Hole 340-U1398A-1H Section 1, Top of Section: 0.0 CSF-A (m)

Hemipelagic sediments at top overlying a seqience of coarse tephras and a pumice-rich volcaniclastic turbidite sand.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples
HS
MADC
XRD CRB
XRD CRB
MADC
Late Pleistocene

brown "sorpy" hemipelagic mud

Grey hemi-pelagic mud

Mottled light grey hemipelagic mud

pumice clast (→ 6cm)

Succession of grey and dark grey sand → tephra fallout

pumiceous volcaniclastic turbidite (10% pumice, 10% ves. lava, 10% mas. lava → mud clast 65% agistal)

V

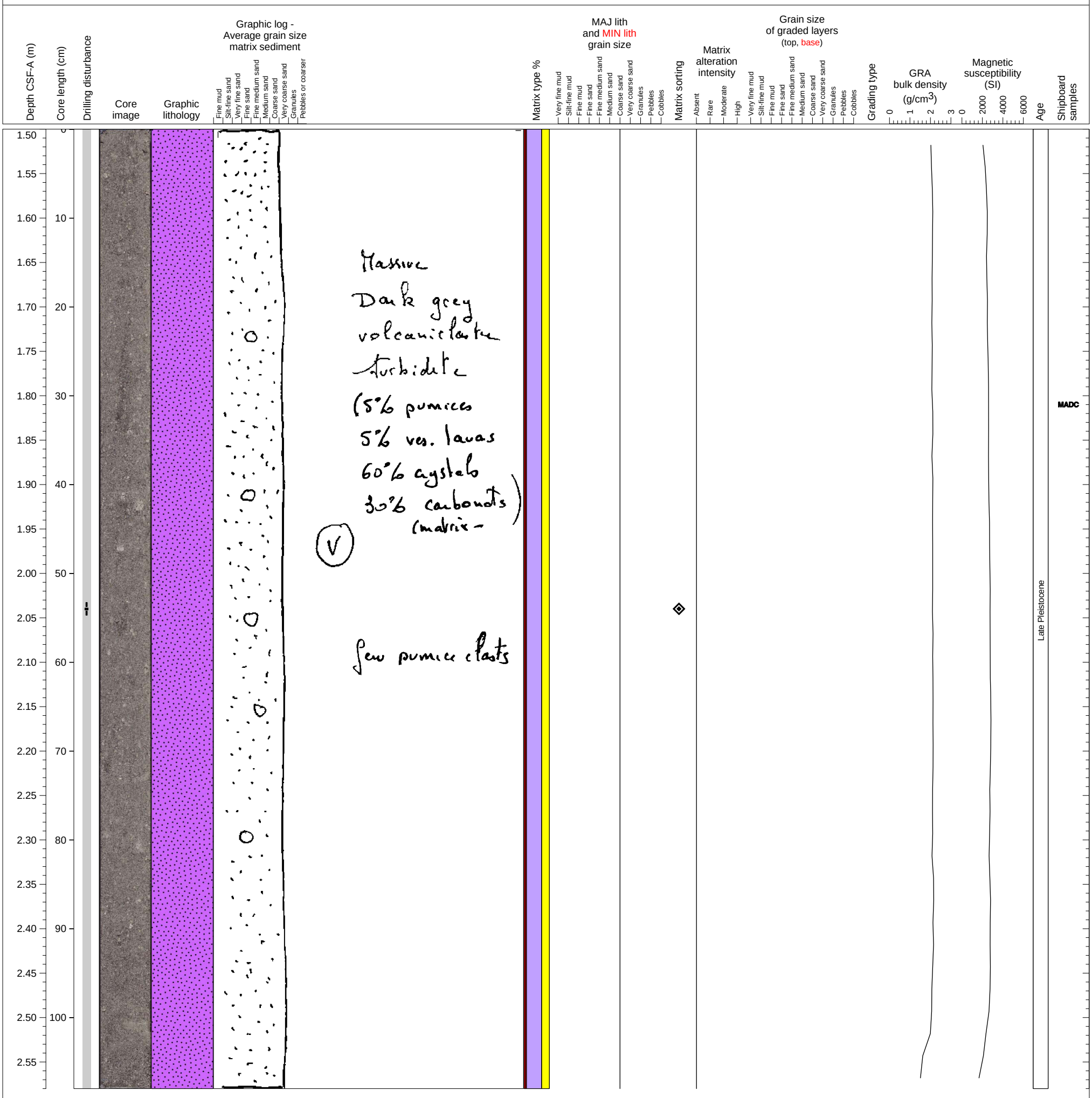
→ pumice clasts (→ 2.5 cm)

small fine sand layer

Top of a pumiceous turbidite

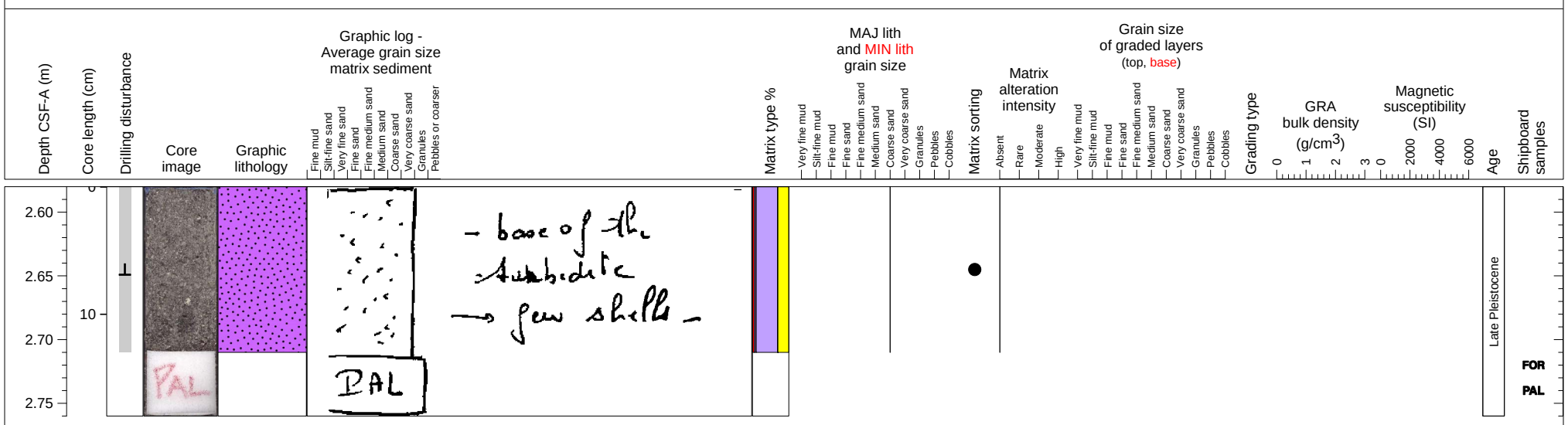
Hole 340-U1398A-1H Section 2, Top of Section: 1.5 CSF-A (m)

Massive, part of pumiceous volcaniclastic turbidite



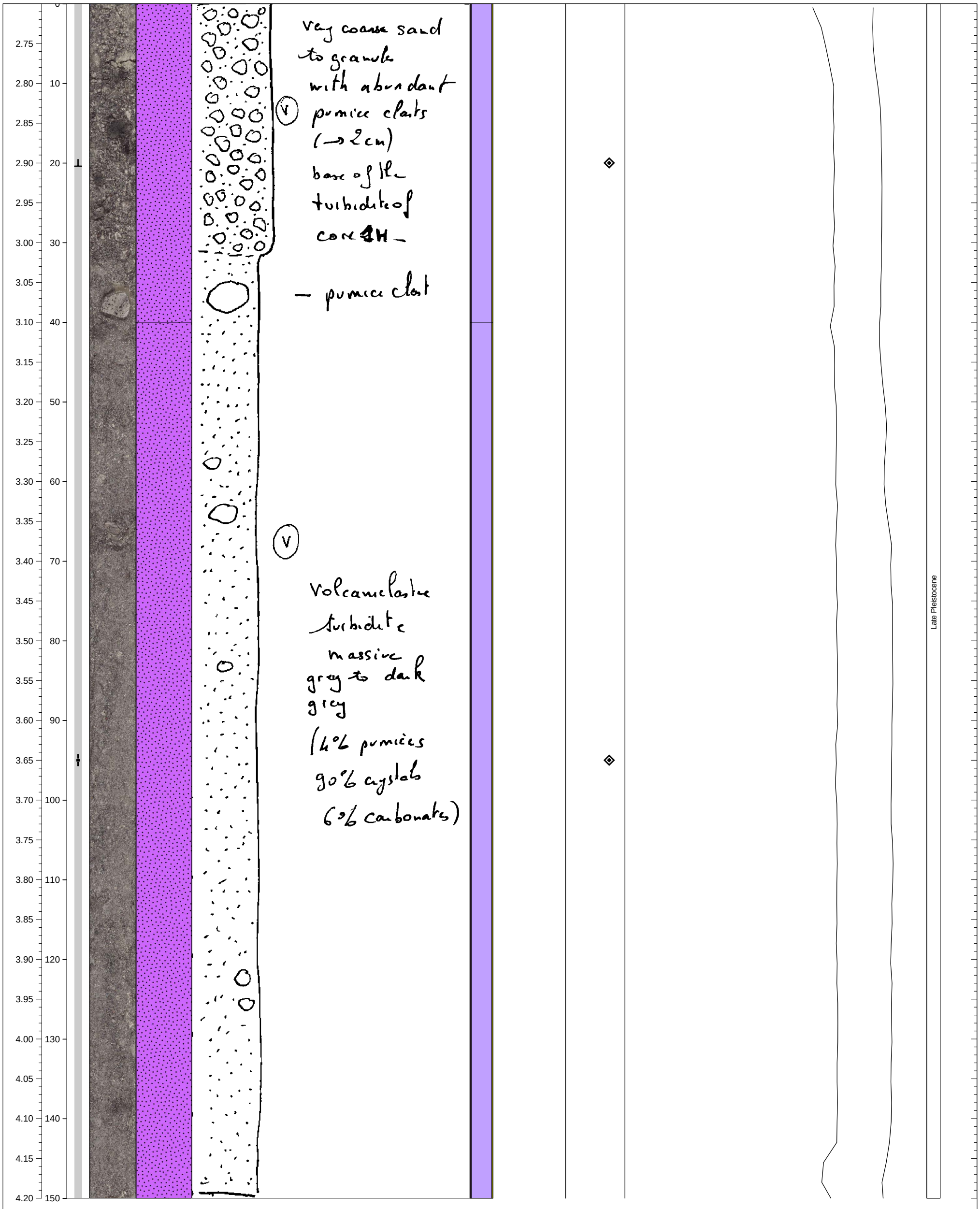
Hole 340-U1398A-1H Section CC, Top of Section: 2.58 CSF-A (m)

Massive volcaniclastic turbidite continued from 1H2A



Hole 340-U1398A-2H Section 1, Top of Section: 2.7 CSF-A (m)

Pumice-bearing volcaniclastic sand (turbidite). Pumice clasts up to 40 mm. Massive.



Hole 340-U1398A-2H Section 2, Top of Section: 4.2 CSF-A (m)

Three units of volcaniclastic turbidites

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples

4.25
4.30
4.35
4.40
4.45
4.50
4.55
4.60
4.65
4.70
4.75
4.80
4.85
4.90
4.95
5.00
5.05
5.10
5.15
5.20
5.25
5.30
5.35
5.40
5.45
5.50
5.55
5.60
5.65
5.70

10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

base of 1h volcaniclastic turbidite of section 1

very fine ash (brown) (30% crystals 70% carb. matrix)

Grey → dark grey volcaniclastic turbidite with few pumice clasts

very fine brown ash (30% crystals 70% matrix carb.)

V

Grey to dark grey volcaniclastic turbidite –

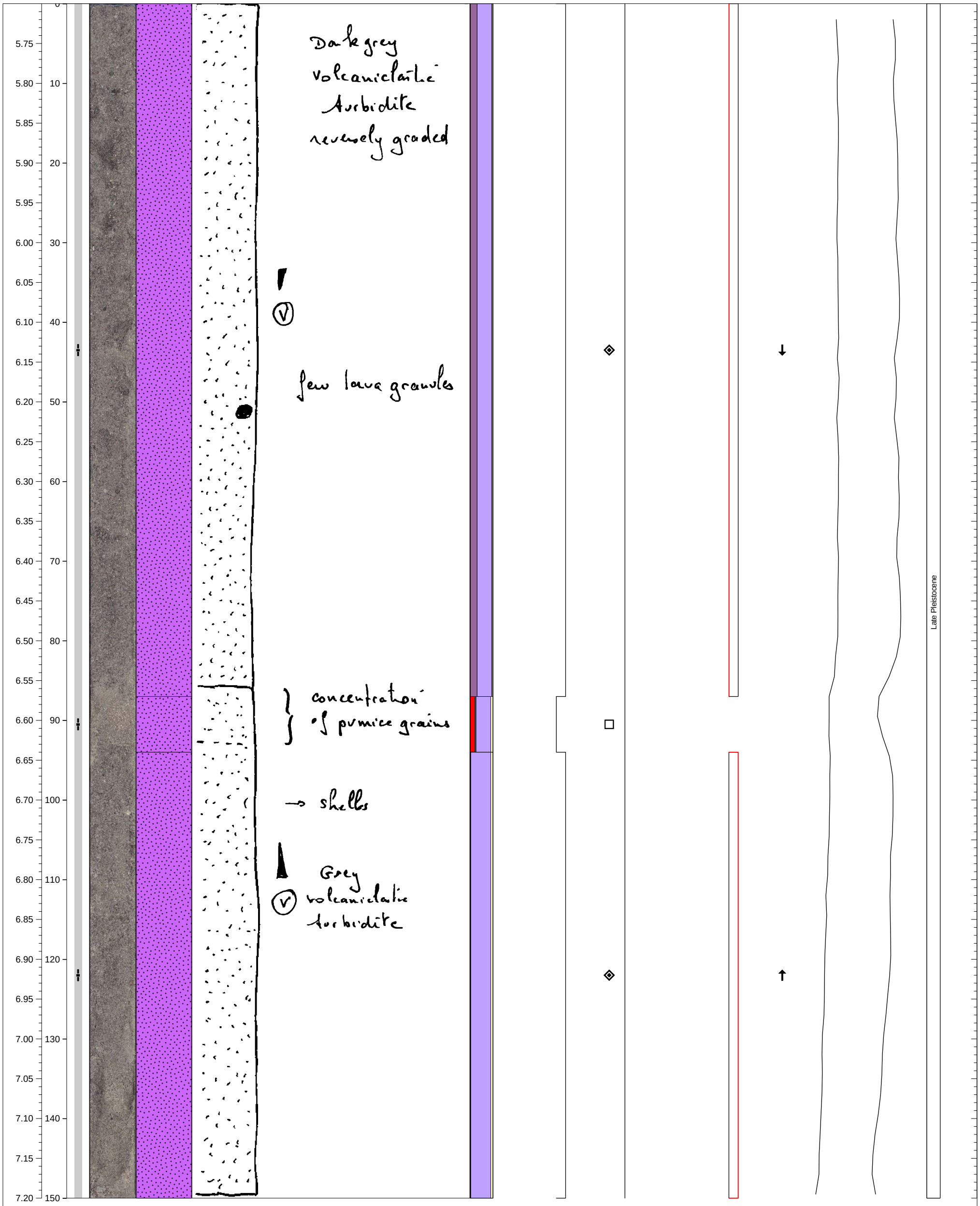
Late Pleistocene

XRD
CRB

MADC

Hole 340-U1398A-2H Section 3, Top of Section: 5.7 CSF-A (m)

Massive, pumice and crystals rich volcaniclastic turbidite



Hole 340-U1398A-2H Section 4, Top of Section: 7.2 CSF-A (m)

Volcaniclastic turbidite

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples

7.25
7.30
7.35
7.40
7.45
7.50
7.55
7.60
7.65
7.70
7.75
7.80
7.85
7.90
7.95
8.00
8.05
8.10
8.15
8.20
8.25
8.30
8.35
8.40
8.45
8.50
8.55
8.60
8.65
8.70

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

] concentration of pumice grains

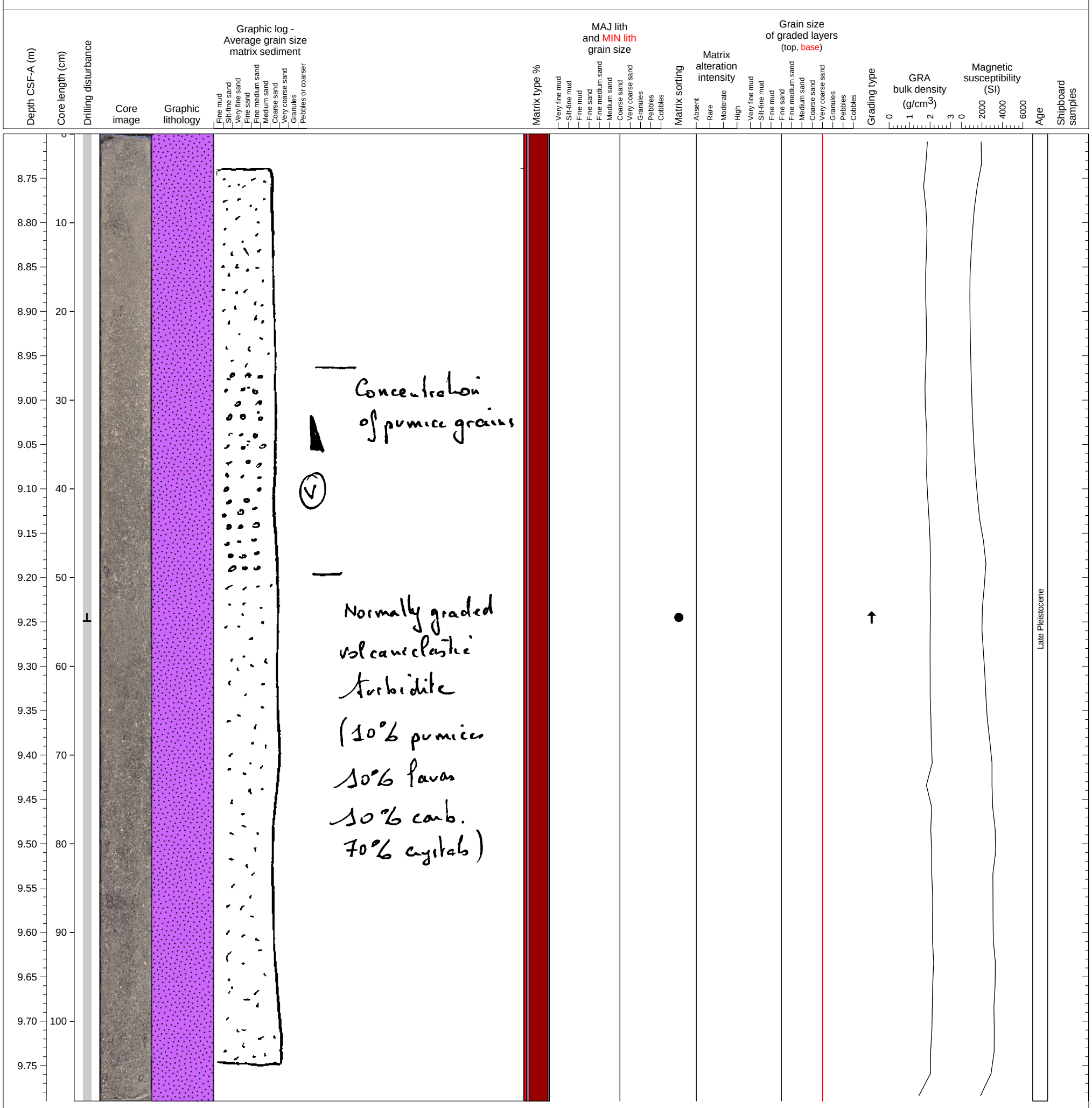
V

Grey - dark grey volcaniclastic turbidite (10% pumices 10% lavas 60% crystals 10% carbonates)

Late Pleistocene

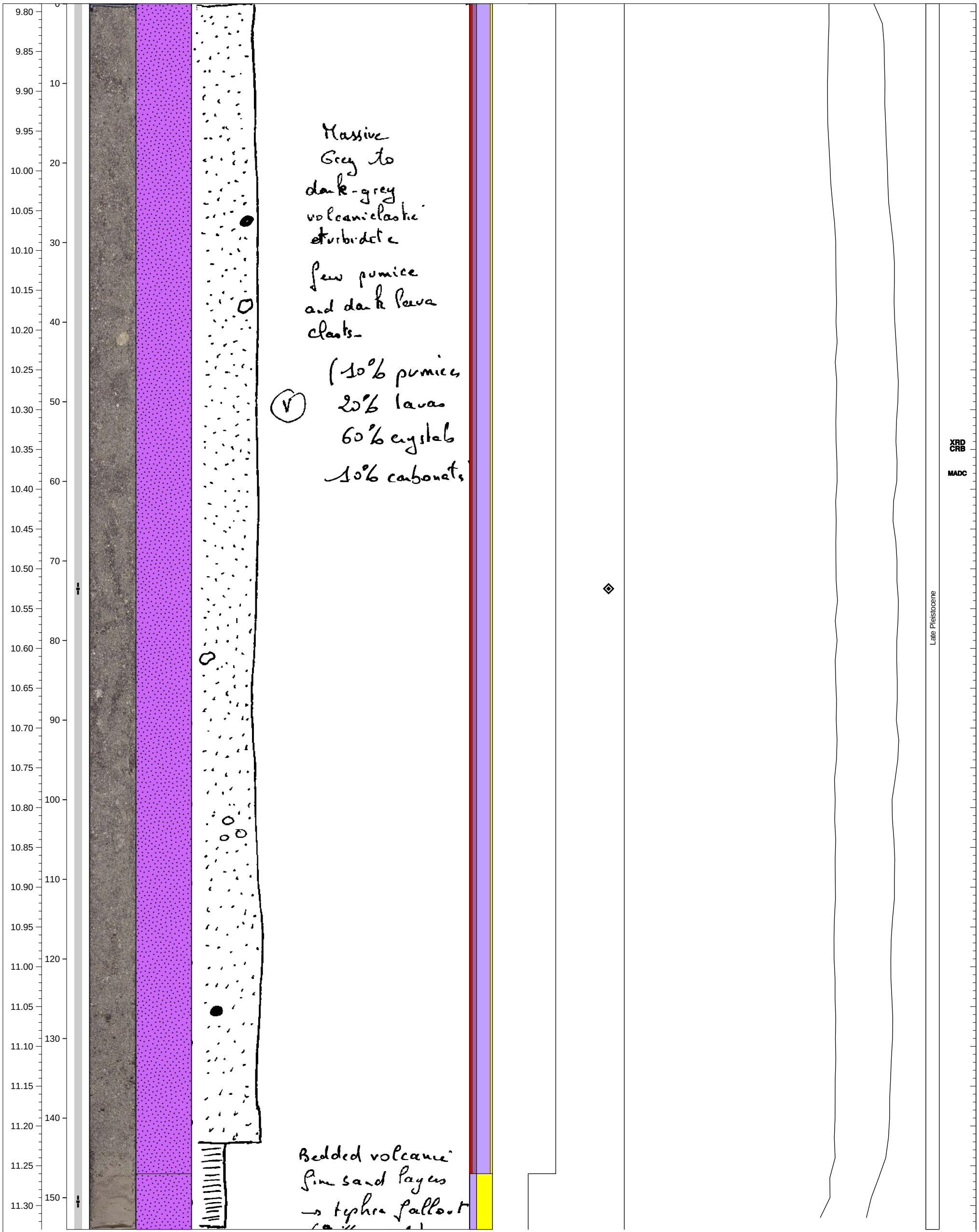
Hole 340-U1398A-2H Section 5, Top of Section: 8.7 CSF-A (m)

Massive volcaniclastic turbidite



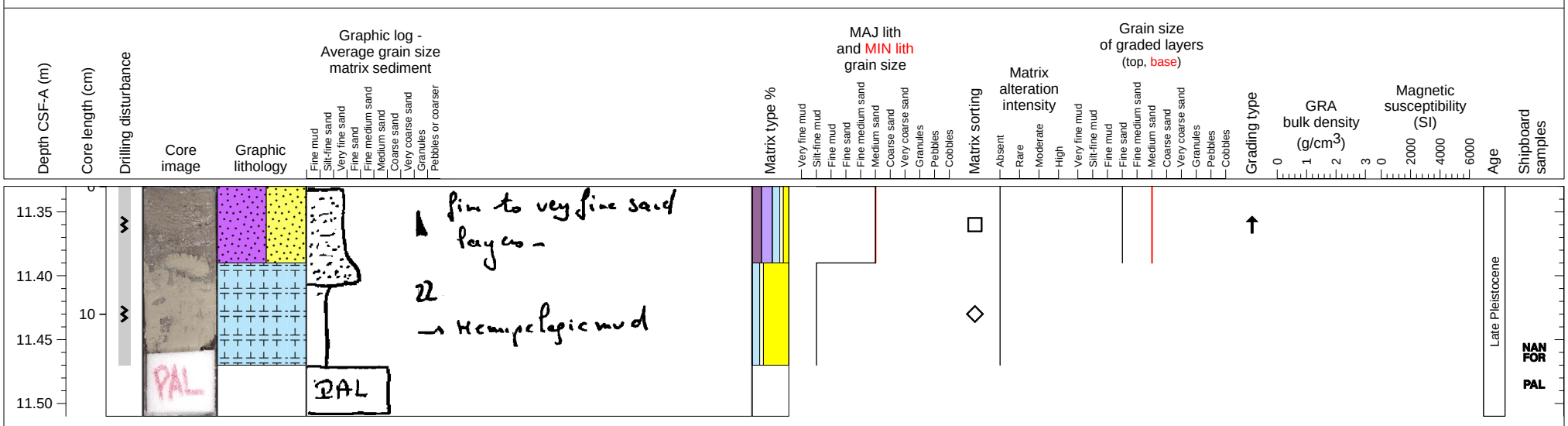
Hole 340-U1398A-2H Section 6, Top of Section: 9.79 CSF-A (m)

Thick volcaniclastic turbidite with some pumice clasts overlying a thin sandy, bedded unit comprising multiple tephra layers.



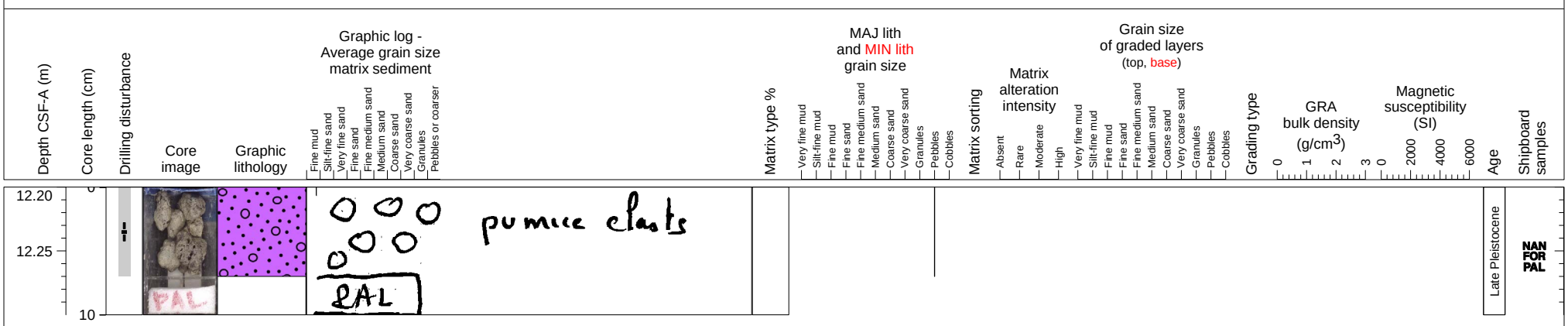
Hole 340-U1398A-2H Section CC, Top of Section: 11.33 CSF-A (m)

Mixed turbidite of volcaniclastic and bioclastic materials and hemipelagic sediment



Hole 340-U1398A-3X Section CC, Top of Section: 12.2 CSF-A (m)

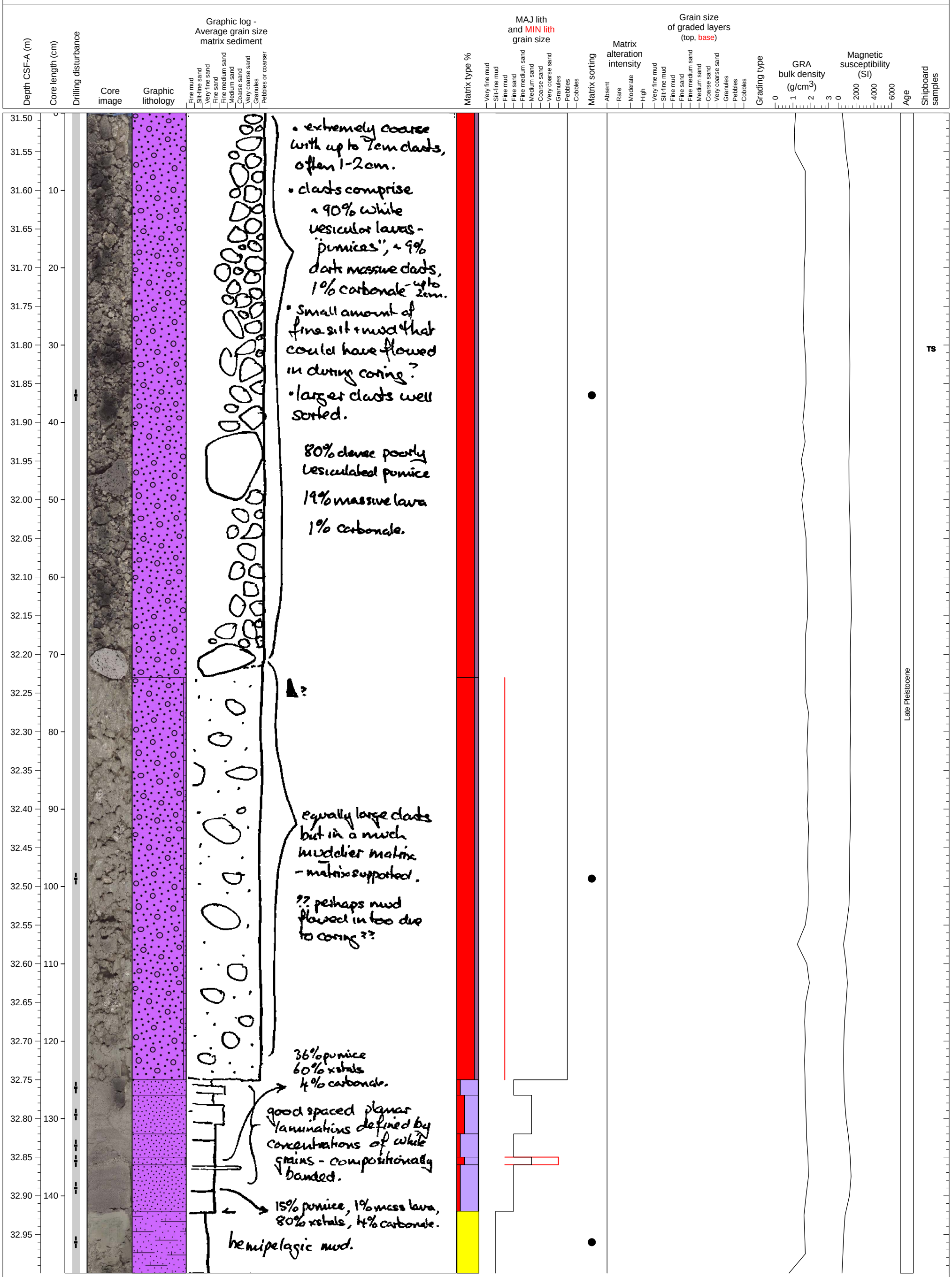
Pumice clast trapped in core catcher.



U1398A-4X NO RECOVERY

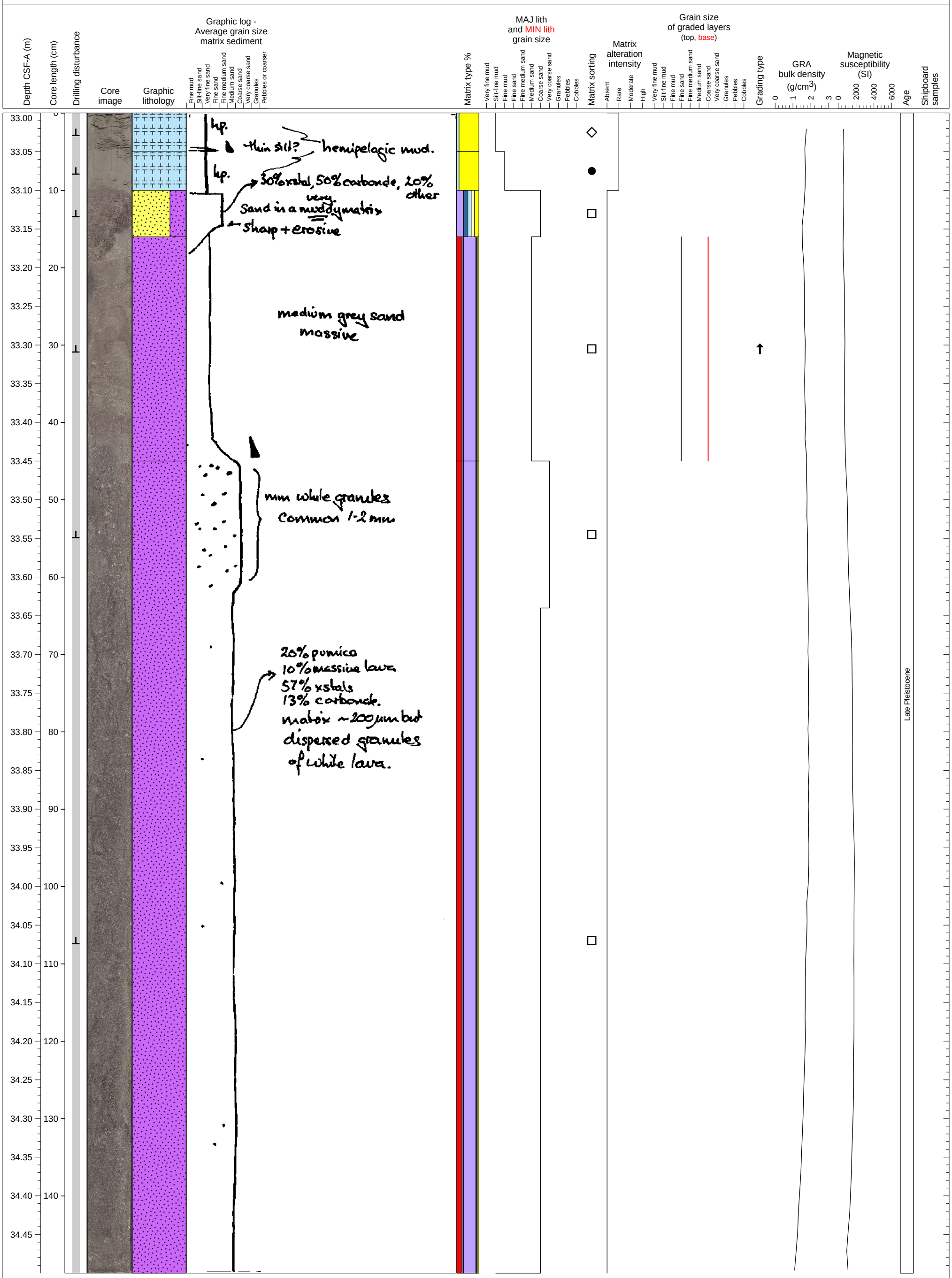
Hole 340-U1398A-5H Section 1, Top of Section: 31.5 CSF-A (m)

Massive pumiceous clast-supported deposits underlying sandy laminated tubidite.



Hole 340-U1398A-5H Section 2, Top of Section: 33.0 CSF-A (m)

Upper part of pumiceous turbidite. In the middle part, there is a portion of pumice concentration.



Hole 340-U1398A-5H Section 3, Top of Section: 34.5 CSF-A (m)

Pumiceous volcaniclastic turbidites intercalating hemipelagic sediment and a potential tephra layer.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
Magnetic susceptibility (SI)
Age
Shipboard samples

34.50 / 0
34.55
34.60 / 10
34.65
34.70 / 20
34.75
34.80 / 30
34.85
34.90 / 40
34.95
35.00 / 50
35.05
35.10 / 60
35.15
35.20 / 70
35.25
35.30 / 80
35.35
35.40 / 90
35.45
35.50 / 100
35.55
35.60 / 110
35.65
35.70 / 120
35.75
35.80 / 130
35.85
35.90 / 140
35.95

?: very subtle medium-dark grey sand.
- massive
- poorly sorted.

5% pumice, 15% mass lava, 10% vesicular, 40% xstals, 25% carb. 5% other.

g

hemipelagic mud

10% pumice, 2% mass lava, 5% vesicular, 3% xstal 5% carb, 75% other (too fine)

laminas of medium sand.

medium grey sand large white grains in dark matrix

55% pumice, 5% mass lava, 10% vesicular lava, 15% xstal 15% carbonate.

hp

probably a clast as can see edge.

hemipelagic mud.

more common 1-2mm of andesite/ pumice

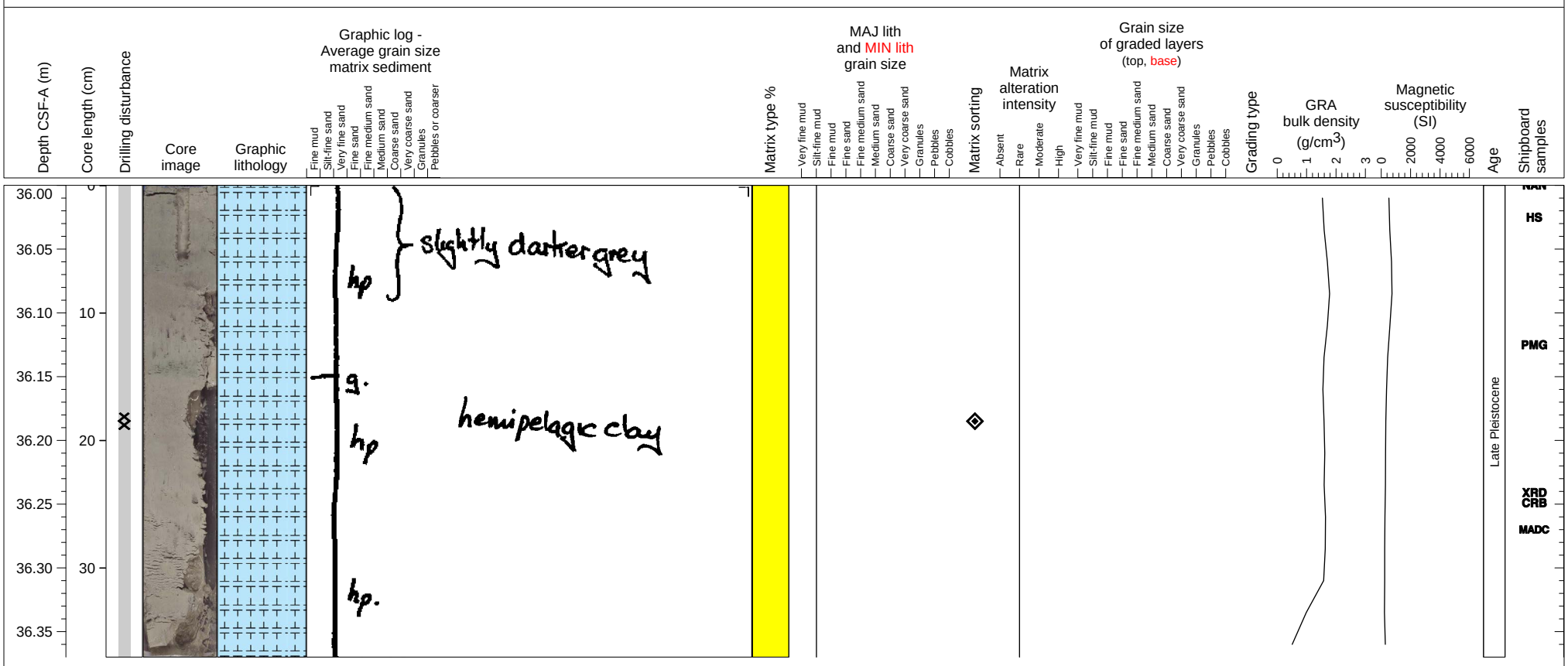
massive medium grey sand.

hemipelagic fine mud.

