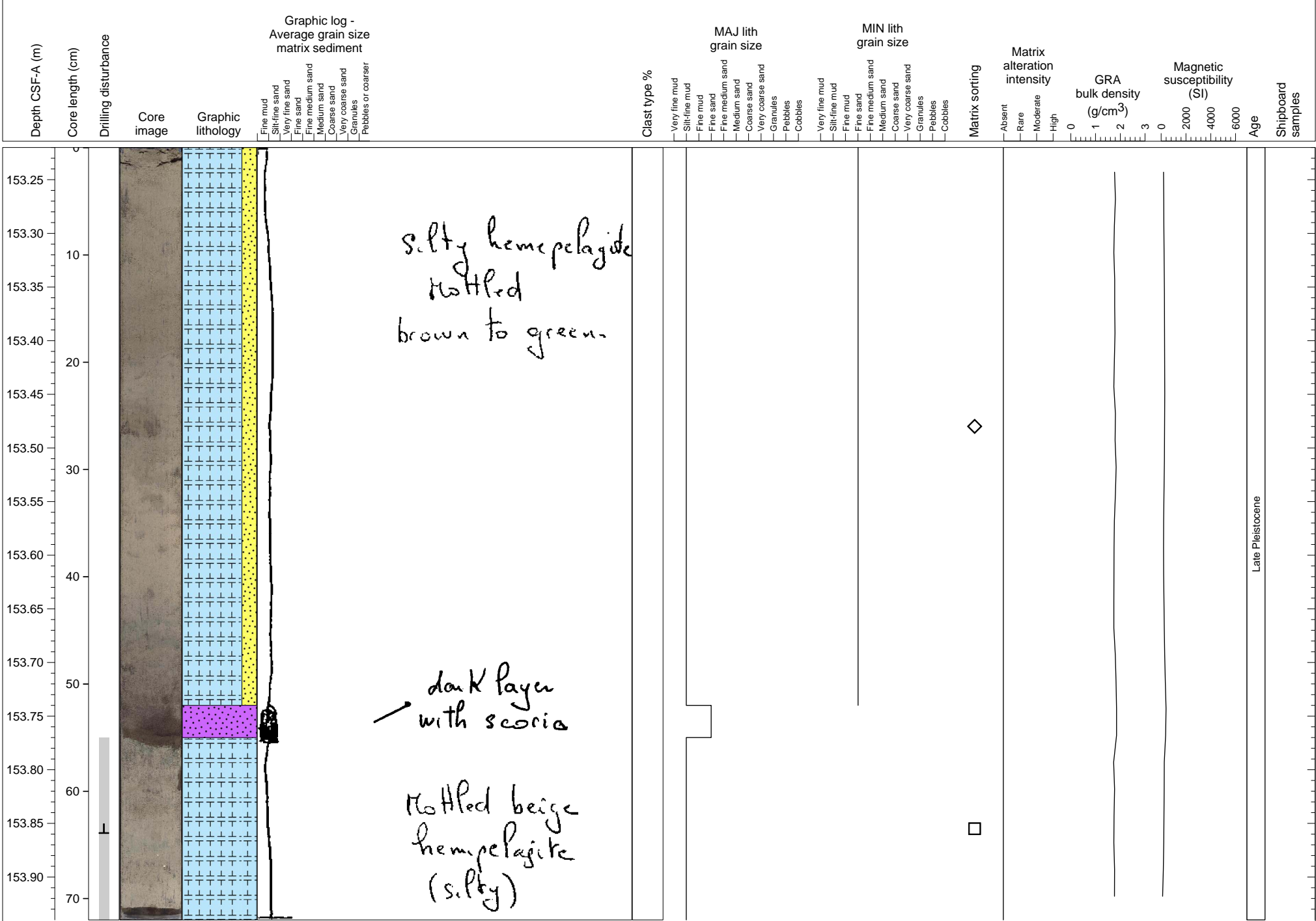
Very mottled hemipelagic beige-brown with green patches

Late Pleistocene

PMG

IW

Hemipelagic sediments with one scoriaceous layer (3cm thick).



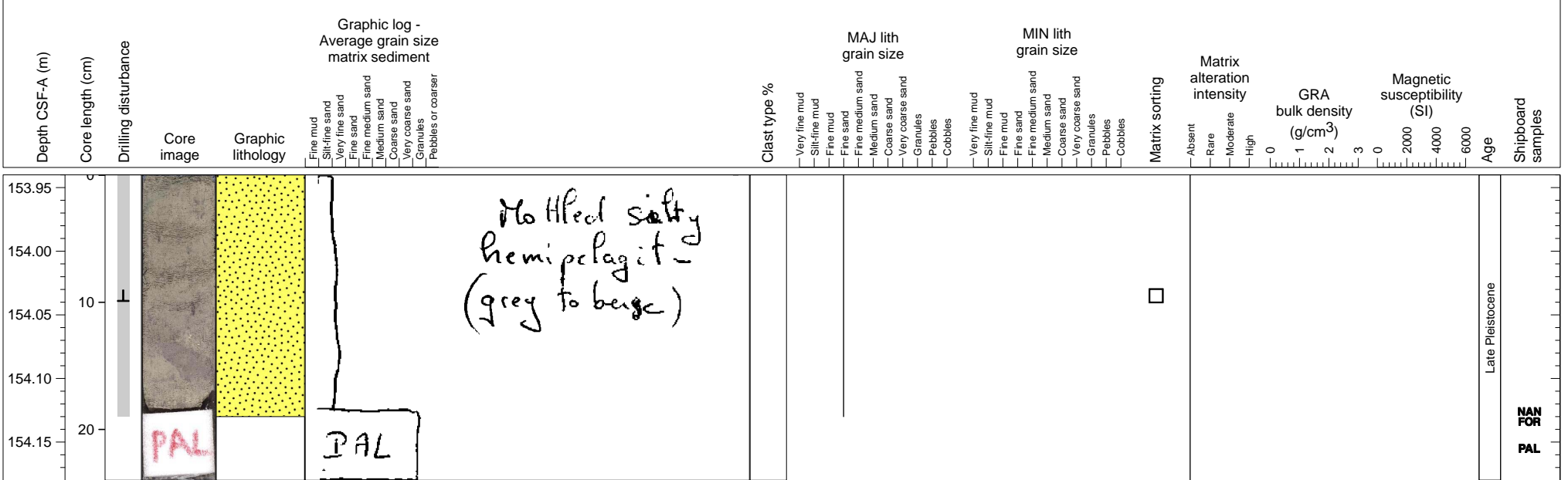
silty hemipelagite
mottled
brown to green

dark layer
with scoria

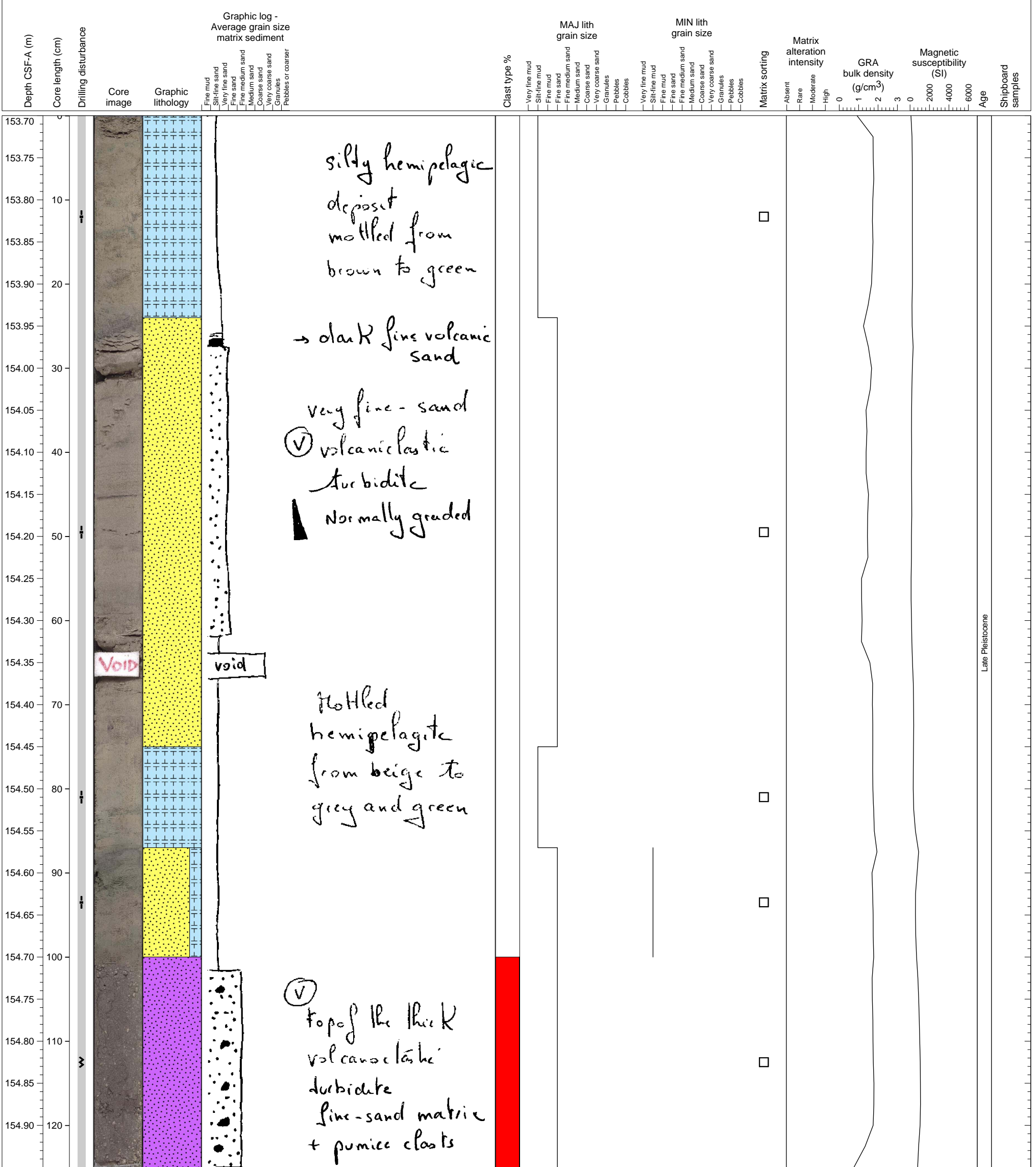
mottled beige
hemipelagite
(silty)

Late Pleistocene

Hemiplegic sediment with patches of organic sediment and mottled coloration, from grey-brown to brown.



