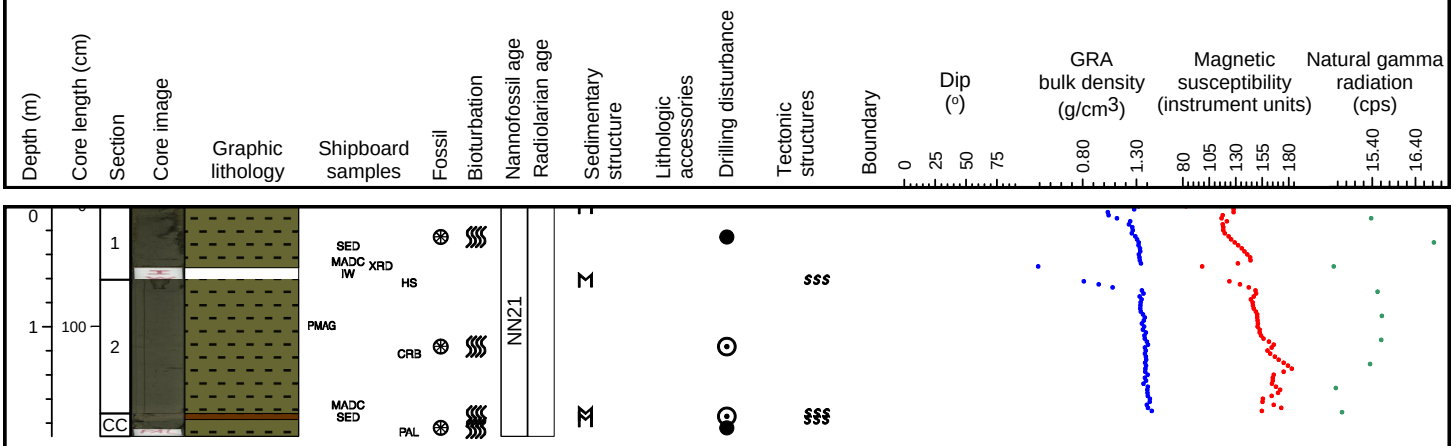
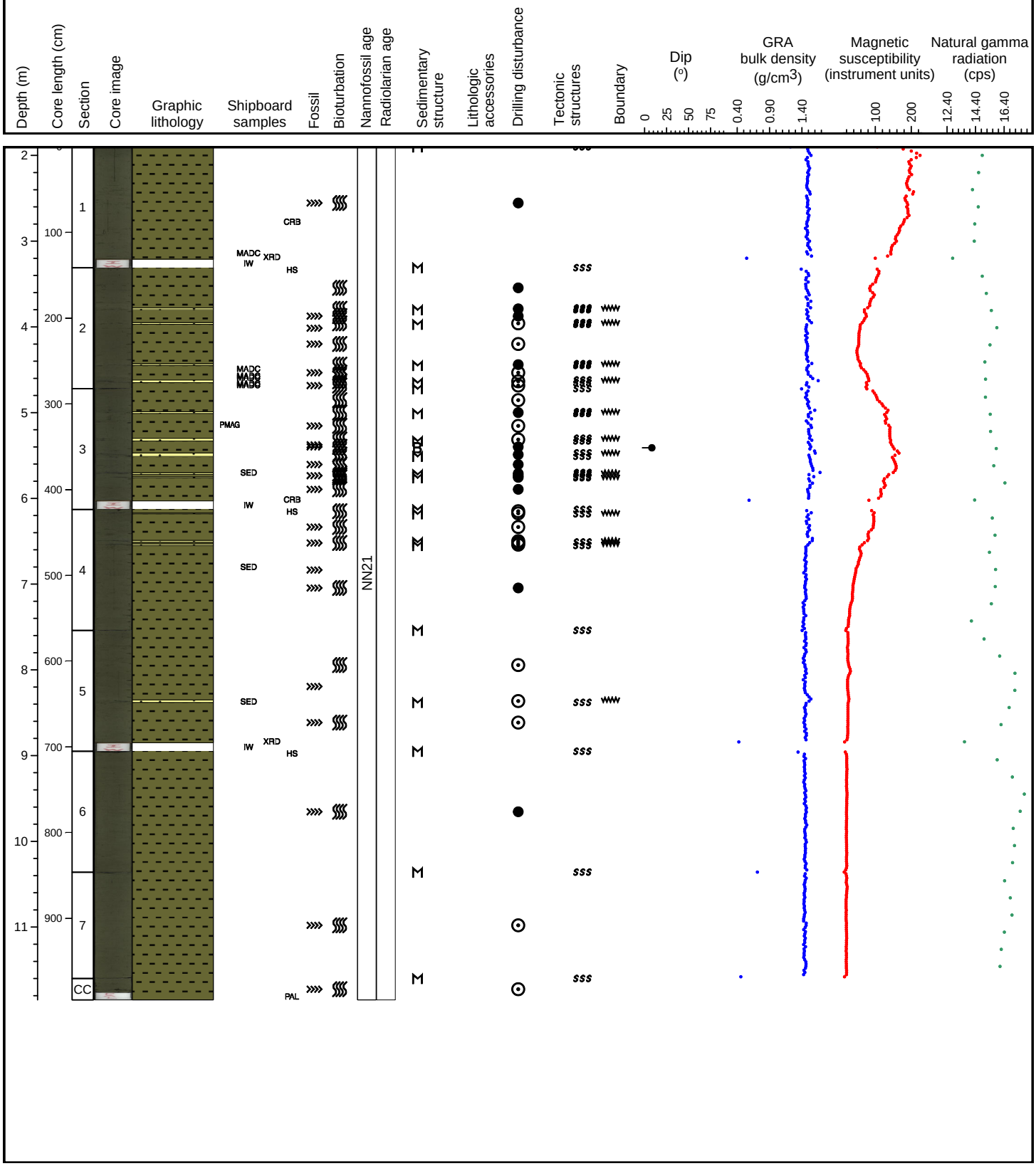
Hole 344-U1414A Core 1H, Interval 0.0-1.91 m (CSF-A)

Massive biogenic component-rich greenish grey silty clay with some bioturbation and one clay horizon in the section CC, 0 to 5 cm.



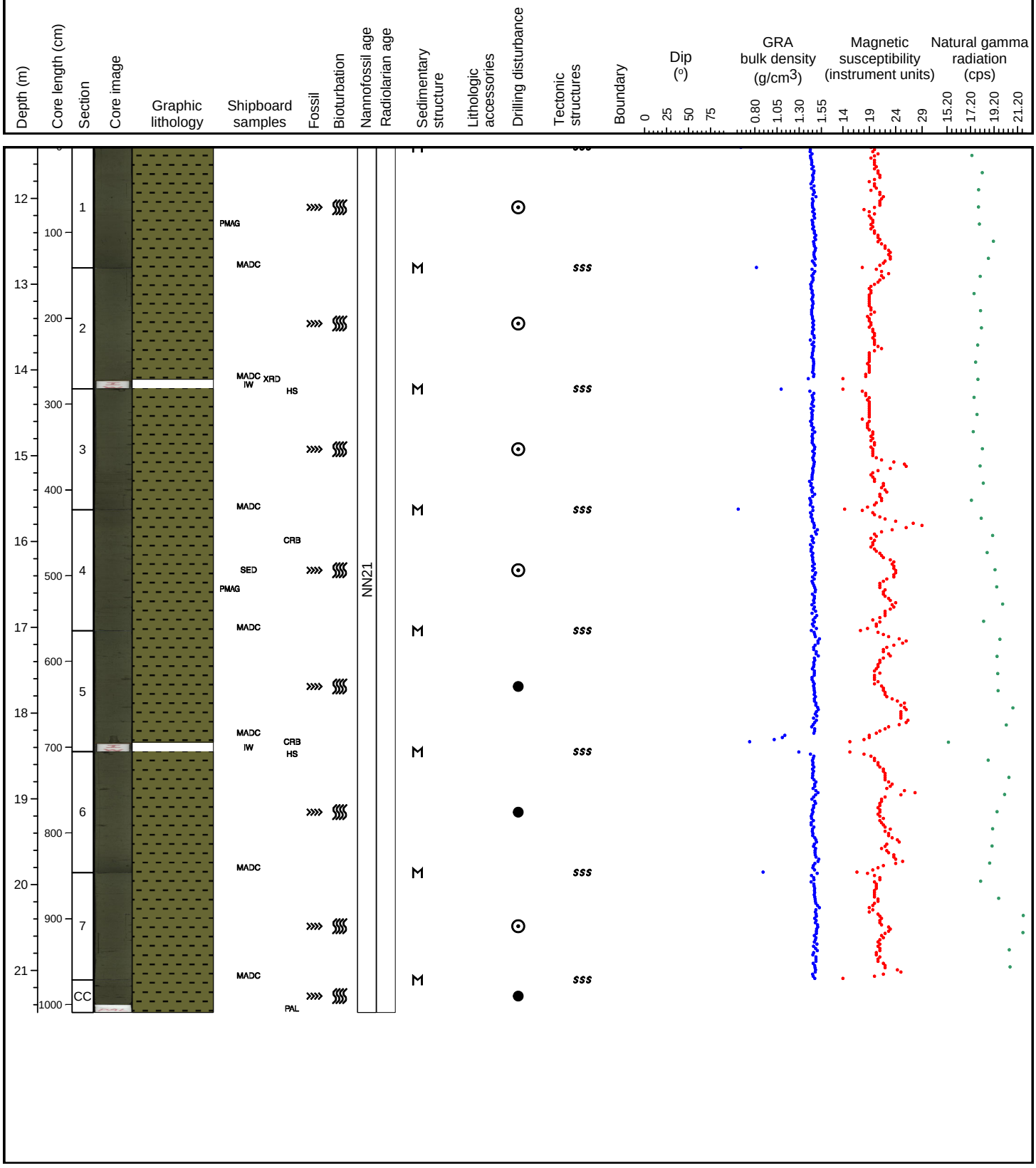
Hole 344-U1414A Core 2H, Interval 1.9-11.85 m (CSF-A)

Massive biogenic component-rich greenish grey silty clay with bioturbation. Small and disseminated med. sand layers more common on the top most 3 sections of the core. Disseminated dark brown and green spots are alteration. Disseminated sand pods throughout. Terrigenous matrix but biogenic (specially nannos) are very abundant.



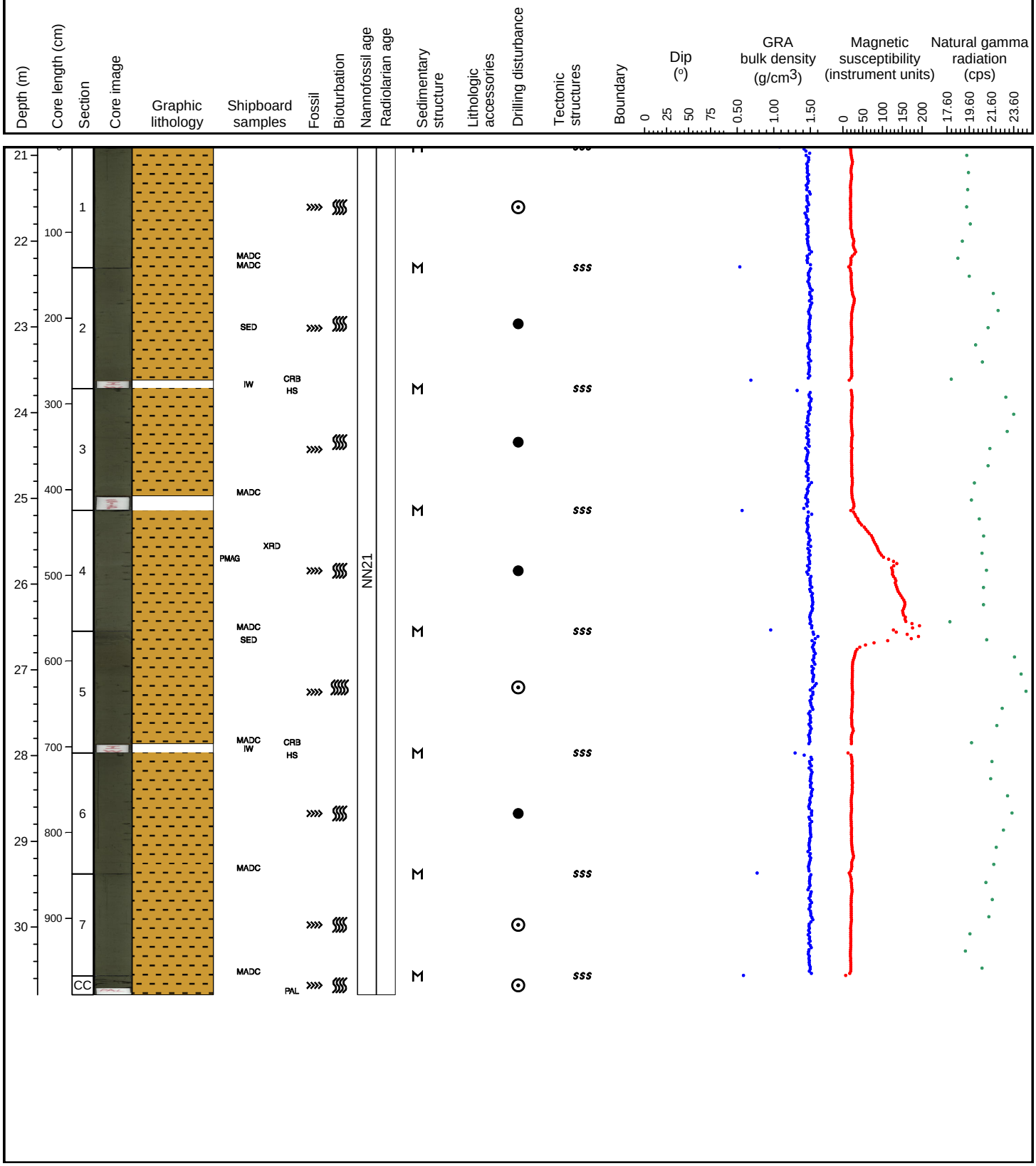
Hole 344-U1414A Core 3H, Interval 11.4-21.49 m (CSF-A)

Massive biogenic component-rich greenish grey silty clay with bioturbation. Disseminated dark brown and green spots are alteration. Disseminated sand pods throughout. The mineral and fragment content of the matrix is more reduced than in the previous core. Biogenic material is abundant.



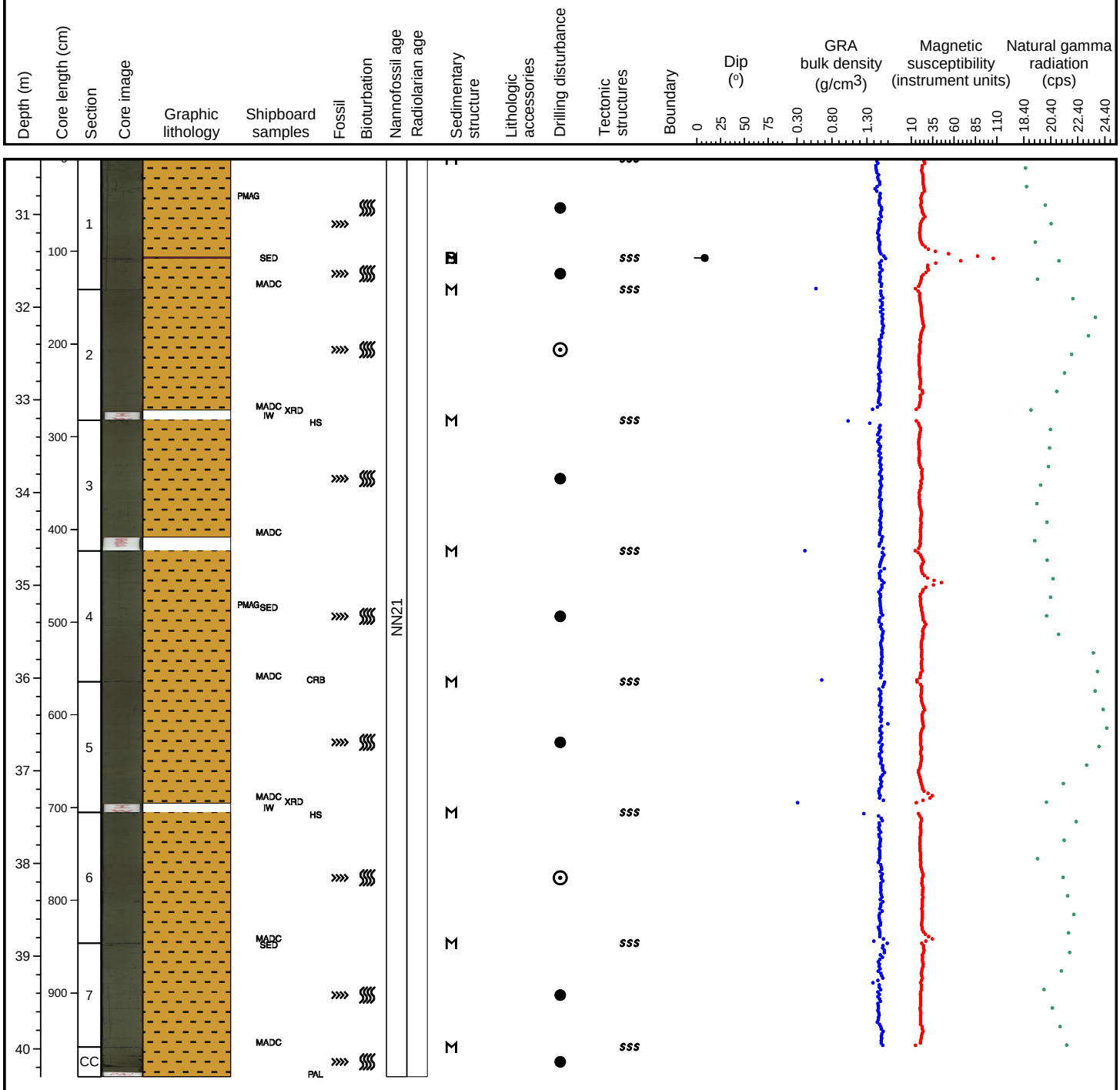
Hole 344-U1414A Core 4H, Interval 20.9-30.79 m (CSF-A)

Massive greenish grey clay with bioturbation. Disseminated dark brown and green spots are alteration. One layer enriched with sapropel (Section 5, 0-10). Disseminated sponge spicule pods throughout the core. The mineral and fragment content of the matrix, and the grain size of the matrix itself is reduced compared to the previous core. Nannos and radiolaria are abundant. Diatoms and foraminifera are common.



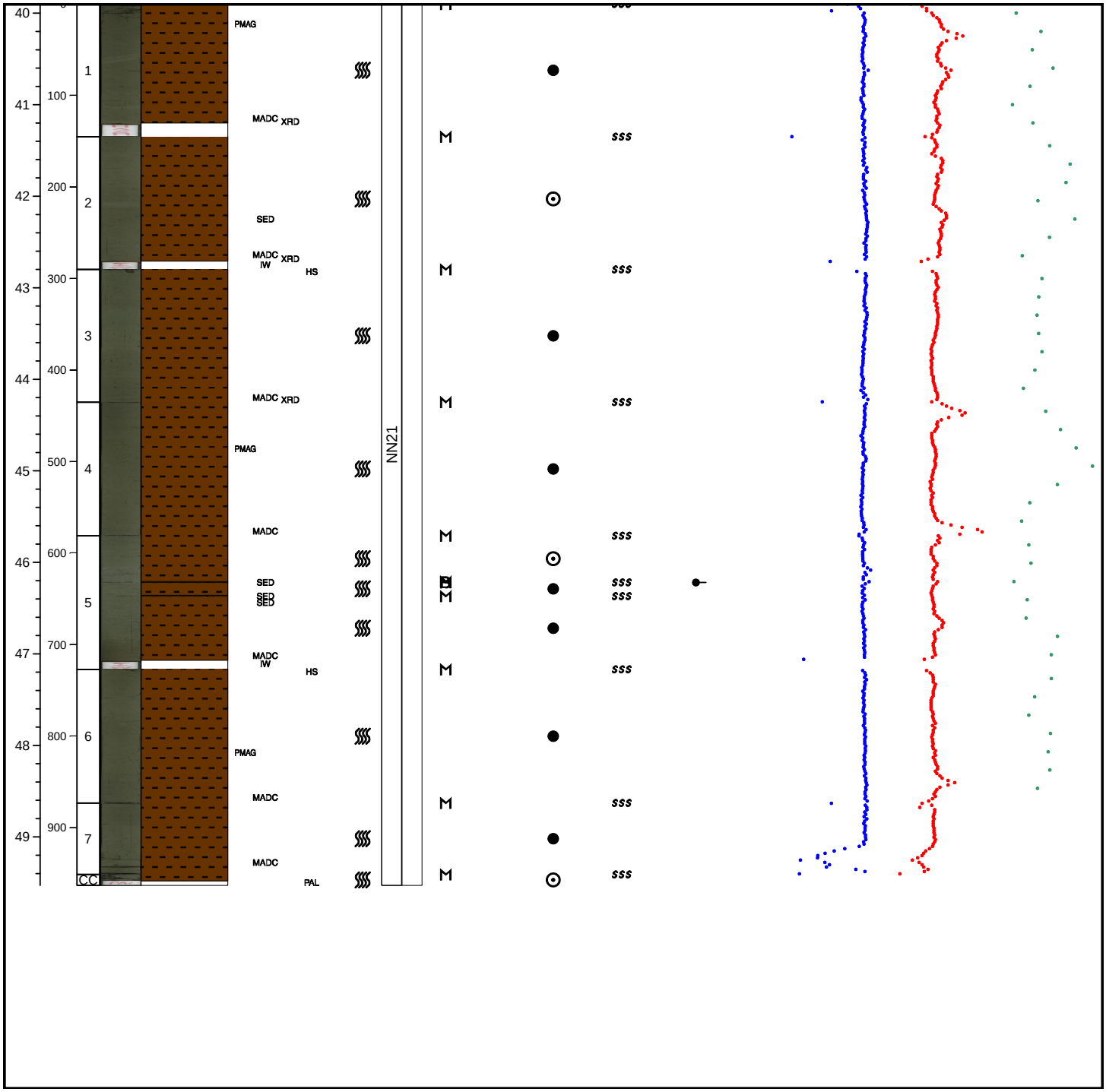
Hole 344-U1414A Core 5H, Interval 30.4-40.3 m (CSF-A)

Massive greenish grey clay with bioturbation. Disseminated dark brown and green spots are alteration. Rare, disseminated sponge spicule and pods pyrite nodules throughout the core. The mineral and fragment content of the matrix, and the grain size of the matrix itself is reduced compared to the previous core. Nannos and radiolaria are abundant. Diatoms and foraminifera are common. One cm thick tephra layer in section 1 at 106 cm and rare small pods.



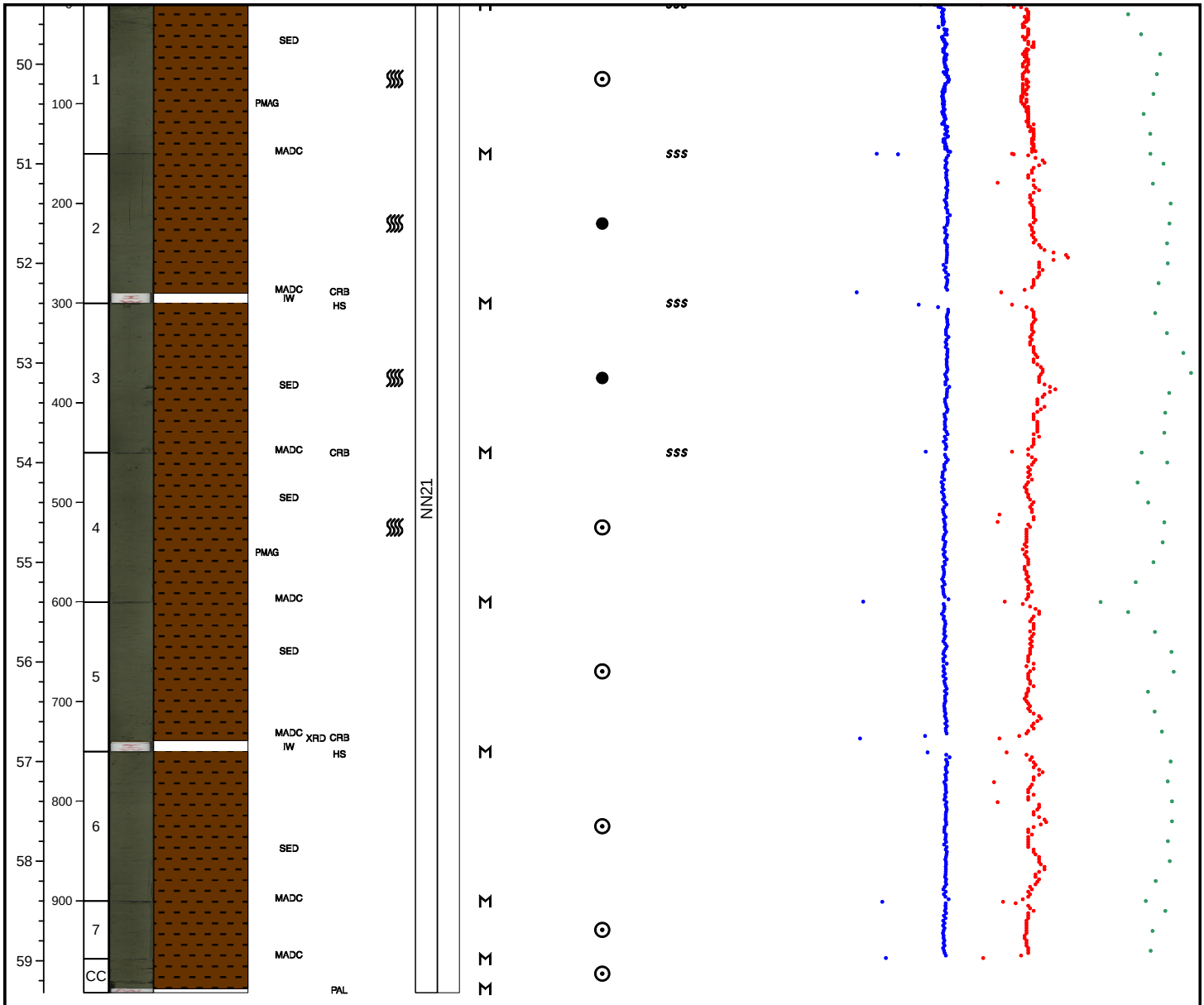
Hole 344-U1414A Core 6H, Interval 39.9-49.53 m (CSF-A)

Massive greenish grey clay with bioturbation. Disseminated dark brown and green spots are alteration. Rare, disseminated sponge spicule in pods. Pyrite nodules and neddles also disseminated throughout the core. Mineral (feldspar) contents in matrix increases compared to previous core. Nannos and radiolaria are abundant, diatoms, and foraminifers are common. Thin sand layers on section 5.



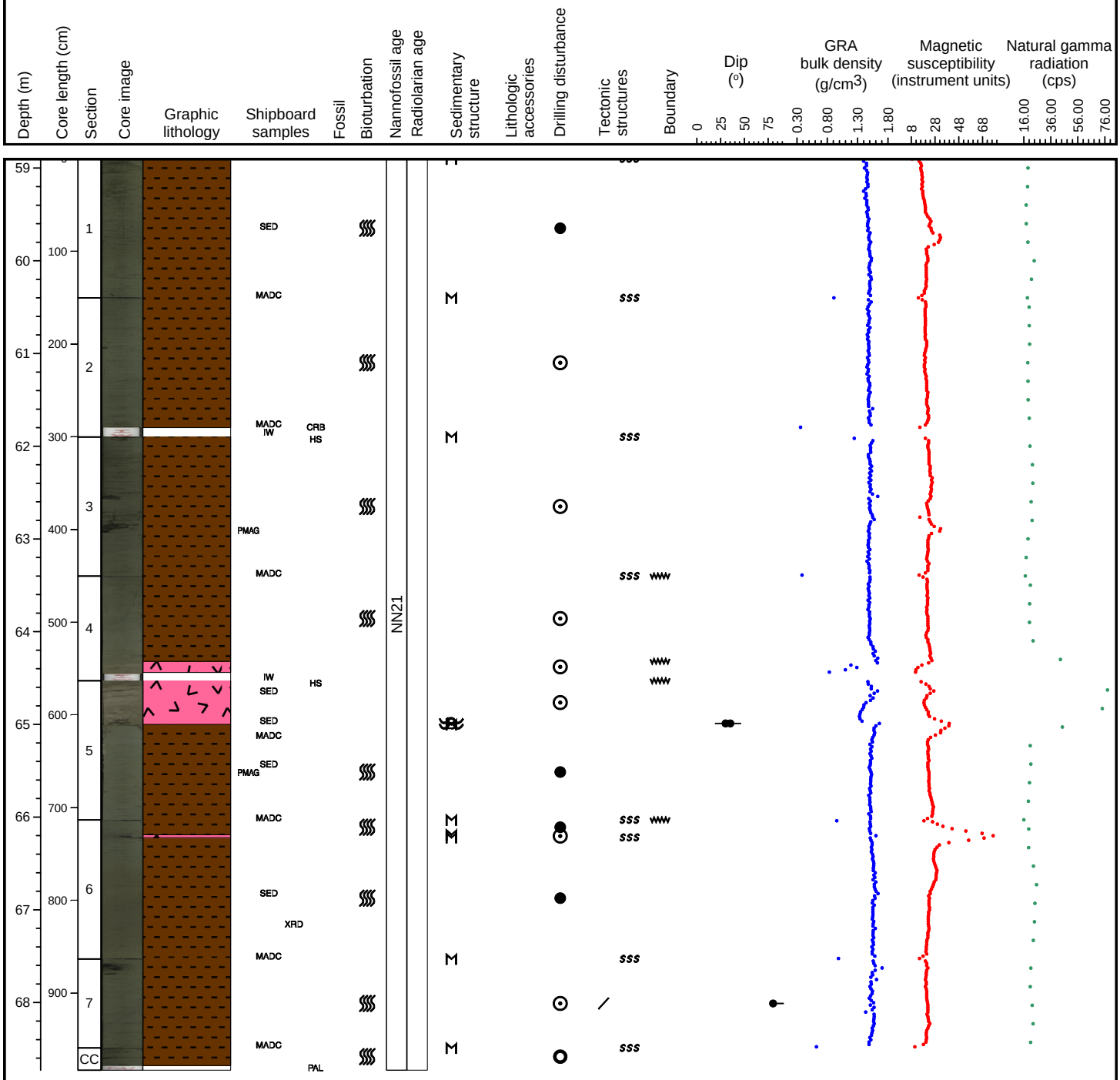
Hole 344-U1414A Core 7H, Interval 49.4-59.32 m (CSF-A)

Massive greenish grey clay with common bioturbation. Disseminated dark brown and green spots are alteration. Rare, disseminated sponge spicules in pods. Some small specs of dark ash in section 3.



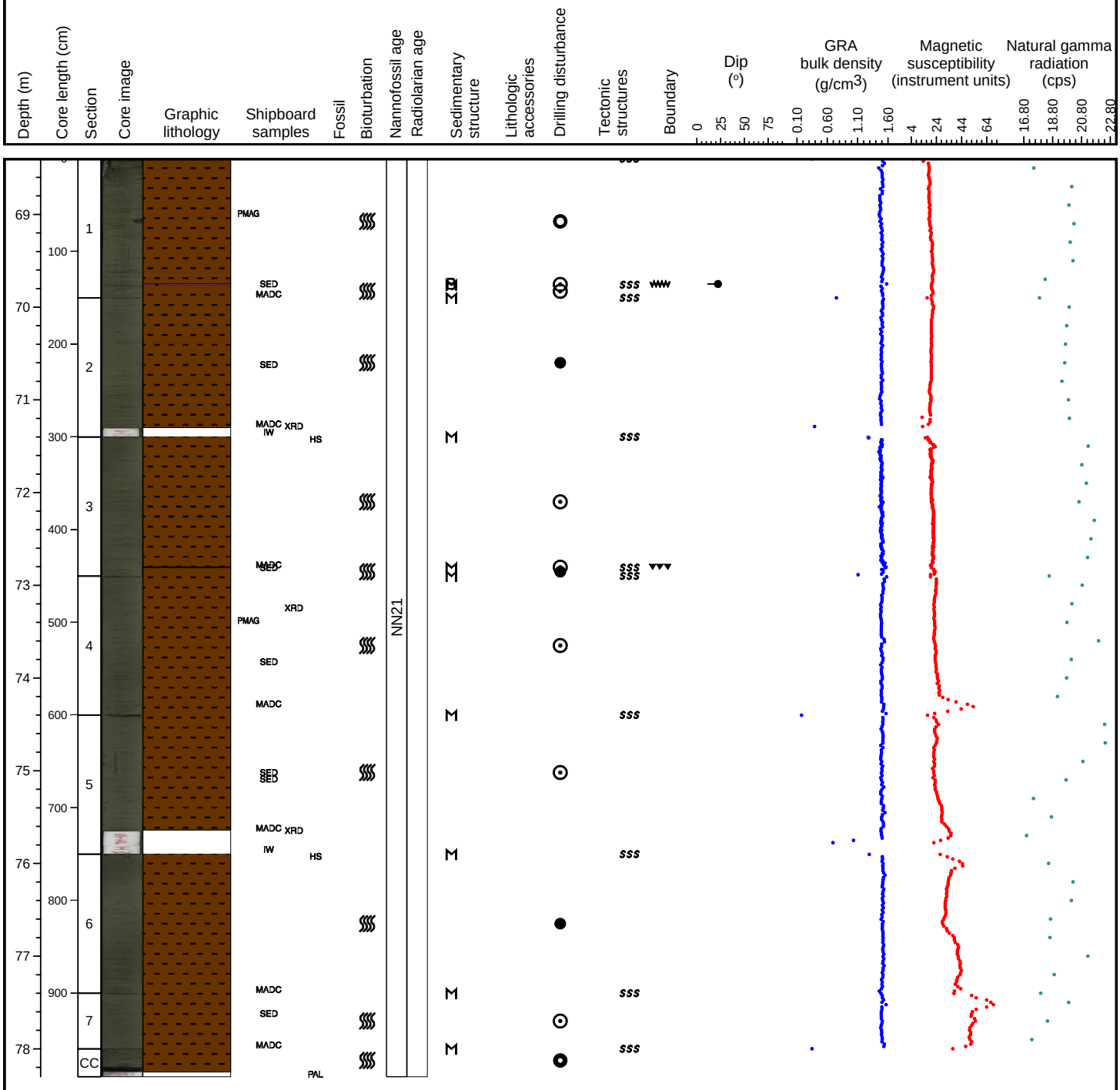
Hole 344-U1414A Core 8H, Interval 58.9-68.73 m (CSF-A)

Massive greenish grey clay with common bioturbation. Rare, disseminated sponge spicules and occasional discoloration indicative of glauconite. Cm-sized pyrite nodules in section 3 at 65-66 cm and 98-100 cm, and section 7 at 10-12 cm. Thick, light-colored well-sorted, normally graded fallout tephra layer rich in volcanic glass and mafic minerals (amphibole, pyroxene) between section 4, 92 cm and section 5, 47 cm.



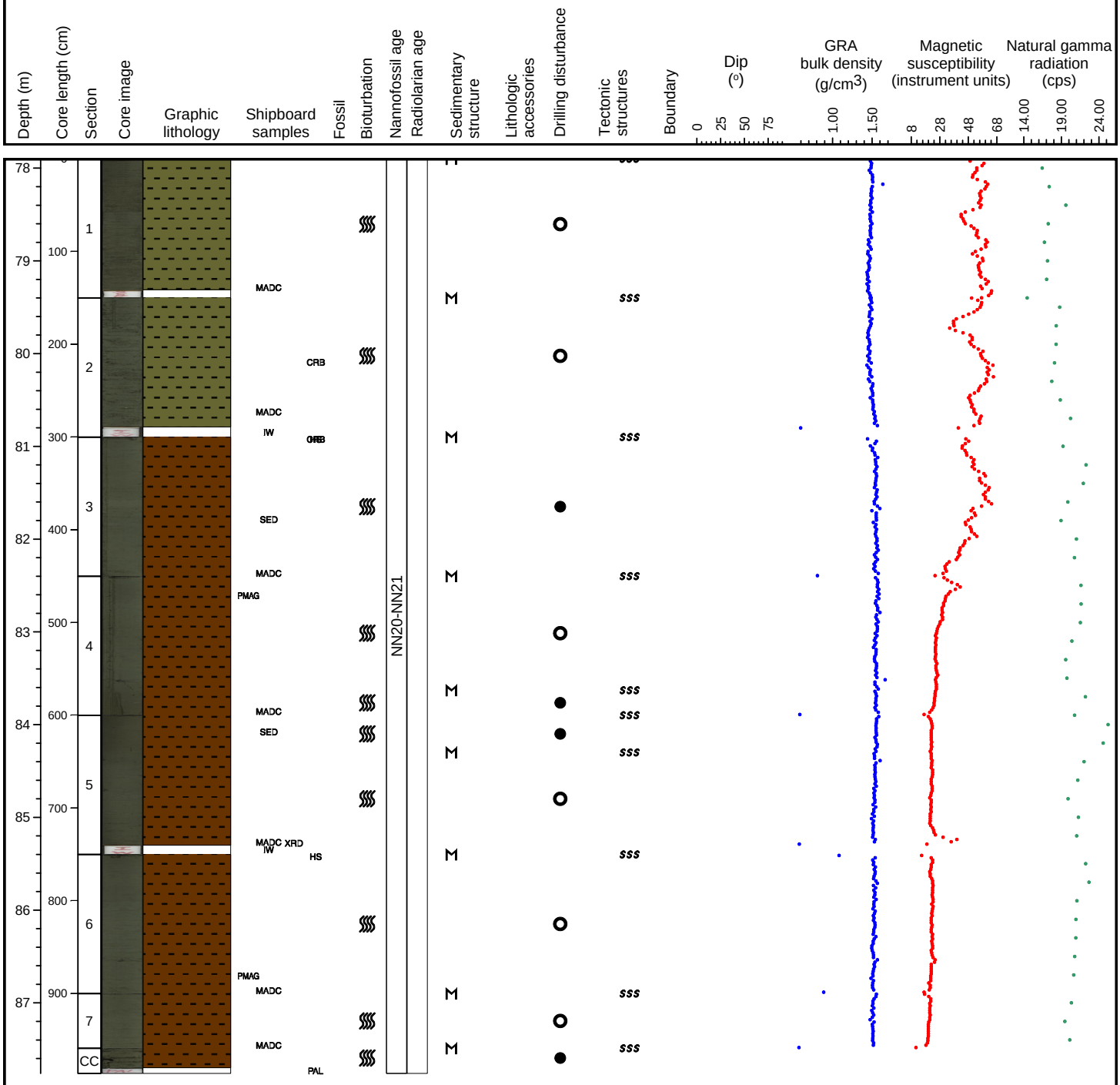
Hole 344-U1414A Core 9H, Interval 68.4-78.3 m (CSF-A)

Massive greenish grey clay with common bioturbation. Rare, disseminated sponge spicules and shell fragments, wood fragment in section 5 at 70 cm. Thin dark-colored ash layer in section 1 at 135-136 cm, and some light-colored tephras in section 3 a 140 cm. Very weakly calcareous matrix.



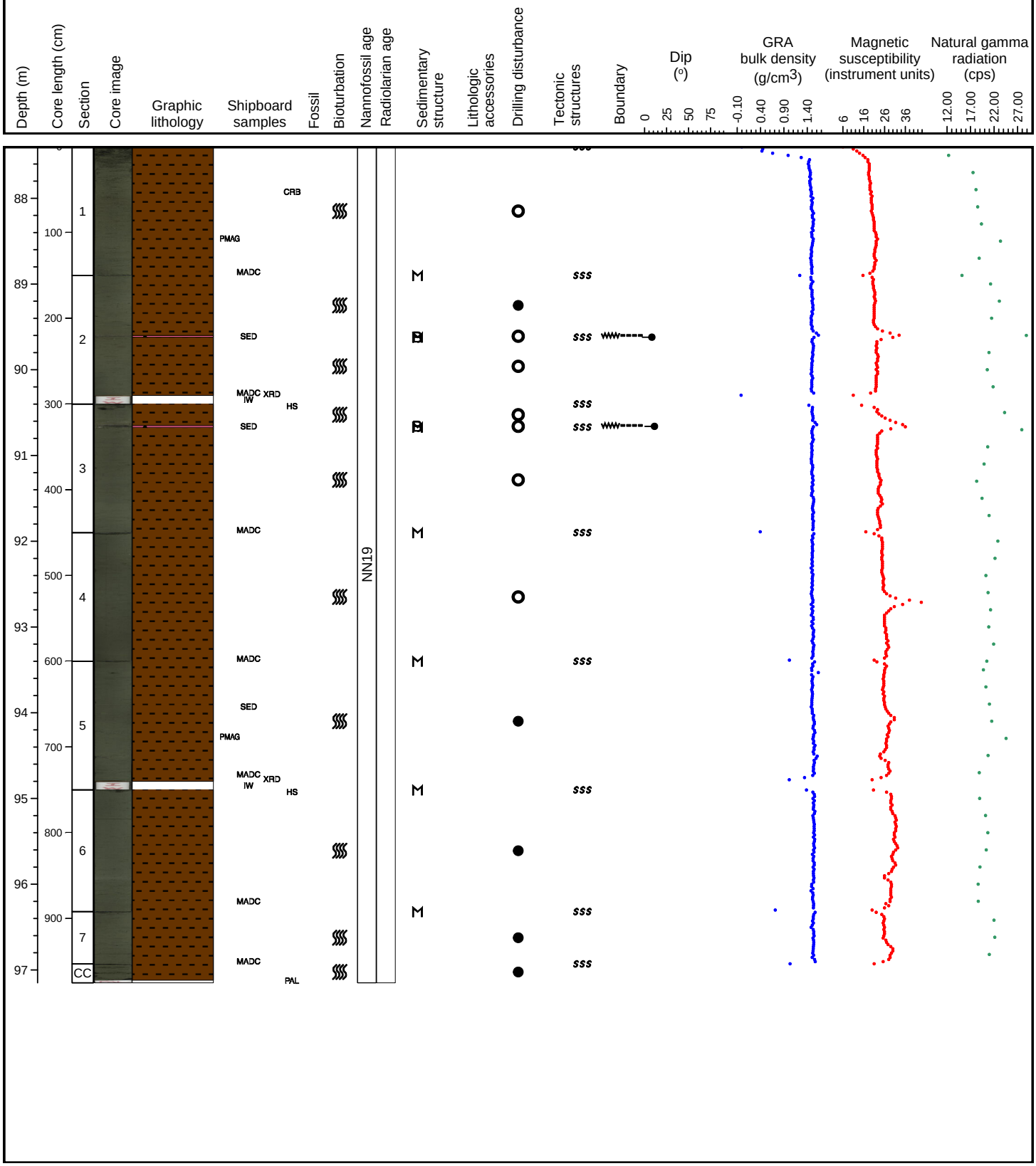
Hole 344-U1414A Core 10H, Interval 77.9-87.76 m (CSF-A)

Massive greenish grey clay with common bioturbation. Rare, disseminated sponge spicules and very rare small ash pods. Cm-sized pyrite burrows in section 4 at 111-113 cm, and section 6 at 112-114 cm. A slight color change with diffuse color is observed from section 4 (123cm) to section 5 (40cm).



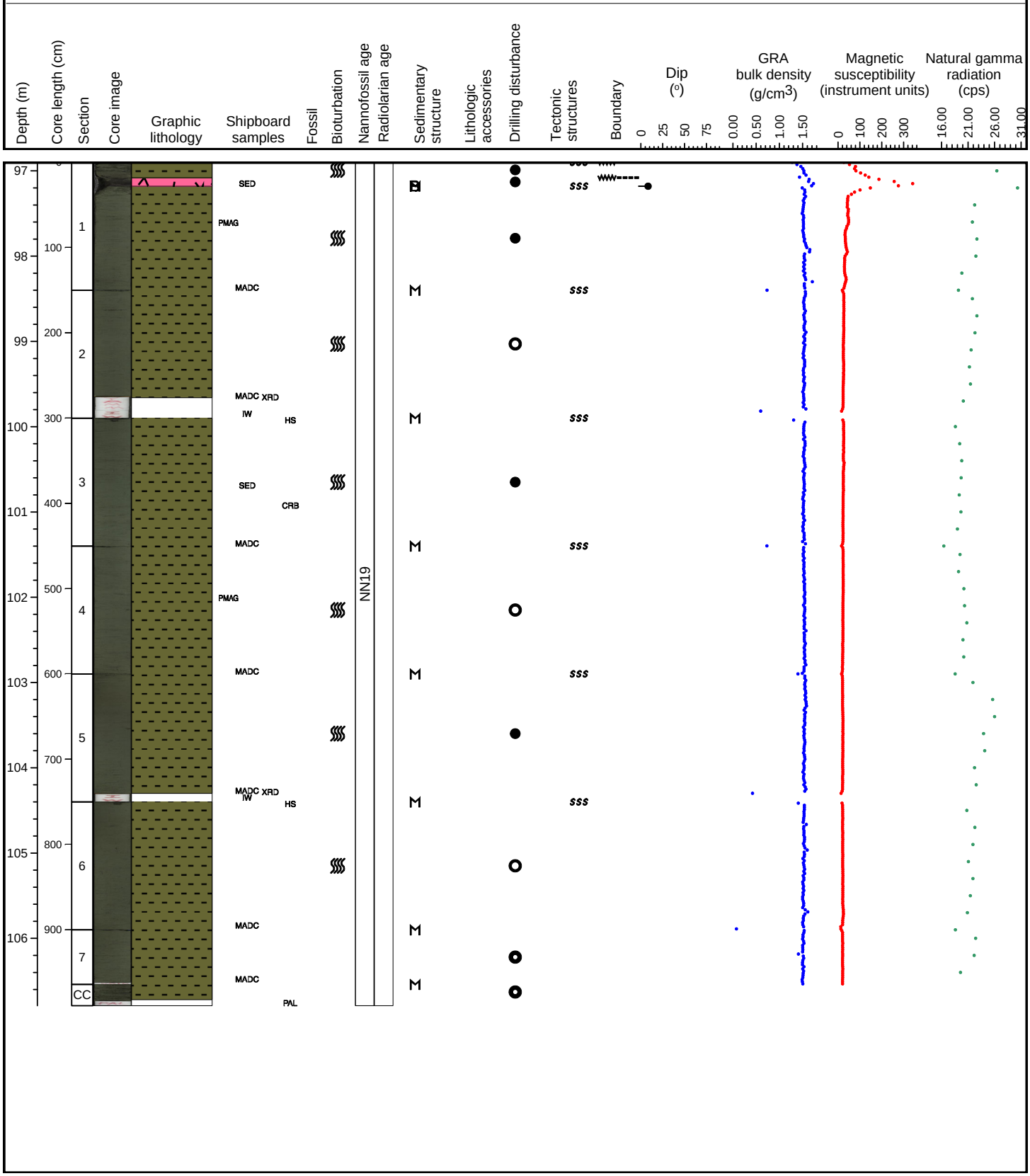
Hole 344-U1414A Core 11H, Interval 87.4-97.15 m (CSF-A)

Massive greenish grey clay with common bioturbation. Rare, disseminated sponge spicules and rare very small ash pods, occasional pyrite. Two tephra fallout layers in section 2 at 70-72 cm and in section 3 at 25-27 cm.



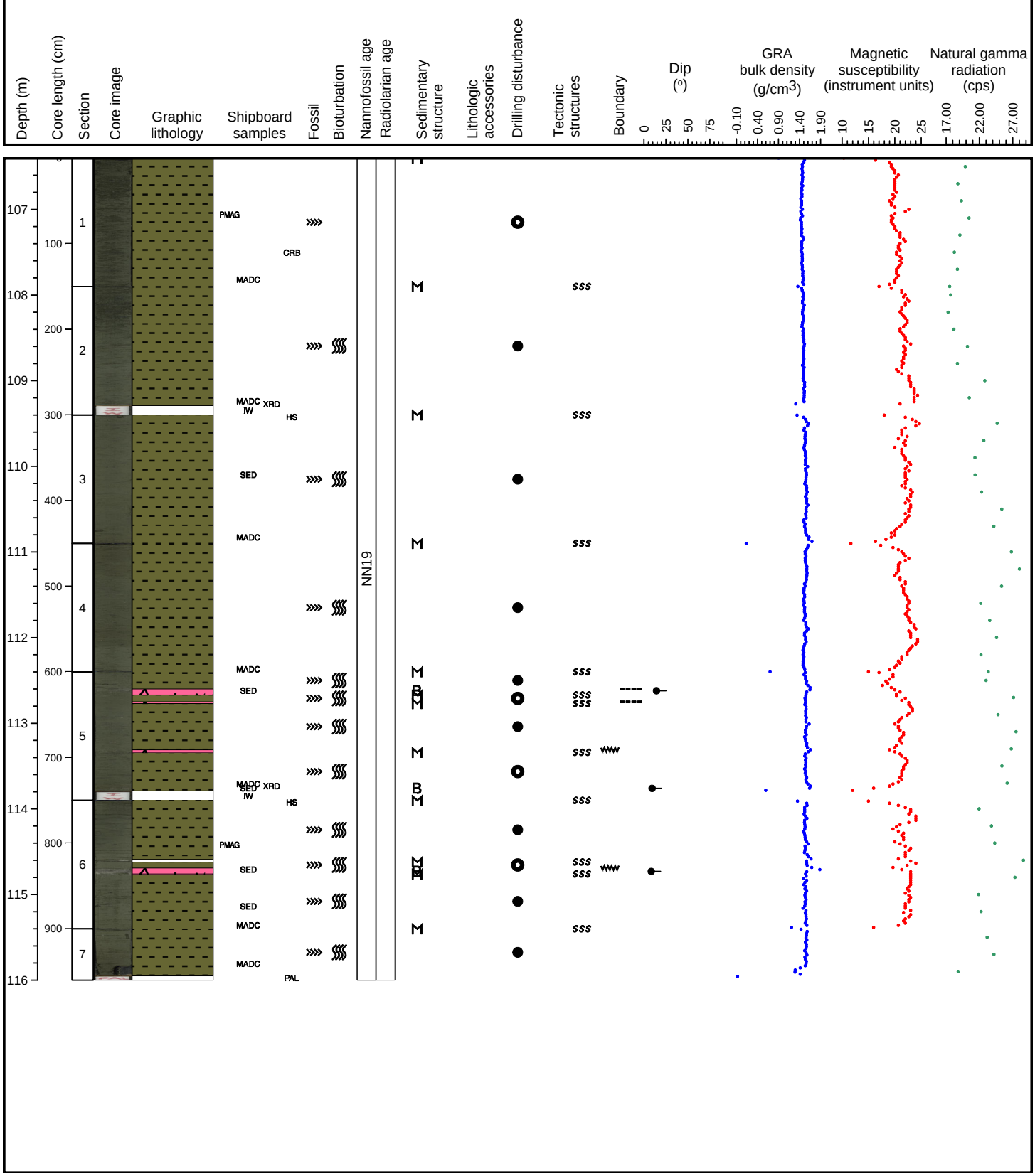
Hole 344-U1414A Core 12H, Interval 96.9-106.79 m (CSF-A)

Massive greenish grey clay with common bioturbation. Rare, disseminated sponge spicules, up to 2 cm diameter ash pods, disseminated pyrite nodules and needles.



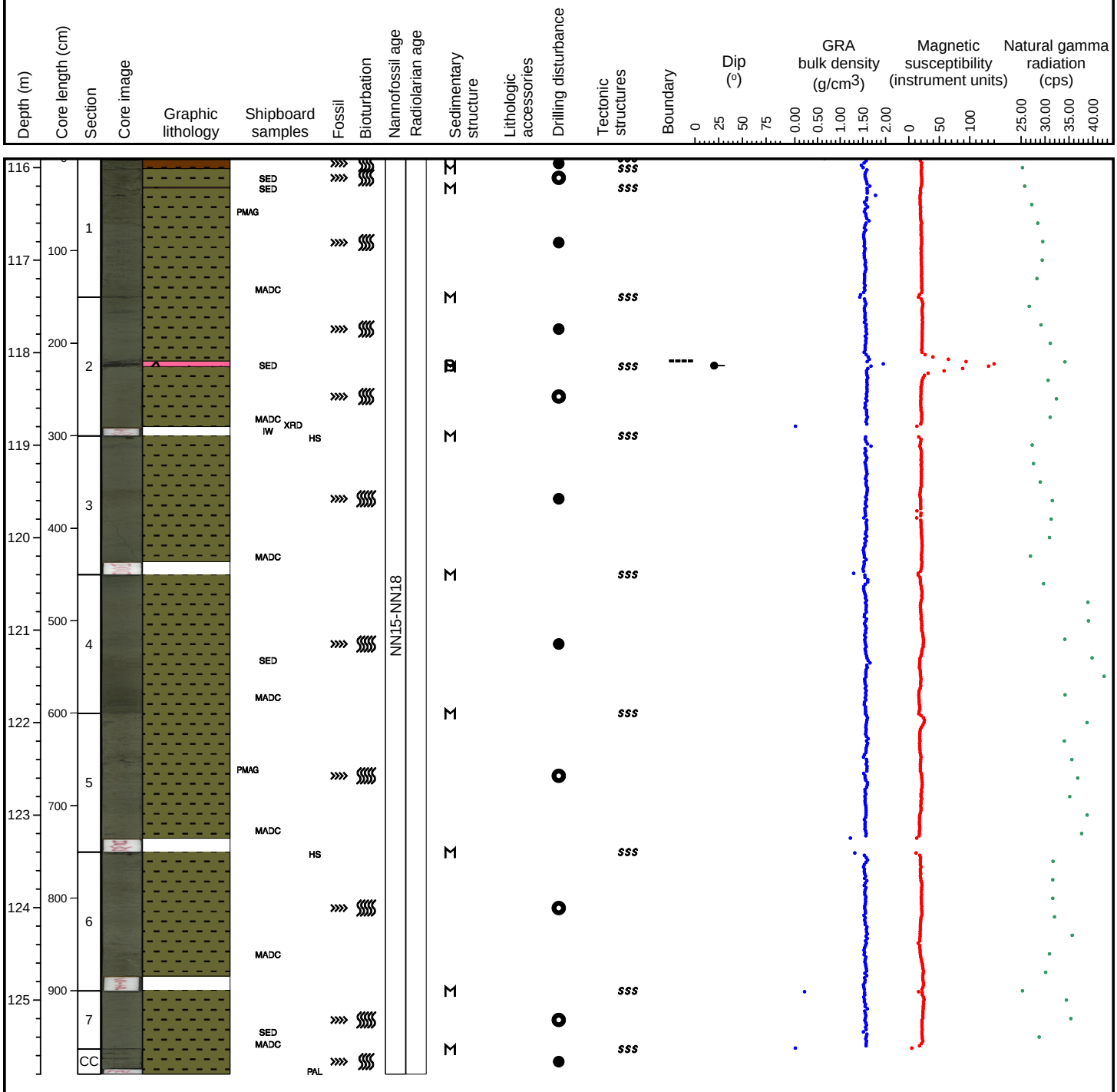
Hole 344-U1414A Core 13H, Interval 106.4-116.0 m (CSF-A)

Massive greenish grey clay with common bioturbation. Rare, disseminated sponge spicules, up to 2 cm diameter ash pods, disseminated pyrite nodules and needles. Tephra layers in sections 5 and 6.