Late Pleistocene

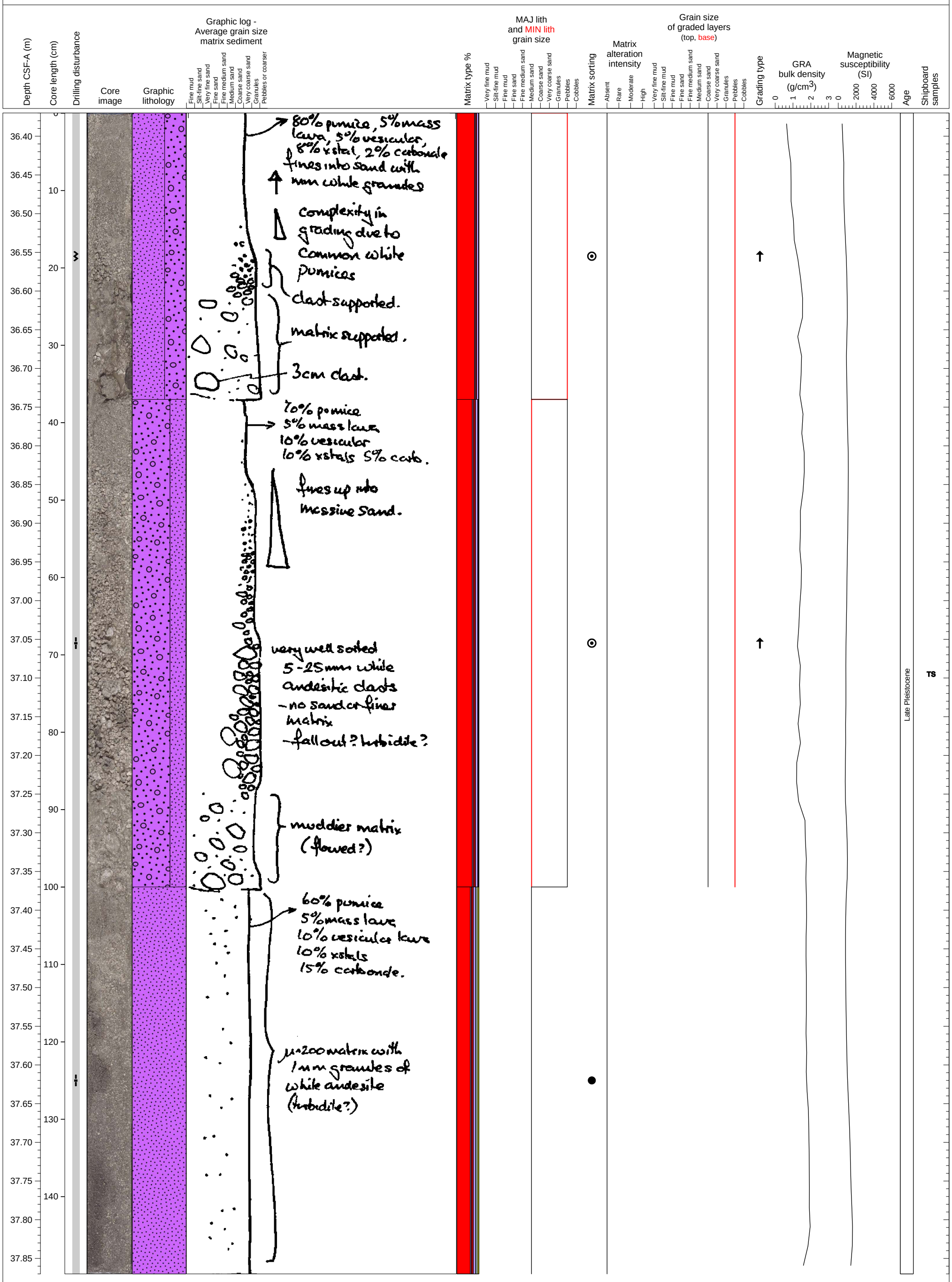
Hole 340-U1398A-5H Section 4, Top of Section: 36.0 CSF-A (m)

Hemipelagic clay with moderate bioturbation.



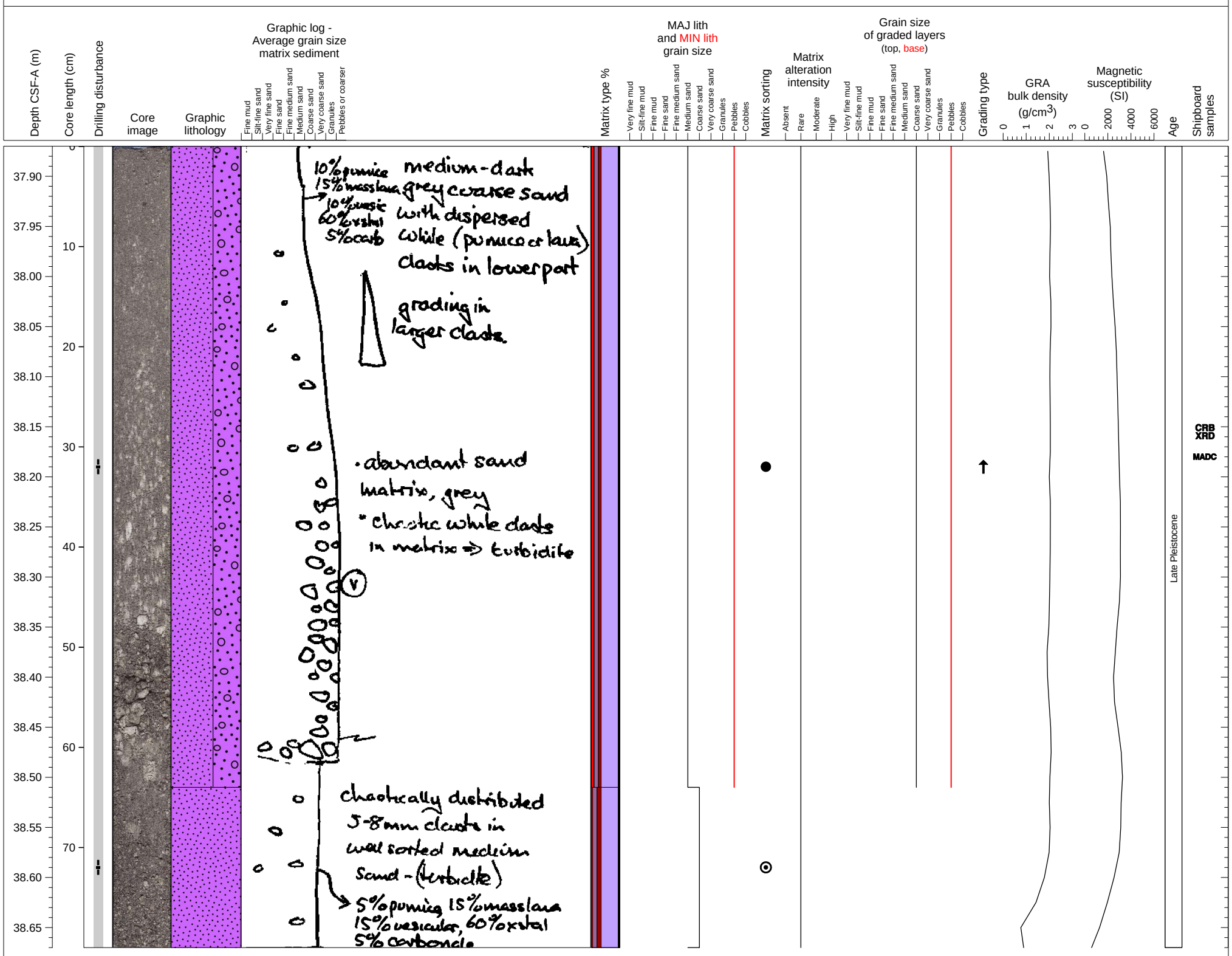
Hole 340-U1398A-5H Section 5, Top of Section: 36.37 CSF-A (m)

Two normally graded volcaniclastic sand/gravel deposits. The normal grading is present in the abundant pumice clasts. Base of unit is a massive volcaniclastic sand deposit with pumice granules.



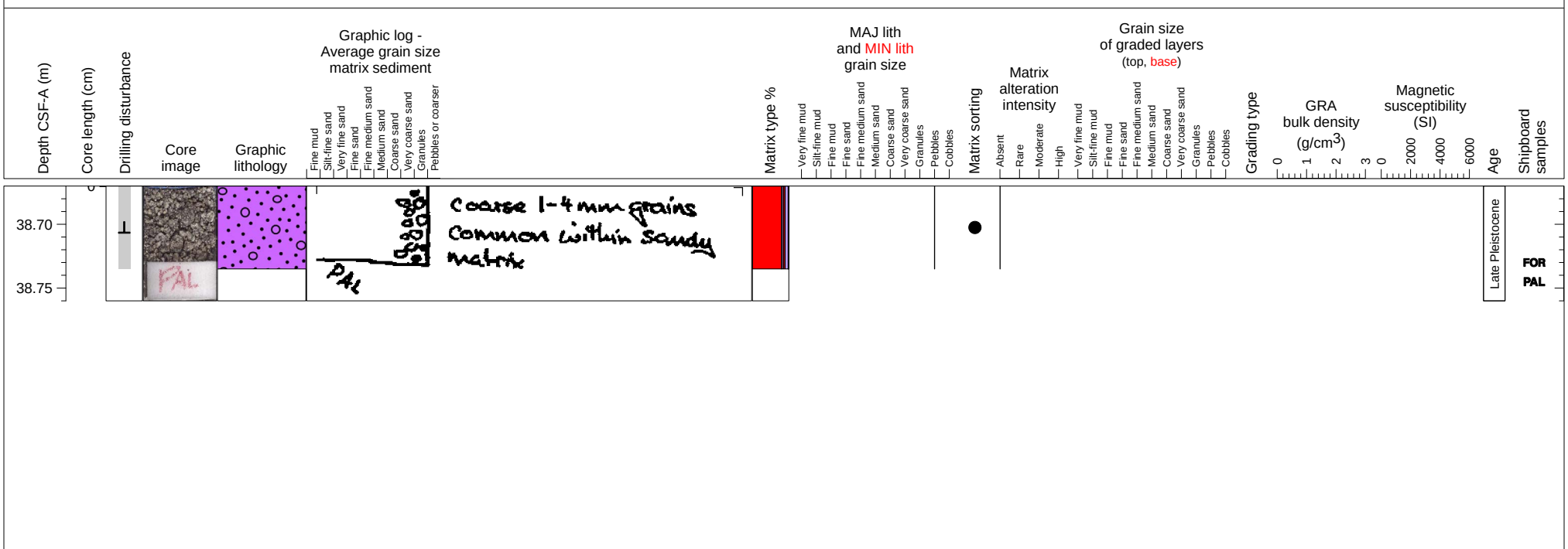
Hole 340-U1398A-5H Section 6, Top of Section: 37.87 CSF-A (m)

Normally graded volcaniclastic sand with pumice clasts displaying the normal gradation overlying a massive volcaniclastic sand unit.



Hole 340-U1398A-5H Section CC, Top of Section: 38.67 CSF-A (m)

Volcaniclastic gravel composed of pumice clasts. PAL sample from base.



Hole 340-U1398A-6H Section 1, Top of Section: 38.7 CSF-A (m)

Massive pebble-sized pumiceous unit underlying sand layer at the top, and sandy turbidite intercalating hemipelagic calays.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
Magnetic susceptibility (SI)
Age
Shipboard samples

VERY COARSE
- 1-2cm common; up to 4cm
- no matrix finer than ~500µm sand
- 60% white clasts?
- 35% dark volcanics
1-2% carbonate.
3% red grains
- clast supported.

pumice ~80%
mass. lava 19%
Carbonate 1%.

muddy sand matrix ?sucked up from below

massive dark brown sand - probably fines up.

10% pumice 5% mass. lava 80% xstals, 5% carbonate.

erosive? flutes

hemipelagic v. fine mud

medium grey-brown turbidite

20% pumice 20% carbonate. 60% xstals

compositional planar lam. inclined - erosive?

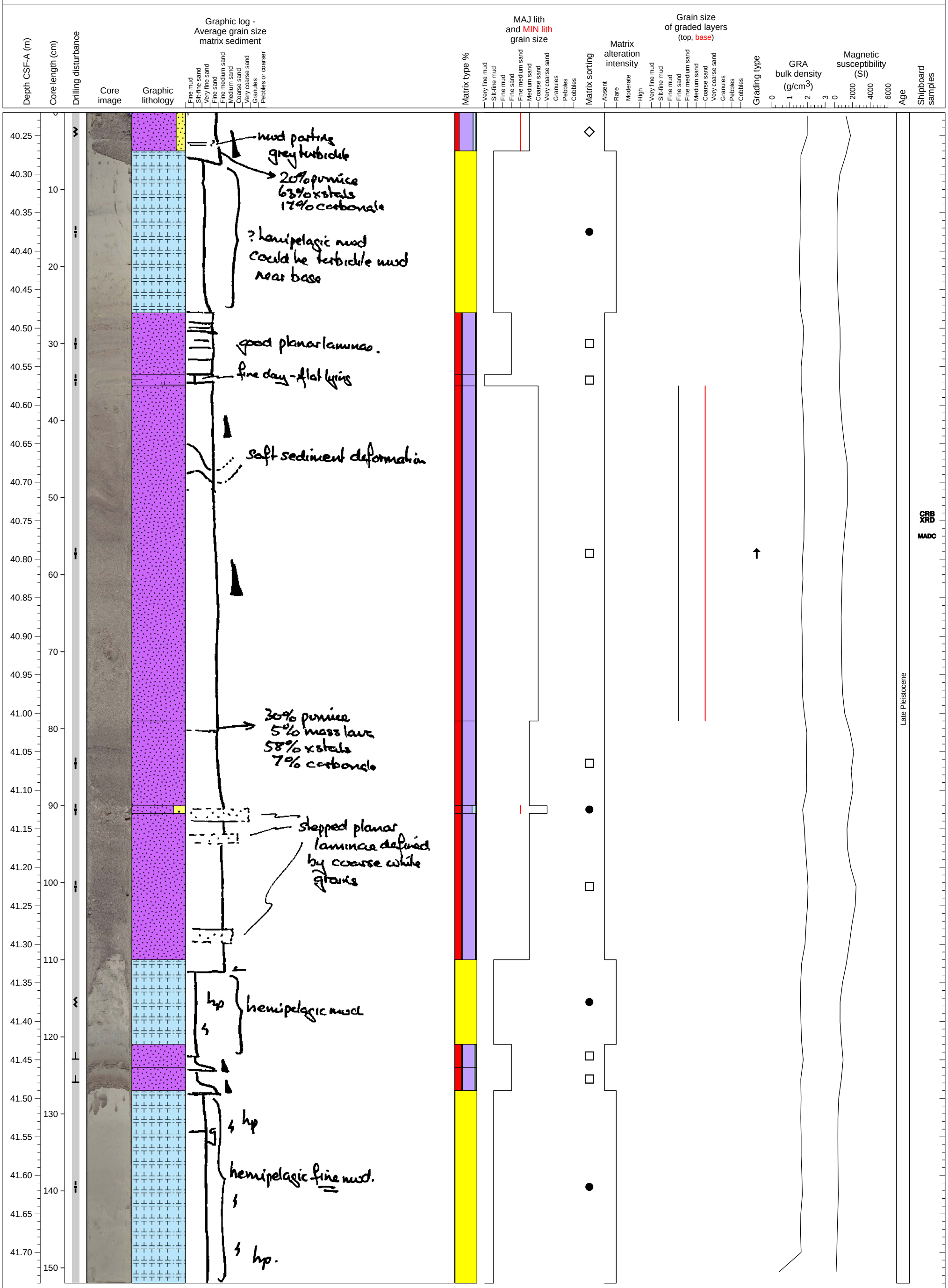
10% pumice 75% crystals 15% carbonate.

hemipelagic mud.

Late Pleistocene

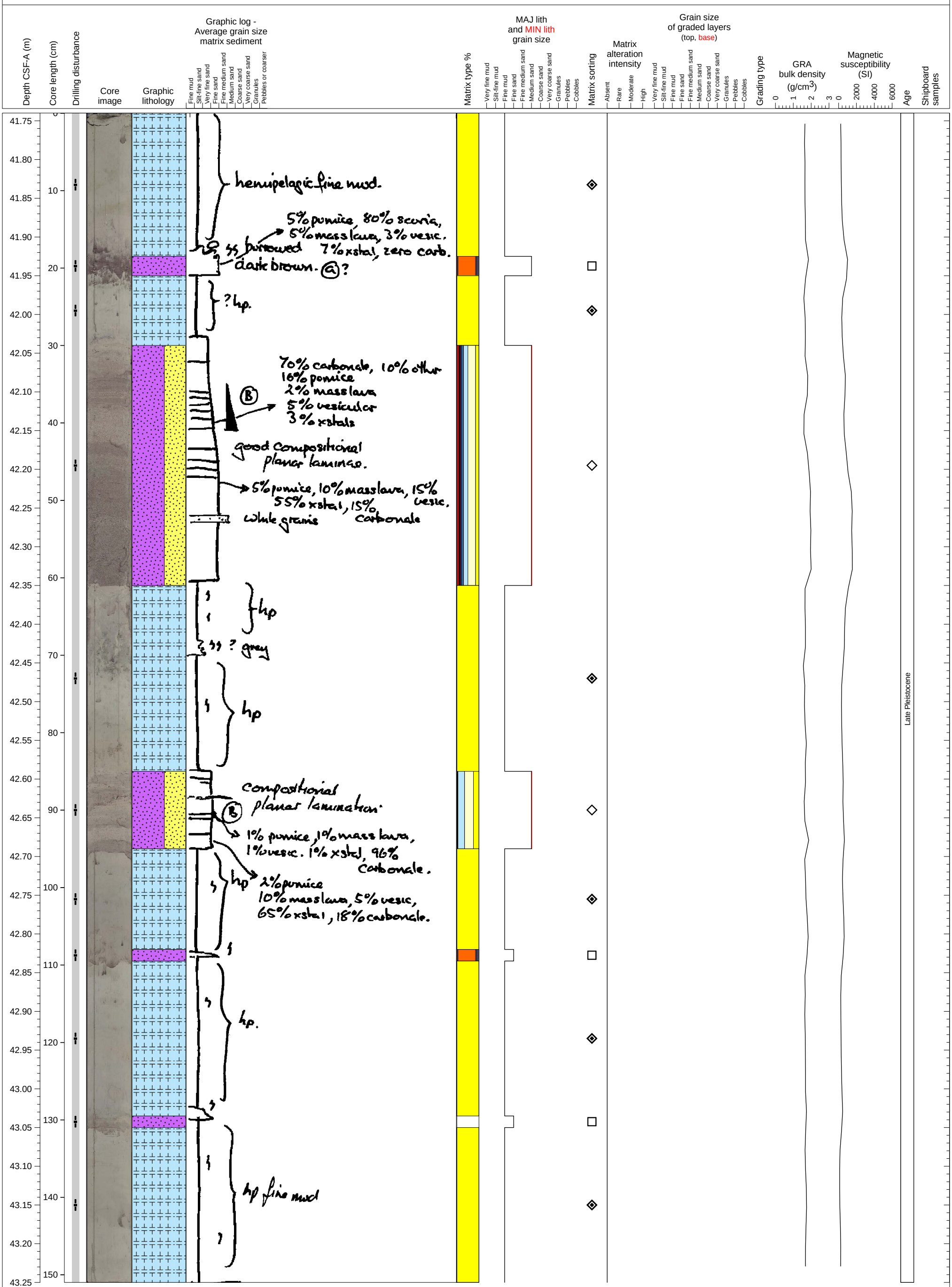
Hole 340-U1398A-6H Section 2, Top of Section: 40.22 CSF-A (m)

Basal part of turbidite at the top, successive multiple tephra or turbidites at the middle and two thin turbidites at bottom, interlayering hemipelagic clays.



Hole 340-U1398A-6H Section 3, Top of Section: 41.74 CSF-A (m)

Hemipelagic clay interlayered with volcaniclastic sand. Two of the volcaniclastic layers are mixed with bioclastic sand. Several tephra beds are found throughout the sample.



Hole 340-U1398A-6H Section 4, Top of Section: 43.25 CSF-A (m)

Interbedded hemipelagic mud and turbidites

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
Magnetic susceptibility (SI)
Age
Shipboard samples

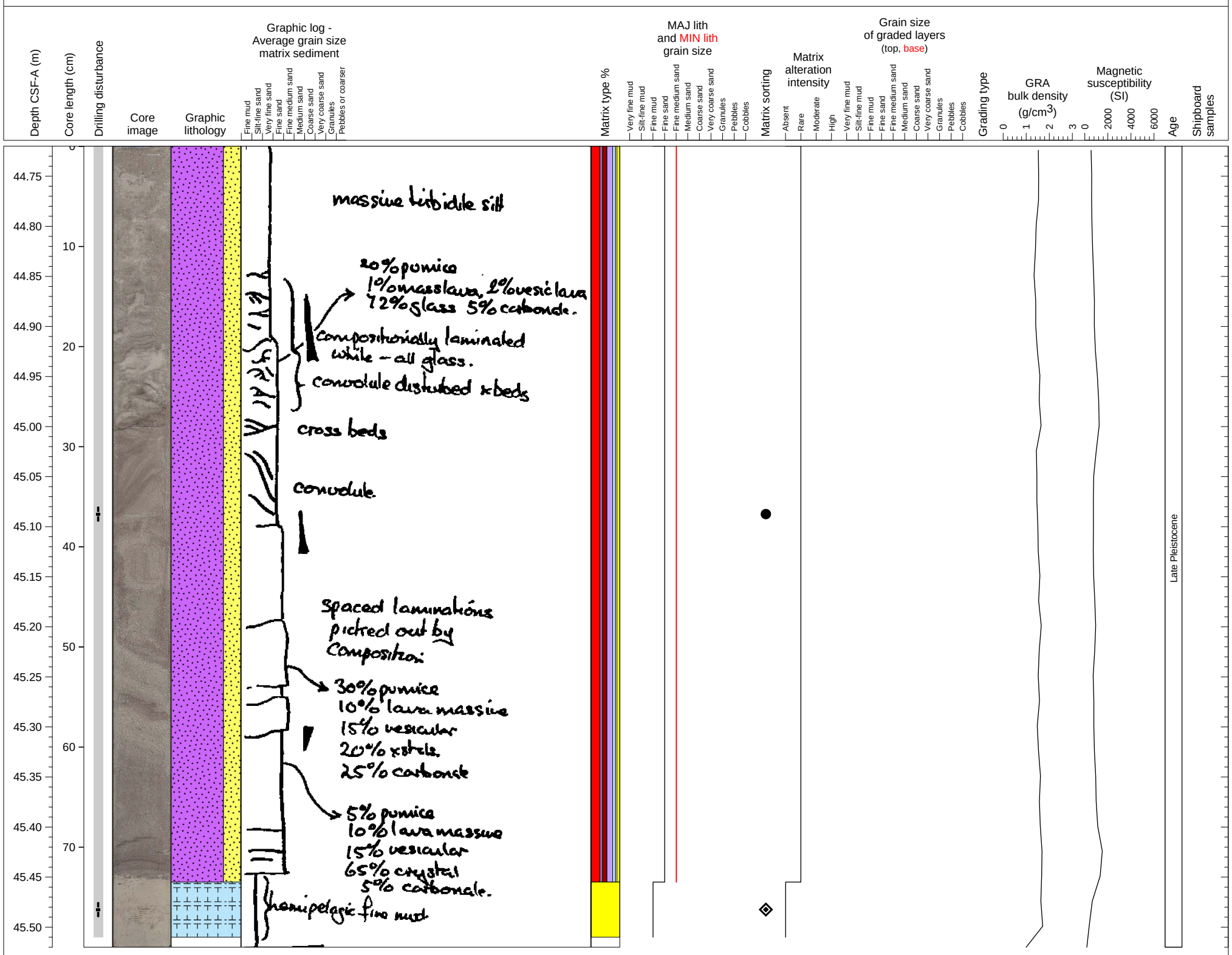
43.30 – 0
43.35 – 10
43.40 – 20
43.45 – 30
43.50 – 40
43.55 – 50
43.60 – 60
43.65 – 70
43.70 – 80
43.75 – 90
43.80 – 100
43.85 – 110
43.90 – 120
43.95 – 130
44.00 – 140
44.05
44.10
44.15
44.20
44.25
44.30
44.35
44.40
44.45
44.50
44.55
44.60
44.65
44.70

hemipelagic mud.
good planar laminations -picked out by composition
medium/light brown.
40% pmice, 2% mass lava, 10% vesic., 1% x stal. 47% carb.
hemipelagic mud. (fine)
larger shell frags.
hemipelagic fine mud.
dark grey
hp hemipelagic fine mud.
2% pumice, 1% scoria, 5% massive l., 5% vesic. l., 82% vitral, 5% carb
turbidite sill
80% pumice, 5% ml., 3% v.f., 9% vitral, 3% carb
contorted, crossbedded hab.
angular truncation
spaced laminations of white grains
massive - gunk mud
mud clast ~ 1cm.
?
hemipelagic mud.

HS
CRB XRD
MADC
Late Pleistocene

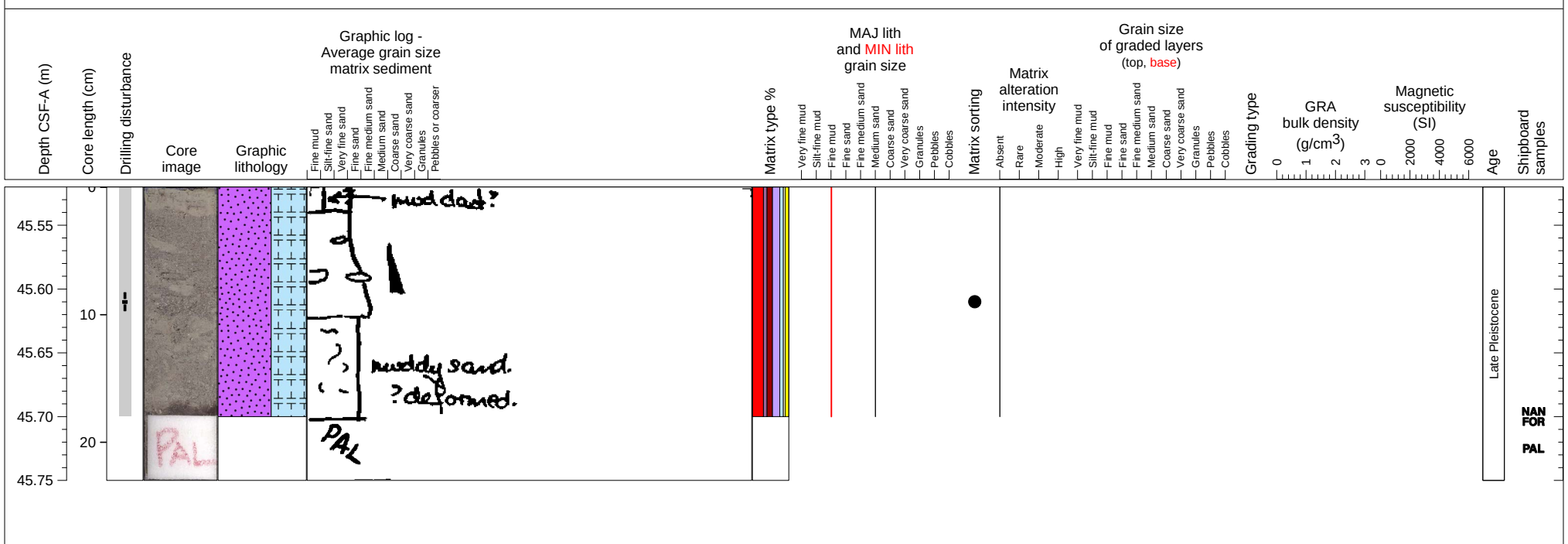
Hole 340-U1398A-6H Section 5, Top of Section: 44.72 CSF-A (m)

Mixed volcaniclastic/bioclastic sand layer containing a diffuse ash layer from 21-28cm. Base of section is hemipelagic clay.



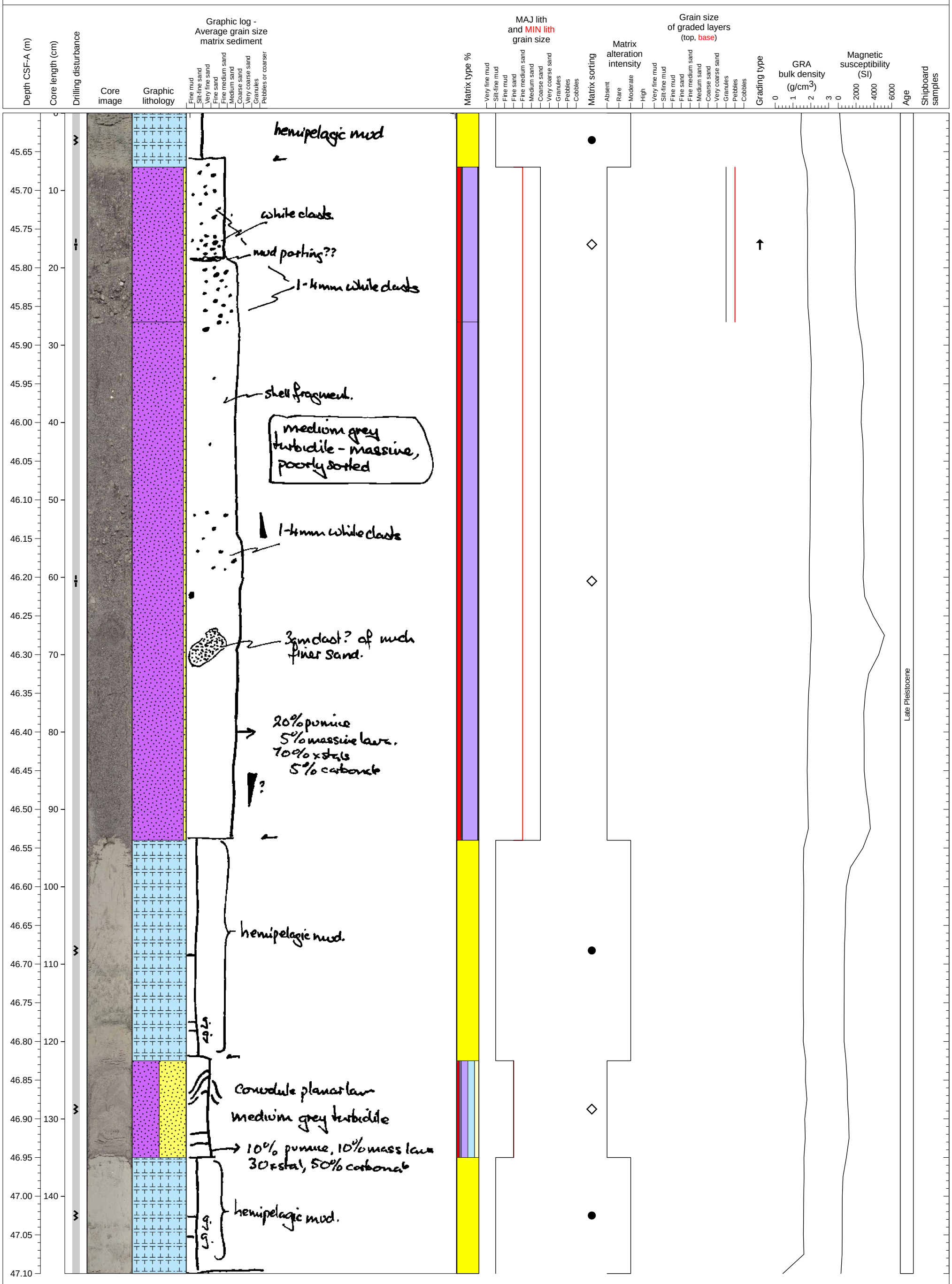
Hole 340-U1398A-6H Section CC, Top of Section: 45.52 CSF-A (m)

Volcaniclastic sand intercalated with hemipelagic clay. The clay may be clasts not actual layers.



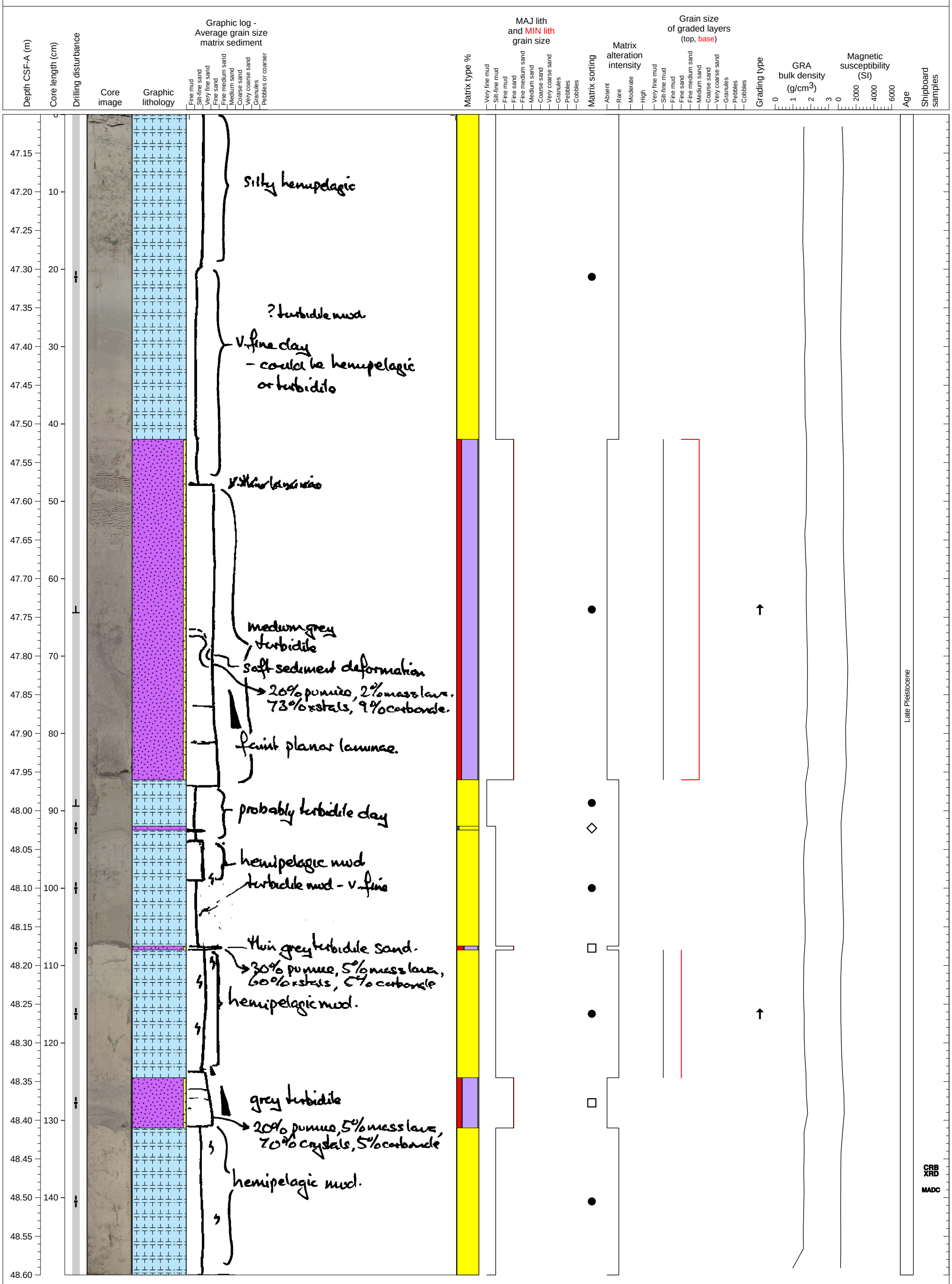
Hole 340-U1398A-7H Section 1, Top of Section: 45.6 CSF-A (m)

Volcaniclastic/bioclastic turbidites interlayered with hemipelagic clay.



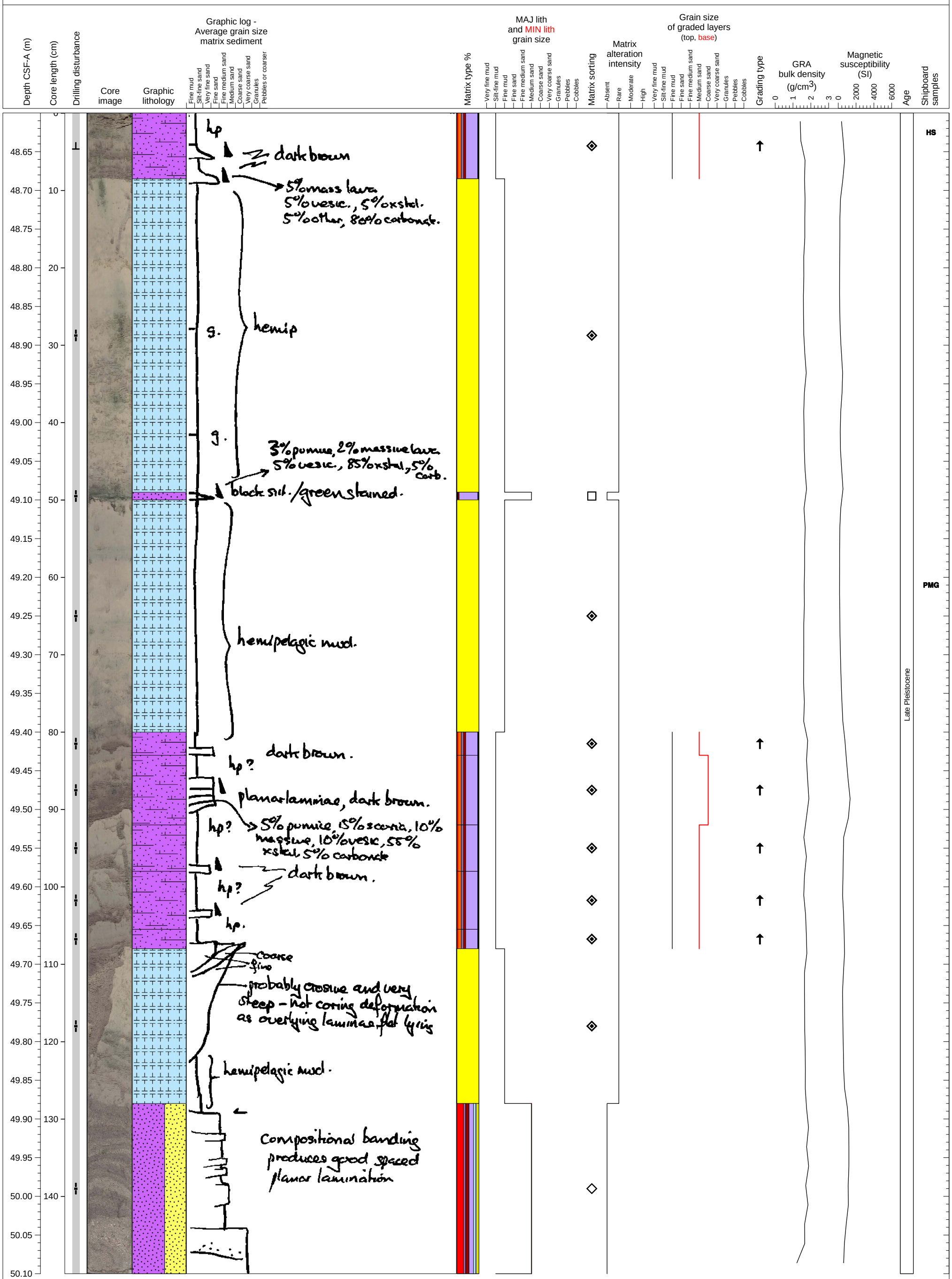
Hole 340-U1398A-7H Section 2, Top of Section: 47.1 CSF-A (m)

At least three volcanic/bioclastic turbidites



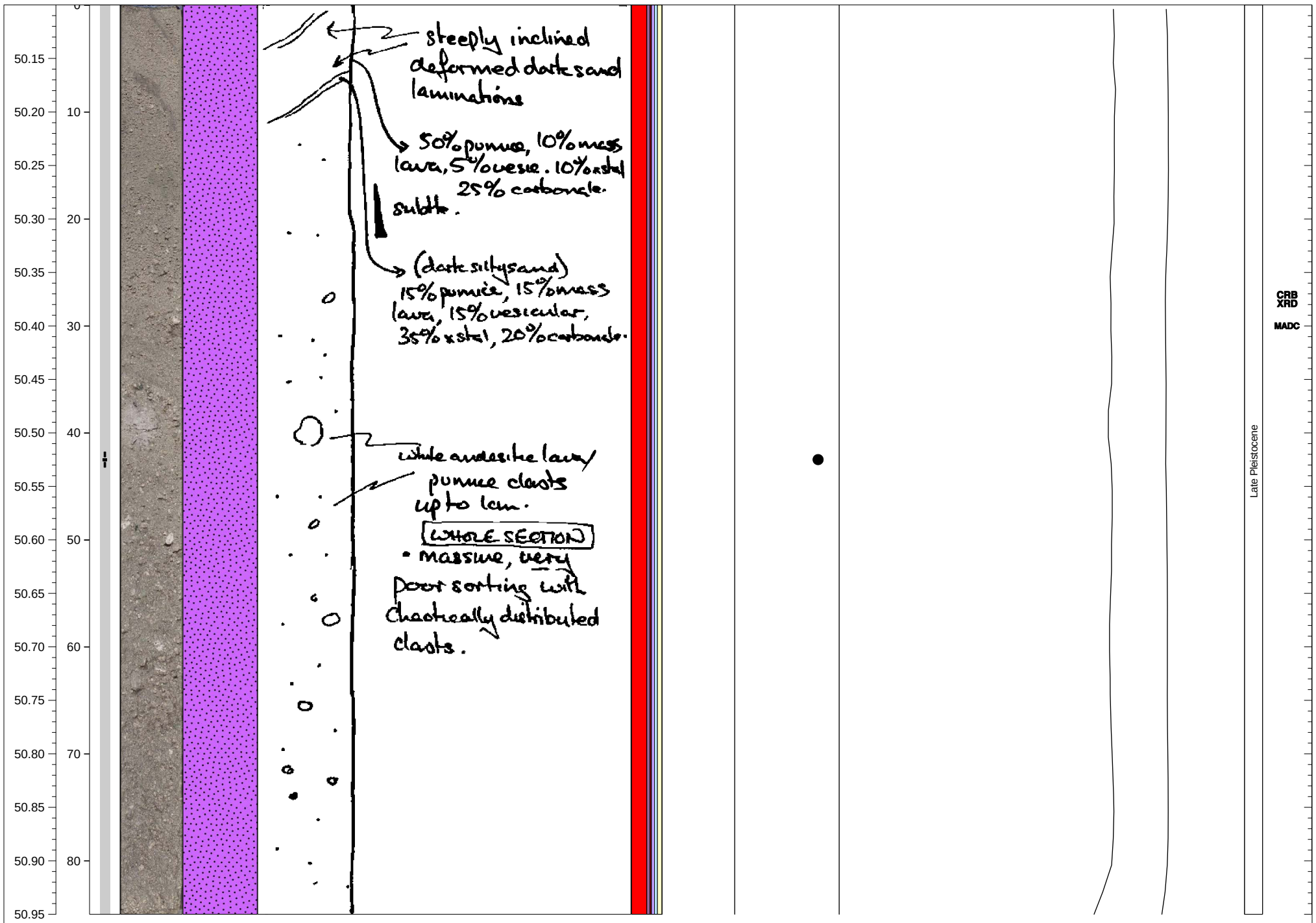
Hole 340-U1398A-7H Section 3, Top of Section: 48.6 CSF-A (m)

Series of normally graded volcaniclastic units interlayered with hemipelagic clay. Base is a mixed volcaniclastic/bioclastic sand.