Weakly laminated hemipelagic sediments (>100 cm thick) underlain by volcanoclastic sand with granular pumice layer of > 26 cm thick.



silty hemipelagic deposit mottled from brown to green

→ dark fine volcanic sand

very fine - sand
 (V) volcaniclastic turbidite
 ▲ Normally graded

mottled hemipelagite from beige to grey and green

(V) top of the thick volcanoclastic turbidite fine-sand matrix + pumice clasts

VOID

void

Late Pleistocene

Soupy, grey colored volcaniclastic fine sand, with white pumice clasts (2 mm-2 cm size).



Volcaniclastic turbidite

Sandy matrix (fine sand) composed dominantly of crystals

Abundant (v) pumice clasts (few mm in size but some of them are → to 2 cm)

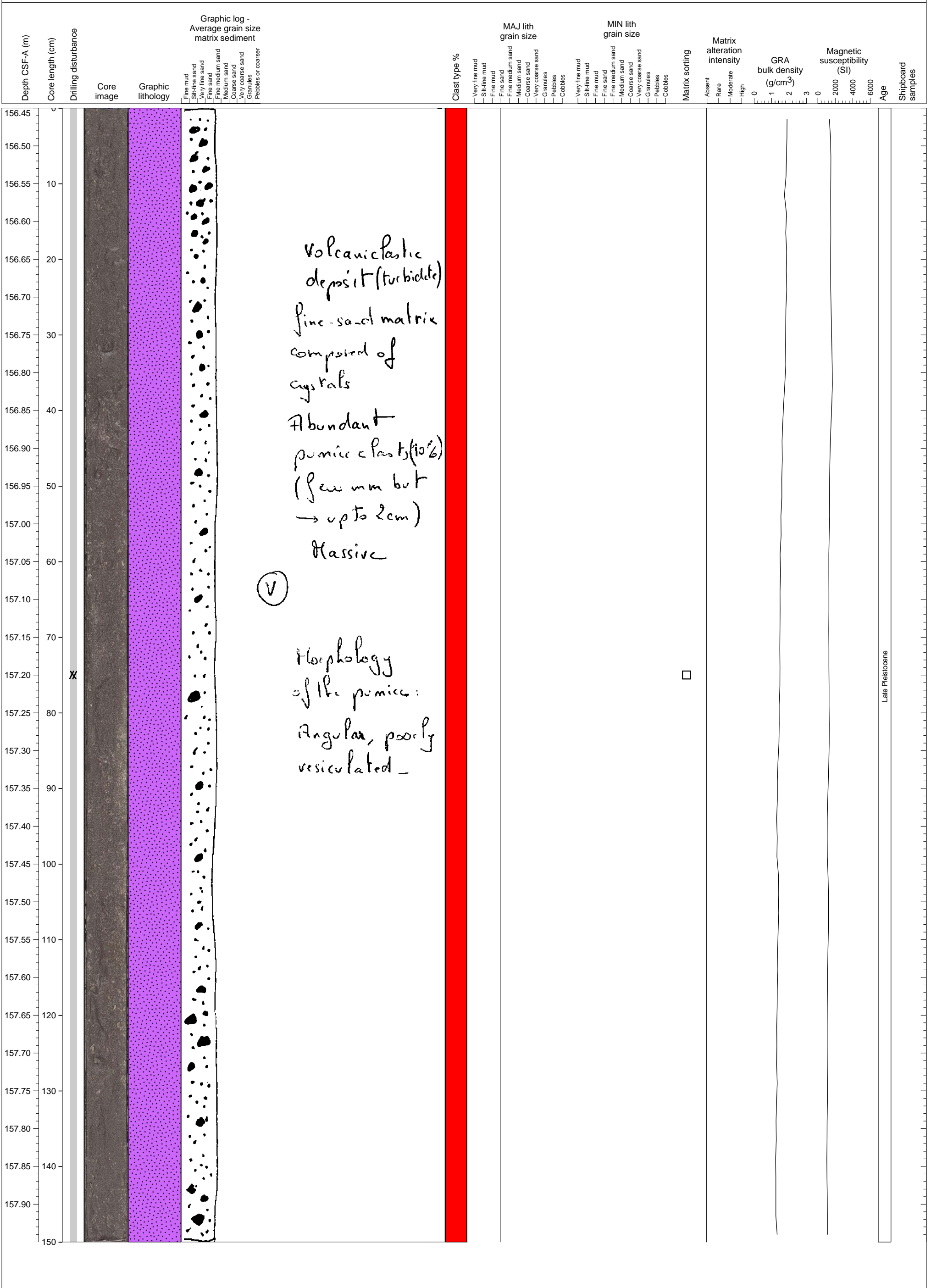
Most abundant pumice clasts at the top of the section

Not graded

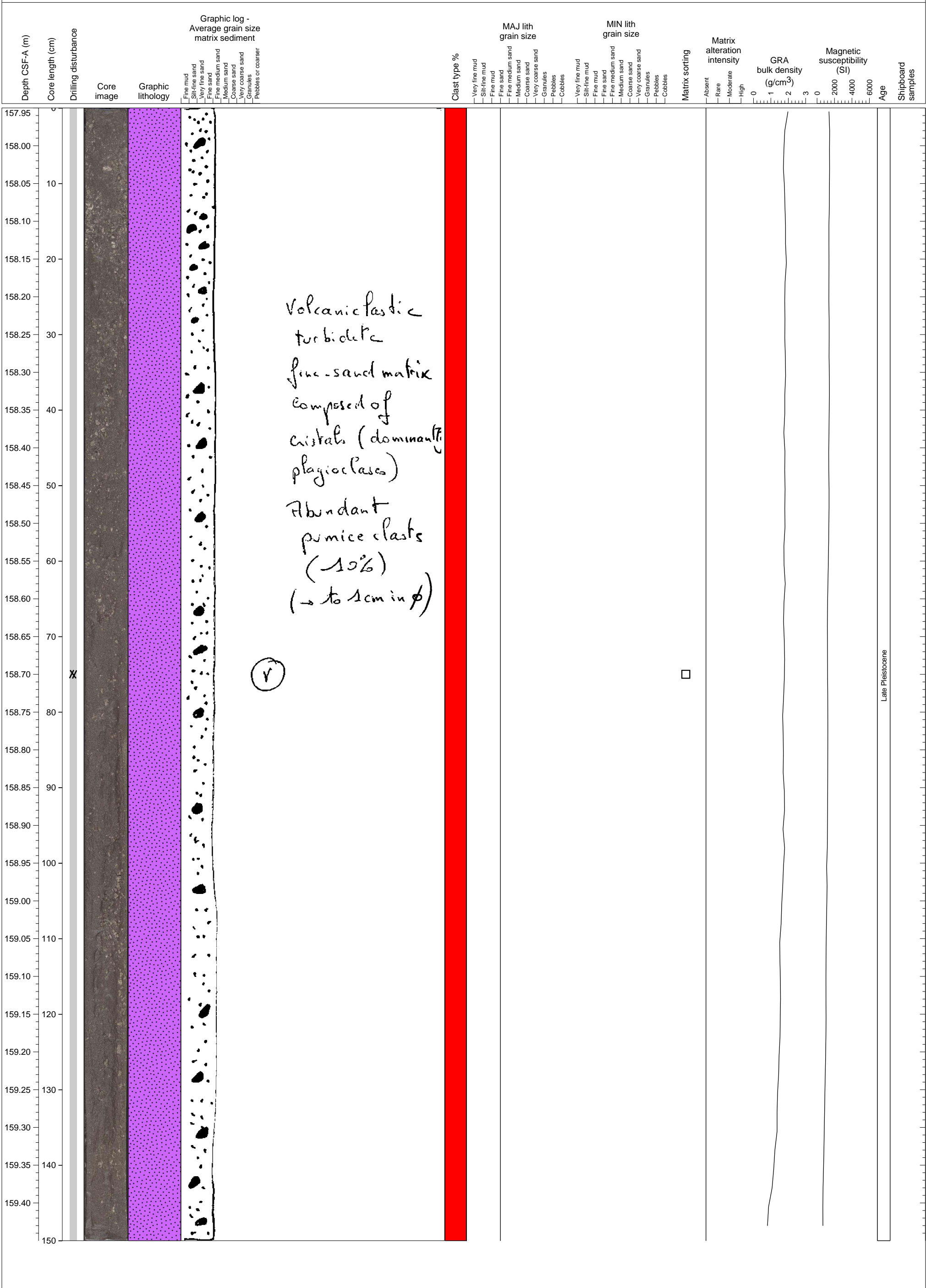
Concentration of pumice in some areas probably due to disturbance during the section cutting.

Late Pleistocene

Soupy, grey colored volcaniclastic fine sand, with white pumice clasts (5 mm-1 cm size).