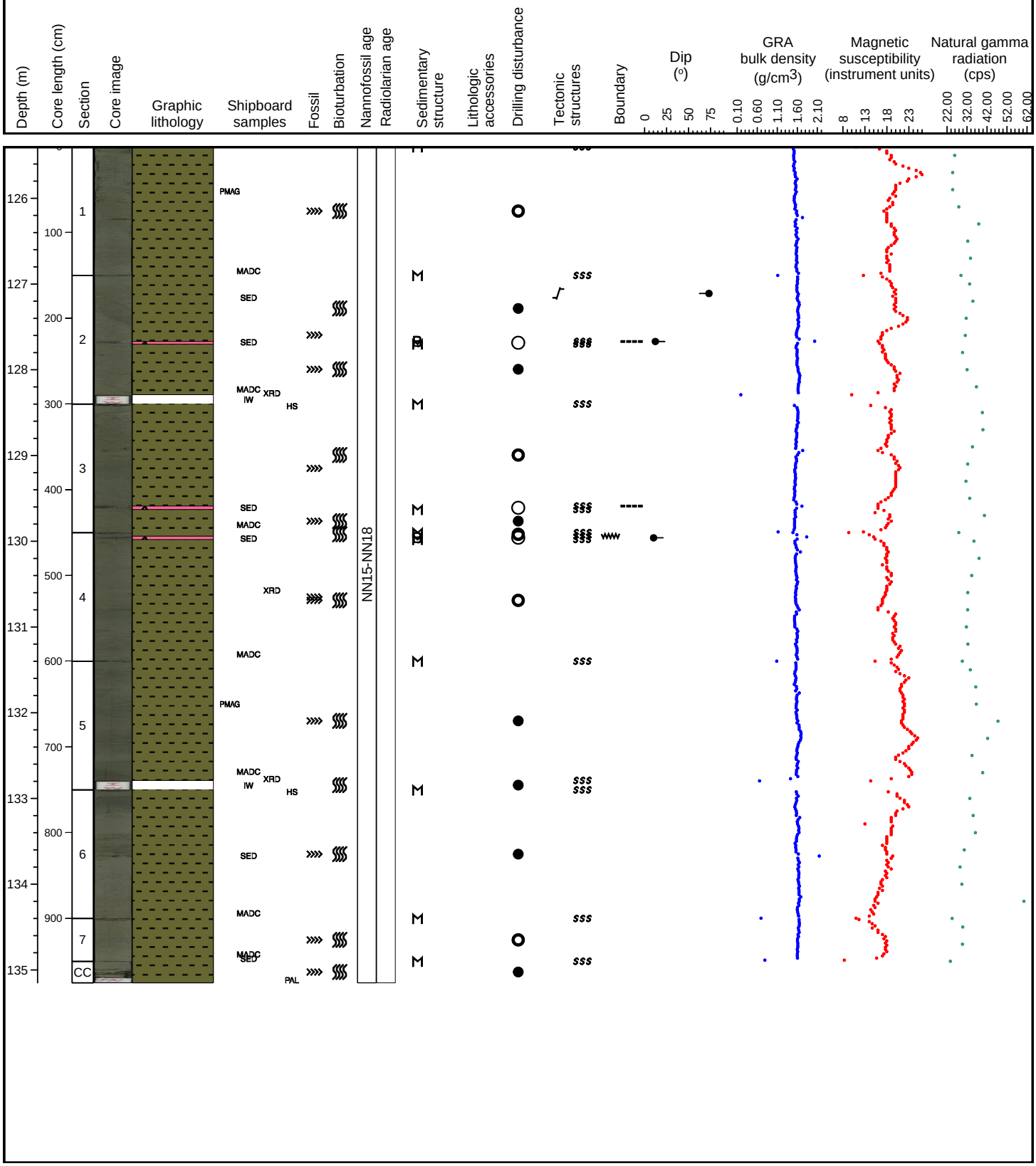
Hole 344-U1414A Core 14H, Interval 115.9-125.8 m (CSF-A)

Massive greenish grey clay with common to heavy bioturbation. Rare, disseminated sponge spicules, pyrite nodules and needles are common. From section 4 onward bioturbation strongly increases and spots where we see grain size changes indicate reworking of material. Dark brown ash layer in section 2 at 67 to 75. Disseminated ash pods between 31 and 34 in section 1.



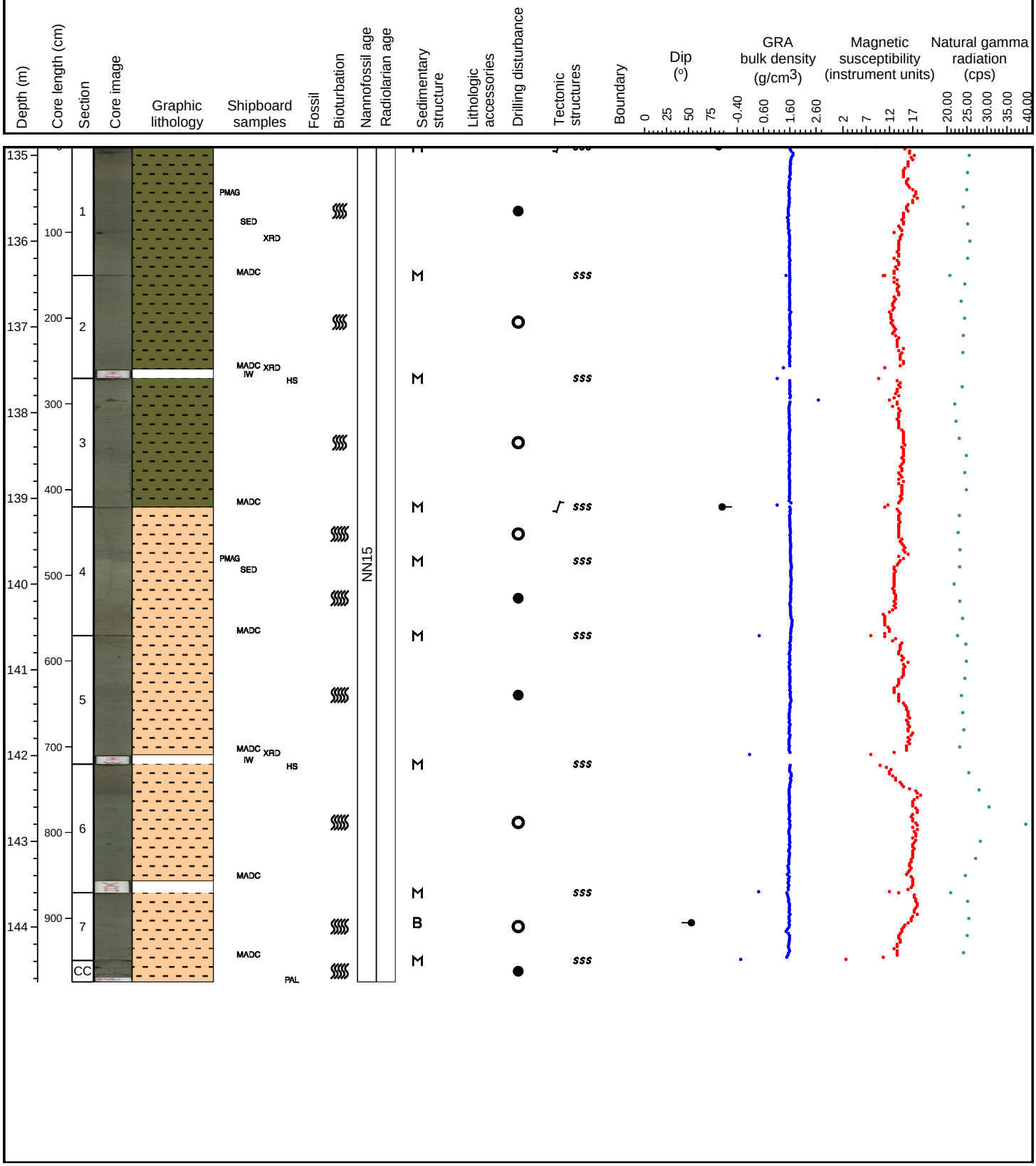
Hole 344-U1414A Core 15H, Interval 125.4-135.15 m (CSF-A)

Massive greenish grey clay with common to heavy bioturbation. Rare, disseminated sponge spicules, pyrite nodules and needles are common. Strong bioturbation and spots where we see grain size changes indicate reworking of material. Several ash layers (section 2: 77-80; section 3: 119-123; section 4:4-8) and pods. Section 2, between 23 and 60, is a possible shear zone.



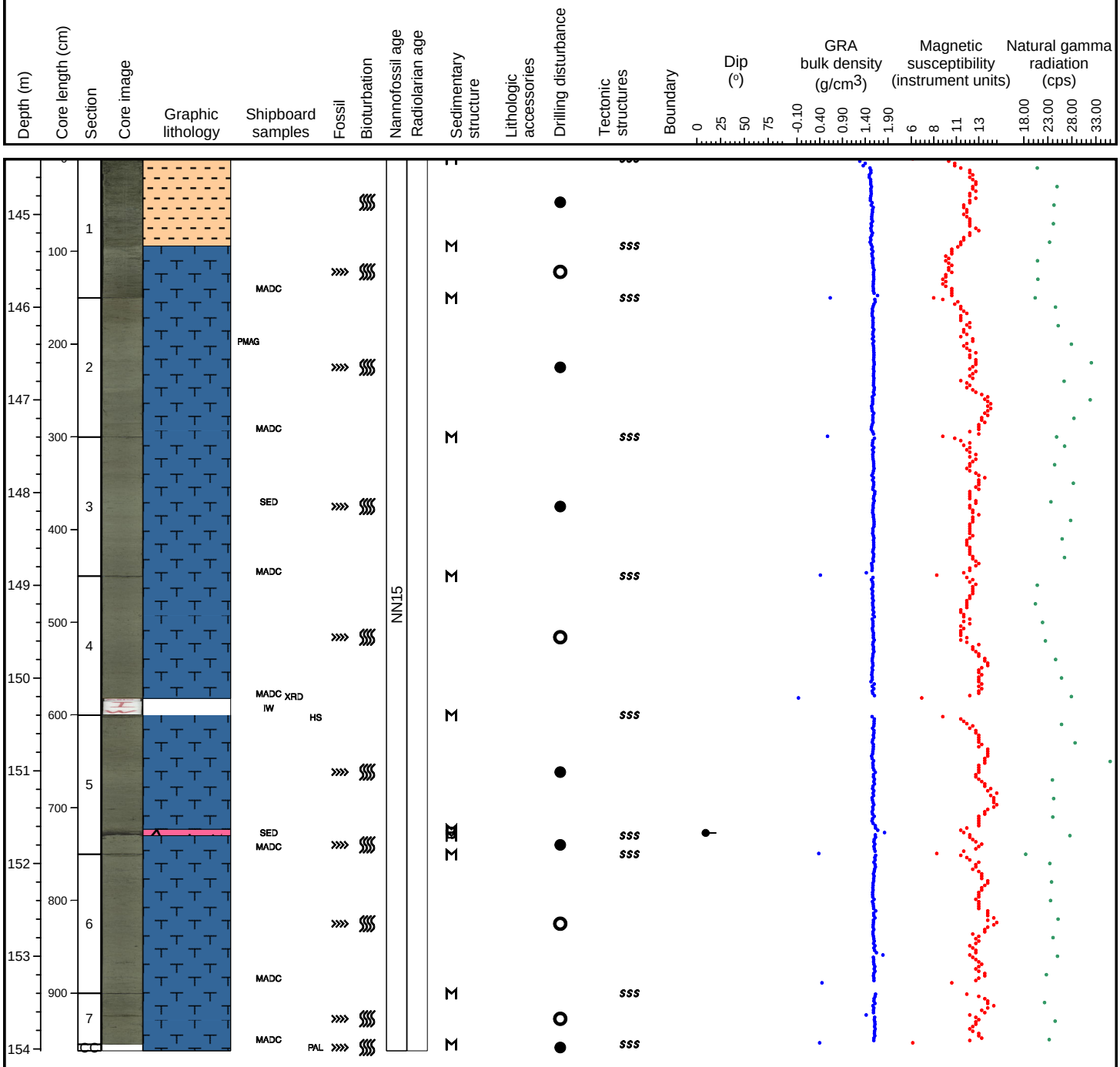
Hole 344-U1414A Core 16H, Interval 134.9-144.64 m (CSF-A)

Massive greenish grey silty clay with hardened pyrite concretions in section 1 and 3 changing into calcareous greyish green clay in section 4 with common to heavy bioturbation. Rare, disseminated sponge spicules. Pyrite nodules and needles are common. Some reworking possible due to heavy bioturbation.



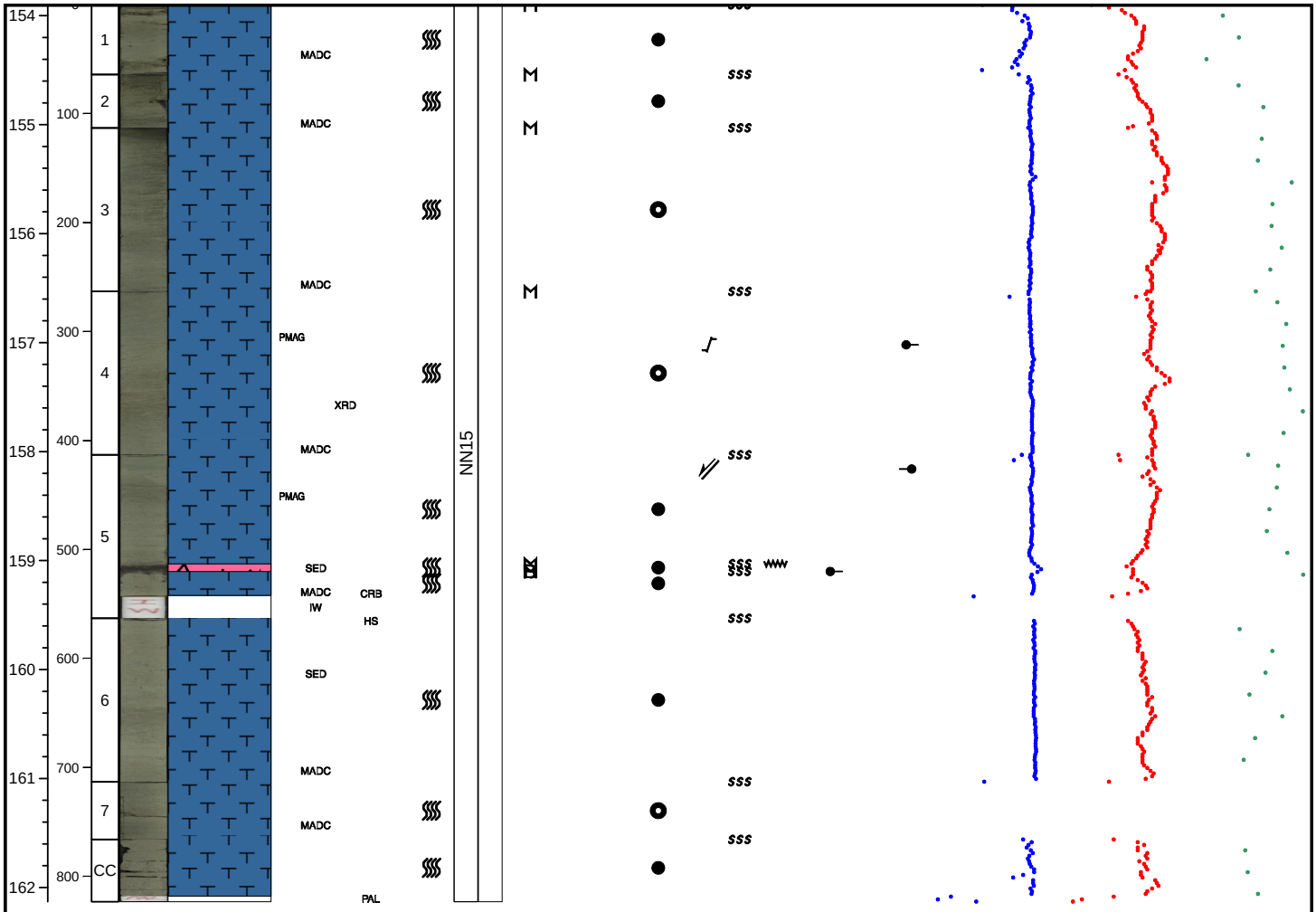
Hole 344-U1414A Core 17H, Interval 144.4-154.02 m (CSF-A)

Massive calcareous greyish green clay with silt and abundant pyrite concretions and needles allover the core and common to abundant nannofossils and other biogenic matter. Change into light greenish grey nannofossil calcareous ooze in section 1 (94 cm). Generally common to heavy bioturbation. Rare, disseminated sponge spicules. Lithic fragments are absent. One dark grey ash layer in section 5, 124-130 cm.



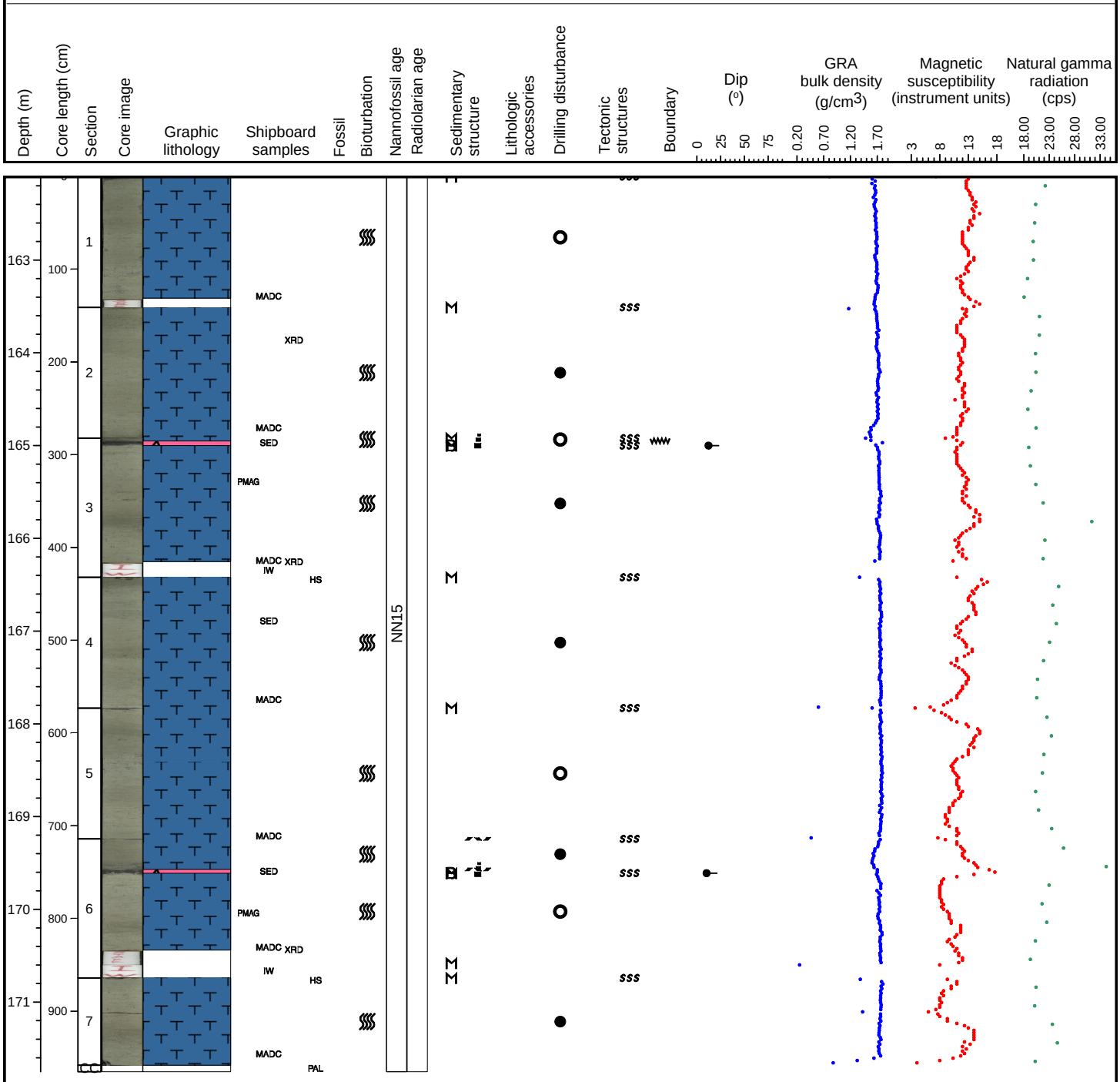
Hole 344-U1414A Core 18H, Interval 153.9-162.13 m (CSF-A)

Massive calcareous greyish green clay. Very rare biogenic fragments. Bioturbation common. One dark grey fine grained fallout tephra layer in section 5 at 100-107 cm.



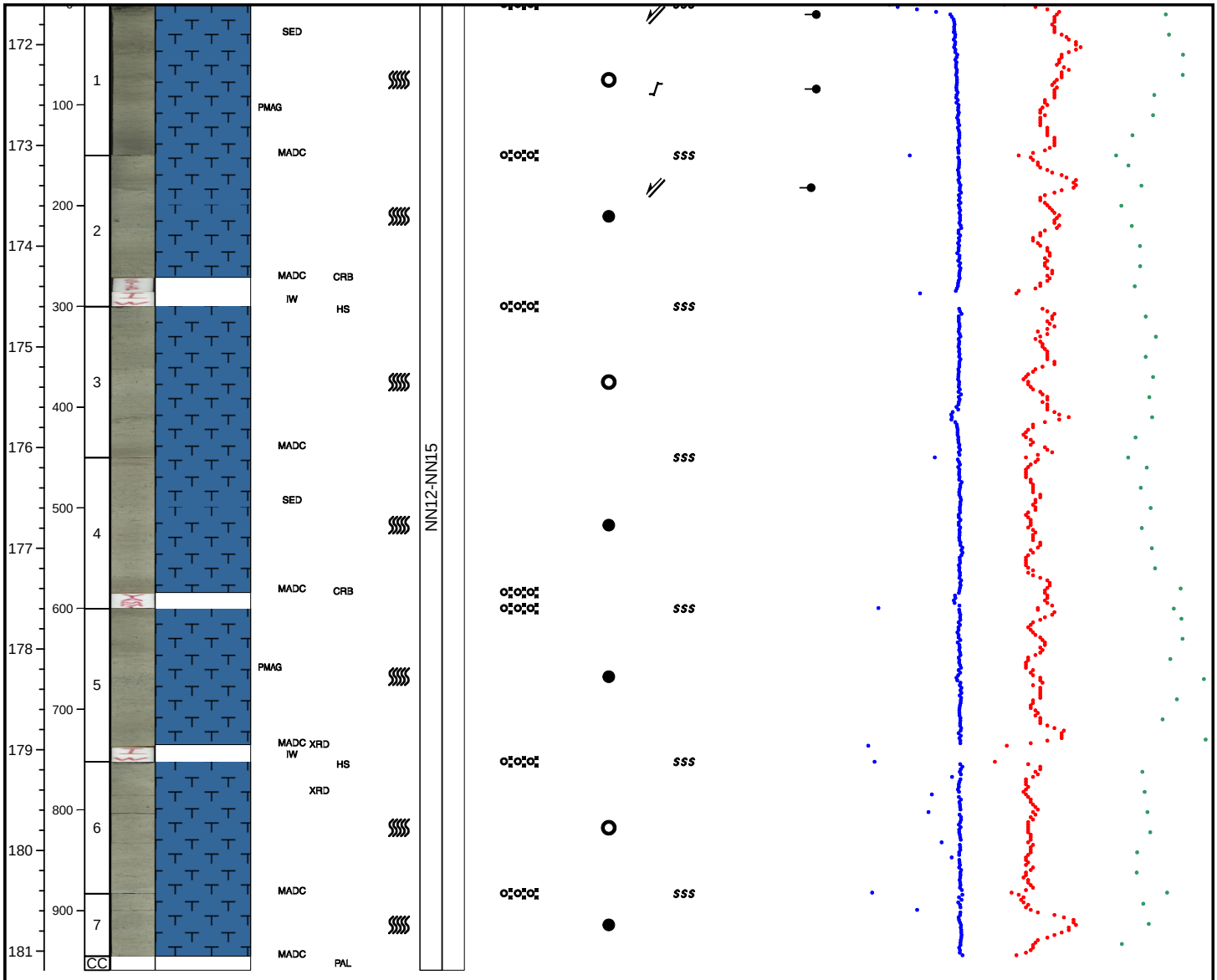
Hole 344-U1414A Core 19H, Interval 162.1-171.75 m (CSF-A)

Massive calcareous pale green clay. Rare small biogenic fragments disseminated through sediment. Burrow filled with pyrite in section 7 at 46-47 cm. Bioturbation common. Two dark, very fine-grained tephra fallout layers in section 3 at 3-8 cm and section 6 at 33-37 cm.



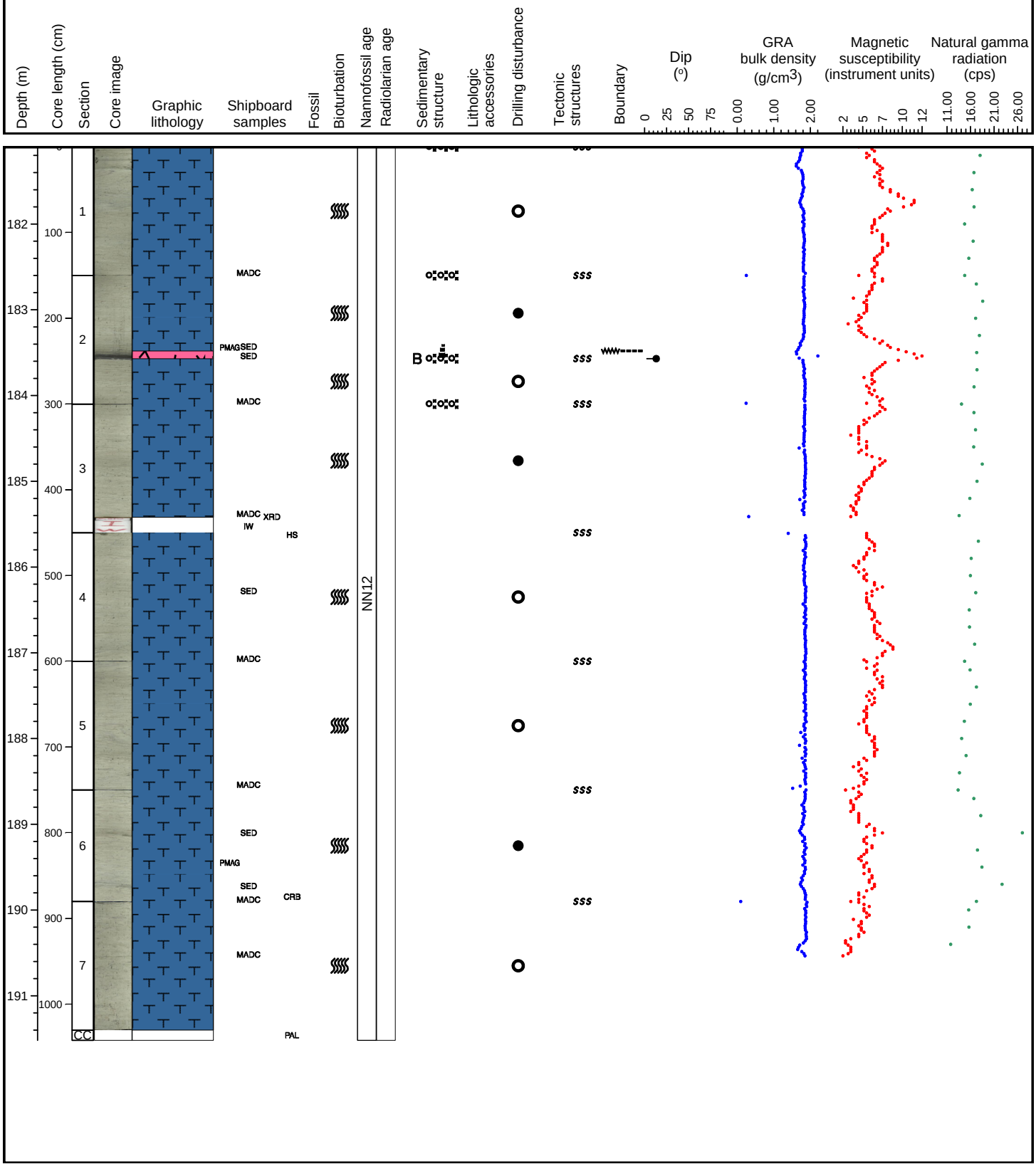
Hole 344-U1414A Core 20H, Interval 171.6-181.19 m (CSF-A)

Massive calcareous pale green to grey green clay. Rare small biogenic fragments disseminated through sediment. Spotty ash pods and discoloration due to glauconite in section 3 at 105-114 cm.



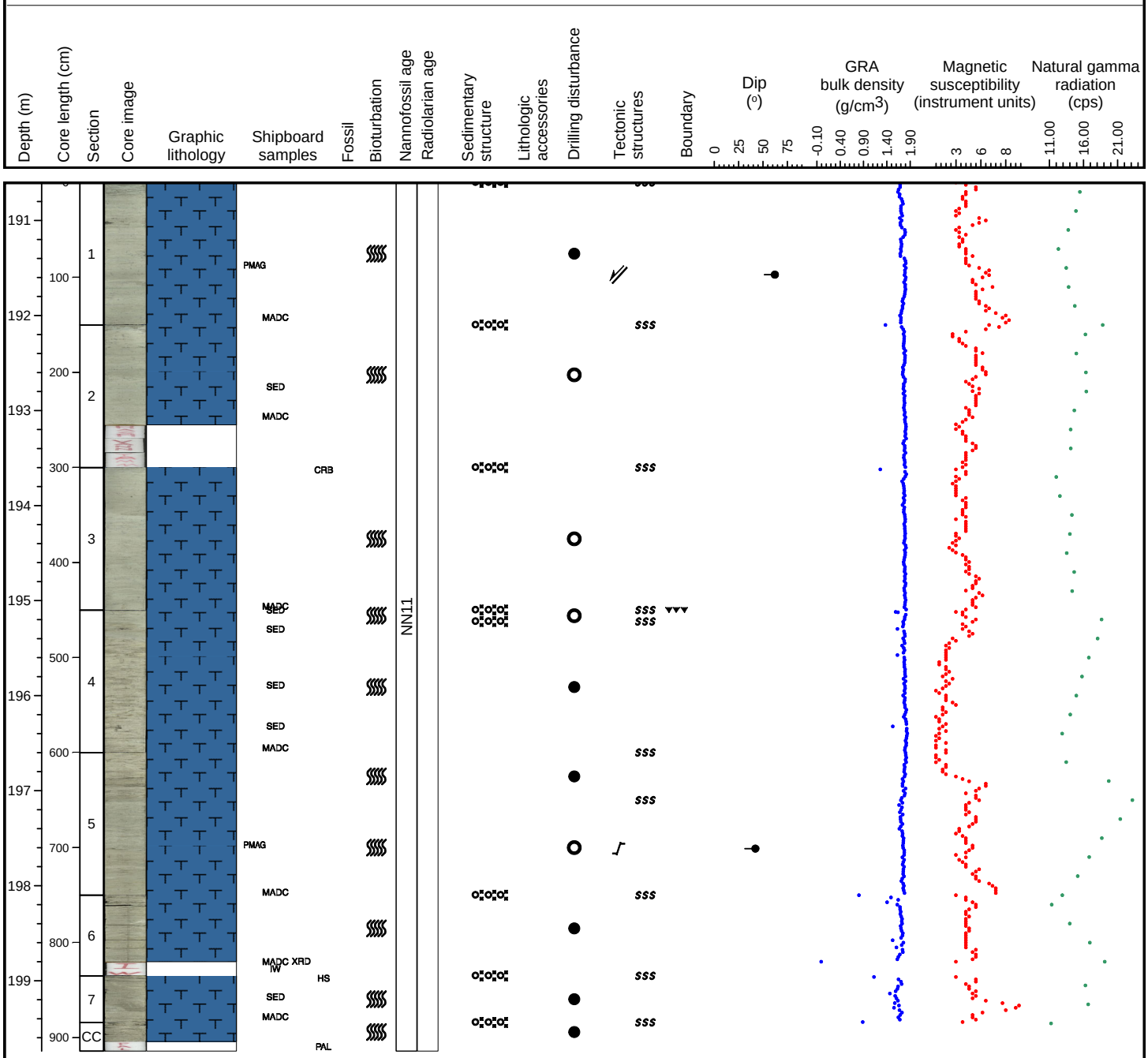
Hole 344-U1414A Core 21H, Interval 181.1-191.52 m (CSF-A)

Massive calcareous light green clay. Rare small biogenic fragments and common pyrite disseminated through sediment. Bioturbation heavy. One dark, fine-grained tephra fallout layer in section 2 at 88-97 cm. Occasional glauconite discoloration.



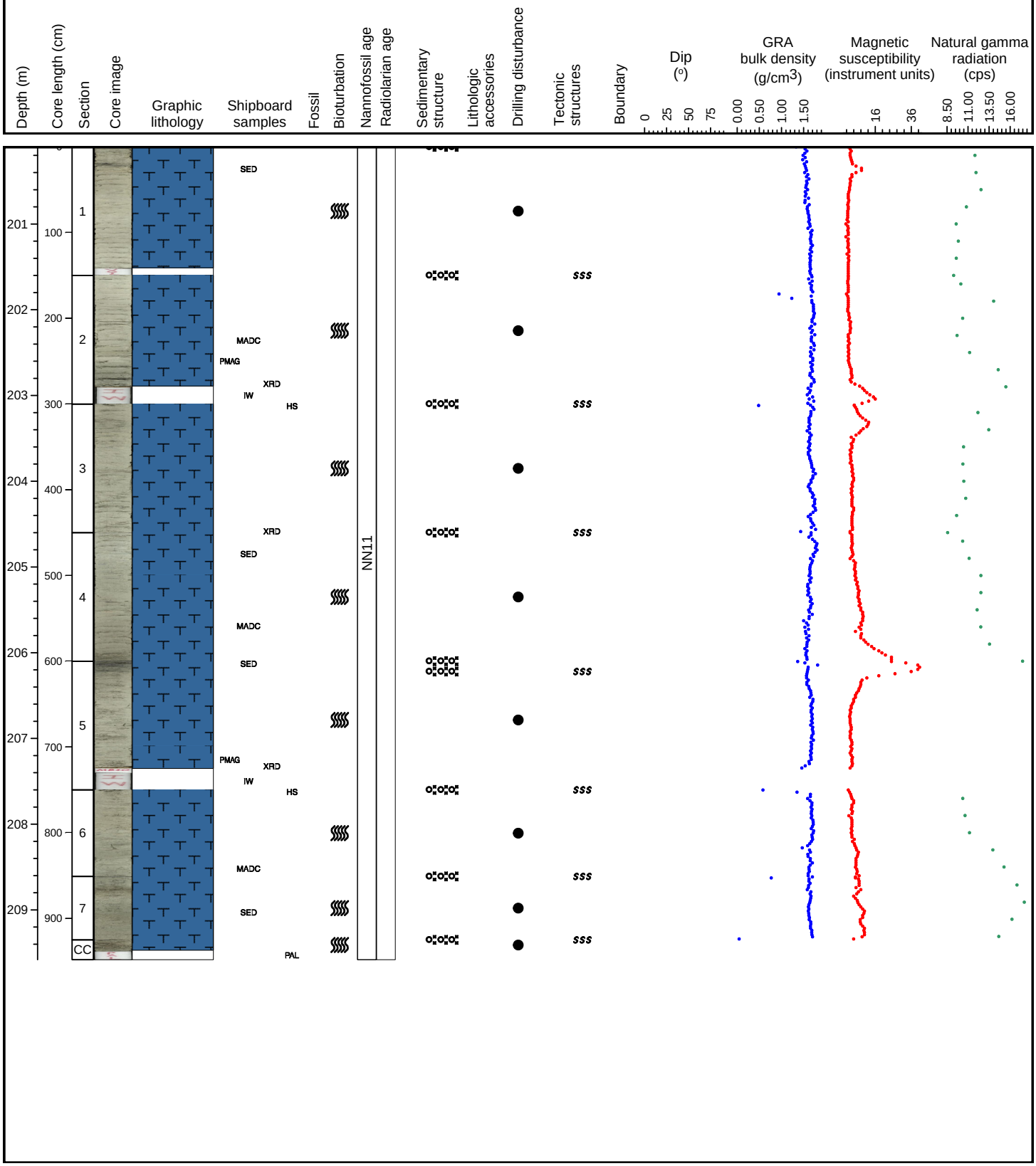
Hole 344-U1414A Core 22H, Interval 190.6-199.74 m (CSF-A)

Massive calcareous light green clay. Abundant pyrite disseminated through sediment. Bioturbation heavy. Common discoloration indicative of glauconite and sometimes glauconite grains. Color is becoming lighter with increasing depth. Diffuse presence of volcanic ash between section 4, 12 cm, to section 5, 50 cm.



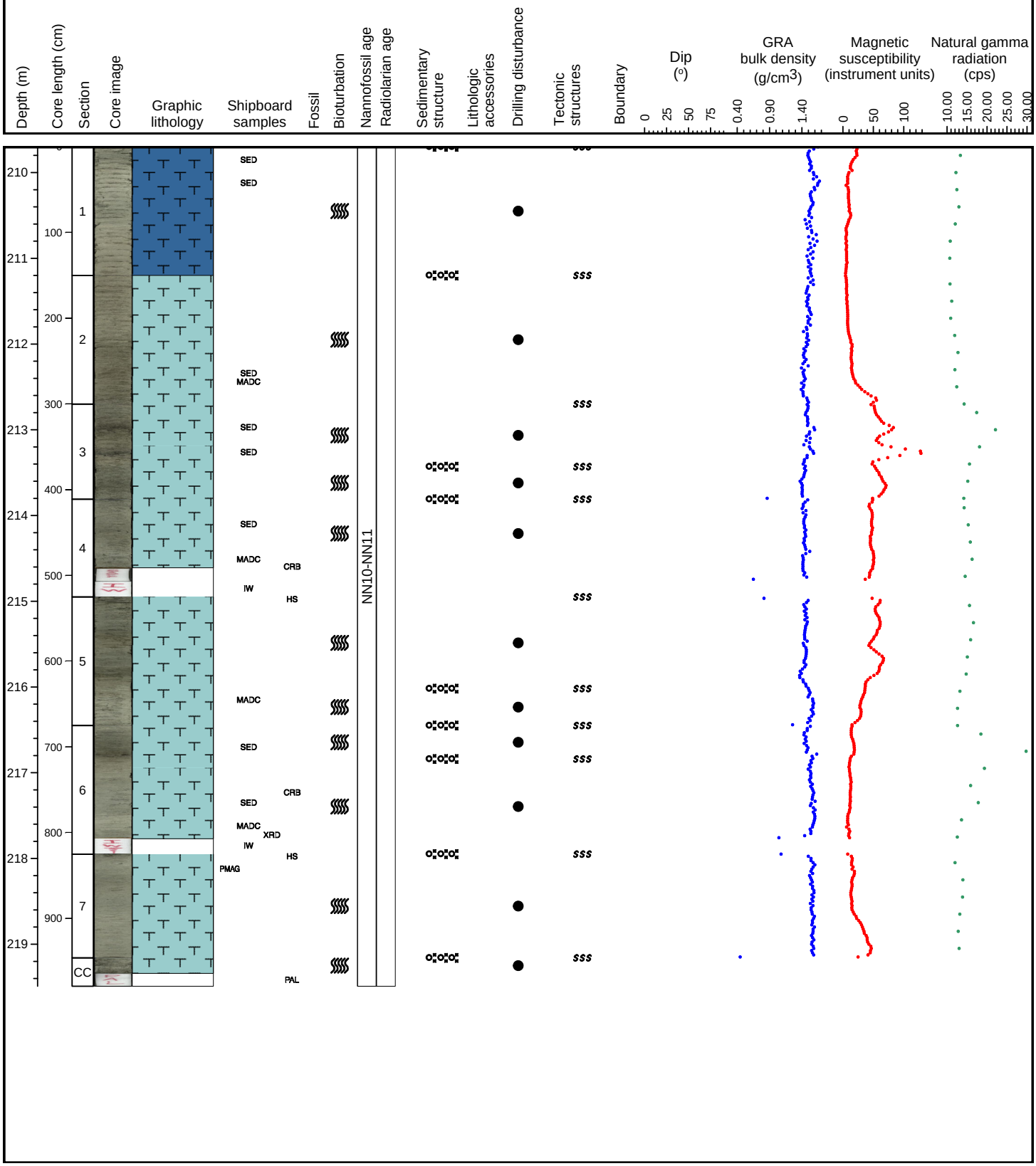
Hole 344-U1414A Core 23X, Interval 200.1-209.58 m (CSF-A)

Massive calcareous white to light grey clay. Rare pyrite disseminated through sediment. Bioturbation heavy. Slight color changes throughout cores. Common disseminated volcanic ash, with a horizon enriched in dark-colored ash in section 5 at 0-12 cm.



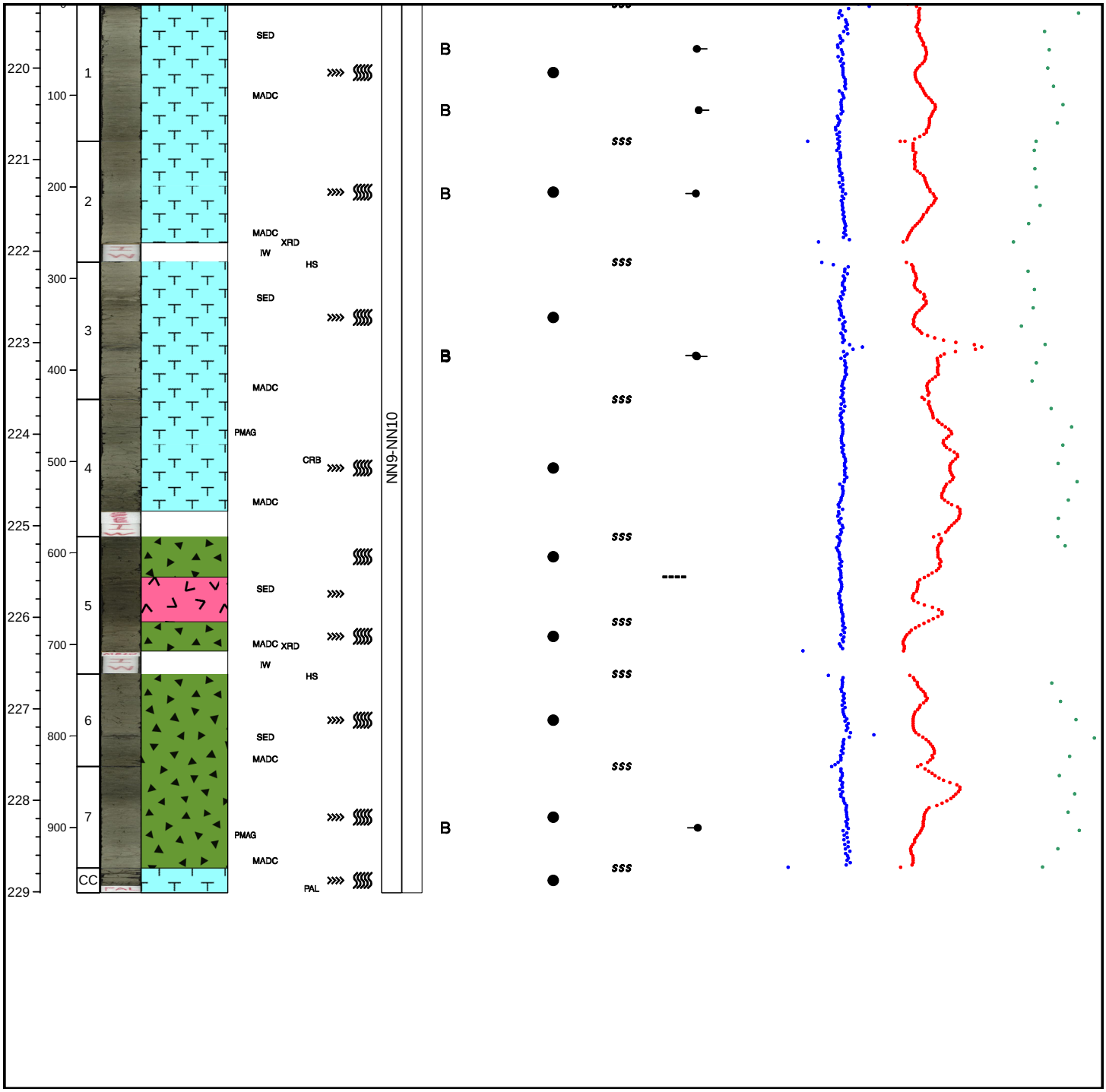
Hole 344-U1414A Core 24X, Interval 209.7-219.49 m (CSF-A)

Massive carbonate ooze light grey to greenish grey silty clay. Rare pyrite disseminated through sediment. Bioturbation heavy. Slight color changes throughout core, possibly also due to variable amount of disseminated volcanic ash. Diffuse volcanic ash layers visible in upper part of section 3 and section 6.



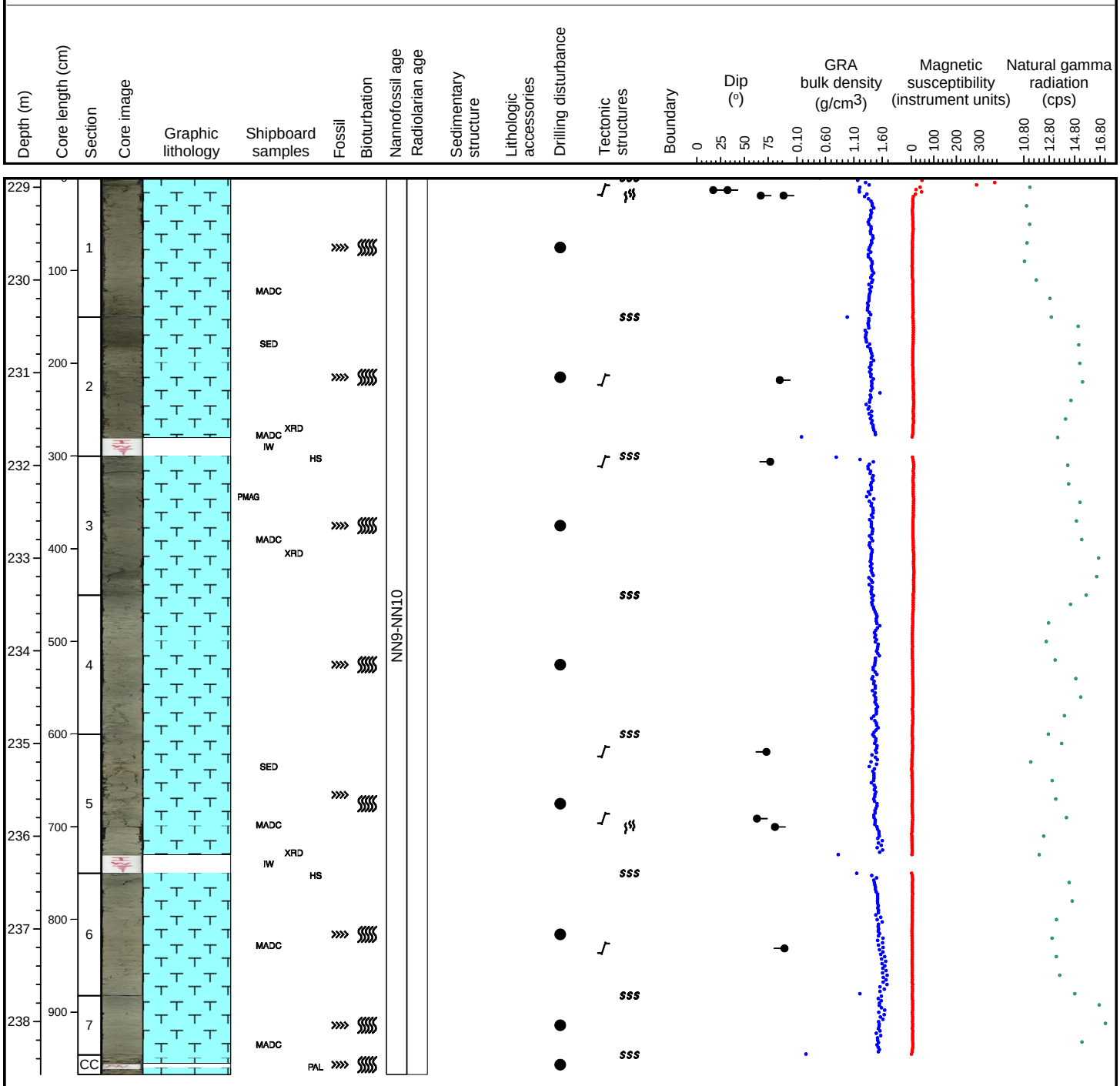
Hole 344-U1414A Core 25X, Interval 219.3-229.01 m (CSF-A)

Massive grey to dark grey nannofossil ooze changes to 50/50 silica-carbonate rich ooze (spicules, radiolaria and diatoms are the silica components), which is heavily bioturbated. No internal structures observed. Pyrite nodules in section 1 (0-2 cm) and section 6 (66 to 68). Ash layer in section 5 from ~ 40 to 93 cm with large glass shards that are mixed in with the silica rich ooze.



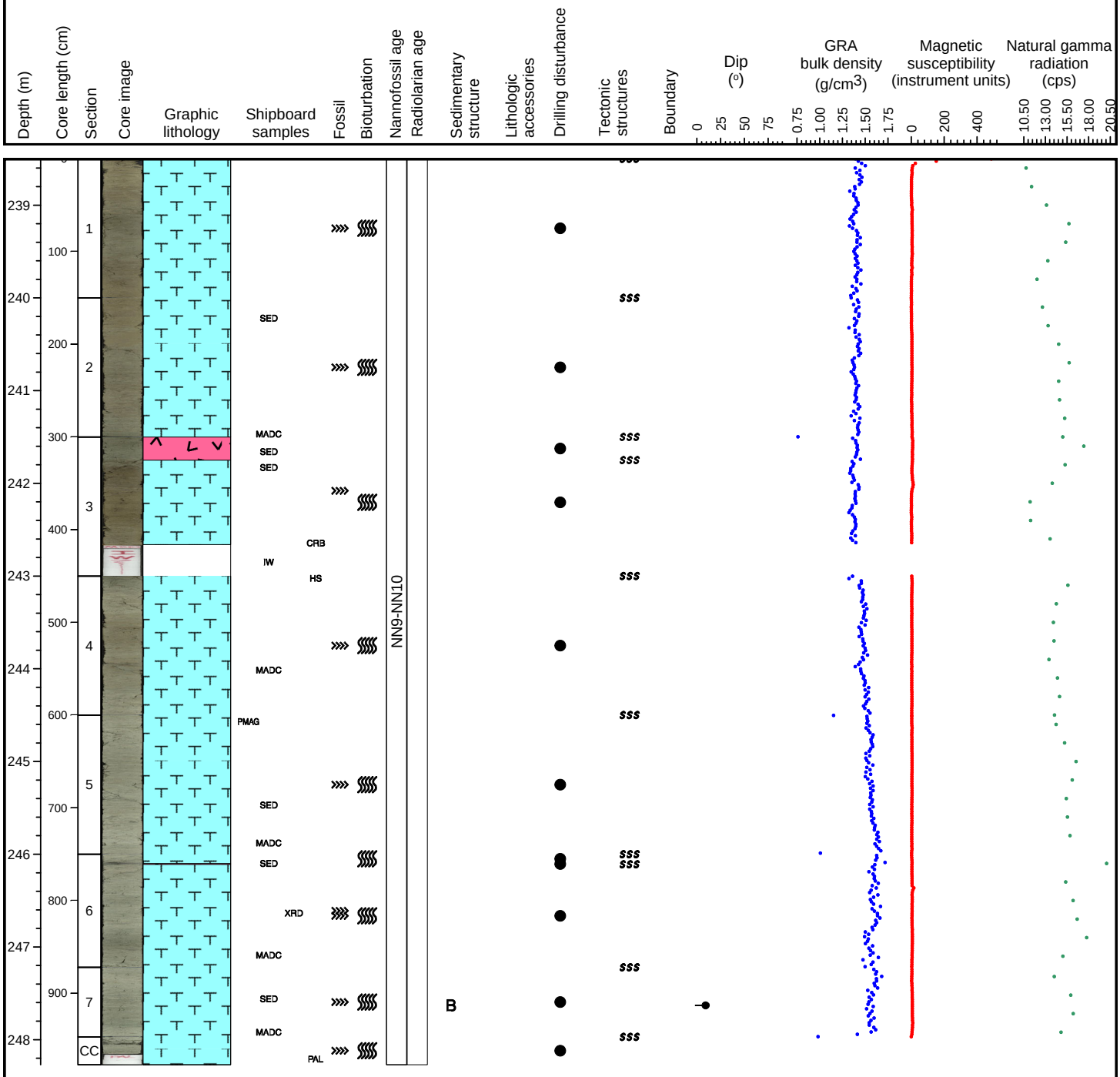
Hole 344-U1414A Core 26X, Interval 228.9-238.57 m (CSF-A)

Massive light grey to dark grey ooze made half of calcareous matter (nannos and foraminifers) and half of silica (spicules, radiolaria and diatoms are the silica components) that is heavily bioturbated. Pyrite nodules and needles all over the core.



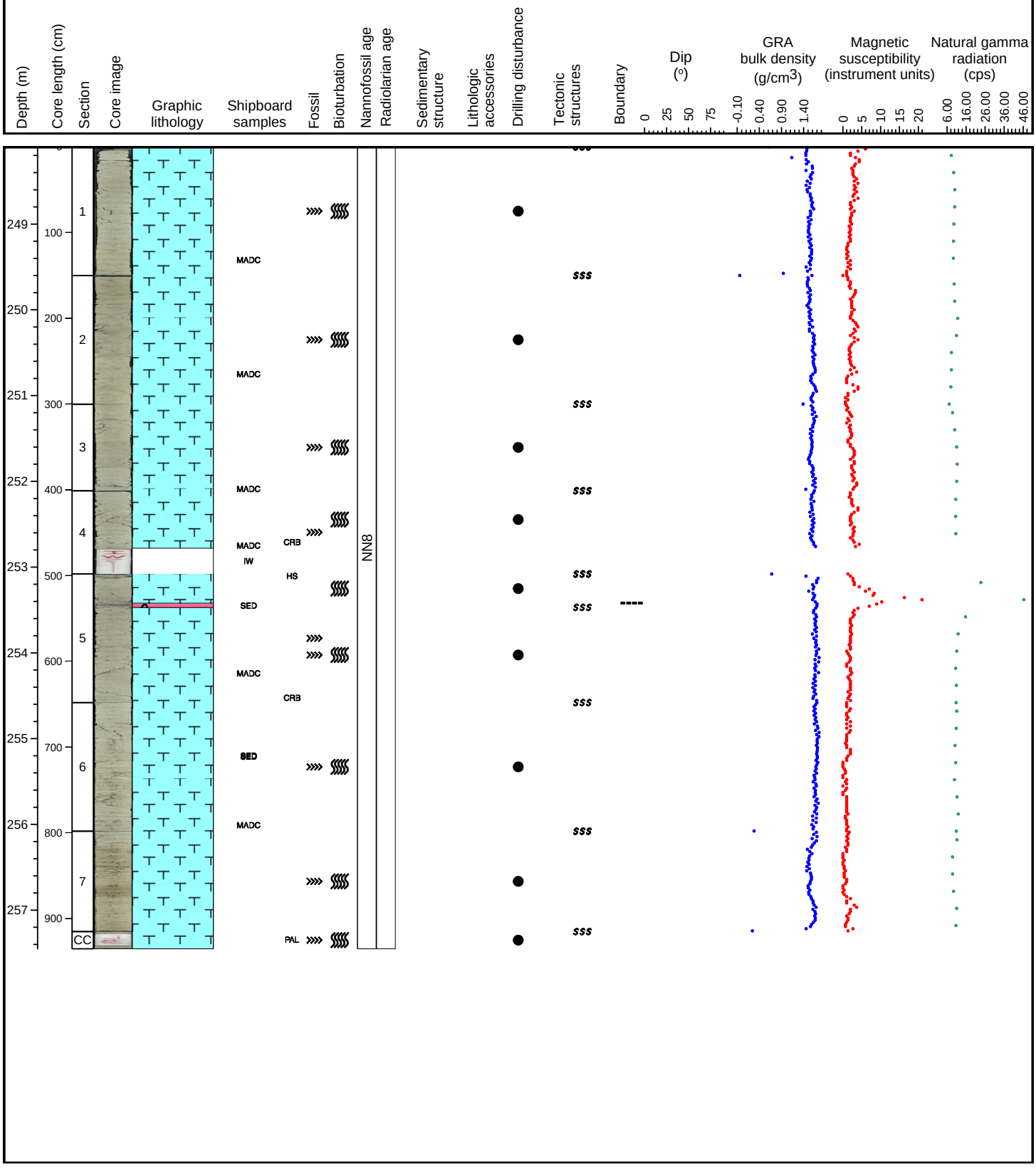
Hole 344-U1414A Core 27X, Interval 238.5-248.27 m (CSF-A)

Massive light grey to dark grey brownish ooze made half of calcareous matter (nannos and foraminifers) and half of silica (spicules, radiolaria and diatoms are the silica components) up to core 4. Afterwards calcareous dominated the now pale green ooze that is heavily bioturbated. Pyrite nodules and needles all over the core. 2 disseminated tephras layers at section 3 (0 to 23) and section 6 (10 to 11).