Hole 340-U1398A-7H Section 4, Top of Section: 50.1 CSF-A (m)

Volcaniclastic sand with abundant pumice clasts.



U1398A-7H-CC ALL TO PALEO

Hole 340-U1398A-8H Section 1, Top of Section: 50.9 CSF-A (m)

Massive pumiceous volcaniclastic sand/granule

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
Magnetic susceptibility (SI)
Age
Shipboard samples

two mud clasts of contrasting colour - one HP, one turbidite mud?

WHOLE SECTION

dark grey matrix with dispersed white (andesite lava/ pomice) granules

- massive
- very poor sorting.

as above

as above.

30% pumice
3% massive lava
5% xstals
8% carbonate

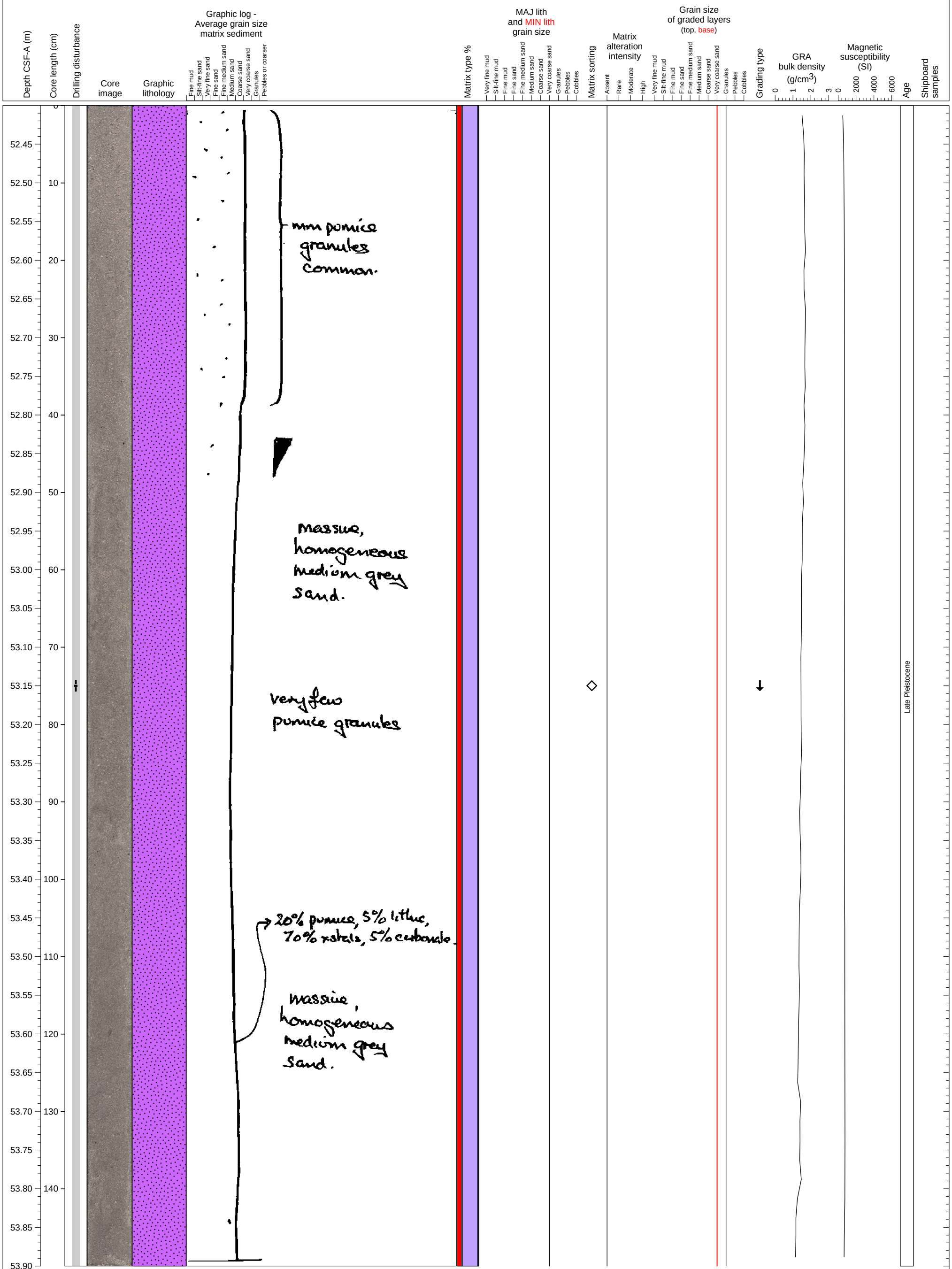
Late Pleistocene

CRB XRD

MADC

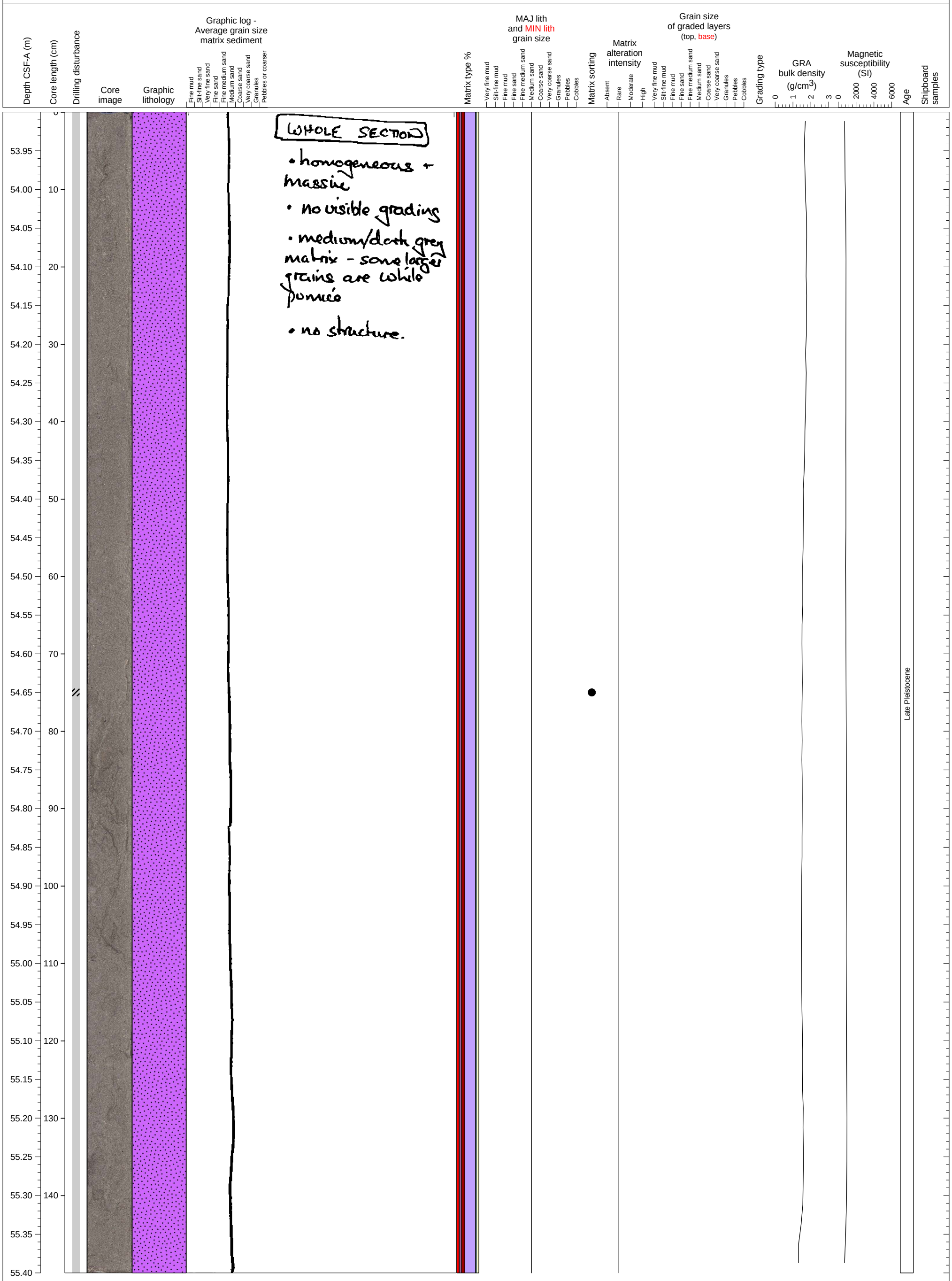
Hole 340-U1398A-8H Section 2, Top of Section: 52.4 CSF-A (m)

A part of massive pumiceous turbidite



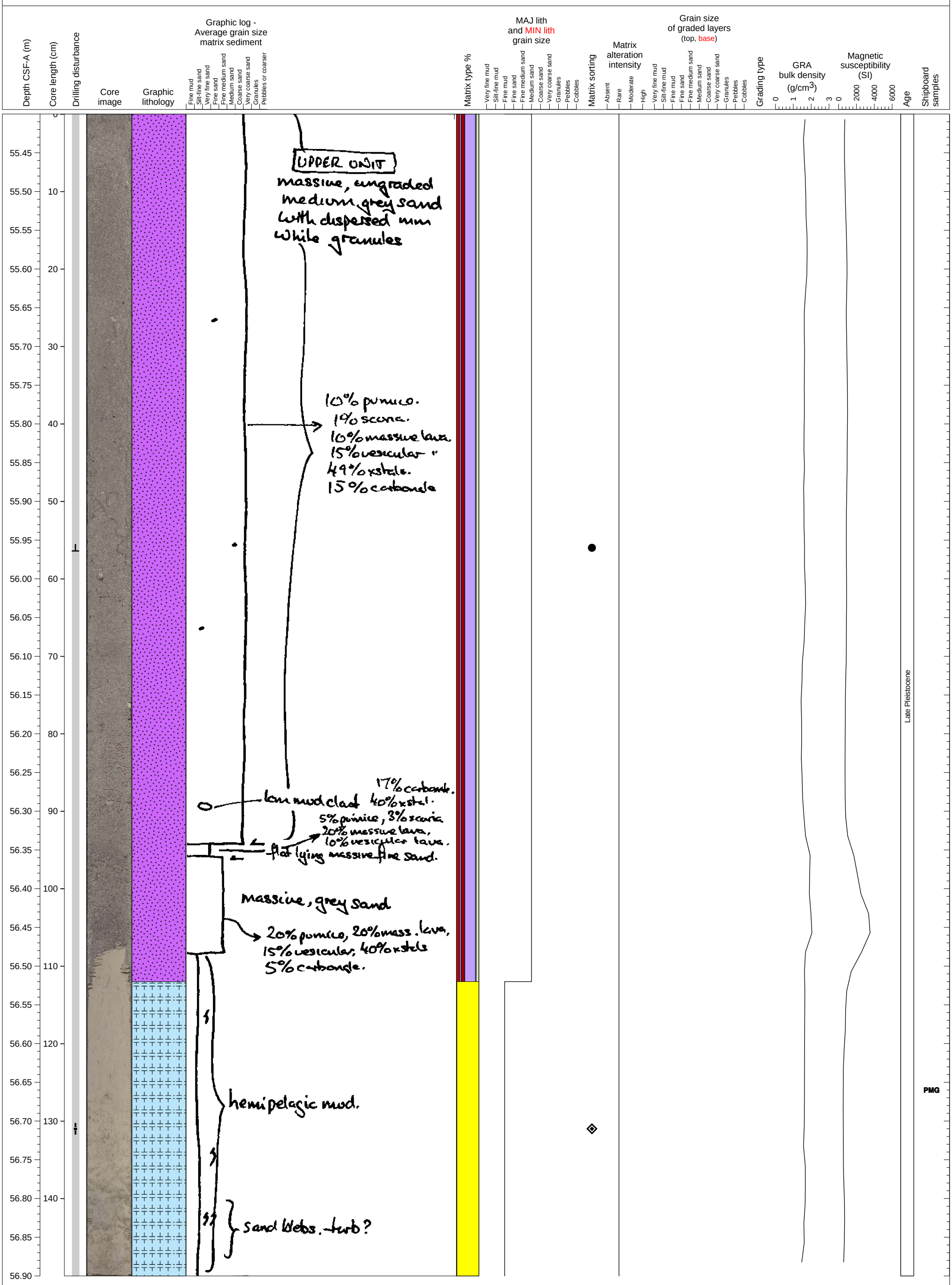
Hole 340-U1398A-8H Section 3, Top of Section: 53.9 CSF-A (m)

Volcaniclastic sand.



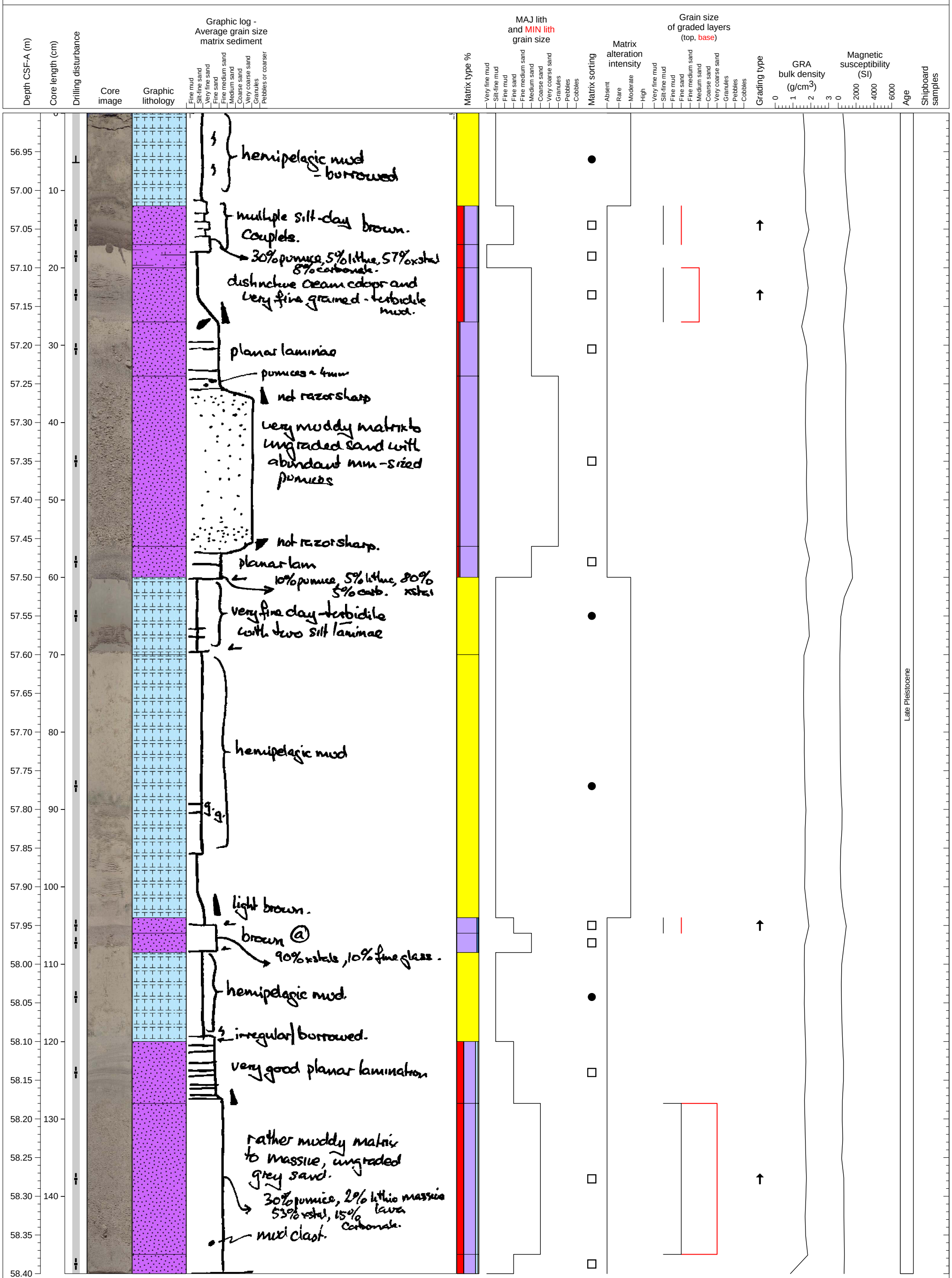
Hole 340-U1398A-8H Section 4, Top of Section: 55.4 CSF-A (m)

Volcaniclastic sand unit overlying hemipelagic clay.



Hole 340-U1398A-8H Section 5, Top of Section: 56.9 CSF-A (m)

Multiple tephra and turbidite layers interlayerd with hemipelagic clays.



Hole 340-U1398A-8H Section 6, Top of Section: 58.4 CSF-A (m)

Volcaniclastic sand units interlayered with hemipelagic clay. Several volcaniclastic sand exhibit normal grading.

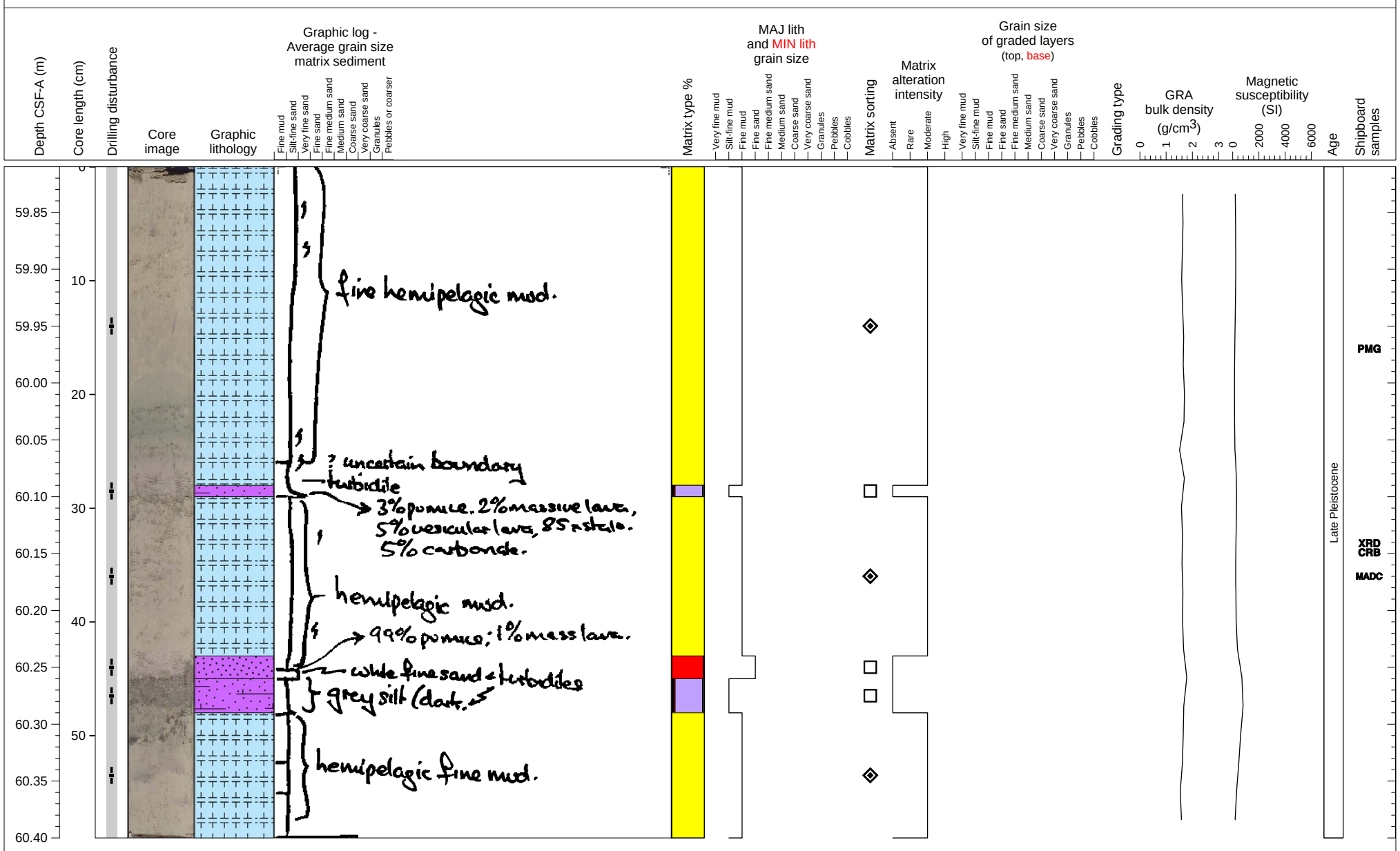
Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment (Fine mud, Silt-fine sand, Very fine sand, Fine sand, Fine medium sand, Medium sand, Coarse sand, Very coarse sand, Granules, Pebbles or coarser)
Matrix type %
MAJ lith and MIN lith grain size (Very fine mud, Silt-fine mud, Fine mud, Fine sand, Fine medium sand, Medium sand, Coarse sand, Very coarse sand, Granules, Pebbles, Cobbles)
Matrix sorting
Matrix alteration intensity (Absent, Rare, Moderate, High)
Grain size of graded layers (top, base) (Very fine mud, Silt-fine mud, Fine mud, Fine sand, Fine medium sand, Medium sand, Coarse sand, Very coarse sand, Granules, Pebbles, Cobbles)
Grading type
GRA bulk density (g/cm^3) (0, 1, 2, 3)
Magnetic susceptibility (SI) (0, 2000, 4000, 6000)
Age
Shipboard samples

58.45 / 10
ungraded, very muddy matrix sand with widely + chaotically dispersed large 2-4mm pumices
debrithic?
58.60 / 20
15% scoria, 8% mass lava, 25% vesicles, 50% xstals 2% carbonate.
58.70 / 30
58.75 / 40
58.80 / 40
58.85 / 50
fine homogeneous mud. ? hemipelagite
58.90 / 50
58.95 / 60
8% carbonate 65% xstals 16% mass lava 5% pumice, 10% vesicles
59.00 / 60
V. sharp
59.05 / 70
massive, ungraded muddy matrix - with few pumice granules at top.
? debrithi or Bouma A
59.10 / 70
59.15 / 80
hemipelagic mud.
59.20 / 80
59.25 / 90
good planar lamination
59.30 / 90
pumices
turbidite - brown
59.35 / 100
faint planar lamination
45% pumice, 5% mass lava, 15% vesicles, 30% xstals, 5% carbonate
59.40 / 100
59.45 / 110
hemipelagic mud.
59.50 / 110
59.55 / 120
? boundary
59.60 / 120
59.65 / 130
black silty base to turbidite.
59.70 / 130
55% pumice, 5% mass lava 10% vesicular, 20% xstals, 10% carbonate
59.75 / 140
cream colour - hp.
59.80 / 140

HS
Late Pleistocene

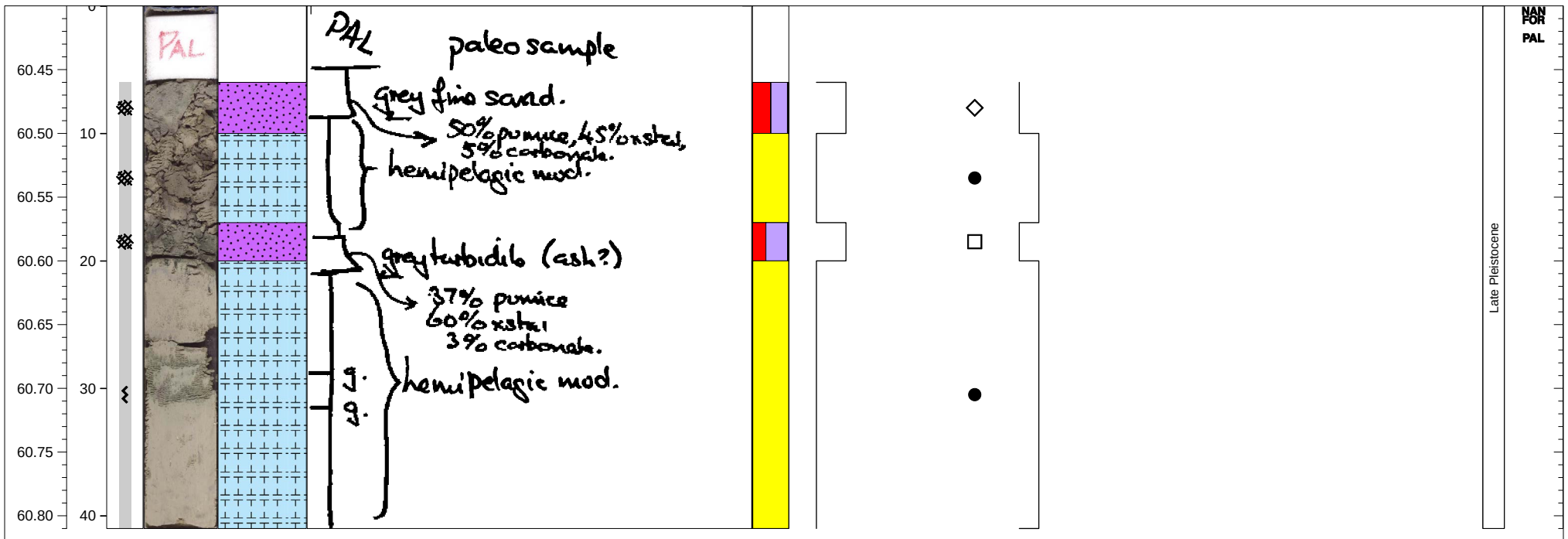
Hole 340-U1398A-8H Section 7, Top of Section: 59.81 CSF-A (m)

Hemipelagic clay interlayered with fine-grained volcaniclastic units.



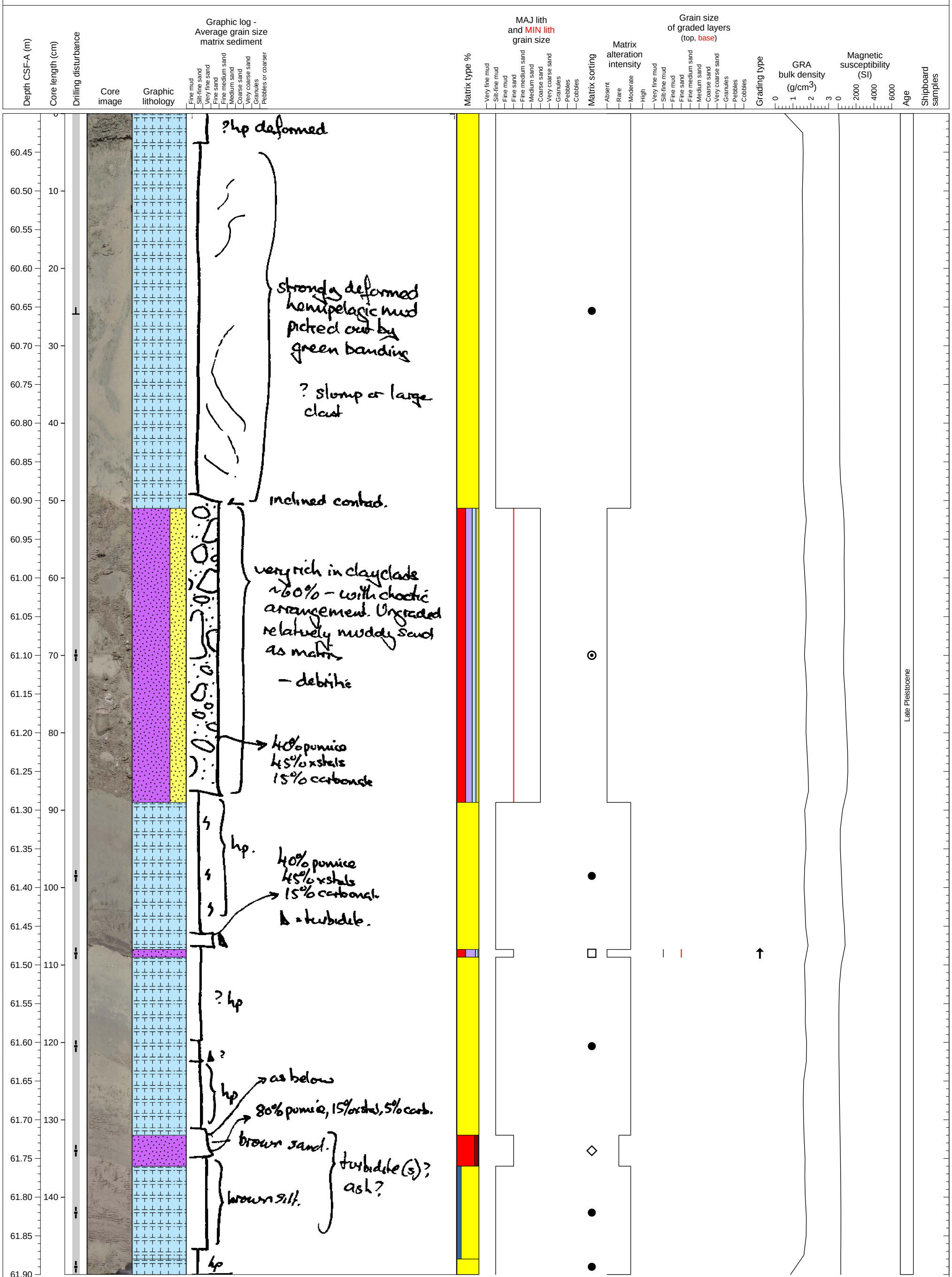
Hole 340-U1398A-8H Section CC, Top of Section: 60.4 CSF-A (m)

Two volcaniclastic sand layers interlayered with hemipelagic clay.



Hole 340-U1398A-9H Section 1, Top of Section: 60.4 CSF-A (m)

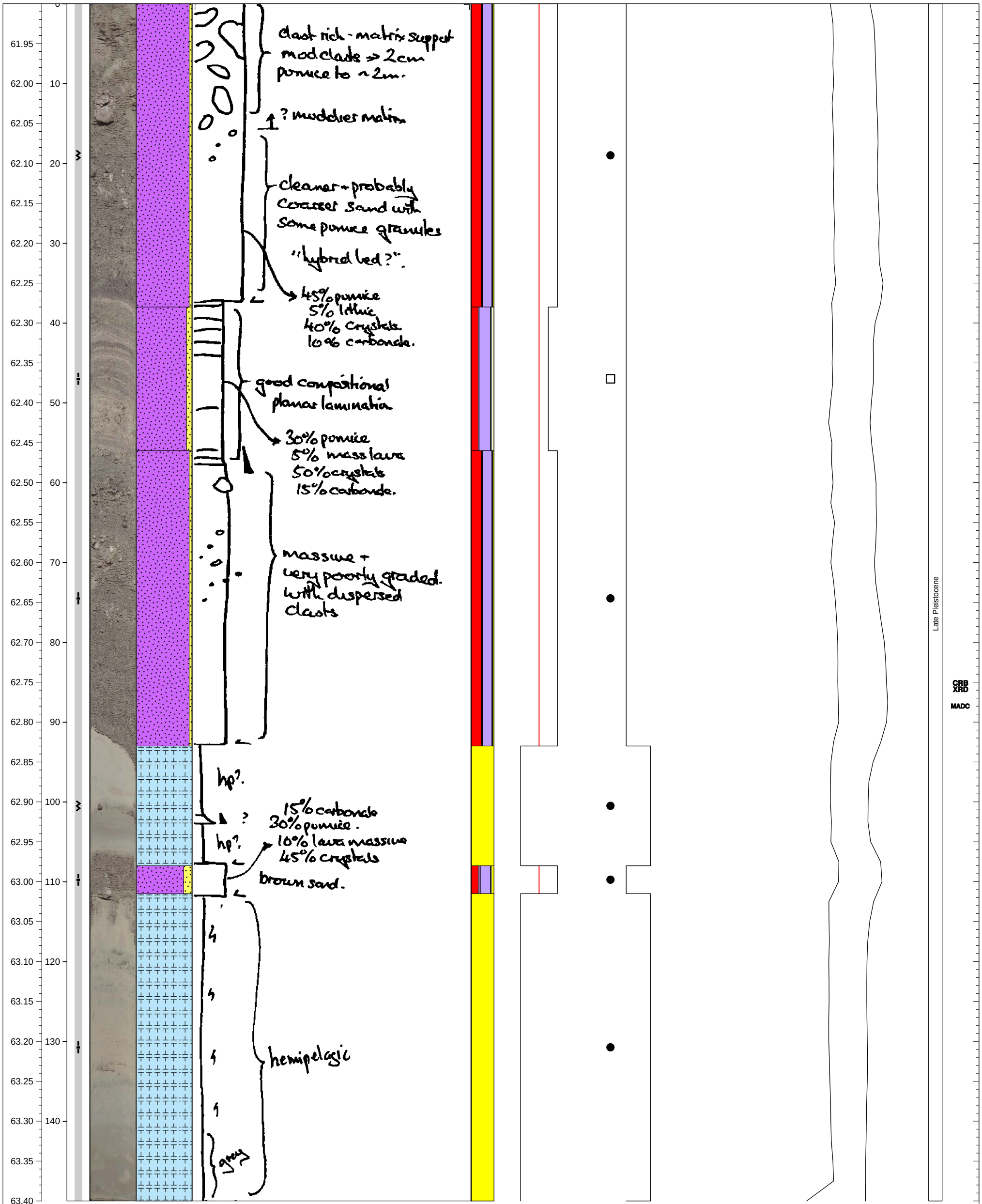
Hemipelagic sediment interlayering with volcaniclastic sand layers with pumice and mud clasts, and a tephra layer.



Hole 340-U1398A-9H Section 2, Top of Section: 61.9 CSF-A (m)

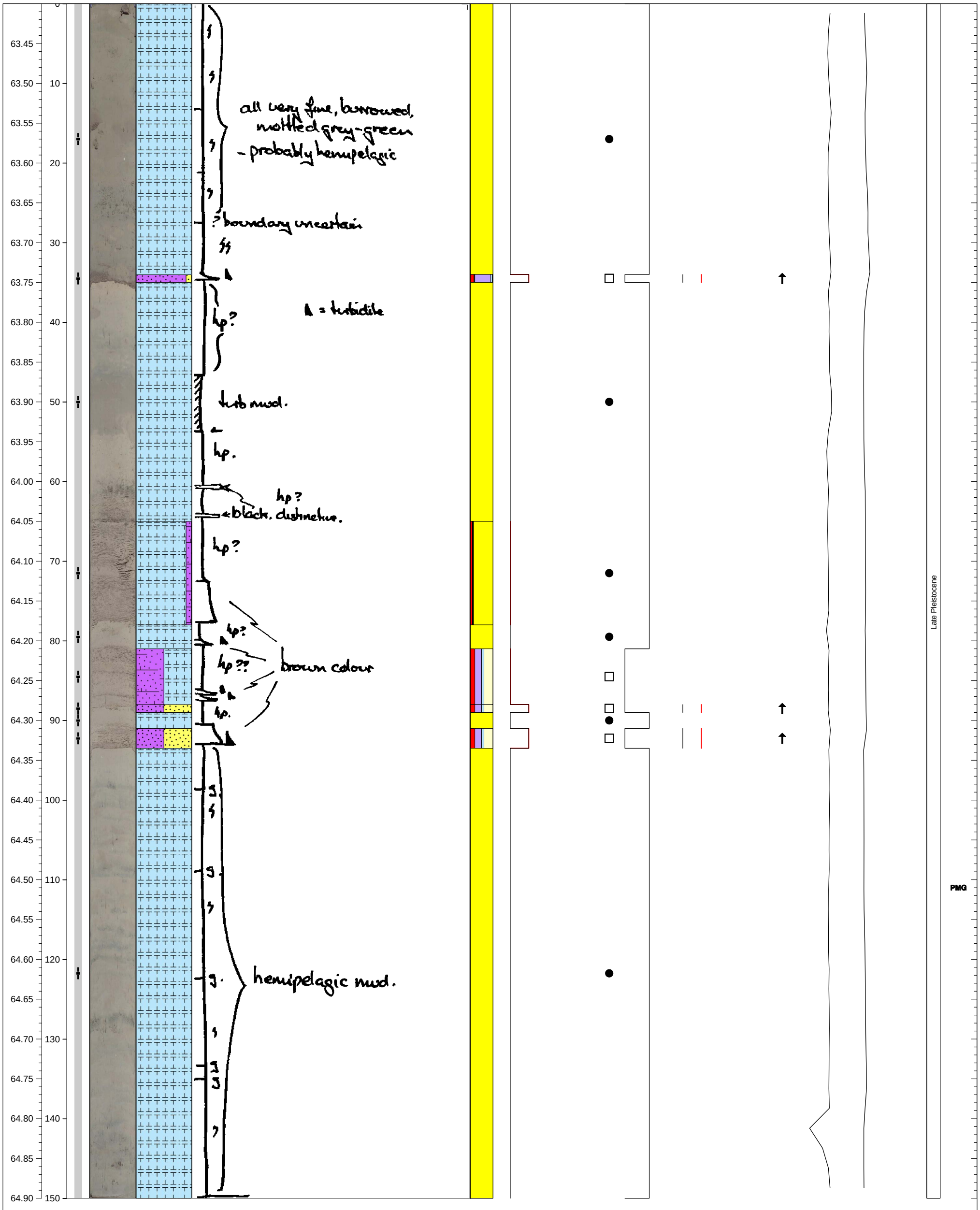
Volcaniclastic turbidite with a portion of color-banding underlying hemipelagic sediment.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
MAJ lith and MIN lith grain size
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
Magnetic susceptibility (SI)
Age
Shipboard samples



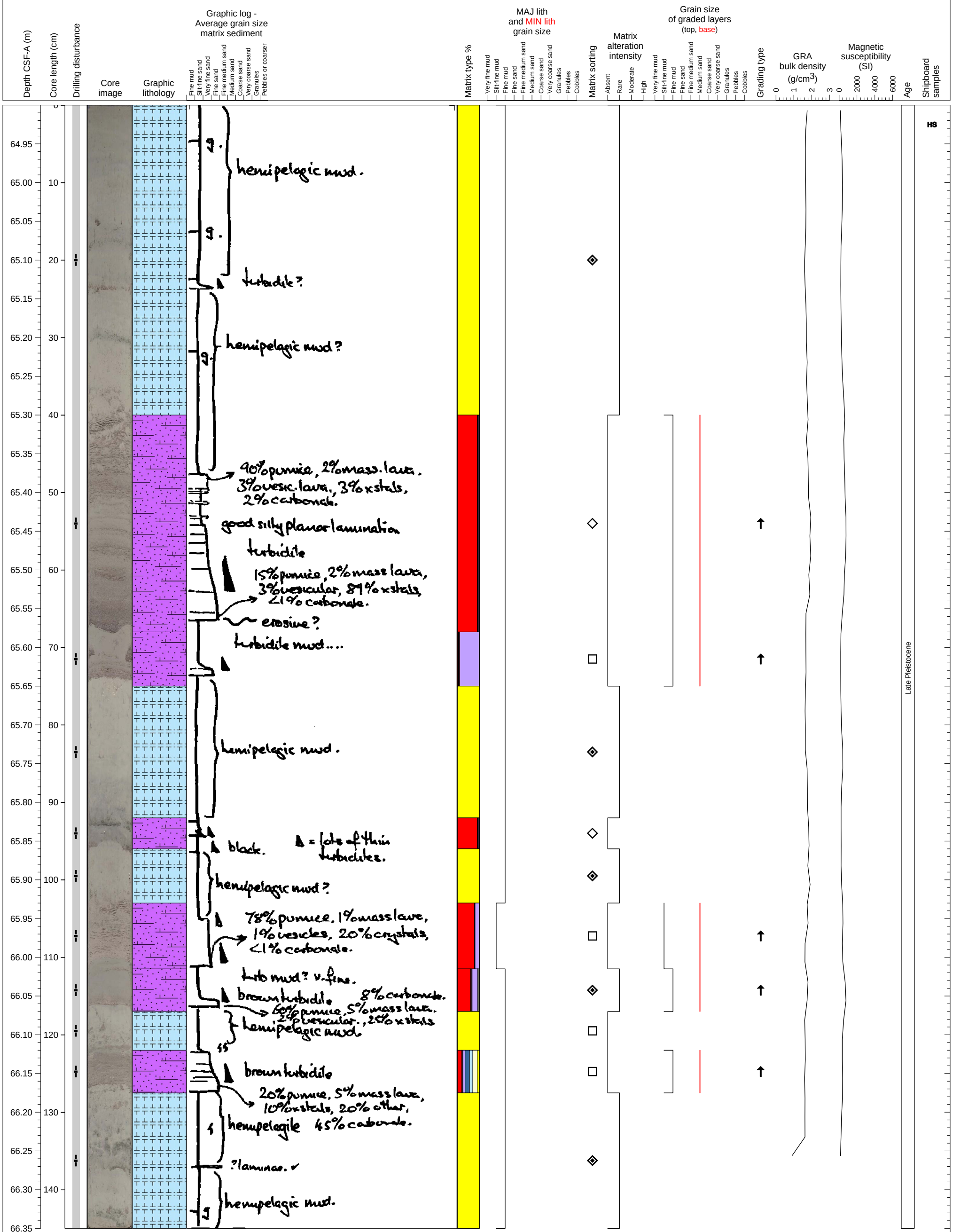
Hole 340-U1398A-9H Section 3, Top of Section: 63.4 CSF-A (m)

Multiple tephra and turbidite layers intecalating with hemipelagic clays.