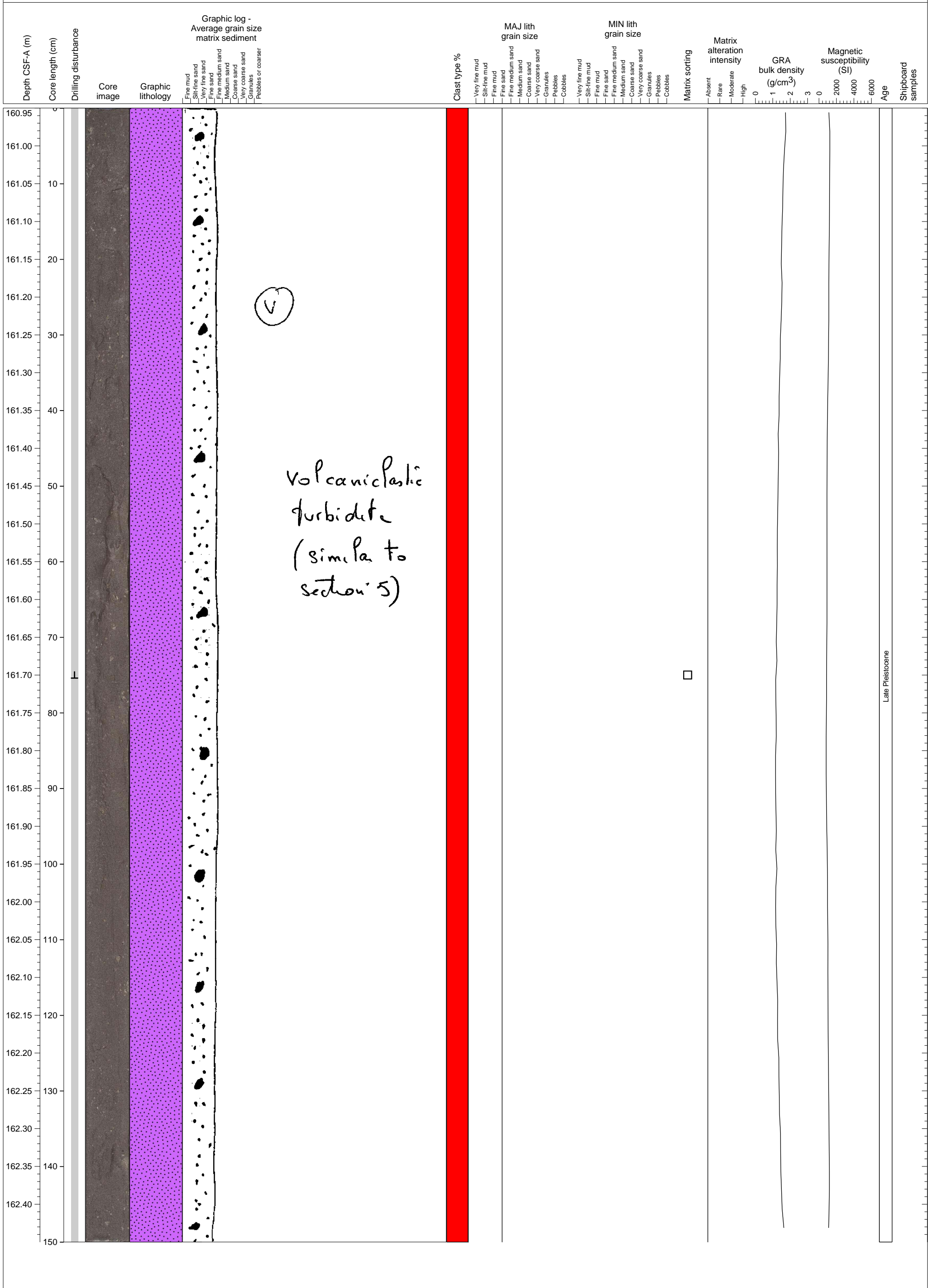
Volcaniclastic sand with 5 to 20% granular pumice clast.



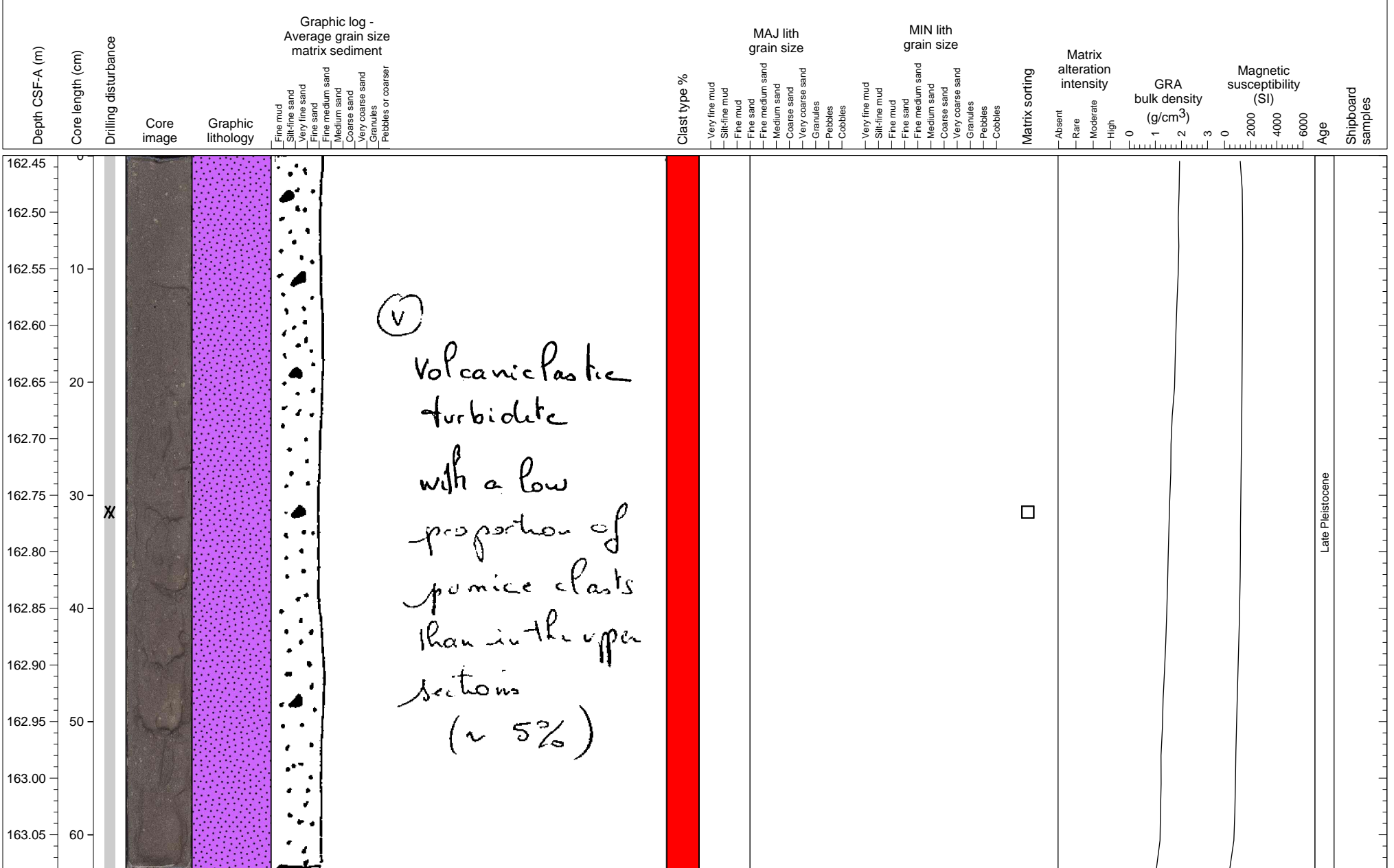
Volcaniclastic sand with 10% pumice clasts up to 15 mm.



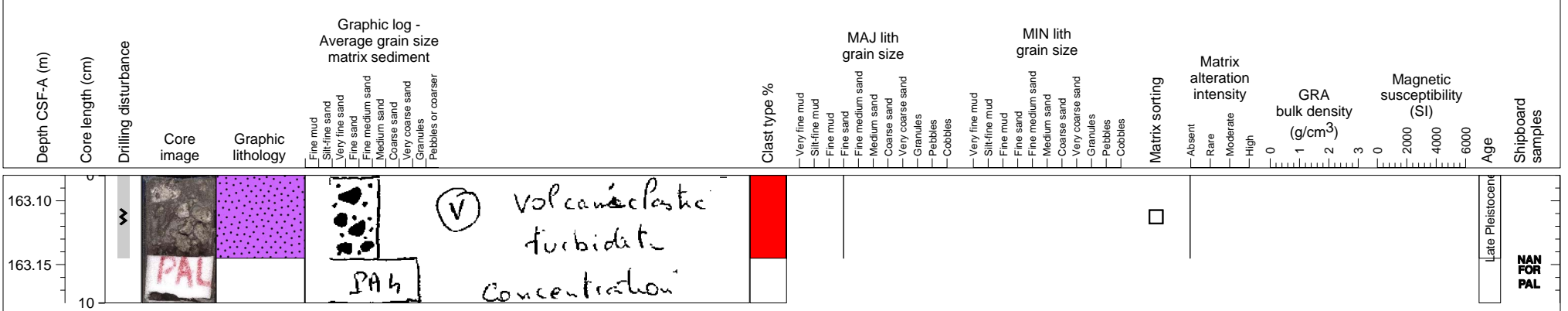
Volcaniclastic turbidite with pumice clasts up to 10 mm. Clasts poorly sorted.