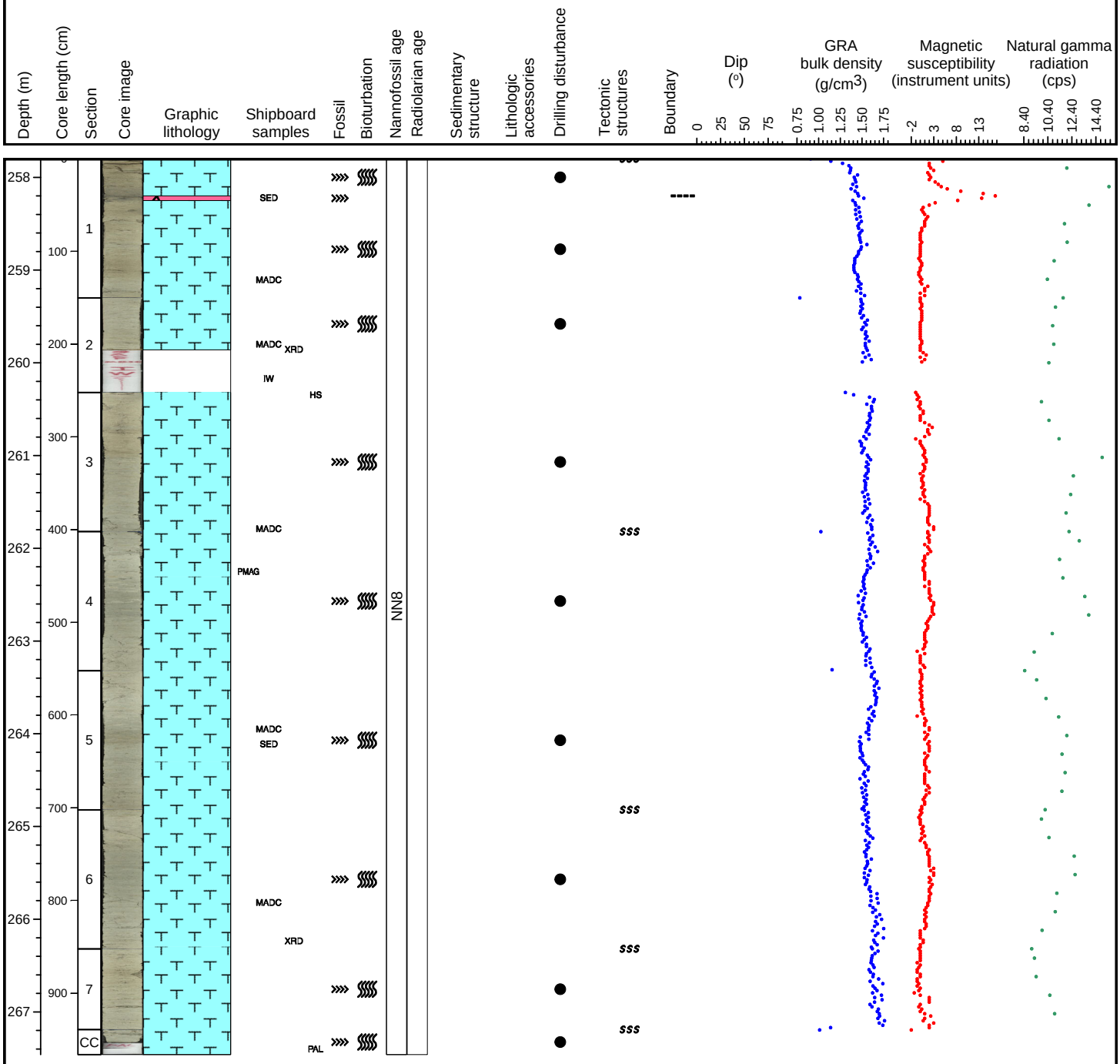
Hole 344-U1414A Core 28X, Interval 248.1-257.45 m (CSF-A)

Massive light grey to very light grey and white ooze made half of calcareous matter (nannos and foraminifers) and half of silica (spicules, radiolaria and diatoms are the silica components) up to section 7 where spicules decrease in abundance and nannos dominate, marked by a slight change in color to a brownish grey. Heavily bioturbated. Pyrite nodules and needles all over the core. One tephra layer at section 5 (33 to 39 cm).



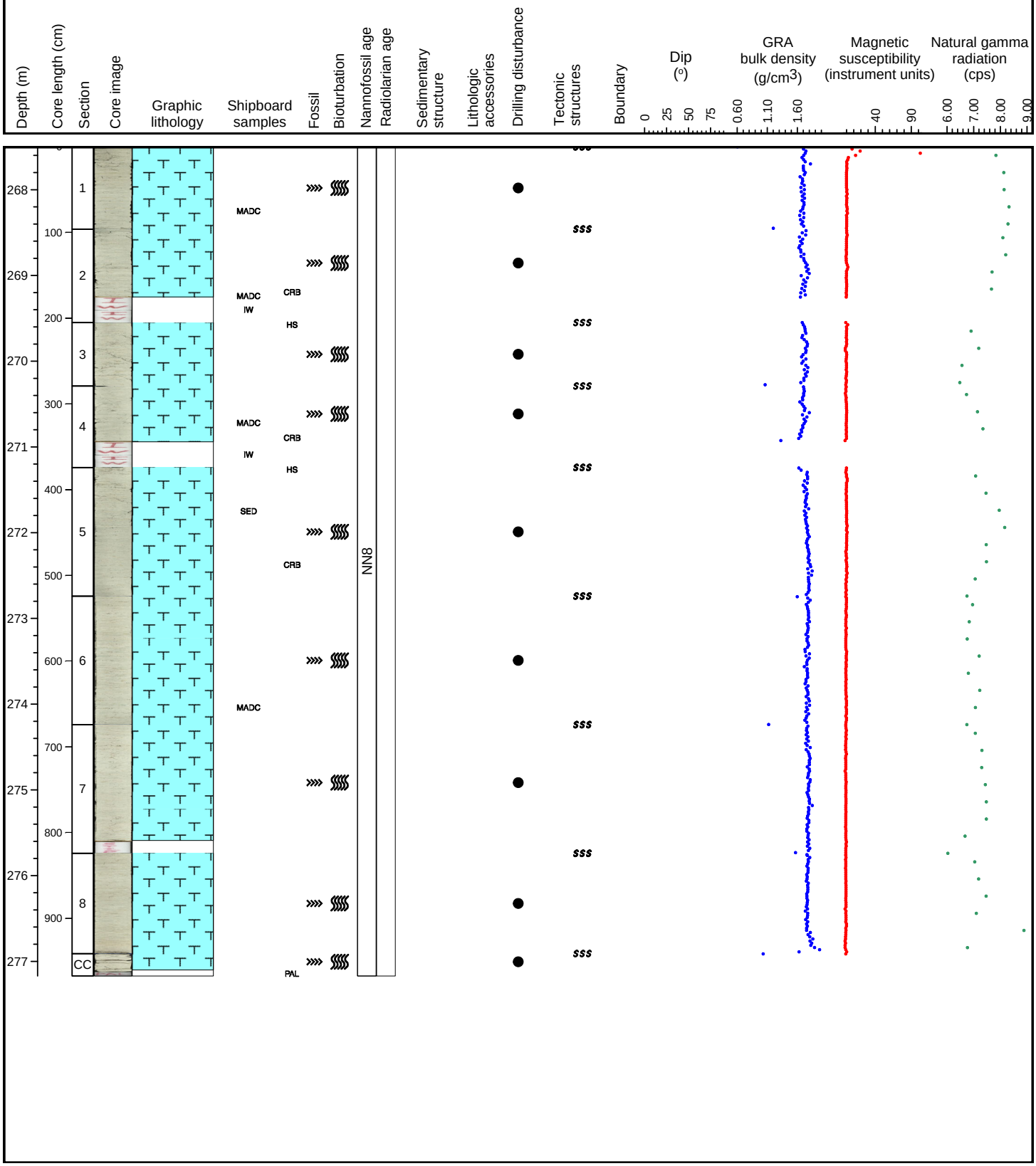
Hole 344-U1414A Core 29X, Interval 257.8-267.46 m (CSF-A)

Massive light grey to very light grey and white ooze made half of calcareous matter (nannos and foraminifers) and half of silica (spicules, radiolaria and diatoms are the silica components) in irregular sections where spicules decrease in abundance and nannos dominate. These zones are marked by a slight change in color from white to to a brownish grey. Heavily bioturbated. Pyrite nodules and needles very rare. One tephra layers at section 1 (40 to 45 cm).



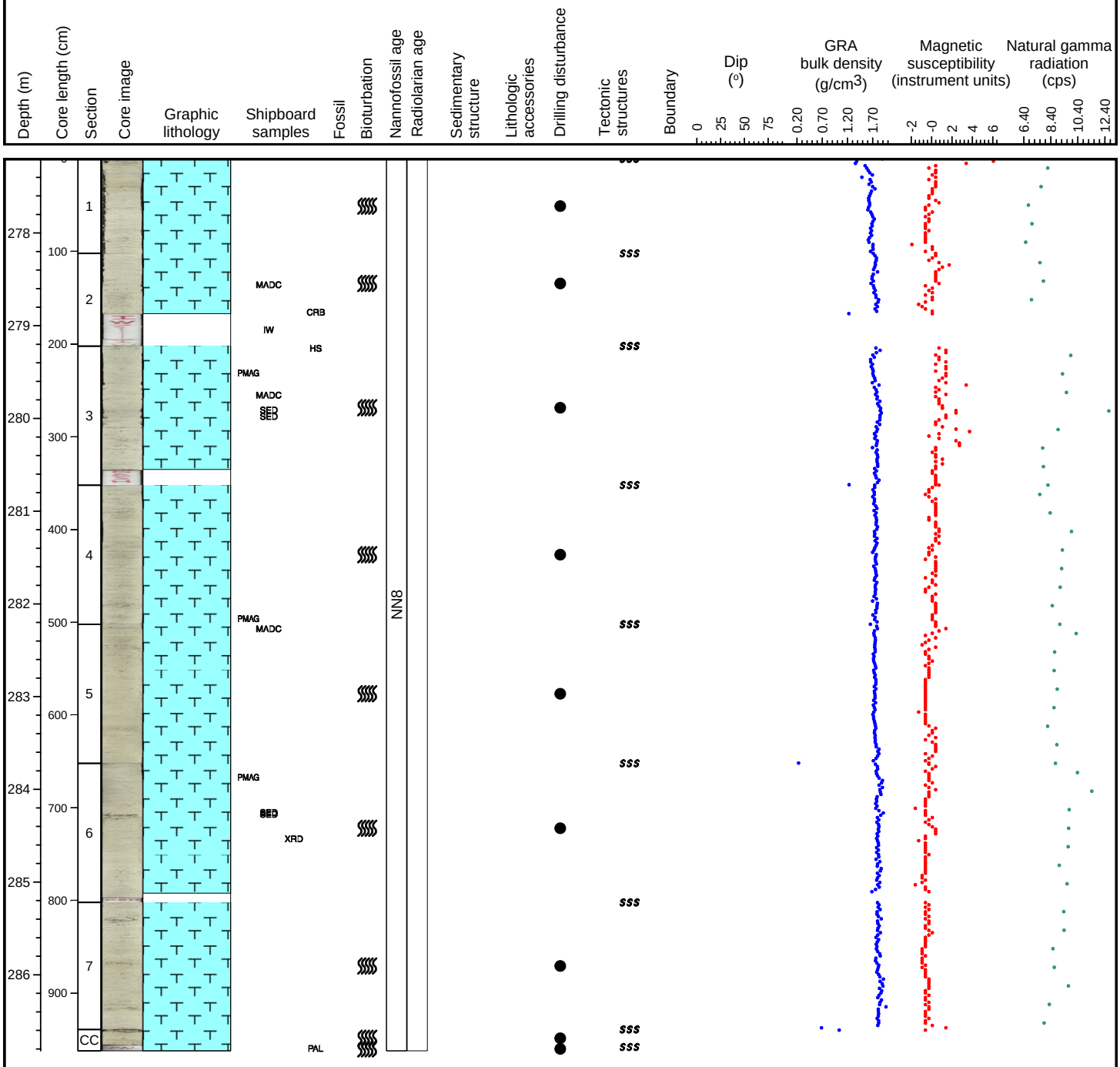
Hole 344-U1414A Core 30X, Interval 267.5-277.17 m (CSF-A)

Massive white calcareous ooze made with abundant, but variable content of sponge spicules, radolarians and diatoms. Disseminated dark brown sand-sized clasts are common. Greenish discoloration indicative of glauconite is common. Heavily bioturbated.



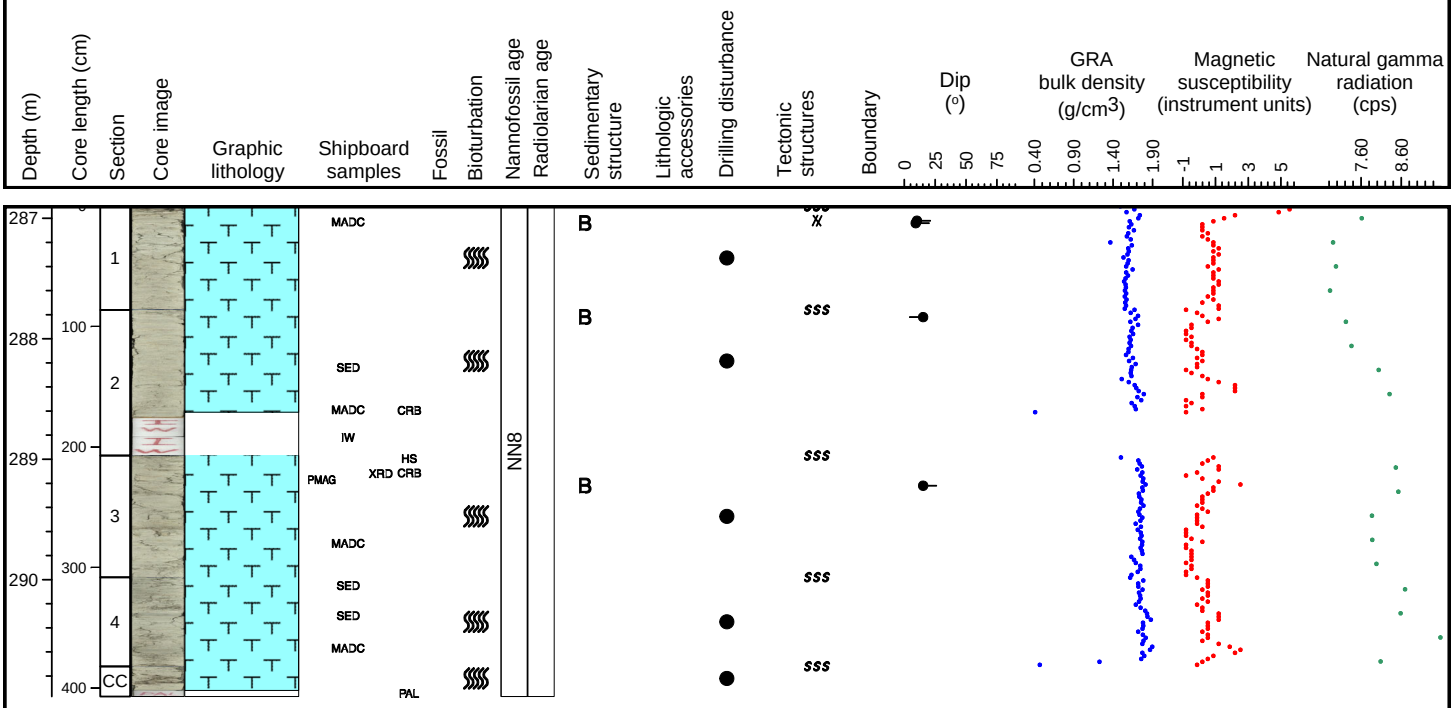
Hole 344-U1414A Core 31X, Interval 277.2-286.82 m (CSF-A)

Massive white calcareous ooze made with abundant, but variable content of sponge spicules, radolarians and diatoms. Disseminated dark brown sand-sized clasts are common. Greenish discoloration indicative of glauconite is common. Heavily bioturbated. Lithified cm-sized clasts of matrix sediment in section 6 and section 7.



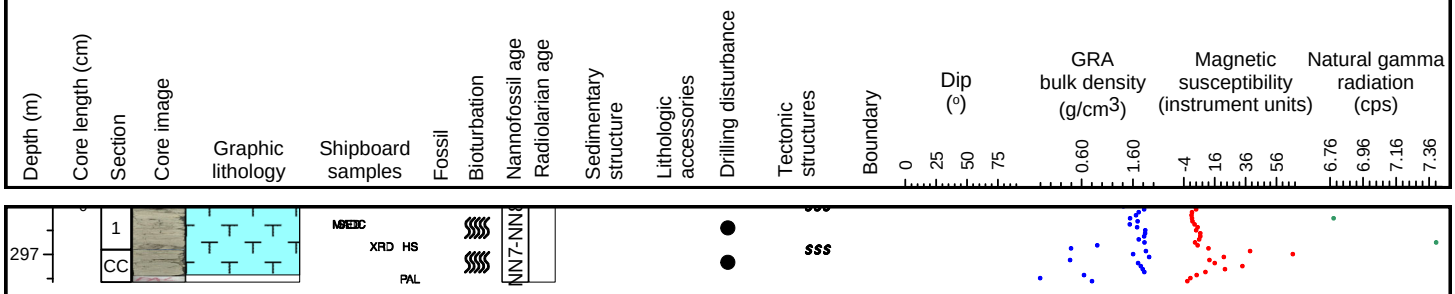
Hole 344-U1414A Core 32X, Interval 286.9-290.97 m (CSF-A)

Massive white calcareous ooze made with abundant, but variable content of sponge spicules, radolarians and diatoms. Disseminated dark brown sand-sized clasts are common. Greenish discoloration indicative of glauconite is common. Heavily bioturbated. Lithification increases.



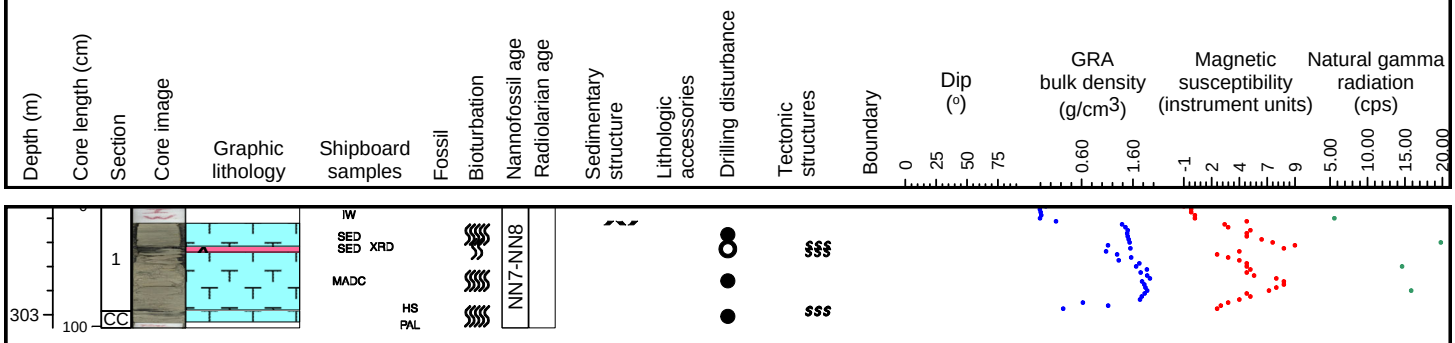
Hole 344-U1414A Core 33X, Interval 296.6-297.23 m (CSF-A)

Massive white calcareous ooze made with abundant, but variable content of sponge spicules, radolarians and diatoms. Disseminated dark brown sand-sized clasts are common. Greenish discoloration indicative of glauconite is common. Heavily bioturbated.



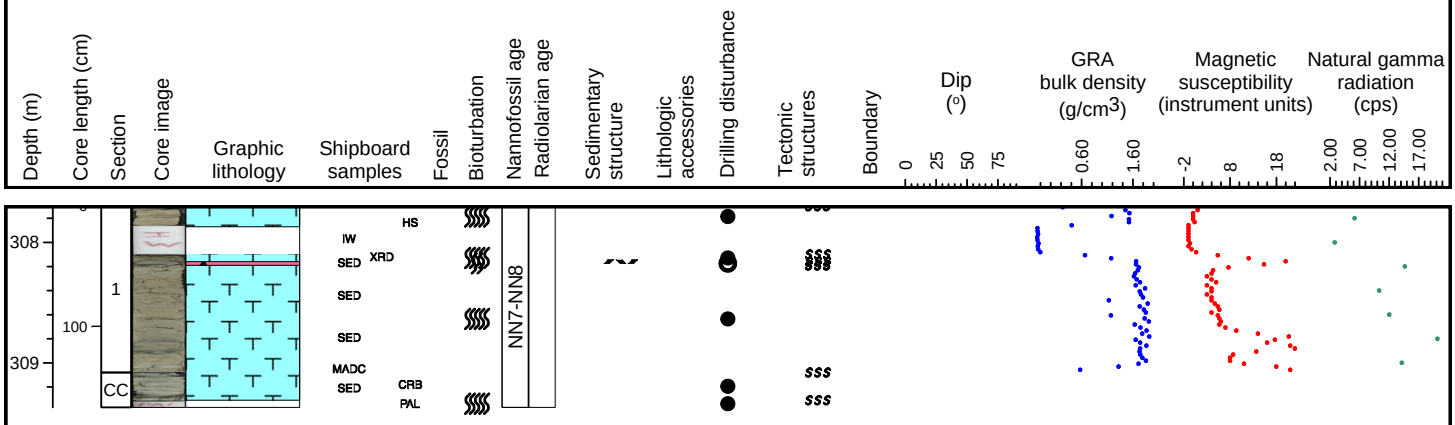
Hole 344-U1414A Core 34X, Interval 302.1-303.11 m (CSF-A)

White calcareous ooze made with abundant, but variable content of sponge spicules, radolarians and diatoms. Disseminated dark brown sand-sized clasts are common. Greenish discoloration indicative of glauconite is common. Heavily bioturbated. Dark tephra layer at 33-38cm, section 1.



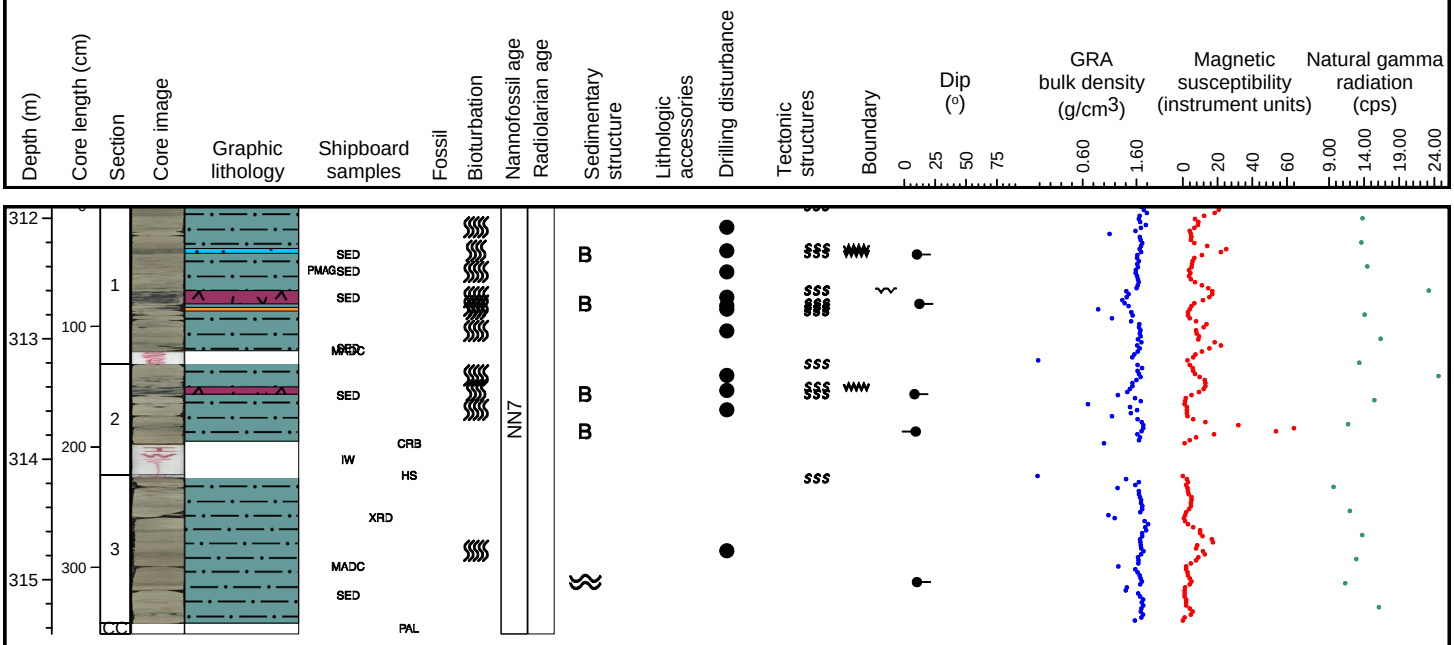
Hole 344-U1414A Core 35X, Interval 307.7-309.37 m (CSF-A)

White to pale green calcareous ooze made with abundant, but variable content of sponge spicules, radolarians and diatoms. Heavily bioturbated.
Dark tephra layer at 46-49cm, section 1.



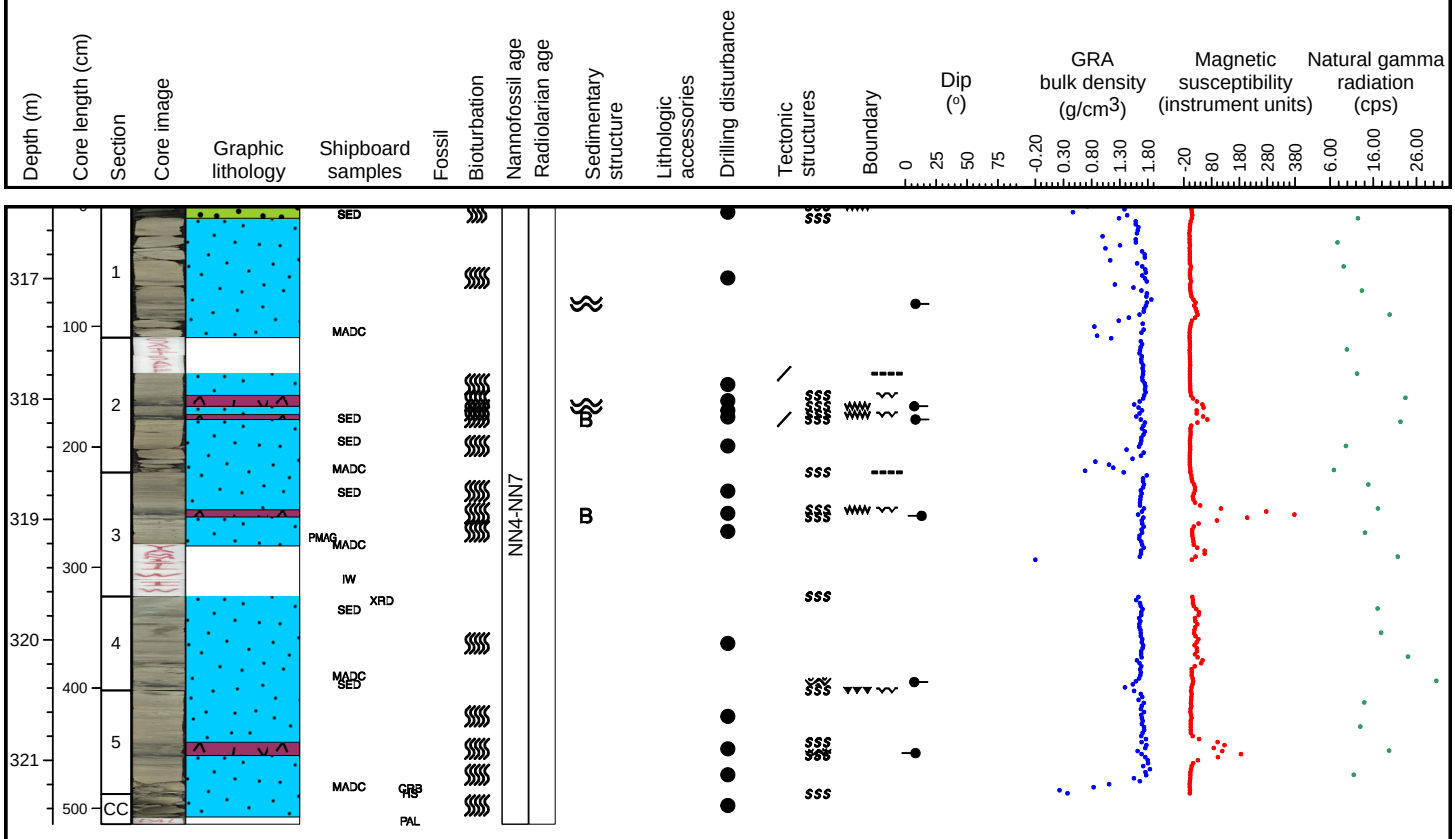
Hole 344-U1414A Core 36R, Interval 311.9-315.45 m (CSF-A)

Grey to light grey heavily bioturbated calcareous siltstone. Mottled appearance. Slight color changes with diffuse boundary indicated presence of layering. Sandy components disseminated through sediment, and sometimes enriched in diffuse layers. Two black very fine-grained pyrite-bearing tuffs in section 1 at 70-81 cm and section 2 at 19-25 cm.



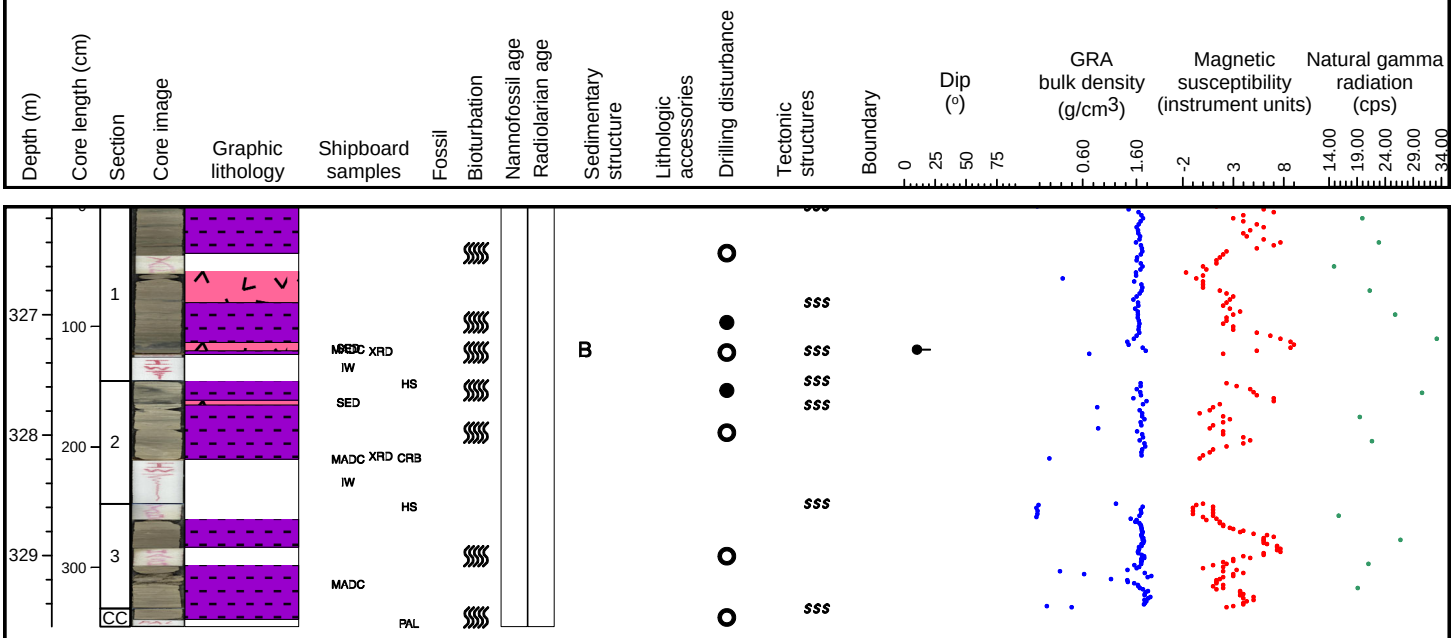
Hole 344-U1414A Core 37R, Interval 316.4-321.53 m (CSF-A)

Grey to light grey heavily bioturbated calcareous sandstone. Mottled appearance. Slight color changes with diffuse boundary indicate presence of layering. Sandy components disseminated through sediment. Black very finegrained to fine-grained, sometimes pyrite-bearing tuff layers in section 2 at 48-57 cm and 64-68 cm, section 3 at 31-37 cm, section 5 at 43-54 cm.



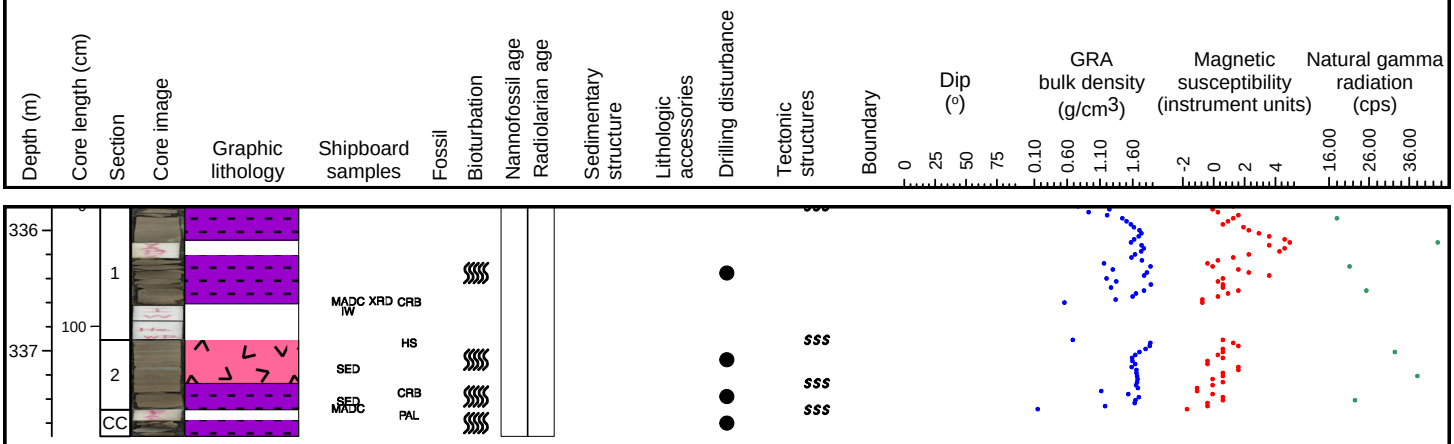
Hole 344-U1414A Core 38R, Interval 326.1-329.59 m (CSF-A)

Massive light greyish brown to dark greyish brown highly bioturbated mix of calcite and silica material that is well lithified and recrystallized. No biogenic fossils observed. Structures still preserved but obscure by recrystallization. The core contains zones are marked by a slight change in color from light to dark brownish grey. Two tephra layers at section 1 (78 to 80 and 114 to 120).



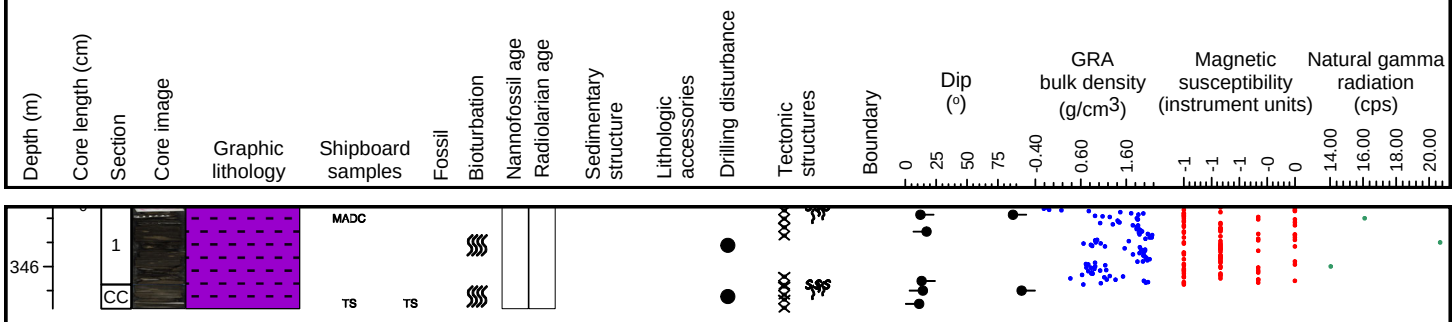
Hole 344-U1414A Core 39R, Interval 335.8-337.71 m (CSF-A)

Massive light greyish brown to dark greyish brown highly bioturbated mix of calcite and silica material that is well lithified and recrystallized. No biogenic fossils observed. Structures still preserved but obscure by recrystallization. The core contains zones are marked by a slight change in color from light to dark brownish grey. One tephra layer at section 2 (23 to 26).



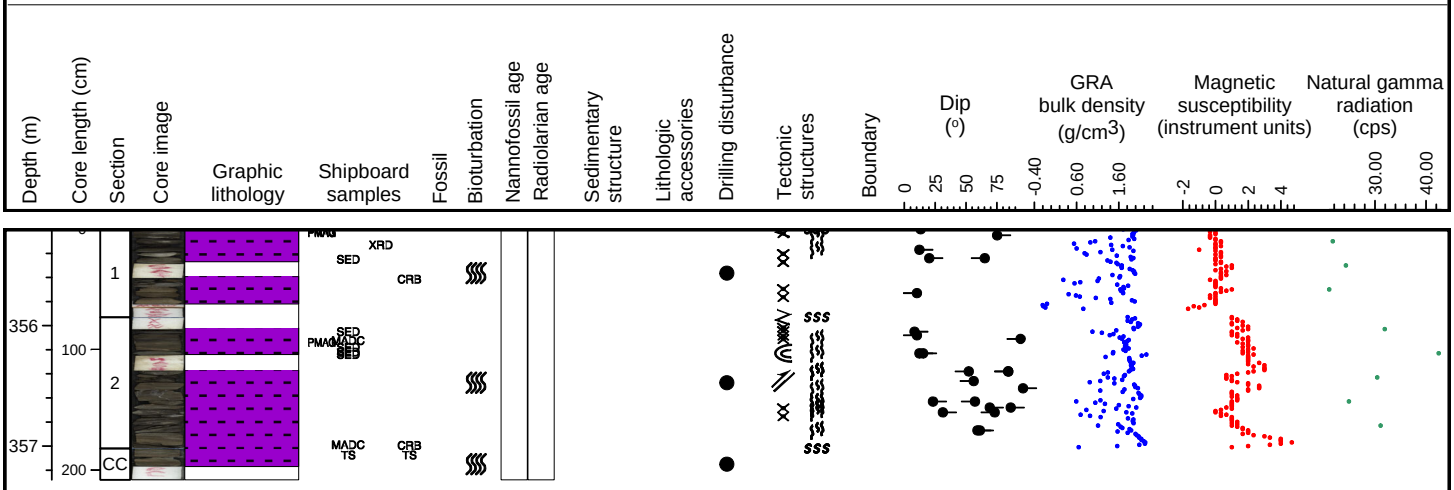
Hole 344-U1414A Core 40R, Interval 345.5-346.35 m (CSF-A)

Foliated dark reddish brown lydite (calcareous and siliceous (Chert?) recrystallized and mixed material is crosscut by calcite veins. Bedding contains calcite along planes. Foliation is evident from the flow of matrix around (silica?) clasts. Calcite is also present along foliation planes. Biogenic material absent. Clay is present and feldspars are rare and where present they are altered. Lithology is difficult to describe. Main components are re-crystallized (first calcite and second silica cements) sedimentary clast and sedimentary bedding structures probably from former silt and sandstones. Eventually two-stage cementation with low temperature calcite at the beginning and higher temperature silica as second stage.



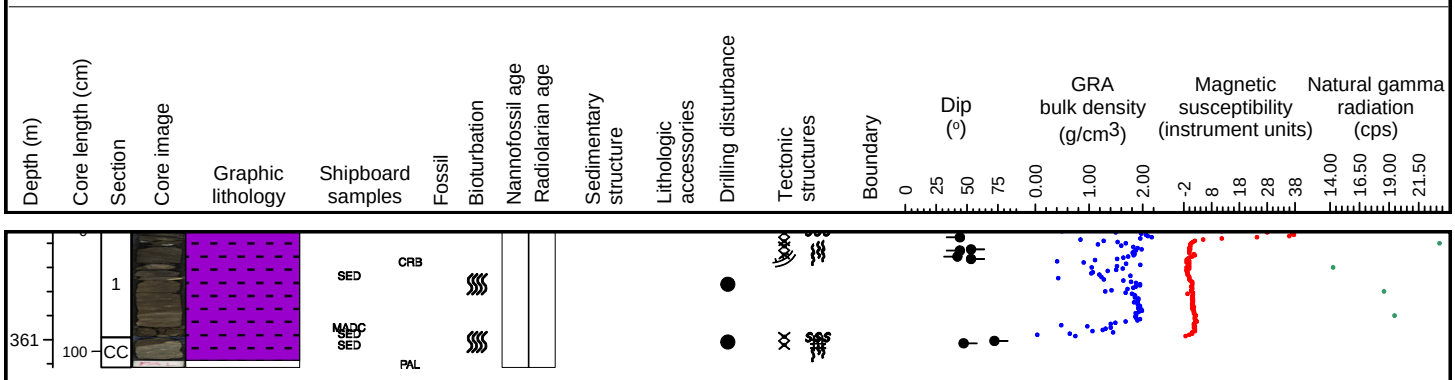
Hole 344-U1414A Core 41R, Interval 355.2-357.28 m (CSF-A)

Foliated dark reddish brown lydite (calcareous and siliceous recrystallized and mixed sediments) is crosscut by calcite veins. Bedding contains calcite along planes. Foliation is evident from the flow of matrix around (silica?) clasts. Calcite is also present along foliation planes. Biogenic material absent. Clay is present and feldspars are rare and where present they are altered.



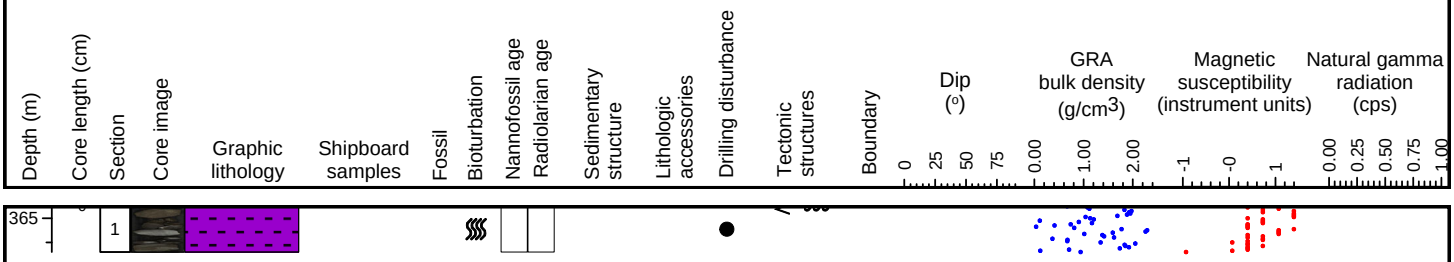
Hole 344-U1414A Core 42R, Interval 360.1-361.23 m (CSF-A)

Foliated dark reddish brown strongly lithified and cemented siltstone (calcareous and siliceous (Chert?). Matrix is recrystallized and mixed material is crosscut by calcite veins. Bedding contains calcite along planes. Foliation is evident from the flow of matrix around (silica?) clasts. Calcite is also present along foliation planes. Biogenic material absent. Clay is present and feldspars are rare and where present they are altered. Lithology is difficult to describe. Main components are re-crystallized (first calcite and second silica cements) sedimentary clast and sedimentary bedding structures probably from former silt and sandstones. Eventually two-stage cementation with low temperature calcite at the beginning and higher temperature silica as second stage. In the CC there is a sharp inclined contact to a completely lithified limestone breccia made out of cm-sized clasts.



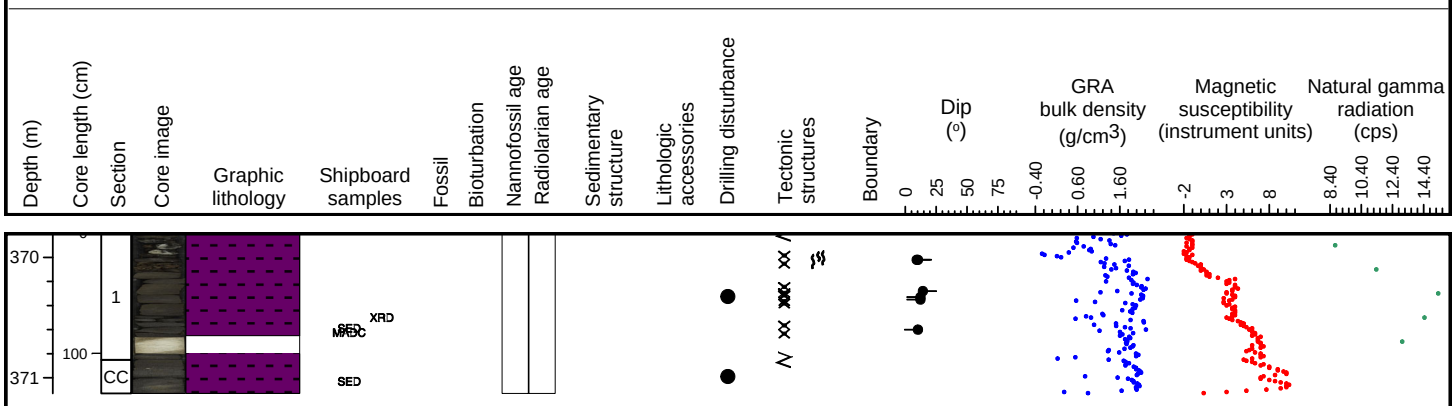
Hole 344-U1414A Core 43R, Interval 364.9-365.28 m (CSF-A)

Foliated dark reddish brown, strongly lithified sandstone (calcareous and siliceous (Chert?) recrystallized and mixed material is crosscut by calcite veins. Bedding contains calcite along planes. Foliation is evident from the flow of matrix around (silica?) clasts. Calcite is also present along foliation planes Biogenic material absent. Clay is present and feldspars are rare and where present they are altered. Lithology is difficult to describe. Main components are re-crystallized (first calcite and second silica cements) sedimentary clast and sedimentary bedding structures probably from former silt and sandstones. Eventually two-stage cementation with low temperature calcite at the beginning and higher temperature silica as second stage.



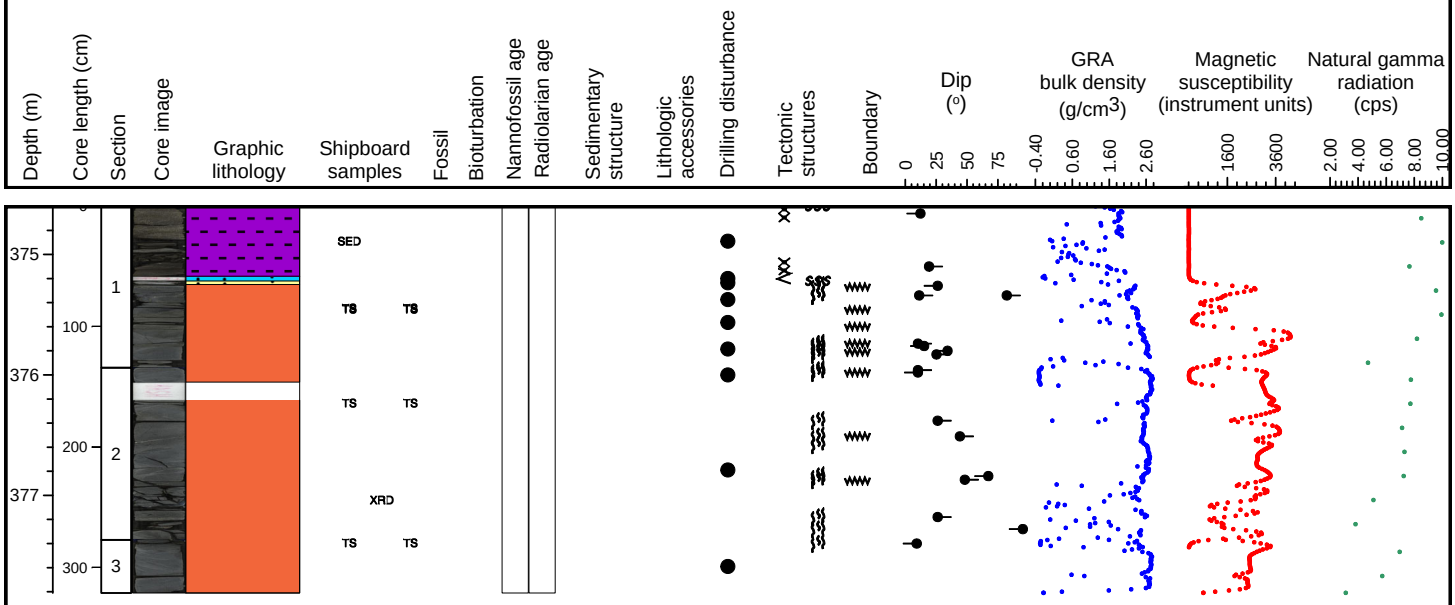
Hole 344-U1414A Core 44R, Interval 369.8-371.13 m (CSF-A)

Calcareous limestone with silicic cement.

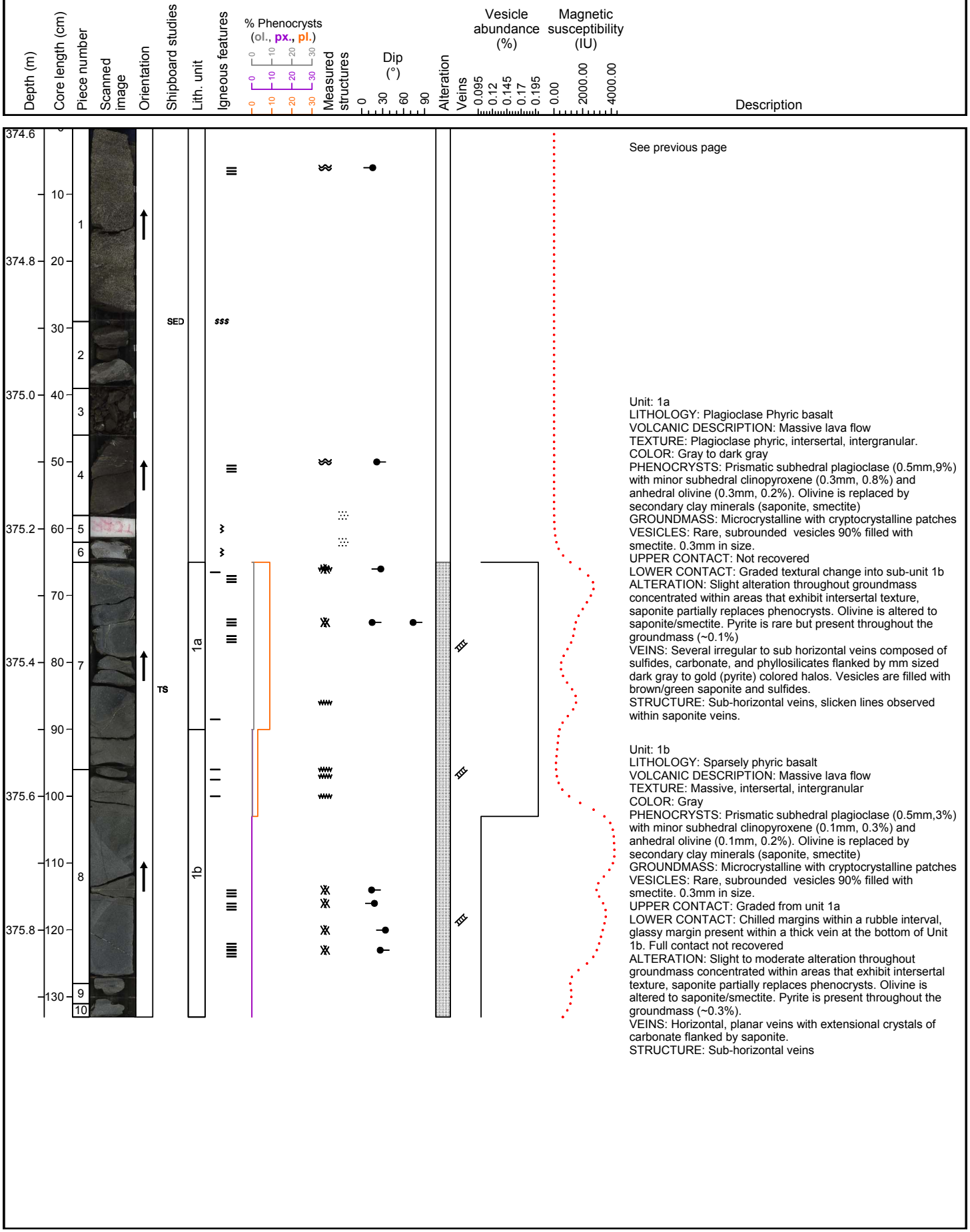


Hole 344-U1414A Core 45R, Interval 374.6-377.81 m (CSF-A)

Foliated dark reddish brown Lydite (calcareous and siliceous (Chert?) recrystallized and mixed material is crosscut by calcite veins. Bedding contains calcite along planes. Foliation is evident from the flow of matrix around (silica?) clasts. Calcite is also present as coarse crystals on the top part of section 1. Biogenic material absent. Clay is present and feldspars are rare and where present they are altered. Lithology is difficult to describe. Main components are re-crystallized (first calcite and second silica cements) sedimentary clast and sedimentary bedding structures probably from former silt and sandstones. Eventually two-stage cementation with low temperature calcite at the beginning and higher temperature silica as second stage.