Hole 340-U1398A-9H Section 4, Top of Section: 64.9 CSF-A (m)

Hemipelagic clay interlayered with abundant volcaniclastic tephra layers, many of which exhibit normal grading.



Hole 340-U1398A-9H Section 5, Top of Section: 66.35 CSF-A (m)

Hemipelagic clay with abundant volcaniclastic tephra layers, many exhibiting normal grading.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples

66.40
66.45
66.50
66.55
66.60
66.65
66.70
66.75
66.80
66.85
66.90
66.95
67.00
67.05
67.10
67.15
67.20
67.25
67.30
67.35
67.40
67.45
67.50
67.55
67.60
67.65
67.70
67.75
67.80

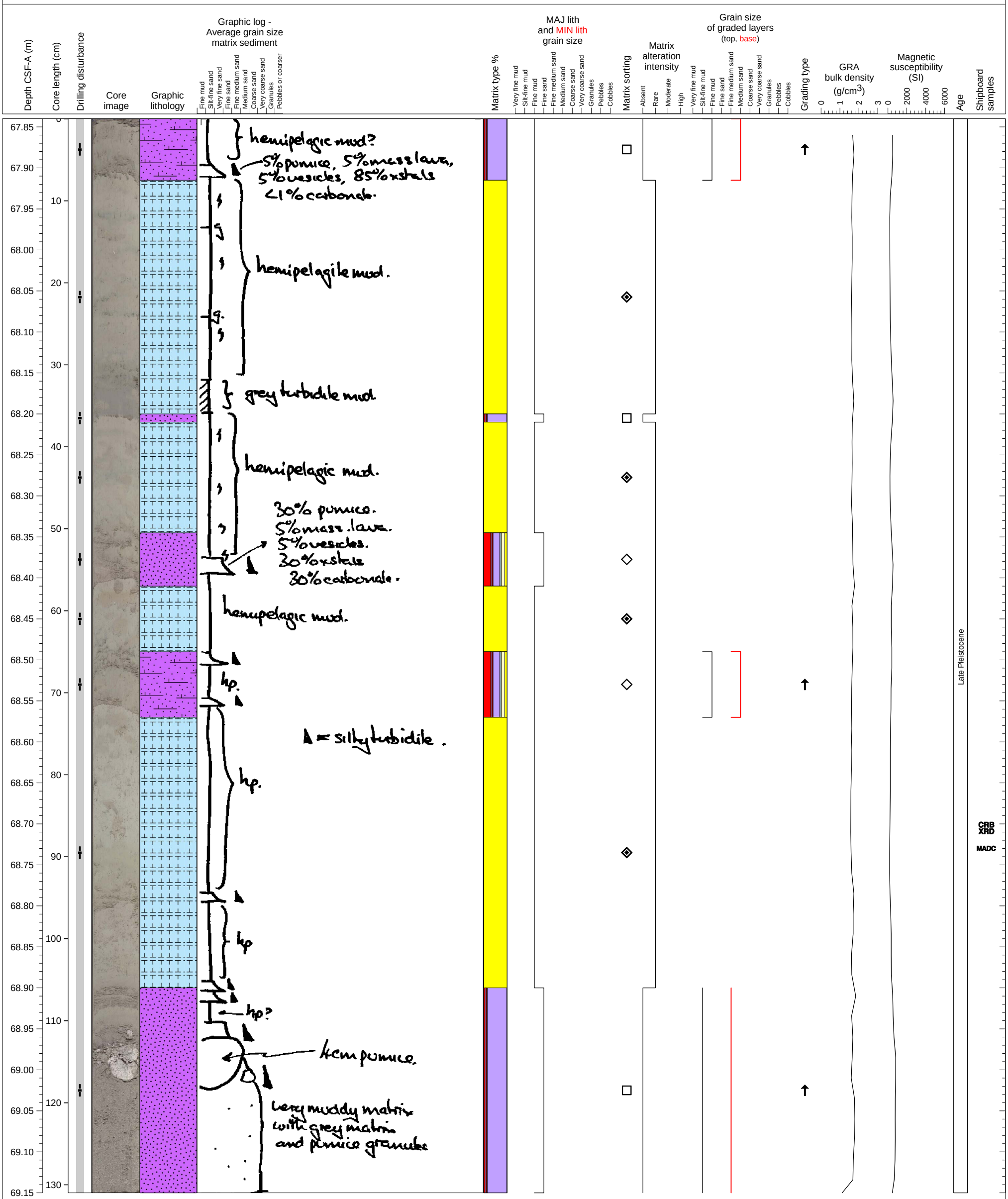
10
20
30
40
50
60
70
80
90
100
110
120
130
140

hp.
? - brown
hemipelagic mud.
grey-turb.
? turb.
hp
brown.
hp.
hp
grey.
hp.
brown.
hp.
turb. grey.
hp.
brown silte.
hp.
hp
brown silt

Late Pleistocene

Hole 340-U1398A-9H Section 6, Top of Section: 67.84 CSF-A (m)

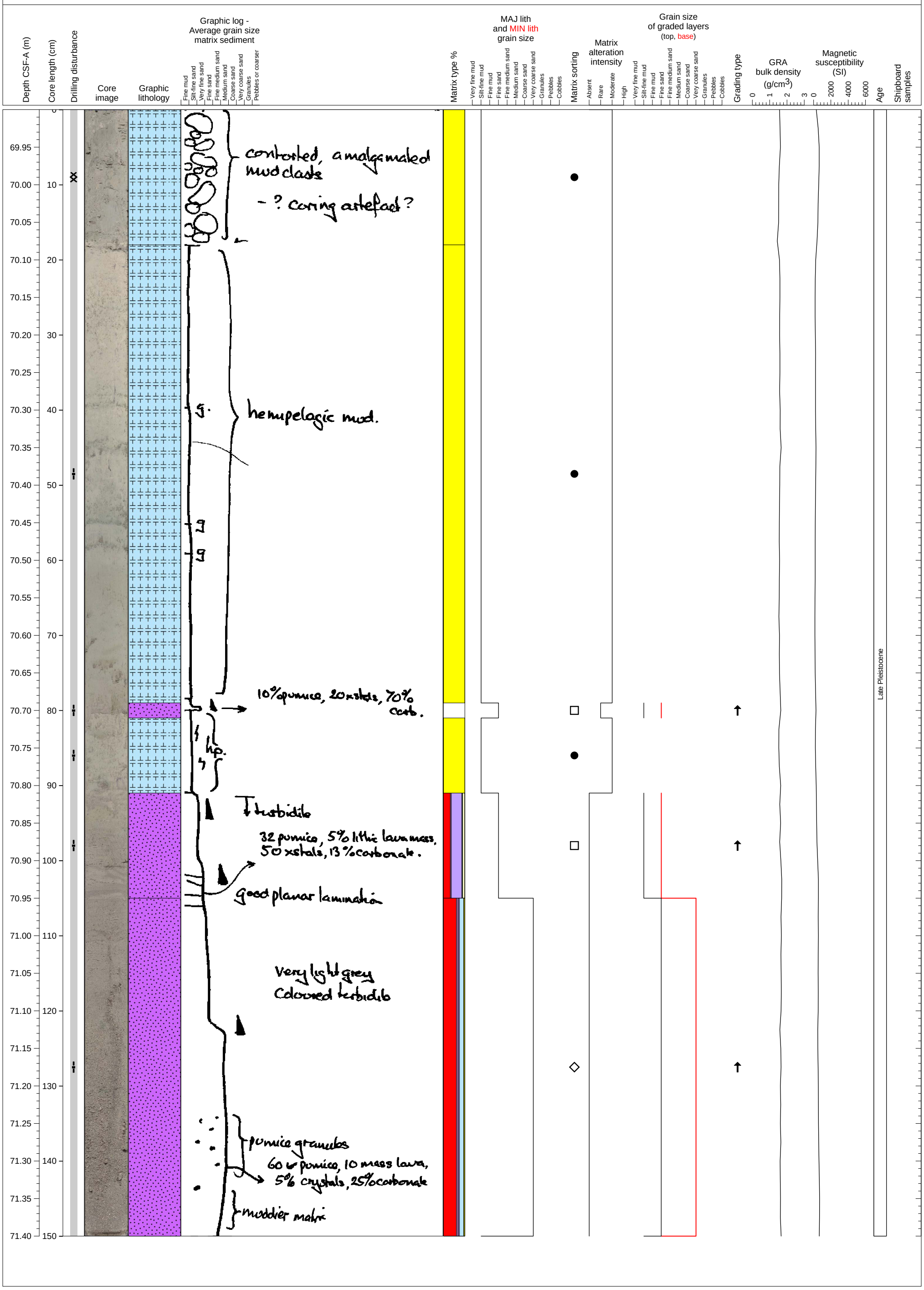
Hemipelagic clay interlayered with abundant volcaniclastic tephra layers, many of which exhibit normal grading.



U1398A-9H-CC ALL TO PALEO

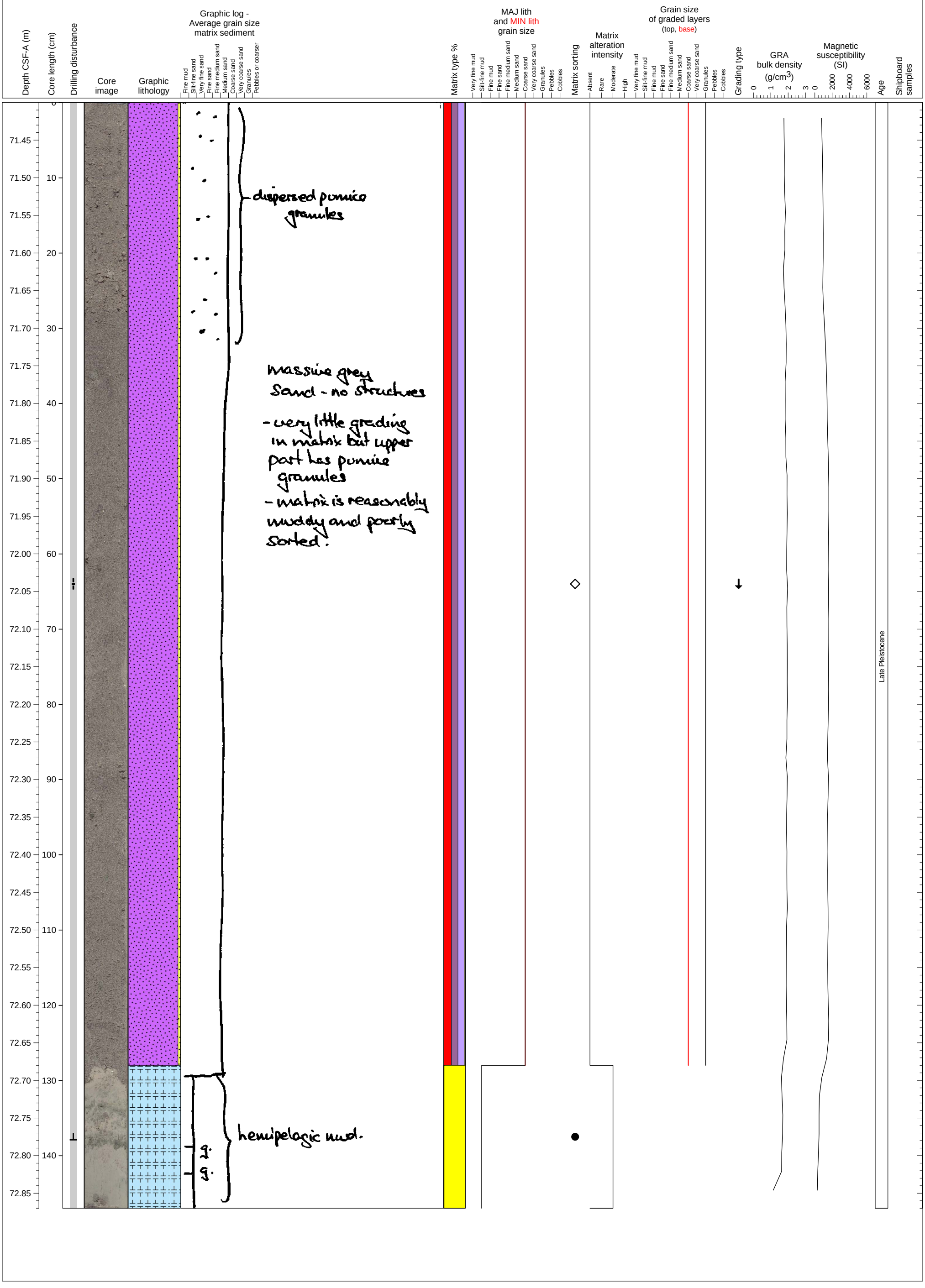
Hole 340-U1398A-10H Section 1, Top of Section: 69.9 CSF-A (m)

Upper part of this section is hemiplelagic clay and the lower is a top of pumiceous turbidite.



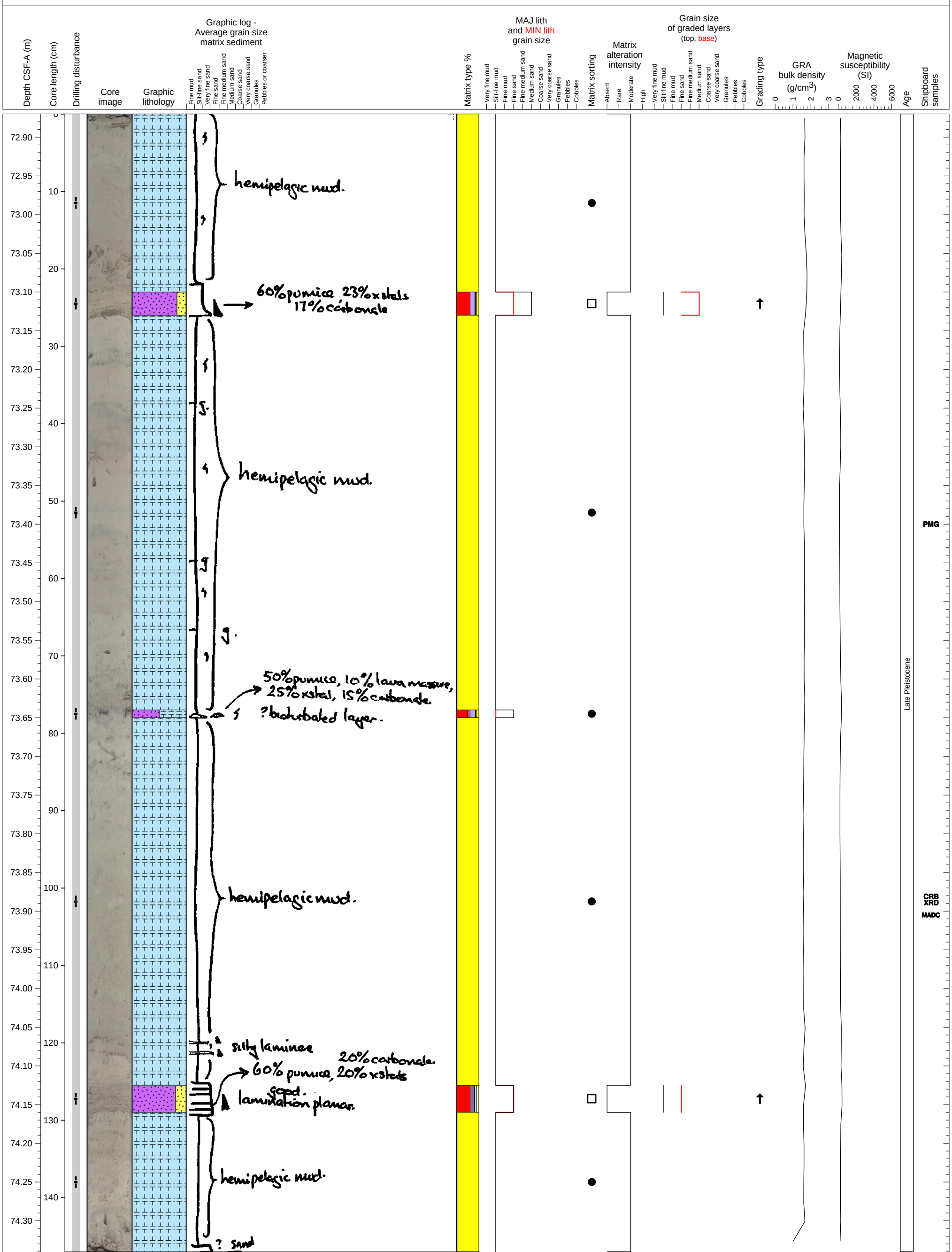
Hole 340-U1398A-10H Section 2, Top of Section: 71.4 CSF-A (m)

Lower part of volcaniclastic turbidite on hemipelagic clay.



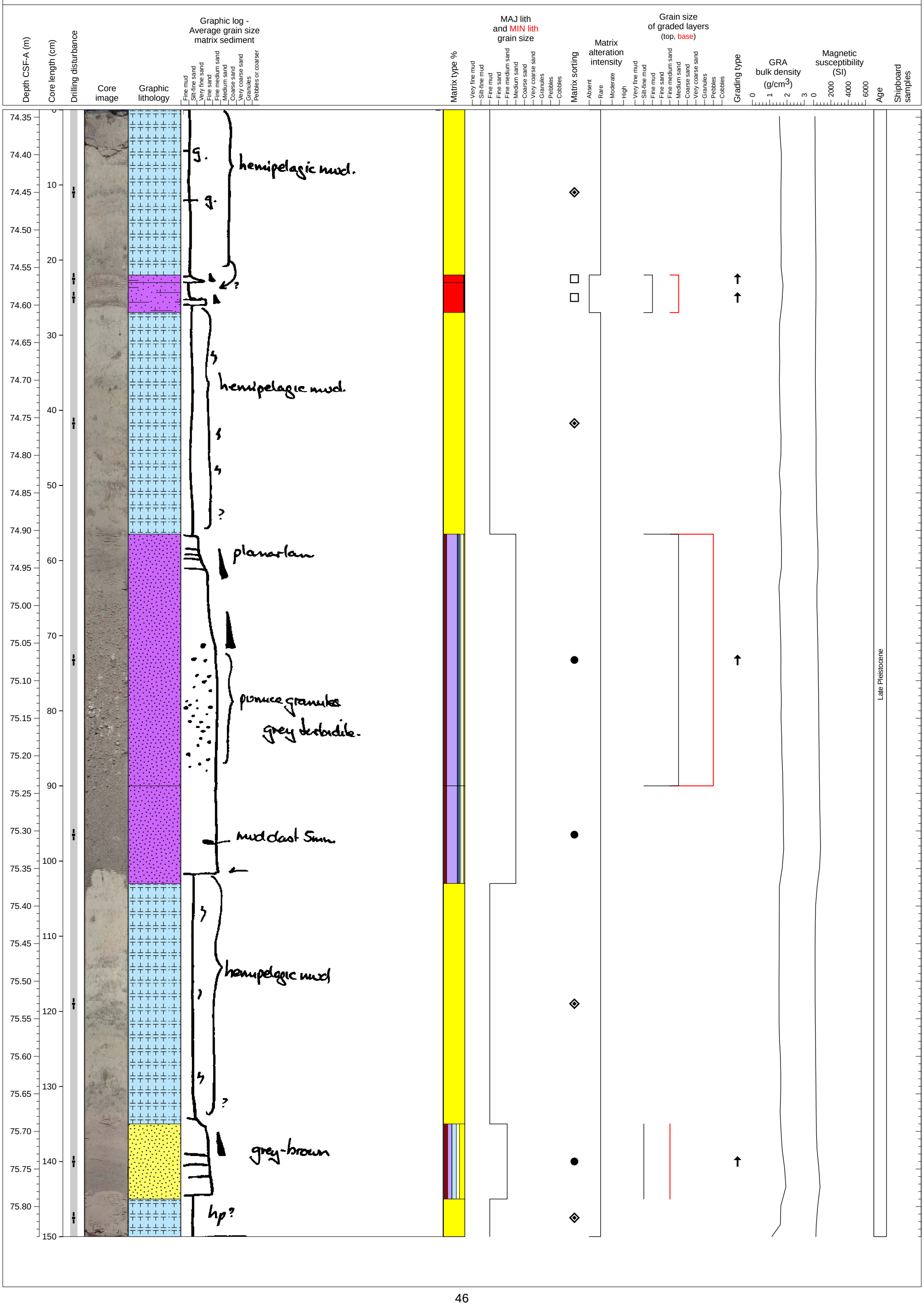
Hole 340-U1398A-10H Section 3, Top of Section: 72.87 CSF-A (m)

Hemipelagic clay interlayered with three tephra layers.



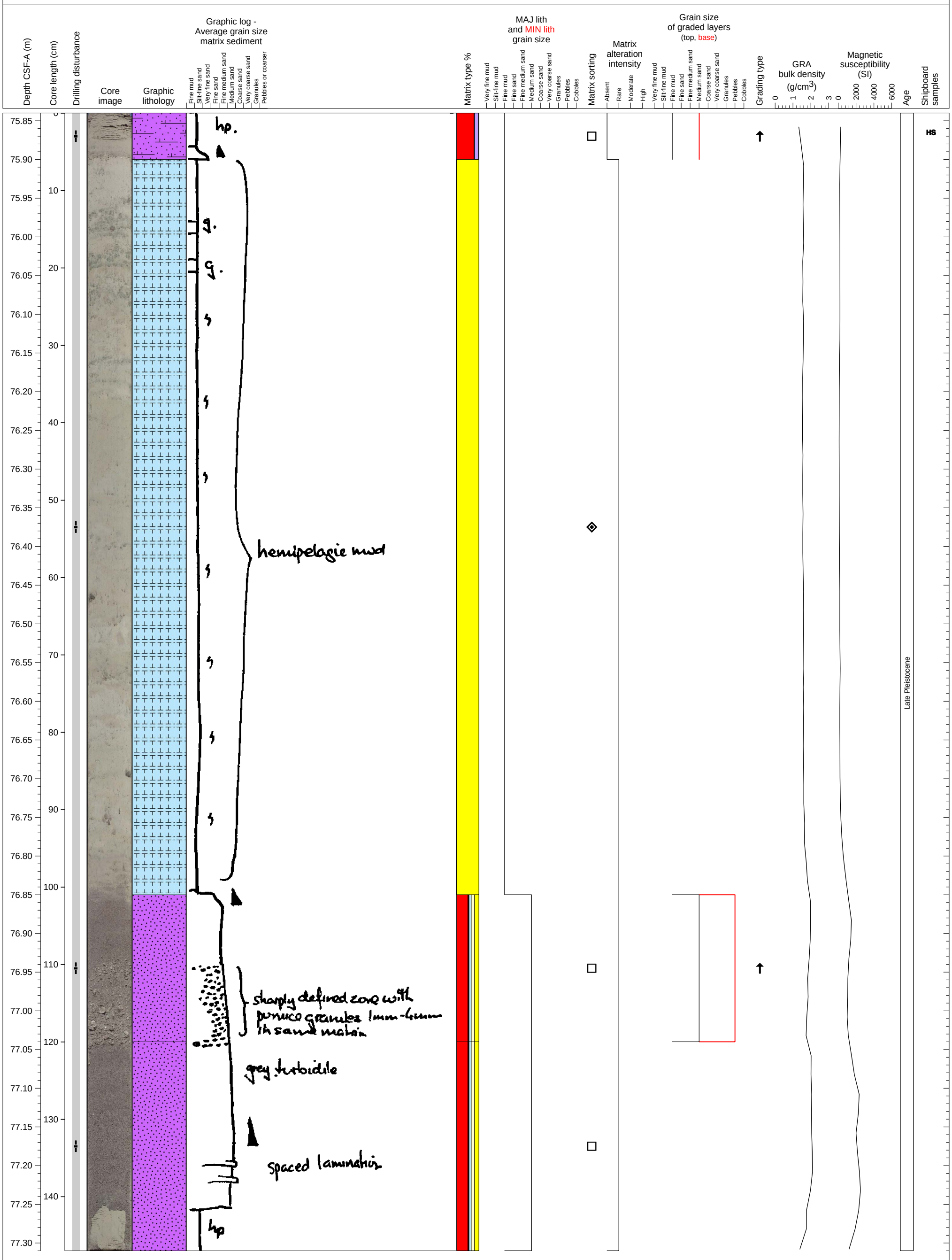
Hole 340-U1398A-10H Section 4, Top of Section: 74.34 CSF-A (m)

Hemipelagic clay interlayered with volcaniclastic sand units, many exhibiting normal grading.



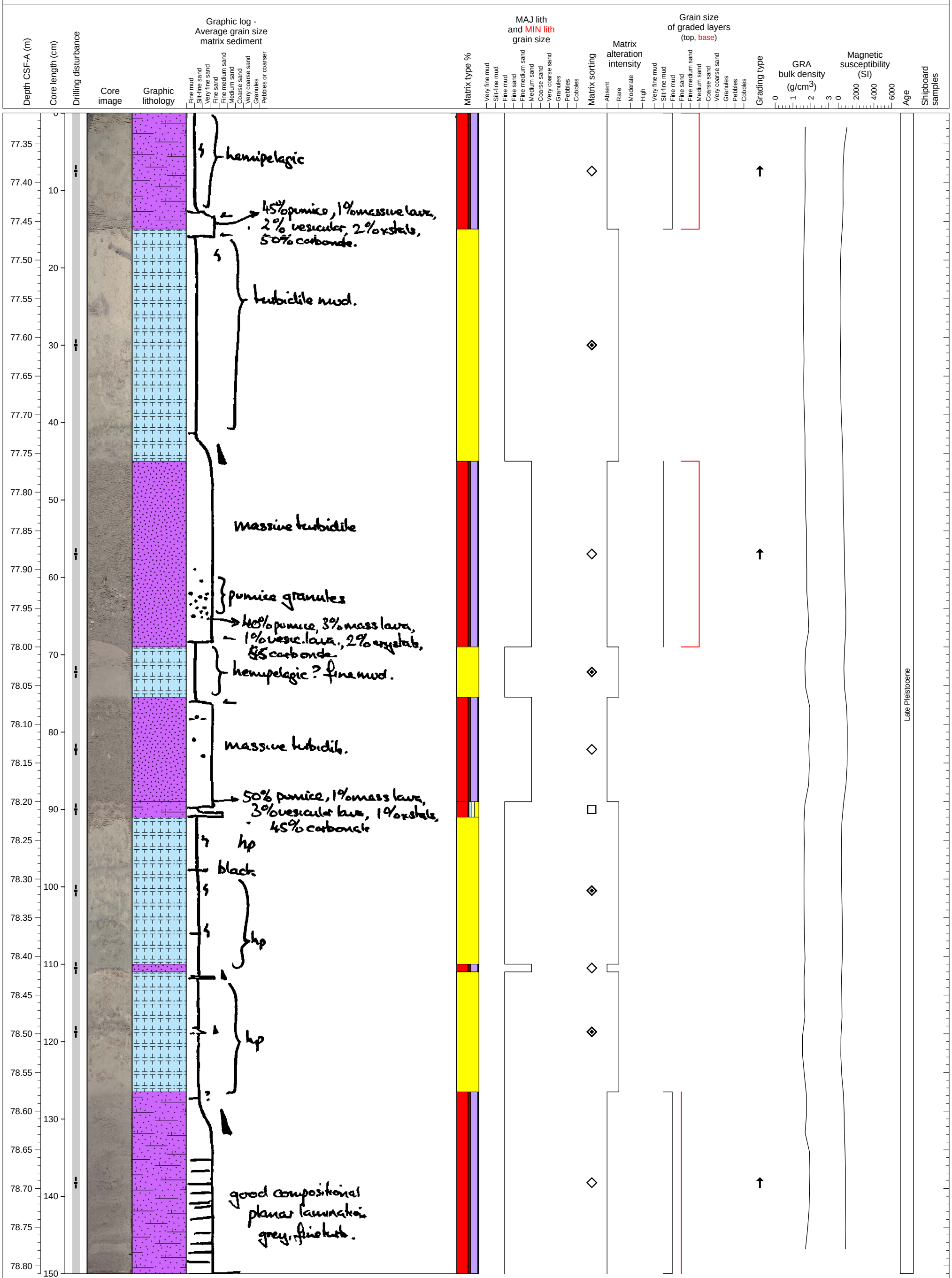
Hole 340-U1398A-10H Section 5, Top of Section: 75.84 CSF-A (m)

Volcaniclastic sand units, many normally graded, interlayered with hemipelagic clay.



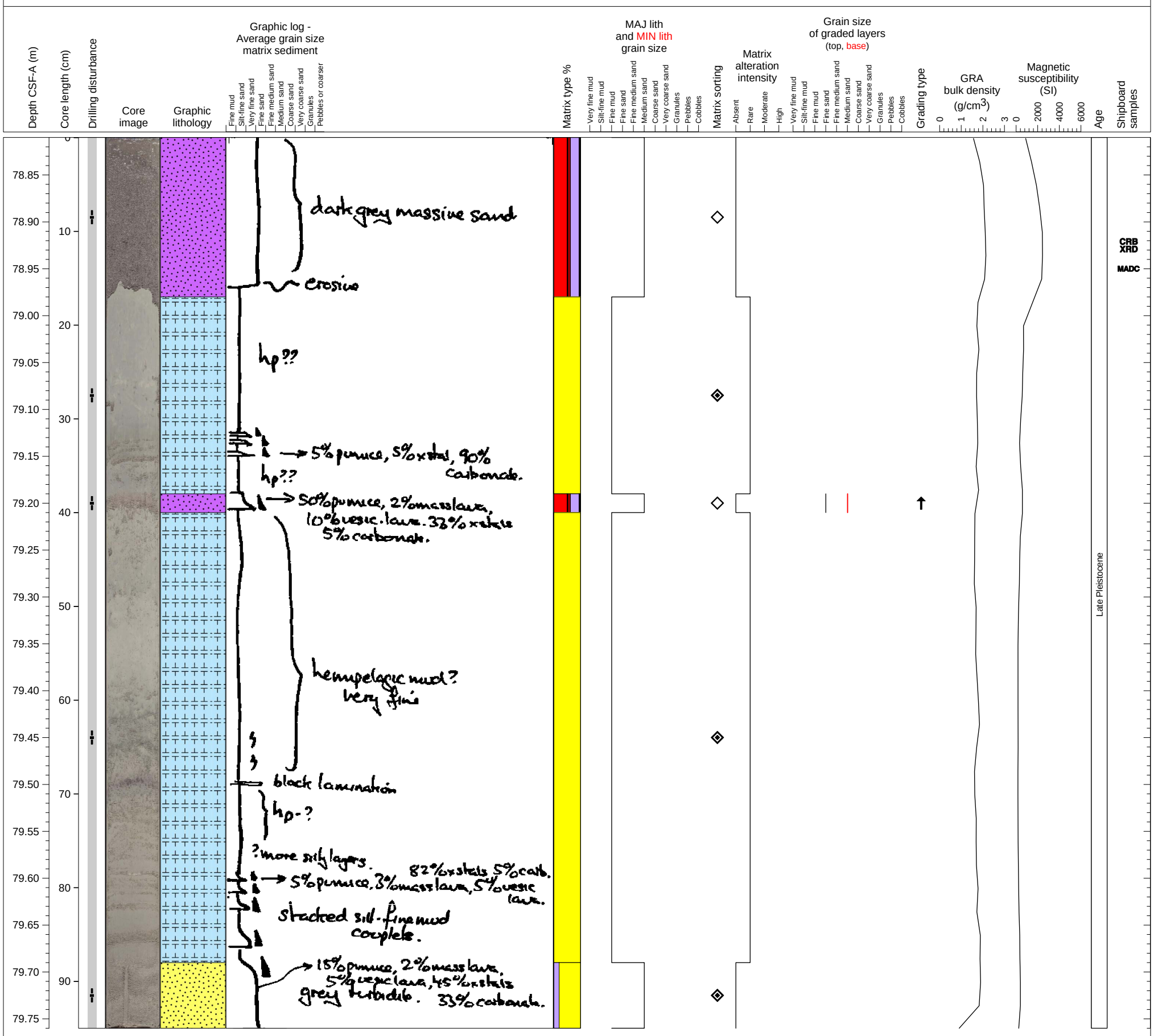
Hole 340-U1398A-10H Section 6, Top of Section: 77.31 CSF-A (m)

Volcaniclastic sand units, many displaying normal grading, interlayered with hemipelagic clay.



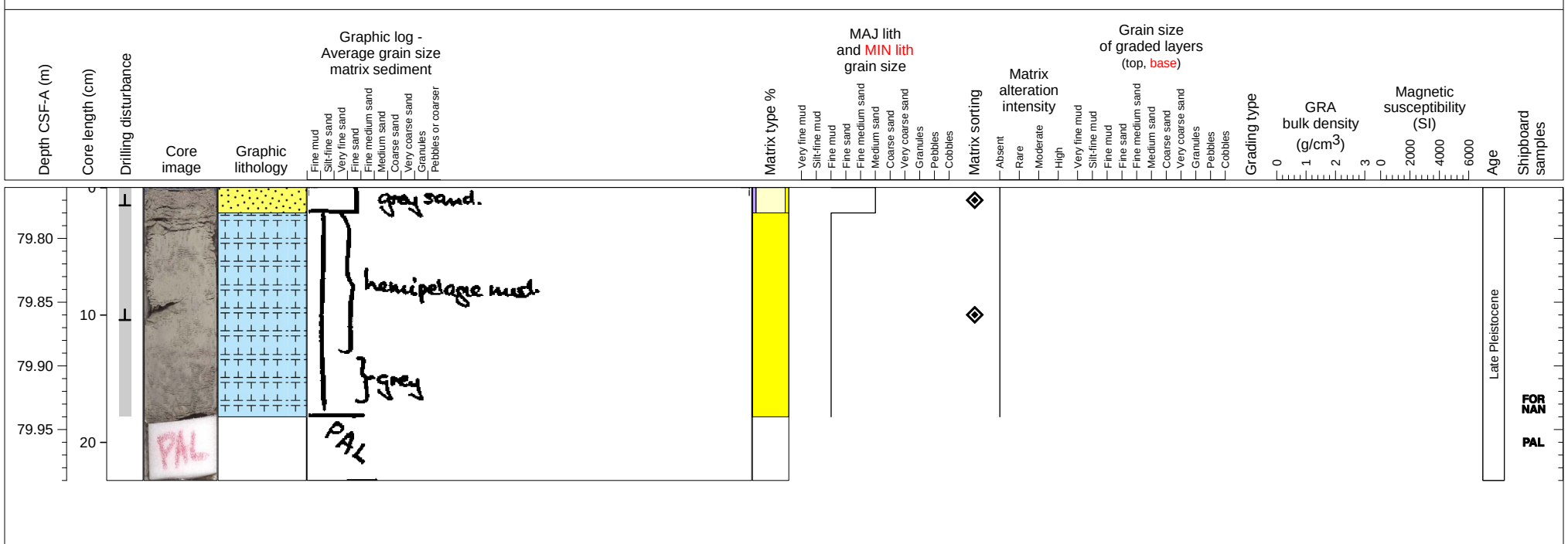
Hole 340-U1398A-10H Section 7, Top of Section: 78.81 CSF-A (m)

Hemipelagic clay interlayered with volcaniclastic sand units.



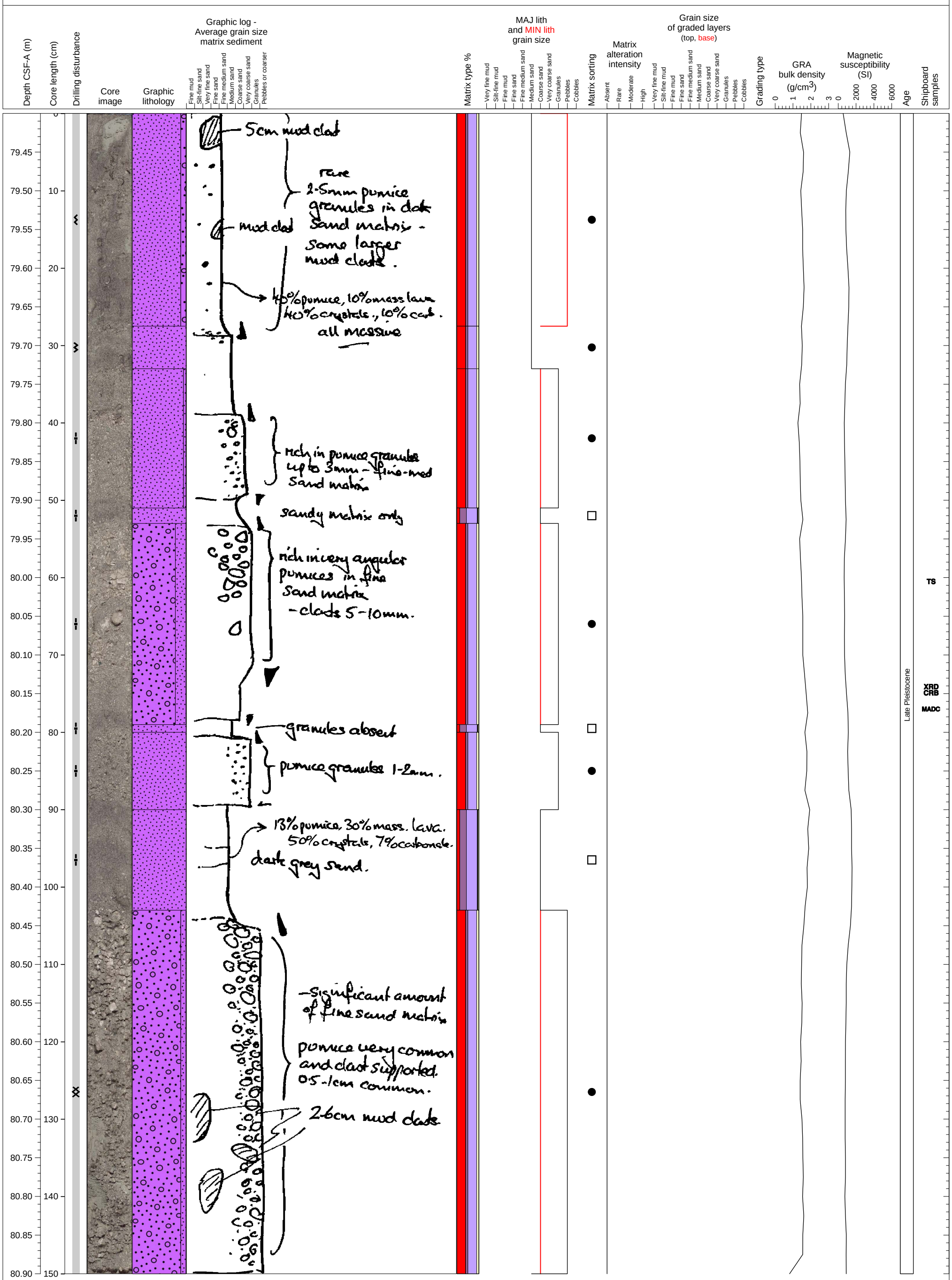
Hole 340-U1398A-10H Section CC, Top of Section: 79.76 CSF-A (m)

Calcareous sand overlying hemipelagic clay. PAL sample from base.



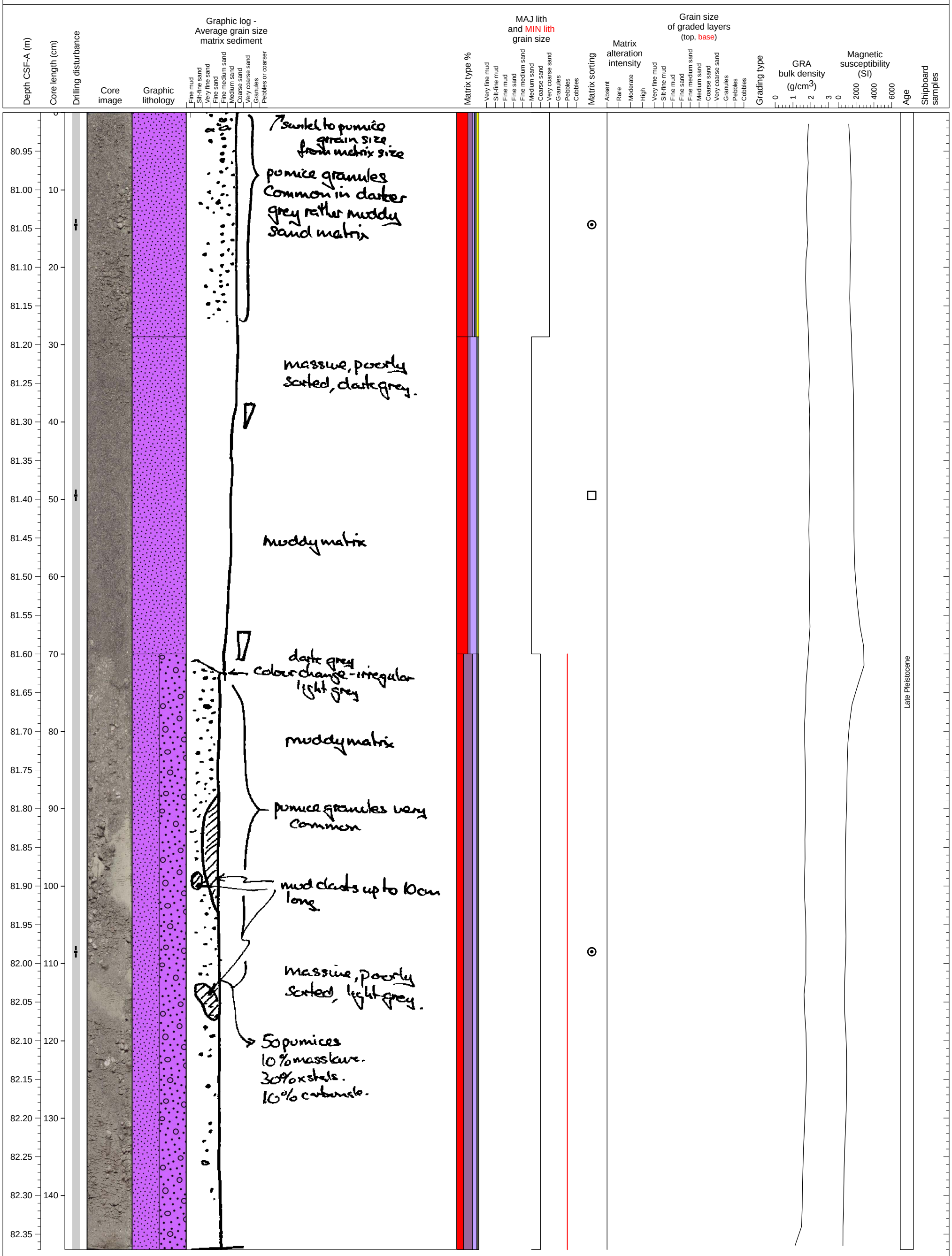
Hole 340-U1398A-11H Section 1, Top of Section: 79.4 CSF-A (m)

Succession of pumiceous sand layers with gradings. The lower most is characterized by pebble sized pumice.