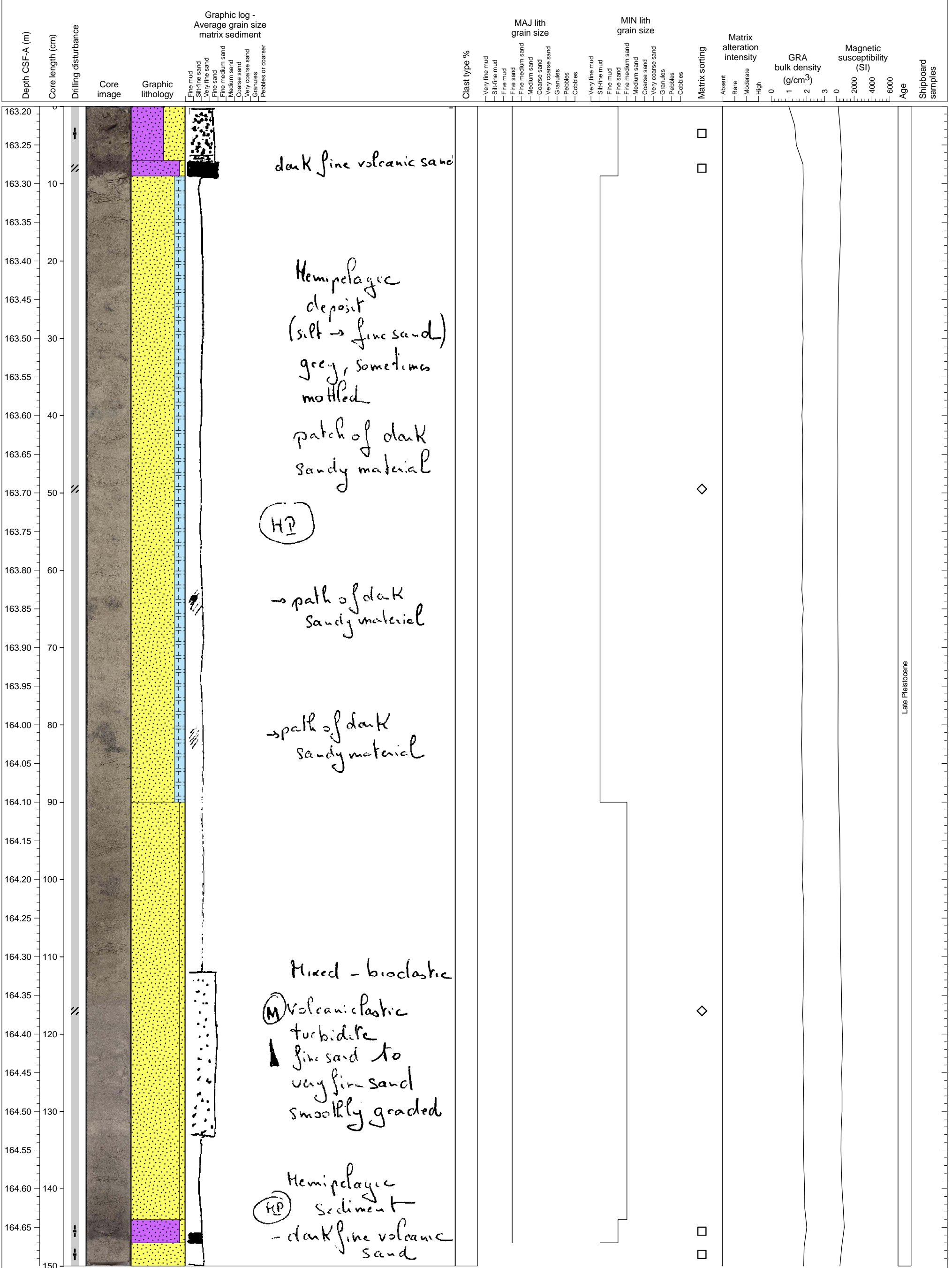
Soupy, grey colored volcaniclastic fine sand with white pumice clasts (up to 5mm size).



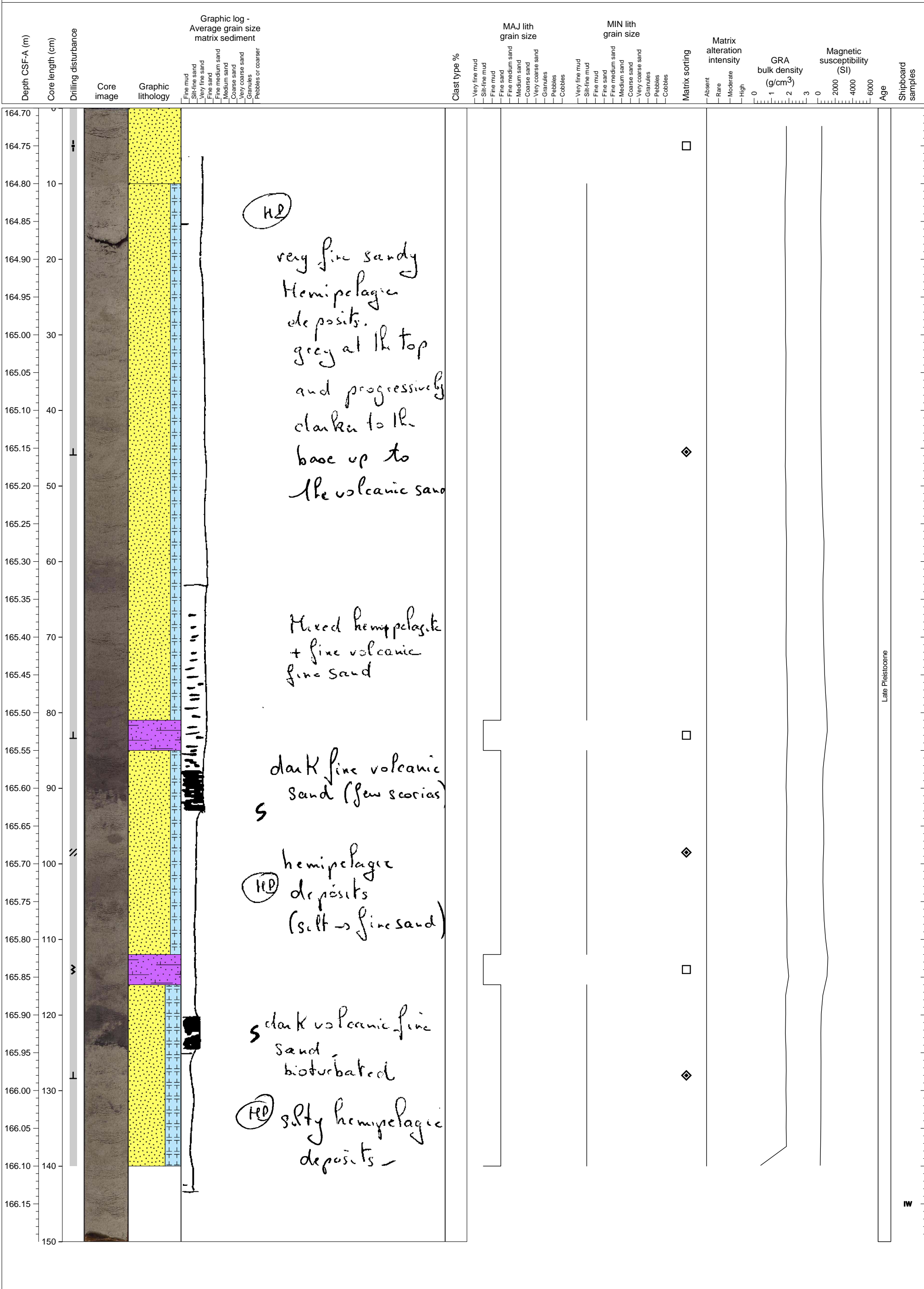
Soupy, grey colored volcaniclastic fine sand with white pumice clasts (1-3.5cm size).



Crudely laminated hemipelagic sediments with thin (<3 cm) minor volcanoclastic sediment layers.



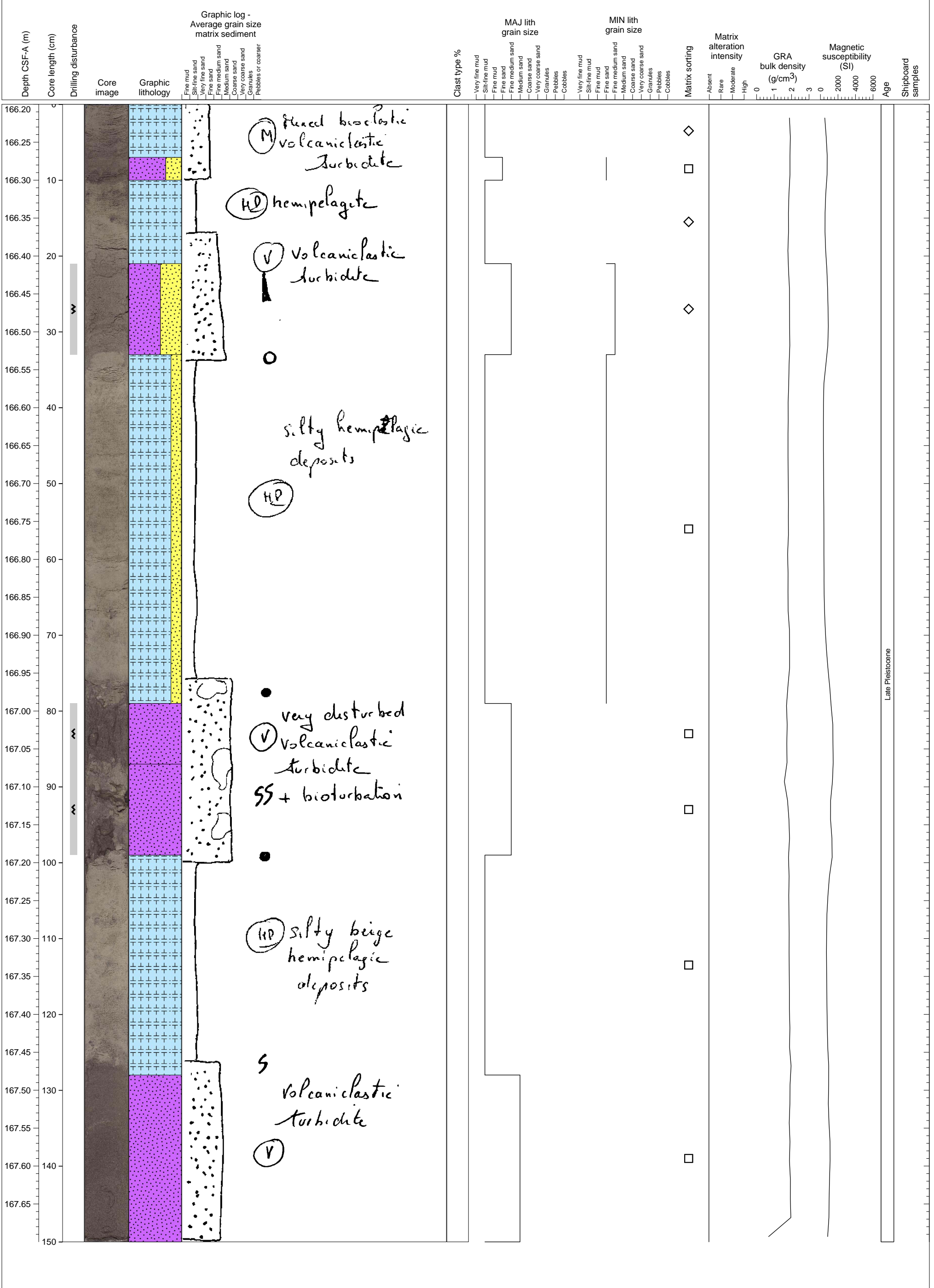
Crudely laminated hemipelagite intercalated by thin volcanoclastic silt layers.