Hole 344-U1414A-45R Section 1, Top of Section: 374.6 m (CSF-A)

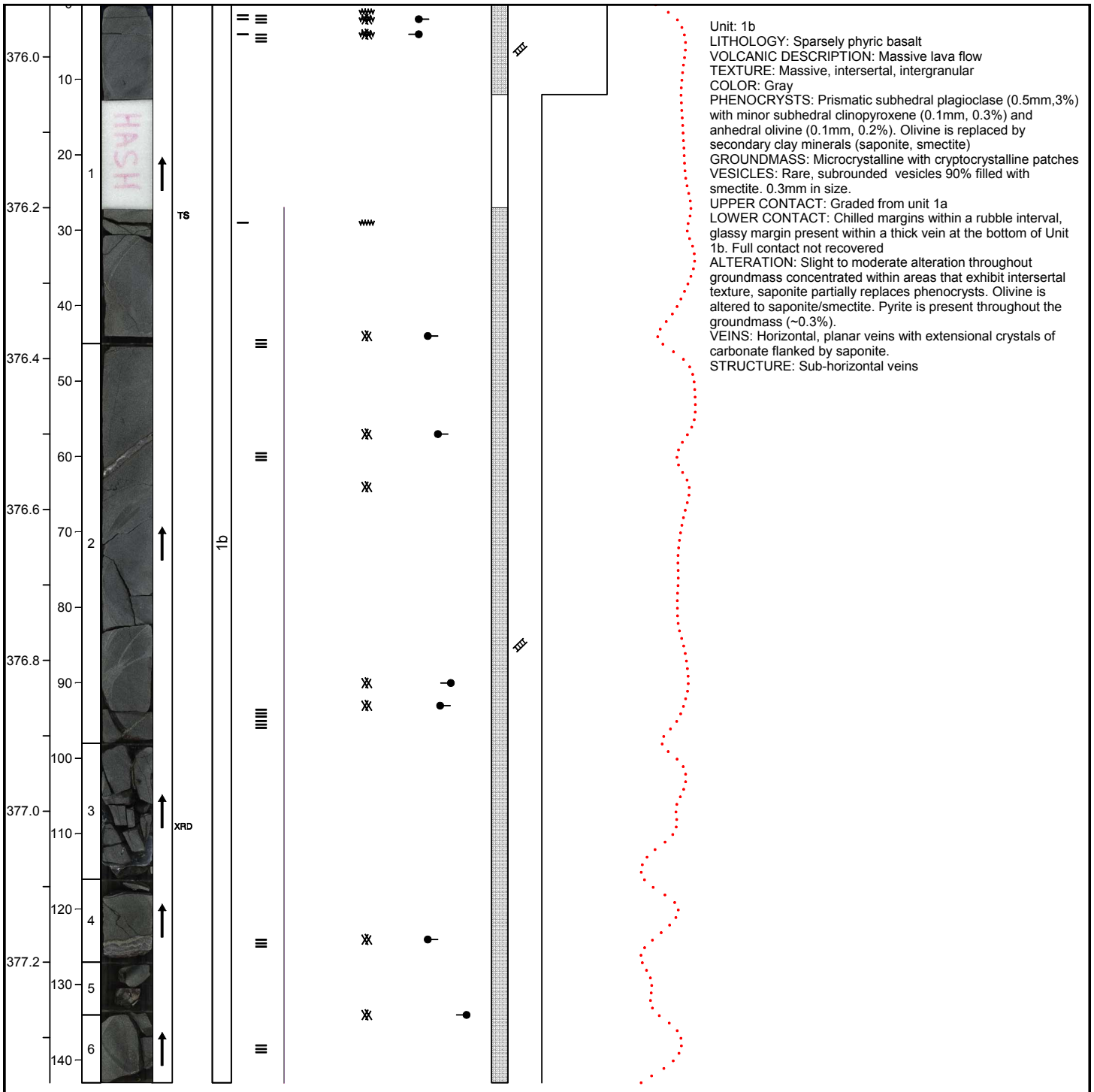


See previous page

Unit: 1a
LITHOLOGY: Plagioclase Phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Plagioclase phyric, intersertal, intergranular.
COLOR: Gray to dark gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.5mm,9%) with minor subhedral clinopyroxene (0.3mm, 0.8%) and anhedral olivine (0.3mm, 0.2%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Microcrystalline with cryptocrystalline patches
VESICLES: Rare, subrounded vesicles 90% filled with smectite. 0.3mm in size.
UPPER CONTACT: Not recovered
LOWER CONTACT: Graded textural change into sub-unit 1b
ALTERATION: Slight alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is rare but present throughout the groundmass (~0.1%)
VEINS: Several irregular to sub horizontal veins composed of sulfides, carbonate, and phyllosilicates flanked by mm sized dark gray to gold (pyrite) colored halos. Vesicles are filled with brown/green saponite and sulfides.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite veins.

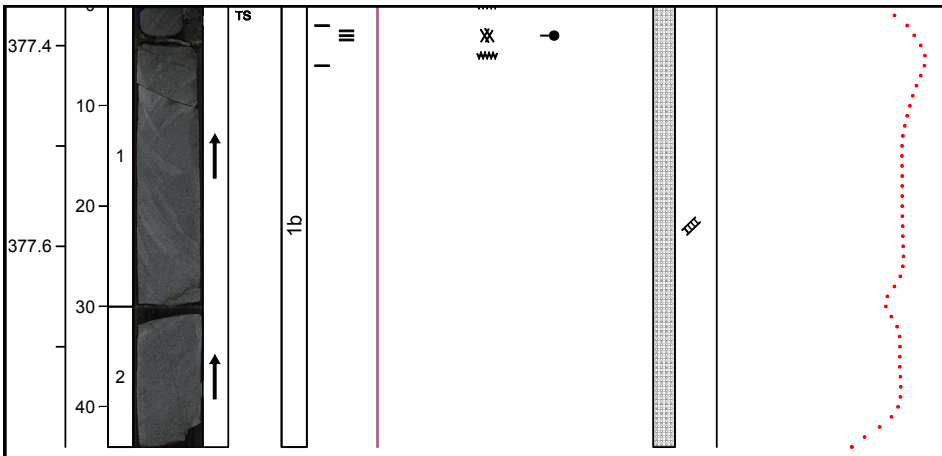
Unit: 1b
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, intersertal, intergranular
COLOR: Gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.5mm,3%) with minor subhedral clinopyroxene (0.1mm, 0.3%) and anhedral olivine (0.1mm, 0.2%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Microcrystalline with cryptocrystalline patches
VESICLES: Rare, subrounded vesicles 90% filled with smectite. 0.3mm in size.
UPPER CONTACT: Graded from unit 1a
LOWER CONTACT: Chilled margins within a rubble interval, glassy margin present within a thick vein at the bottom of Unit 1b. Full contact not recovered
ALTERATION: Slight to moderate alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is present throughout the groundmass (~0.3%).
VEINS: Horizontal, planar veins with extensional crystals of carbonate flanked by saponite.
STRUCTURE: Sub-horizontal veins

Hole 344-U1414A-45R Section 2, Top of Section: 375.93 m (CSF-A)



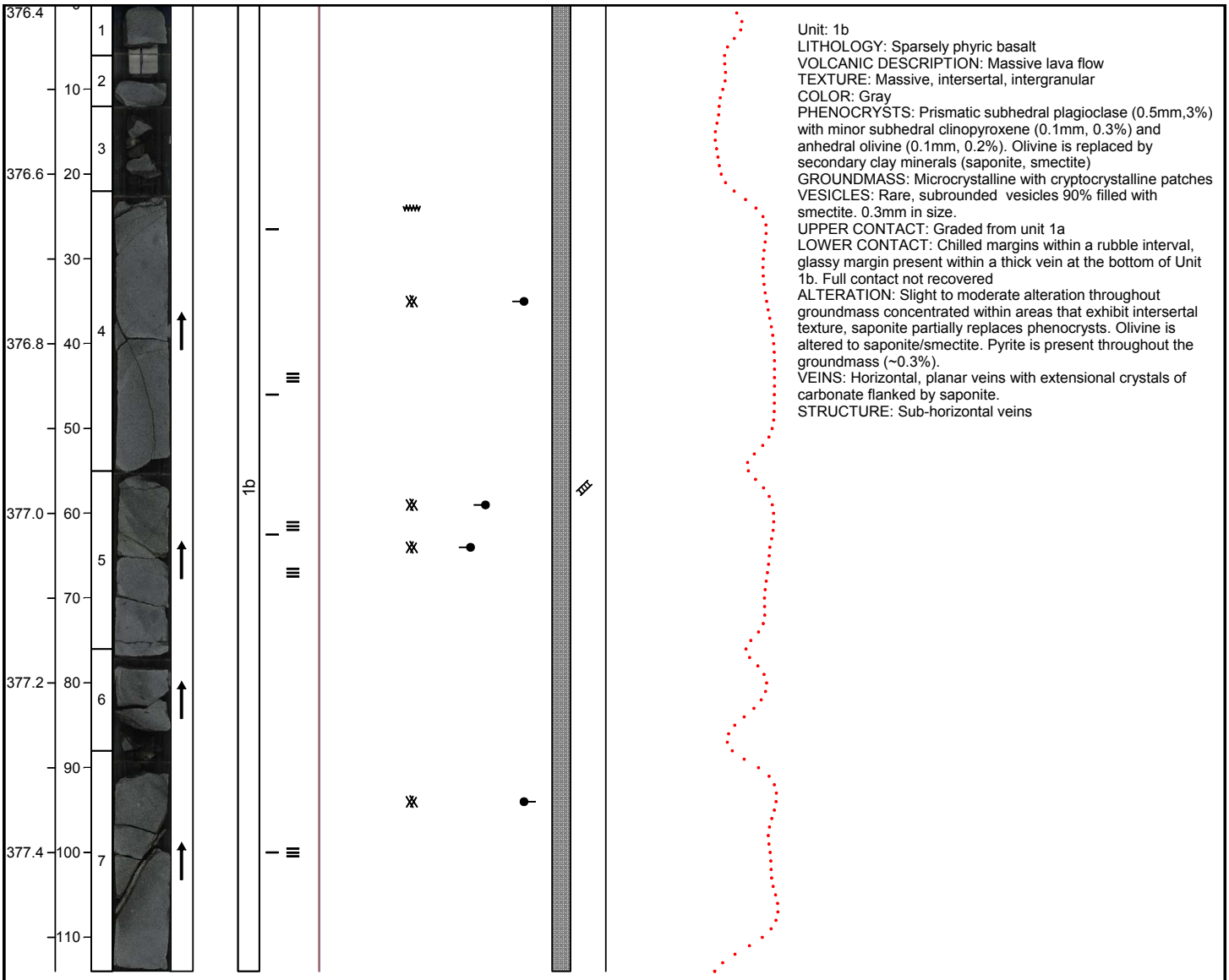
Unit: 1b
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, intersertal, intergranular
COLOR: Gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.5mm,3%) with minor subhedral clinopyroxene (0.1mm, 0.3%) and anhedral olivine (0.1mm, 0.2%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Microcrystalline with cryptocrystalline patches
VESICLES: Rare, subrounded vesicles 90% filled with smectite. 0.3mm in size.
UPPER CONTACT: Graded from unit 1a
LOWER CONTACT: Chilled margins within a rubble interval, glassy margin present within a thick vein at the bottom of Unit 1b. Full contact not recovered
ALTERATION: Slight to moderate alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is present throughout the groundmass (~0.3%).
VEINS: Horizontal, planar veins with extensional crystals of carbonate flanked by saponite.
STRUCTURE: Sub-horizontal veins

Hole 344-U1414A-45R Section 3, Top of Section: 377.36 m (CSF-A)

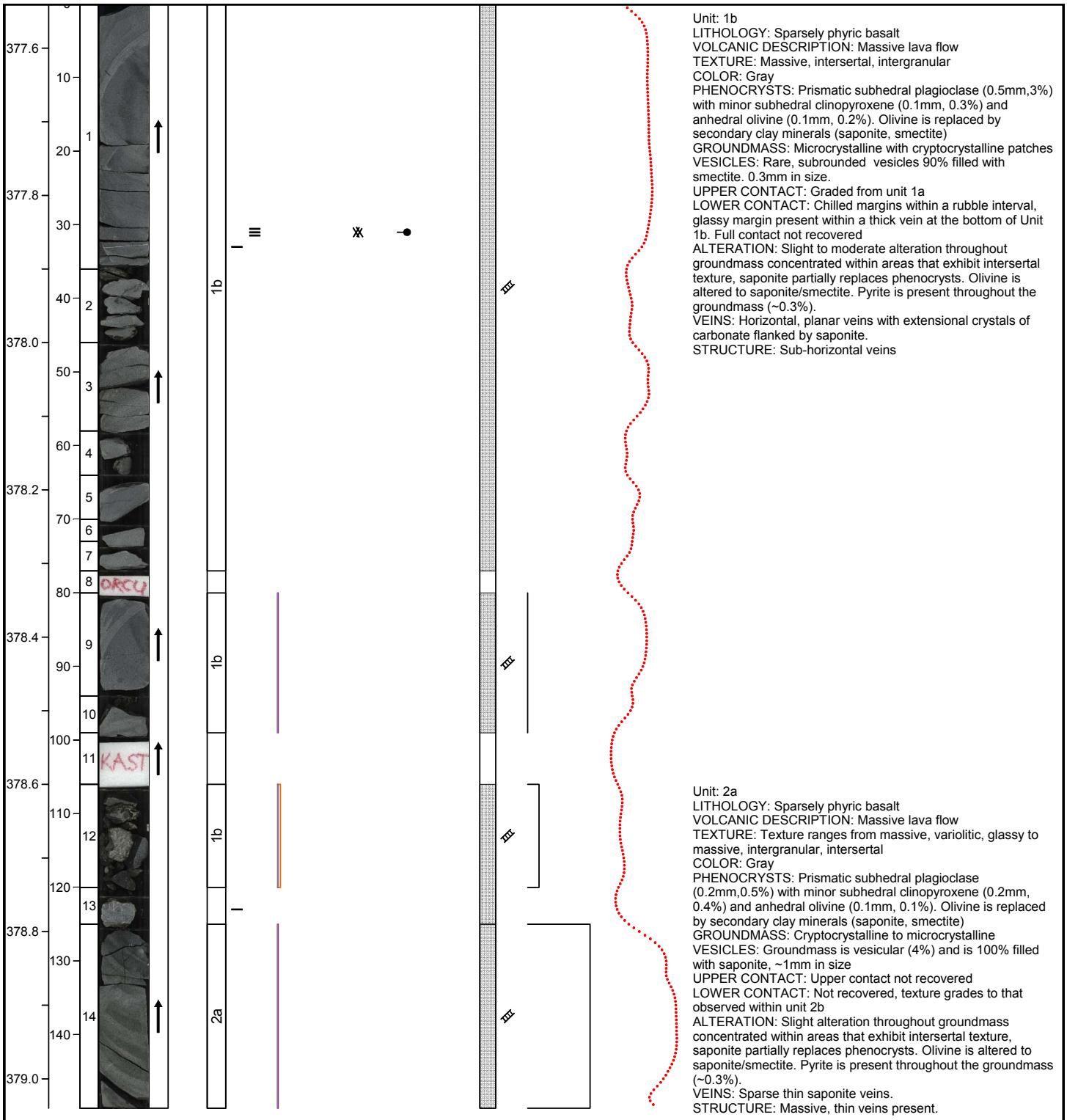


Unit: 1b
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, intersertal, intergranular
COLOR: Gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.5mm,3%) with minor subhedral clinopyroxene (0.1mm, 0.3%) and anhedral olivine (0.1mm, 0.2%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Microcrystalline with cryptocrystalline patches
VESICLES: Rare, subrounded vesicles 90% filled with smectite. 0.3mm in size.
UPPER CONTACT: Graded from unit 1a
LOWER CONTACT: Chilled margins within a rubble interval, glassy margin present within a thick vein at the bottom of Unit 1b. Full contact not recovered
ALTERATION: Slight to moderate alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is present throughout the groundmass (~0.3%).
VEINS: Horizontal, planar veins with extensional crystals of carbonate flanked by saponite.
STRUCTURE: Sub-horizontal veins

Hole 344-U1414A-46R Section 1, Top of Section: 376.4 m (CSF-A)



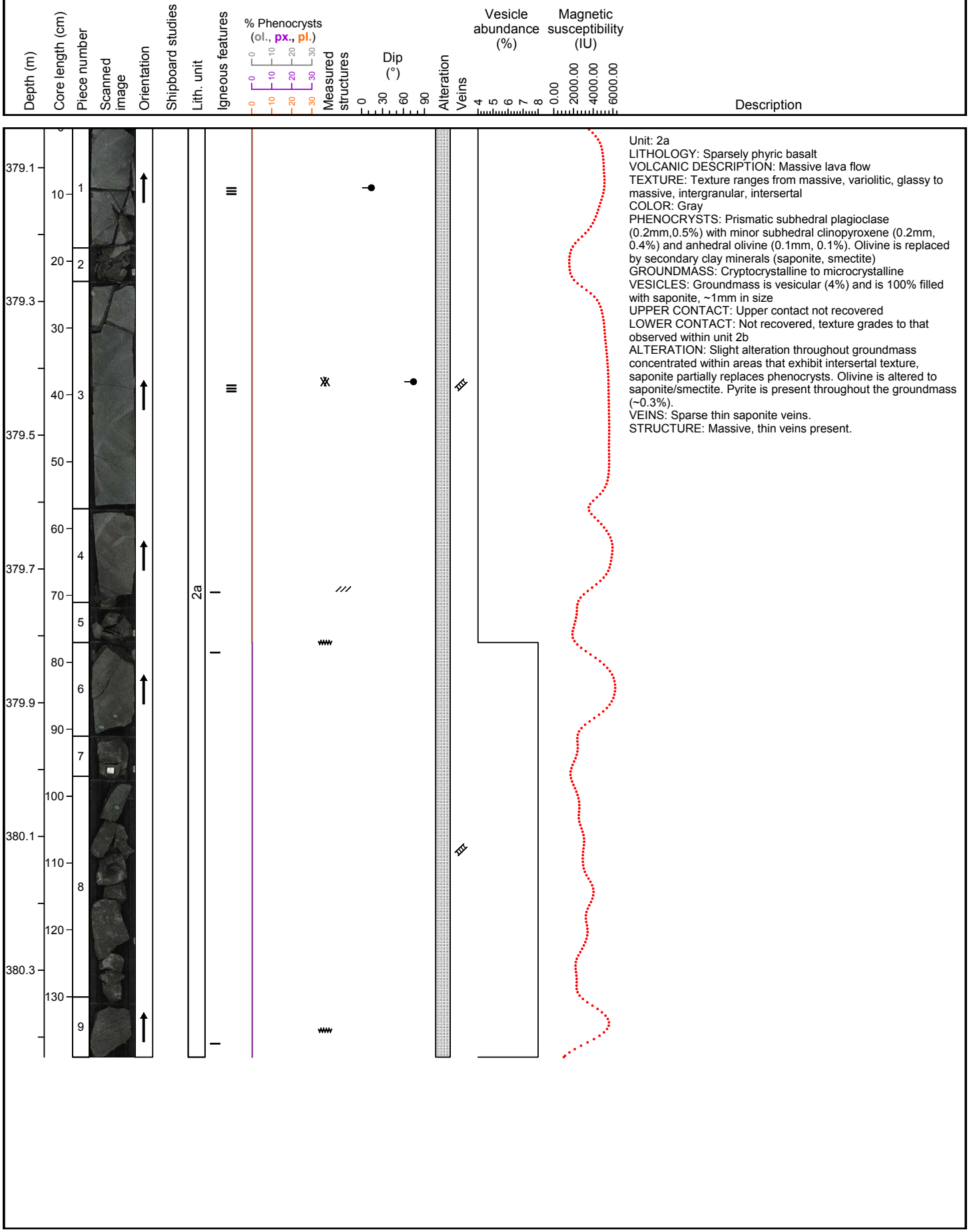
Hole 344-U1414A-46R Section 2, Top of Section: 377.54 m (CSF-A)



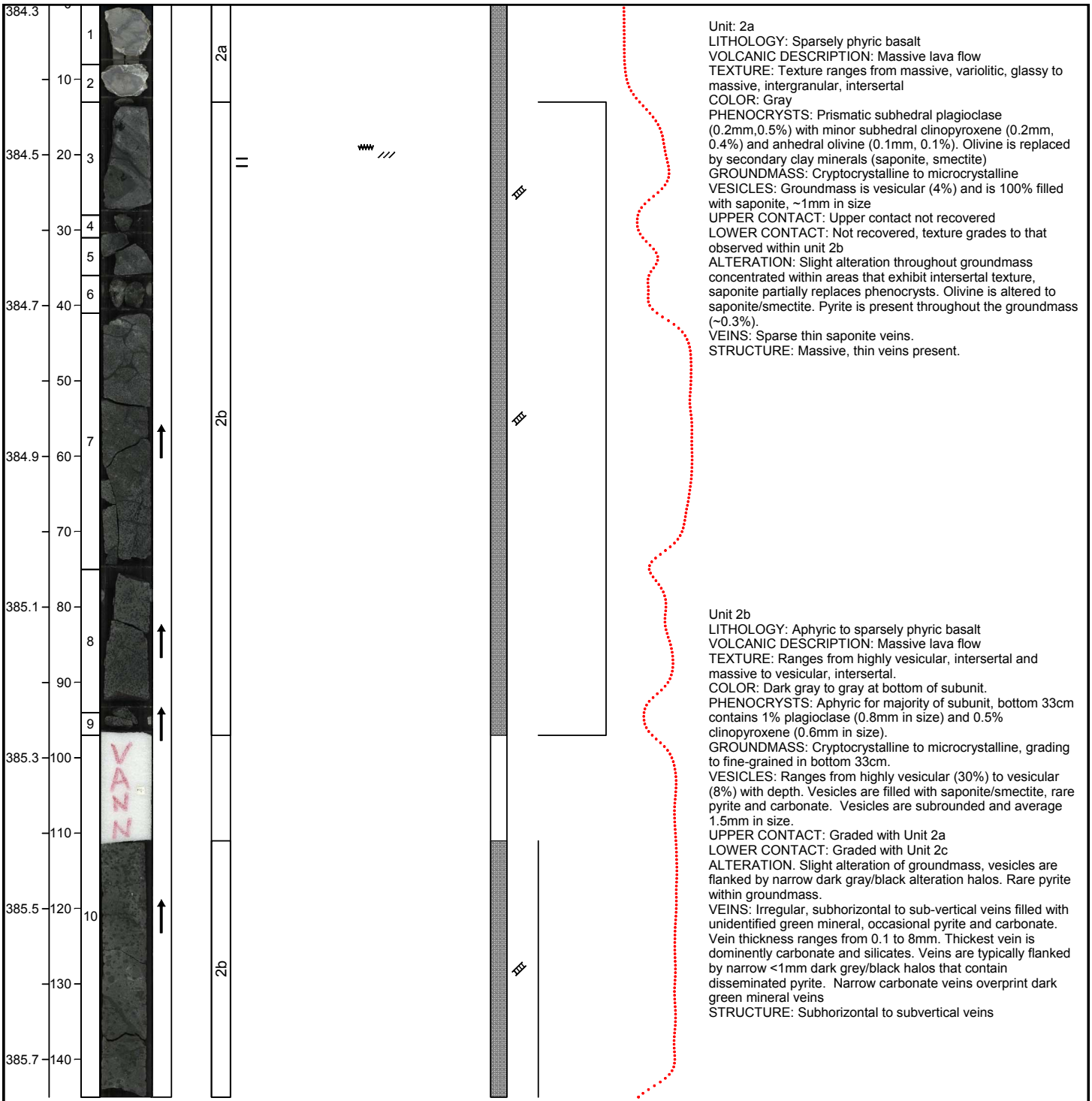
Unit: 1b
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, intersertal, intergranular
COLOR: Gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.5mm,3%) with minor subhedral clinopyroxene (0.1mm, 0.3%) and anhedral olivine (0.1mm, 0.2%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Microcrystalline with cryptocrystalline patches
VESICLES: Rare, subrounded vesicles 90% filled with smectite. 0.3mm in size.
UPPER CONTACT: Graded from unit 1a
LOWER CONTACT: Chilled margins within a rubble interval, glassy margin present within a thick vein at the bottom of Unit 1b. Full contact not recovered
ALTERATION: Slight to moderate alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is present throughout the groundmass (~0.3%).
VEINS: Horizontal, planar veins with extensional crystals of carbonate flanked by saponite.
STRUCTURE: Sub-horizontal veins

Unit: 2a
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Texture ranges from massive, variolitic, glassy to massive, intergranular, intersertal
COLOR: Gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.2mm,0.5%) with minor subhedral clinopyroxene (0.2mm, 0.4%) and anhedral olivine (0.1mm, 0.1%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Cryptocrystalline to microcrystalline
VESICLES: Groundmass is vesicular (4%) and is 100% filled with saponite, ~1mm in size
UPPER CONTACT: Upper contact not recovered
LOWER CONTACT: Not recovered, texture grades to that observed within unit 2b
ALTERATION: Slight alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is present throughout the groundmass (~0.3%).
VEINS: Sparse thin saponite veins.
STRUCTURE: Massive, thin veins present.

Hole 344-U1414A-46R Section 3, Top of Section: 379.04 m (CSF-A)



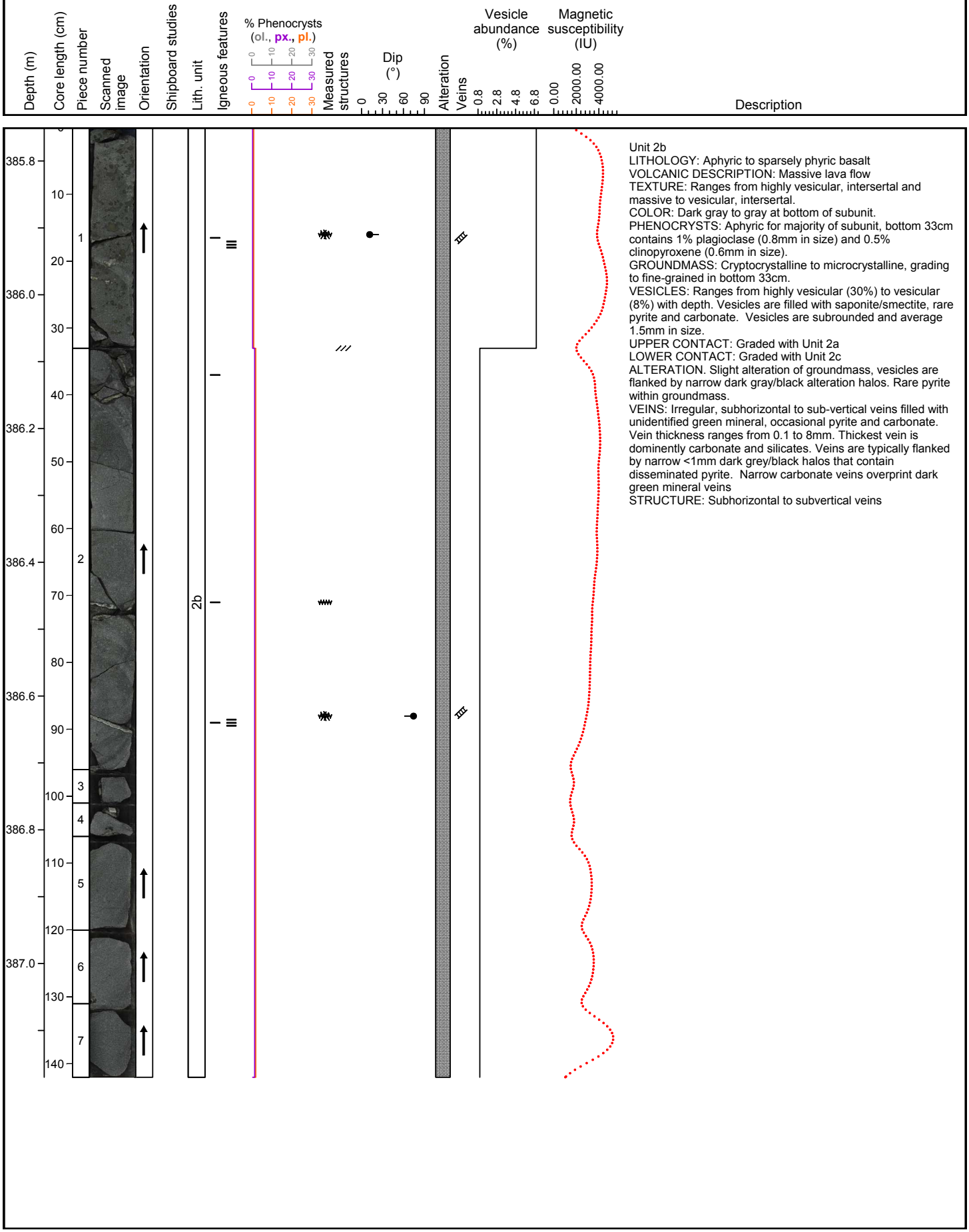
Hole 344-U1414A-47R Section 1, Top of Section: 384.3 m (CSF-A)



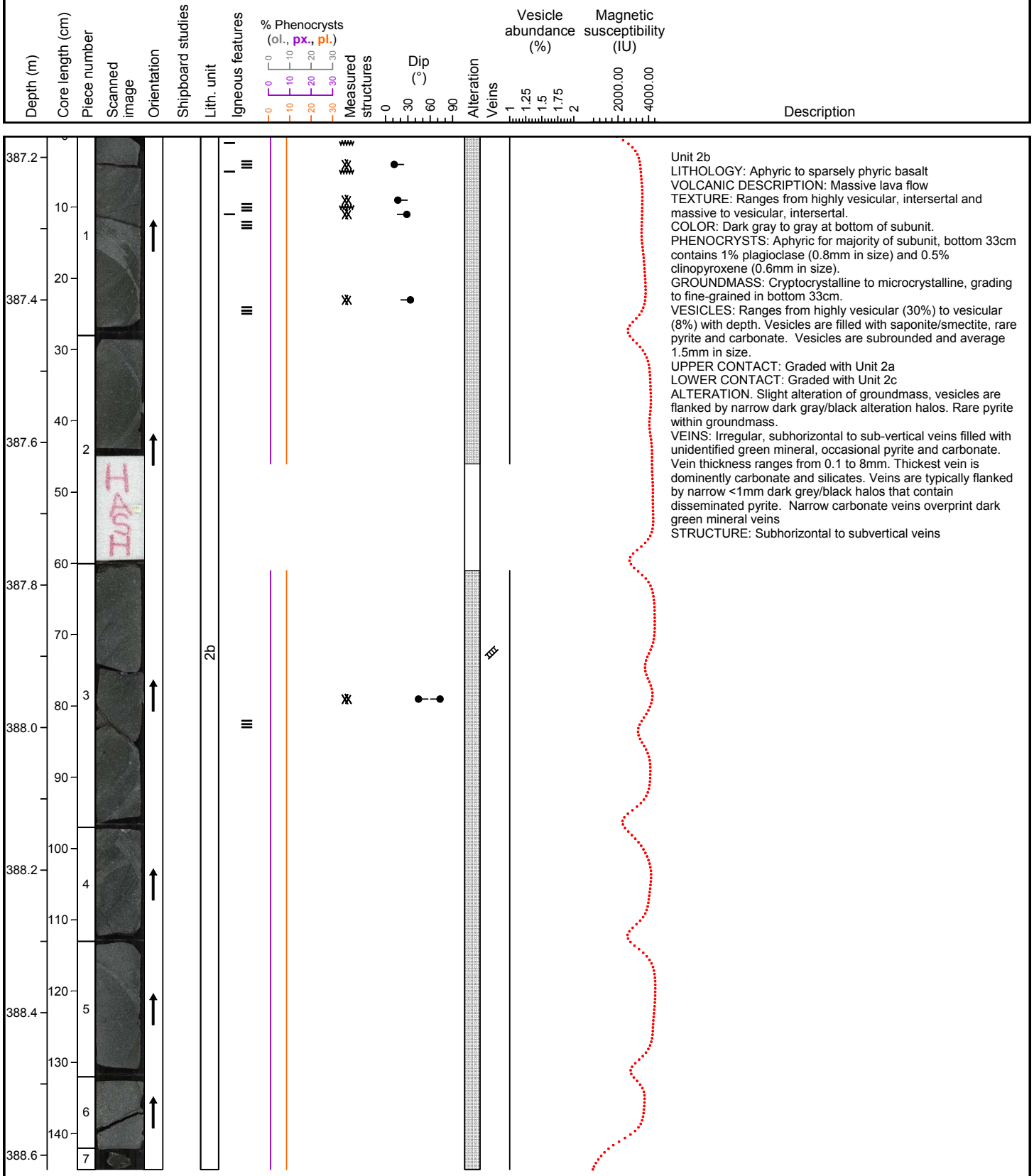
Unit: 2a
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Texture ranges from massive, variolitic, glassy to massive, intergranular, intersertal
COLOR: Gray
PHENOCRYSTS: Prismatic subhedral plagioclase (0.2mm,0.5%) with minor subhedral clinopyroxene (0.2mm, 0.4%) and anhedral olivine (0.1mm, 0.1%). Olivine is replaced by secondary clay minerals (saponite, smectite)
GROUNDMASS: Cryptocrystalline to microcrystalline
VESICLES: Groundmass is vesicular (4%) and is 100% filled with saponite, ~1mm in size
UPPER CONTACT: Upper contact not recovered
LOWER CONTACT: Not recovered, texture grades to that observed within unit 2b
ALTERATION: Slight alteration throughout groundmass concentrated within areas that exhibit intersertal texture, saponite partially replaces phenocrysts. Olivine is altered to saponite/smectite. Pyrite is present throughout the groundmass (~0.3%).
VEINS: Sparse thin saponite veins.
STRUCTURE: Massive, thin veins present.

Unit 2b
LITHOLOGY: Aphyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Ranges from highly vesicular, intersertal and massive to vesicular, intersertal.
COLOR: Dark gray to gray at bottom of subunit.
PHENOCRYSTS: Aphyric for majority of subunit, bottom 33cm contains 1% plagioclase (0.8mm in size) and 0.5% clinopyroxene (0.6mm in size).
GROUNDMASS: Cryptocrystalline to microcrystalline, grading to fine-grained in bottom 33cm.
VESICLES: Ranges from highly vesicular (30%) to vesicular (8%) with depth. Vesicles are filled with saponite/smectite, rare pyrite and carbonate. Vesicles are subrounded and average 1.5mm in size.
UPPER CONTACT: Graded with Unit 2a
LOWER CONTACT: Graded with Unit 2c
ALTERATION. Slight alteration of groundmass, vesicles are flanked by narrow dark gray/black alteration halos. Rare pyrite within groundmass.
VEINS: Irregular, subhorizontal to sub-vertical veins filled with unidentified green mineral, occasional pyrite and carbonate. Vein thickness ranges from 0.1 to 8mm. Thickest vein is dominently carbonate and silicates. Veins are typically flanked by narrow <1mm dark grey/black halos that contain disseminated pyrite. Narrow carbonate veins overprint dark green mineral veins
STRUCTURE: Subhorizontal to subvertical veins

Hole 344-U1414A-47R Section 2, Top of Section: 385.75 m (CSF-A)

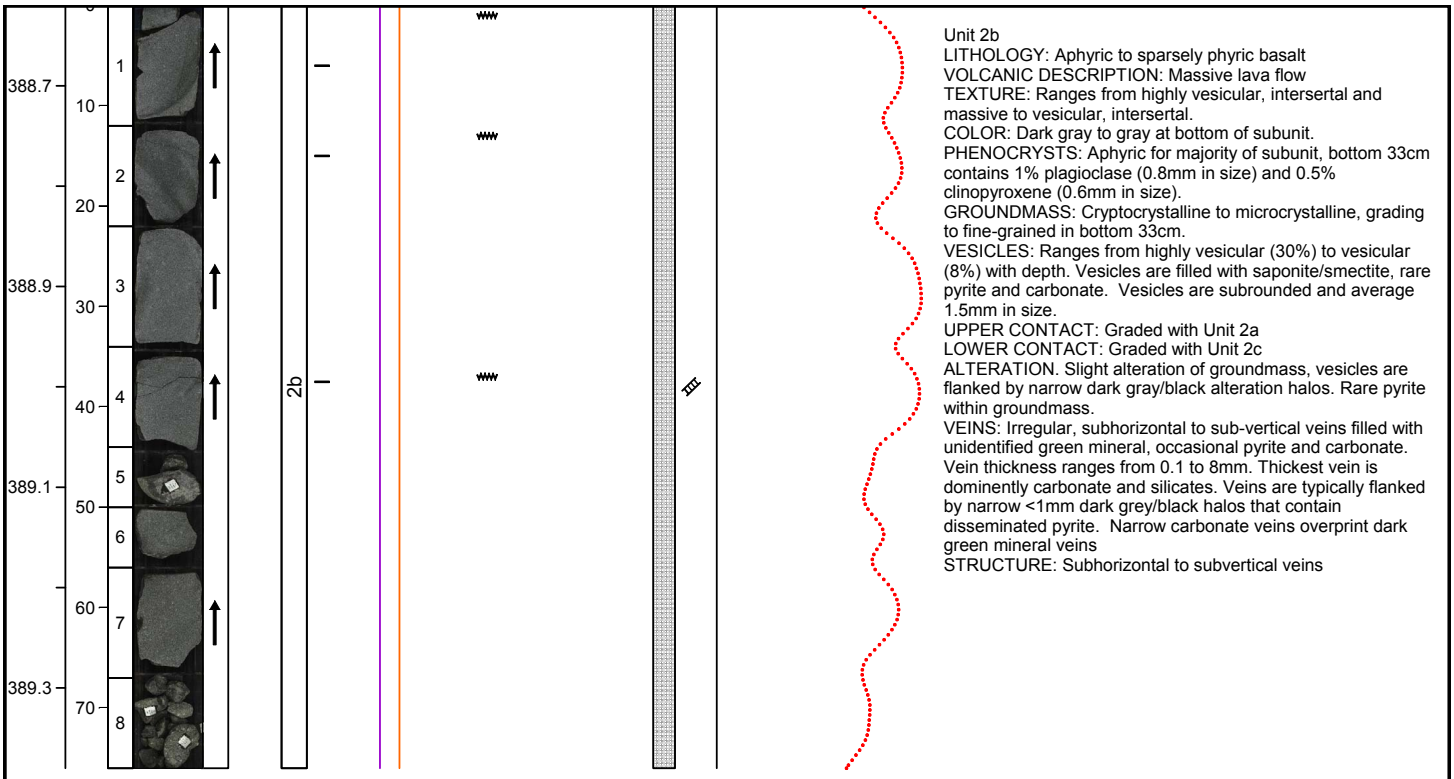


Hole 344-U1414A-47R Section 3, Top of Section: 387.17 m (CSF-A)



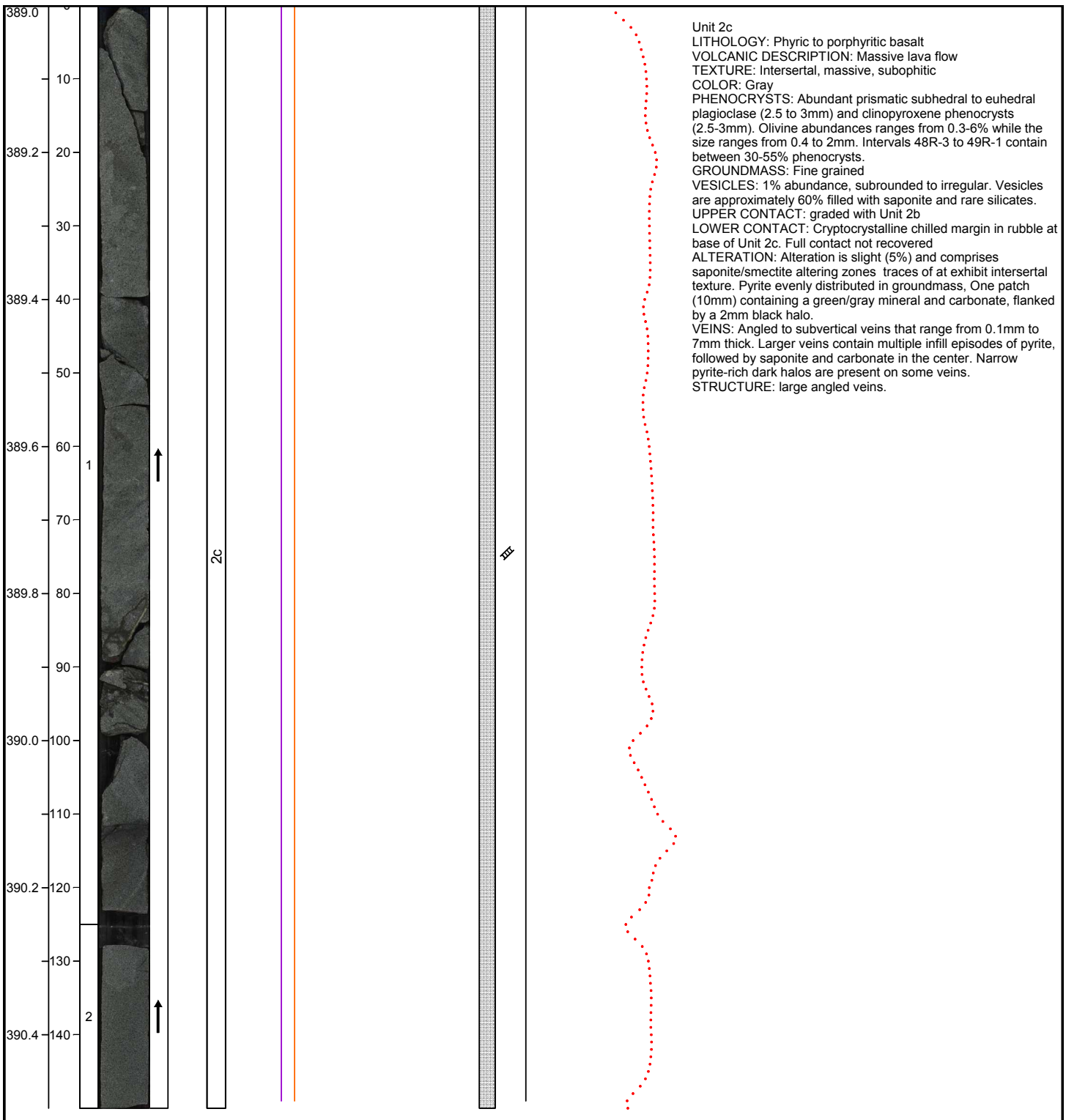
Unit 2b
LITHOLOGY: Aphyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Ranges from highly vesicular, intersertal and massive to vesicular, intersertal.
COLOR: Dark gray to gray at bottom of subunit.
PHENOCRYSTS: Aphyric for majority of subunit, bottom 33cm contains 1% plagioclase (0.8mm in size) and 0.5% clinopyroxene (0.6mm in size).
GROUNDMASS: Cryptocrystalline to microcrystalline, grading to fine-grained in bottom 33cm.
VESICLES: Ranges from highly vesicular (30%) to vesicular (8%) with depth. Vesicles are filled with saponite/smectite, rare pyrite and carbonate. Vesicles are subrounded and average 1.5mm in size.
UPPER CONTACT: Graded with Unit 2a
LOWER CONTACT: Graded with Unit 2c
ALTERATION. Slight alteration of groundmass, vesicles are flanked by narrow dark gray/black alteration halos. Rare pyrite within groundmass.
VEINS: Irregular, subhorizontal to sub-vertical veins filled with unidentified green mineral, occasional pyrite and carbonate. Vein thickness ranges from 0.1 to 8mm. Thickest vein is dominently carbonate and silicates. Veins are typically flanked by narrow <1mm dark grey/black halos that contain disseminated pyrite. Narrow carbonate veins overprint dark green mineral veins
STRUCTURE: Subhorizontal to subvertical veins

Hole 344-U1414A-47R Section 4, Top of Section: 388.62 m (CSF-A)

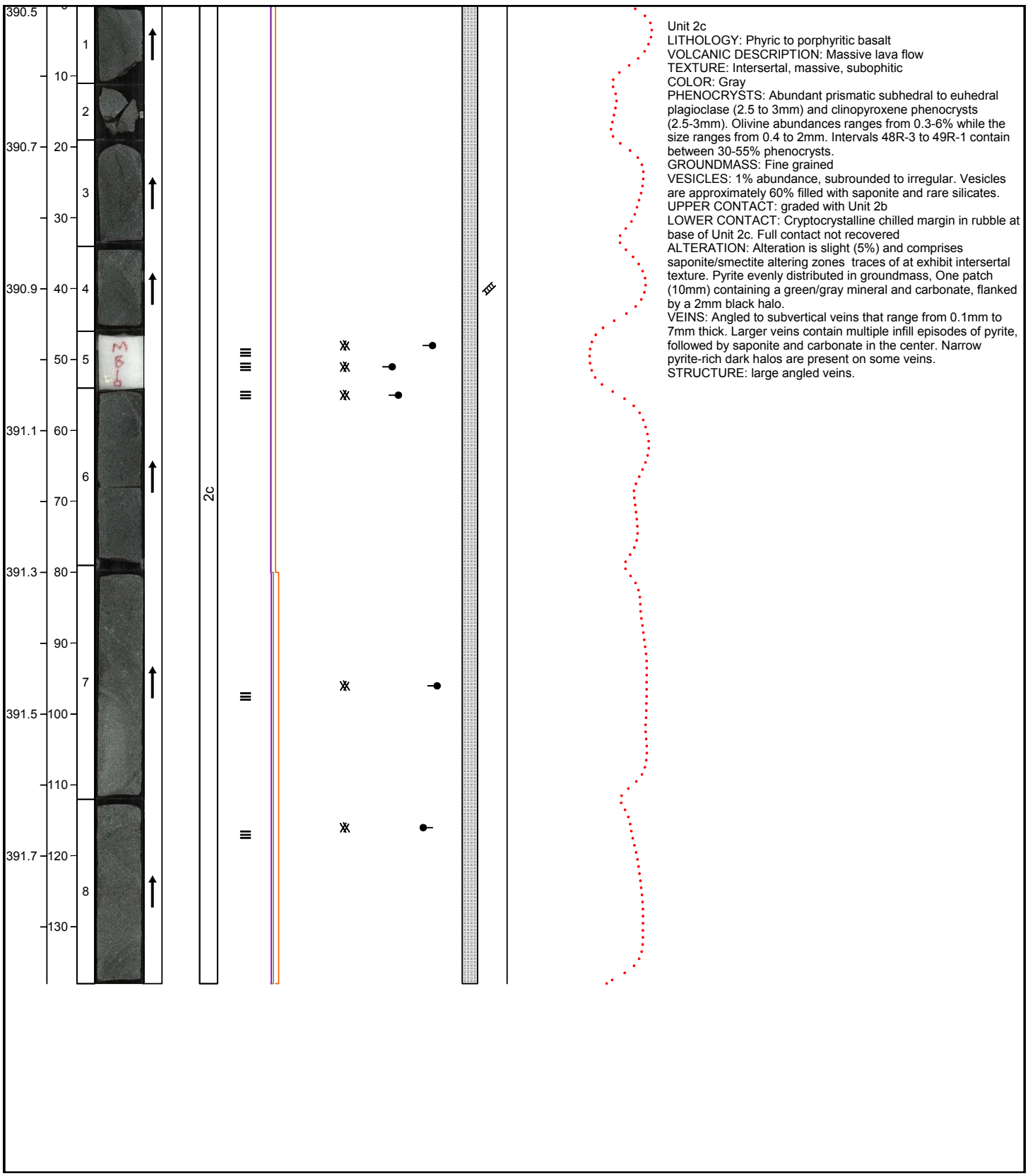


Unit 2b
LITHOLOGY: Aphyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Ranges from highly vesicular, intersertal and massive to vesicular, intersertal.
COLOR: Dark gray to gray at bottom of subunit.
PHENOCRYSTS: Aphyric for majority of subunit, bottom 33cm contains 1% plagioclase (0.8mm in size) and 0.5% clinopyroxene (0.6mm in size).
GROUNDMASS: Cryptocrystalline to microcrystalline, grading to fine-grained in bottom 33cm.
VESICLES: Ranges from highly vesicular (30%) to vesicular (8%) with depth. Vesicles are filled with saponite/smectite, rare pyrite and carbonate. Vesicles are subrounded and average 1.5mm in size.
UPPER CONTACT: Graded with Unit 2a
LOWER CONTACT: Graded with Unit 2c
ALTERATION. Slight alteration of groundmass, vesicles are flanked by narrow dark gray/black alteration halos. Rare pyrite within groundmass.
VEINS: Irregular, subhorizontal to sub-vertical veins filled with unidentified green mineral, occasional pyrite and carbonate. Vein thickness ranges from 0.1 to 8mm. Thickest vein is dominently carbonate and silicates. Veins are typically flanked by narrow <1mm dark grey/black halos that contain disseminated pyrite. Narrow carbonate veins overprint dark green mineral veins
STRUCTURE: Subhorizontal to subvertical veins

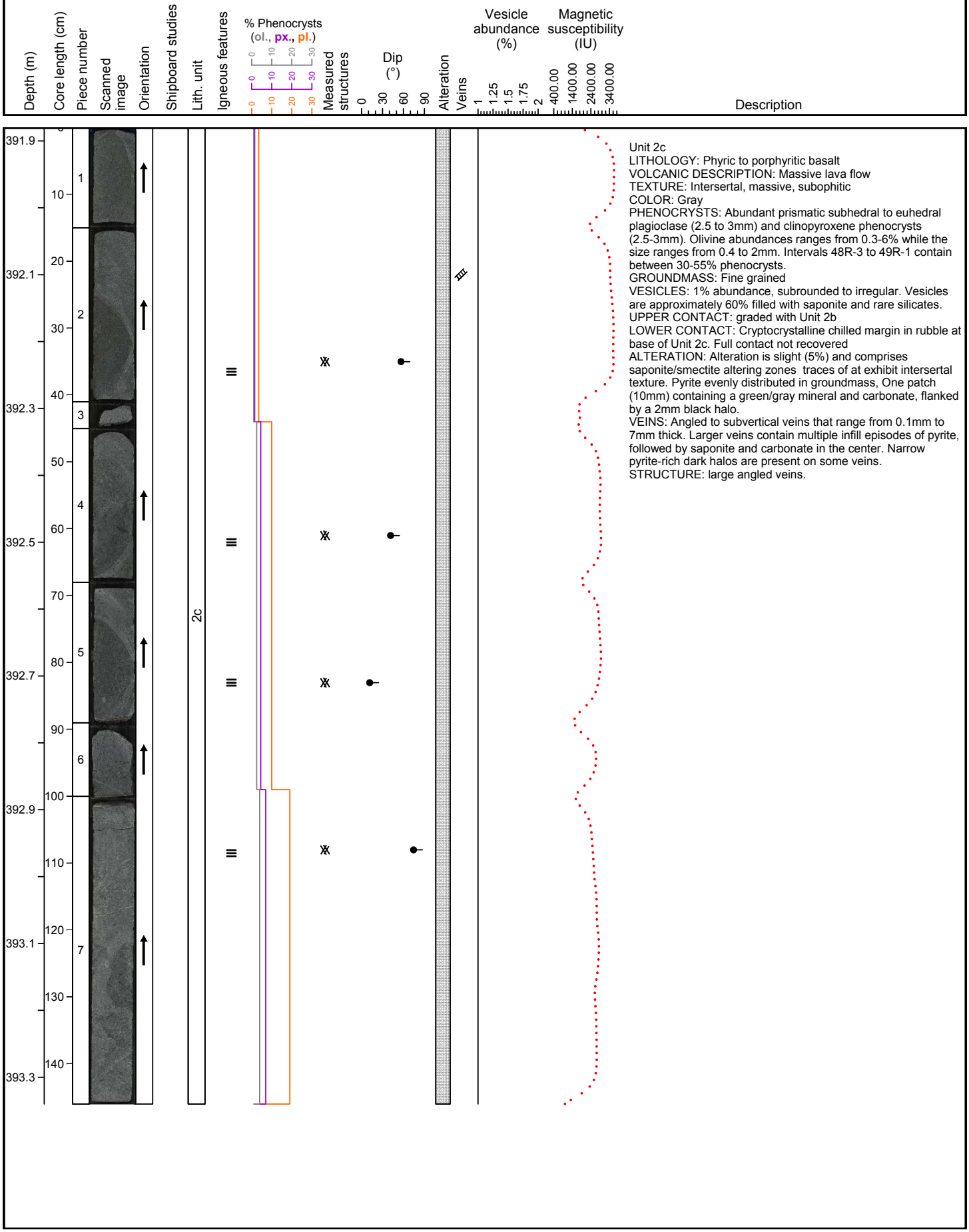
Hole 344-U1414A-48R Section 1, Top of Section: 389.0 m (CSF-A)



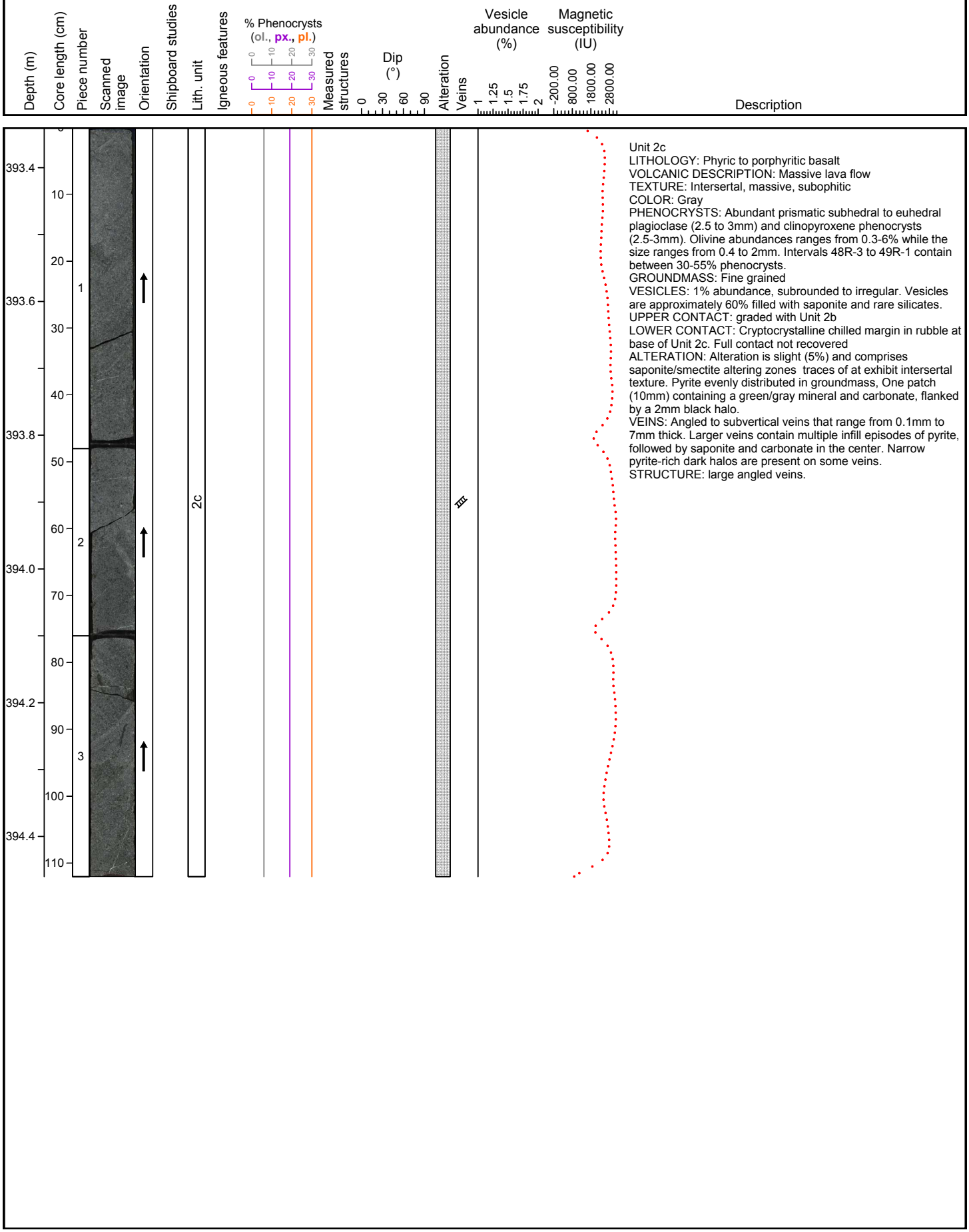
Hole 344-U1414A-48R Section 2, Top of Section: 390.5 m (CSF-A)