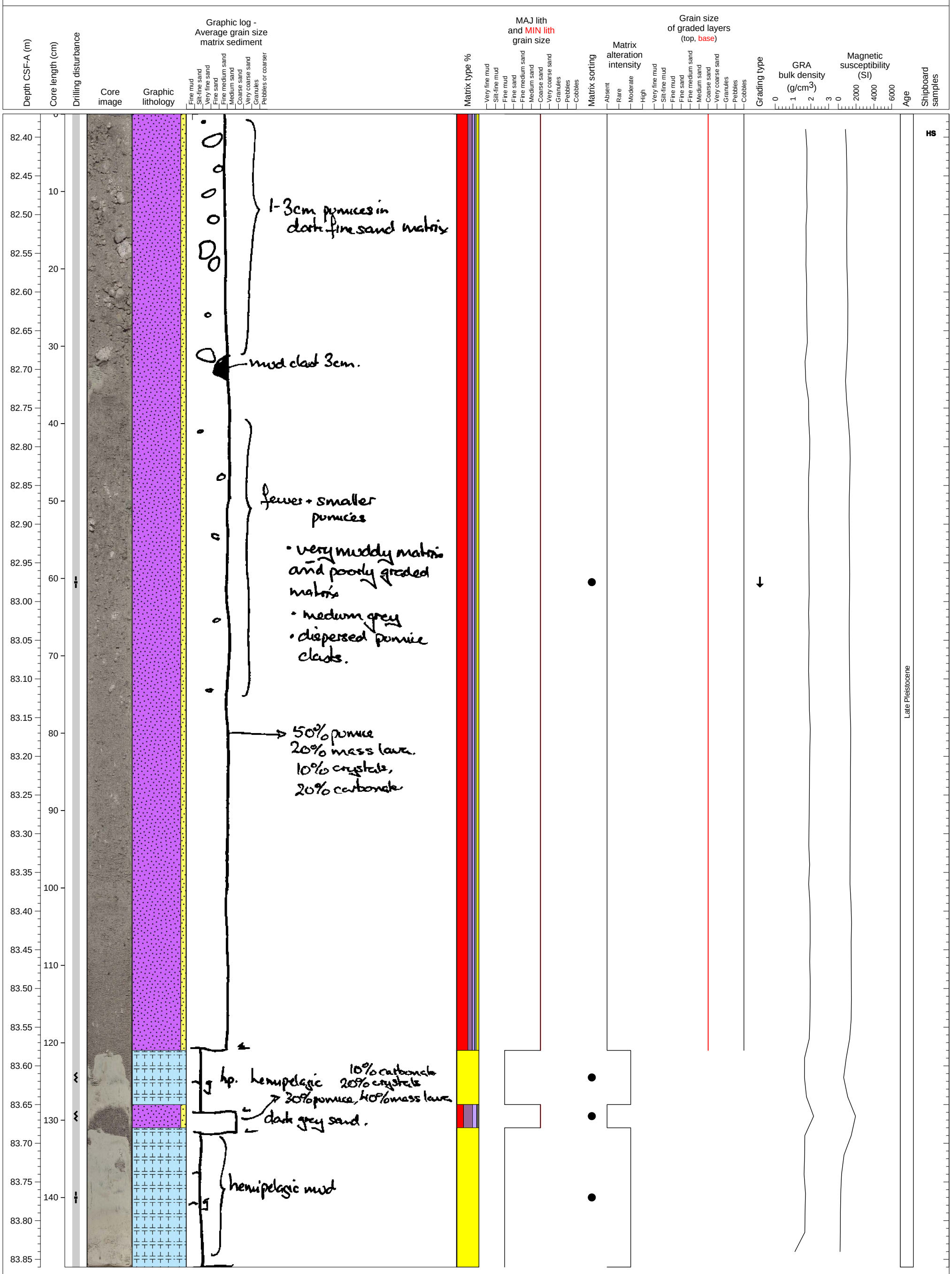
Hole 340-U1398A-11H Section 2, Top of Section: 80.9 CSF-A (m)

Graded massive pumiceous with potions of clast concentration. In the bottom of this section the sorting is very poor.



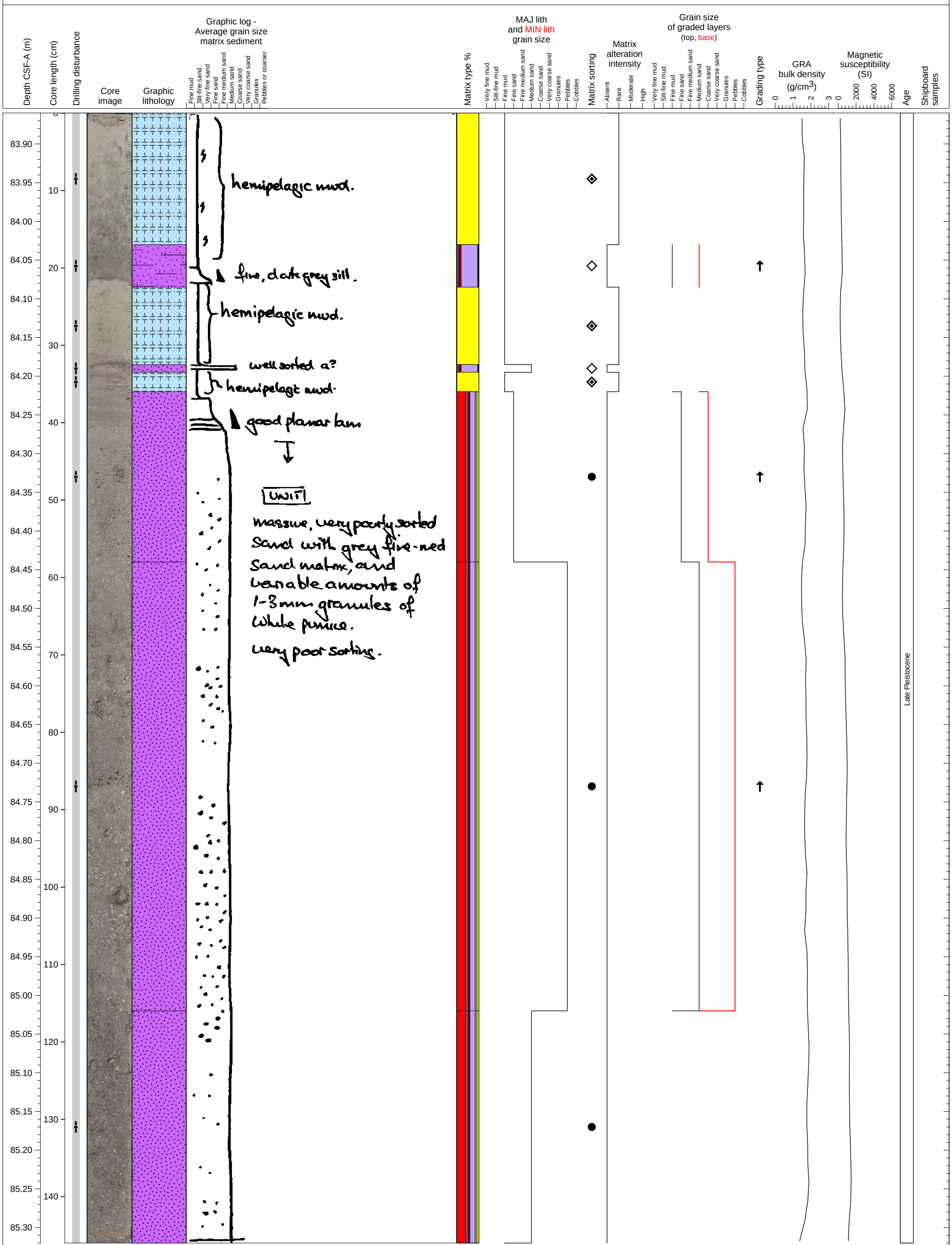
Hole 340-U1398A-11H Section 3, Top of Section: 82.37 CSF-A (m)

Massive pumiceous turbidite on hemipelagic clay.



Hole 340-U1398A-11H Section 4, Top of Section: 83.86 CSF-A (m)

Hemipelagic clay interlayered with abundant volcaniclastic sand units, many displaying normal grading.



Hole 340-U1398A-11H Section 5, Top of Section: 85.32 CSF-A (m)

Volcaniclastic sand units, one with abundant pumice clasts.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
Magnetic susceptibility (SI)
Age
Shipboard samples

pumice granules common.

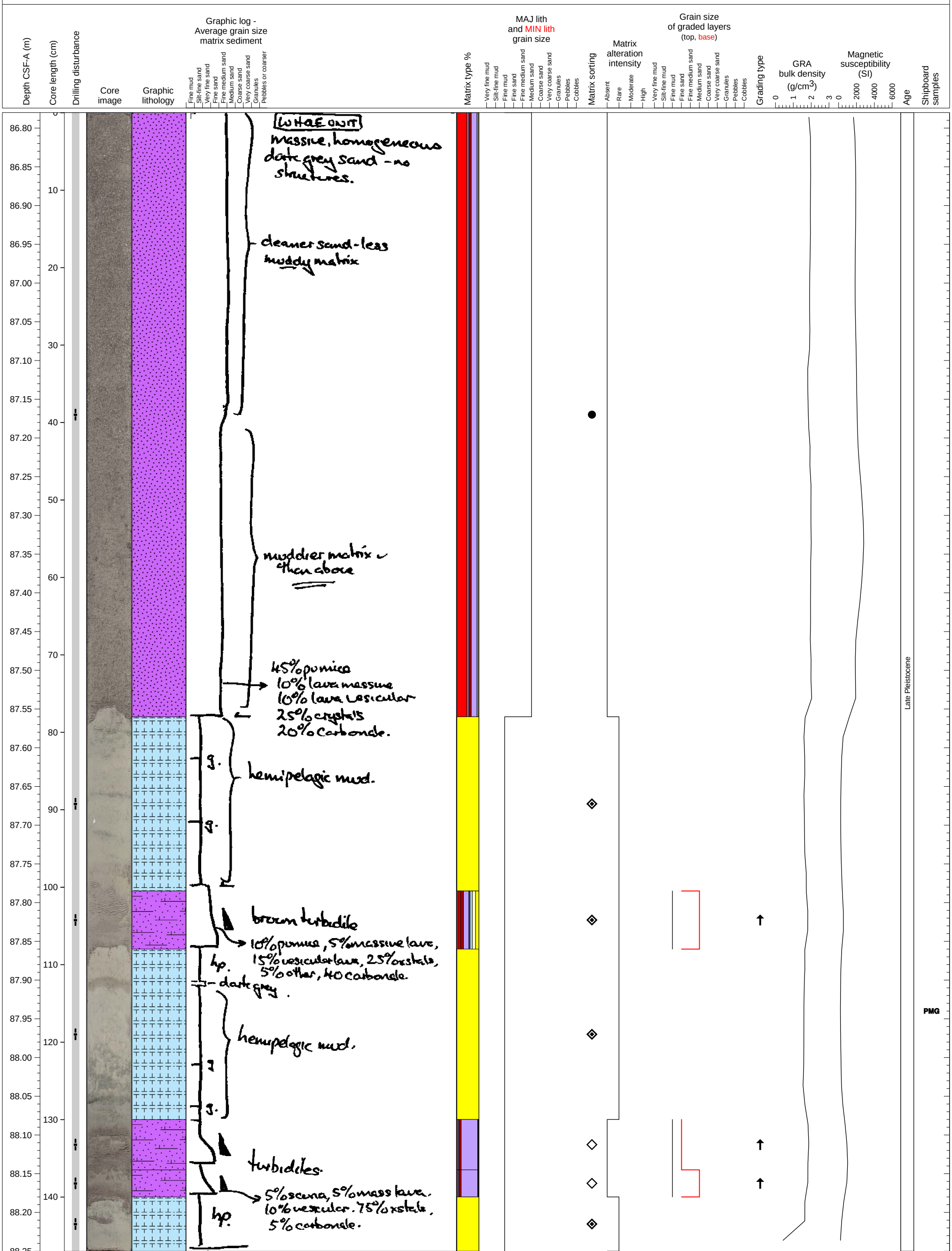
WHOLE SECTION
massive, dark grey homogeneous – very slight inverse grading of matrix and changes in abundance of pumice granules.

inversely graded matrix through whole section?

Late Pleistocene

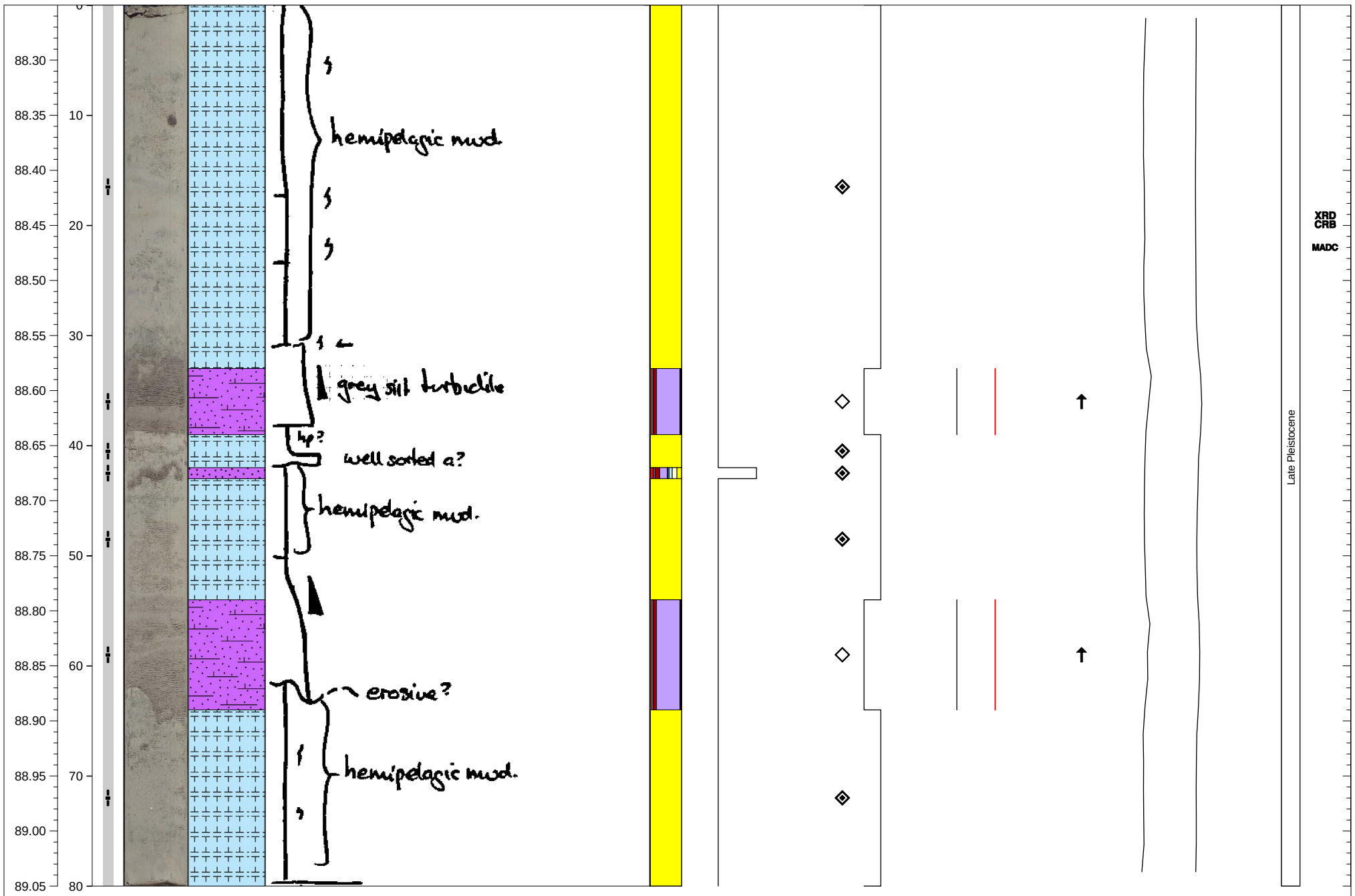
Hole 340-U1398A-11H Section 6, Top of Section: 86.78 CSF-A (m)

Volcaniclastic sand, many displaying normal grading, interlayered with hemipelagic clay.



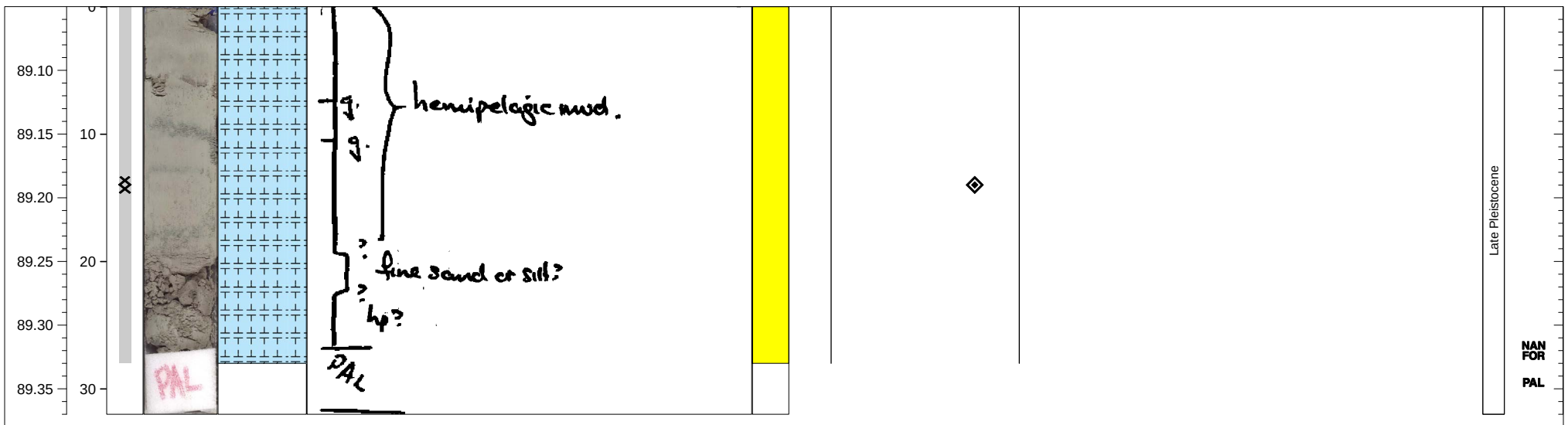
Hole 340-U1398A-11H Section 7, Top of Section: 88.25 CSF-A (m)

Hemipelagic clay interlayered with abundant volcaniclastic sand units, many displaying normal grading.



Hole 340-U1398A-11H Section CC, Top of Section: 89.05 CSF-A (m)

Hemipelagic clay. PAL from base.



Hole 340-U1398A-12H Section 1, Top of Section: 88.9 CSF-A (m)

Hemipelagic sediments interbedded with several thin ash and volcaniclastic sands (probably thicker tephras).

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples

88.95 – 10
89.00 – 10
89.05 – 20
89.10 – 20
89.15 – 30
89.20 – 30
89.25 – 40
89.30 – 40
89.35 – 50
89.40 – 50
89.45 – 60
89.50 – 60
89.55 – 70
89.60 – 70
89.65 – 80
89.70 – 80
89.75 – 90
89.80 – 90
89.85 – 100
89.90 – 100
89.95 – 110
90.00 – 110
90.05 – 120
90.10 – 120
90.15 – 130
90.20 – 130
90.25 – 140
90.30 – 140
90.35 – 150
90.40 – 150

highly bioturbated grey hemipelagic mud

volcanic fine sand

Two fine volcanic sand (grey)

Grey volcanic Sand (10% pumices, 35% massive lavas, 30% crystals, 30% carbonate)

very fin volcanic sand (20% lavas 65% crystals 15% carbonate)

fine volcanic sand (tephra fallout)

fine volcanic sand

fine volcanic sand

Mottled grey hemipelagic mud

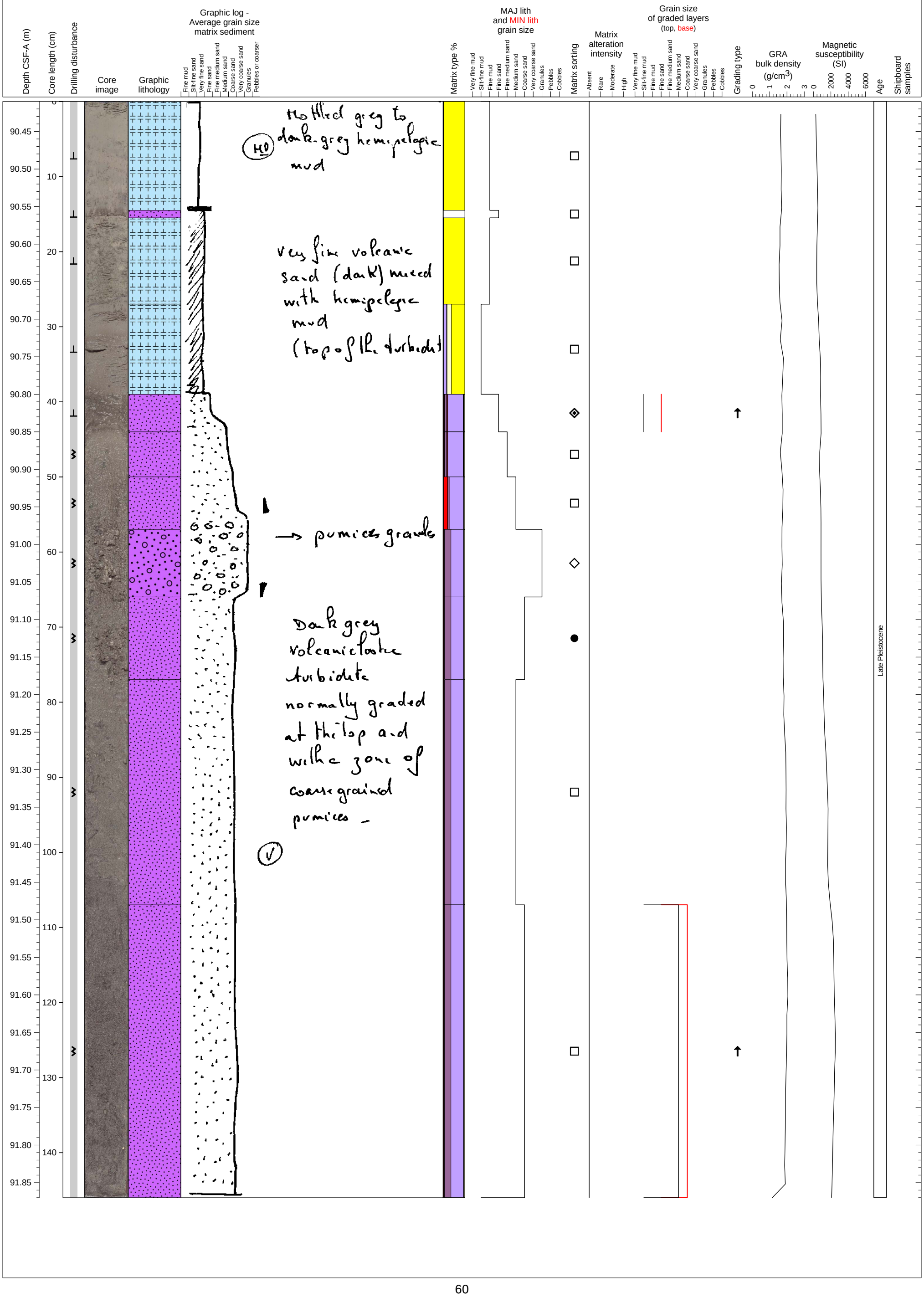
fine volcanic sand

Late Pleistocene

XRD CRB
MADC
PMG

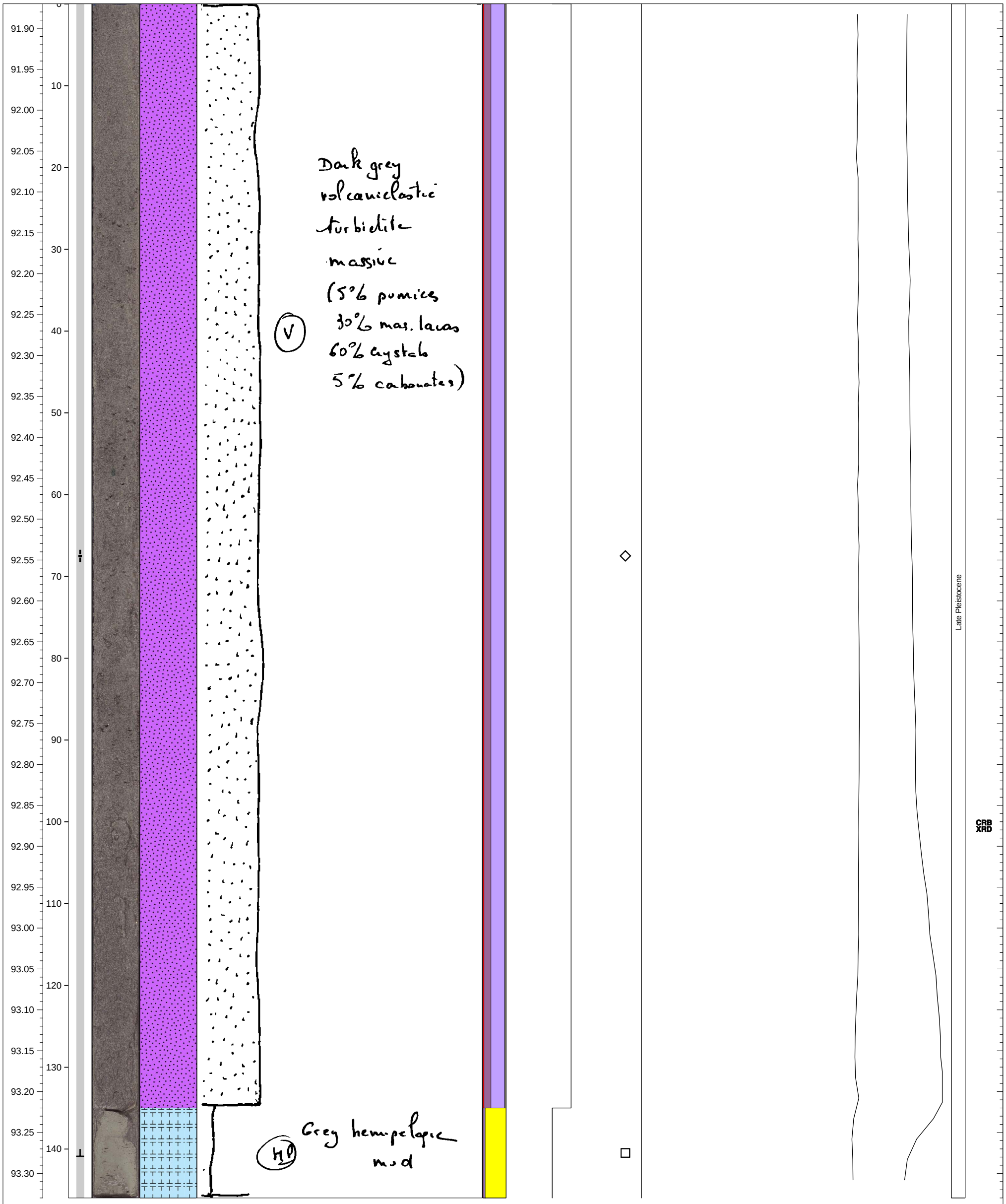
Hole 340-U1398A-12H Section 2, Top of Section: 90.41 CSF-A (m)

More than 1 m thick volcaniclastic turbidite capped with hemipelagite



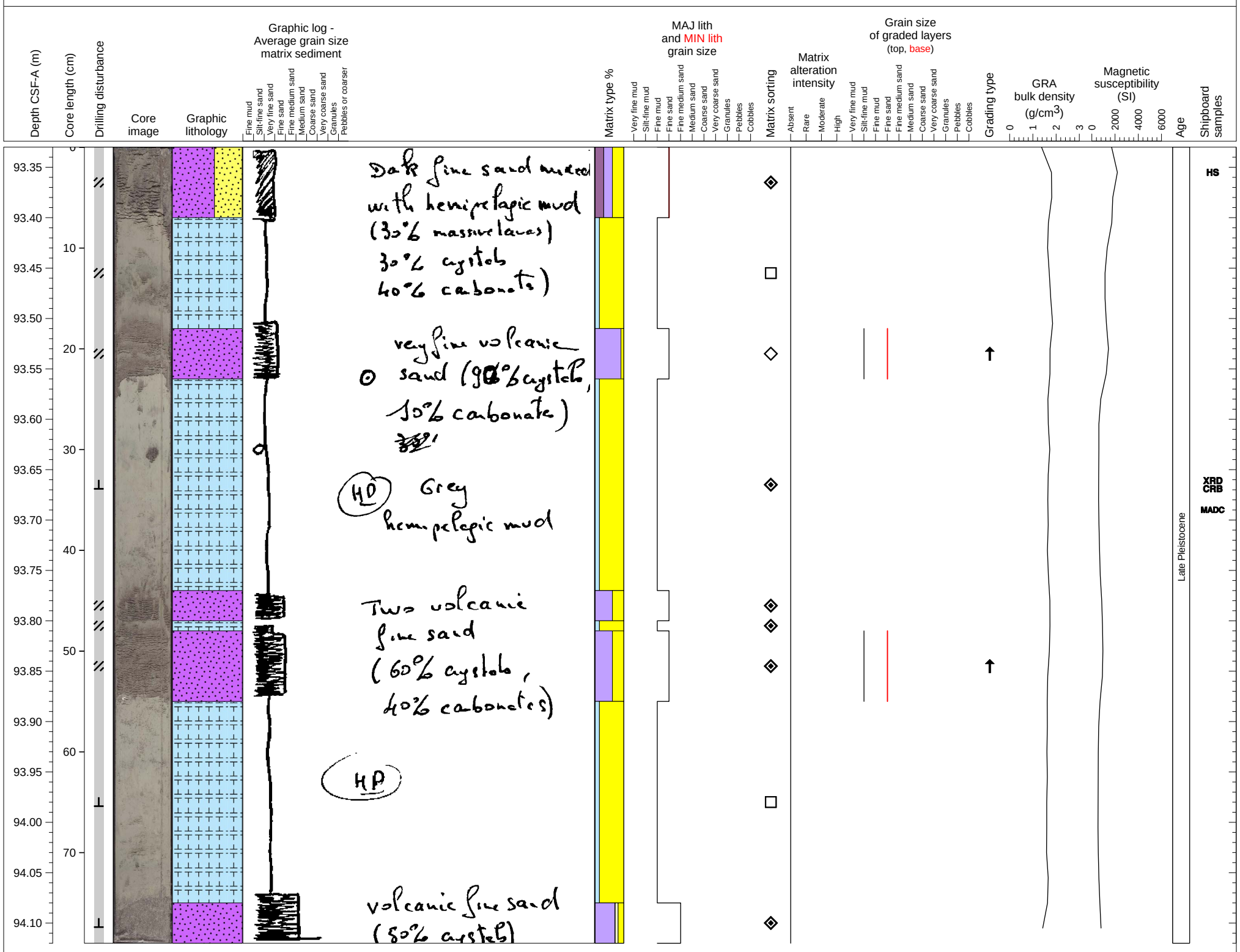
Hole 340-U1398A-12H Section 3, Top of Section: 91.87 CSF-A (m)

Thick volcaniclastic sand unit (turbidite) overlying thin hemipelagic sediment.



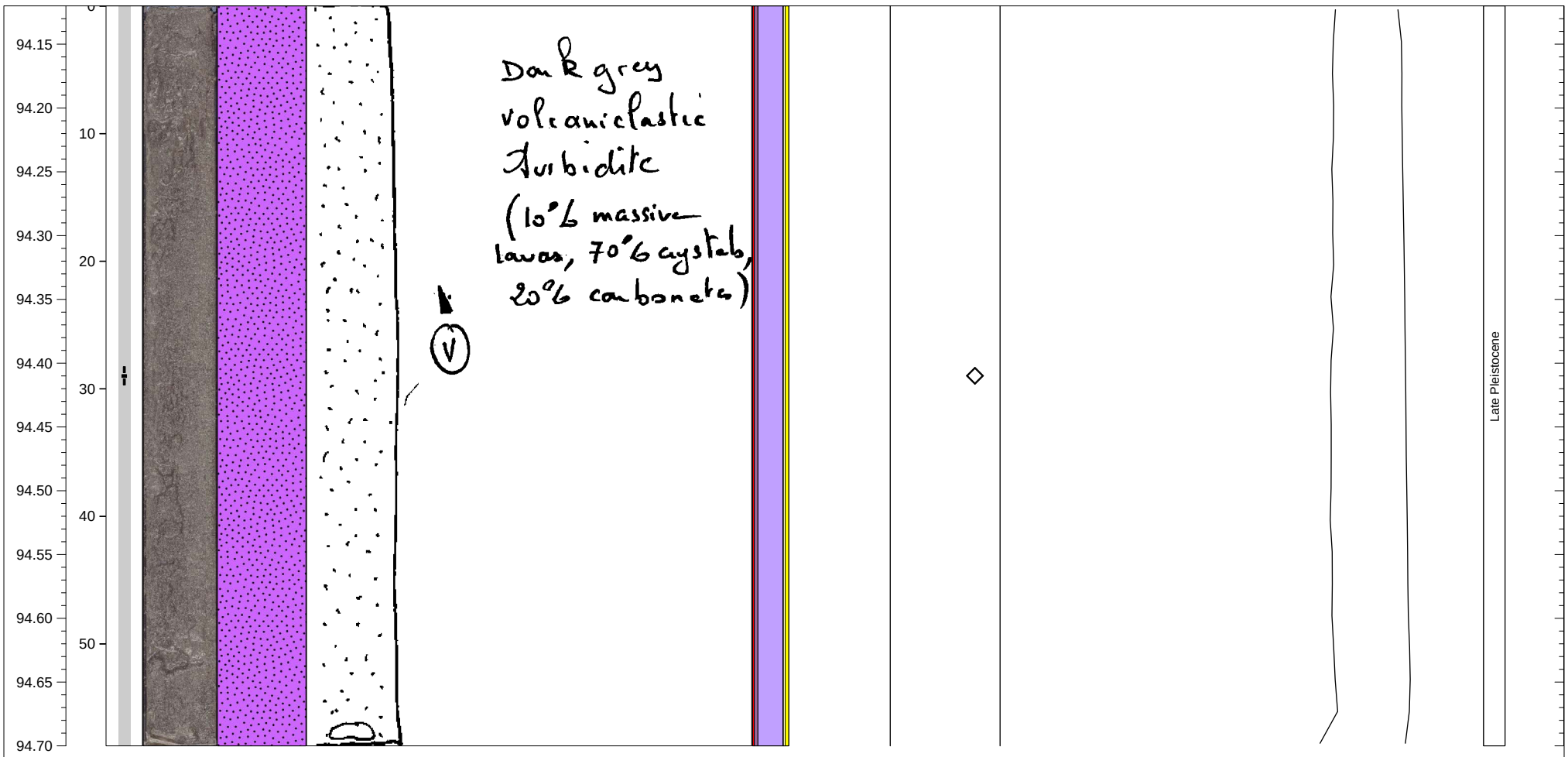
Hole 340-U1398A-12H Section 4, Top of Section: 93.33 CSF-A (m)

Intercalation of volcanic sand and hemipelagic sediment



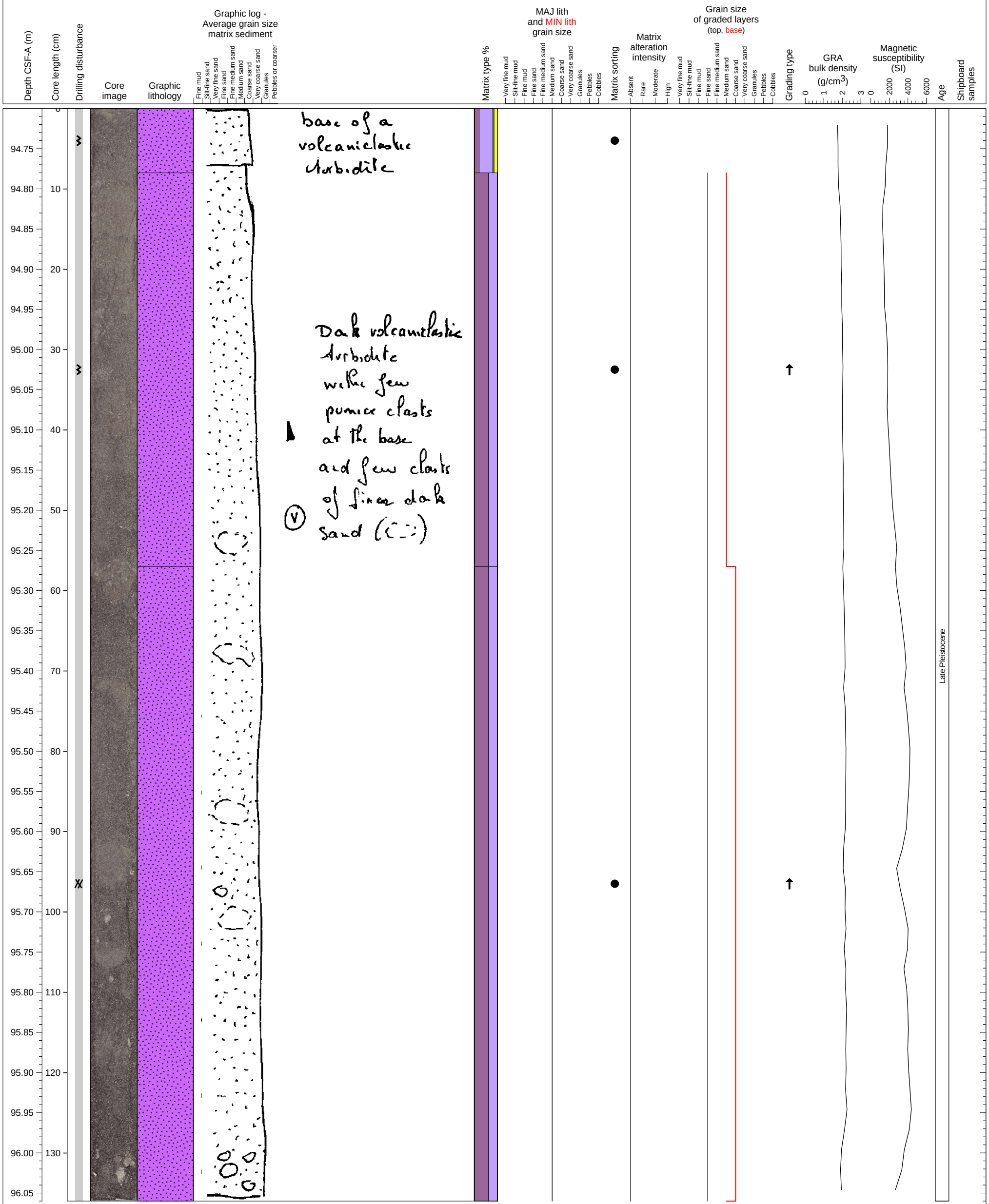
Hole 340-U1398A-12H Section 5, Top of Section: 94.12 CSF-A (m)

Volcaniclastic sand unit, rich in crystals.