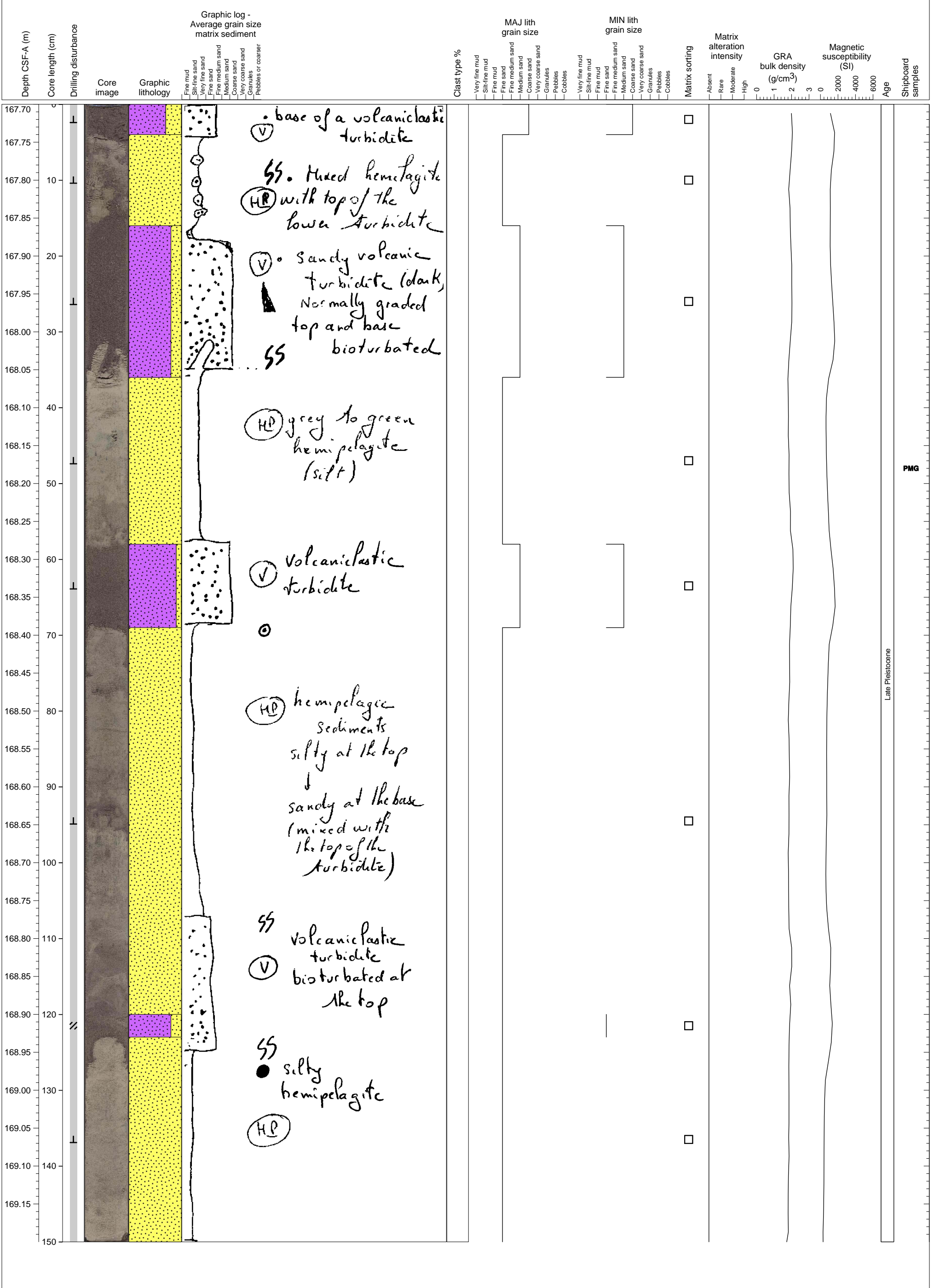
Late Pleistocene

1W

Hemipelagic fine sediments intercalated with volcanoclastic turbidites.



Interbedded hemipelagic sediments and mixed volcanoclastic-bioclastic turbidite sands.



• base of a volcanoclastic turbidite (V)

SS. Mixed hemipelagic (HP) with top of the lower turbidite

(V) • sandy volcanic turbidite (dark, Normally graded top and base bioturbated)

(HP) grey to green hemipelagic (silt)

(V) volcanoclastic turbidite

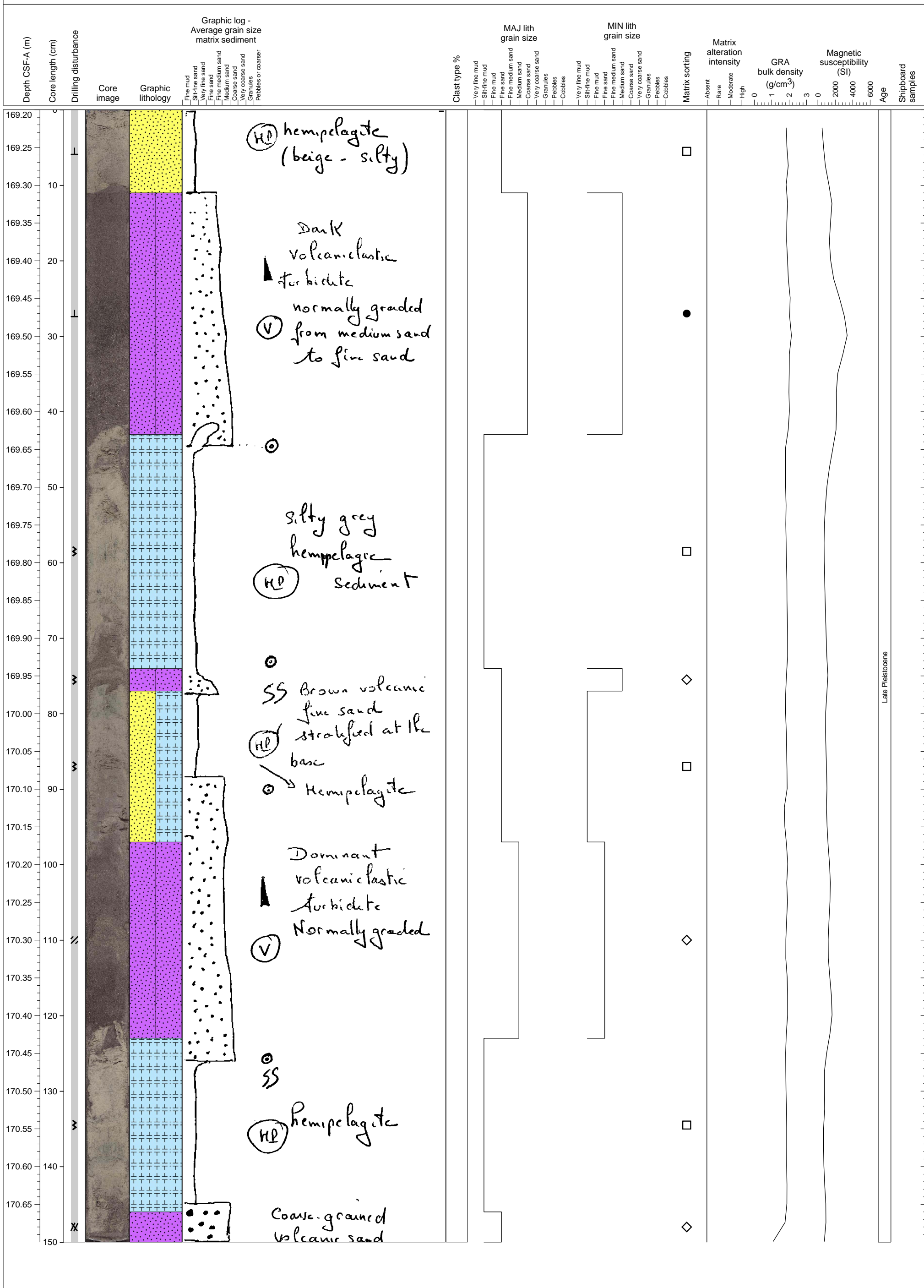
(HP) hemipelagic sediments silty at the top sandy at the base (mixed with the top of the turbidite)

SS volcanoclastic turbidite bioturbated at the top

SS silty hemipelagic (HP)