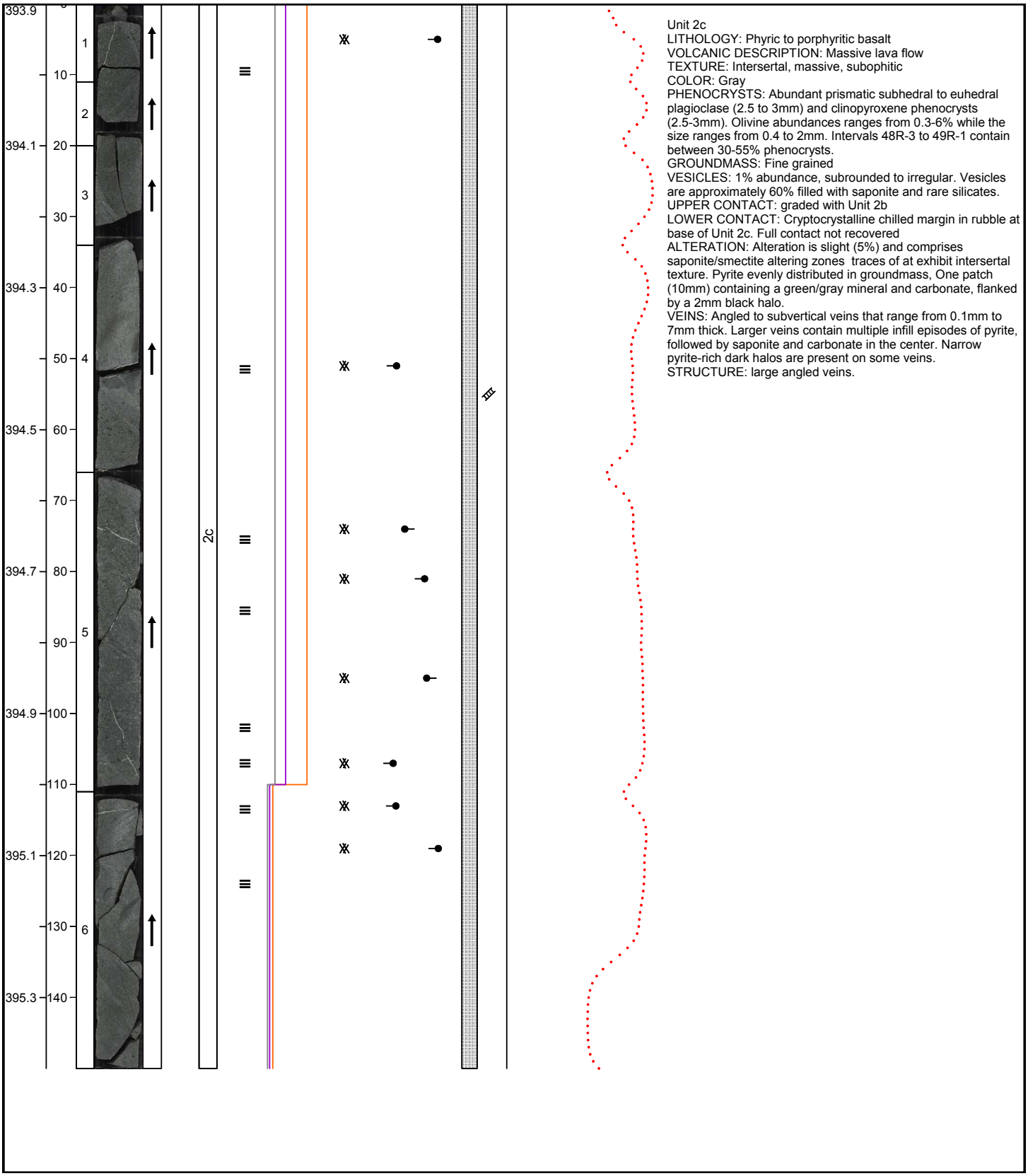
Hole 344-U1414A-48R Section 3, Top of Section: 391.88 m (CSF-A)



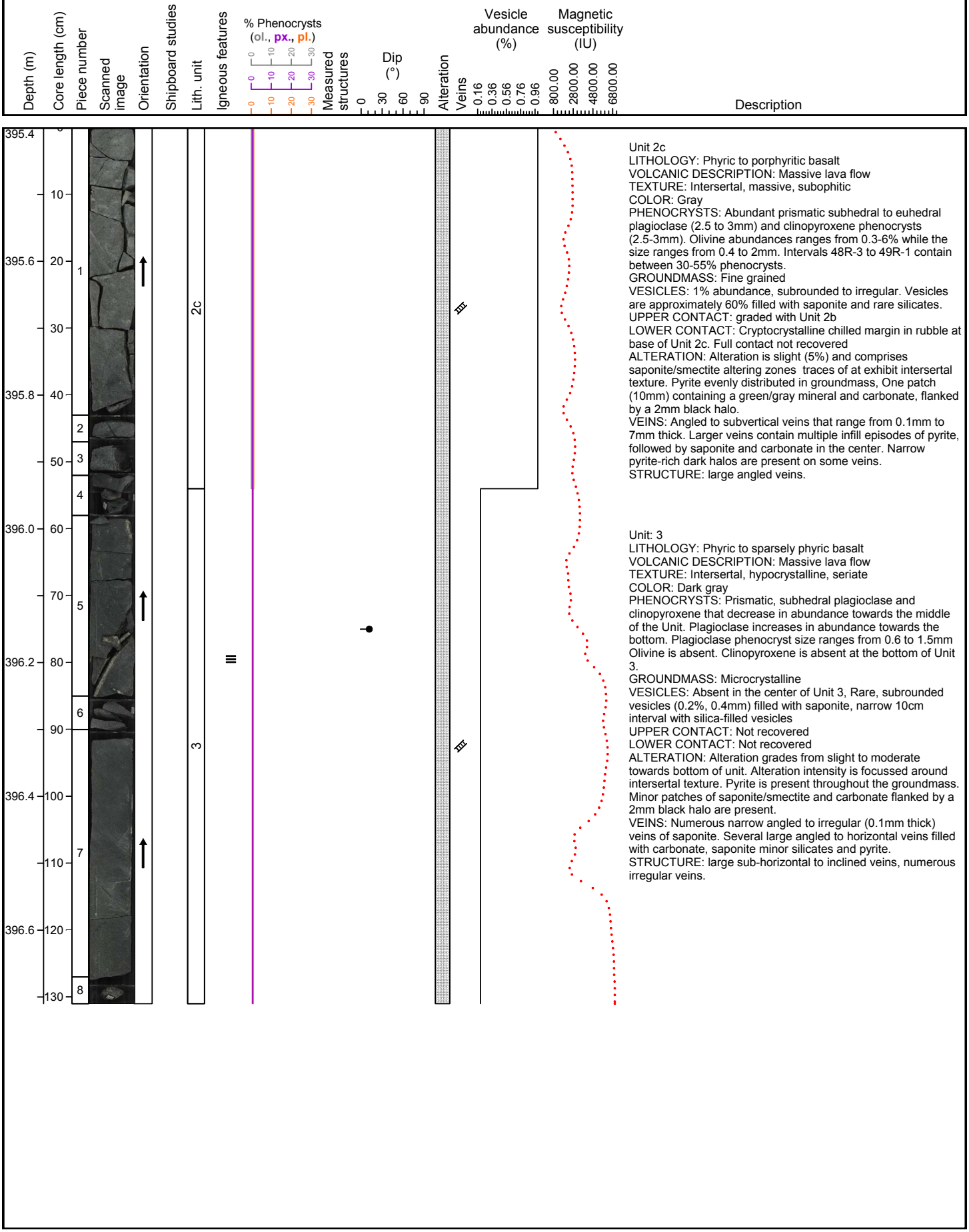
Hole 344-U1414A-48R Section 4, Top of Section: 393.34 m (CSF-A)



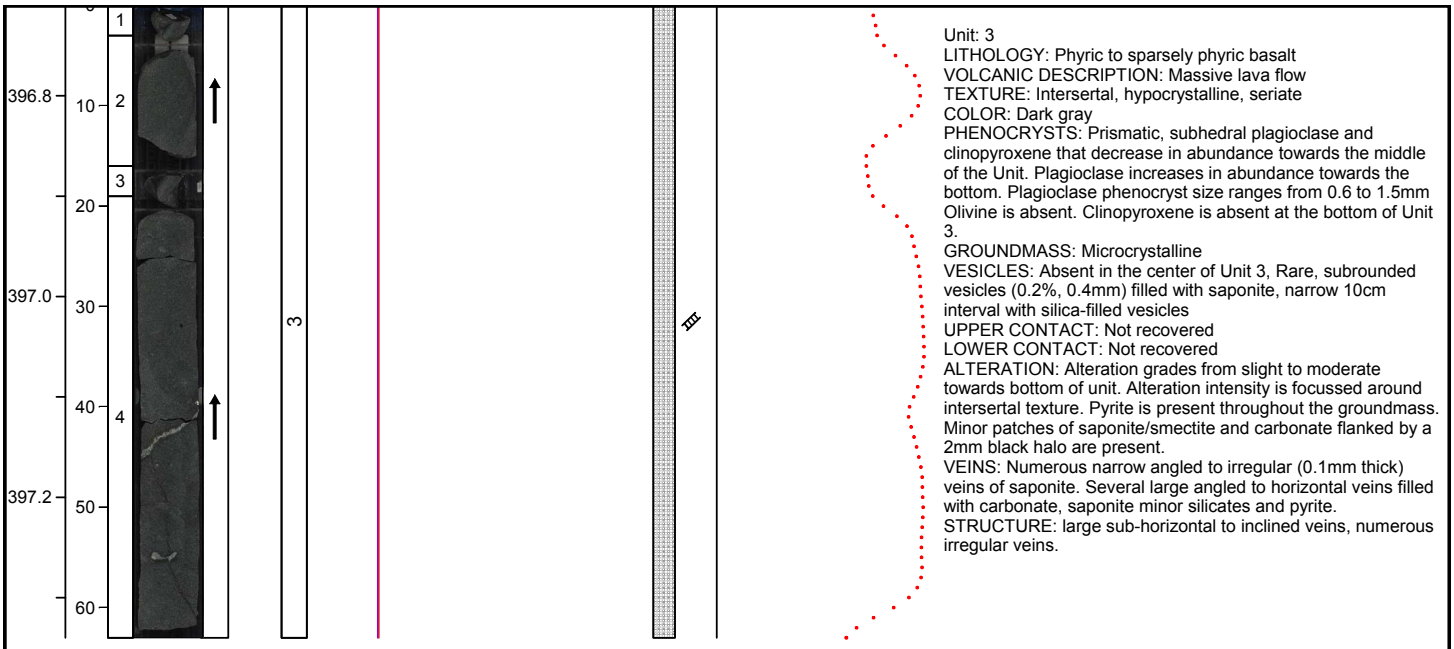
Hole 344-U1414A-49R Section 1, Top of Section: 393.9 m (CSF-A)



Hole 344-U1414A-49R Section 2, Top of Section: 395.4 m (CSF-A)

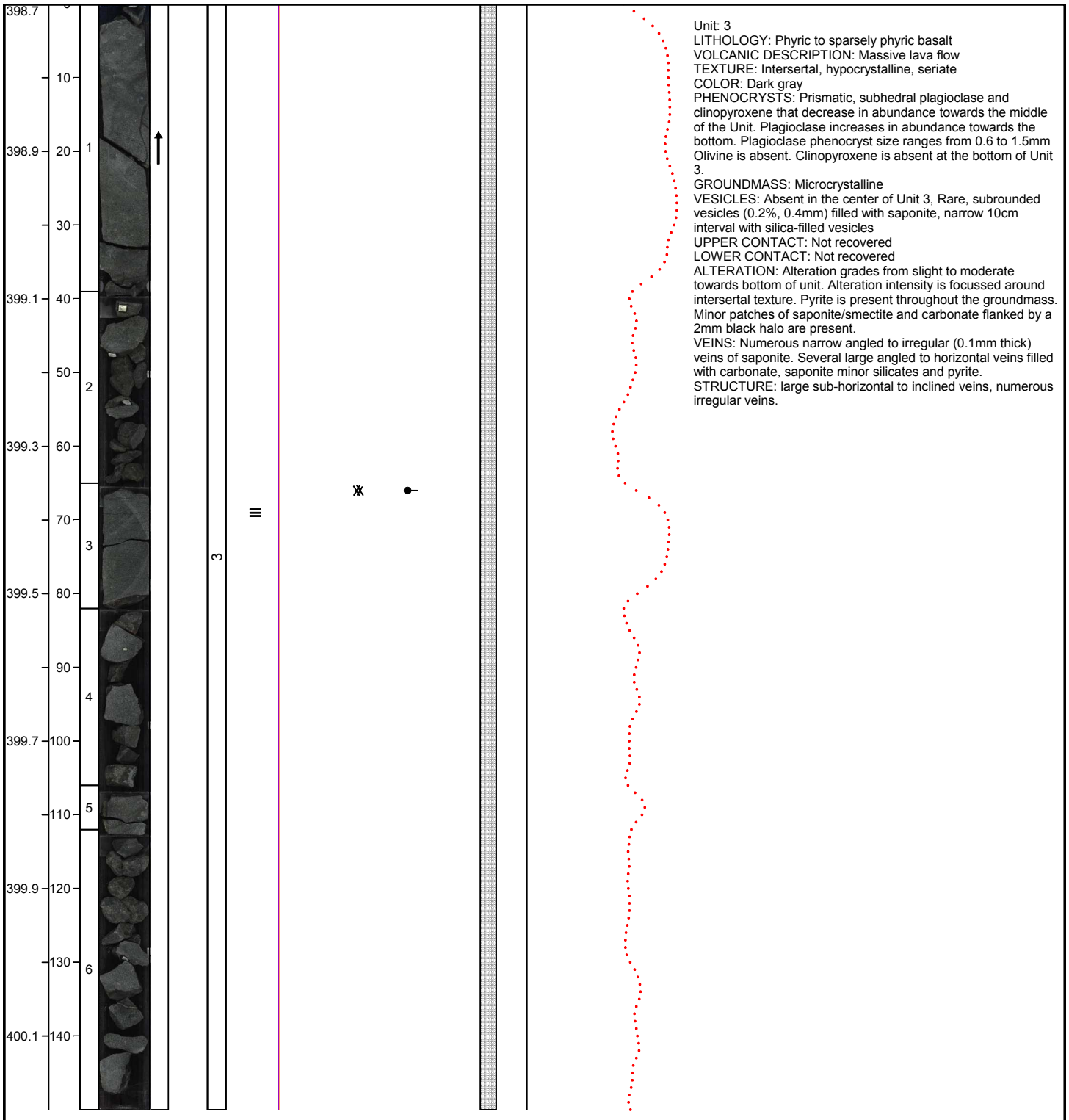


Hole 344-U1414A-49R Section 3, Top of Section: 396.71 m (CSF-A)



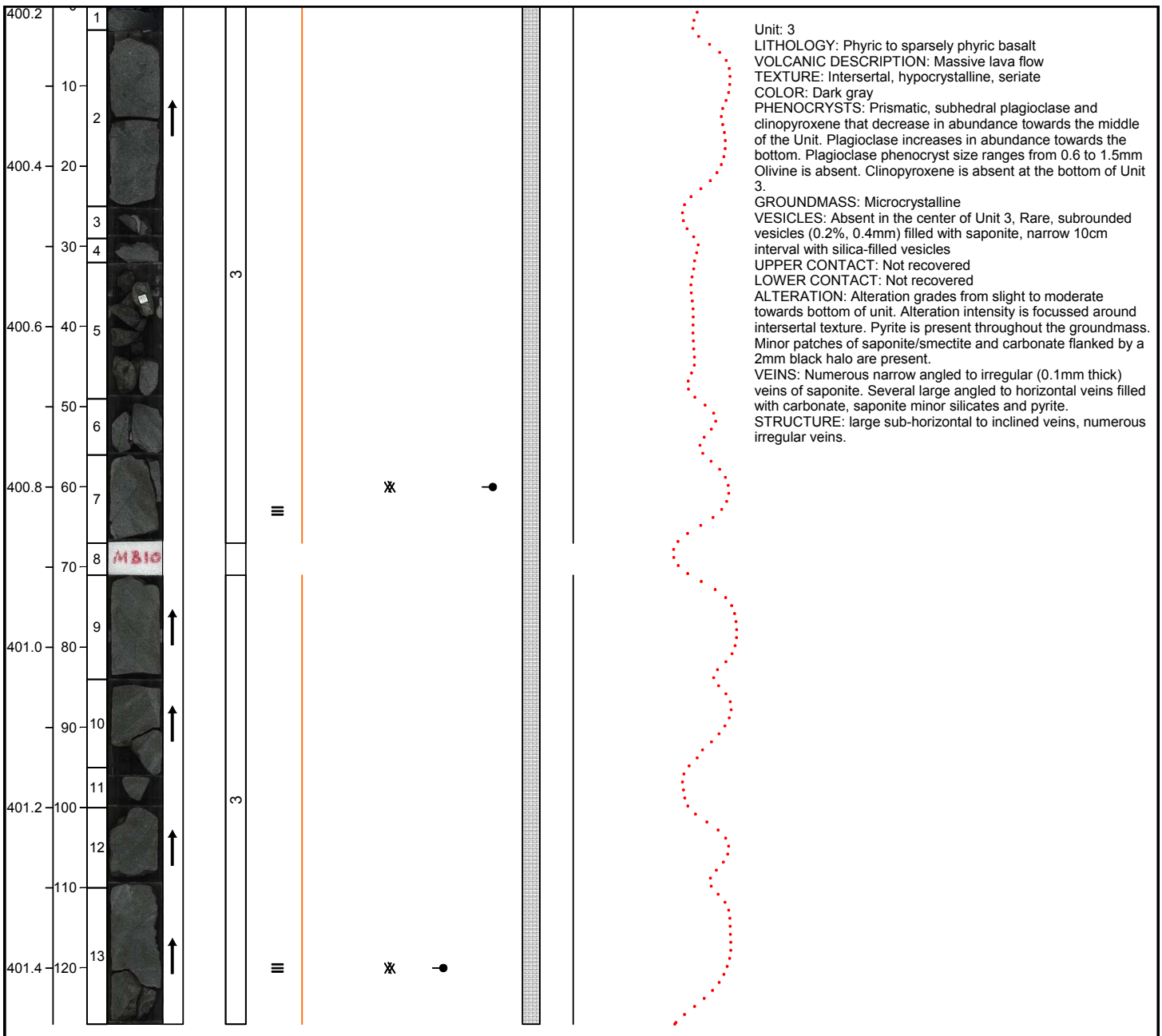
Unit: 3
LITHOLOGY: Phyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Dark gray
PHENOCRYSTS: Prismatic, subhedral plagioclase and clinopyroxene that decrease in abundance towards the middle of the Unit. Plagioclase increases in abundance towards the bottom. Plagioclase phenocryst size ranges from 0.6 to 1.5mm Olivine is absent. Clinopyroxene is absent at the bottom of Unit 3.
GROUNDMASS: Microcrystalline
VESICLES: Absent in the center of Unit 3, Rare, subrounded vesicles (0.2%, 0.4mm) filled with saponite, narrow 10cm interval with silica-filled vesicles
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration grades from slight to moderate towards bottom of unit. Alteration intensity is focussed around intersertal texture. Pyrite is present throughout the groundmass. Minor patches of saponite/smectite and carbonate flanked by a 2mm black halo are present.
VEINS: Numerous narrow angled to irregular (0.1mm thick) veins of saponite. Several large angled to horizontal veins filled with carbonate, saponite minor silicates and pyrite.
STRUCTURE: large sub-horizontal to inclined veins, numerous irregular veins.

Hole 344-U1414A-50R Section 1, Top of Section: 398.7 m (CSF-A)



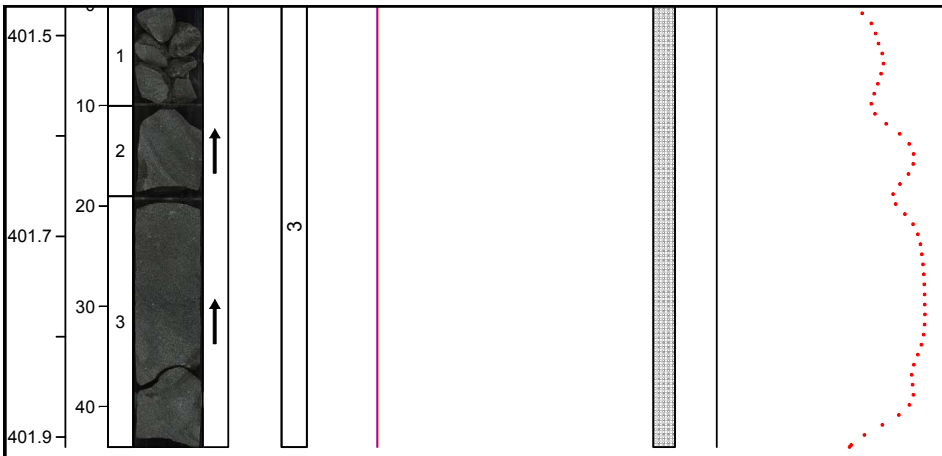
Unit: 3
LITHOLOGY: Phyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Dark gray
PHENOCRYSTS: Prismatic, subhedral plagioclase and clinopyroxene that decrease in abundance towards the middle of the Unit. Plagioclase increases in abundance towards the bottom. Plagioclase phenocryst size ranges from 0.6 to 1.5mm Olivine is absent. Clinopyroxene is absent at the bottom of Unit 3.
GROUNDMASS: Microcrystalline
VESICLES: Absent in the center of Unit 3, Rare, subrounded vesicles (0.2%, 0.4mm) filled with saponite, narrow 10cm interval with silica-filled vesicles
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration grades from slight to moderate towards bottom of unit. Alteration intensity is focussed around intersertal texture. Pyrite is present throughout the groundmass. Minor patches of saponite/smectite and carbonate flanked by a 2mm black halo are present.
VEINS: Numerous narrow angled to irregular (0.1mm thick) veins of saponite. Several large angled to horizontal veins filled with carbonate, saponite minor silicates and pyrite.
STRUCTURE: large sub-horizontal to inclined veins, numerous irregular veins.

Hole 344-U1414A-50R Section 2, Top of Section: 400.2 m (CSF-A)



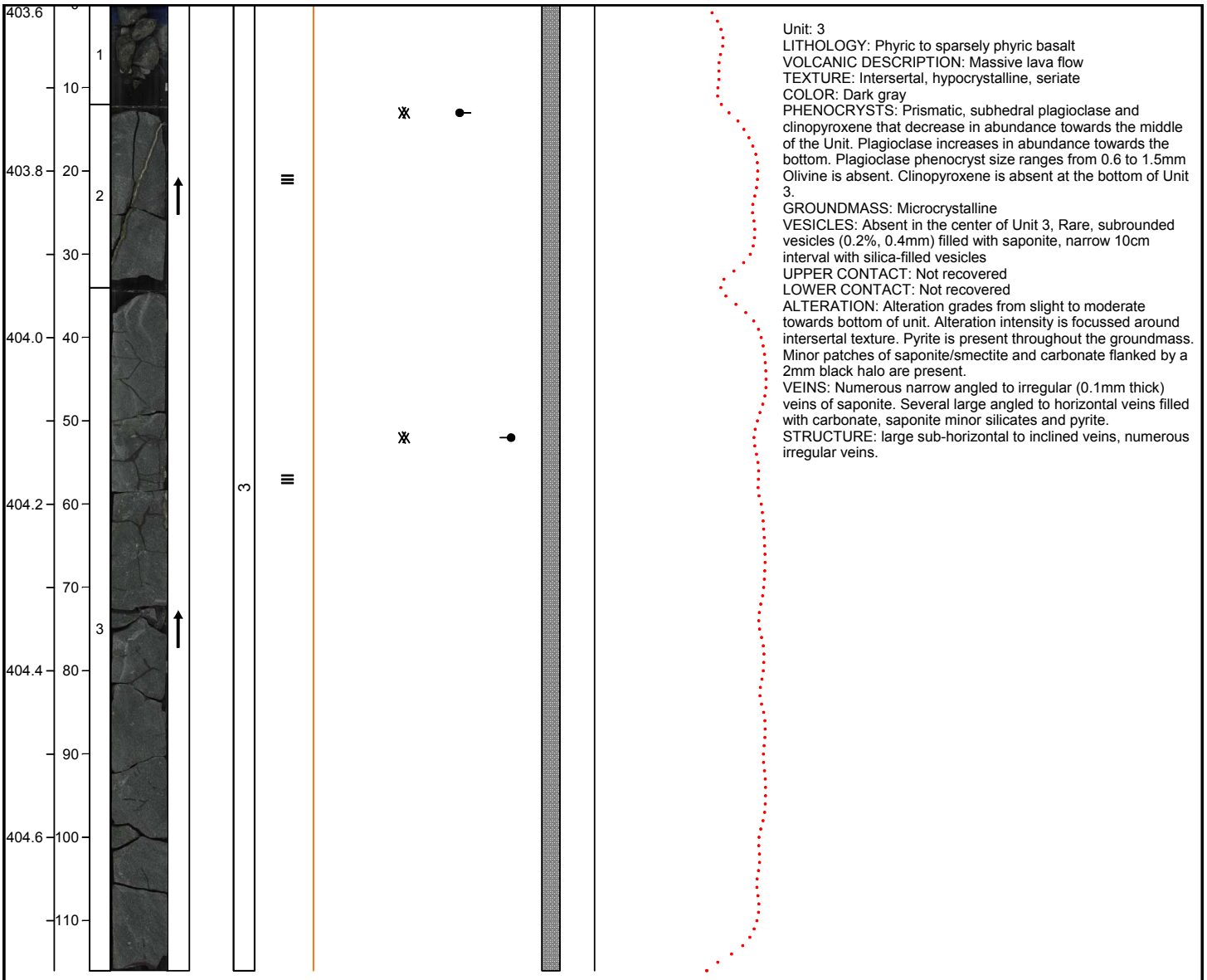
Unit: 3
LITHOLOGY: Phyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Dark gray
PHENOCRYSTS: Prismatic, subhedral plagioclase and clinopyroxene that decrease in abundance towards the middle of the Unit. Plagioclase increases in abundance towards the bottom. Plagioclase phenocryst size ranges from 0.6 to 1.5mm Olivine is absent. Clinopyroxene is absent at the bottom of Unit 3.
GROUNDMASS: Microcrystalline
VESICLES: Absent in the center of Unit 3, Rare, subrounded vesicles (0.2%, 0.4mm) filled with saponite, narrow 10cm interval with silica-filled vesicles
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration grades from slight to moderate towards bottom of unit. Alteration intensity is focussed around intersertal texture. Pyrite is present throughout the groundmass. Minor patches of saponite/smectite and carbonate flanked by a 2mm black halo are present.
VEINS: Numerous narrow angled to irregular (0.1mm thick) veins of saponite. Several large angled to horizontal veins filled with carbonate, saponite minor silicates and pyrite.
STRUCTURE: large sub-horizontal to inclined veins, numerous irregular veins.

Hole 344-U1414A-50R Section 3, Top of Section: 401.47 m (CSF-A)

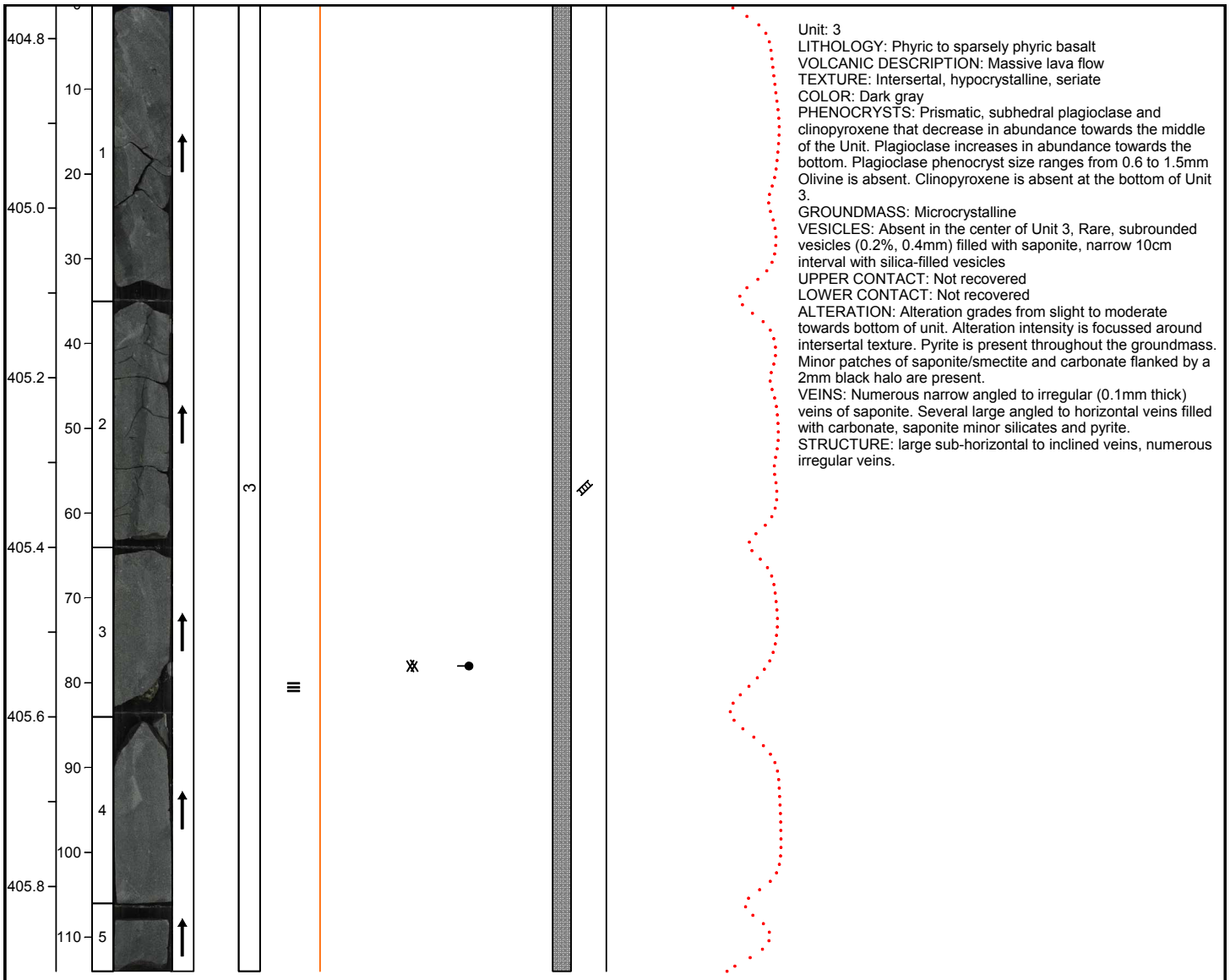


Unit: 3
LITHOLOGY: Phyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Dark gray
PHENOCRYSTS: Prismatic, subhedral plagioclase and clinopyroxene that decrease in abundance towards the middle of the Unit. Plagioclase increases in abundance towards the bottom. Plagioclase phenocryst size ranges from 0.6 to 1.5mm Olivine is absent. Clinopyroxene is absent at the bottom of Unit 3.
GROUNDMASS: Microcrystalline
VESICLES: Absent in the center of Unit 3, Rare, subrounded vesicles (0.2%, 0.4mm) filled with saponite, narrow 10cm interval with silica-filled vesicles
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration grades from slight to moderate towards bottom of unit. Alteration intensity is focussed around intersertal texture. Pyrite is present throughout the groundmass. Minor patches of saponite/smectite and carbonate flanked by a 2mm black halo are present.
VEINS: Numerous narrow angled to irregular (0.1mm thick) veins of saponite. Several large angled to horizontal veins filled with carbonate, saponite minor silicates and pyrite.
STRUCTURE: large sub-horizontal to inclined veins, numerous irregular veins.

Hole 344-U1414A-51R Section 1, Top of Section: 403.6 m (CSF-A)

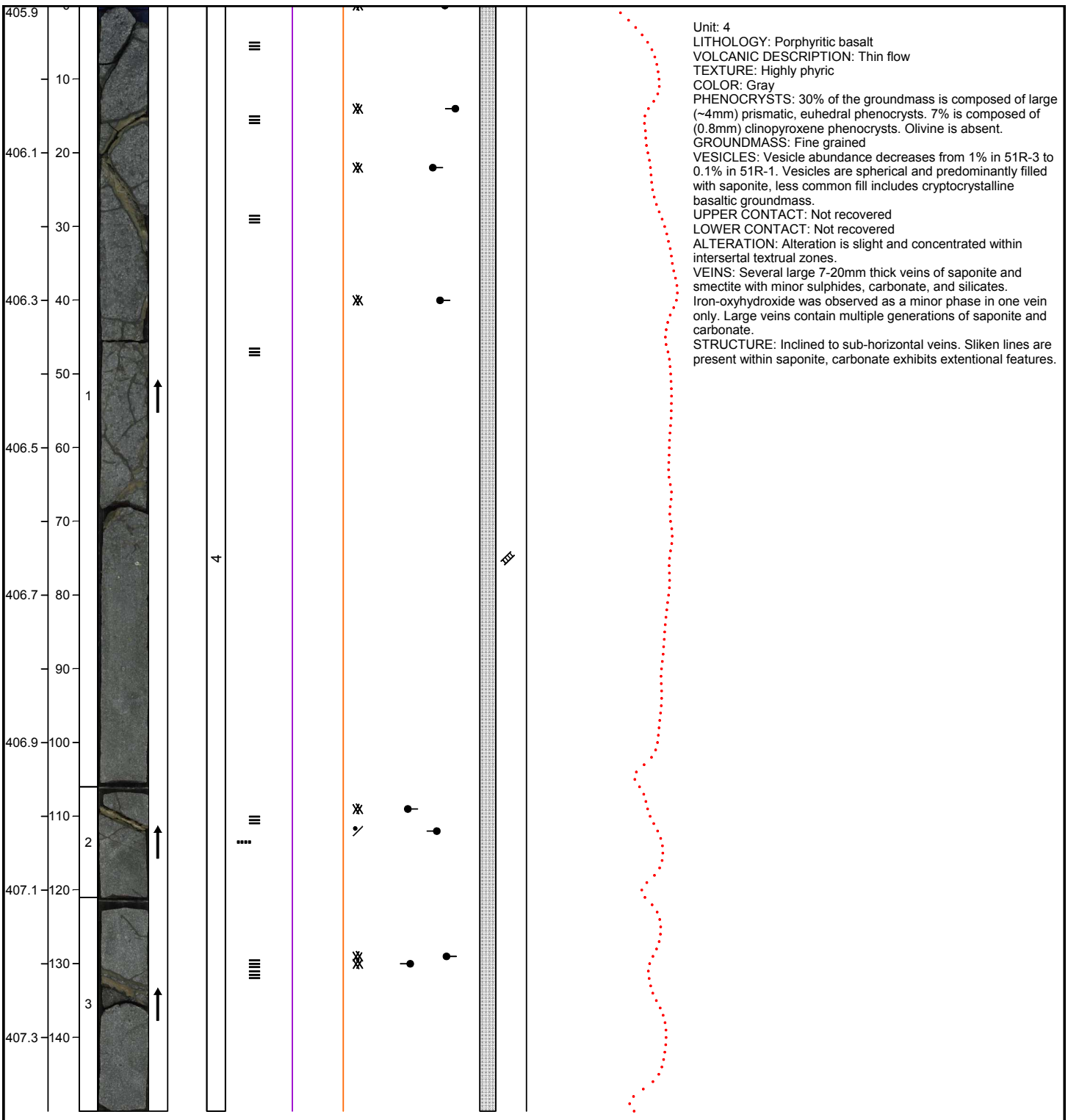


Hole 344-U1414A-51R Section 2, Top of Section: 404.76 m (CSF-A)

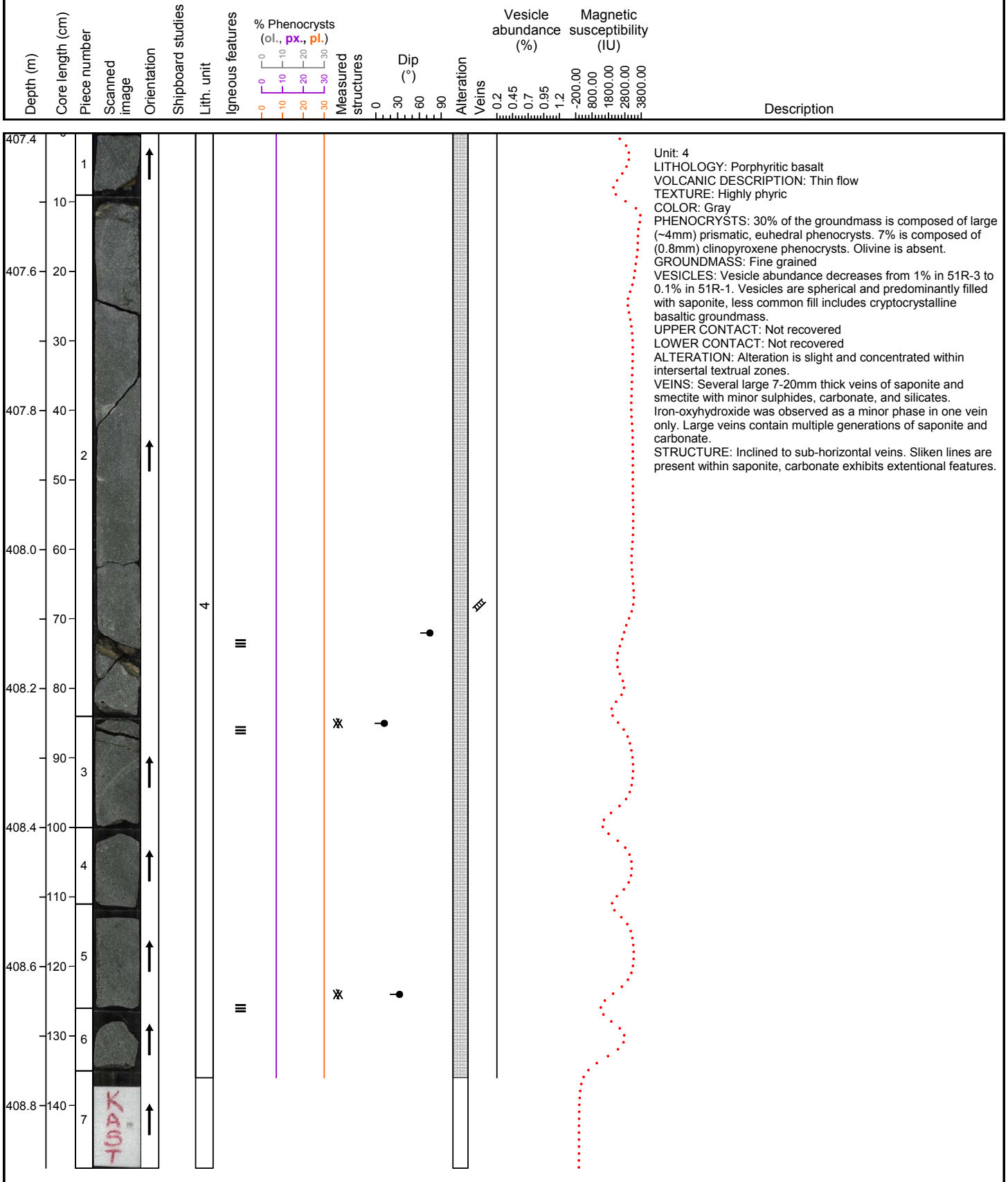


Unit: 3
LITHOLOGY: Phyric to sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Dark gray
PHENOCRYSTS: Prismatic, subhedral plagioclase and clinopyroxene that decrease in abundance towards the middle of the Unit. Plagioclase increases in abundance towards the bottom. Plagioclase phenocryst size ranges from 0.6 to 1.5mm Olivine is absent. Clinopyroxene is absent at the bottom of Unit 3.
GROUNDMASS: Microcrystalline
VESICLES: Absent in the center of Unit 3, Rare, subrounded vesicles (0.2%, 0.4mm) filled with saponite, narrow 10cm interval with silica-filled vesicles
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration grades from slight to moderate towards bottom of unit. Alteration intensity is focussed around intersertal texture. Pyrite is present throughout the groundmass. Minor patches of saponite/smectite and carbonate flanked by a 2mm black halo are present.
VEINS: Numerous narrow angled to irregular (0.1mm thick) veins of saponite. Several large angled to horizontal veins filled with carbonate, saponite minor silicates and pyrite.
STRUCTURE: large sub-horizontal to inclined veins, numerous irregular veins.

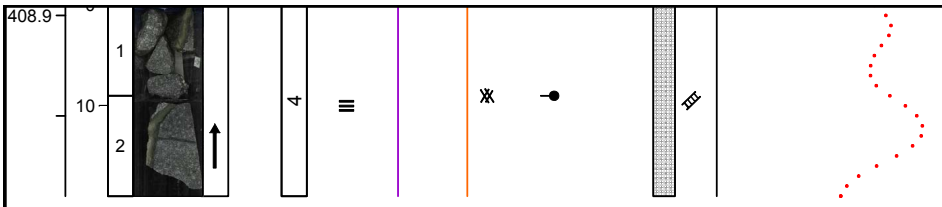
Hole 344-U1414A-51R Section 3, Top of Section: 405.9 m (CSF-A)



Hole 344-U1414A-51R Section 4, Top of Section: 407.4 m (CSF-A)

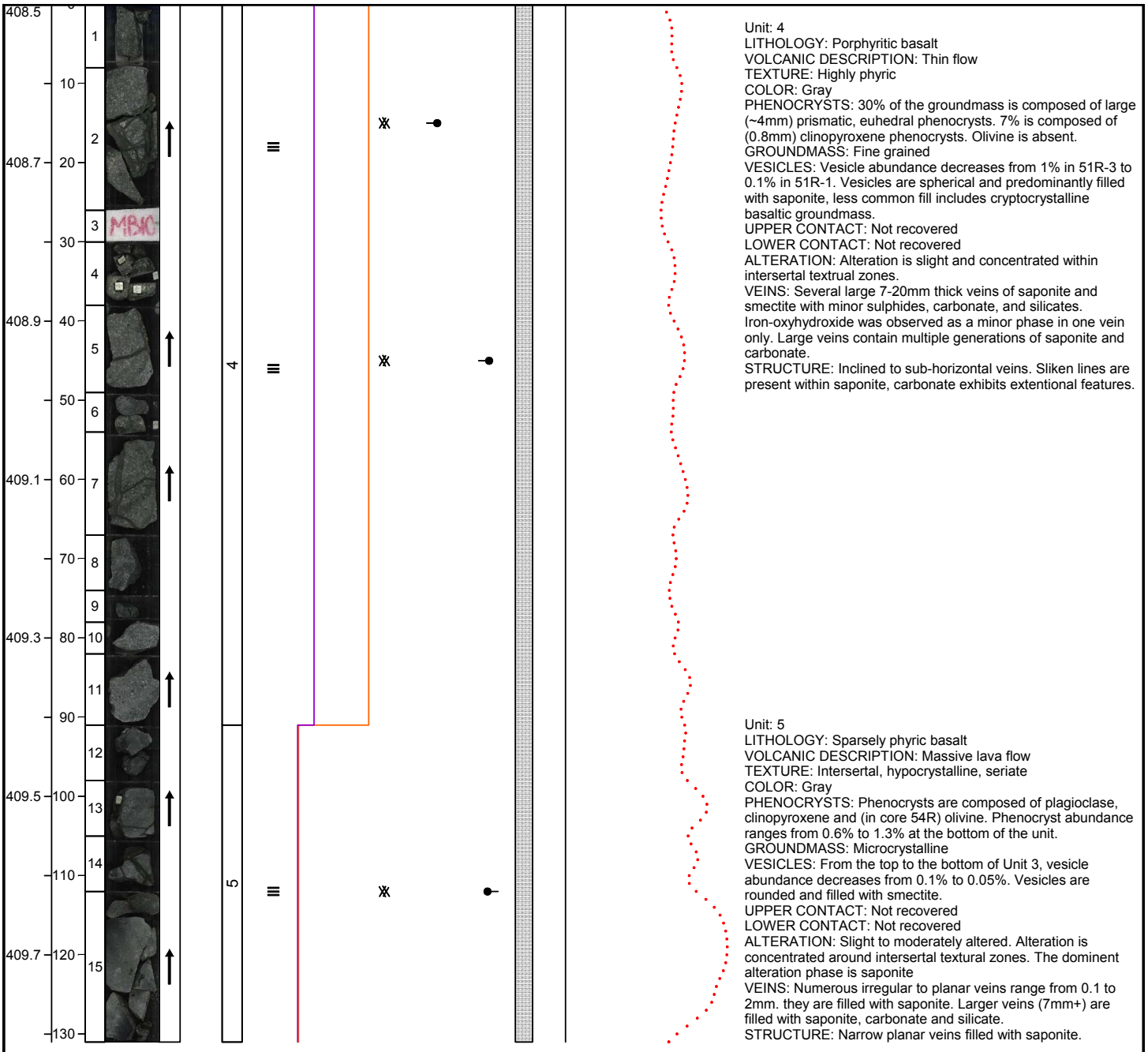


Hole 344-U1414A-51R Section 5, Top of Section: 408.89 m (CSF-A)



Unit: 4
LITHOLOGY: Porphyritic basalt
VOLCANIC DESCRIPTION: Thin flow
TEXTURE: Highly phyric
COLOR: Gray
PHENOCRYSTS: 30% of the groundmass is composed of large (~4mm) prismatic, euhedral phenocrysts. 7% is composed of (0.8mm) clinopyroxene phenocrysts. Olivine is absent.
GROUNDMASS: Fine grained
VESICLES: Vesicle abundance decreases from 1% in 51R-3 to 0.1% in 51R-1. Vesicles are spherical and predominantly filled with saponite, less common fill includes cryptocrystalline basaltic groundmass.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration is slight and concentrated within intersertal textrual zones.
VEINS: Several large 7-20mm thick veins of saponite and smectite with minor sulphides, carbonate, and silicates. Iron-oxyhydroxide was observed as a minor phase in one vein only. Large veins contain multiple generations of saponite and carbonate.
STRUCTURE: Inclined to sub-horizontal veins. Sliken lines are present within saponite, carbonate exhibits extentional features.

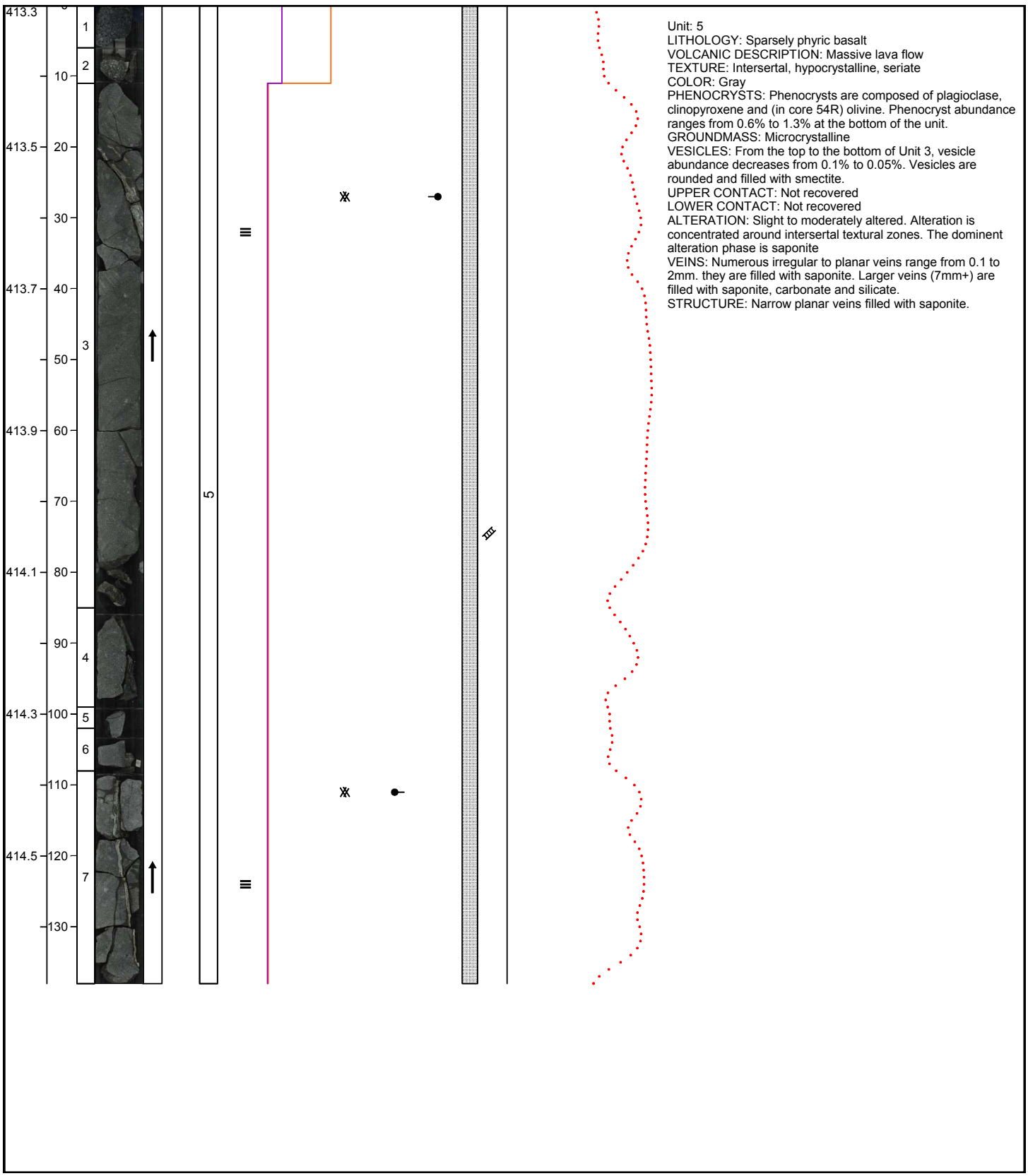
Hole 344-U1414A-52R Section 1, Top of Section: 408.5 m (CSF-A)



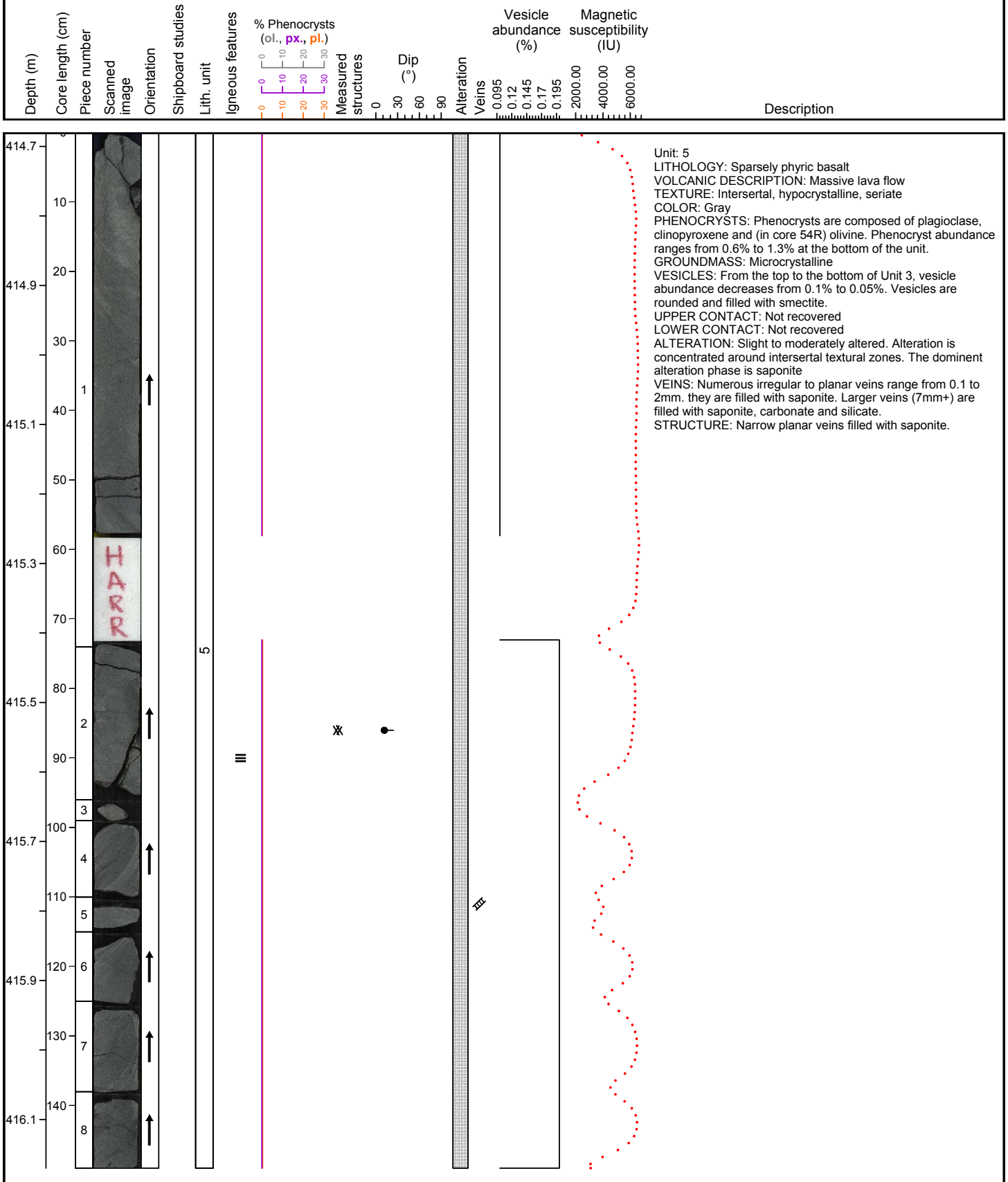
Unit: 4
LITHOLOGY: Porphyritic basalt
VOLCANIC DESCRIPTION: Thin flow
TEXTURE: Highly phyric
COLOR: Gray
PHENOCRYSTS: 30% of the groundmass is composed of large (~4mm) prismatic, euhedral phenocrysts. 7% is composed of (0.8mm) clinopyroxene phenocrysts. Olivine is absent.
GROUNDMASS: Fine grained
VESICLES: Vesicle abundance decreases from 1% in 51R-3 to 0.1% in 51R-1. Vesicles are spherical and predominantly filled with saponite, less common fill includes cryptocrystalline basaltic groundmass.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration is slight and concentrated within intersertal textrual zones.
VEINS: Several large 7-20mm thick veins of saponite and smectite with minor sulphides, carbonate, and silicates. Iron-oxyhydroxide was observed as a minor phase in one vein only. Large veins contain multiple generations of saponite and carbonate.
STRUCTURE: Inclined to sub-horizontal veins. Sliken lines are present within saponite, carbonate exhibits extentional features.

Unit: 5
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Gray
PHENOCRYSTS: Phenocrysts are composed of plagioclase, clinopyroxene and (in core 54R) olivine. Phenocryst abundance ranges from 0.6% to 1.3% at the bottom of the unit.
GROUNDMASS: Microcrystalline
VESICLES: From the top to the bottom of Unit 3, vesicle abundance decreases from 0.1% to 0.05%. Vesicles are rounded and filled with smectite.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Slight to moderately altered. Alteration is concentrated around intersertal textural zones. The dominent alteration phase is saponite
VEINS: Numerous irregular to planar veins range from 0.1 to 2mm. they are filled with saponite. Larger veins (7mm+) are filled with saponite, carbonate and silicate.
STRUCTURE: Narrow planar veins filled with saponite.