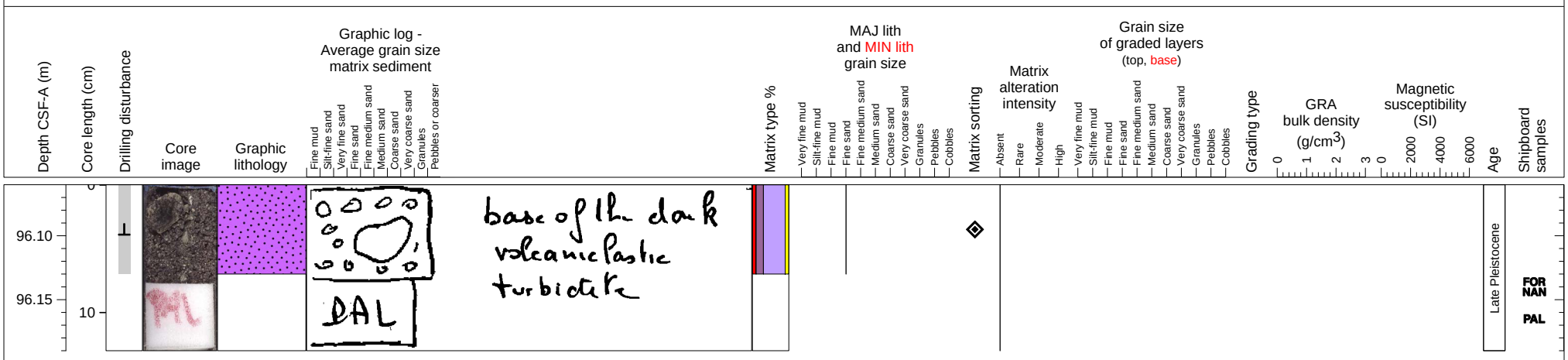
Hole 340-U1398A-12H Section 6, Top of Section: 94.7 CSF-A (m)

Volcaniclastic turbidite containing pumice and sediment clasts



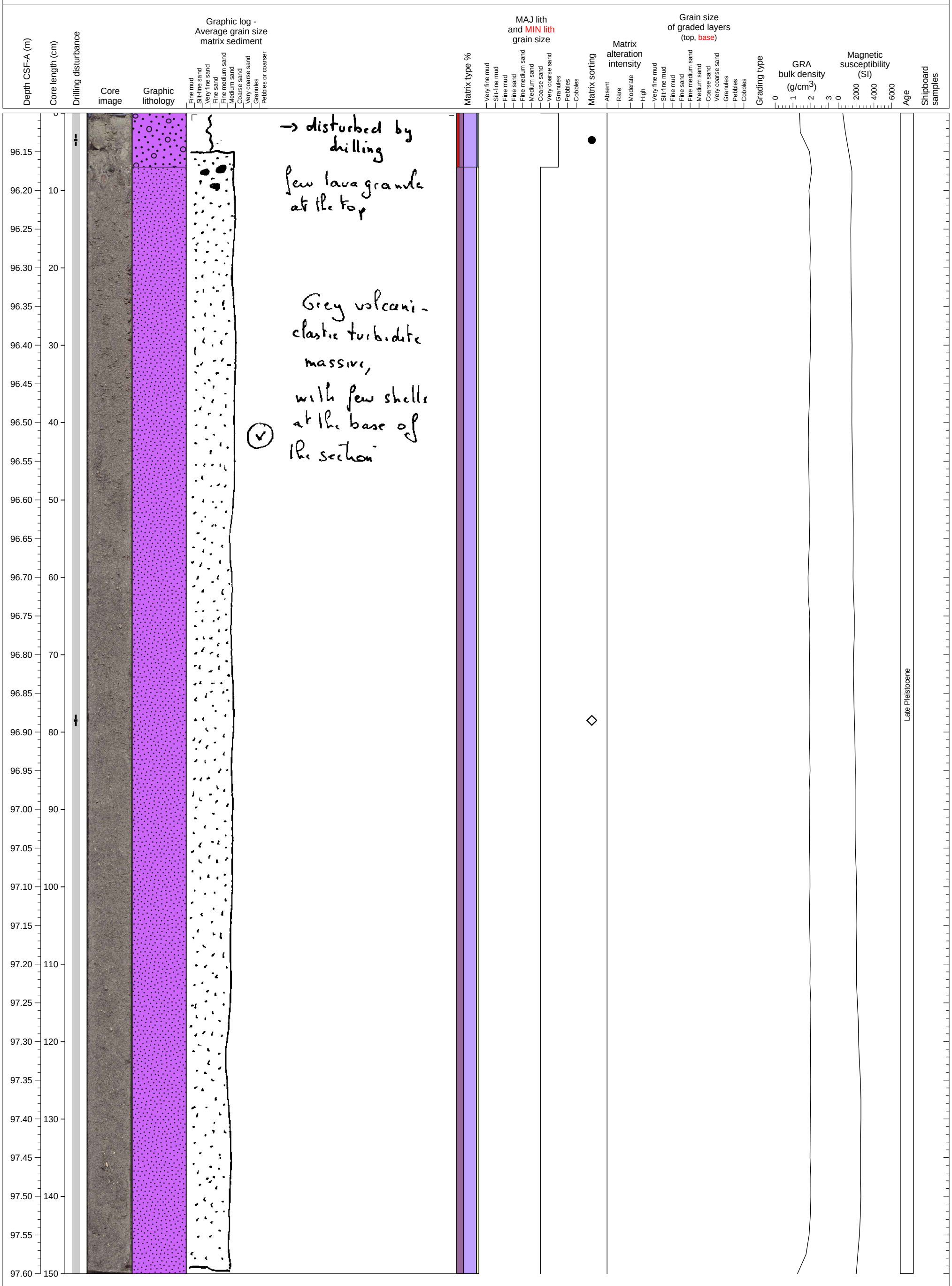
Hole 340-U1398A-12H Section CC, Top of Section: 96.06 CSF-A (m)

Coarse volcaniclastic sand with few pumice clasts up to 20 mm.



Hole 340-U1398A-13H Section 1, Top of Section: 96.1 CSF-A (m)

Part of thick volcaniclastic turbidite



Hole 340-U1398A-13H Section 2, Top of Section: 97.6 CSF-A (m)

Volcaniclastic turbidite with intercalated hemipelagic sediment

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
Magnetic susceptibility (SI)
Age
Shipboard samples

base of the volcaniclastic turbidite of the section 1
(20% massive lava
50% crystals
20% bio. carbonate
10% detritic carbonate)

Grey hemipelagic mud

Grey to dark-grey volcaniclastic turbidite normally graded at the top.
(20% massive lava
50% crystals
30% carbonates)

Late Pleistocene
PMG

Hole 340-U1398A-13H Section 3, Top of Section: 99.1 CSF-A (m)

Volcaniclastic turbidite and hemipelagic sediment

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
Magnetic susceptibility (SI)
Age
Shipboard samples

Grey - volcanic facies Turbidite normally graded from medium to medium - fine sand

Abundant pumice granules (→ 0,5 cm) at the base

Hemipelagic mud grey to green

reddish white volcanic sand bioturbated

Grey - green hemipelagic mud

Late Pleistocene

CRB XRD

Hole 340-U1398A-13H Section 4, Top of Section: 100.57 CSF-A (m)

Hemipelagic sediment wit thin ash layers, a sequence of thinly bedded ash, and a volcaniclastic turbidite.

Depth CSF-A (m)

Core length (cm)

Drilling disturbance

Core image

Graphic lithology

Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser

Matrix type %

MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles

Matrix sorting

Matrix alteration intensity
Absent
Rare
Moderate
High

Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles

Grading type

GRA bulk density (g/cm^3)
0
1
2
3

Magnetic susceptibility (SI)
0
2000
4000
6000

Age

Shipboard samples

100.60
100.65
100.70
100.75
100.80
100.85
100.90
100.95
101.00
101.05
101.10
101.15
101.20
101.25
101.30
101.35
101.40
101.45
101.50
101.55
101.60
101.65
101.70
101.75
101.80
101.85
101.90
101.95
102.00

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140

HS

CRB XRD

MADC

Late Pleistocene

Dark grey, mottled hemipelagic mud

HP

– very fine volcanic sand

g

few green zone

HP

g

very fine volcanic sand

Grey laminated volcanic sand

V

normally graded → turbidite

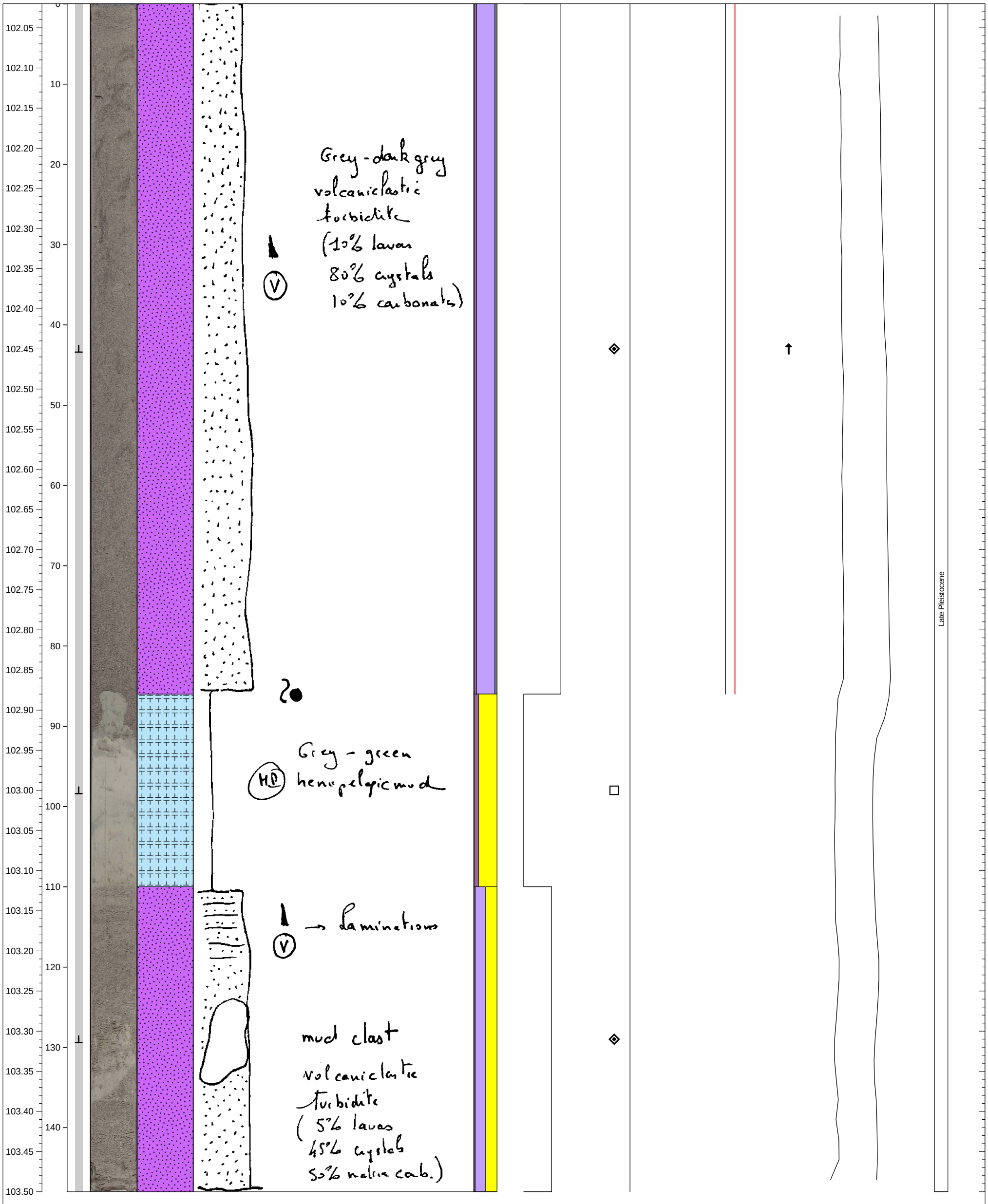
HP

Normally graded volcanic sand → turbidite

V

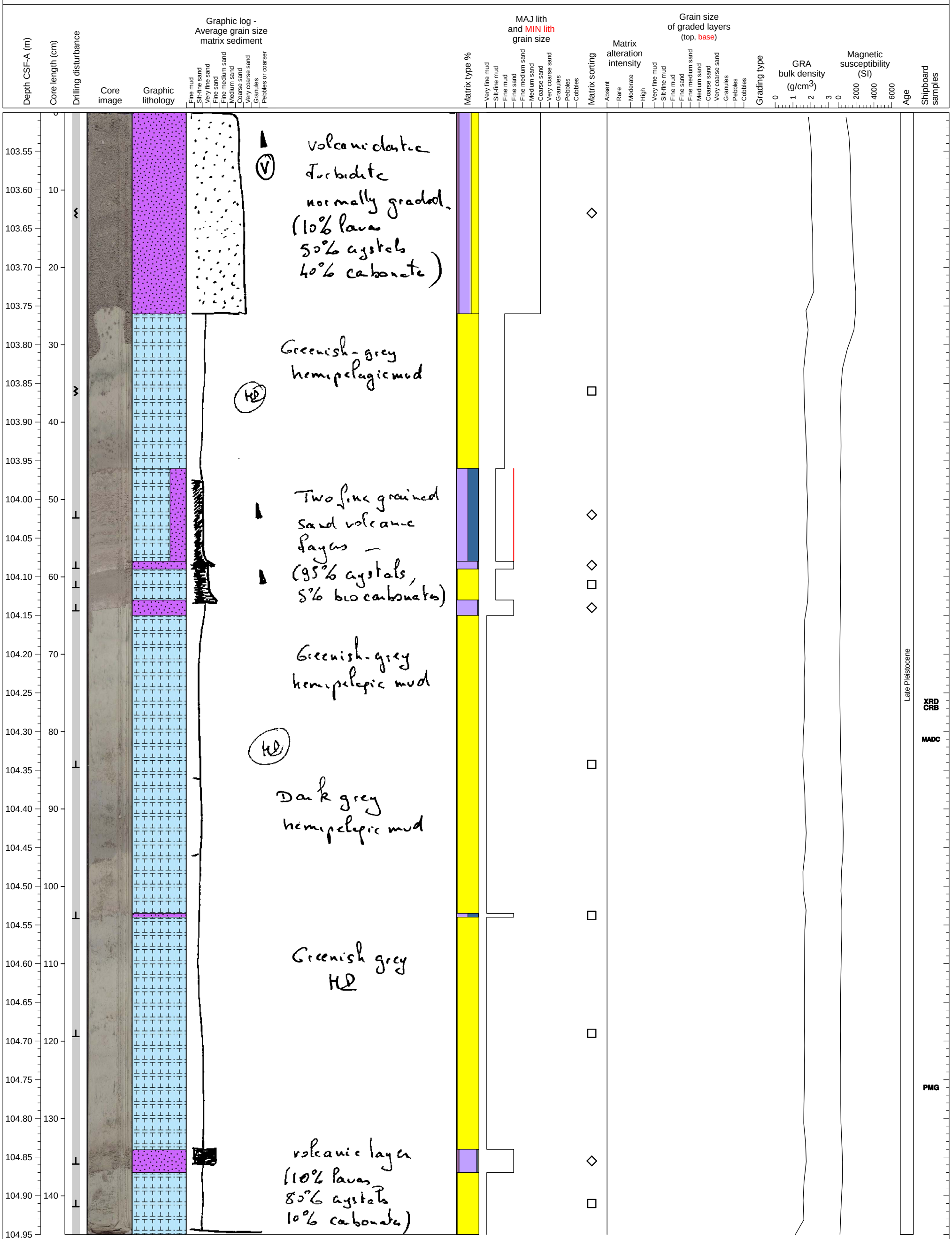
Hole 340-U1398A-13H Section 5, Top of Section: 102.02 CSF-A (m)

Two volcaniclastic turbidites with a thin hemipelagic unit inbetween.



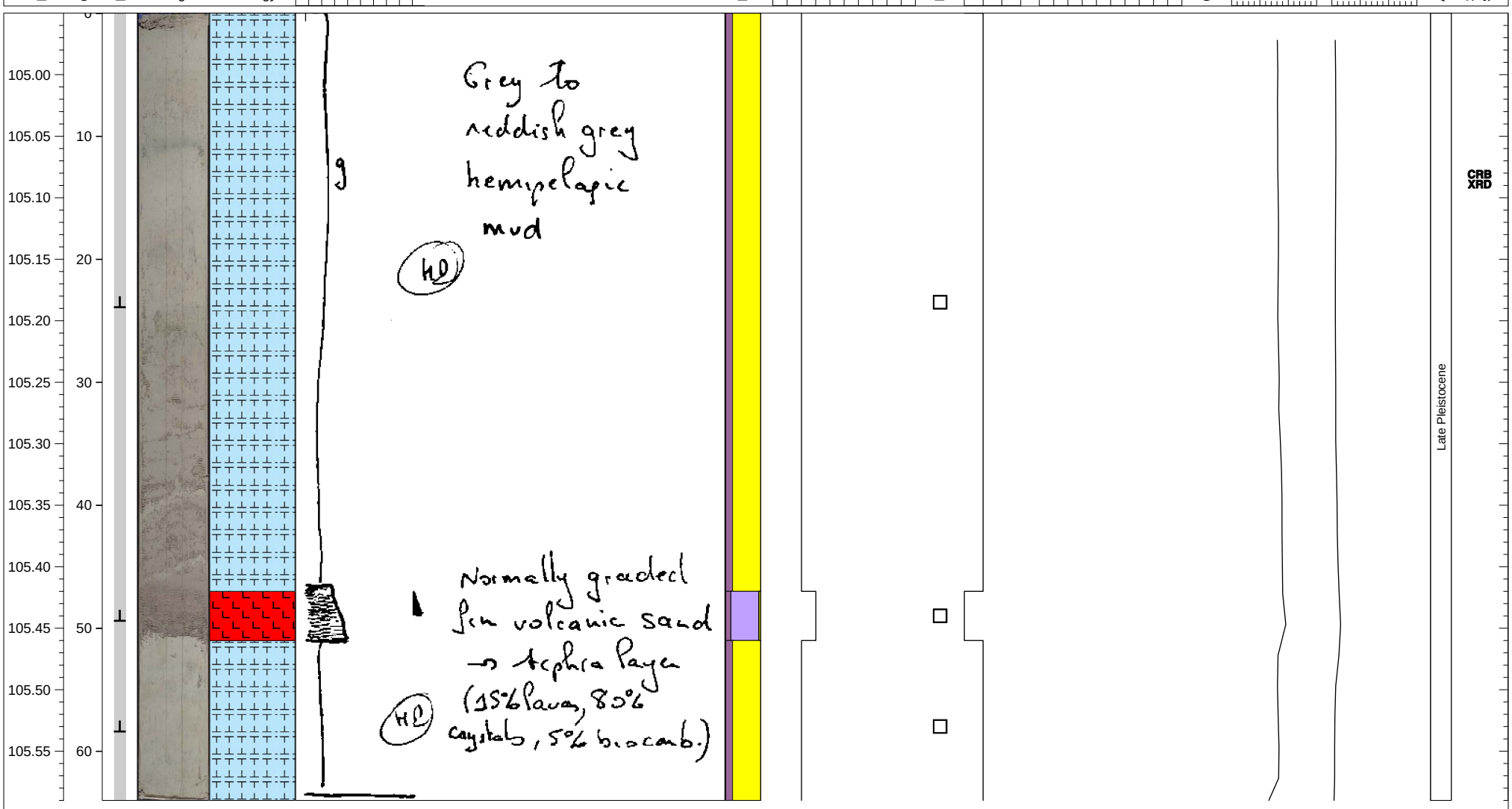
Hole 340-U1398A-13H Section 6, Top of Section: 103.5 CSF-A (m)

Hemipelagic sediments with several thin ashfall layers. top 30 cm is a base unit of volcaniclastic turbidite



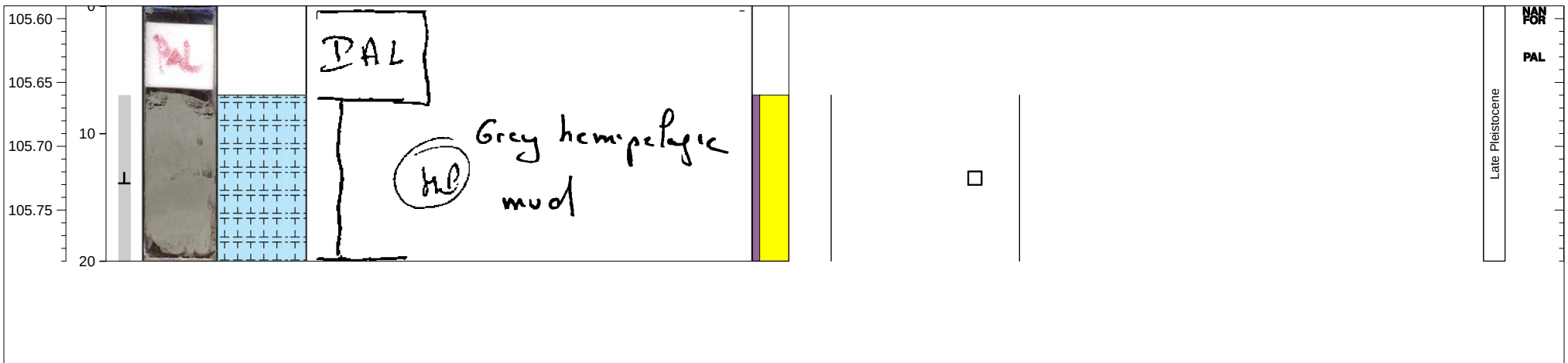
Hole 340-U1398A-13H Section 7, Top of Section: 104.95 CSF-A (m)

Hemipelagic sediment with a single ash layer



Hole 340-U1398A-13H Section CC, Top of Section: 105.59 CSF-A (m)

Hemipelagic sediment



Hole 340-U1398A-14X Section 1, Top of Section: 105.6 CSF-A (m)

Hemipelagic sediments with intercalated volcaniclastic sand containing considerable amounts of bioclastic materials

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm^3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples

105.65
105.70
105.75
105.80
105.85
105.90
105.95
106.00
106.05
106.10
106.15
106.20
106.25
106.30
106.35
106.40
106.45
106.50
106.55
106.60
106.65
106.70
106.75
106.80
106.85
106.90
106.95
107.00
107.05
107.10

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

Grey - brown hemipelagic mud

HD

Two fine volcanic sand → tephras (40% crystals, 10% detritic carbonate 50% carbonate matrix)

HD

few green zones

HD

Dark grey HD

(30% crystal, 30% carb) fine volcanic sand

Light browish grey hemipelagic mud

HD

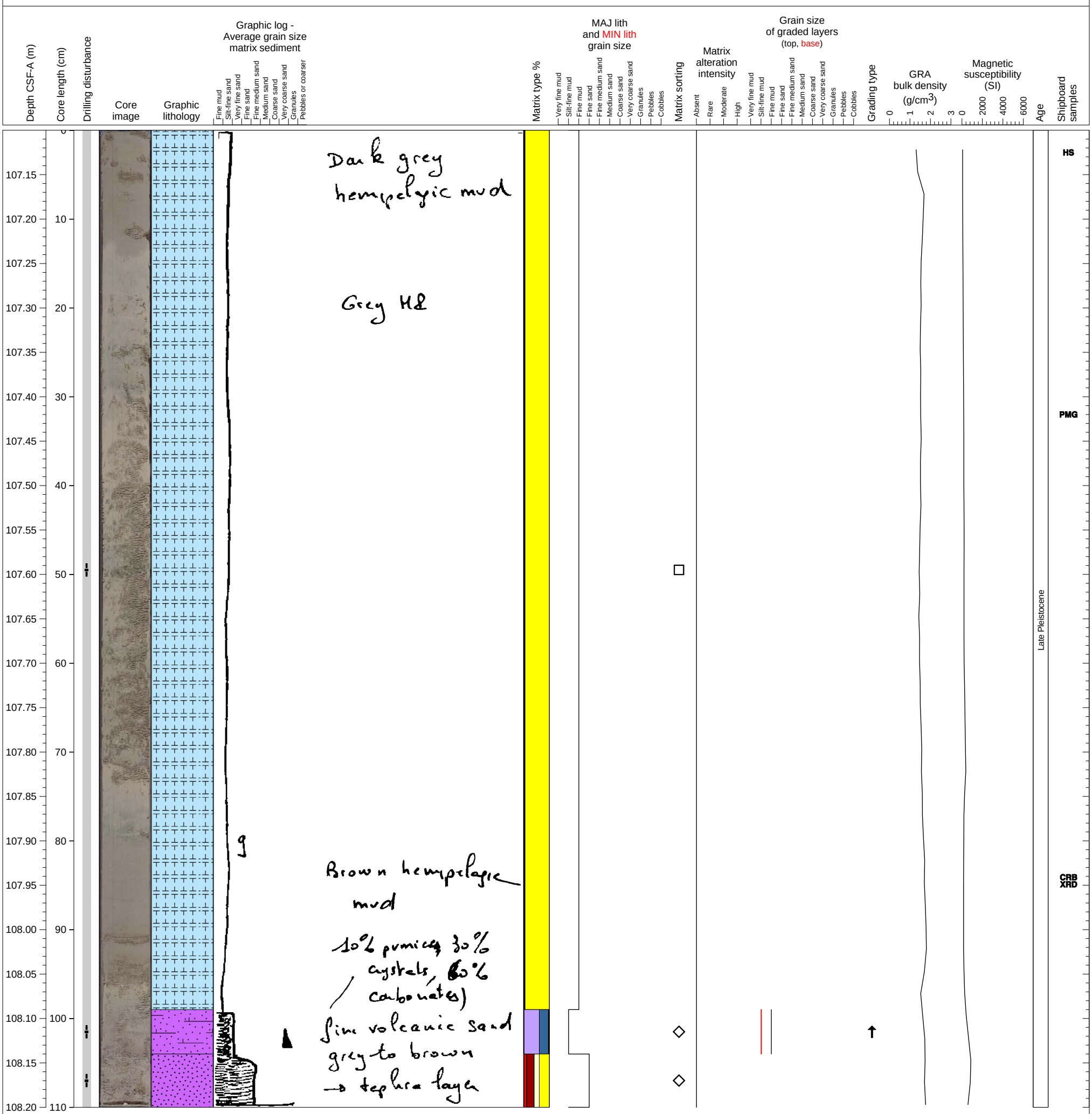
Late Pleistocene

MADC
MADC

XRD
CRB

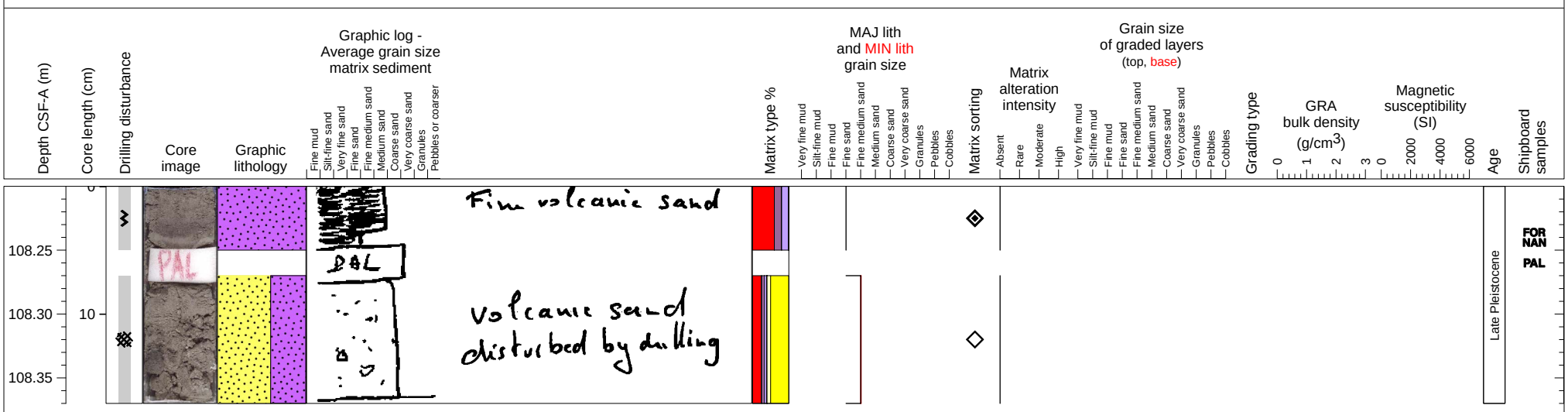
Hole 340-U1398A-14X Section 2, Top of Section: 107.1 CSF-A (m)

Hemipelagic fine sediment with thin volcanic ashfall or volcaniclastic turbidite facies at the bottom of the section



Hole 340-U1398A-14X Section CC, Top of Section: 108.2 CSF-A (m)

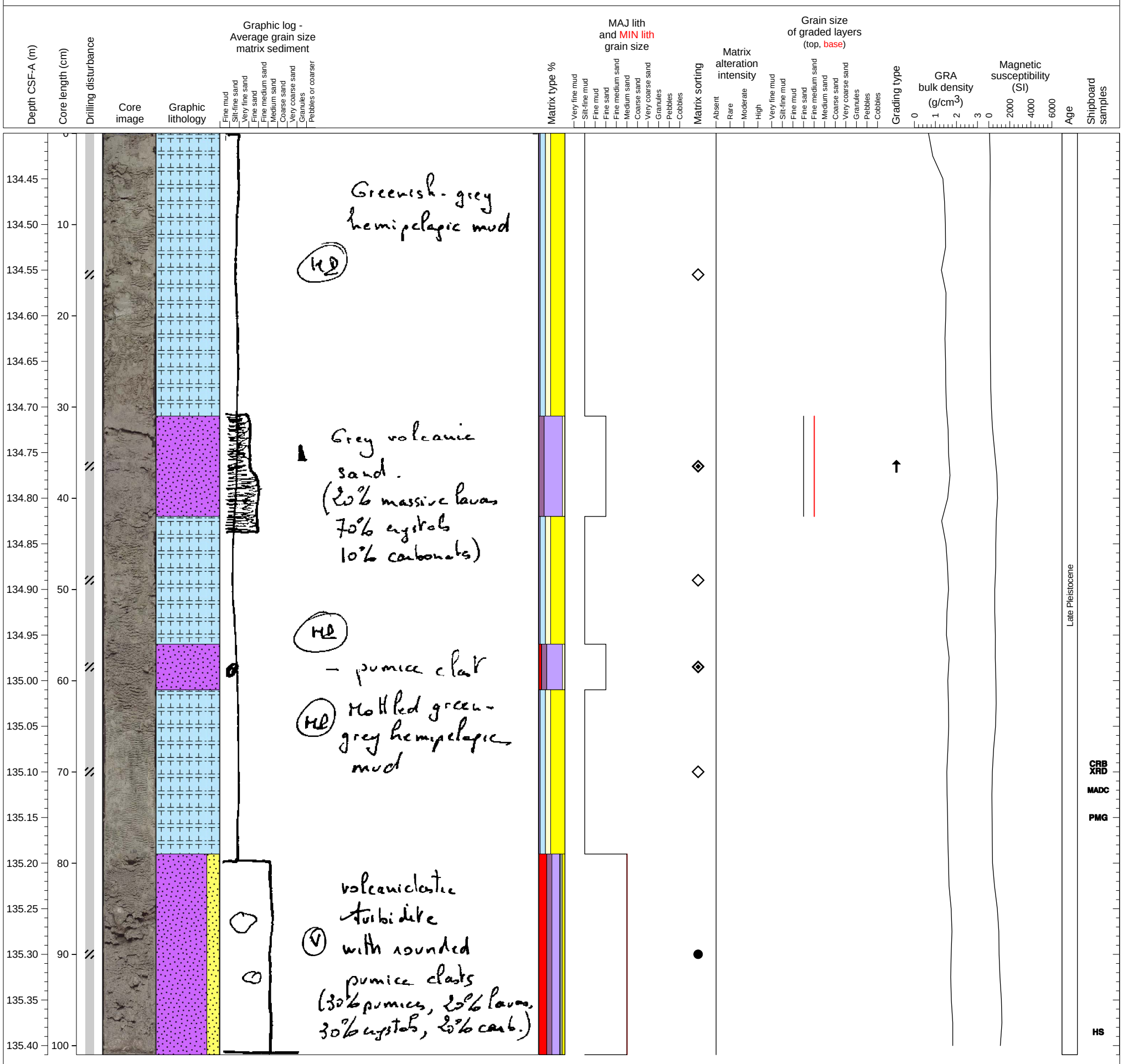
Base of laminated tephra and mix of bioclastic and volcaniclastic materials



U1398A-15X-CC ALL TO PALEO
U1398A-16X NO RECOVERY

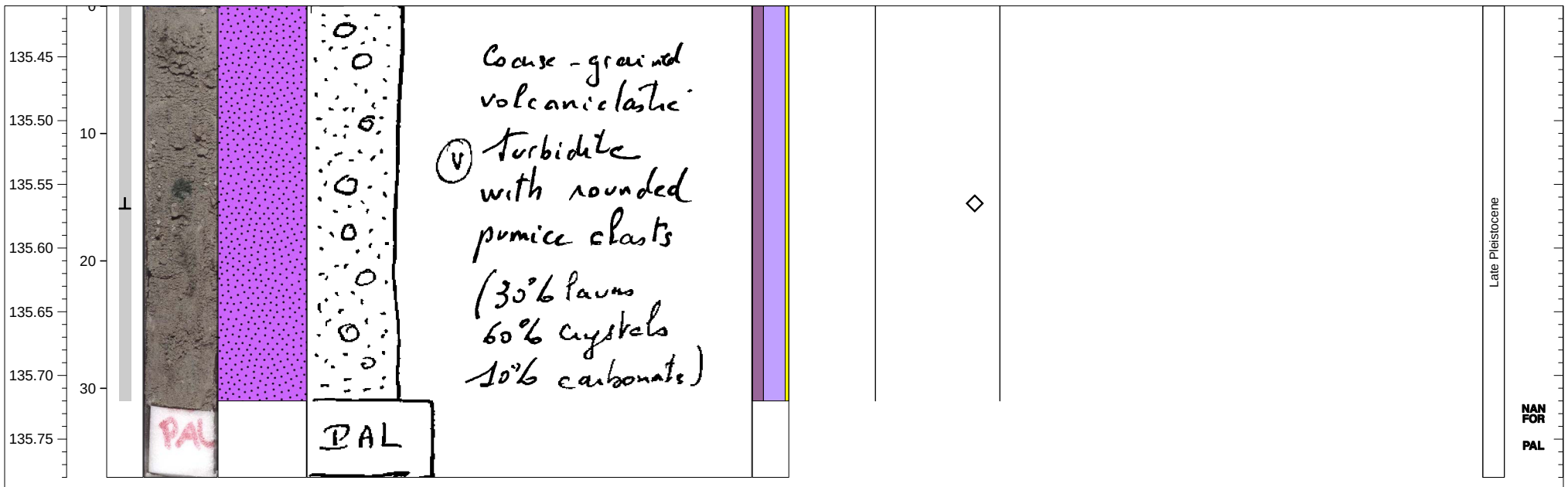
Hole 340-U1398A-17X Section 1, Top of Section: 134.4 CSF-A (m)

Intercalation of hemipelagic sediments and volcaniclastic sand layers



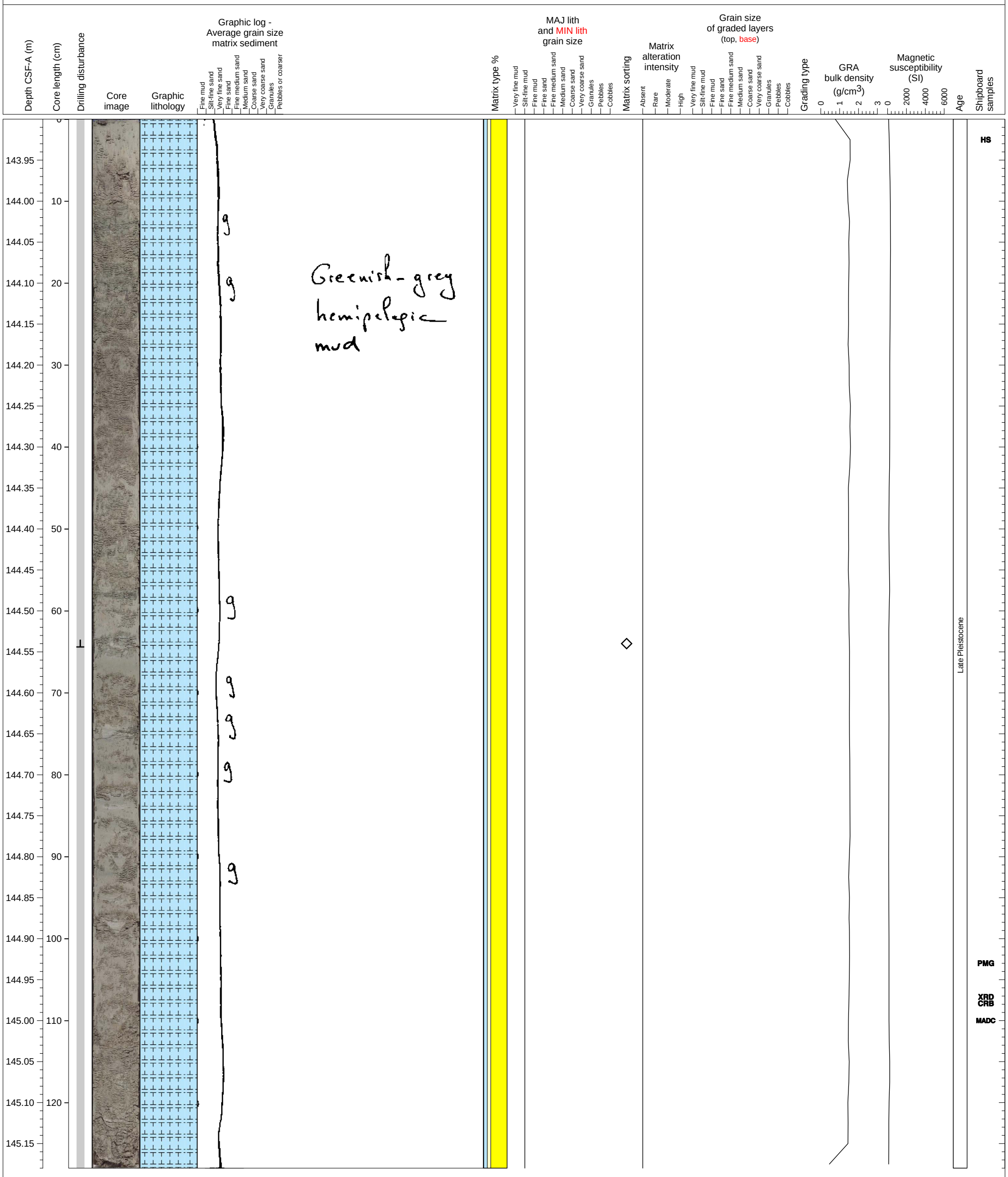
Hole 340-U1398A-17X Section CC, Top of Section: 135.41 CSF-A (m)

Volcaniclastic turbidite



Hole 340-U1398A-18X Section 1, Top of Section: 143.9 CSF-A (m)

Mottled hemipelagic sediment

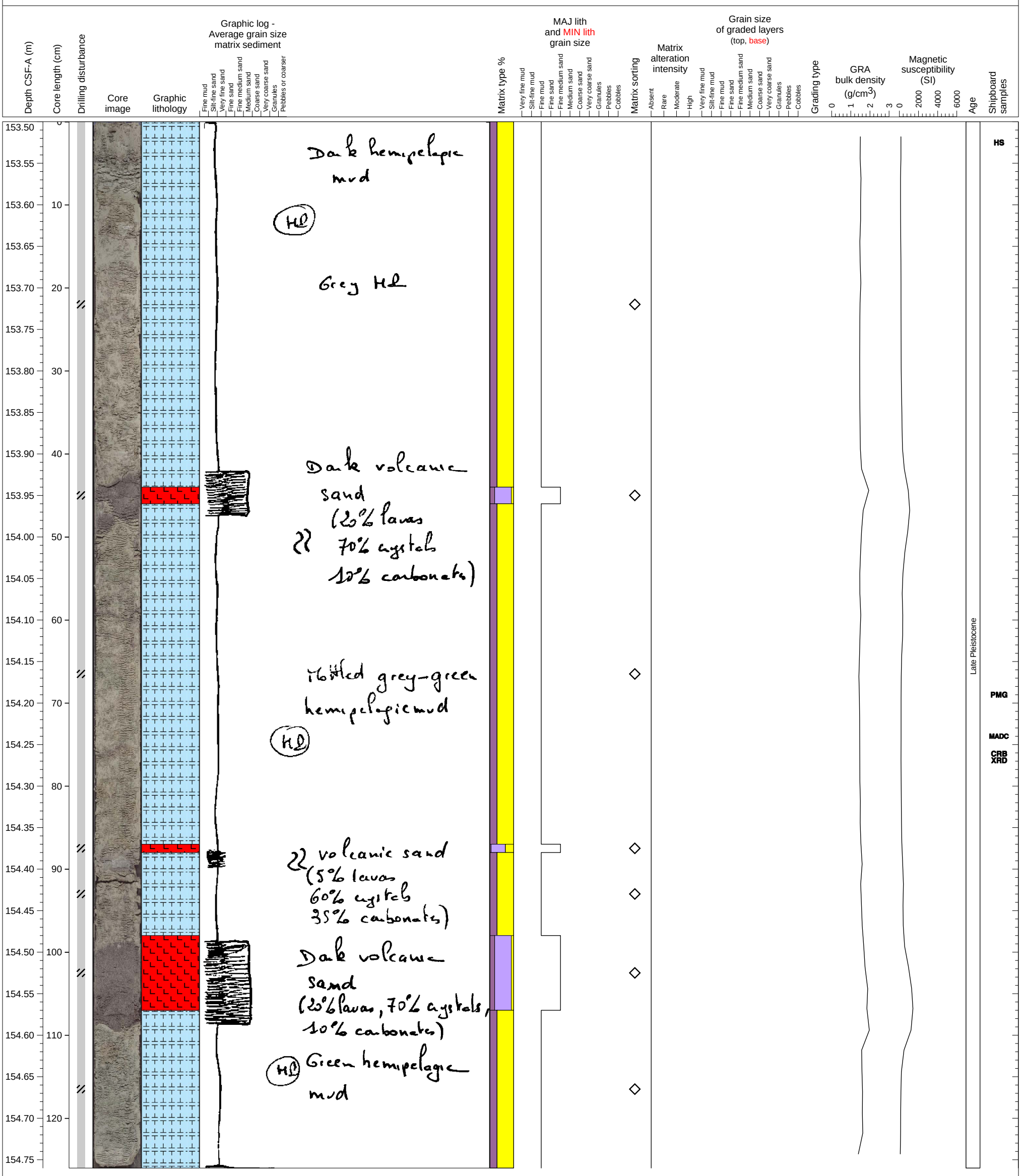


Hole 340-U1398A-18X Section CC, Top of Section: 145.18 CSF-A (m)

Hemipelagic sediment

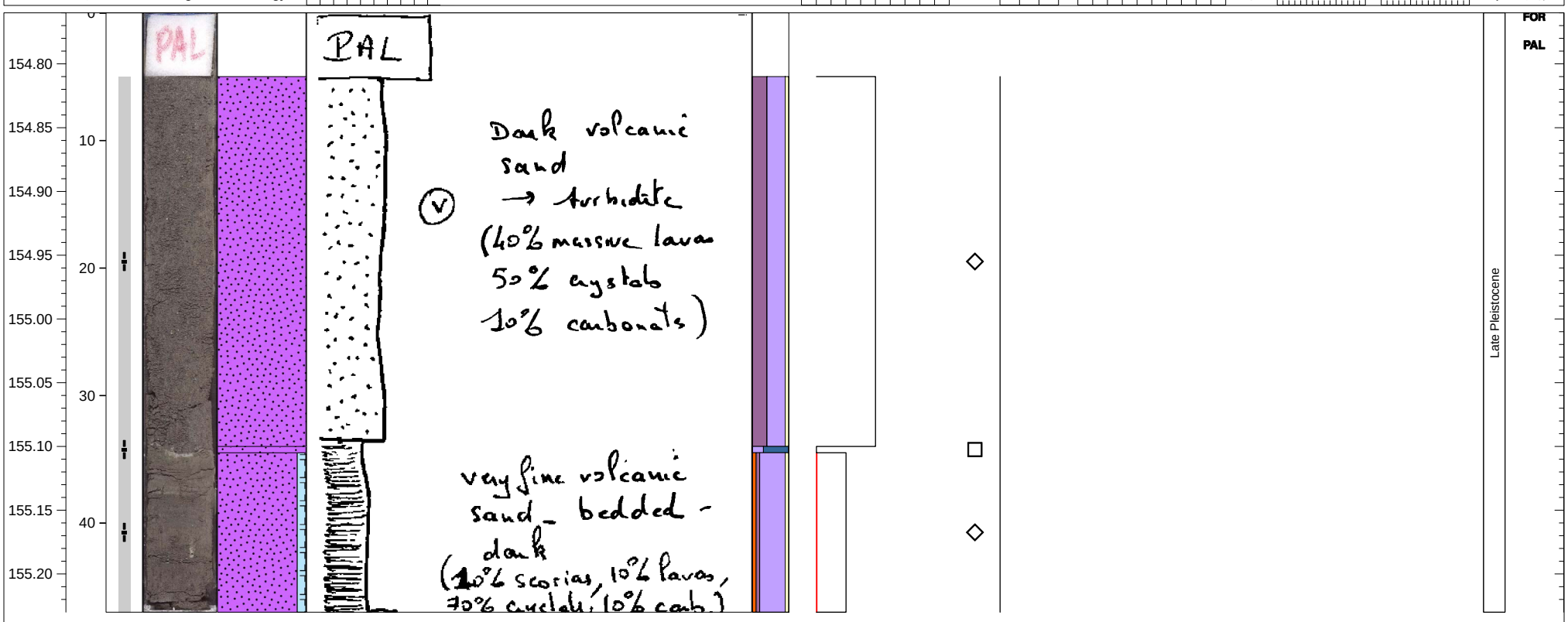
Hole 340-U1398A-19X Section 1, Top of Section: 153.5 CSF-A (m)

Hemipelagic sediments with three thin ash layers.