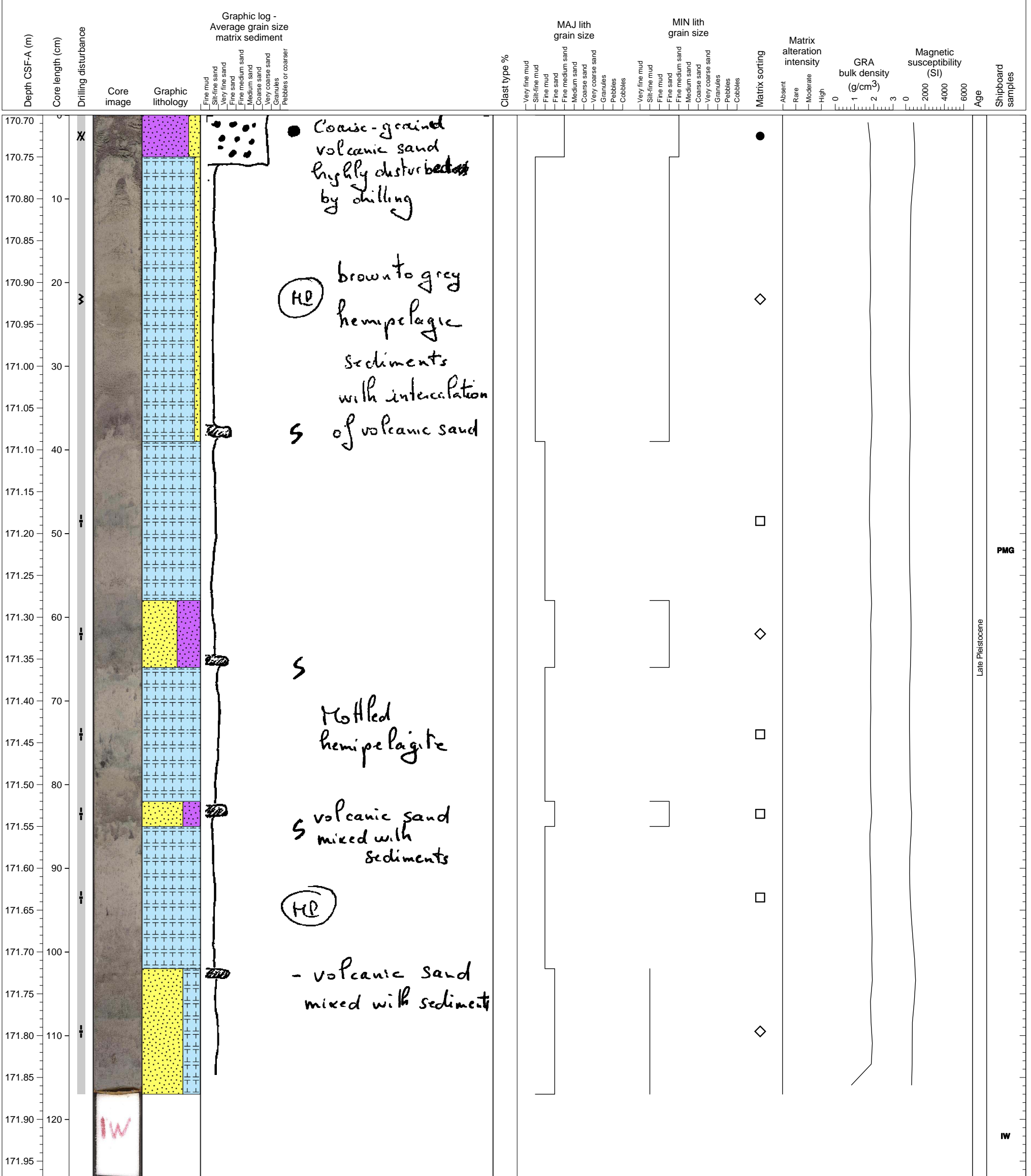
Late Pleistocene

Alternation of well sorted hemipelagites and poor to moderately sorted volcaniclastic turbidites.



Late Pleistocene

Hemipelagic fine sediments intercalated with thin turbidite (volcaniclastic and mixed), thin green layers are present.