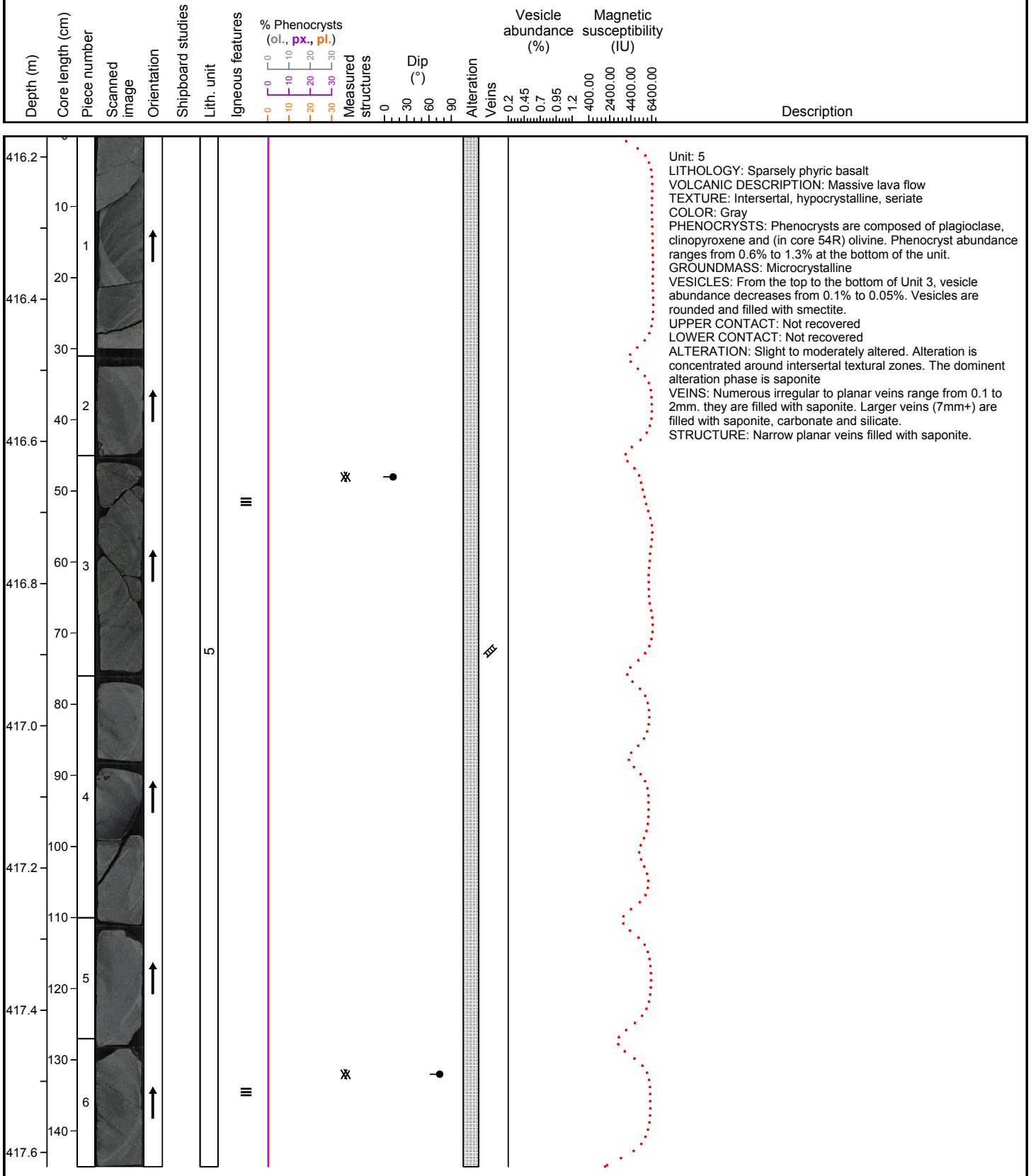
Hole 344-U1414A-53R Section 1, Top of Section: 413.3 m (CSF-A)



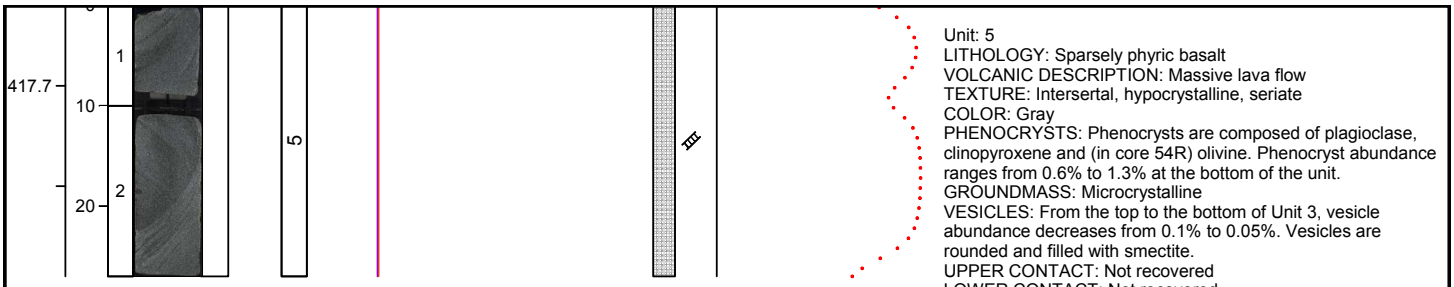
Hole 344-U1414A-53R Section 2, Top of Section: 414.68 m (CSF-A)



Hole 344-U1414A-53R Section 3, Top of Section: 416.17 m (CSF-A)

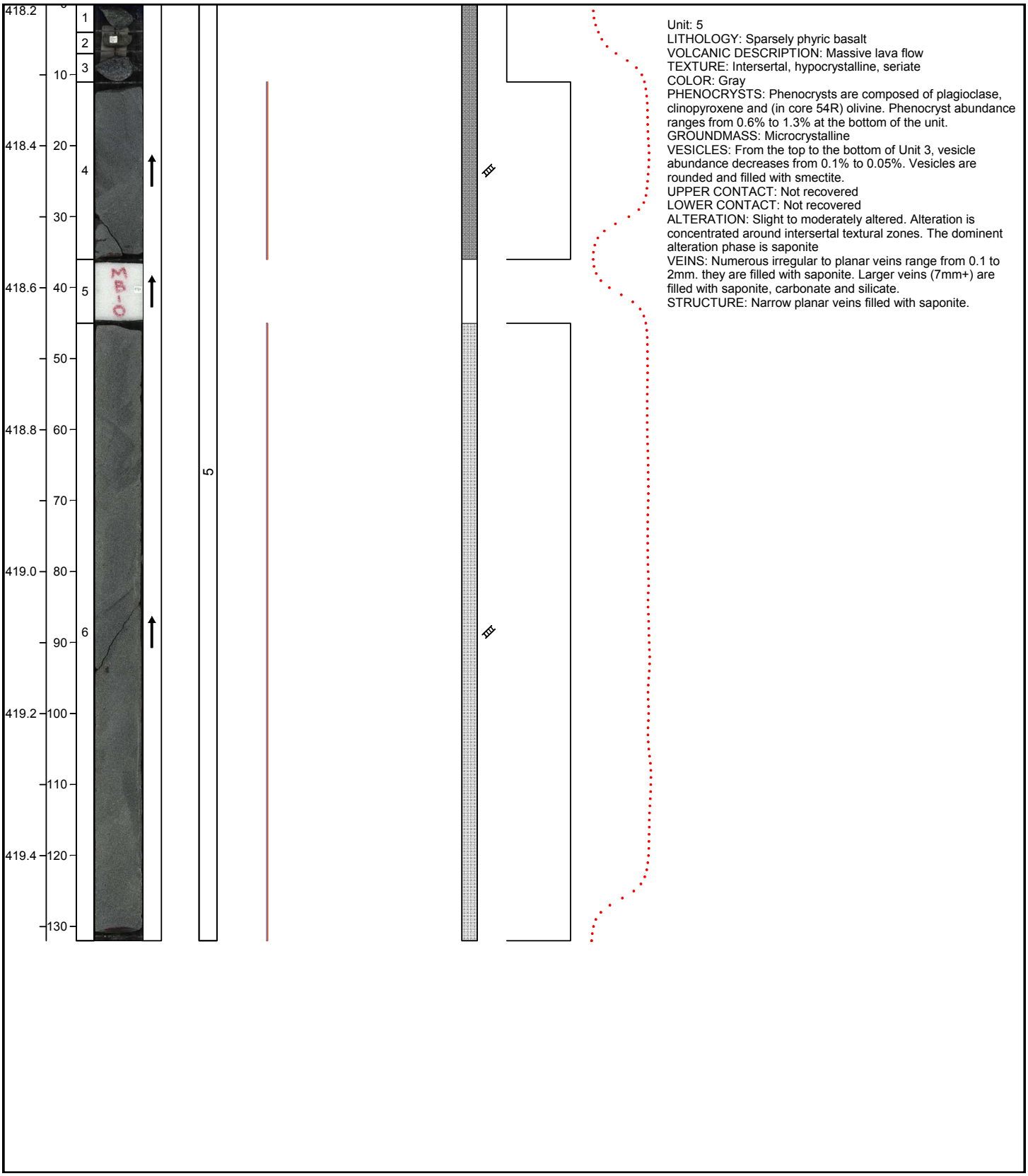


Hole 344-U1414A-53R Section 4, Top of Section: 417.62 m (CSF-A)

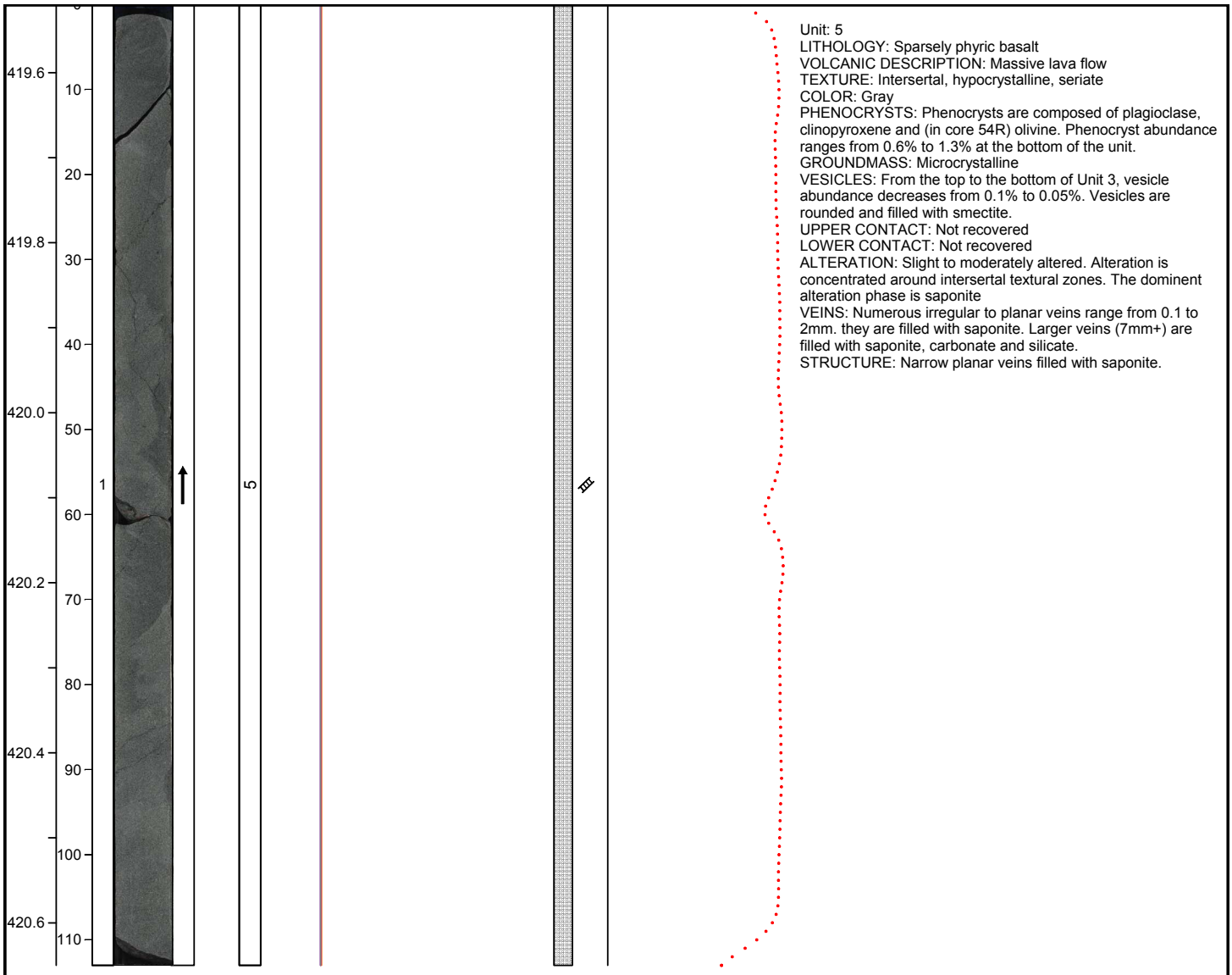


Unit: 5
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Gray
PHENOCRYSTS: Phenocrysts are composed of plagioclase, clinopyroxene and (in core 54R) olivine. Phenocryst abundance ranges from 0.6% to 1.3% at the bottom of the unit.
GROUNDMASS: Microcrystalline
VESICLES: From the top to the bottom of Unit 3, vesicle abundance decreases from 0.1% to 0.05%. Vesicles are rounded and filled with smectite.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Slight to moderately altered. Alteration is concentrated around intersertal textural zones. The dominent alteration phase is saponite
VEINS: Numerous irregular to planar veins range from 0.1 to 2mm. they are filled with saponite. Larger veins (7mm+) are filled with saponite, carbonate and silicate.
STRUCTURE: Narrow planar veins filled with saponite.

Hole 344-U1414A-54R Section 1, Top of Section: 418.2 m (CSF-A)

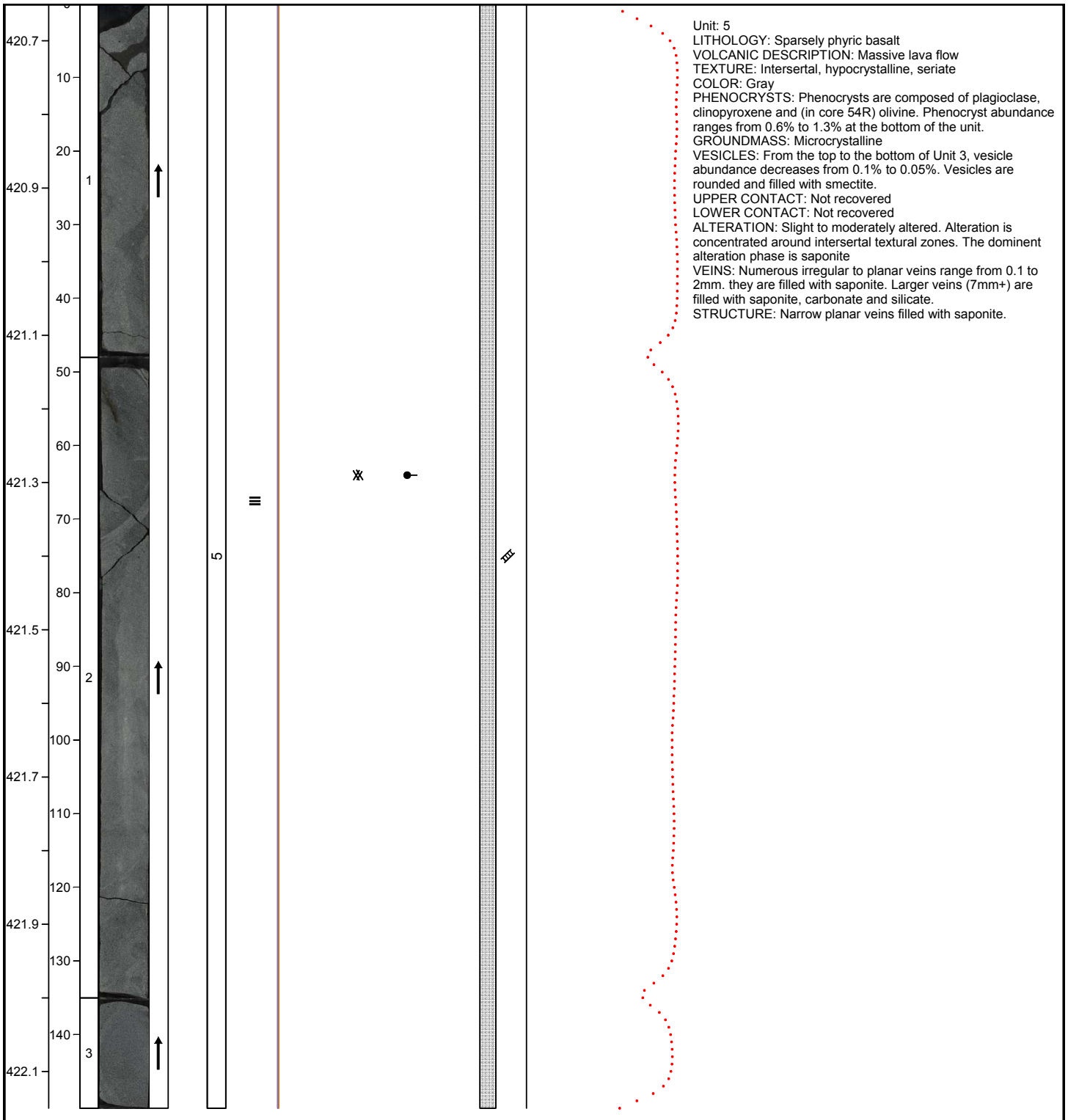


Hole 344-U1414A-54R Section 2, Top of Section: 419.52 m (CSF-A)

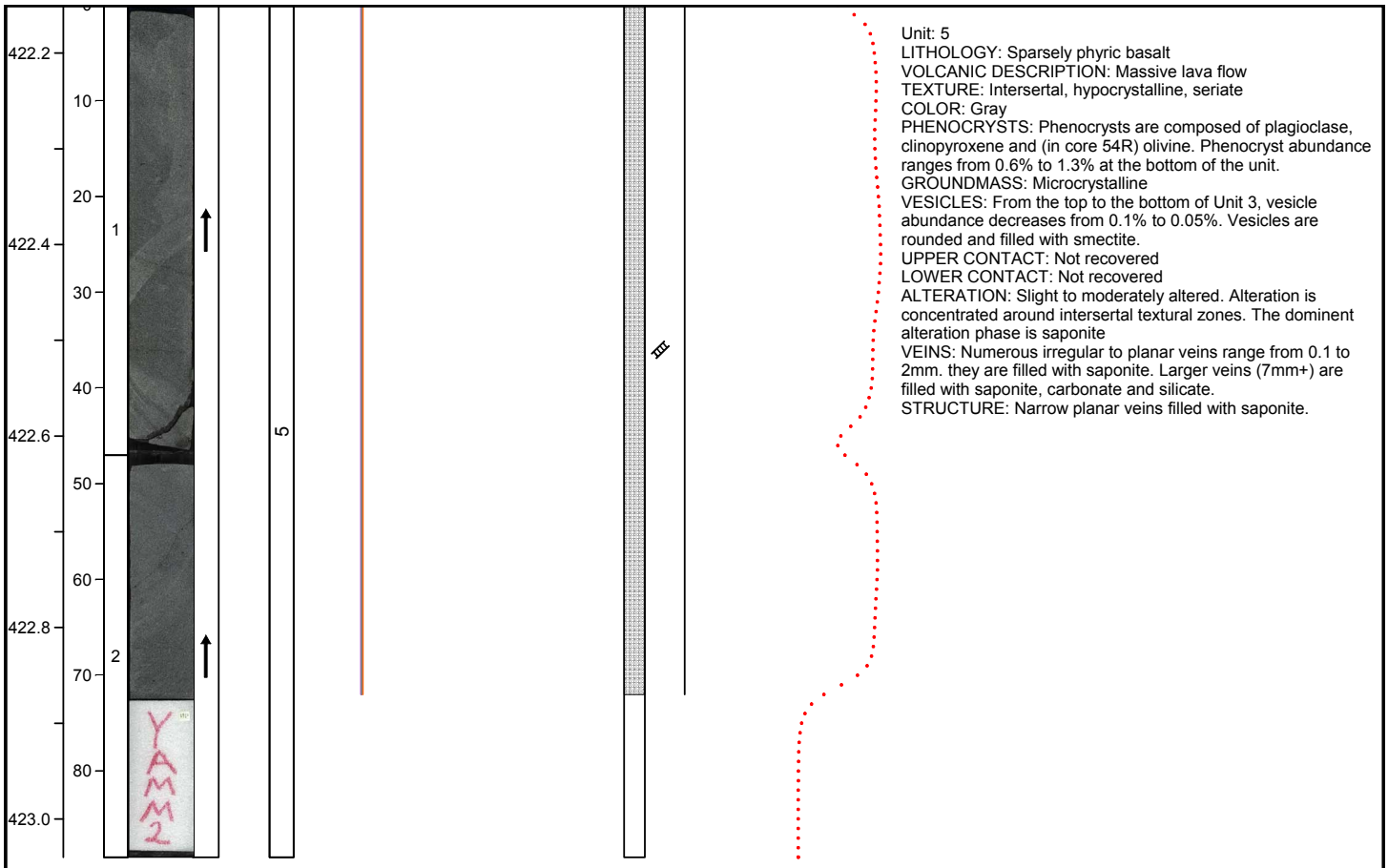


Unit: 5
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Gray
PHENOCRYSTS: Phenocrysts are composed of plagioclase, clinopyroxene and (in core 54R) olivine. Phenocryst abundance ranges from 0.6% to 1.3% at the bottom of the unit.
GROUNDMASS: Microcrystalline
VESICLES: From the top to the bottom of Unit 3, vesicle abundance decreases from 0.1% to 0.05%. Vesicles are rounded and filled with smectite.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Slight to moderately altered. Alteration is concentrated around intersertal textural zones. The dominent alteration phase is saponite
VEINS: Numerous irregular to planar veins range from 0.1 to 2mm. they are filled with saponite. Larger veins (7mm+) are filled with saponite, carbonate and silicate.
STRUCTURE: Narrow planar veins filled with saponite.

Hole 344-U1414A-54R Section 3, Top of Section: 420.65 m (CSF-A)

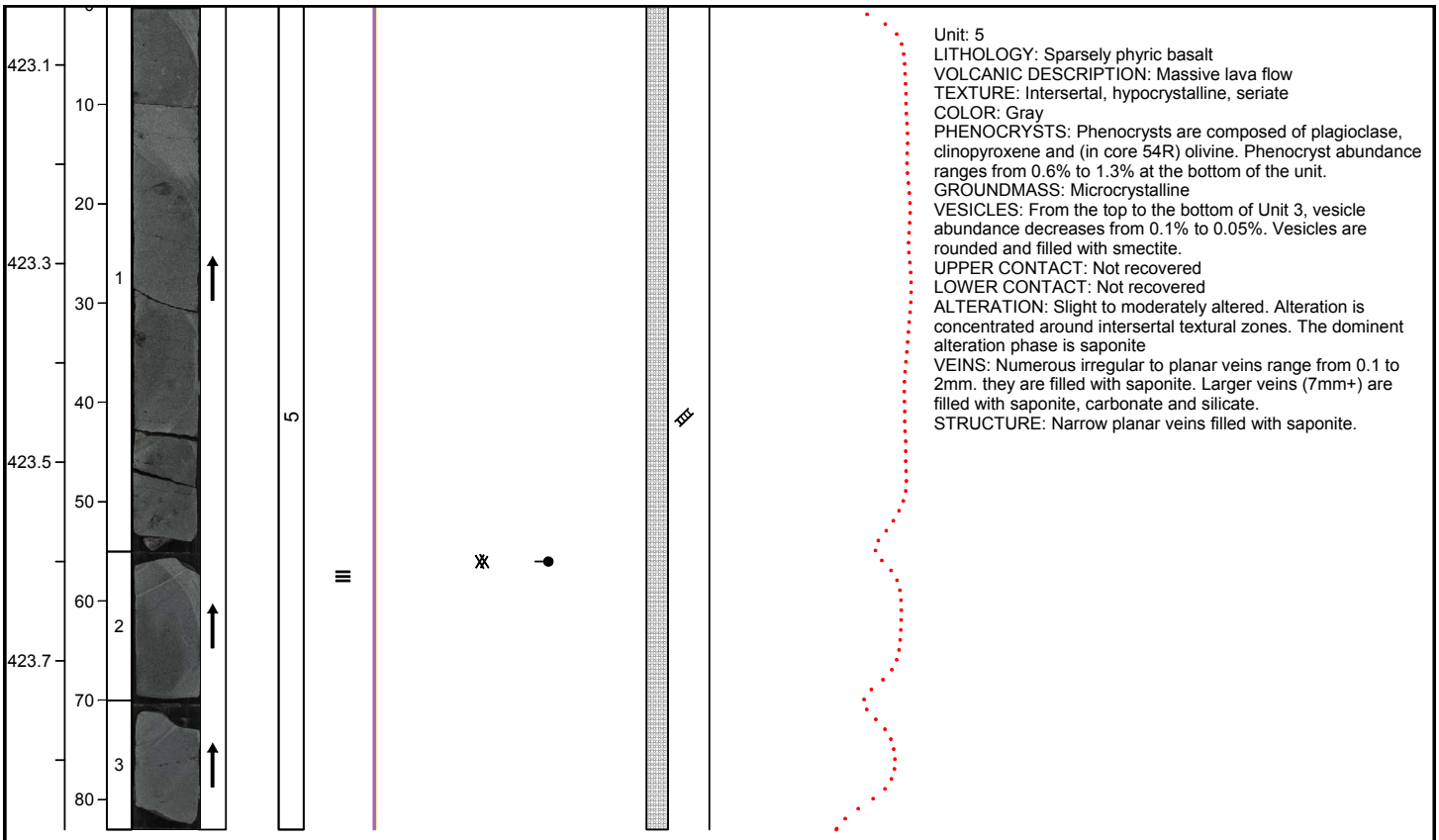


Hole 344-U1414A-54R Section 4, Top of Section: 422.15 m (CSF-A)



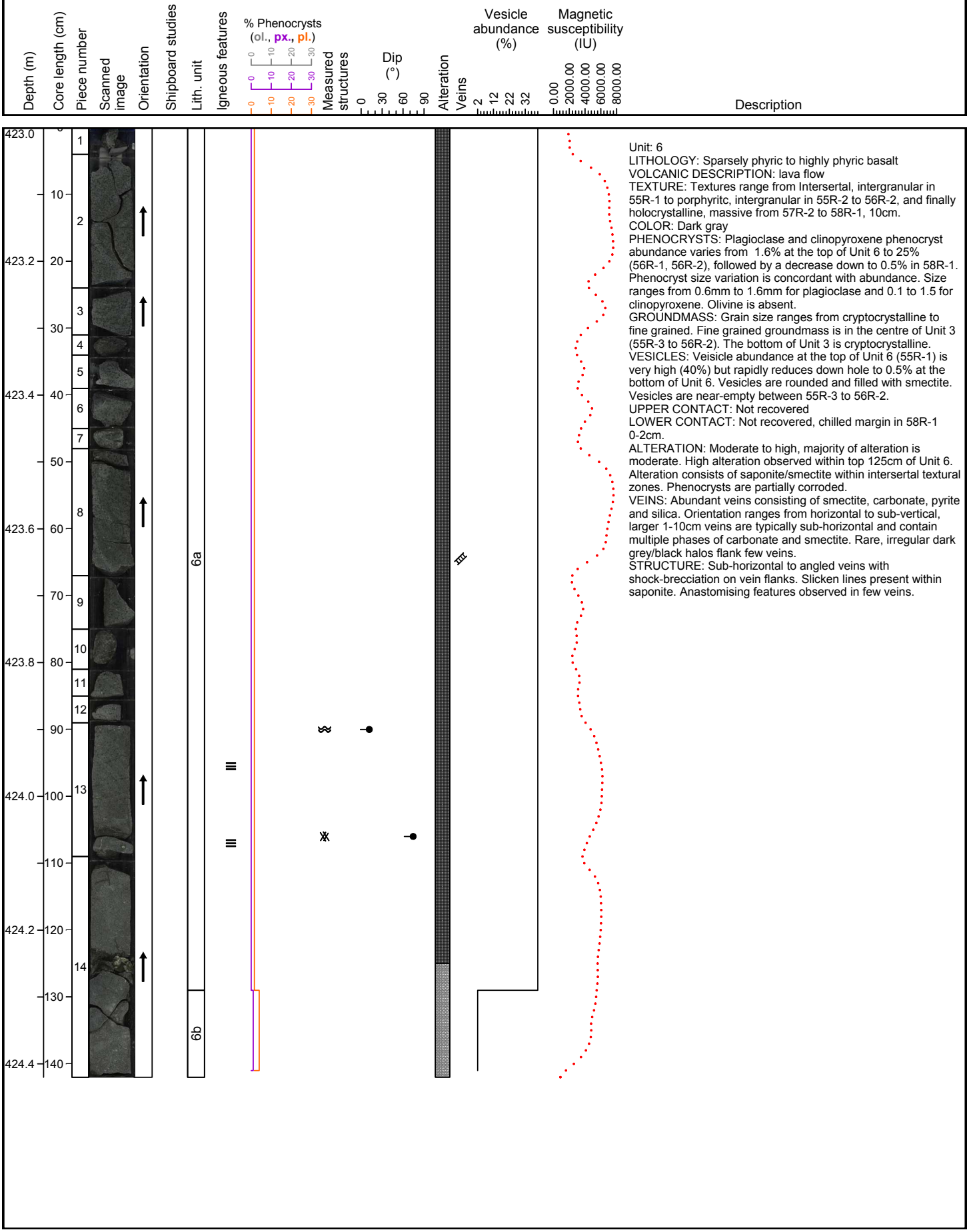
Unit: 5
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Gray
PHENOCRYSTS: Phenocrysts are composed of plagioclase, clinopyroxene and (in core 54R) olivine. Phenocryst abundance ranges from 0.6% to 1.3% at the bottom of the unit.
GROUNDMASS: Microcrystalline
VESICLES: From the top to the bottom of Unit 3, vesicle abundance decreases from 0.1% to 0.05%. Vesicles are rounded and filled with smectite.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Slight to moderately altered. Alteration is concentrated around intersertal textural zones. The dominent alteration phase is saponite
VEINS: Numerous irregular to planar veins range from 0.1 to 2mm. they are filled with saponite. Larger veins (7mm+) are filled with saponite, carbonate and silicate.
STRUCTURE: Narrow planar veins filled with saponite.

Hole 344-U1414A-54R Section 5, Top of Section: 423.04 m (CSF-A)



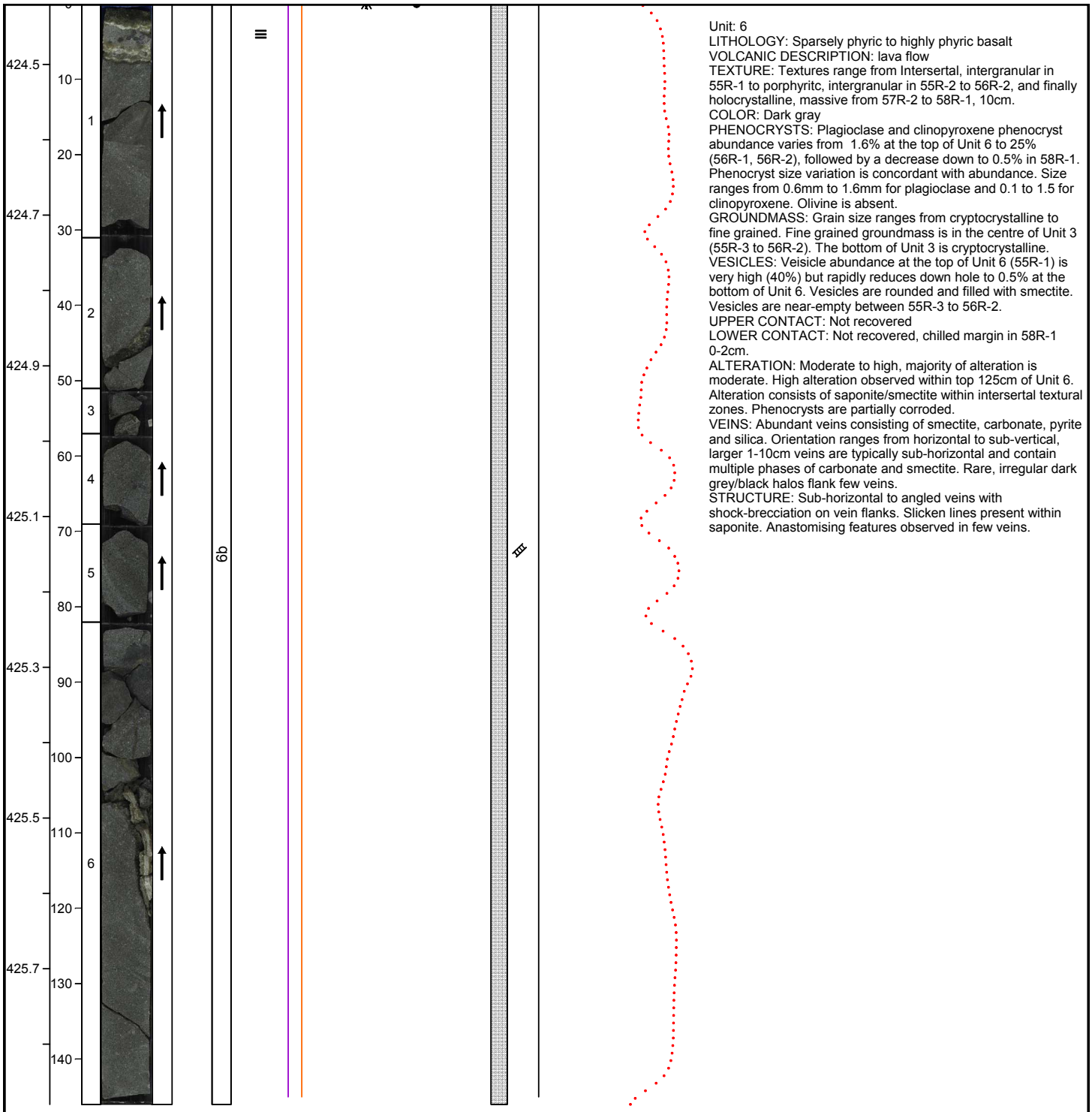
Unit: 5
LITHOLOGY: Sparsely phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Intersertal, hypocrystalline, seriate
COLOR: Gray
PHENOCRYSTS: Phenocrysts are composed of plagioclase, clinopyroxene and (in core 54R) olivine. Phenocryst abundance ranges from 0.6% to 1.3% at the bottom of the unit.
GROUNDMASS: Microcrystalline
VESICLES: From the top to the bottom of Unit 3, vesicle abundance decreases from 0.1% to 0.05%. Vesicles are rounded and filled with smectite.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Slight to moderately altered. Alteration is concentrated around intersertal textural zones. The dominent alteration phase is saponite
VEINS: Numerous irregular to planar veins range from 0.1 to 2mm. they are filled with saponite. Larger veins (7mm+) are filled with saponite, carbonate and silicate.
STRUCTURE: Narrow planar veins filled with saponite.

Hole 344-U1414A-55R Section 1, Top of Section: 423.0 m (CSF-A)



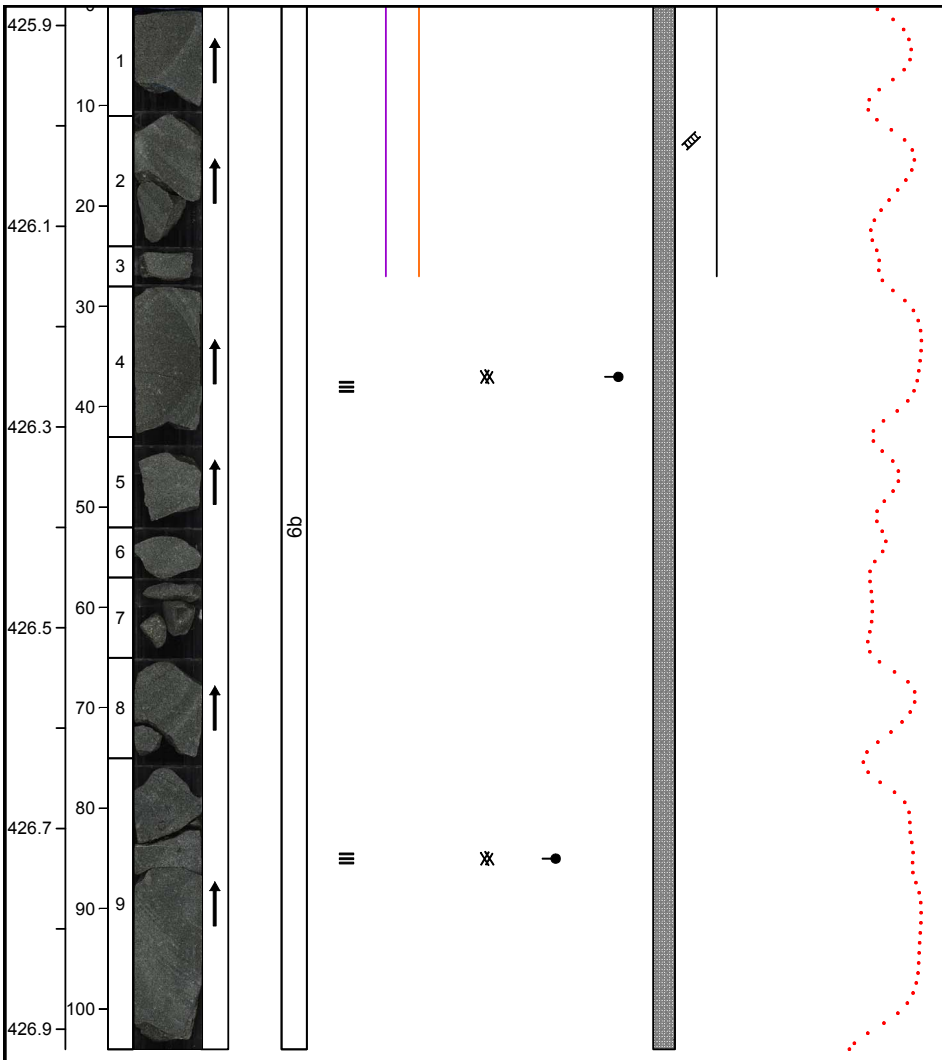
Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Hole 344-U1414A-55R Section 2, Top of Section: 424.42 m (CSF-A)



Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

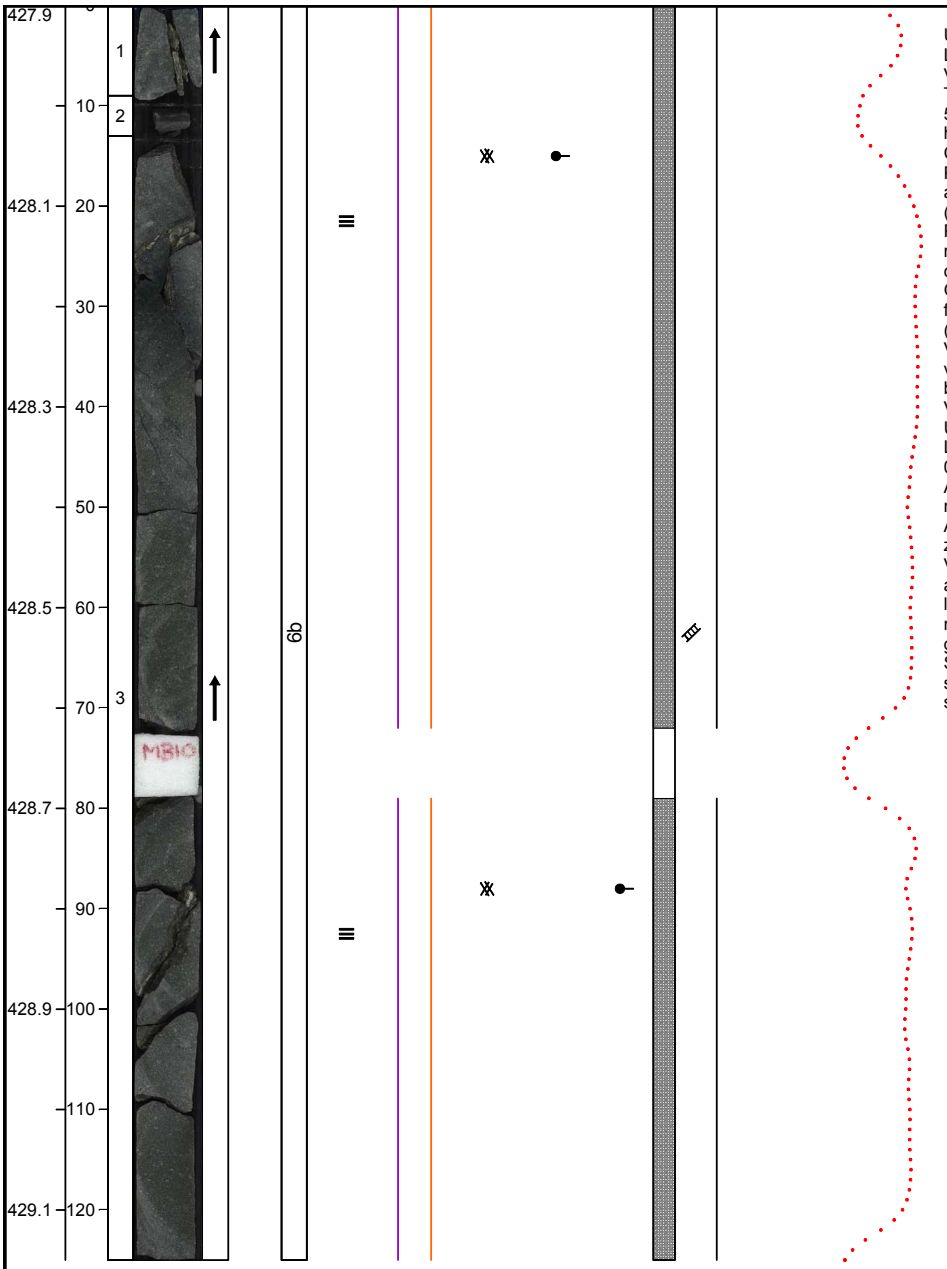
Hole 344-U1414A-55R Section 3, Top of Section: 425.88 m (CSF-A)



Description

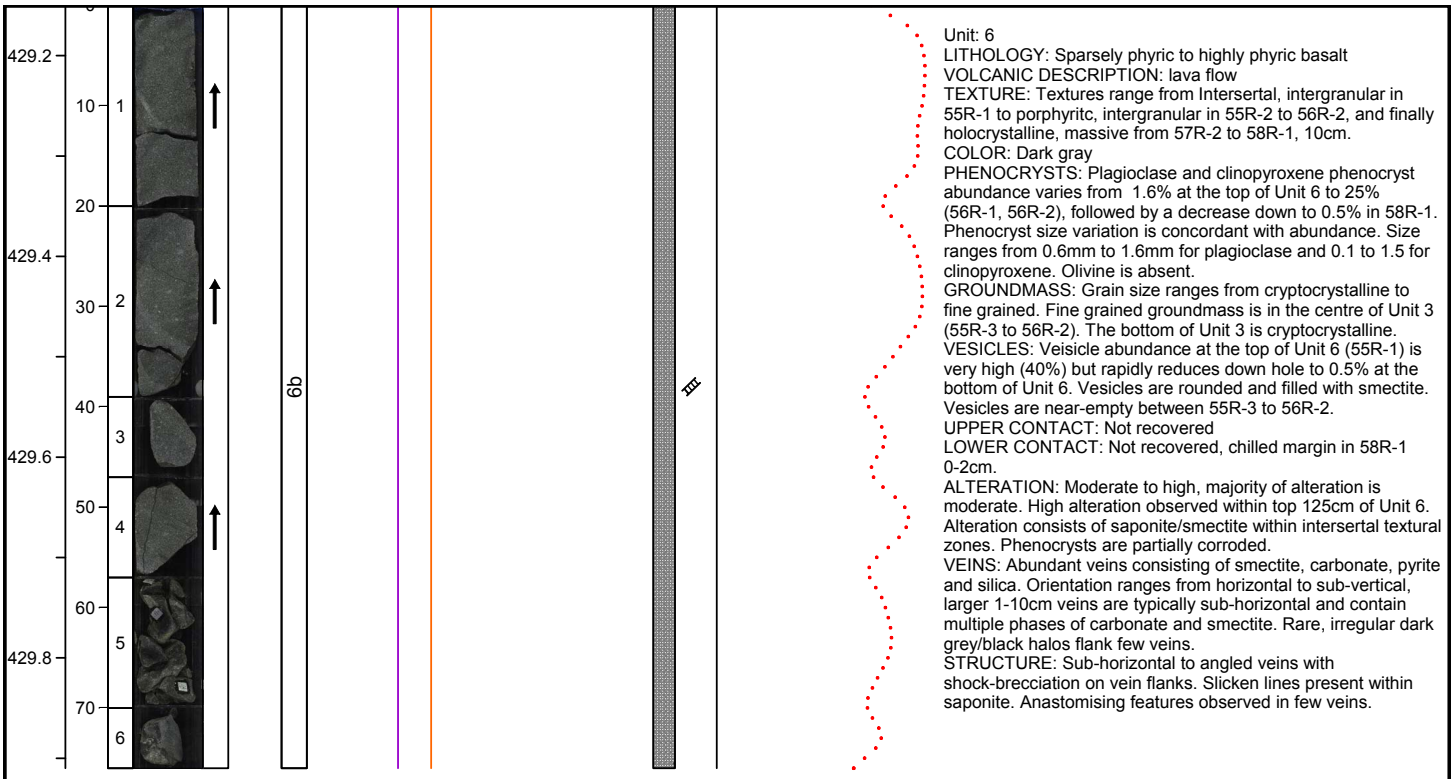
Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Hole 344-U1414A-56R Section 1, Top of Section: 427.9 m (CSF-A)



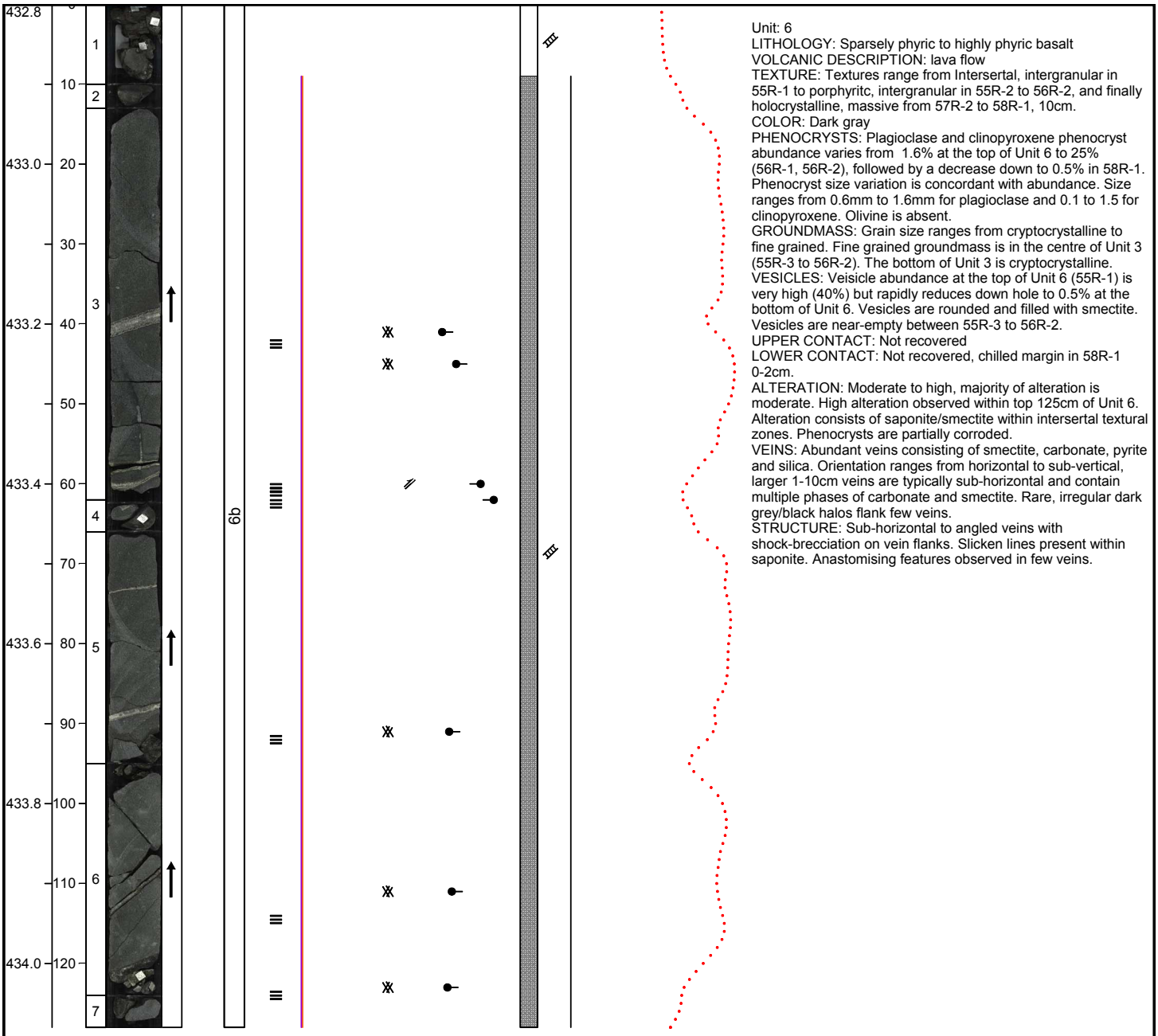
Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Hole 344-U1414A-56R Section 2, Top of Section: 429.15 m (CSF-A)



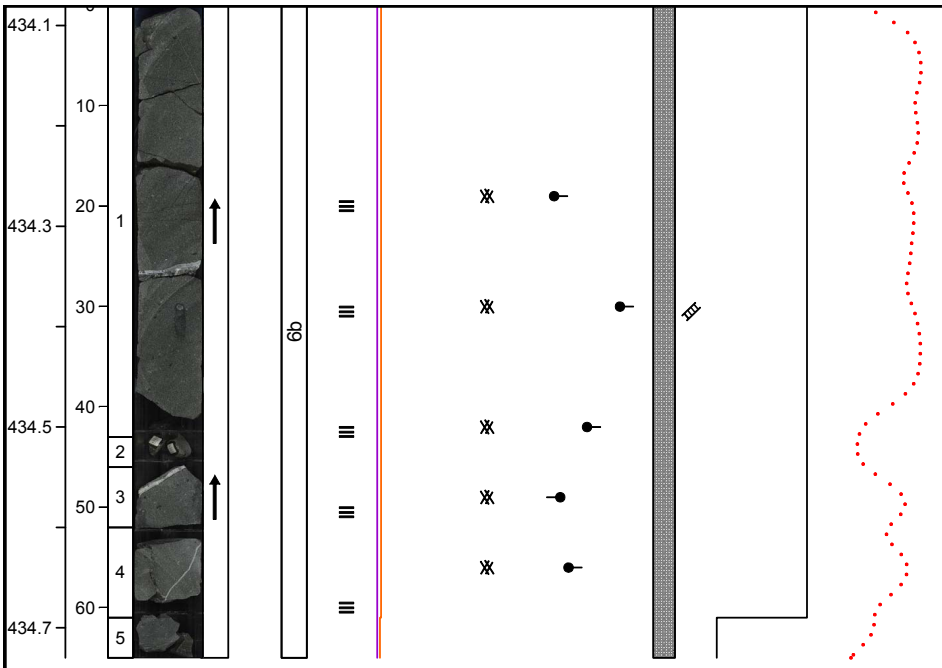
Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Hole 344-U1414A-57R Section 1, Top of Section: 432.8 m (CSF-A)



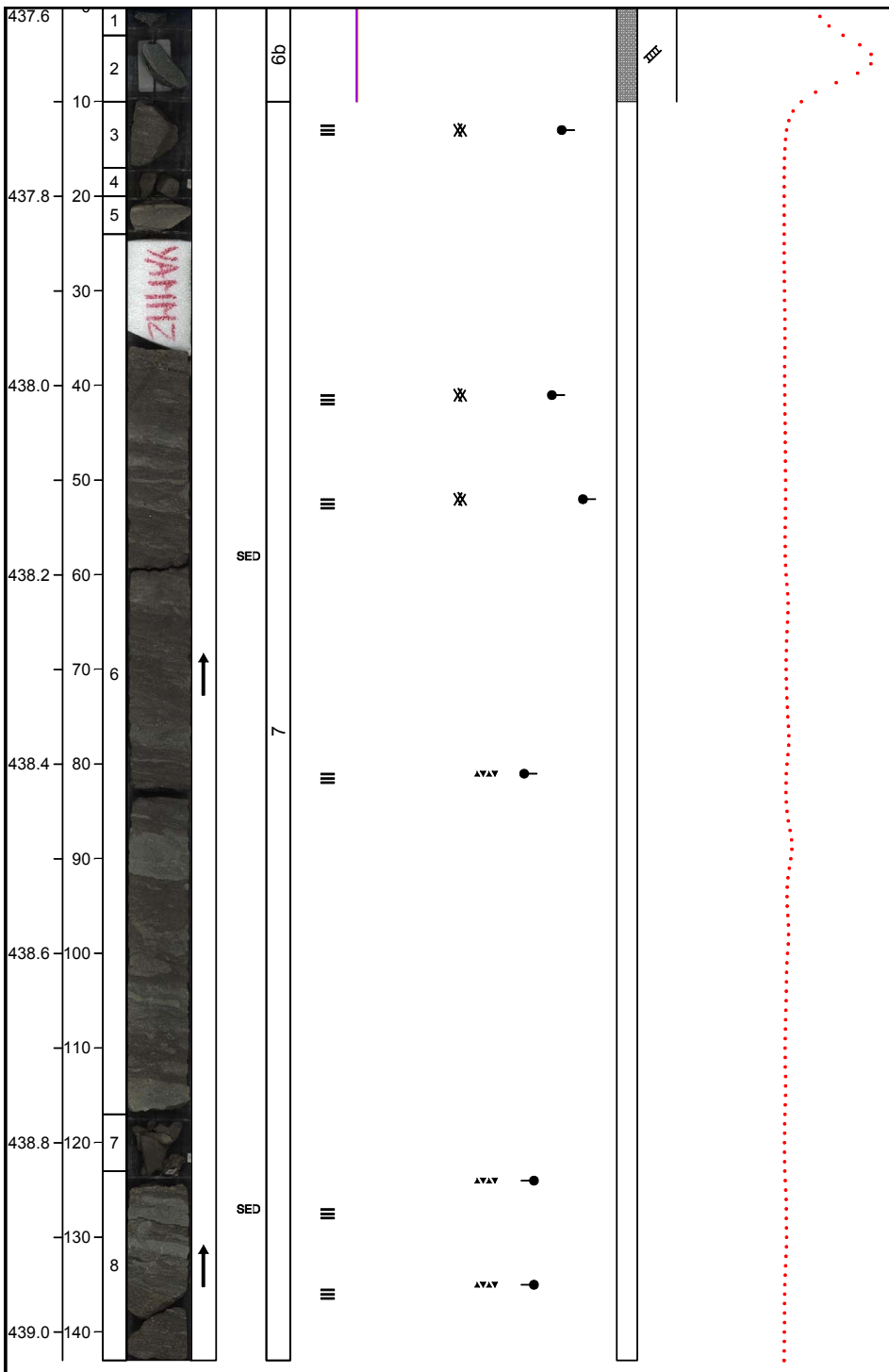
Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Hole 344-U1414A-57R Section 2, Top of Section: 434.08 m (CSF-A)



Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Hole 344-U1414A-58R Section 1, Top of Section: 437.6 m (CSF-A)

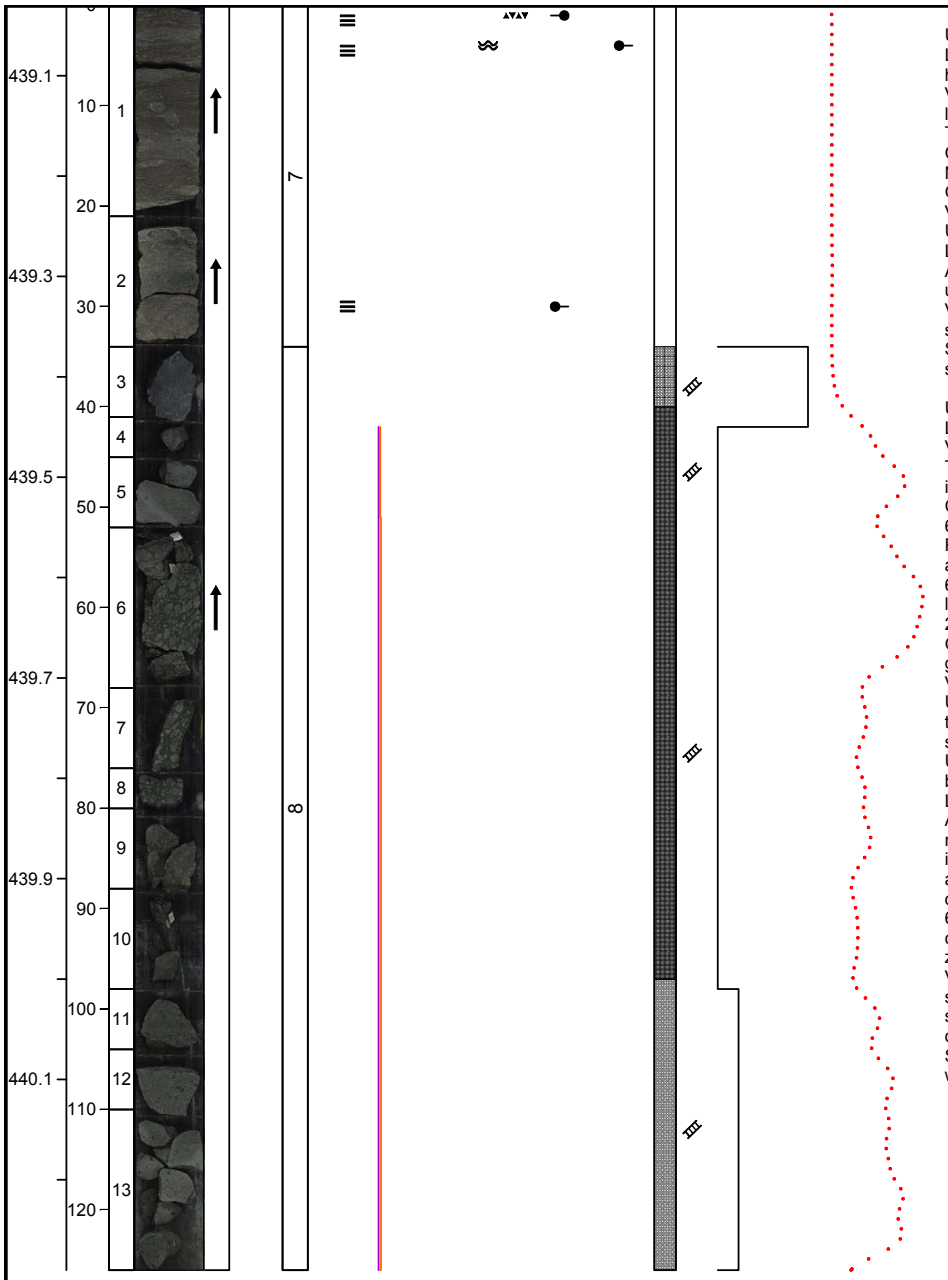


Description

Unit: 6
LITHOLOGY: Sparsely phyric to highly phyric basalt
VOLCANIC DESCRIPTION: lava flow
TEXTURE: Textures range from Intersertal, intergranular in 55R-1 to porphyritc, intergranular in 55R-2 to 56R-2, and finally holocrystalline, massive from 57R-2 to 58R-1, 10cm.
COLOR: Dark gray
PHENOCRYSTS: Plagioclase and clinopyroxene phenocryst abundance varies from 1.6% at the top of Unit 6 to 25% (56R-1, 56R-2), followed by a decrease down to 0.5% in 58R-1. Phenocryst size variation is concordant with abundance. Size ranges from 0.6mm to 1.6mm for plagioclase and 0.1 to 1.5 for clinopyroxene. Olivine is absent.
GROUNDMASS: Grain size ranges from cryptocrystalline to fine grained. Fine grained groundmass is in the centre of Unit 3 (55R-3 to 56R-2). The bottom of Unit 3 is cryptocrystalline.
VESICLES: Veisicle abundance at the top of Unit 6 (55R-1) is very high (40%) but rapidly reduces down hole to 0.5% at the bottom of Unit 6. Vesicles are rounded and filled with smectite. Vesicles are near-empty between 55R-3 to 56R-2.
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered, chilled margin in 58R-1 0-2cm.
ALTERATION: Moderate to high, majority of alteration is moderate. High alteration observed within top 125cm of Unit 6. Alteration consists of saponite/smectite within intersertal textural zones. Phenocrysts are partially corroded.
VEINS: Abundant veins consisting of smectite, carbonate, pyrite and silica. Orientation ranges from horizontal to sub-vertical, larger 1-10cm veins are typically sub-horizontal and contain multiple phases of carbonate and smectite. Rare, irregular dark grey/black halos flank few veins.
STRUCTURE: Sub-horizontal to angled veins with shock-brecciation on vein flanks. Slicken lines present within saponite. Anastomising features observed in few veins.