Hole 340-U1398A-19X Section CC, Top of Section: 154.76 CSF-A (m)

Volcaniclastic turbidite with ashfall at the base of core catcher



Hole 340-U1398A-20X Section 1, Top of Section: 163.1 CSF-A (m)

Mottled hemipelagic sediments with intercalated volcaniclasticsand layers

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
0
1
2
3
Magnetic susceptibility (SI)
0
2000
4000
6000
Age
Shipboard samples

163.10
163.15
163.20
163.25
163.30
163.35
163.40
163.45
163.50
163.55
163.60
163.65
163.70
163.75
163.80
163.85
163.90
163.95
164.00
164.05
164.10
164.15
164.20
164.25
164.30
164.35
164.40
164.45
164.50
164.55
164.60

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

Grey hemipelagic mud

HP

Reddish dark grey sand

V => turbidite (40% massive lavas 50% crystals 10% carbonate)

Grey green hemipelagic mud

HP

very fine volcanic sand

Light grey hemipelagic mud

? volcanic sand !

HP

Grey- green hemipelagic mud

HS

Late Pleistocene

PMG

Hole 340-U1398A-20X Section CC, Top of Section: 164.65 CSF-A (m)

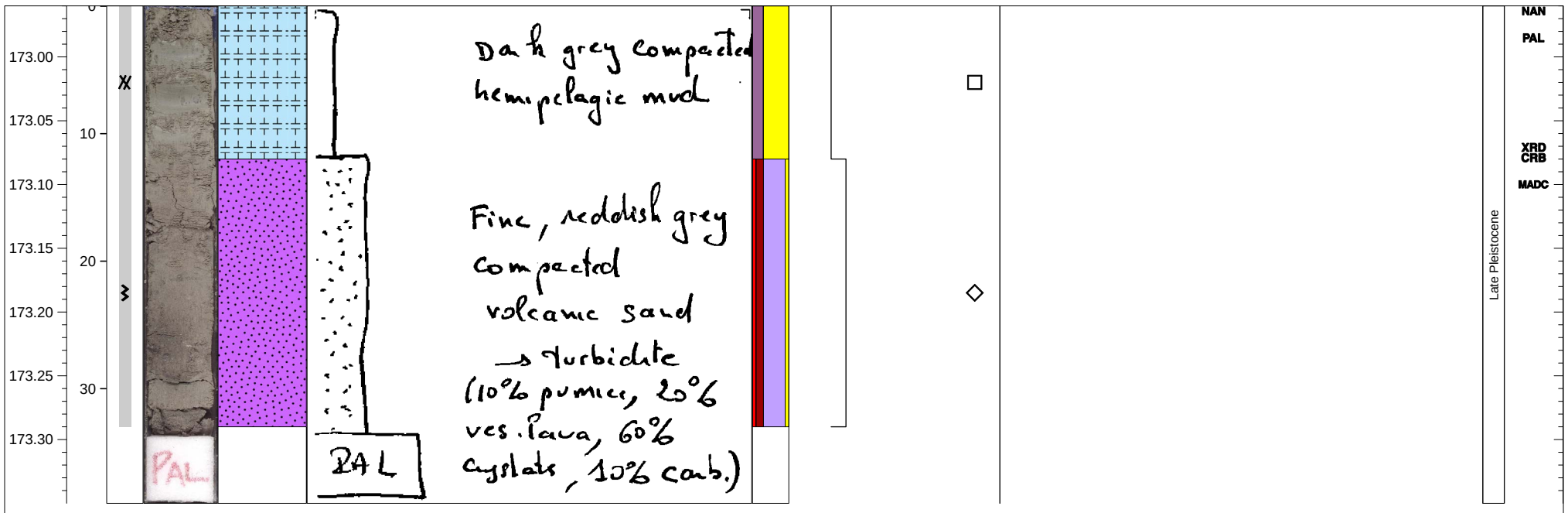
Silty hemipelagic sediment

Hole 340-U1398A-21X Section 1, Top of Section: 172.7 CSF-A (m)

Distrubed hemipelagic sediment

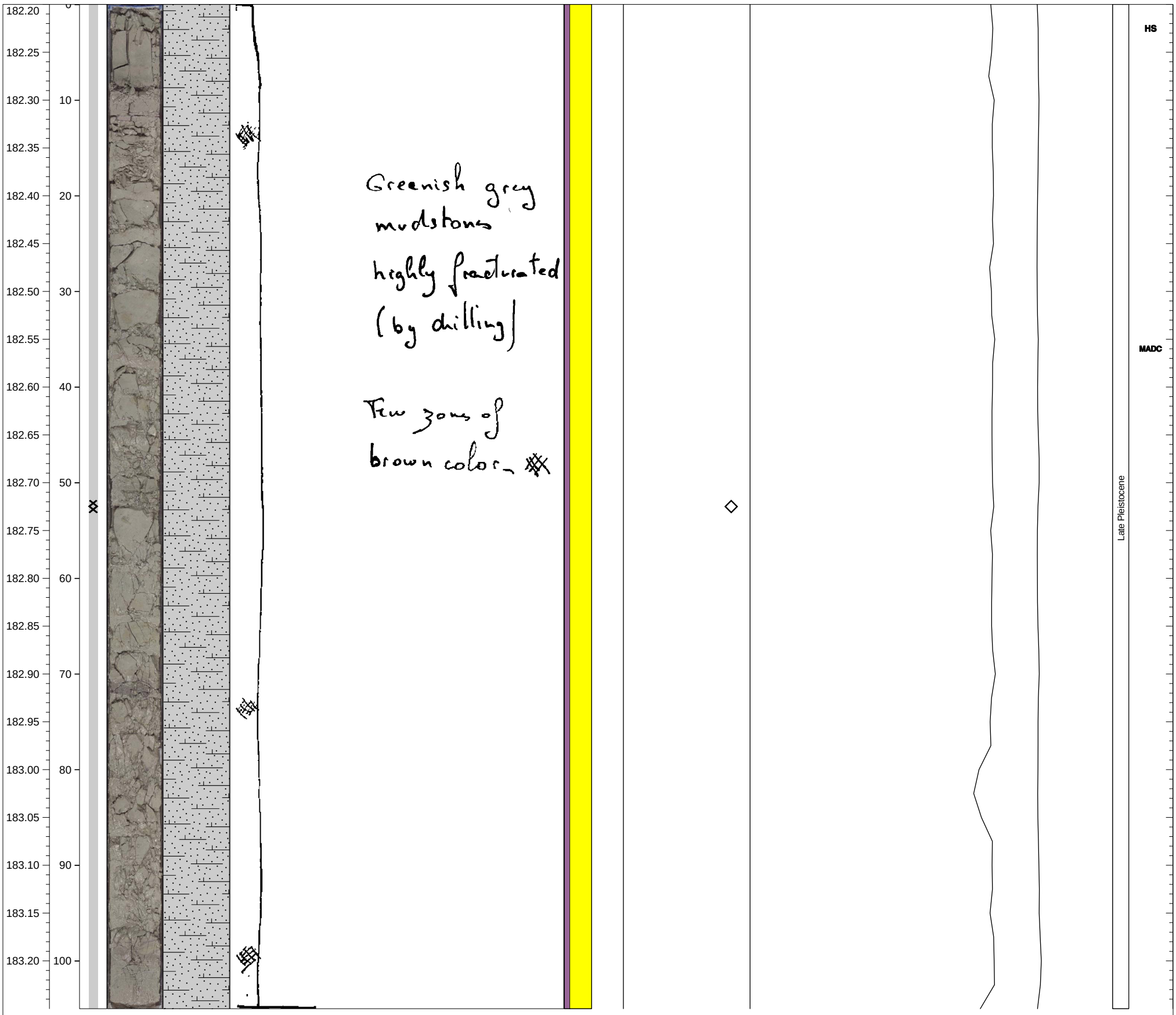
Hole 340-U1398A-21X Section CC, Top of Section: 172.96 CSF-A (m)

Hemipelagic sediment and a volcaniclastic turbidite.



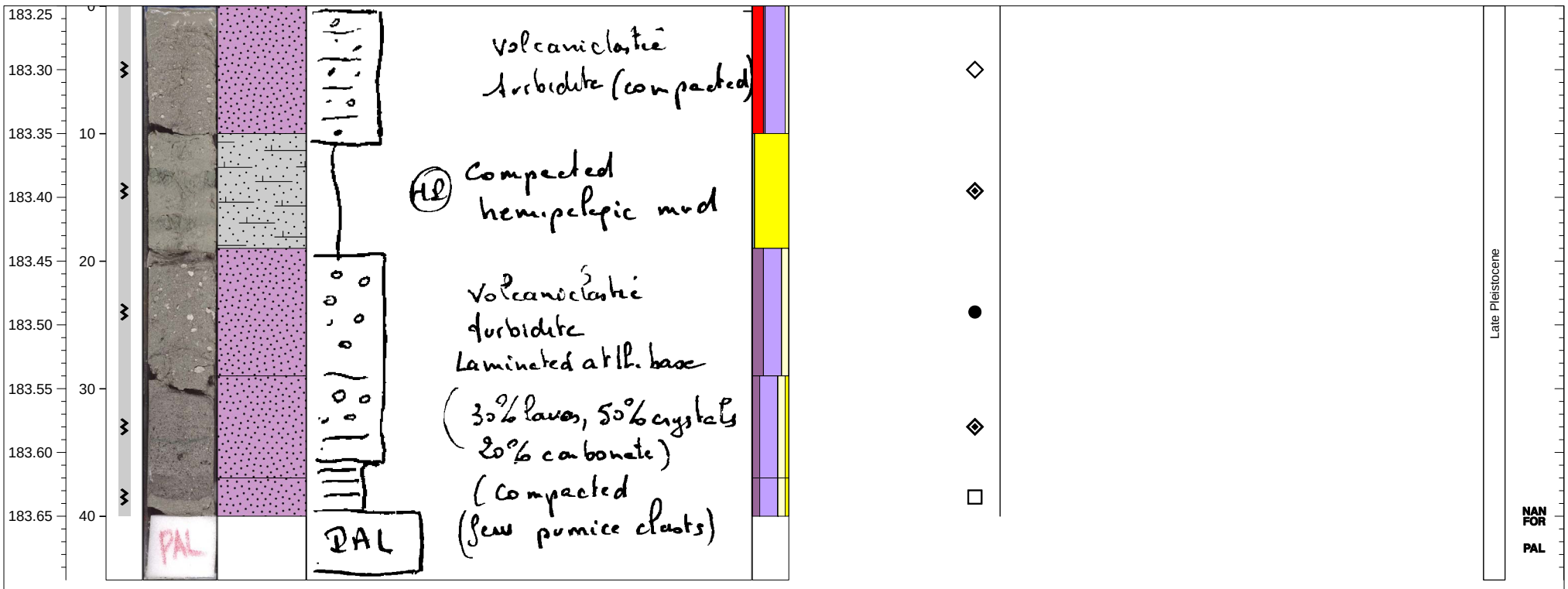
Hole 340-U1398A-22X Section 1, Top of Section: 182.2 CSF-A (m)

Highly fractured (by cutting) mudstone.



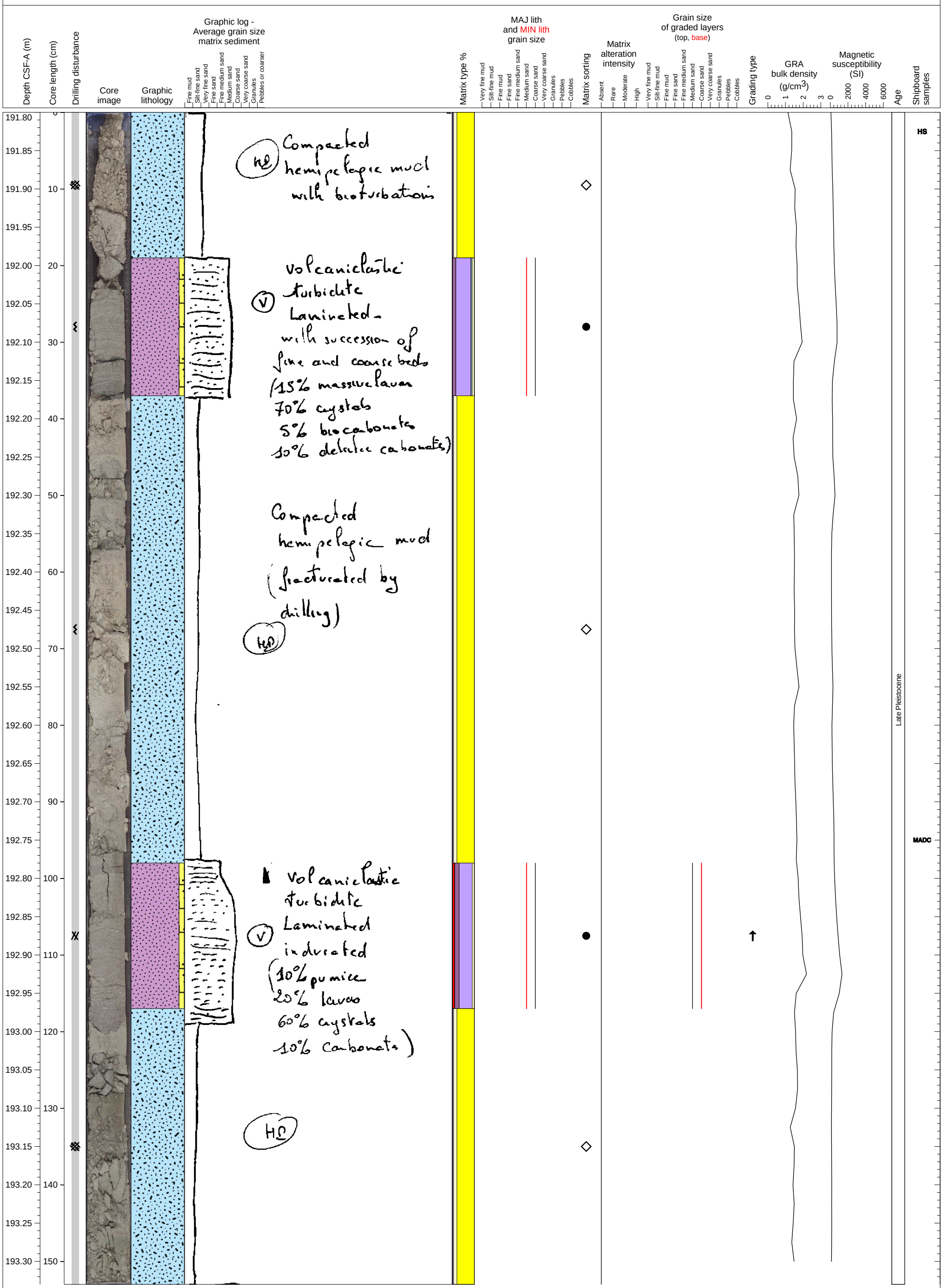
Hole 340-U1398A-22X Section CC, Top of Section: 183.25 CSF-A (m)

Part of volcaniclastic turbidite in core catcher



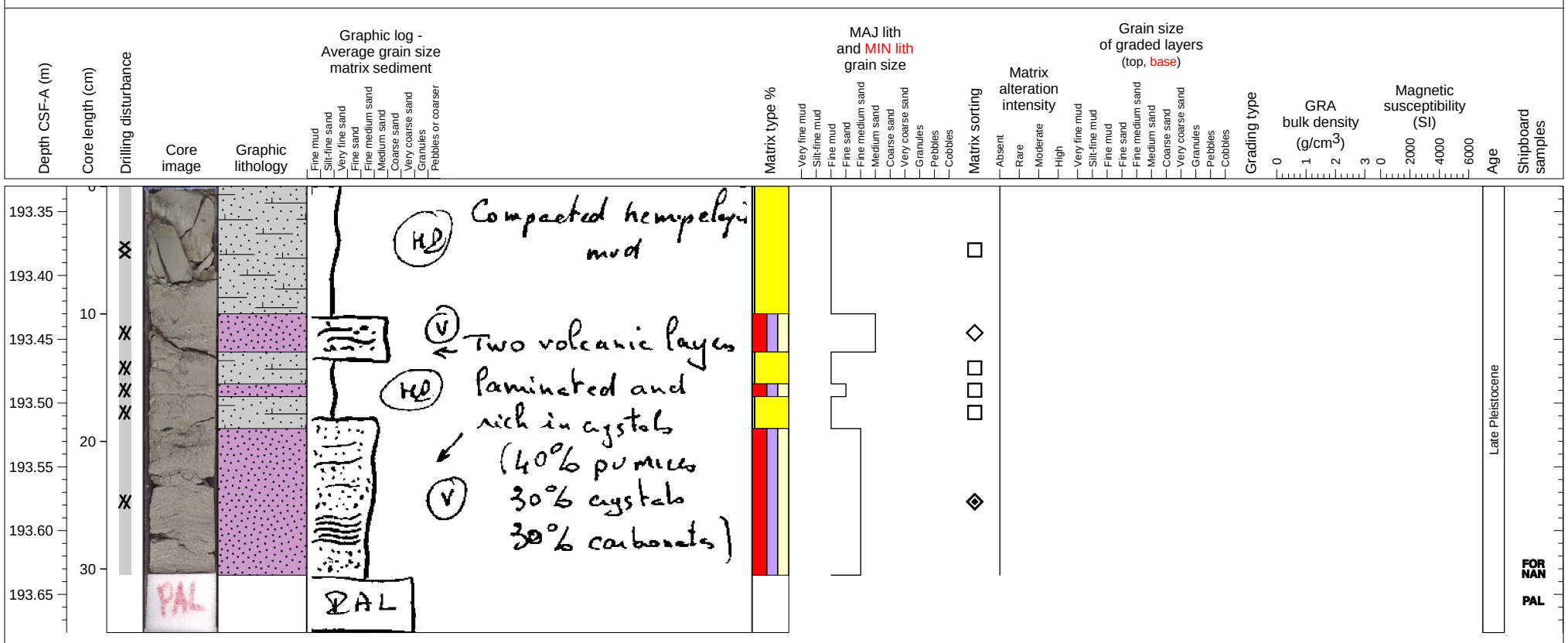
Hole 340-U1398A-23X Section 1, Top of Section: 191.8 CSF-A (m)

Compacted hemipelagic mudstone with intercalated laminated volcaniclastic turbidite



Hole 340-U1398A-23X Section CC, Top of Section: 193.33 CSF-A (m)

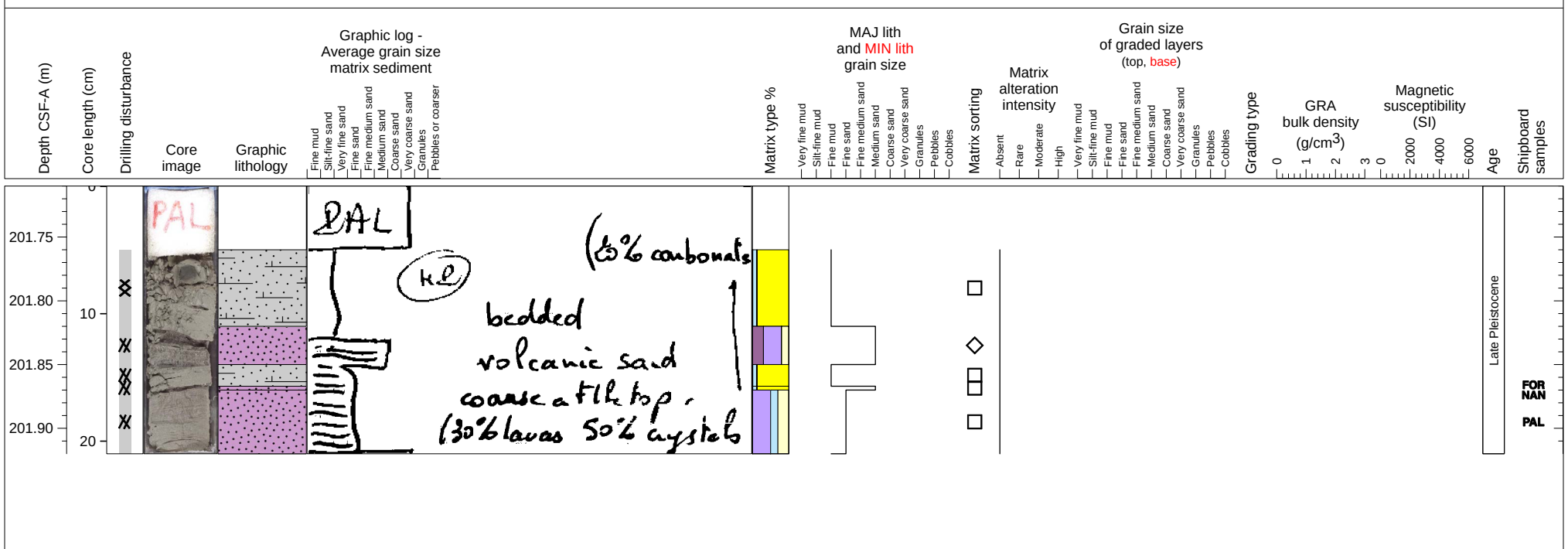
Hemipelagite with thin turbidite



Hole 340-U1398A-24X Section 1, Top of Section: 201.4 CSF-A (m)

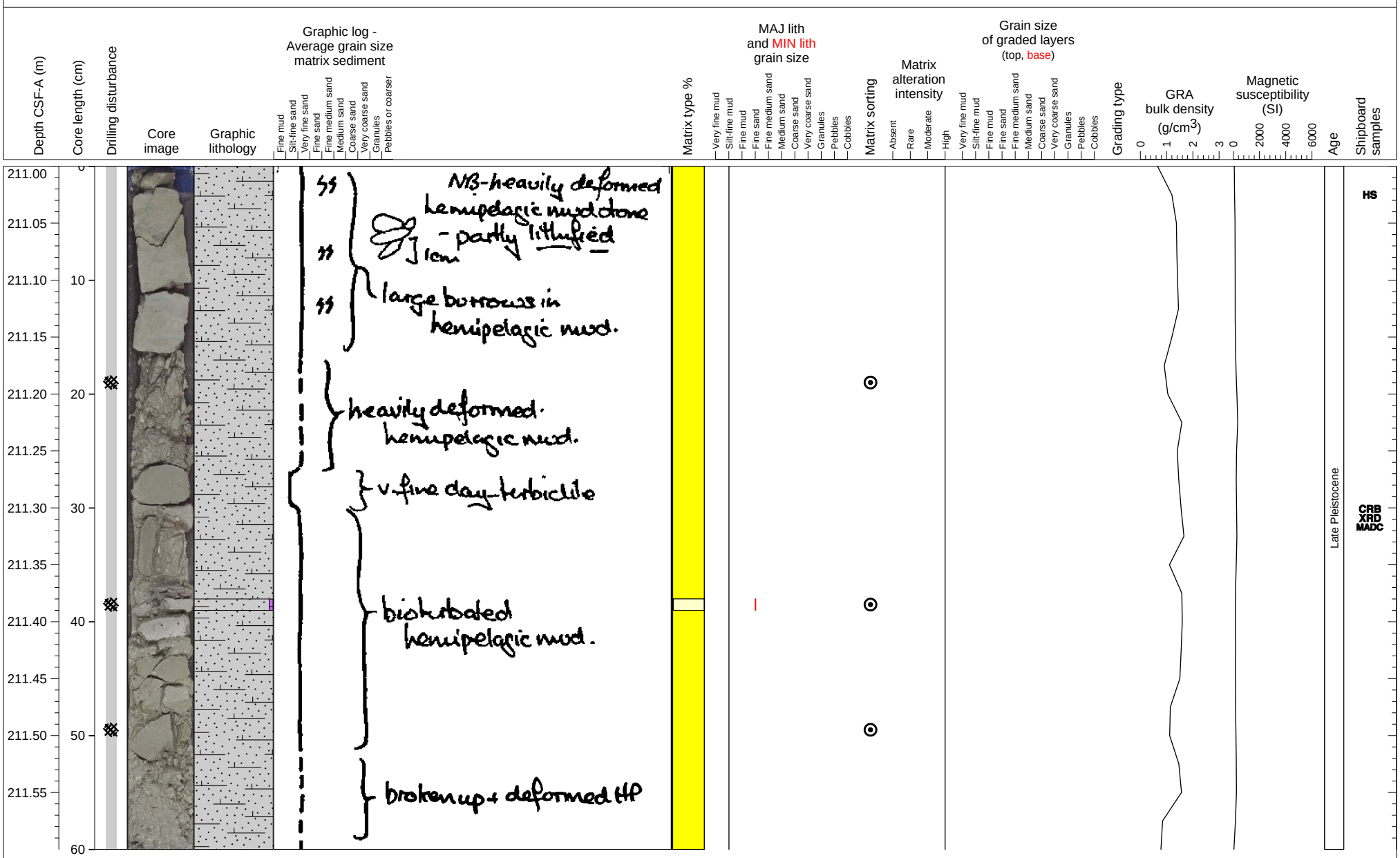
Hemipelagite

Hemipelagite with thin turbidite



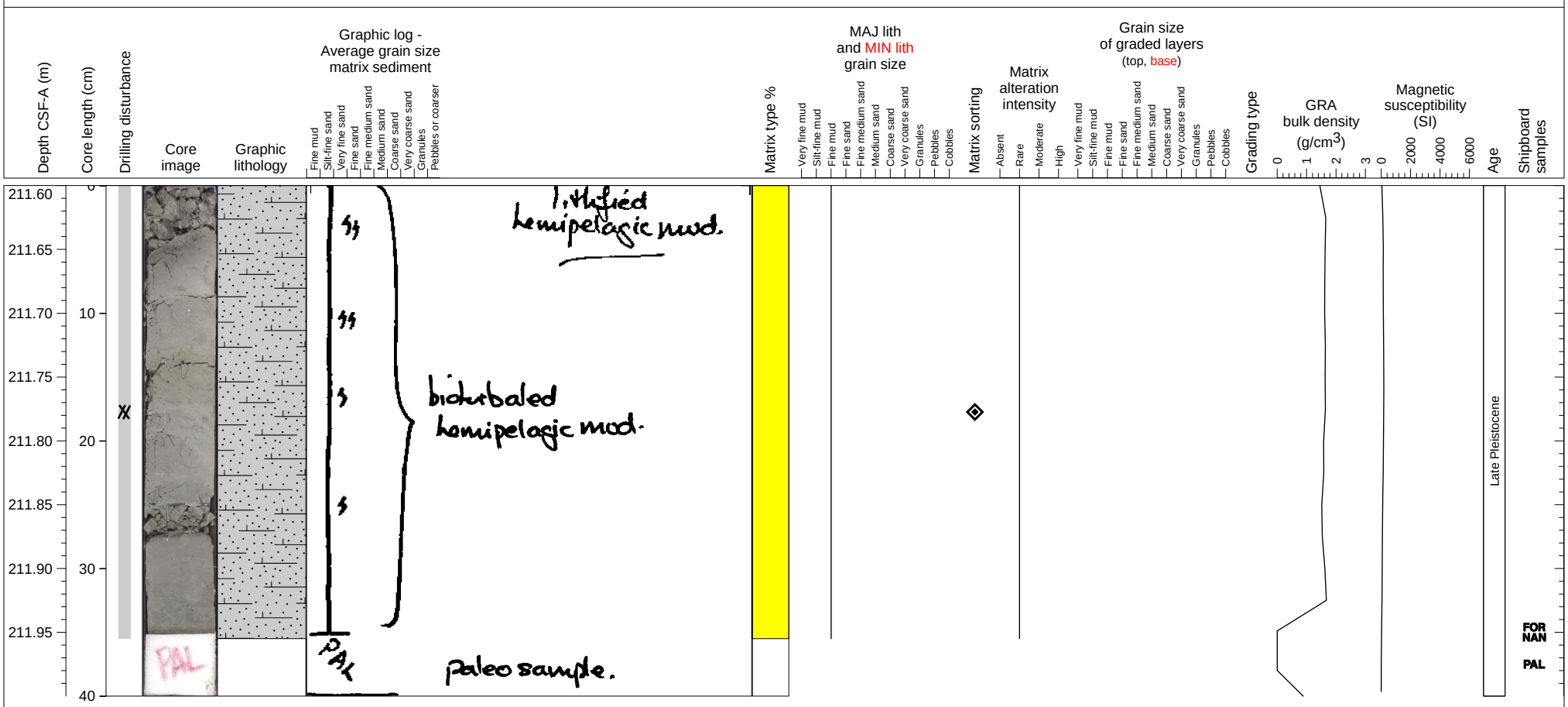
Hole 340-U1398A-25X Section 1, Top of Section: 211.0 CSF-A (m)

Lithified heavily bioturbated hemipelagic clay.



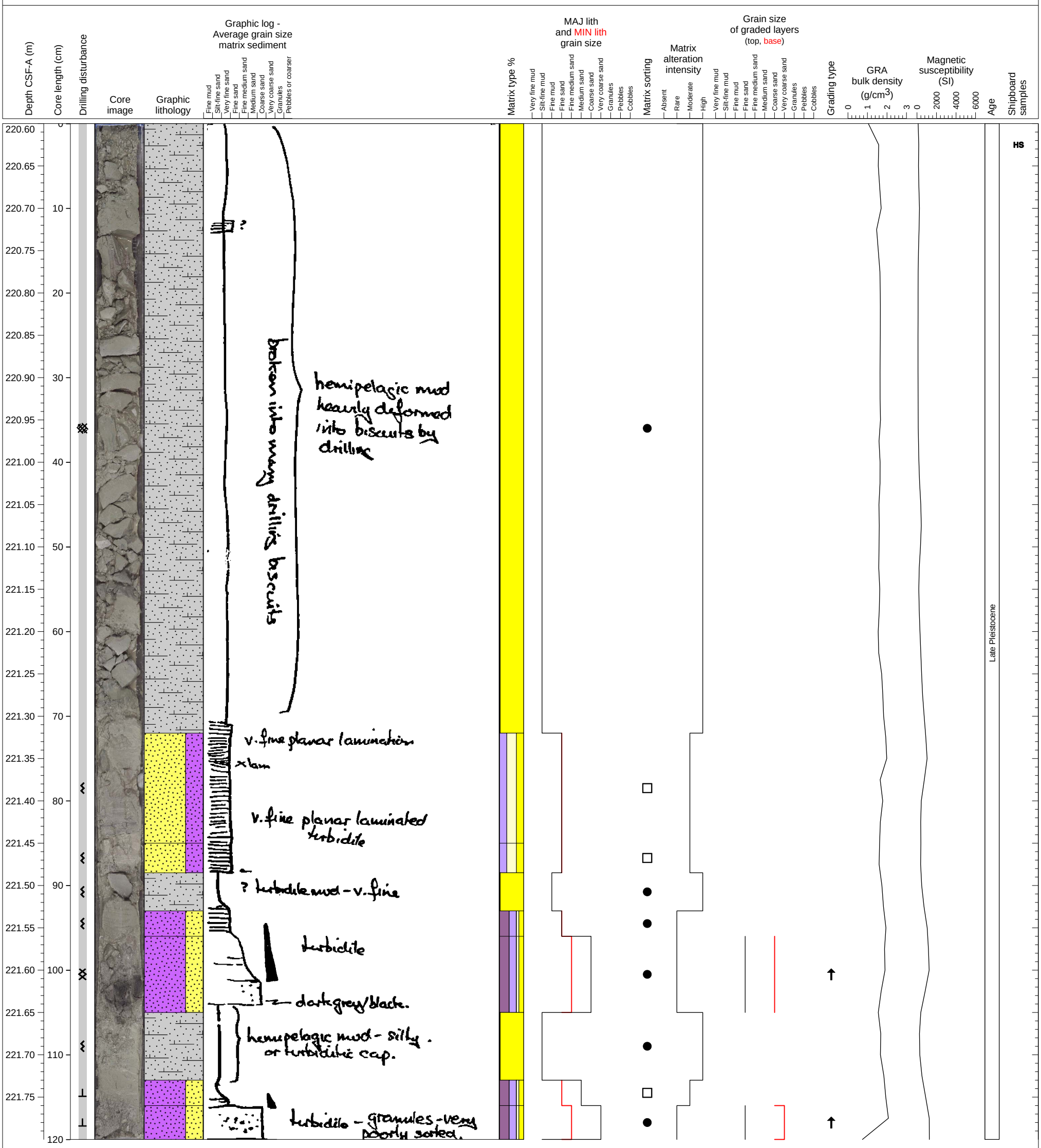
Hole 340-U1398A-25X Section CC, Top of Section: 211.6 CSF-A (m)

Mudstone, partially lithified hemipelagic clay. PAL sample from base.



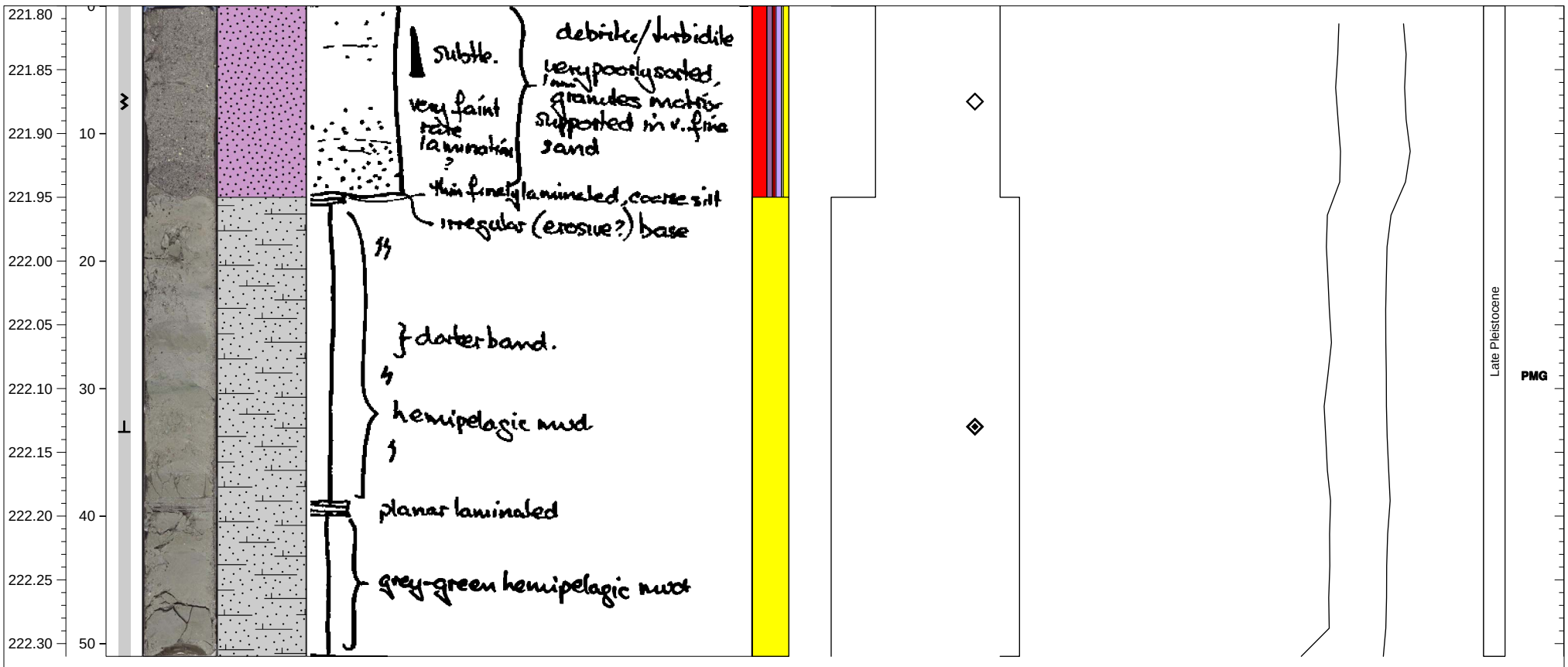
Hole 340-U1398A-26X Section 1, Top of Section: 220.6 CSF-A (m)

Lithified heavily bioturbated hemipelagic clay and at least two turbidite. Turbidites are characterized by massive lower part and parallel or cross stratified upper part.



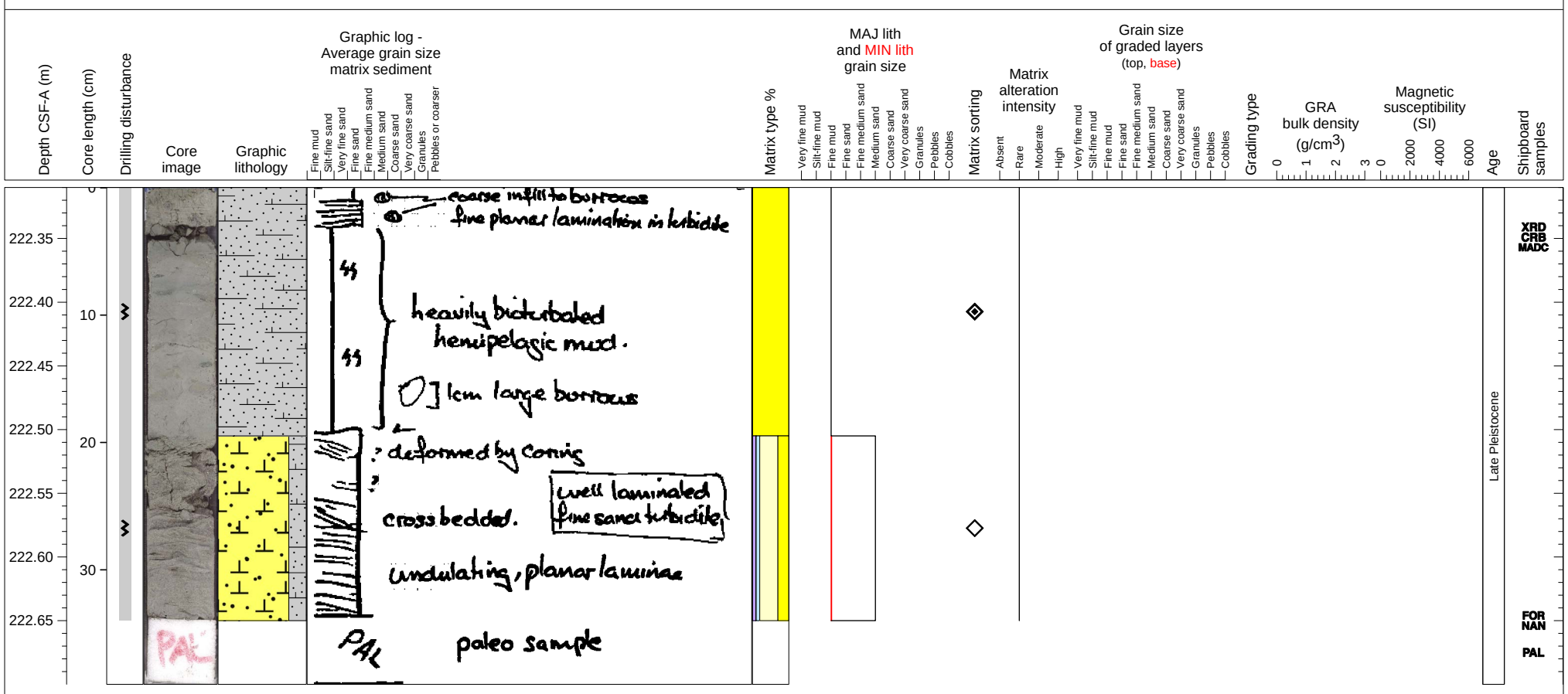
Hole 340-U1398A-26X Section 2, Top of Section: 221.8 CSF-A (m)

Partailly lithified volcaniclastic sandstone overlying a mudstone.