● Coarse-grained volcanic sand highly disturbed by churning

○ HP brown to grey hemipelagic sediments with intercalation of volcanic sand

S

Mottled hemipelagic

S volcanic sand mixed with sediments

○ HP

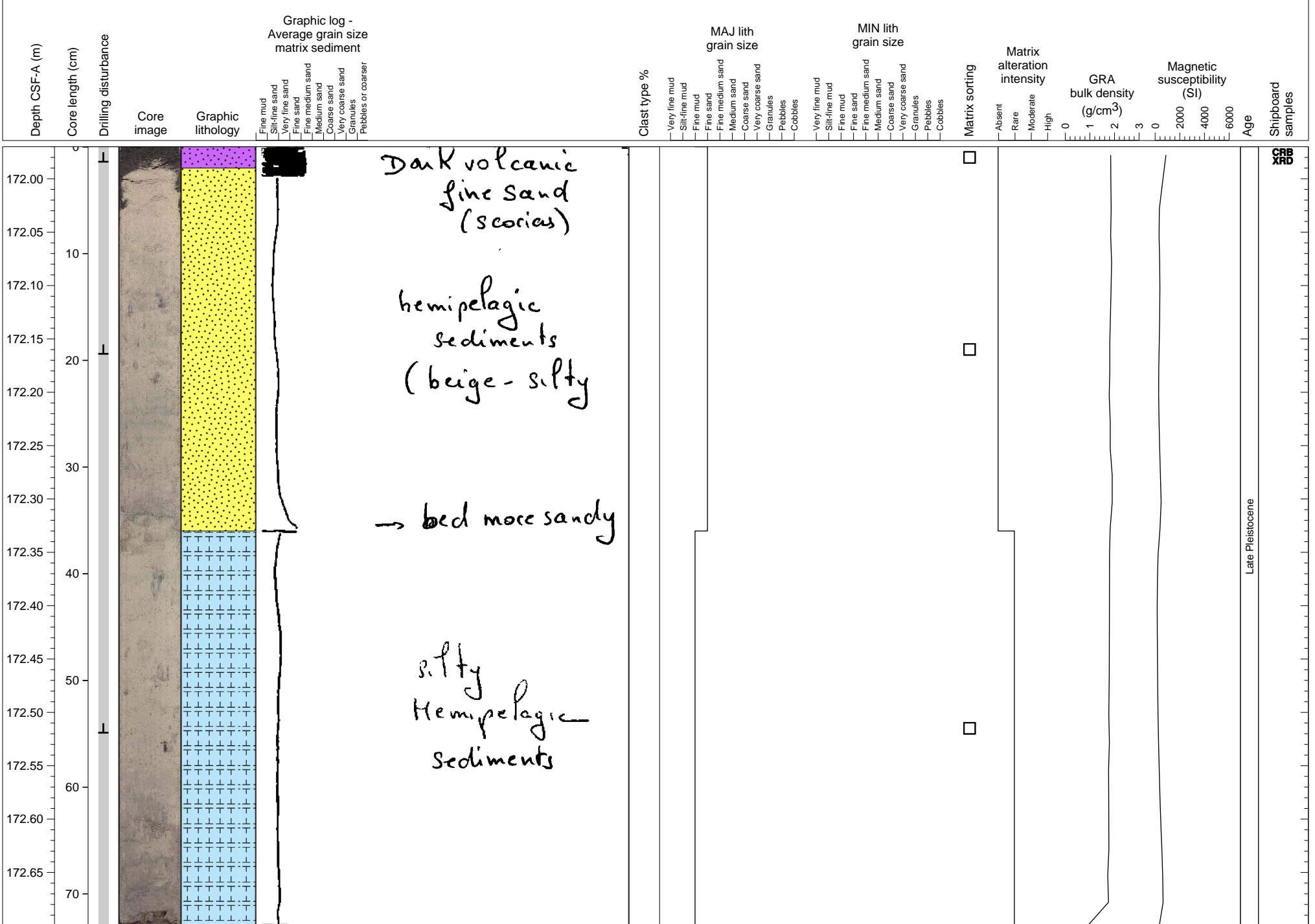
- volcanic sand mixed with sediments

PMG

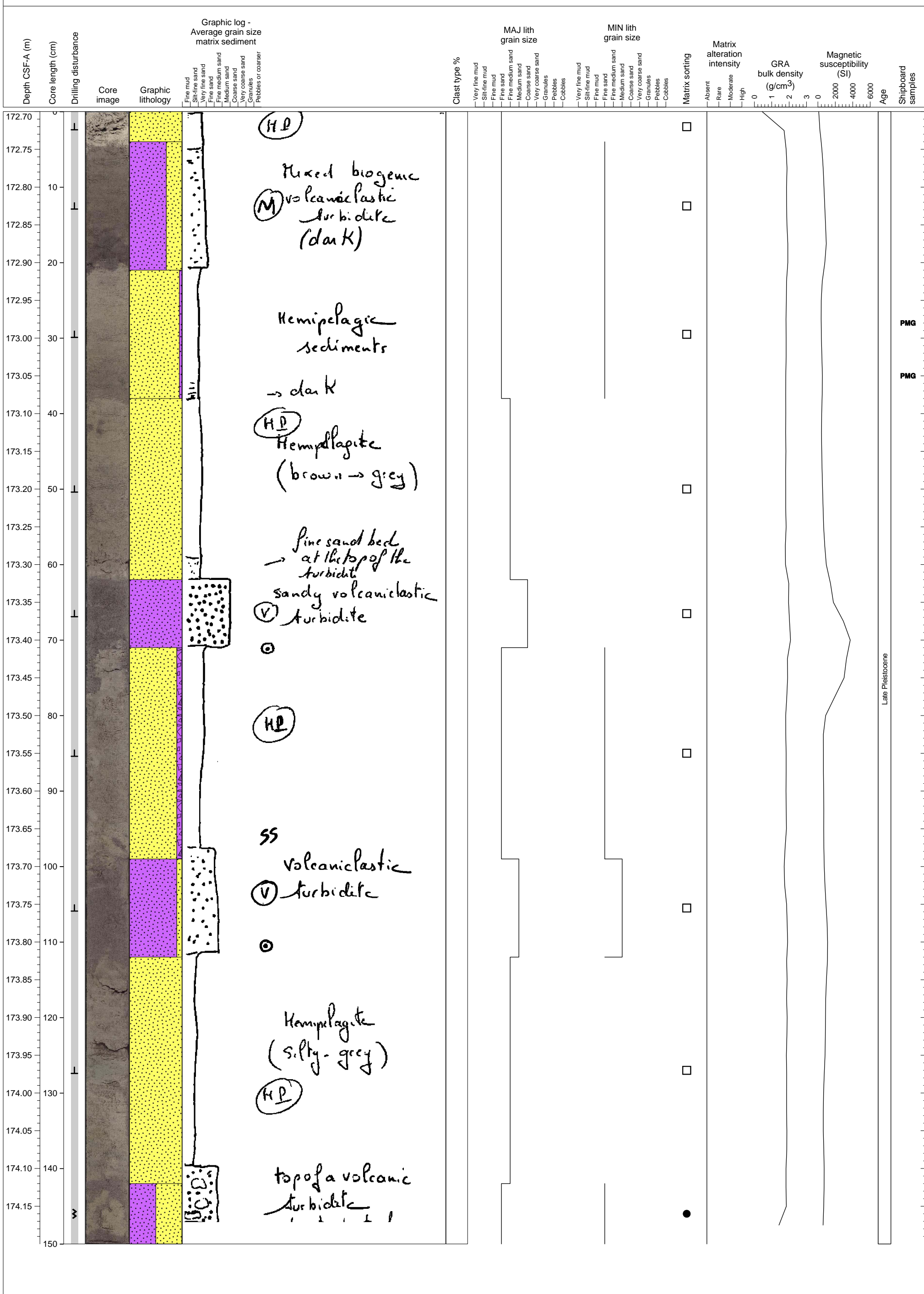
Late Pleistocene

IW

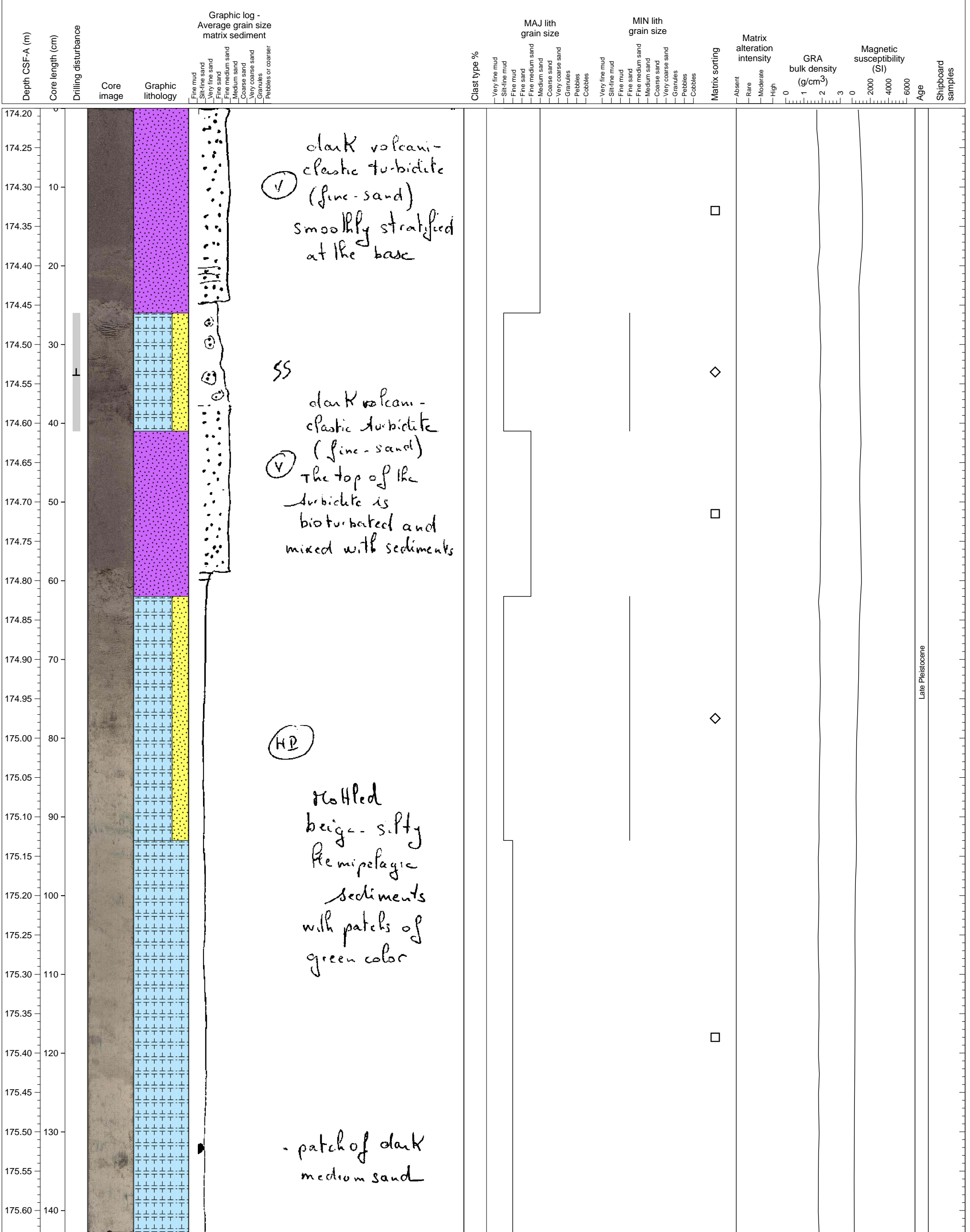
Thin scoria rich unit at top, with hemipelagic sediments beneath.



Hemipelagic sediments containing minor volcanoclastic sediments interbedded with mixed volcanoclastic/bioclastic turbidite sands.



Hemipelagic sediments intercalated with volcanoclastic turbidites.



dark volcanoclastic turbidite (fine-sand) smoothly stratified at the base

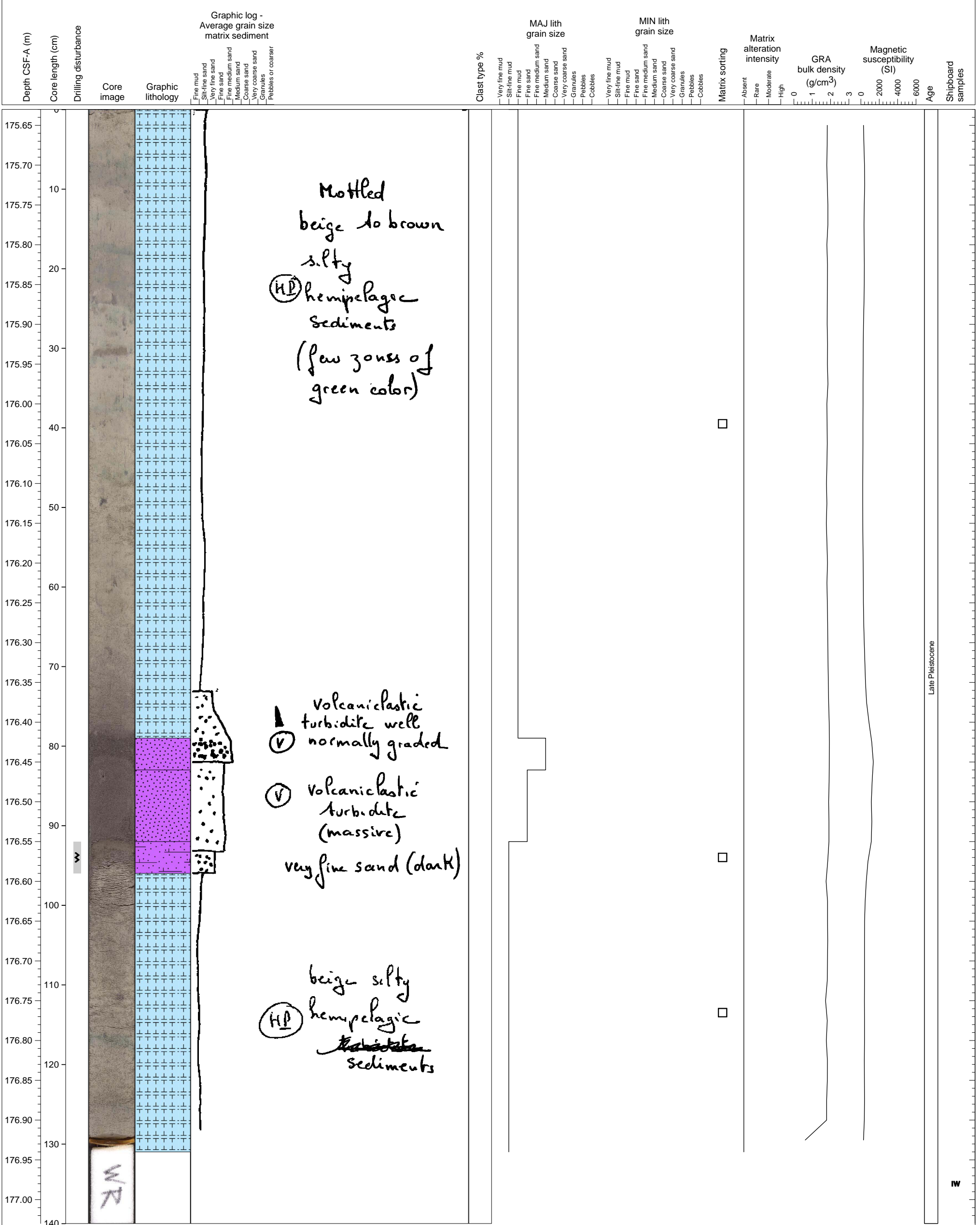
SS
dark volcanoclastic turbidite (fine-sand)
The top of the turbidite is bioturbated and mixed with sediments

HP
scalloped beige-silty hemipelagic sediments with patches of green color

- patch of dark medium sand

Late Pleistocene

Hemipelagic sediments with several intercalations of volcanoclastic turbidite.



Mottled beige to brown silty (HP) hemipelagic sediments (few zones of green color)

▲ volcanoclastic turbidite well normally graded
 (V) volcanoclastic turbidite (massive) very fine sand (dark)