Unit: 7
LITHOLOGY: Intercalated calcareous silty sandstone with clay horizons
VOLCANIC DESCRIPTION: Intercalated sediment between lava flows
TEXTURE:
COLOR: Brown-red
NANNOFOSSILS: Poorly preserved benthic foraminifera
GROUNDMASS:
VESICLES: None
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Carbonate and silica veins present throughout unit, partial recrystallization.
VEINS: Several narrow (0.1mm) veins of carbonate with splayed to branching morphology.
STRUCTURE: Normal faults observed at bottom of intercalated sediment unit.

Hole 344-U1414A-58R Section 2, Top of Section: 439.03 m (CSF-A)

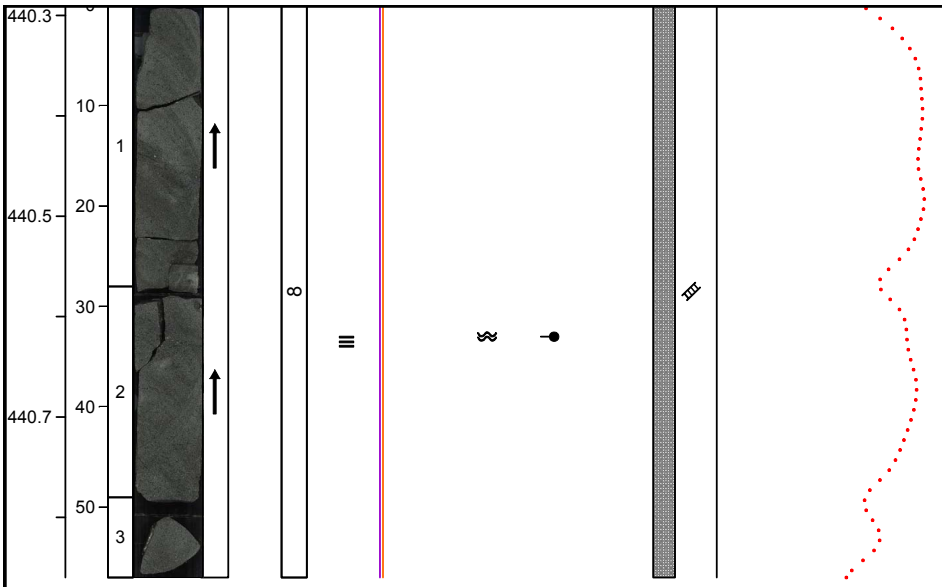


Description

Unit: 7
LITHOLOGY: Intercalated calcareous silty sandstone with clay horizons
VOLCANIC DESCRIPTION: Intercalated sediment between lava flows
TEXTURE:
COLOR: Brown-red
NANNOFOSSILS: Poorly preserved benthic foraminifera
GROUNDMASS:
VESICLES: None
UPPER CONTACT: Not recovered
LOWER CONTACT: Not recovered
ALTERATION: Carbonate and silica veins present throughout unit, partial recrystallization.
VEINS: Several narrow (0.1mm) veins of carbonate with splayed to branching morphology.
STRUCTURE: Normal faults observed at bottom of intercalated sediment unit.

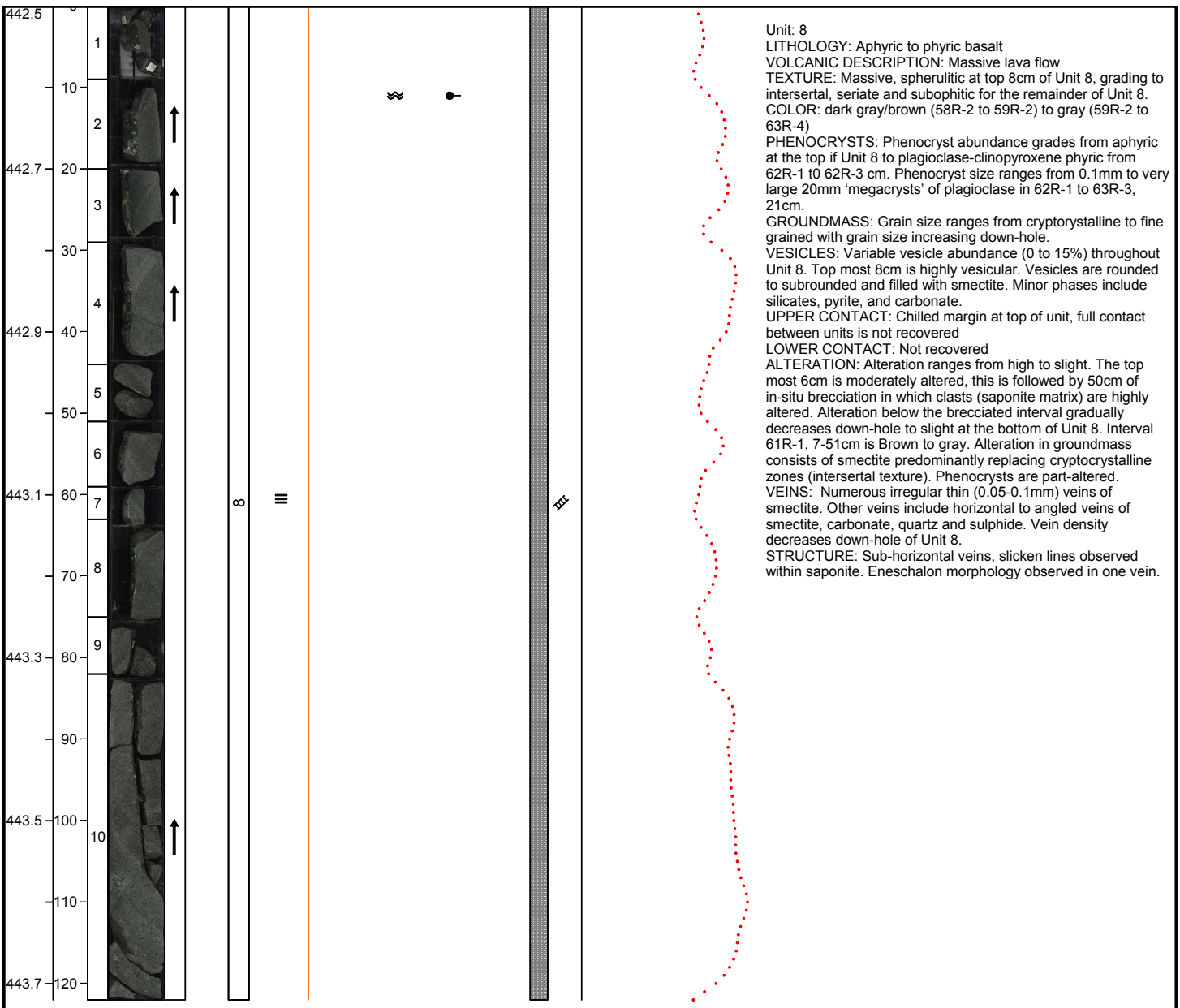
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-58R Section 3, Top of Section: 440.29 m (CSF-A)



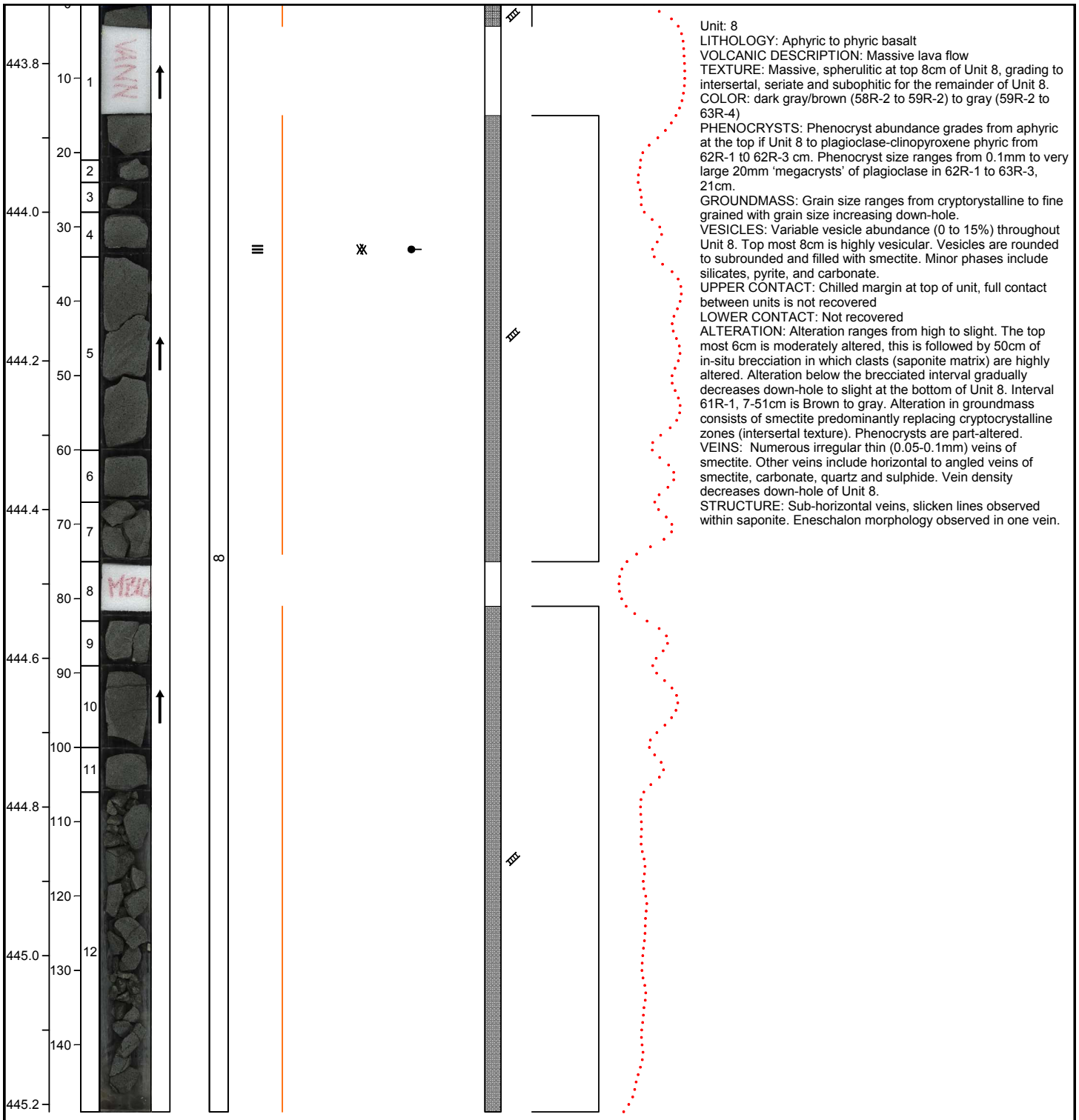
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-59R Section 1, Top of Section: 442.5 m (CSF-A)



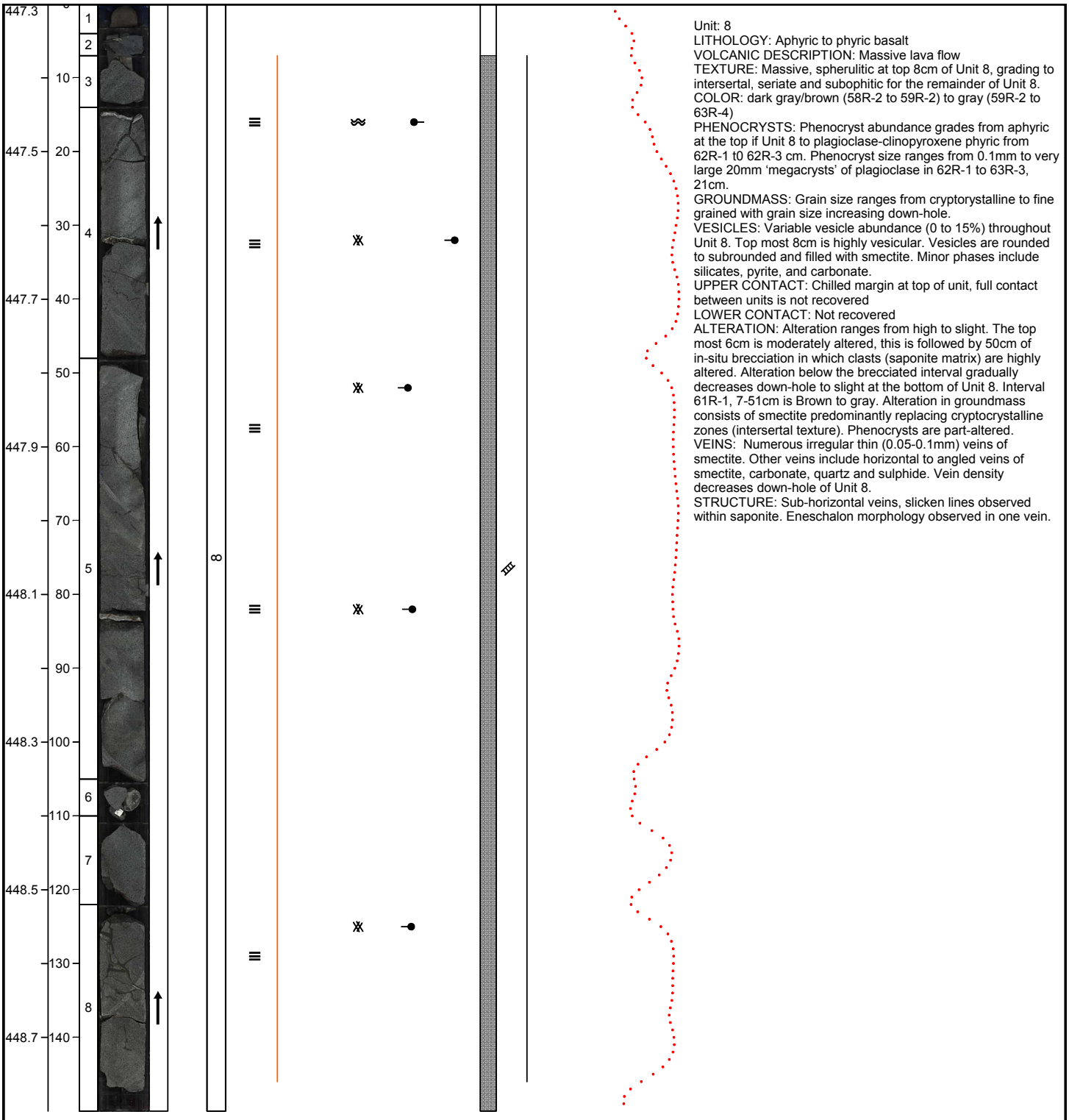
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-59R Section 2, Top of Section: 443.72 m (CSF-A)



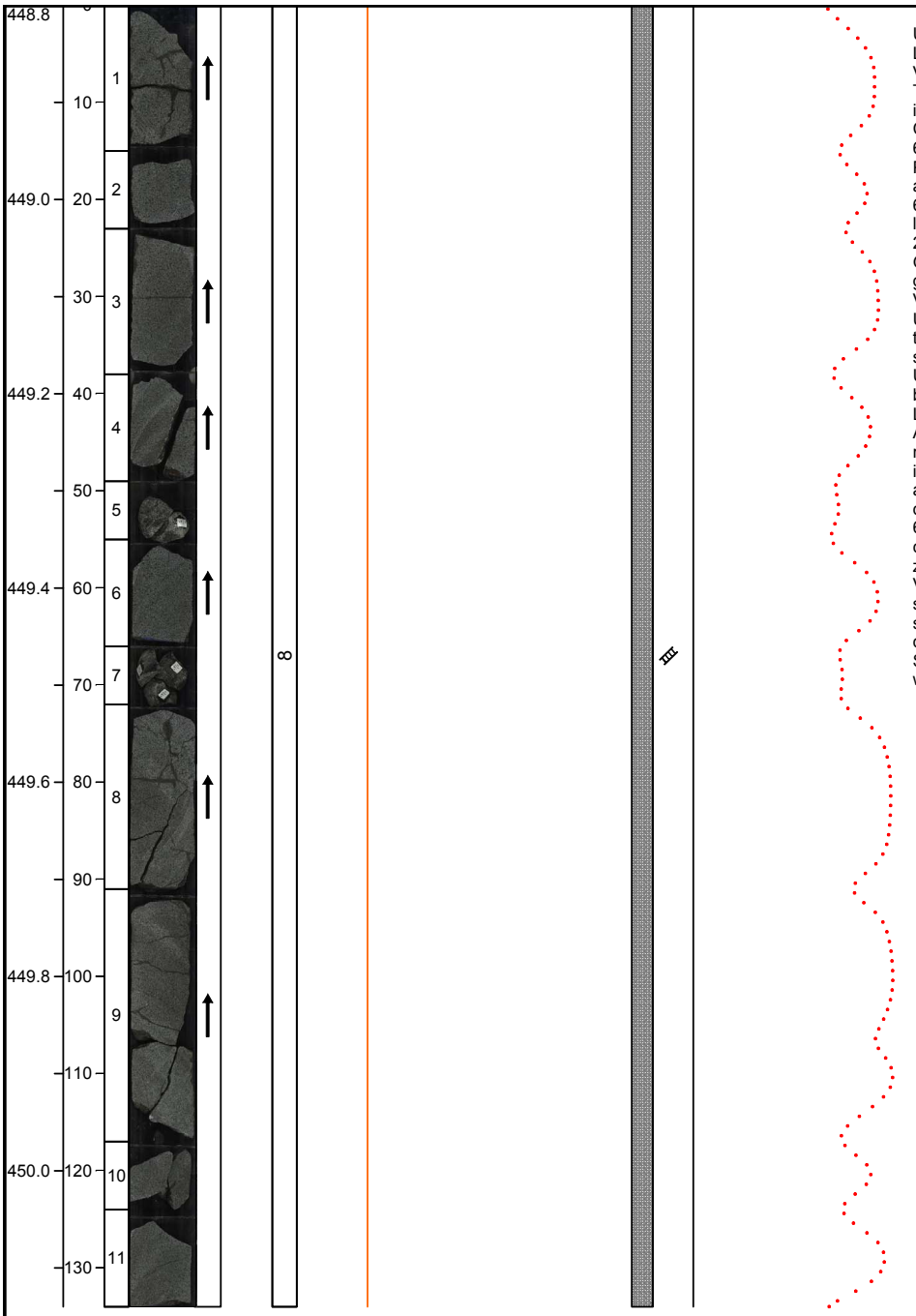
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-60R Section 1, Top of Section: 447.3 m (CSF-A)



Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

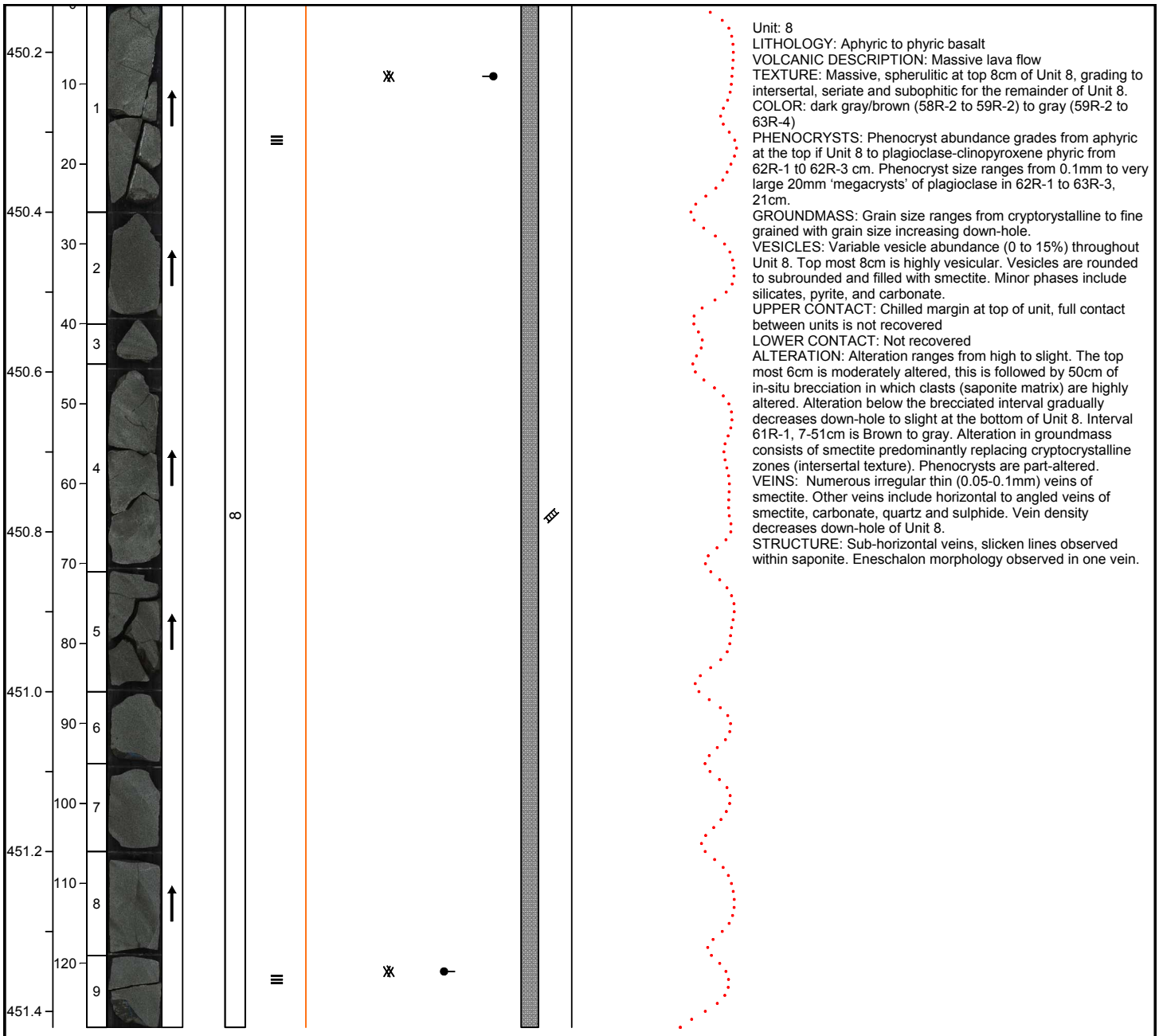
Hole 344-U1414A-60R Section 2, Top of Section: 448.8 m (CSF-A)



Description

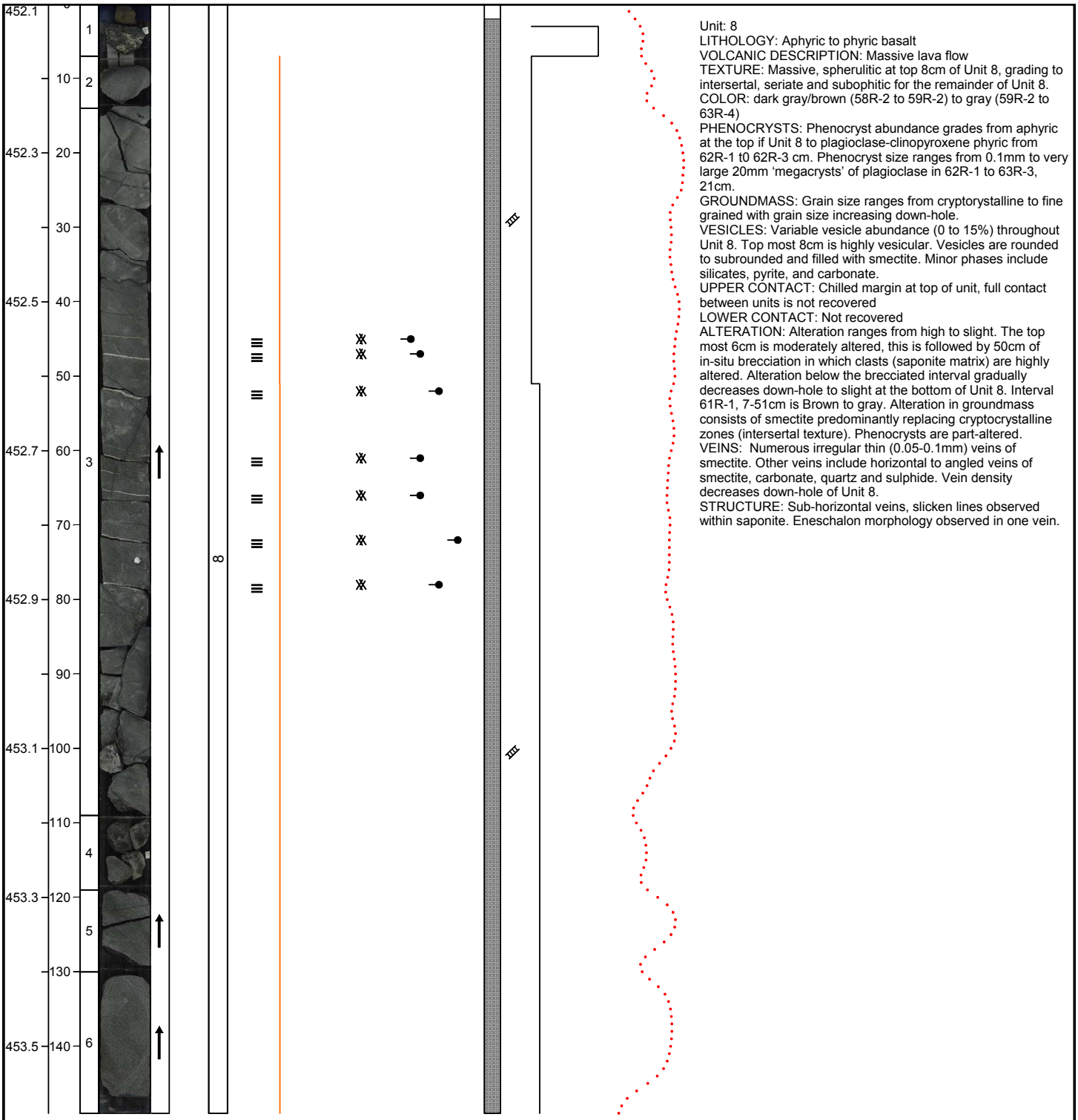
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-60R Section 3, Top of Section: 450.14 m (CSF-A)



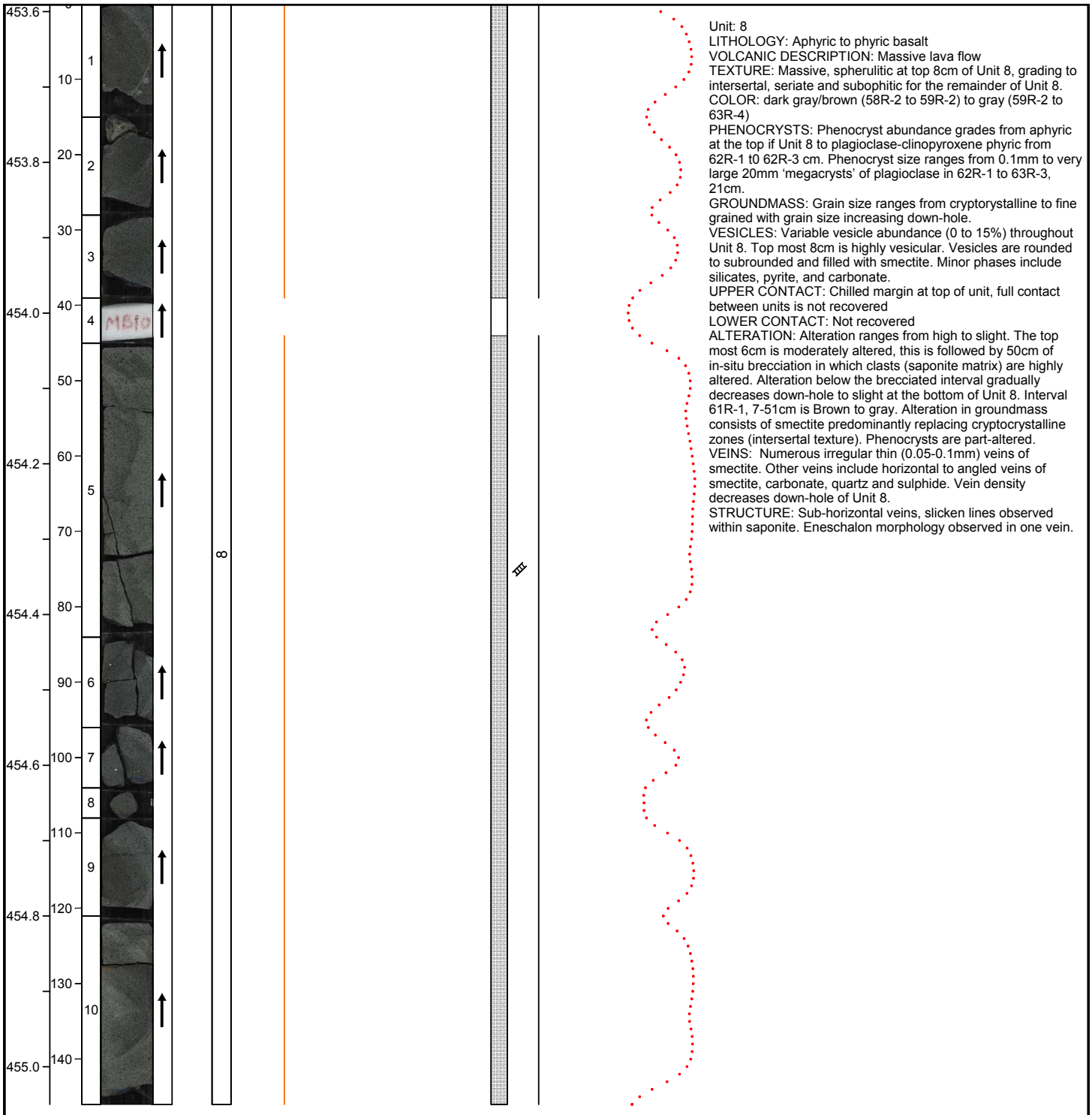
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-61R Section 1, Top of Section: 452.1 m (CSF-A)

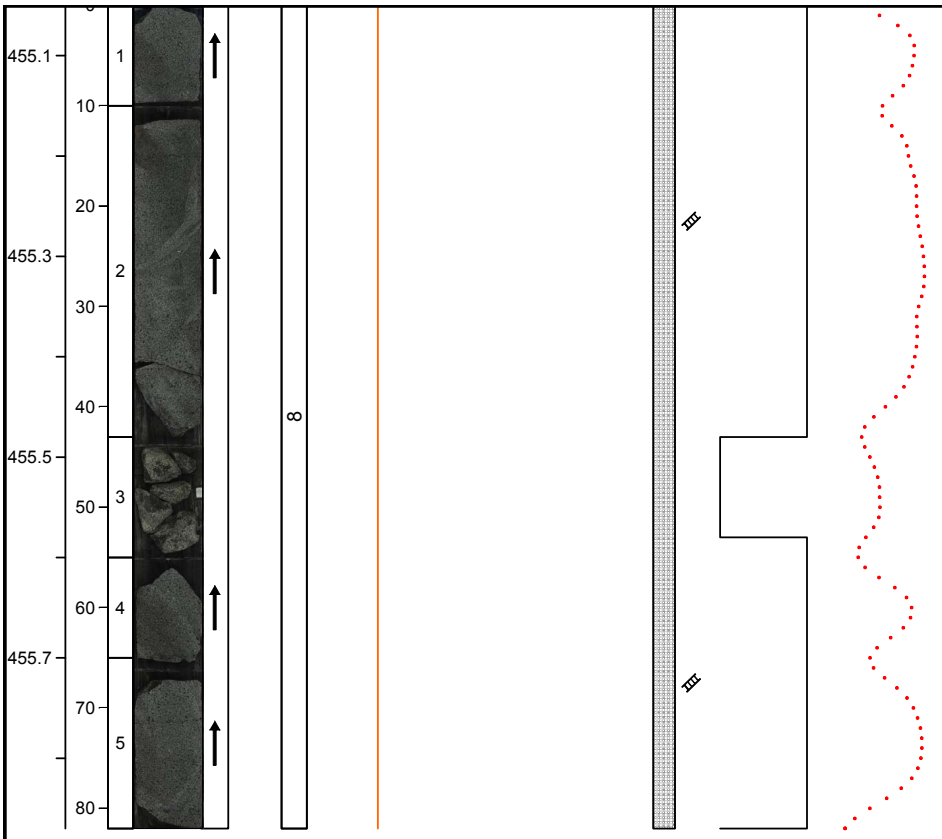


Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-61R Section 2, Top of Section: 453.59 m (CSF-A)

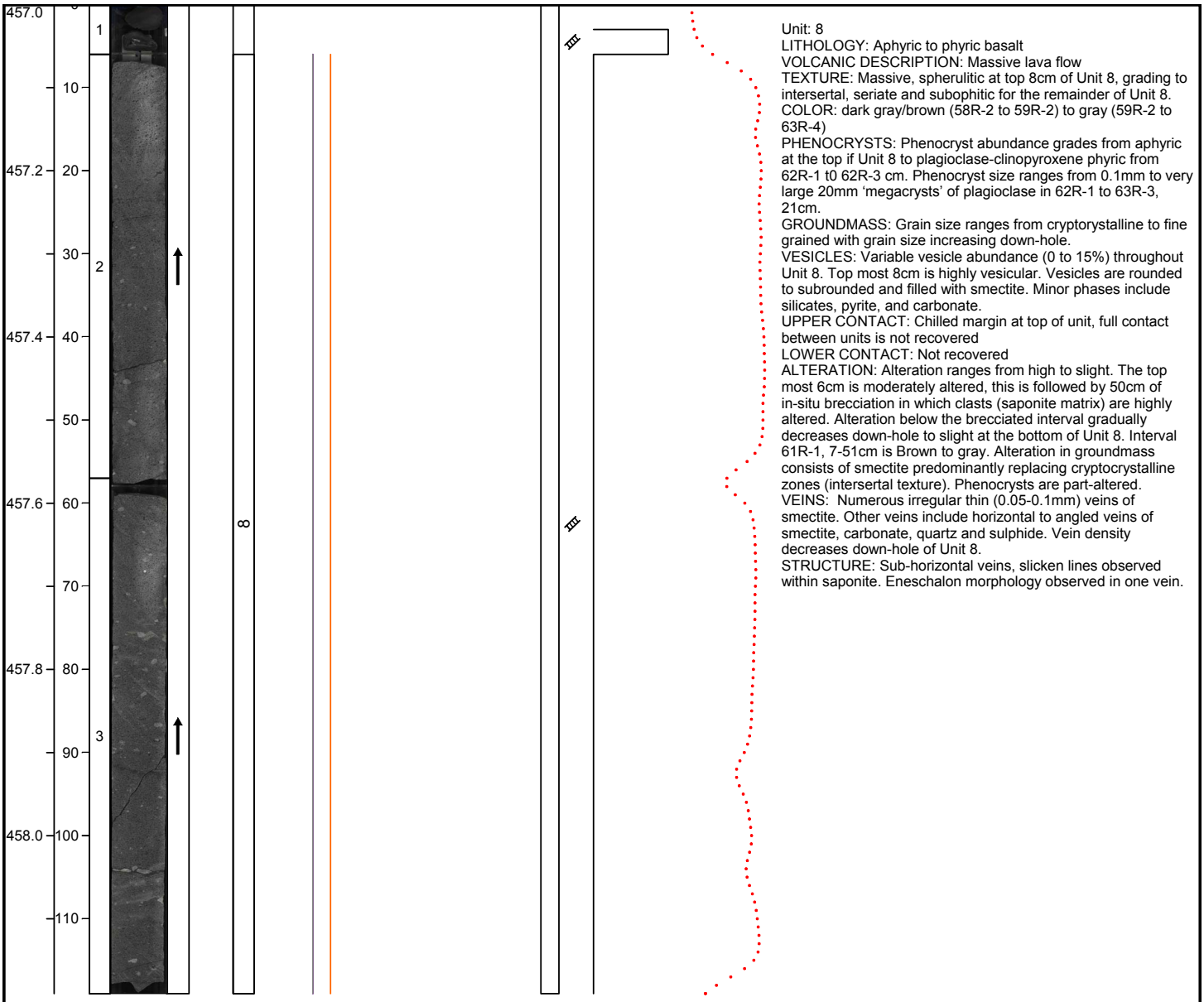


Hole 344-U1414A-61R Section 3, Top of Section: 455.05 m (CSF-A)



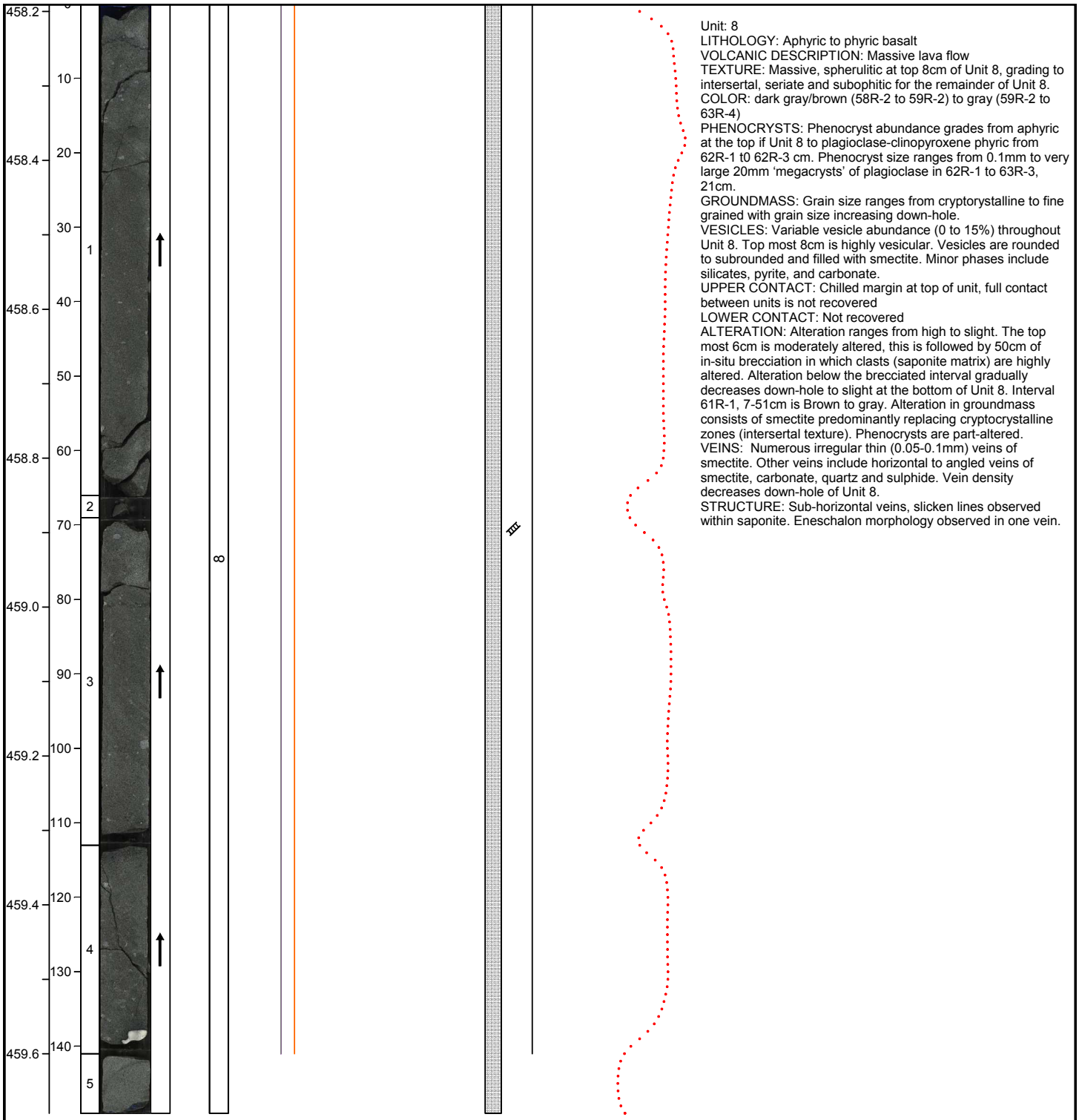
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-62R Section 1, Top of Section: 457.0 m (CSF-A)



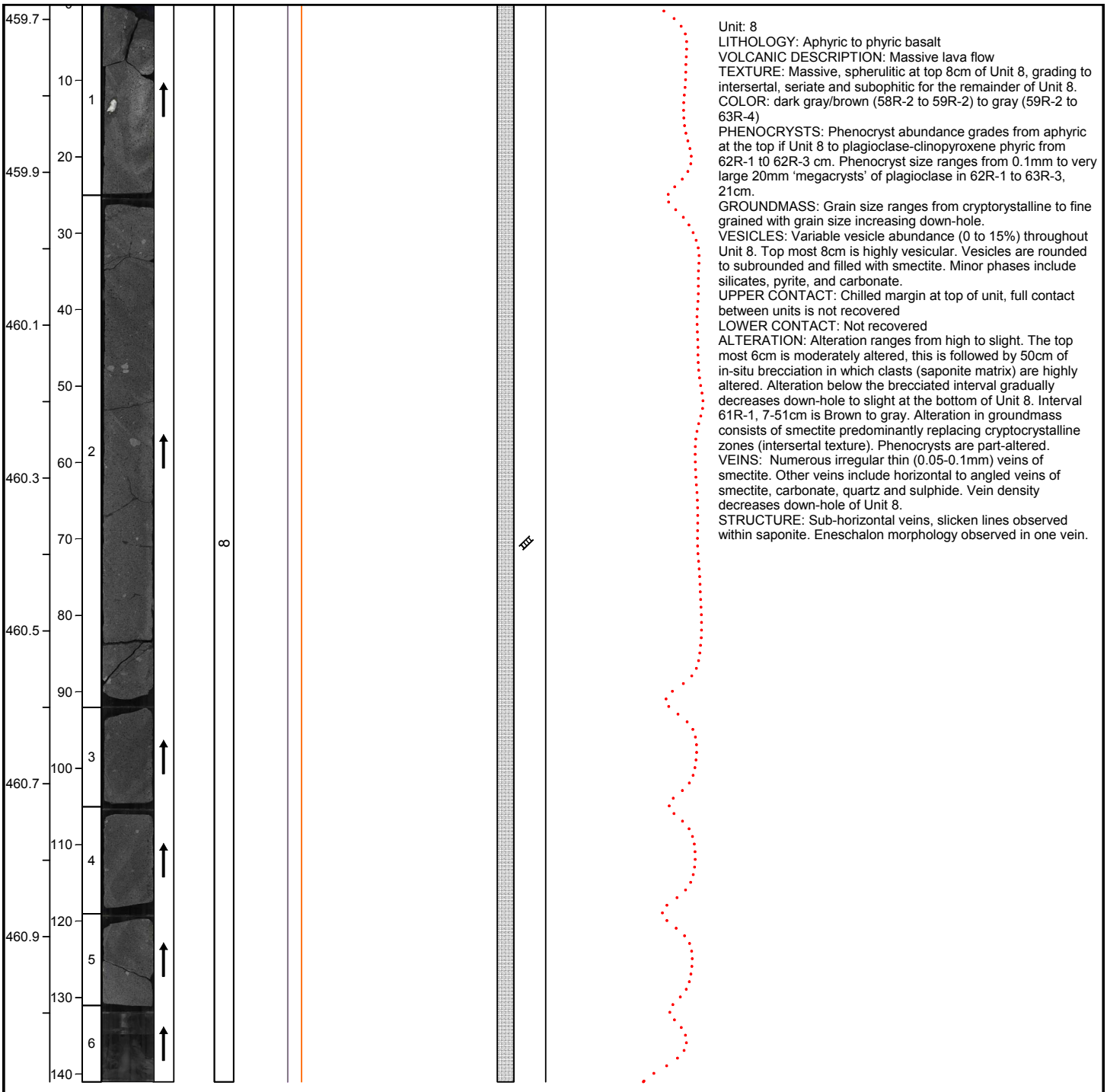
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-62R Section 2, Top of Section: 458.19 m (CSF-A)

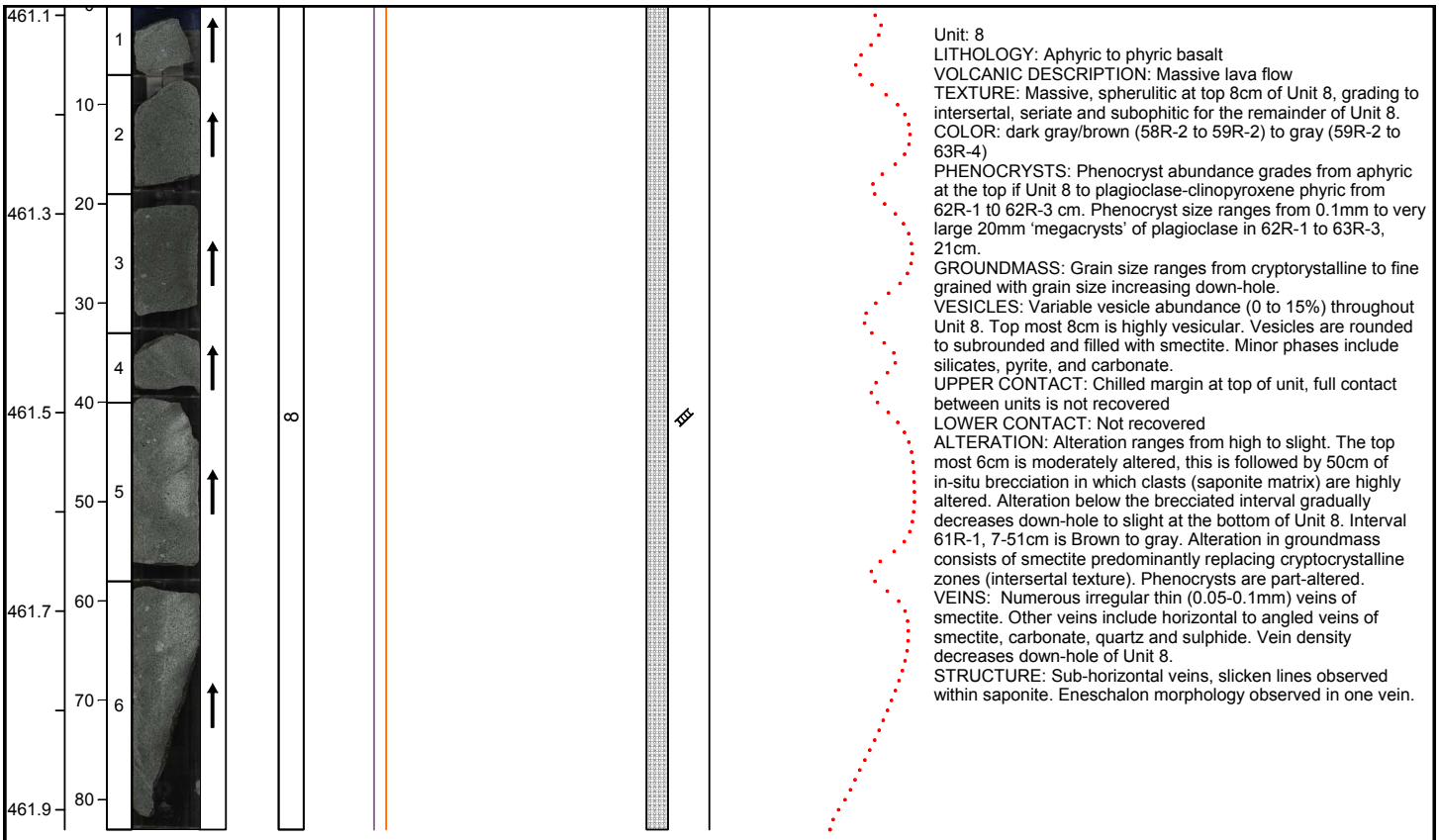


Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-62R Section 3, Top of Section: 459.68 m (CSF-A)



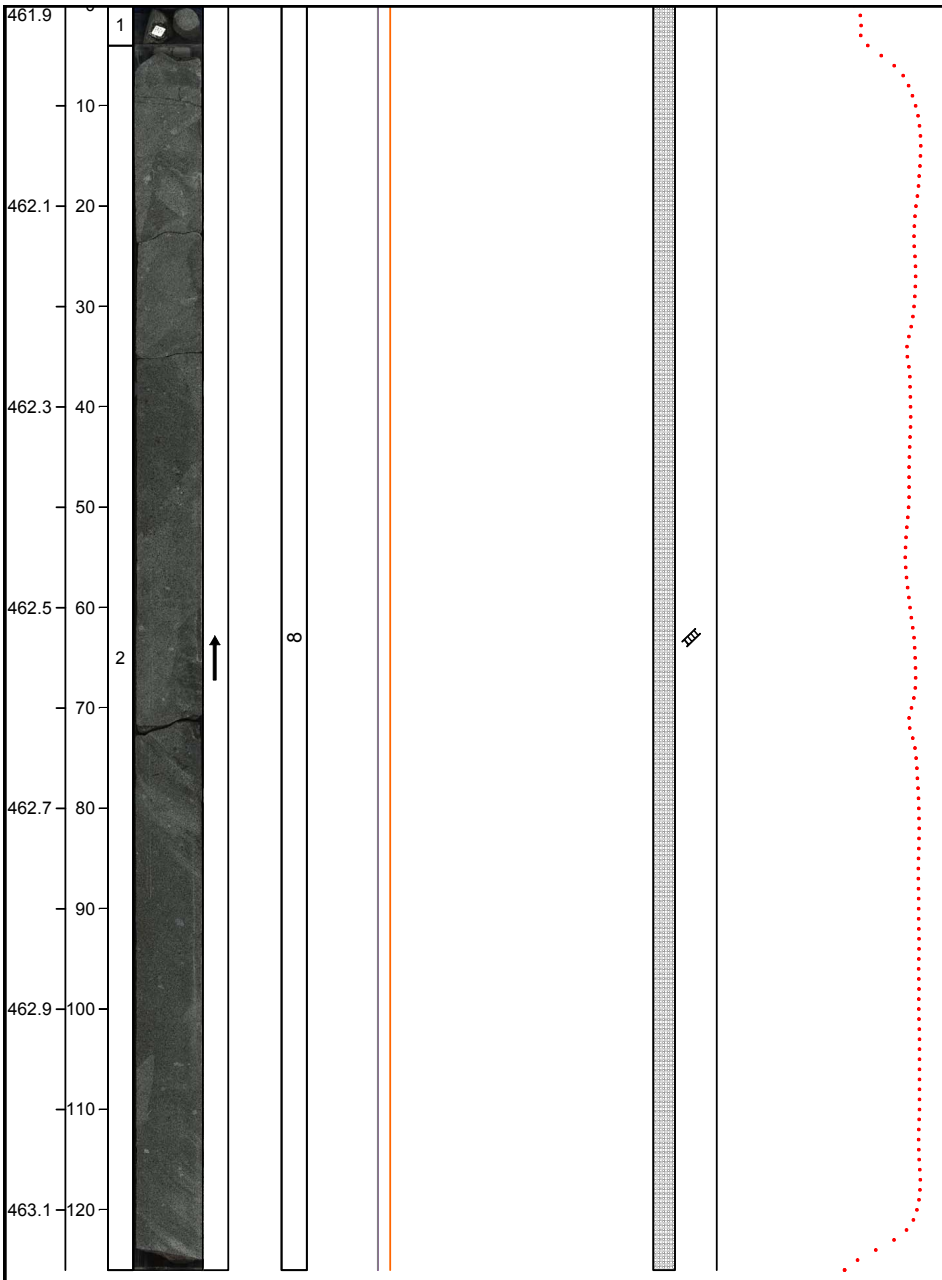
Hole 344-U1414A-62R Section 4, Top of Section: 461.09 m (CSF-A)