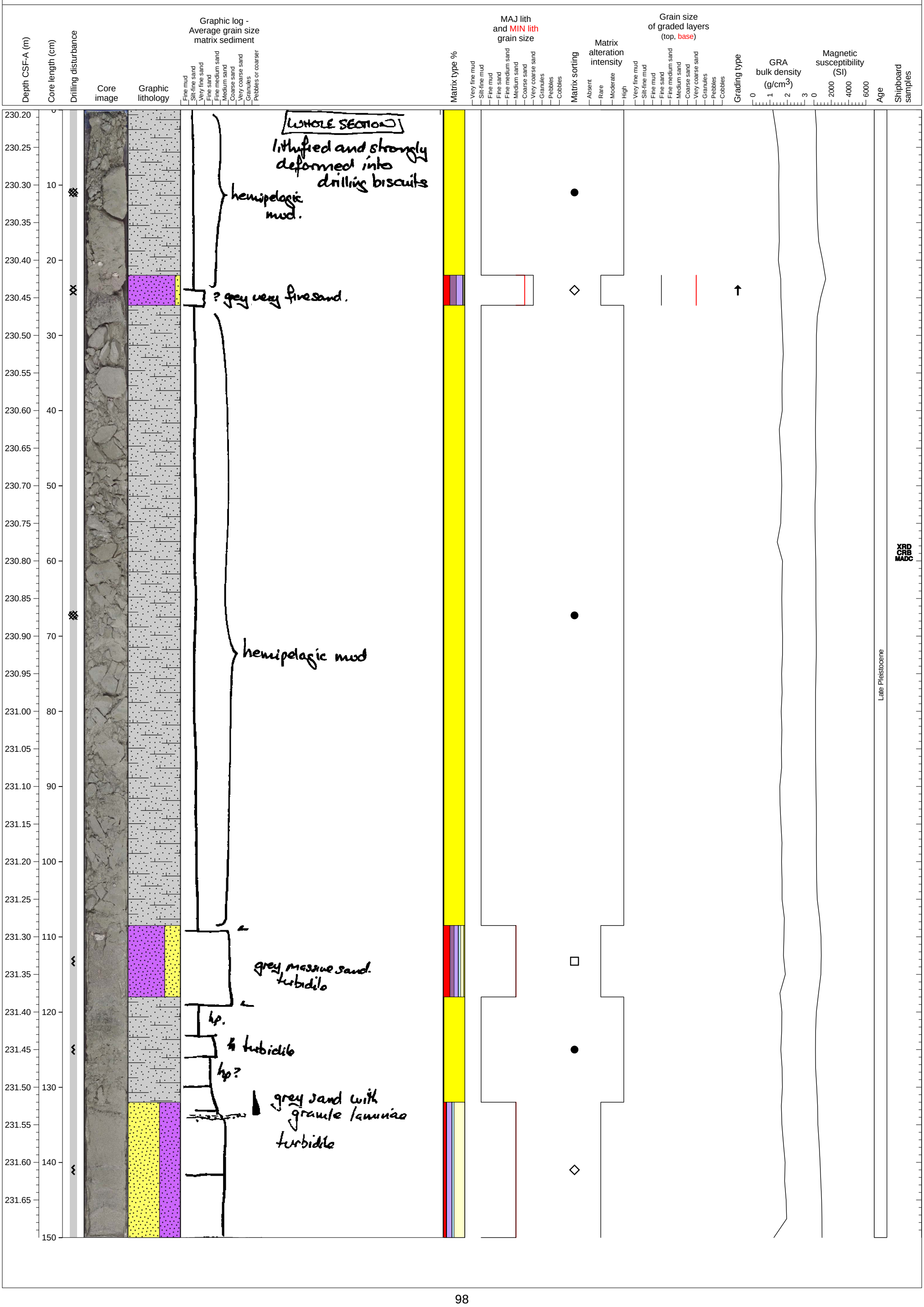
Hole 340-U1398A-26X Section CC, Top of Section: 222.31 CSF-A (m)

Mudstone overlaying sandstone with fine mudstone laminae. PAL sample from base.



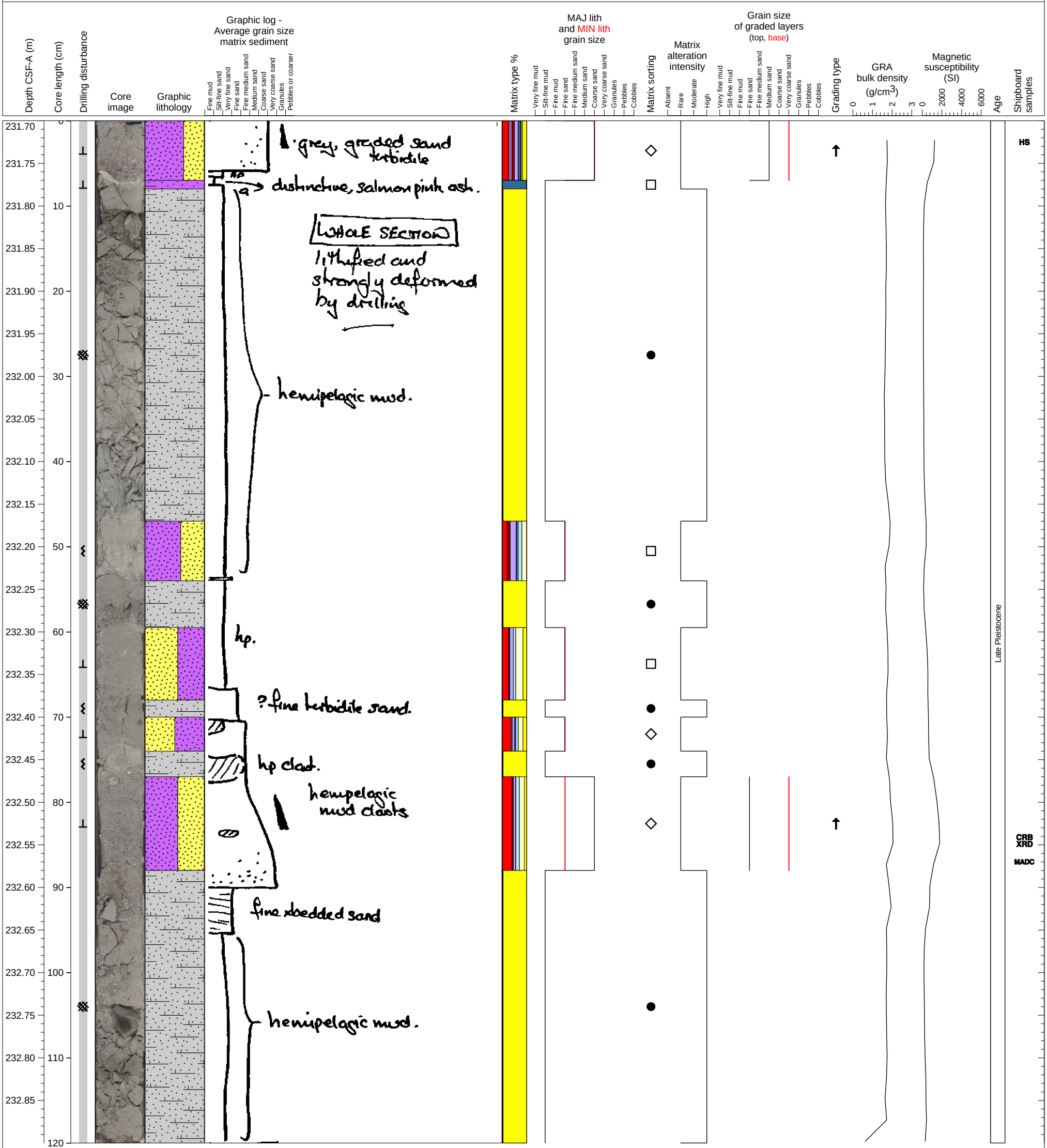
Hole 340-U1398A-27X Section 1, Top of Section: 230.2 CSF-A (m)

Lithified bioturbated hemipelagic clay intercalating with volcaniclastic sand layers with lamination.



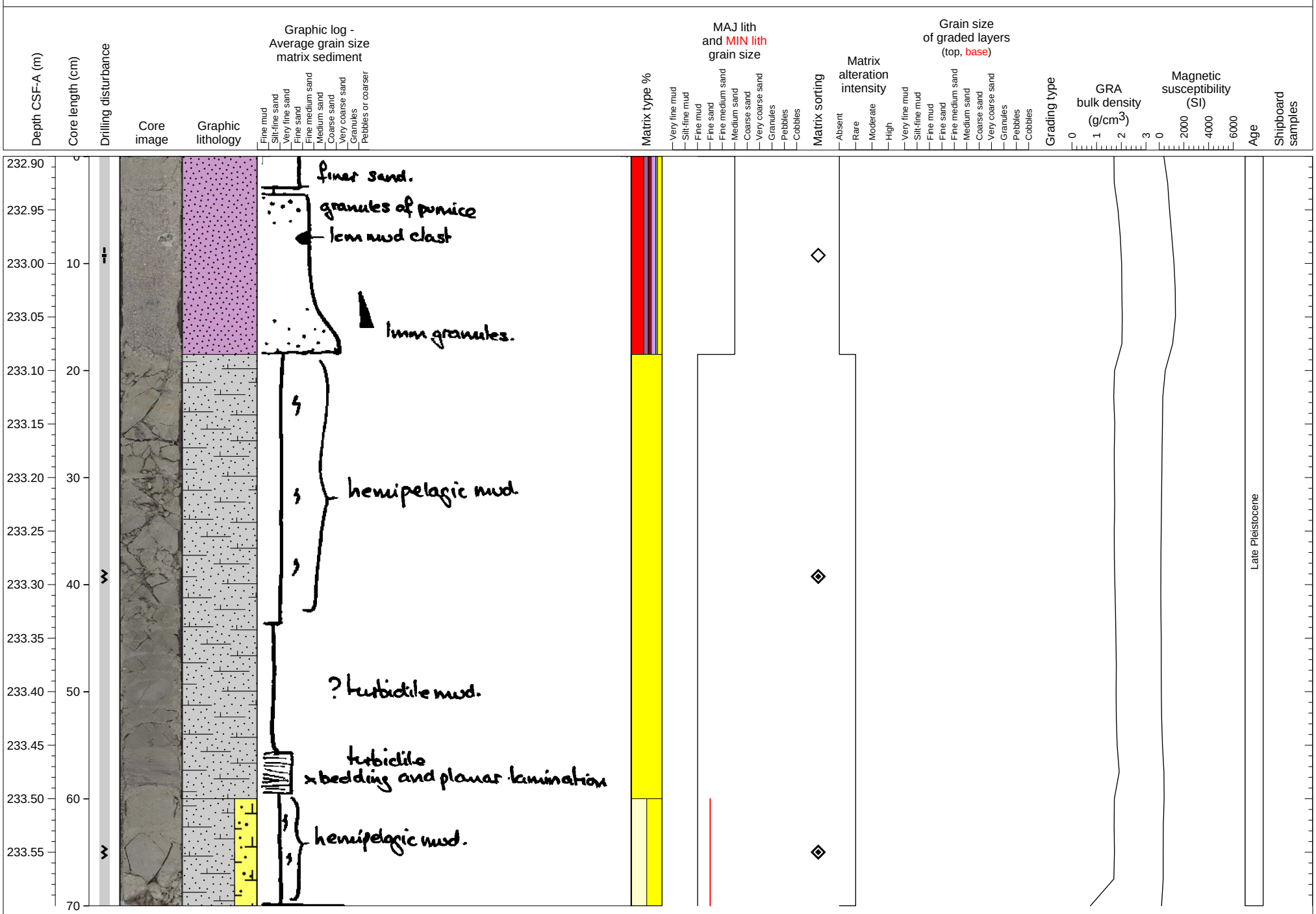
Hole 340-U1398A-27X Section 2, Top of Section: 231.7 CSF-A (m)

Lithified heavily bioturbated hemipelagic clay intercalating with volcaniclastic/calcareous sand layers with grading or lamination. At the top 8 cm, pinkish colored, 1-cm-thick glassy tephra is intercalated.



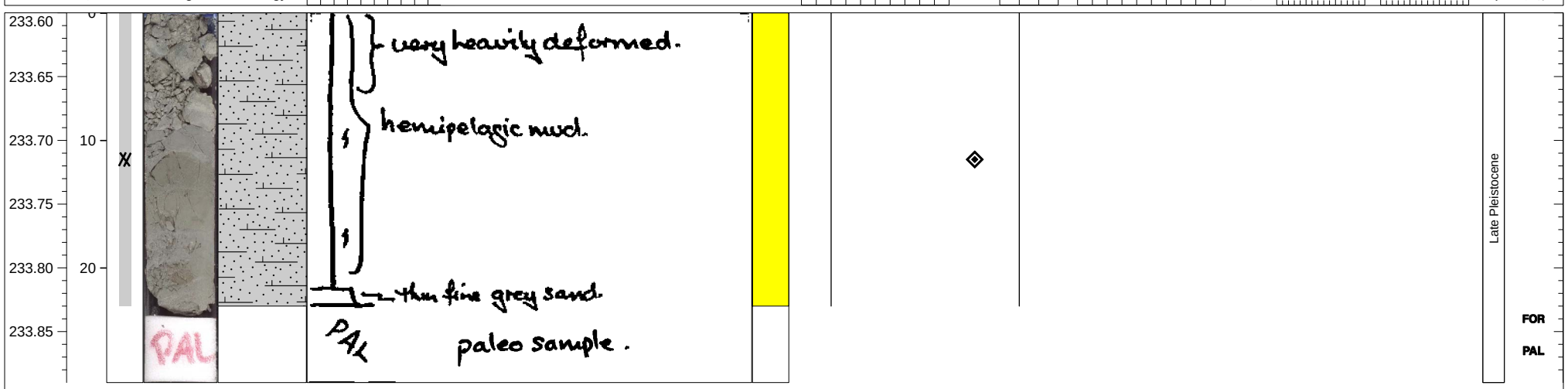
Hole 340-U1398A-27X Section 3, Top of Section: 232.9 CSF-A (m)

Volcaniclastic sandstone overlying a mudstone and interlayered mudstone/calcareous sandstone. Mudstone shows fine laminations, ripples, and cross bedding at base of unit.



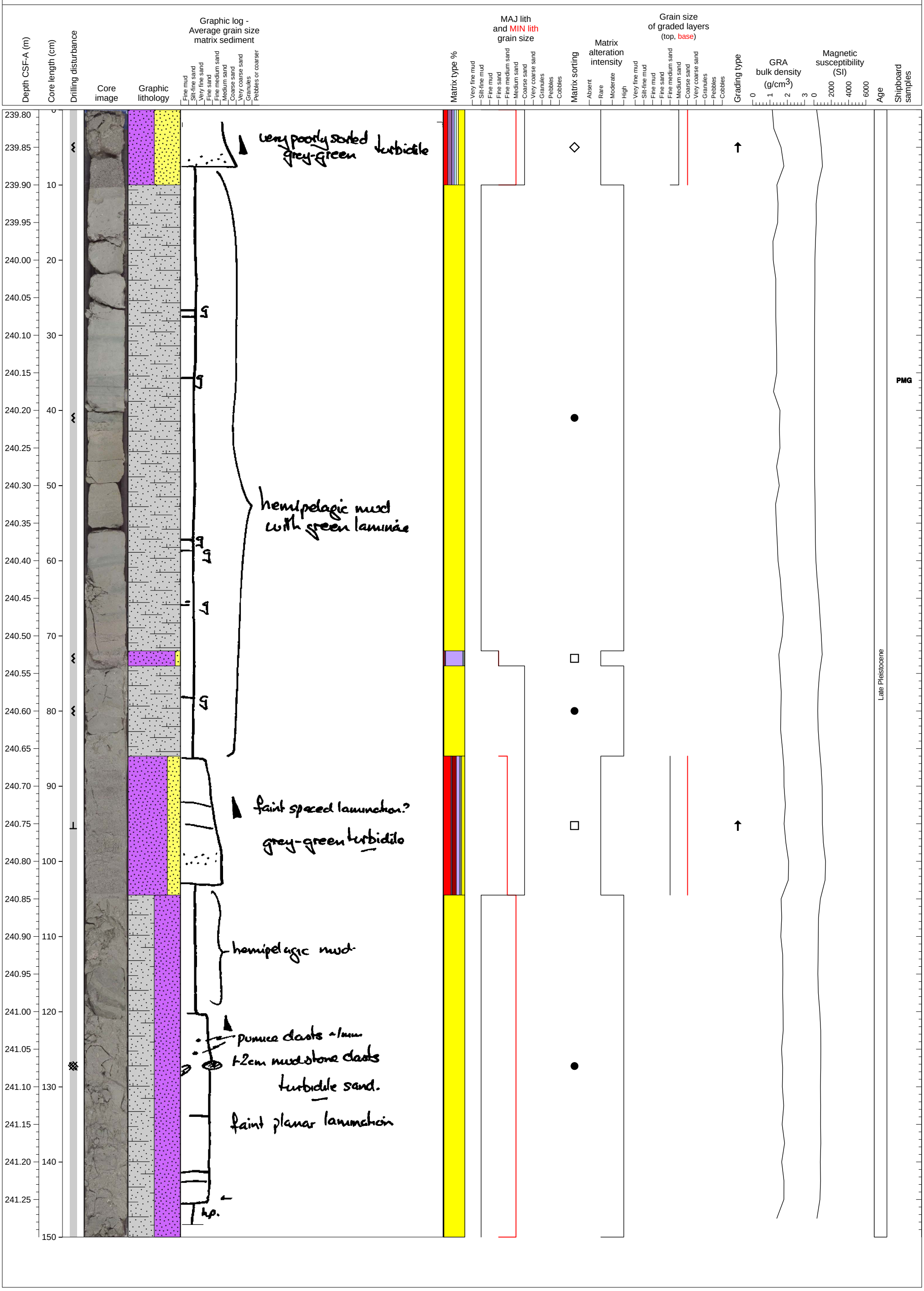
Hole 340-U1398A-27X Section CC, Top of Section: 233.6 CSF-A (m)

Mudstone, partially lithified hemipelagic clay. PAL from base of section.



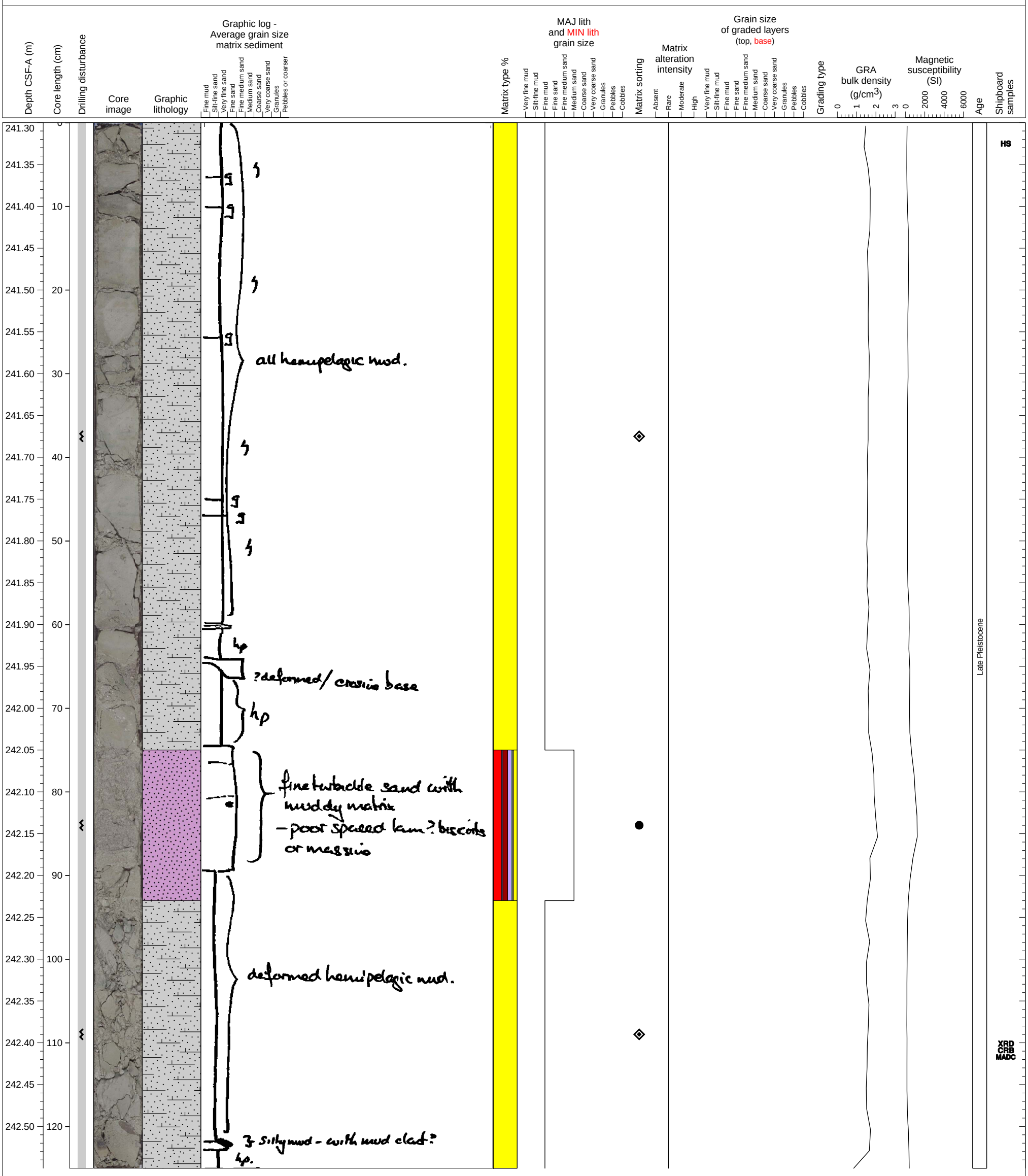
Hole 340-U1398A-28X Section 1, Top of Section: 239.8 CSF-A (m)

Lithified heavily bioturbated hemipelagic clay, intercalating volcaniclastic sand layers.



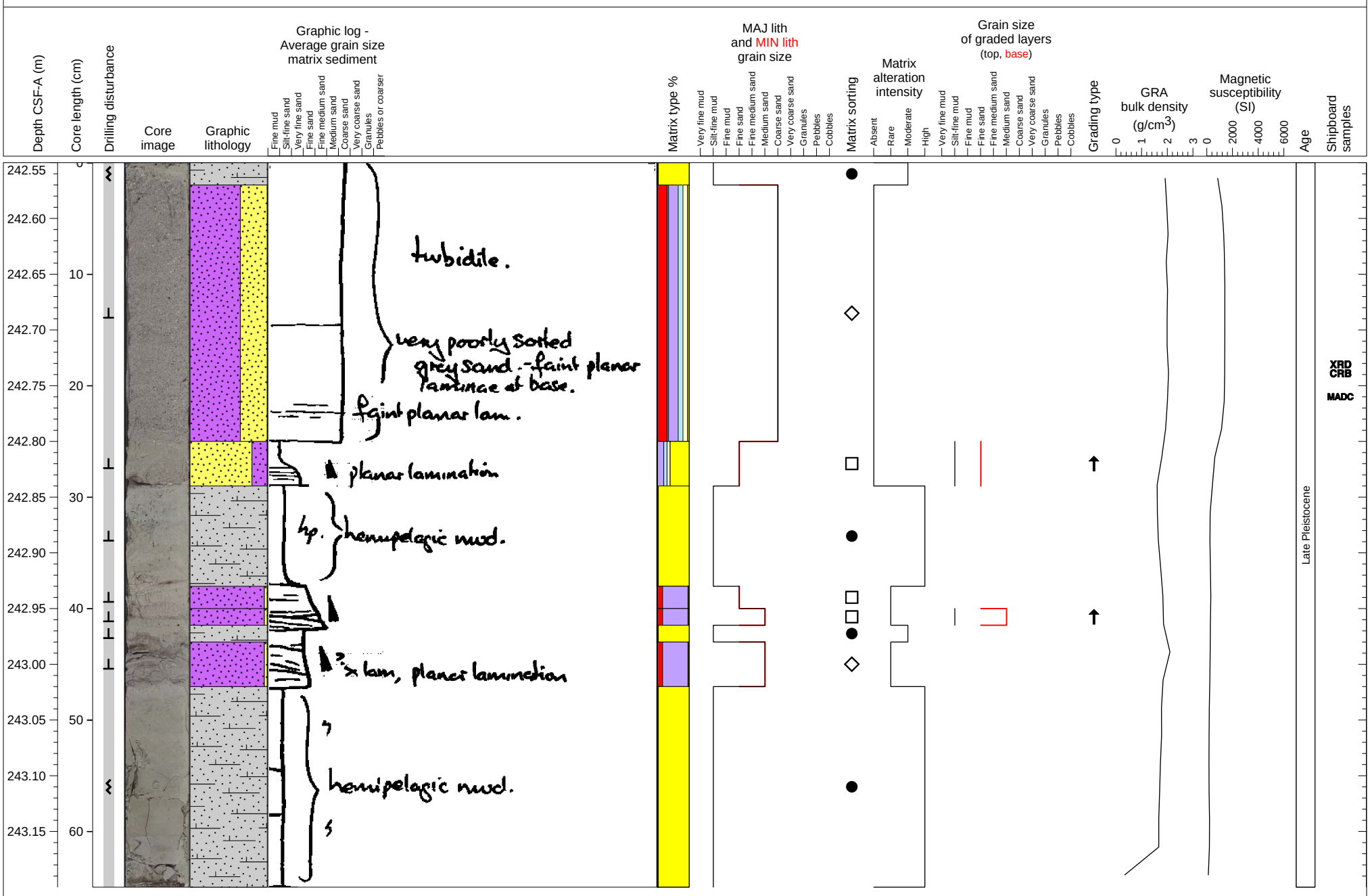
Hole 340-U1398A-28X Section 2, Top of Section: 241.3 CSF-A (m)

Mudstone interlayered with volcaniclastic sandstone.



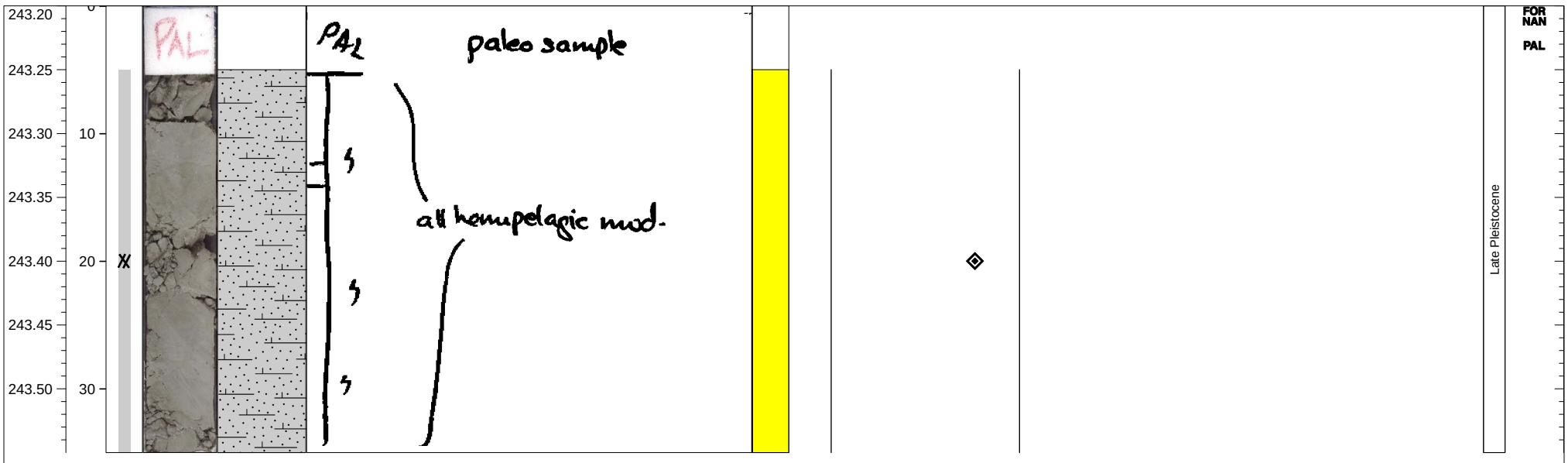
Hole 340-U1398A-28X Section 3, Top of Section: 242.55 CSF-A (m)

Lithified bioturbated hemipelagic clay intercalating volcaniclastic/calcareous sand layers with complex lamination.



Hole 340-U1398A-28X Section CC, Top of Section: 243.2 CSF-A (m)

Mudstone (partially lithified hemipelagic clay). PAL sample from top of section.



Hole 340-U1398A-29X Section 1, Top of Section: 249.4 CSF-A (m)

Lithified heavily bioturbated hemipelagic clay intercalating volcaniclastic and calcareous sand layers.

Depth CSF-A (m)
Core length (cm)
Drilling disturbance
Core image
Graphic lithology
Graphic log - Average grain size matrix sediment
Fine mud
Silt-fine sand
Very fine sand
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles or coarser
Matrix type %
MAJ lith and MIN lith grain size
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Matrix sorting
Matrix alteration intensity
Absent
Rare
Moderate
High
Grain size of graded layers (top, base)
Very fine mud
Silt-fine mud
Fine mud
Fine sand
Fine medium sand
Medium sand
Coarse sand
Very coarse sand
Granules
Pebbles
Cobbles
Grading type
GRA bulk density (g/cm3)
Magnetic susceptibility (SI)
Age
Shipboard samples

249.40 0
249.45
249.50 10
249.55
249.60 20
249.65
249.70 30
249.75
249.80 40
249.85
249.90 50
249.95
250.00 60
250.05
250.10 70
250.15
250.20 80
250.25
250.30 90
250.35
250.40 100
250.45
250.50 110
250.55
250.60 120
250.65
250.70 130
250.75
250.80 140
250.85
150

hemipelagic mudstone - in places heavily disturbed by drilling

well sorted light grey sand.

?real, not biscuits

mud clast.

hp.

massive muddy matrix sands turbidites

hp.

hp.

deformed by drilling.

massive turbidite

hp.

Late Pleistocene

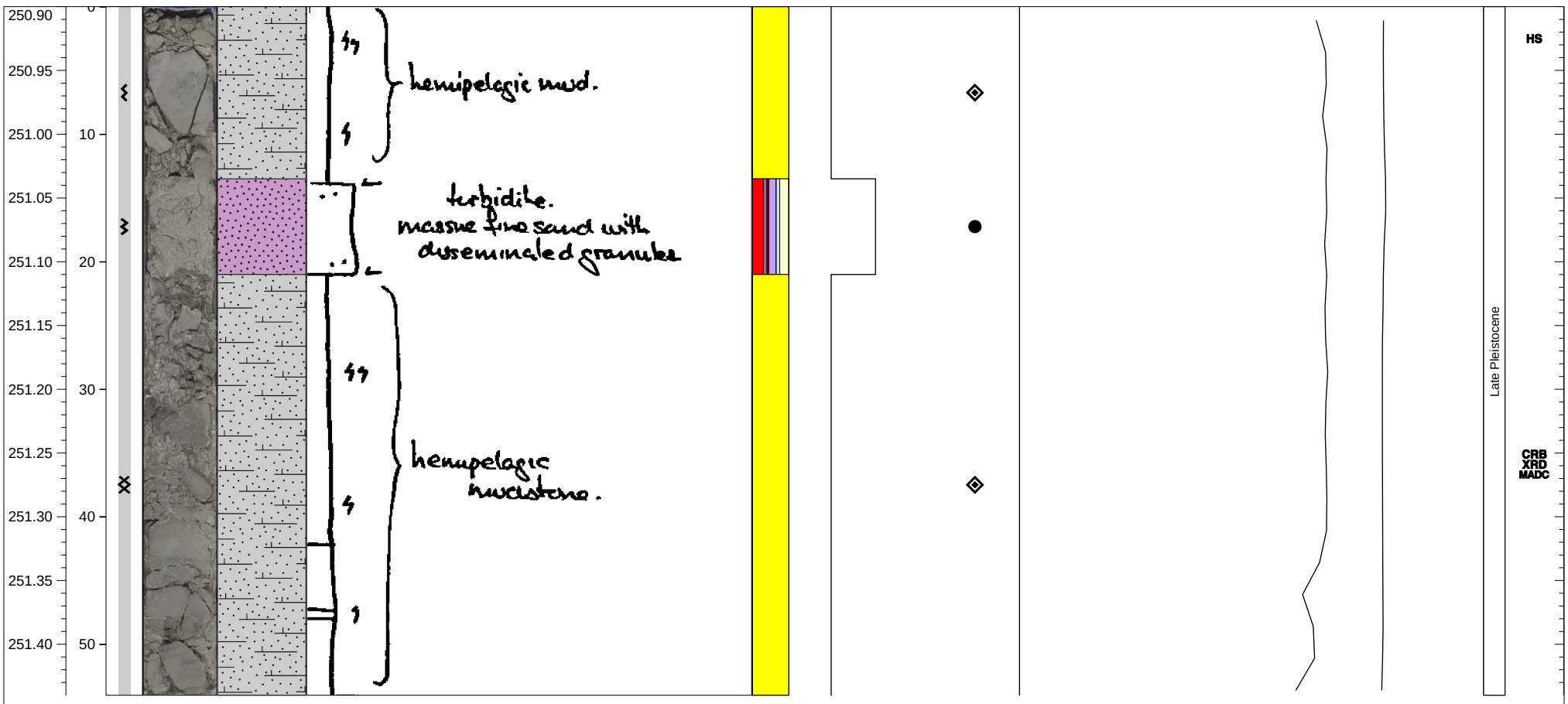
PMG

CRB XRD

MADC

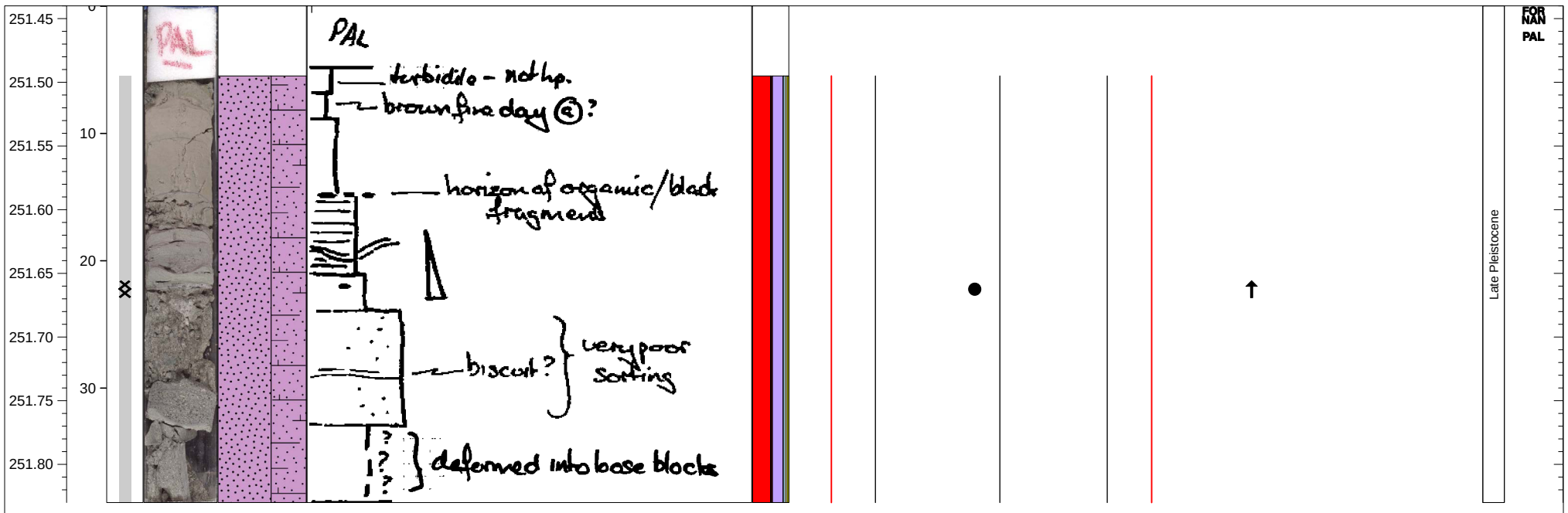
Hole 340-U1398A-29X Section 2, Top of Section: 250.9 CSF-A (m)

Interlayered mudstone with volcaniclastic sandstone.



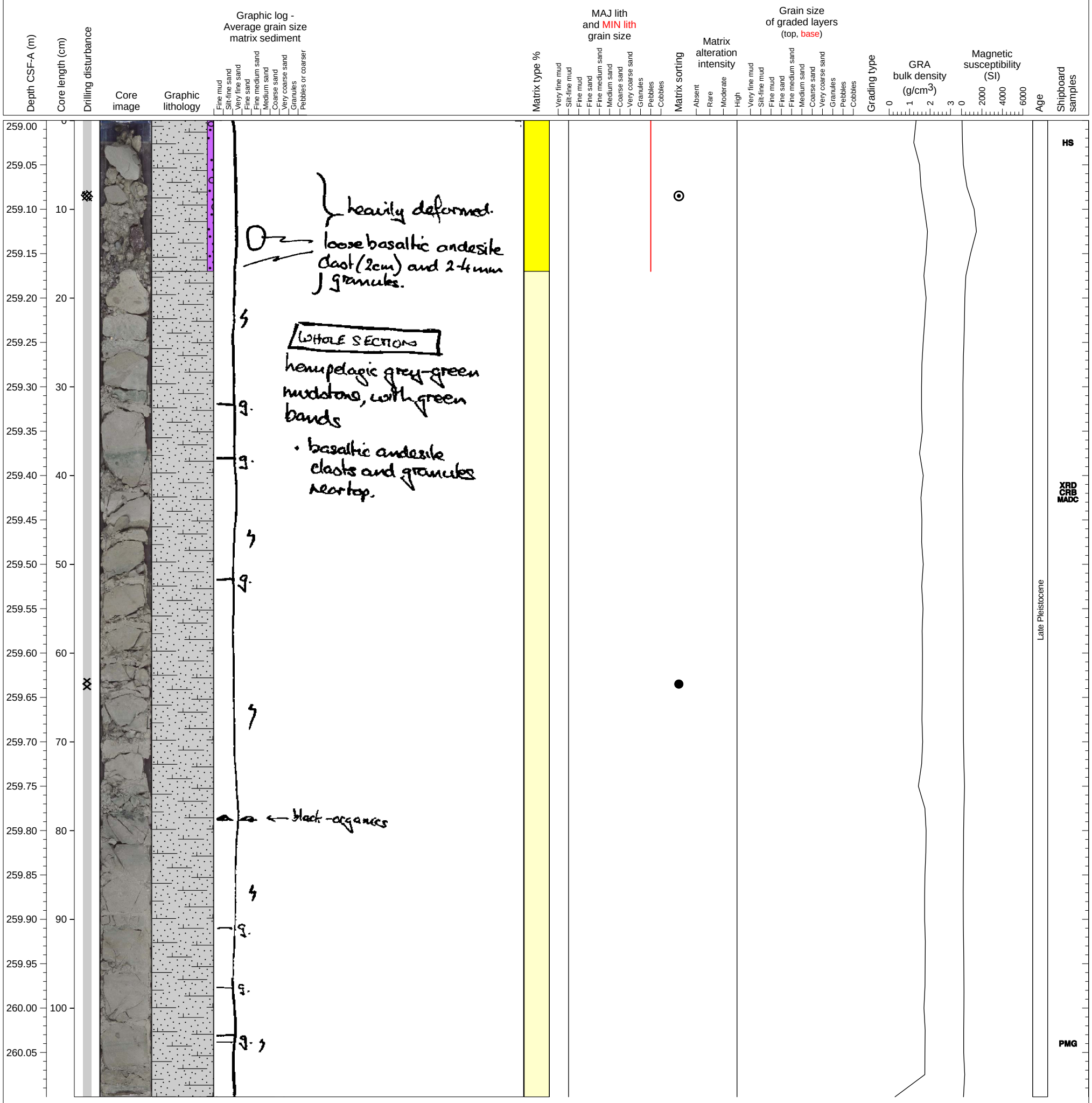
Hole 340-U1398A-29X Section CC, Top of Section: 251.44 CSF-A (m)

Normally graded volcaniclastic unit. Appears to grade from meidum sandstone to fine mudstone, but difficult to tell because of severe drilling disturbance.



Hole 340-U1398A-30X Section 1, Top of Section: 259.0 CSF-A (m)

Lithified heavily bioturbated hemipelagic clay with a lot burrows.



Hole 340-U1398A-30X Section CC, Top of Section: 260.1 CSF-A (m)

Mudstone overlying volcaniclastic sandstone layers, one of which is normally graded. PAL sample from top of section.