beige silty (HP) hemipelagic ~~turbidite~~ sediments

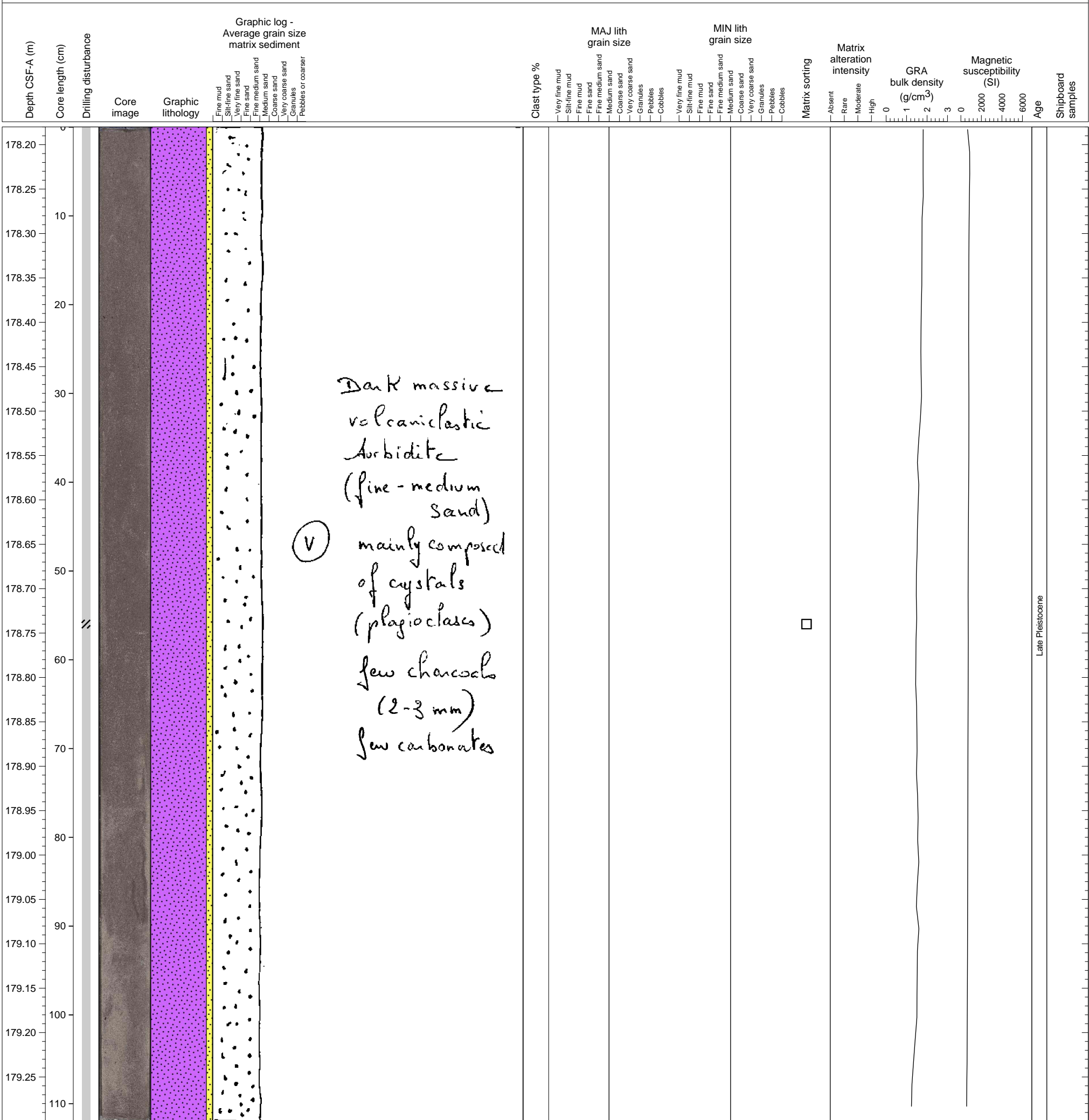
Late Pleistocene

W

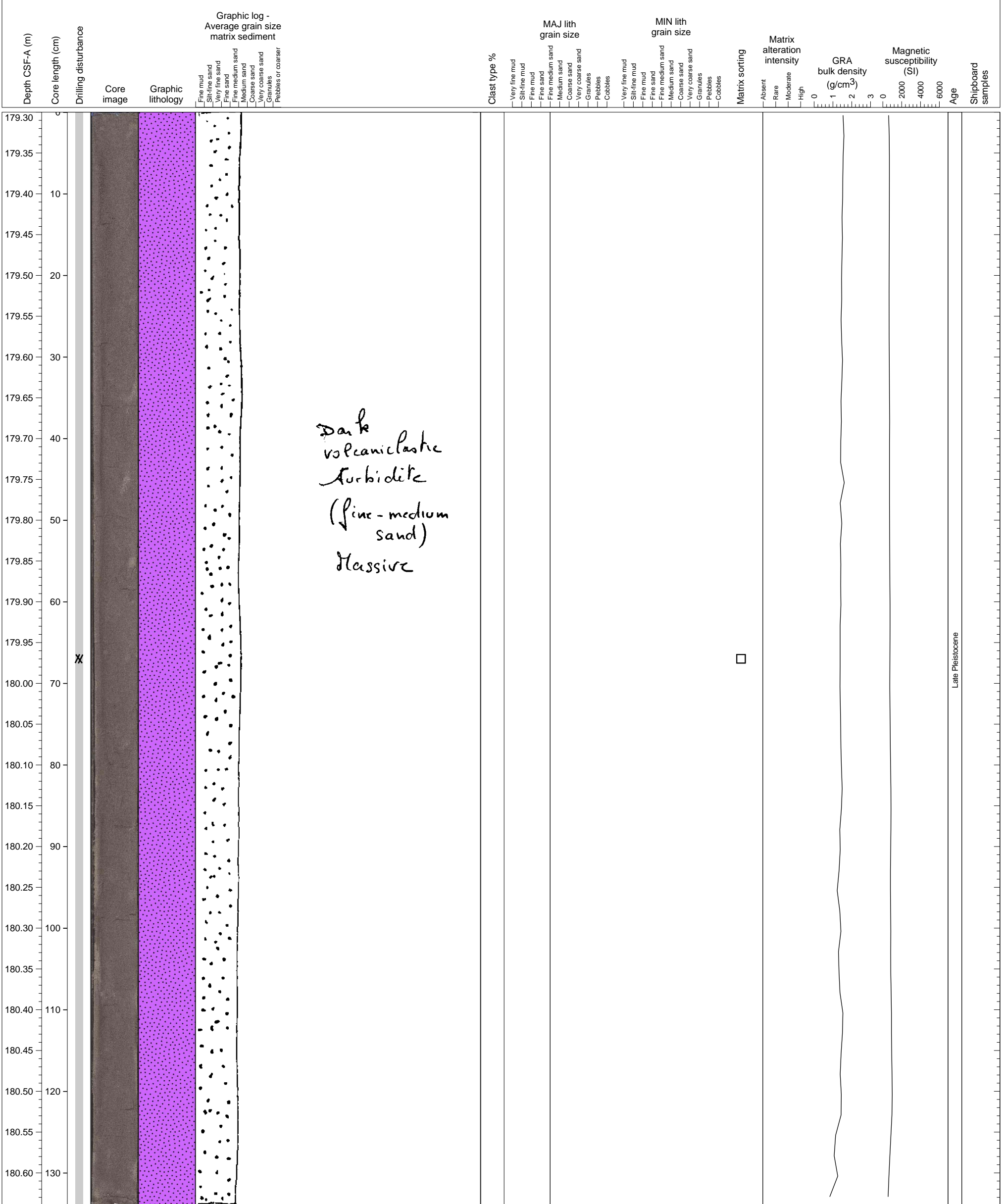
Mixed volcanoclastic-carbonate turbidite sand. Massive, no grading.



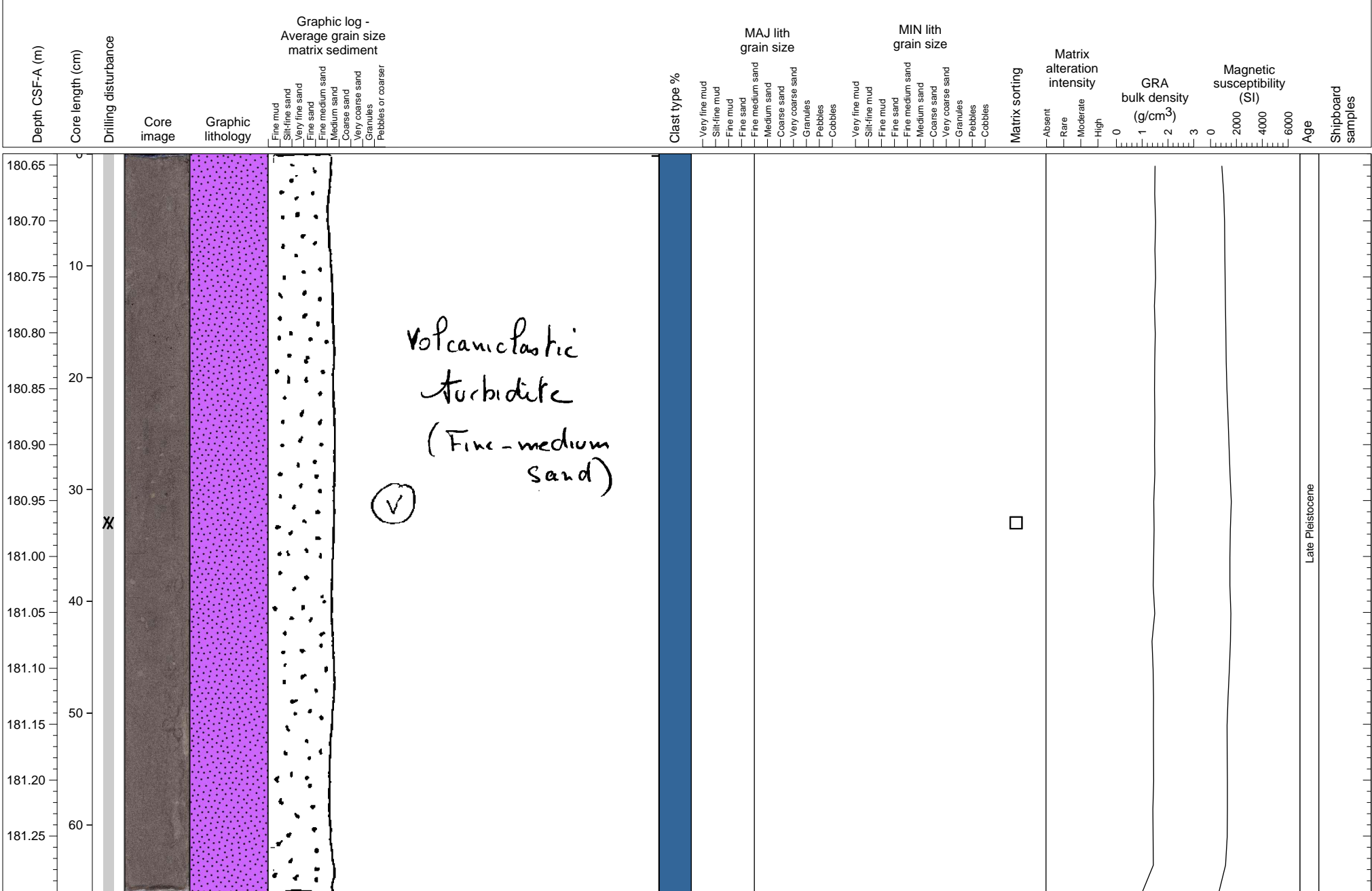
Mixed volcanoclastic-carbonate turbidite sand. Massive, no grading.



Soupy, grey colored volcaniclastic turbidite.



Soupy, grey colored volcaniclastic turbidite, mud clasts (up to 5 mm) are present..



Soupy, grey colored volcaniclastic turbidite, mud clasts (up to 1cm) are present..