Description

Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

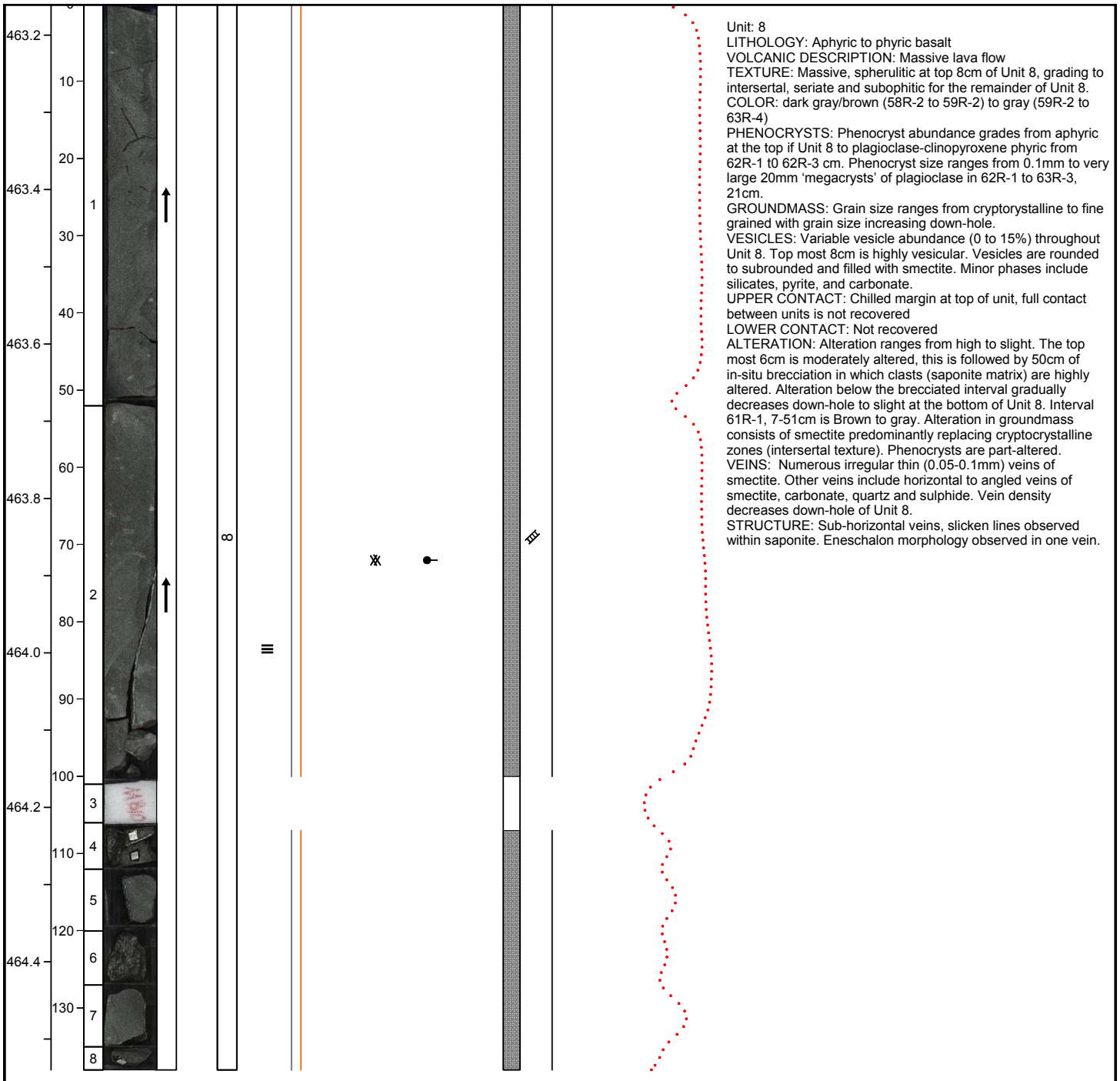
Hole 344-U1414A-63R Section 1, Top of Section: 461.9 m (CSF-A)



Description

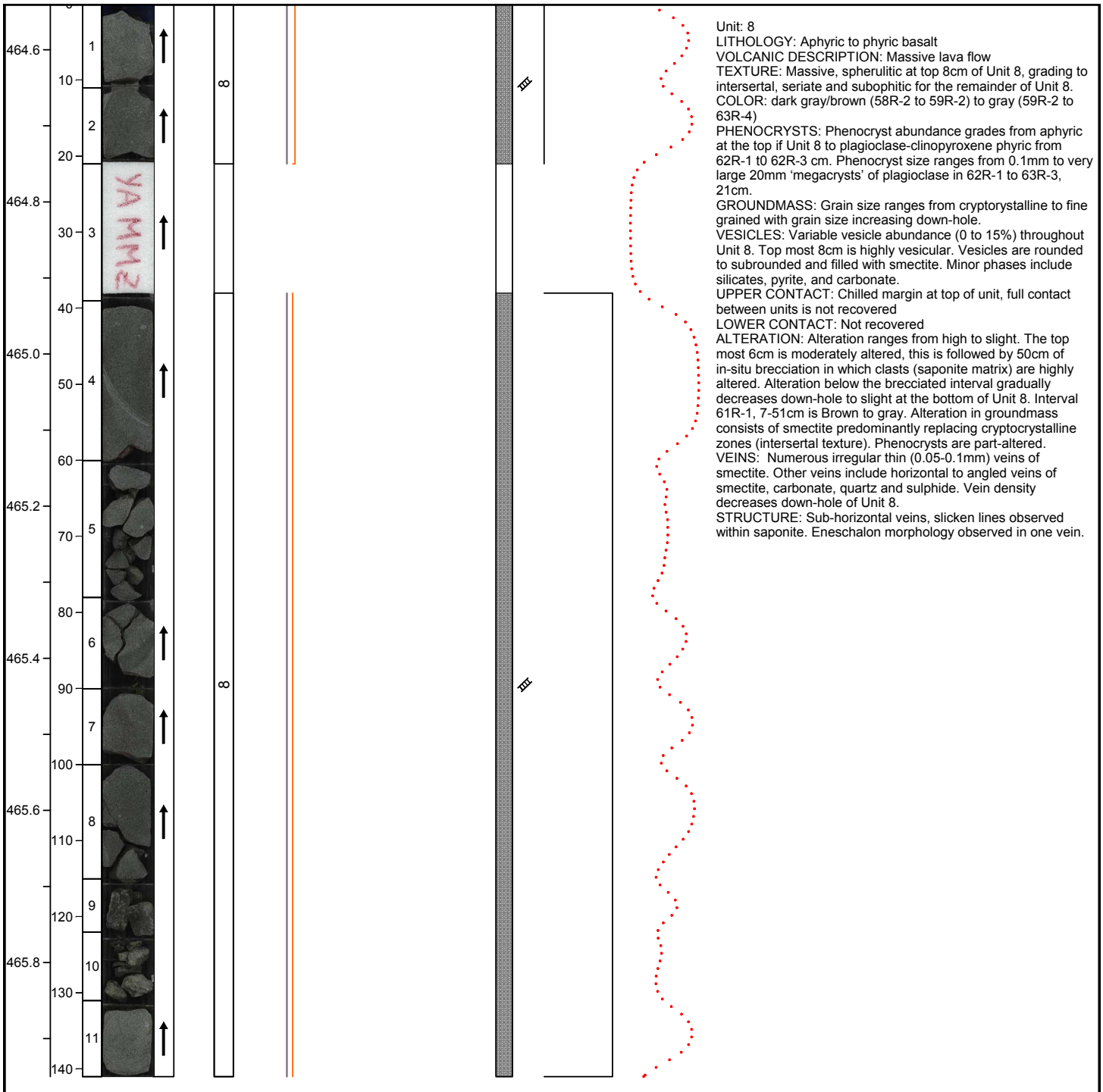
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-63R Section 2, Top of Section: 463.16 m (CSF-A)



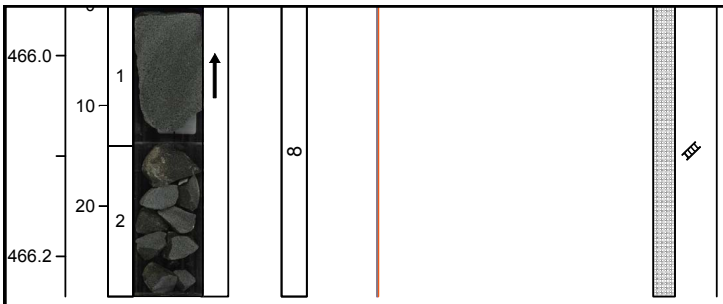
Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-63R Section 3, Top of Section: 464.54 m (CSF-A)



Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Hole 344-U1414A-63R Section 4, Top of Section: 465.95 m (CSF-A)



Description

Unit: 8
LITHOLOGY: Aphyric to phyric basalt
VOLCANIC DESCRIPTION: Massive lava flow
TEXTURE: Massive, spherulitic at top 8cm of Unit 8, grading to intersertal, seriate and subophitic for the remainder of Unit 8.
COLOR: dark gray/brown (58R-2 to 59R-2) to gray (59R-2 to 63R-4)
PHENOCRYSTS: Phenocryst abundance grades from aphyric at the top if Unit 8 to plagioclase-clinopyroxene phyric from 62R-1 t0 62R-3 cm. Phenocryst size ranges from 0.1mm to very large 20mm 'megacrysts' of plagioclase in 62R-1 to 63R-3, 21cm.
GROUNDMASS: Grain size ranges from cryptorystalline to fine grained with grain size increasing down-hole.
VESICLES: Variable vesicle abundance (0 to 15%) throughout Unit 8. Top most 8cm is highly vesicular. Vesicles are rounded to subrounded and filled with smectite. Minor phases include silicates, pyrite, and carbonate.
UPPER CONTACT: Chilled margin at top of unit, full contact between units is not recovered
LOWER CONTACT: Not recovered
ALTERATION: Alteration ranges from high to slight. The top most 6cm is moderately altered, this is followed by 50cm of in-situ brecciation in which clasts (saponite matrix) are highly altered. Alteration below the brecciated interval gradually decreases down-hole to slight at the bottom of Unit 8. Interval 61R-1, 7-51cm is Brown to gray. Alteration in groundmass consists of smectite predominantly replacing cryptocrystalline zones (intersertal texture). Phenocrysts are part-altered.
VEINS: Numerous irregular thin (0.05-0.1mm) veins of smectite. Other veins include horizontal to angled veins of smectite, carbonate, quartz and sulphide. Vein density decreases down-hole of Unit 8.
STRUCTURE: Sub-horizontal veins, slicken lines observed within saponite. Eneschalon morphology observed in one vein.

Sample	Top Depth [m]	Bottom Depth [m]	Description of where smear slide taken	Actinolite abundance	Tephra	Siliciclastic	Detrital carbonate	Biogenic carbonate	Glauconite abundance	Clay minerals abundance	Opaques abundance	Feldspar abundance	Quartz abundance	Glass abundance	Halite abundance	Calcite, allogenic abundance	Hornblende abundance	Pyroxene abundance	Chalcedony abundance	Biotite abundance	Chlorite abundance	Other mineral	Other mineral	Microfossil abundance	Diatoms abundance	Calcareous nannofossils abundance	Foraminifera abundance	Radiolarians abundance	Sponge spicule fragments abundance	Silicoflagellate, ebridian, actiniscidian abundance	Microfossil comment	Macrofossil (fauna) abundance	Macrofossil (fauna) comment	Rock fragment - sedimentary lithic	Rock fragment - volcanic lithic	Rock fragment - plutonic lithic	Principal lithology	General smear slide comment
344-U1414A-1H-1-A 33/33-SED	0.33	0.33		R	R	D	C	A	C	D	C	A	C	R		C	C	C			C	SAPROPEL	C	A	A	C	A	A	C	C				C	C	R		
344-U1414A-1H-CC-A 3/3-SED	1.75	1.75		R	R	M	R	C	C	D	C	A	C	R		R	R	R			C	SAPROPEL	A	C	A	C	A	C	C						R			
344-U1414A-2H-3-A 98/98-SED	5.7	5.7		R	R	D	R	A	A	R	C	A	C	C		R	C	C	R	R	C	SAPROPEL	R	A	A	D	C	C	A				C	A	R		
344-U1414A-2H-4-A 67/67-SED	6.8	6.8		R	C	D	C	A	A	D	C	A	C	C		C	C	C			C	SAPROPEL	C	A	D	A	A	C	C	R			R	C			
344-U1414A-2H-5-A 83/83-SED	8.37	8.37		R	R	M	R	C	C	C	A	A	R	R		R	C	C			R	SAPROPEL	R	C	A	A	C	R	R				R	A	C		
344-U1414A-3H-4-A 70/70-SED	16.33	16.33			C	D	C	A	C	D	R	A	C	C		C	C	R	R	R	C	SAPROPEL	C	A	A	D	C	C	C				R	C			
344-U1414A-4H-2-A 69/69-SED	23	23		R	C	D	C	A	R	D	C	A	R	C		C	R		R	R	R	SAPROPEL	C	A	A	A	C	D	C	R			R	C			
344-U1414A-4H-5-A 10/10-SED	26.65	26.65		R	A	D	C	A	C	D	C	A	C	A		C	C	R	R	R	R	SAPROPEL	A	A	C	D	C	A	R				C	C			
344-U1414A-5H-1-A 107/107-SED	31.47	31.47			A	A	C		R	A	C	A	C	A		C	C	C			R	SAPROPEL	R										R	A			
344-U1414A-5H-4-A 61/61-SED	35.24	35.24			C	D	C	A	C	D	C	C	C	C		C		R			R	SAPROPEL	C	A	A	A	C	A	C	R			R	C	R		
344-U1414A-5H-7-A 2/2-SED	38.88	38.88			R	A		R	R	C	M	A	C	R			C	C				SAPROPEL	C	R					M					C			
344-U1414A-6H-2-A 90/90-SED	42.25	42.25			C	D	C	A	C	D	C	C	C	C		C	R	C			C	SAPROPEL	C	A	C	A	A	C	R				C	C			
344-U1414A-6H-5-A 51/51-SED	46.22	46.22			C	A	C	D	C	A	C	A	C	C		C	C	C			R	SAPROPEL	C	D	C	A	A		R				C	A	R		
344-U1414A-6H-5-A 66/66-SED	46.37	46.37			A	A		C	R		C	A	C	A			C	C						C	A		D	C	R						A			
344-U1414A-6H-5-A 73/73-SED	46.44	46.44			C	D	C	A	C	D	C	A	C	C		C	R	R			R	SAPROPEL	C	A	A	A	A	D	R				C	C	R		
344-U1414A-7H-1-A 36/36-SS	49.76	49.76			C	C	R	M	R	R	R	C	C	C		R	C	C						M	R	R	R	C	M					R	C			
344-U1414A-7H-3-A 82/82-SS	53.22	53.22			A	A	C	C		C	C	A	C	C		C	C	C				SAPROPEL	R	C	C		A	C	A	R	Presence of Ichtyolith (rare)			C	A	C		
344-U1414A-7H-4-A 45/45-SS	54.35	54.35		R	C	D	R	A	C	D	C	A	C	C		R	C	C			R	SAPROPEL	C	A	A	C	C	D	C	R				C	C			
344-U1414A-7H-5-A 49/49-SS	55.89	55.89			C	M	C	C	C	A	C	C	C	C		C	C	R			C	SAPROPEL	R	C	R	A	A		R				A	C	R		
344-U1414A-7H-6-A 97/97-SS	57.87	57.87			C	M	C	C	R	D	A	C	R	C		C	R	R				SAPROPEL	C	C	C	A	A	C	R				C	C			
344-U1414A-8H-1-A 73/73-SS	59.63	59.63			C	C					M	C	C	C			R																	R	R		
344-U1414A-8H-5-A 11/11-SS	64.64	64.64			M	C					C	C	C	A			R	C	R	R														D	R		
344-U1414A-8H-5-A 43/43-SS	64.96	64.96			M	C			R		A	C	C	A			C	C	R	R														D	R		
344-U1414A-8H-5-A 90/90-SS	65.43	65.43			C	D	C	A	C	D	R	C	C	C		C	C	R	R	R	R	SAPROPEL	R	A	D	A	A	A	C	R				R	C			
344-U1414A-8H-6-A 79/79-SS	66.82	66.82			C	D	C	A	C	D	C	A	C	C		C	C	R			R	SAPROPEL	A	A	C	A	A	A	C					C	A	R		
344-U1414A-9H-1-A 135/135-SS	69.75	69.75			A	D	R	R	R	A	D	C	R	C		R	C		R	R	R	SAPROPEL	R	R	R	M								R	A	R		
344-U1414A-9H-2-A 72/72-SS	70.62	70.62		R	C	A	C	A	A	A	C	C	C	C		C	C	R	R	R	C	ZEOLITE	A	A	A	A	C	C	R	R				C	A	R		
344-U1414A-9H-3-A 141/141-SS	72.81	72.81			M	A					C	A	C	A			A	C																	A	R		
344-U1414A-9H-4-W 92/93-SS	73.82	73.83			D	A		R	C		R	A	C	D			C	C	C	C	R			R			M								C	A	R		
344-U1414A-9H-5-A 62/62-SS	75.02	75.02				A	C	C		C	R	R				C						SHELL	M	C			M								A	R			
344-U1414A-9H-5-A 69/69-SS	75.09	75.09																				SAPROPEL	M																Mixed between would and sapropel
344-U1414A-9H-7-A 22/22-SS	77.62	77.62			C	D	C	A	C	A	R	A	C	C		C	C				R	SAPROPEL	R	A	A	R	D	C	C					C	A	R		

Sample	Top Depth [m]	Bottom Depth [m]	Description of where smear slide taken	Actinolite abundance	Tephra	Siliciclastic	Detrital carbonate	Biogenic carbonate	Glauconite abundance	Clay minerals abundance	Opaques abundance	Feldspar abundance	Quartz abundance	Glass abundance	Halite abundance	Calcite, allogenic abundance	Hornblende abundance	Pyroxene abundance	Chalcedony abundance	Biotite abundance	Chlorite abundance	Other mineral	Other mineral	Microfossil abundance	Diatoms abundance	Calcareous nannofossils abundance	Foraminifera abundance	Radiolarians abundance	Sponge spicule fragments abundance	Silicoflagellate, ebridian, actiniscidian abundance	Microfossil comment	Macrofossil (fauna) abundance	Macrofossil (fauna) comment	Rock fragment - sedimentary lithic	Rock fragment - volcanic lithic	Rock fragment - plutonic lithic	Principal lithology	General smear slide comment
344-U1414A-10H-3-A 89/89-SS	81.79	81.79			C	D	C	A	C	A	C	A	C	C		C	C	R	R	R	C	ZEOLITE	C	A	R	A	C	A	R					C	A			
344-U1414A-10H-5-A 18/18-SS	84.08	84.08			C	D	C	A	C	D	C	C	C	C		C	R	R	R	R	C	SAPROPEL	A	A	R	D	A	R	R					C	C	R		
344-U1414A-11H-2-A 71/71-SS	89.61	89.61			A	A		C	R		C	A	C	A			R	R	C	C				C	C	A	A	C	R					R	A			
344-U1414A-11H-3-A 26/26-SS	90.66	90.66			A	A					A	A	C	A			C	R																		D			
344-U1414A-11H-5-A 53/53-SS	93.93	93.93			C	A	C	A	C	A	C	A	C	C		C	C	R			R	SAPROPEL	C	A	C	A	A	A	R	R				C	A	R		
344-U1414A-12H-1-A 25/25-SS	97.15	97.15			M	C				R	C	C	C	A			C	C																		D			
344-U1414A-12H-3-A 79/79-SS	100.69	100.69			C	D	C	A	C	D	C	C	C	C		C	C	R	R	R	C	ZEOLITE	C	A	R	A	A	A	R					C	C	R		
344-U1414A-13H-3-A 70/70-SED	110.1	110.1			R	D	C	C	C	D	R	C	C	R		C	R	R	R	R	C	SAPROPEL	R	C	C	A	A	R	R					C	C	R		
344-U1414A-13H-5-SED	112.62	112.62			D	A	R	R		R	C	A	C	A		R	C	C						R		M								C	D	R		
344-U1414A-13H-5-SED	113.76	113.76			D	A					C	A	C	A			C	C																		D	R		
344-U1414A-13H-6-A 124/124-SED	115.14	115.14			C	D	A	C	C	D	C	C	C	C		A	C				R			C		D	A		R					A	C			
344-U1414A-13H-6-A 81/81-SED	114.71	114.71			D	A					C	A	C	A			C	C	C	C																D	R		
344-U1414A-14H-1-A 22/22-SED	116.12	116.12			C	D	C	C	R	D	C	C	C	C		C	C	R						C		D	A		R					A	A			
344-U1414A-14H-1-A 33/33-SED	116.23	116.23			D	A		R			C	A	C	A			C	R																	R	D	R		
344-U1414A-14H-2-A 74/74-SED	118.14	118.14			D	A					C	A	C	C		C	C	C																	R	D	R		
344-U1414A-14H-4-A 93/93-SED	121.33	121.33			C	C	D	A	R		C	C	C	C		D								C											R				
344-U1414A-14H-7-A 45/45-SED	125.35	125.35			C	C	D	A	R		C	C	R	C		D	C							A		D	A		C					C	R			
344-U1414A-15H-2-A 26/26-SED	127.16	127.16			C	C	D	A	C		C	C	C	C		D	C		C	C	R			A	C	A	D	R	R					A	R			
344-U1414A-15H-2-A 78/78-SED	127.68	127.68			D	C					C	C	C	A			C	C	C	C															C	D	C		
344-U1414A-15H-3-A 121/121-SED	129.61	129.61			D	C					A	C	C	A																					R	D	R		
344-U1414A-15H-4-A 7/7-SED	129.97	129.97			D	C		C			C	C	C	A		C																			R	D	R		
344-U1414A-15H-6-A 77/77-SED	133.67	133.67			D	C		A			C	C	R	A		A	C	R	R	R															C	D	R		
344-U1414A-15H-7-A 47/47-SED	134.87	134.87			C	C	D	A	R		C	R	R	C		D	R				R			A		A	A	C	R					C	R			
344-U1414A-16H-1-A 87/87-SED	135.77	135.77			C	C	D	A	R		R	C		C		D			R	R				A		D	C	A	C					A	R			
344-U1414A-16H-4-A 73/73-SED	139.83	139.83			C	R	D	A	R		R	R	R	C		D			R	R				A		D	A		R					C	R			
344-U1414A-17H-3-A 70/70-SED	148.1	148.1			R	R	D	A			C	R	R	R		D	R		R	R				A	R	D	A	C	R					C				
344-U1414A-17H-5-A 127/127-SED	151.67	151.67			D	C	C	R	R		A	C	C	A		C	R							R		D	A							C	D	R		
344-U1414A-18H-5-A 104/104-SS	159.07	159.07			M	A				R	C	A	C	A			C	R																		D			
344-U1414A-18H-6-A 51/51-SS	160.04	160.04				R	D	A			R	R	R			D			C	C		zeolite	C	A		A	D												
344-U1414A-19H-3-A 5/5-SS	164.97	164.97			M	A	R	R			A	R	R	C		R								R		M								R	M	C		
344-U1414A-19H-4-A 47/47-SS	166.89	166.89			R	C	D	A			C	R	R	R		D						zeolite	R	A		D	A							C				
344-U1414A-19H-6-A 35/35-SS	169.59	169.59			M	C	R	R			C	R	R	C		R			C	C				R		M								R	M	C		
344-U1414A-20H-1-A 27/27-SS	171.87	171.87			R	C	D	A			C			R		D			C	C				A		D	A	R										
344-U1414A-20H-4-A 42/42-SS	176.52	176.52			R	C	A	A			C					A			C	C				A		A	D		R					A				

Sample	Top Depth [m]	Bottom Depth [m]	Description of where smear slide taken	Actinolite abundance	Tephra	Siliciclastic	Detrital carbonate	Biogenic carbonate	Glauconite abundance	Clay minerals abundance	Opaques abundance	Feldspar abundance	Quartz abundance	Glass abundance	Halite abundance	Calcite, allogenic abundance	Hornblende abundance	Pyroxene abundance	Chalcedony abundance	Biotite abundance	Chlorite abundance	Other mineral	Other mineral	Microfossil abundance	Diatoms abundance	Calcareous nannofossils abundance	Foraminifera abundance	Radiolarians abundance	Sponge spicule fragments abundance	Silicoflagellate, ebridian, actiniscidian abundance	Microfossil comment	Macrofossil (fauna) abundance	Macrofossil (fauna) comment	Rock fragment - sedimentary lithic	Rock fragment - volcanic lithic	Rock fragment - plutonic lithic	Principal lithology	General smear slide comment
344-U1414A-21H-2-A 83/83-SS	183.43	183.43			C	R	D	C			R	C	R	C		D						zeolite	R	C		A	D							A	C			
344-U1414A-21H-2-A 94/94-SS	183.54	183.54			C	C					D	C	C	C																			R	A	R		
344-U1414A-21H-4-A 68/68-SS	186.28	186.28					D	A			R					D								A		A	D		R					A				
344-U1414A-21H-6-W 112/112-SS	189.72	189.72			R	C	A	C			R	C	C	R		A			R	R				C		A	D							D				
344-U1414A-21H-6-W 50/50-SS	189.1	189.1			R	C	D	A			R	C	C	R		D			C	C				A		A	D							A	R			
344-U1414A-22H-2-A 65/65-SS	192.75	192.75				C	D	A			R	R	R			D	C							A	R	A	A	C	A					C				
344-U1414A-22H-4-A 122/122-SS	196.32	196.32			D	C	C	R		C	C	C	C	A		C	R	R						R		M			R					R	D			
344-U1414A-22H-4-A 79/79-SS	195.89	195.89			C	R	D	A			R	R	R	C		D		R				SAPROPEL	R	A		A	C	A	A					A				
344-U1414A-22H-4-W 20/20-SS	195.3	195.3			C	C	A	A	A	R	A	C	R	C		A					C			A	R	R	A	A	C					R	A	C		
344-U1414A-22H-7-A 22/22-SS	199.17	199.17			R	C	D	A			R	R	R	R		D	C		R	R				A	R	A	C	A	A					A	R			
344-U1414A-23X-1-A 26/26-SS	200.36	200.36			C	C	D	A	R		R	R	R	C		D	C	R						A	C	A	C	A	A	R				C				
344-U1414A-23X-4-A 25/25-SS	204.85	204.85			R	C	D	A	R		R	R	R	R		D	C	R	R	R				A	C	A	C	A	A					C				
344-U1414A-23X-5-A 3/3-SS	206.13	206.13			A	C	A	A	C	R	C	C	C	A		A	C	R	R	R	R			A	A	C	C	A	C	R				C	A			
344-U1414A-23X-7-A 42/42-SS	209.03	209.03				C	D	A	C	R	R	R	C			D	C	C						A	C	A	C	A	C	R				C	C			
344-U1414A-24X-1-A 15/15-SED	209.85	209.85			R	C	D	A	R		R	R	R	R		D	R	R						A	R	A	A	A	C					A				
344-U1414A-24X-1-A 42/42-SS	210.12	210.12				C	D	A	R		C	R	R			D	R		R	R	R			A	R	C	A	A	A					A				
344-U1414A-24X-2-A 114/114-SS	212.34	212.34				C	A	A	C		C	C	R			A	C	R	R	R	R			A	R	C	A	A	A					A				
344-U1414A-24X-3-A 27/27-SS	212.97	212.97			D	C	A	C	R		C	C	R	A		A	R	R	C	C				C	R	C	C	D	R					C	D	R		
344-U1414A-24X-3-A 56/56-SS	213.26	213.26			D	C	A	A	R		C	R	R	A		A		R			R			A	R	A	A	A	R					C	D	R		
344-U1414A-24X-4-A 29/29-SS	214.1	214.1				C	D	A	C		R	C	C			D	C	R			C			A	R	C	A	A	A					A				
344-U1414A-24X-6-A 25/25-SS	216.7	216.7			A	C	A	A	C		C	C	C	A		A			C	C	C			A	R	A	A	D	R					C	A	R		
344-U1414A-24X-6-A 90/90-SS	217.35	217.35			A	C	A	A	C		C	C	C	C		A	R	C	C	C	C			A	R	C	A	D	C					A	C	R		
344-U1414A-25X-1-A 34/34-SED	219.64	219.64			C	C	D	A		R	R	R		C		D	R	R						A	C	A	A	D	C					C				
344-U1414A-25X-3-A 39/39-SED	222.51	222.51			A	C	A	C		C	A	C	C	A		A	R	R						C	C	C	A	D	C					R	A			
344-U1414A-25X-5-A 57/57-SED	225.69	225.69		R	C	C	A	D	C	C	C	C	C	C		A	R	R			C	SAPROPEL	R	D	C	A	A	A	D	R				C	R			
344-U1414A-25X-6-A 69/69-SED	227.31	227.31			A	A	A	C		A	C	C	C	A		A	R							C	R	C	A	D	C					C	A			
344-U1414A-26X-2-A 29/29-SED	230.69	230.69				A	A	A	C	C	C	C	C			A	C	R						A	R	C	A	A	A					C	C			
344-U1414A-26X-5-A 35/35-SED	235.25	235.25			R	C	D	A	C		C	R	R	R		D	C	R				SAPROPEL	R	A	C	C	A	A	A					A	R			
344-U1414A-27X-2-A 22/22-SED	240.22	240.22			R	C	D	A	C		C	R	R	R		D	R		R	R	R			A	A	C	C	A	A	C				C				
344-U1414A-27X-3-A 16/16-SED	241.66	241.66			R	C	D	A	C		R	R	R	R		D	R							A	C	C	A	A	C	R				A	C			
344-U1414A-27X-3-A 33/33-SED	241.83	241.83				C	D	A	R		C	R	R			D	R							A	C	C	A	A	A	C				A				
344-U1414A-27X-5-A 97/97-SED	245.47	245.47			C	C	D	A	C		R	R	R	C		D	R		R	R				A	R	C	C	D	A					A	C	R		
344-U1414A-27X-6-A 10/10-SED	246.1	246.1			A	C	D	C			C	R	C	A		D	C		C	C				C		R	D	A	R					R	A			
344-U1414A-27X-7-A 34/34-SED	247.56	247.56			C	C	D	A			C	R	R	C		D	R							A	R	C	A	A	C					C				

Sample	Top Depth [m]	Bottom Depth [m]	Description of where smear slide taken	Actinolite abundance	Tephra	Siliciclastic	Detrital carbonate	Biogenic carbonate	Glauconite abundance	Clay minerals abundance	Opaques abundance	Feldspar abundance	Quartz abundance	Glass abundance	Halite abundance	Calcite, allogenic abundance	Hornblende abundance	Pyroxene abundance	Chalcedony abundance	Biotite abundance	Chlorite abundance	Other mineral	Other mineral	Microfossil abundance	Diatoms abundance	Calcareous nannofossils abundance	Foraminifera abundance	Radiolarians abundance	Sponge spicule fragments abundance	Silicoflagellate, ebridian, actiniscidian abundance	Microfossil comment	Macrofossil (fauna) abundance	Macrofossil (fauna) comment	Rock fragment - sedimentary lithic	Rock fragment - volcanic lithic	Rock fragment - plutonic lithic	Principal lithology	General smear slide comment
344-U1414A-28X-5-A 37/37-SED	253.45	253.45			D	C	C			C	C	C	C	A		C	C	R	C	C															C	D			
344-U1414A-28X-6-A 62/62-SED	255.2	255.2				R	D	A			C		R			D								A	C	C	C	A	D						A				
344-U1414A-28X-6-A 63/63-SED	255.21	255.21				R	D	A			R	R	R			D								A	C	C	A	A	C						A				
344-U1414A-29X-1-A 42/42-SED	258.22	258.22			D	R	C	A			C	R	R	A		C								A	C	R	C	A	C	R					R	A			
344-U1414A-29X-5-SED	264.11	264.11			C	C	D	A	R	R	C	R	R	C		D	R	R	R	R				A	C	C	C	A	A	R									
344-U1414A-30X-5-A 51/51-SS	271.75	271.75			R	R	D	A	R	R	R	R	R	R		D	R							A	R	C	A	A	A										
344-U1414A-31X-3-A 69/69-SS	279.91	279.91			C	R	A	A			R		R	C		A	R							A		A	A	C	R						A				
344-U1414A-31X-3-A 76/76-SS	279.98	279.98				R	A	C	R		R					A	R							C		A	D								D				
344-U1414A-31X-6-A 53/53-SS	284.25	284.25			R	R	M	C			R	R	R	R		M	R							C	R	A	D	C							A				
344-U1414A-31X-6-A 55/55-SS	284.27	284.27					A	C			C					A								C		A	D								D				
344-U1414A-32X-2-A 48/48-SS	288.24	288.24				R	D	A	R		R	R				D	R							A		A	D	R							A				
344-U1414A-32X-4-A 32/32-SS	290.3	290.3				C	D	A			C					D	R		R	R		ZEOLITE	C	A		A	D								A	R			
344-U1414A-32X-4-A 7/7-SS	290.05	290.05				C	D	A	C		R	R	R			D	R							A		A	D								A				
344-U1414A-33X-1-A 15/15-SS	296.75	296.75				C	A	A	R		R					A	C				R			A		A	D	C							A				
344-U1414A-34X-1-A 25/25-SS	302.35	302.35				R	D	C	R		C		R			D	R					ZEOLITE	R	C		D	A								A	R			
344-U1414A-34X-1-A 35/35-SS	302.45	302.45			D	C	C	R			C	C	R	A		C						ZEOLITE	C	R		M									R	D			
344-U1414A-35X-1-A 109/109-SS	308.79	308.79				C	D	A	R		C	C	R			D	C				R			A		A	D	C							A		R		
344-U1414A-35X-1-A 47/47-SS	308.17	308.17			A	C	A	C			C	R	C	A		A								C		D	A		R						R	A			
344-U1414A-35X-1-A 74/74-SS	308.44	308.44				C	A	A			R		R			A	C					ZEOLITE	C	A		A	D	A							A				
344-U1414A-35X-CC-A 13/13-SS	309.21	309.21				C	D	A	R		R		C			D		R			C			A		C	D	A							A	R			
344-U1414A-36R-1-A 118/118-SS	313.08	313.08			A	C	A	C	C		R	C	C	C		A					C			C		C	M								C	A	C		
344-U1414A-36R-1-A 40/40-SS	312.3	312.3			A	C	D	C	C	R	C	R	R	C		D	R	R						C		A	D		R						A	A			
344-U1414A-36R-1-A 54/54-SS	312.44	312.44			C	C	D	C			R	R	R	C		D						ZEOLITE	C	C		A	D								A	R			
344-U1414A-36R-1-A 76/76-SS	312.66	312.66			D	C	C	R			C	C	R	A		C								R		M	C								R	D			
344-U1414A-36R-2-A 26/26-SS	313.47	313.47			C	C	R	R			C	C	C	C		R	R							R		R	M								R	C	C		dominant recrystallized calcite
344-U1414A-36R-3-A 100/100-SS	315.13	315.13			R	R	R	C			R		R	R		R	R	R						C		C	M								D				abundant recrystallized calcite
344-U1414A-37R-1-A 7/7-SS	316.47	316.47			C	C	C	A	C		C	C	C	C		C								A		C	D	A	R						A	R			abundant recrystallized calcite
344-U1414A-37R-2-A 67/67-SS	318.16	318.16			D	A	C	C		C	C	C	C	A		C								C		A	D								C	D	C		
344-U1414A-37R-2-A 86/86-SS	318.35	318.35				C	R	R	C		R					R	R							R		M									D				abundant recrystallized calcite
344-U1414A-37R-4-A 11/11-SS	319.75	319.75				C	R	C	C		R					R								C		A	D								D				abundant recrystallized calcite
344-U1414A-37R-4-A 73/73-SS	320.37	320.37			D	C	C	C		C	C	R	R	D		C								C		D	A								R	A	R		

Sample	Top Depth [m]	Bottom Depth [m]	Description of where smear slide taken	Actinolite abundance	Tephra	Siliciclastic	Detrital carbonate	Biogenic carbonate	Glauconite abundance	Clay minerals abundance	Opaques abundance	Feldspar abundance	Quartz abundance	Glass abundance	Halite abundance	Calcite, allogenic abundance	Hornblende abundance	Pyroxene abundance	Chalcedony abundance	Biotite abundance	Chlorite abundance	Other mineral	Other mineral	Microfossil abundance	Diatoms abundance	Calcareous nannofossils abundance	Foraminifera abundance	Radiolarians abundance	Sponge spicule fragments abundance	Siliceoflagellate, ebridian, actiniscidian abundance	Microfossil comment	Macrofossil (fauna) abundance	Macrofossil (fauna) comment	Rock fragment - sedimentary lithic	Rock fragment - volcanic lithic	Rock fragment - plutonic lithic	Principal lithology	General smear slide comment
344-U1414A-38R-1-SED	327.28	327.28									R		R																					C	C				major recrystallized calcite
344-U1414A-38R-2-A 18/18-SED	327.73	327.73									A	C	C																					C	C	R			dominant recrystallized calcite
344-U1414A-39R-2-A 24/24-SED	337.15	337.15			D	C	R				R	R	C	A		R																		R	A				abundant recrystallized calcite
344-U1414A-39R-2-A 51/51-SED	337.42	337.42						C			R													C		A	D							C					major recrystallized calcite
344-U1414A-41R-1-A 104/104-SED	356.24	356.24				C				C	C	R																											major recrystallized calcite
344-U1414A-41R-1-A 25/25-SED	355.45	355.45									R																												major recrystallized calcite
344-U1414A-41R-2-A 12/12-SED	356.05	356.05									C																												major recrystallized calcite
344-U1414A-41R-2-A 25/25-SED	356.18	356.18									C																												major recrystallized calcite
344-U1414A-41R-2-A 29/29-SED	356.22	356.22				C				R	C	C	R																										major recrystallized calcite
344-U1414A-42R-1-SED	360.47	360.47			C	C				C	C	R	R																						C				major recrystallized calcite
344-U1414A-42R-1-SED	360.95	360.95									C																												major recrystallized calcite
344-U1414A-42R-CC-SED	361.03	361.06			C	C		R		C	C			C										R		M									C				dominant recrystallized calcite
344-U1414A-44R-1-A 79/79-SED	370.59	370.59				C					C	C	C																						R				dominant recrystallized calcite
344-U1414A-44R-CC-A 18/18-SED	371.03	371.03				C				R	C	C	C																						D				common recrystallized calcite

Sample	Top [cm]	Bottom [cm]	Top Depth [m]	Bottom Depth [m]	Tephra layer/pod shape	Tephra layer/pod color	Tephra layer/pod compaction	Cementation of tephra layer/pod	Bottom contact	Bottom contact dip [deg]	Bottom contact angle [deg]	Top contact	Top contact dip [deg]	Top contact angle [deg]	Component summary	Grain sorting	Grading comment	Grain size of normal graded layers - base	Grain size of normal graded layers - base RANK	Grain size of normal graded layers - top	Grain size of normal graded layers - top RANK	Grain size of reverse graded layers - base	Grain size of reverse graded layers - base RANK	Grain size of reverse graded layers - top	Grain size of reverse graded layers - top RANK
344-U1414A-5H-1-A	106	107	31.46	31.47	lensoid										Glass										
344-U1414A-8H-4-A	92	104	64.32	64.44	layered	7.5YR 5/1 (gray)	very slightly consolidated		sharp boundary								normally graded, top contact in previous section									
344-U1414A-8H-6-W	0	150	66.03	67.53	spotty	5Y 2.5/1 (black)	slightly consolidated		sharp boundary			sharp boundary					well-sorted, spotty, no grading recognizable									
344-U1414A-9H-1-W	135	136	69.75	69.76	layered	10Y 2.5/1 (greenish black)	very slightly consolidated		sharp boundary			sharp boundary					normal									
344-U1414A-9H-3-W	140	141	72.8	72.81	spotty	5GY 4/1 (dark greenish gray)	very slightly consolidated		diffuse boundary			diffuse boundary					normal, well-sorted, bottom contact in next section									
344-U1414A-11H-2-W	70	72	89.6	89.62	layered	N 4 (dark gray)	slightly consolidated		sharp boundary			gradational boundary					light-colored, well-sorted, normally graded									
344-U1414A-11H-3-W	25	27	90.65	90.67	layered	N 3 (very dark gray)	slightly consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-12H-1-W	18	28	97.08	97.18	layered	5YR 2.5/1 (black)	moderately consolidated		sharp boundary			gradational boundary					normally graded, well-sorted									
344-U1414A-13H-5-A	20	27	112.6	112.67	layered	N 4 (dark gray)	moderately consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-13H-5-A	35	37	112.75	112.77	layered	N 4 (dark gray)	moderately consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-13H-5-A	91	94	113.31	113.34	layered	N 4 (dark gray)	moderately consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-13H-6-A	79	86	114.69	114.76	layered	N 4 (dark gray)	moderately consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-14H-1-A	31	32	116.21	116.22	lensoid	N 8 (white)	very slightly consolidated		discontinuous contact								Layered lenses. very fine-sand									
344-U1414A-14H-2-A	69	75	118.09	118.15	layered	10YR 2/1 (black)	very slightly consolidated		sharp boundary			gradational boundary					normally graded from med sand to very fine sand. Layered									
344-U1414A-15H-2-A	77	80	127.67	127.7	layered	N 5 (gray)	very slightly consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-15H-3-A	119	123	129.59	129.63	layered	N 5 (gray)	well consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-15H-4-A	4	8	129.94	129.98	layered	N 5 (gray)	very slightly consolidated		sharp boundary			gradational boundary					light- and dark-colored, well-sorted, normally graded									
344-U1414A-17H-5-A	123	130	151.63	151.7	layered	N 4 (dark gray)	moderately consolidated		sharp boundary			gradational contact			pyroxene, feldspar, blocky transparent glass shards	well	normal graded	medium sand	5	very fine sand	3				
344-U1414A-18H-5-A	100	107	159.03	159.1	layered	10Y 3/2 (very dark grayish green)	moderately consolidated		sharp boundary			sharp boundary				well	normal grading	medium sand	5	fine sand	4				
344-U1414A-19H-3-A	3	8	164.95	165	layered	N 4 (dark gray)	moderately consolidated		sharp boundary			gradational boundary				well	normally graded	silt	2	silt	2				
344-U1414A-19H-6-A	33	37	169.57	169.61	layered	N 4 (dark gray)	moderately consolidated		bioturbated boundary or contact			bioturbated boundary or contact				well	normally graded	silt	2	silt	2				
344-U1414A-21H-2-A	88	97	183.48	183.57	layered	10Y 3/2 (very dark grayish green)	moderately consolidated		sharp boundary			gradational boundary				well	normally and inversely graded	silt	2	sand	3				
344-U1414A-25X-5-A	44	93	225.56	226.05	layered	2.5YR 3/1 (dark reddish gray)	very slightly consolidated		gradational boundary			gradational boundary													
344-U1414A-27X-3-A	0	25	241.5	241.75	spotty	2.5YR 3/1 (dark reddish gray)	very slightly consolidated																		
344-U1414A-27X-6-A	0	122	246	247.22	spotty	N 4 (dark gray)	very slightly consolidated																		
344-U1414A-28X-5-A	34	39	253.42	253.47	layered	N 4 (dark gray)	very slightly consolidated		gradational boundary			gradational boundary													
344-U1414A-29X-1-A	40	45	258.2	258.25	layered	N 4 (dark gray)	very slightly consolidated		gradational boundary			gradational boundary													
344-U1414A-36R-1-A	70	81	312.6	312.71	layered	N 2.5 (black)	lithified		sharp boundary			bioturbated boundary or contact					normally graded									
344-U1414A-36R-2-A	19	25	313.4	313.46	layered	N 2.5 (black)	lithified		sharp boundary			bioturbated boundary or contact					normally graded									
344-U1414A-37R-2-A	48	57	317.97	318.06	layered	N 2.5 (black)	lithified		sharp boundary			bioturbated boundary or contact					normally graded									
344-U1414A-37R-2-A	64	68	318.13	318.17	layered	N 2.5 (black)	lithified		sharp boundary			bioturbated boundary or contact					normally graded									
344-U1414A-37R-3-A	31	37	318.92	318.98	layered	N 2.5 (black)	lithified		sharp boundary			bioturbated boundary or contact					normally graded									
344-U1414A-37R-5-A	0	86	320.42	321.28	layered	N 2.5 (black)	lithified		bioturbated boundary or contact			bioturbated boundary or contact					normally graded									
344-U1414A-38R-1-A	78	80	326.88	326.9		N 4 (dark gray)	lithified								Partly recrystallized and strongly altered										
344-U1414A-38R-1-A	113	120	327.23	327.3	layered	N 4 (dark gray)	lithified								Partly recrystallized and strongly altered										
344-U1414A-38R-2-A	16	20	327.71	327.75	layered	N 4 (dark gray)	lithified								Partly recrystallized and strongly altered										

THIN SECTION ID: **344-U1414A-46R-2-W 16/20-TSB-TS#19** Thin section no.: 344-19

PRIMARY MINERALOGY Observer: CSD

Lithology: **aphyric, massive, intergranular tholeiitic basalt**

Grain size: very fine grained Textur aphyric
Sample domain comment: Massive, evenly distributed groundmass with prismatic to bladed plagioclase

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		3								
Plagioclase		63								
Clinopyroxene		21.5								
Fe-Ti-oxide		5.5								
Mesostasis		7								

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 2
Recrystallization extent: very slight
General alteration comment: very minor, fresh olivine present

Secondary mineral name	Present (%)	Comment
Clay, saponite	0.7	int, ol
Clay, smectite	1.2	int, ol

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	0.7	
Clay, smectite	1.2	

VEINS AND HALOS Observer: CSD

Vein type	Vein ave. thickness (mm)	Vein generation	Vein comment
sineous, irregular	<0.1	One episode	Cuts and replaces ol-phenocryst, potential bio-alteration (tubes)

THIN SECTION ID: **344-U1414A-47R-1-W 89/93-TSB-TS#20** Thin section no.: 344-20

PRIMARY MINERALOGY Observer: CSD

Lithology: **sparesly phyric intersertal (hyalophitic) tholeiitic basalt**

Grain size: microcrystalline Texture:
Sample domain comment: high alteration, hard to discern groundmass, plagioclase is bladed

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	0.2	0								none, but may be obsured by alteration
Plagioclase	0.2					0.25	subhedral			highly corroded/altered
Clinopyroxene	0									none, but may be obscured by alteration

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		1.08								
Plagioclase		49.5								
Clinopyroxene		17.2								
Fe-Ti-oxide		8.96								
Mesostasis		23.3								
Vesicles		32.7		0.5	5	2	rounded		very highly vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 60
Recrystallization extent: very high
General alteration comment: intersertal areas are entirely altered, plagioclase and clinopyroxene is part corroded to completely altered

Secondary mineral name	Present (%)	Comment
Clay, smectite	60	all

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, smectite	60	

VEINS AND HALOS Observer: CSD

Vein type	Vein ave. thickness (mm)	Vein generation	Vein comment
irregular	<<0.1	One episode	Very fine veins that link vesicles, vein material lines the inner edge of vesicles. Tubes and branching structures in and near smectite (microbial alteration?).

THIN SECTION ID: **344-U1414A-47R-3-W 39/42-TSB-TS#21** Thin section no.: 344-21

PRIMARY MINERALOGY Observer: CSD

Lithology: **porphritic, subophitic, intersertal, intergranular tholeiitic basalt**

Grain size: very fine grained Texture:
Sample domain comment: Massive, slight alteration, abundant in intersertal zones. Plagioclase is bladed.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	9.5	0								
Plagioclase	8.5					2	subhedral			Oscillatory zoning in some plagioclase pheoncrysts
Clinopyroxene	1					0.4	subhedral to anhedral			part corroded

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		1.29								
Plagioclase		57.8								
Clinopyroxene		21.6								
Fe-Ti-oxide		6.17								
Mesostasis		13.1								
Vesicles		2.7		0.1	0.3	0.2	subrounded		vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 8
Recrystallization extent: slight
General alteration comment: alteravtion is most prevelant in intersertal zones

Secondary mineral name	Present (%)	Comment
Clay, smectite	8	int, ol?

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, smectite	8	

THIN SECTION ID: **344-U1414A-48R-4-W 17/21-TSB-TS#22** Thin section no.: 344-22

PRIMARY MINERALOGY Observer: CSD

Lithology: **porphyritic, subophitic, intersertal (hyalophitic) olivine tholeiite basalt**

Grain size: fine grained Texture:
Sample domain comment: Massive, slight alteration, abundant intersertal zones. Plagioclase is lamellar to bladed

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	54.78	6.05								entirely altered - iddingsite pseudomorphs only
Plagioclase	30.03					3	euhedral-subhedral			Oscillatory zoning and twinning is common
Clinopyroxene	18.7					3	subhedral to anhedral			

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		5.6								
Plagioclase		48.3								
Clinopyroxene		31.6								
Fe-Ti-oxide		6.3								
Mesostasis		8								
Vesicles		1		0.1	0.4	0.2	irregular to subrounded		sparsely vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 4
Recrystallization extent: slight
General alteration comment: slight alteration, chlorite present

Secondary mineral name	Present (%)	Comment
Chlorite	0.5	int, plag
Clay, smectite	3.5	int, ol, plag

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, smectite	3.5	

THIN SECTION ID: **344-U1414A-49R-1-W 95/98-TSB-TS#23** Thin section no.: 344-23

PRIMARY MINERALOGY Observer: CSD

Lithology: **porphyritic, intersertal to intergranular olivine tholeiite basalt**

Grain size: very fine grained Texture:
Sample domain comment: Massive, slight alteration, abundant intersertal zones, high olivine (assumed to be the replaced phenocrysts), plagioclase is lamellar to bladed

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	32	4								entirely altered - calcite + chlorite pseudomorphs
Plagioclase	19					3	subhedral to euhedral			twinning and oscillatory zoning is common
Clinopyroxene	9					3	subhedral to anhedral			

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		8.5								
Plagioclase		53.5								
Clinopyroxene		21.5								
Fe-Ti-oxide		4.7								
Mesostasis		10.7								

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 3
Recrystallization extent: slight
General alteration comment: slight alteration, chlorite and carbonate replace olivine phenocrysts

Secondary mineral name	Present (%)	Comment
Calcium carbonate	0.5	ol, int
Chlorite	2	ol, int
Clay, smectite	1.5	ol, int

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Calcium carbonate	0.5	
Clay, smectite	1.5	

VEINS AND HALOS Observer: CSD

Vein type	Vein ave. thickness (mm)	Vein generation	Vein comment
subhorizontal, one branch	1	two generations	Very narrow second carbonate fill episode with no extension features cross cuts thicker extensional carbonate/sap vein

THIN SECTION ID: **344-U1414A-50R-2-W 96/98-TSB-TS#24** Thin section no.: 344-24

PRIMARY MINERALOGY Observer: CSD

Lithology: **aphyric, intersertal, hypocrystalline, seriate tholeiitic basalt**

Grain size: fine grained Textur aphyric
Sample domain comment: Massive, slight alteration, intersertal, cpx not fully developed, plagioclase is lamellar to bladed

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase		48.1								
Clinopyroxene		9								
Fe-Ti-oxide		6.5								
Mesostasis		36.2								

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 9
Recrystallization extent: slight
General alteration comment: slight alteration of intersertal zones and partly formed clinopyroxene

Secondary mineral name	Present (%)	Comment
Clay, saponite	9	int, cpx

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	9	

THIN SECTION ID: **344-U1414A-51R-2-W 60/64-TSB-TS#25** Thin section no.: 344-25

PRIMARY MINERALOGY Observer: CSD

Lithology: **sparsely phyric, intersertal, hypocrystalline, seriate tholeiitic basalt**

Grain size: fine grained Texture:
Sample domain comment: Massive, intersertal, moderate alteration, alteration most intense within intersertal zones. Plagioclase is bladed

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	0.3	0								Phenocrysts absent in the more altered interesertal zone
Plagioclase	0.3					1.5	subhedral to euhedral			Twinned with inclusions

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		0.3								
Plagioclase		44.2								
Clinopyroxene		18.7								
Fe-Ti-oxide		5.6								
Mesostasis		31								
Vesicles		0.2		0.1	0.2	0.2	rounded		very sparsely vesicular	present within interstitial zone

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 10
Recrystallization extent: moderate
General alteration comment: slight-moderate alteration

Secondary mineral name	Present (%)	Comment
Clay, saponite	8	int, cpx, ol?

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	8	

VEINS AND HALOS Observer: CSD

Halo type	Halo ave. thickness (mm)	Halo color	Halo comment
	10	brown	Halo relates to textural change (increased interstital cryptocrystalline to glassy zones); irregular

THIN SECTION ID: **344-U1414A-51R-3-W 42/46-TSB-TS#26** Thin section no.: 344-26

PRIMARY MINERALOGY Observer: CSD

Lithology: **seriate, hypocrystalline, porphyritic tholeiitic basalt**

Grain size: microcrystalline to cryptocrystalline Texture:
Sample domain comment: Seriate texture (varying grain size) slight alteration, intersertal, clinopyroxene and plagioclase are not fully developed, plagioclase crystals are lamellar to bladed

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	30	0								
Plagioclase	23					2.5	subhedral			twinning and oscillatory zoning is common
Clinopyroxene	7					0.8	anhedral to subhedral			part corroded

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase		27.8								
Clinopyroxene		10.3								
Fe-Ti-oxide		13.7								
Mesostasis		47.8								
Vesicles		1		0.2	2.6	1.3	rounded		vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 4
Recrystallization extent: slight
General alteration comment: slight altreration in groundmass, focused on intersertal zones

Secondary mineral name	Present (%)	Comment
Clay, saponite	2	int, cpx, plag
Clay, smectite	2	int, cpx, plag

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	2	
Clay, smectite	2	

THIN SECTION ID: **344-U1414A-53R-2-W 34/37-TSB-TS#27** Thin section no.: 344-27

PRIMARY MINERALOGY Observer: CSD

Lithology: **phyric, intersertal (hyalophitic), subophitic, intergranular tholeiitic basalt**

Grain size: fine grained Texture:
Sample domain comment: Slight alteration within intersertal zones. Vesicles are filled with basaltic groundmass, rare altered olivine. Plagioclase crystals are lamellar in shape

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	1.5	0								
Plagioclase	1.5					1	subhedral			twinning and oscillatory zoning is common

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		0.5								
Plagioclase		62.6								
Clinopyroxene		18.7								
Fe-Ti-oxide		4.3								
Mesostasis		13.1								
Vesicles		0.2		0.1	0.4	0.2	rounded		sparsely vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 5
Recrystallization extent: slight
General alteration comment: slight altreration in groundmass, focussed on intersertal zones. Olivine replaced

Secondary mineral name	Present (%)	Comment
Clay, saponite	4.5	in

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	4.5	

THIN SECTION ID: **344-U1414A-54R-5-W 76/79-TSB-TS#28** Thin section no.: 344-28

PRIMARY MINERALOGY Observer: CSD

Lithology: **phyric, intersertal (hyalophitic), subophitic, intergranular olivine tholeiite basalt**

Grain size: microcrystalline to fine grained Texture:
Sample domain comment: Very slight groundmass alteration, olivine is almost always replaced by saponite. Plagioclase crystals are lamellar to bladed in shape.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	1.3	0.3								entirely altered - iddingsite pseudomorphs only
Plagioclase	0.8					1.5	subhedral to euhedral			Twinning common
Clinopyroxene	0.2					0.7	anhedral			

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		3.3								
Plagioclase		61.2								
Clinopyroxene		17.1								
Fe-Ti-oxide		6.8								
Mesostasis		12.3								
Vesicles		<0.1		0.1	1	0.5	rounded		very sparsely vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 3.6
Recrystallization extent: very slight
General alteration comment: very slight alteration in groundmass, focussed on intersertal zones and olivine

Secondary mineral name	Present (%)	Comment
Clay, saponite	1	int

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	1	

THIN SECTION ID: **344-U1414A-55R-1-W 25/29-TSB-TS#29** Thin section no.: 344-29

PRIMARY MINERALOGY Observer: CSD

Lithology: **intersertal, seriate, porphyritic tholeiitic basalt**

Grain size: microcrystalline Texture:
Sample domain comment: High groundmass alteration, hard to discern groundmass. Plagioclase crystals are lamellar to bladed in shape.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	1.6	0								none, but may be obsured by alteration
Plagioclase	1.6					0.8	subhedral to euhedral			Twinning common, embayed to skeletal, many replaced
Clinopyroxene	0									none, but may be obsured by alteration

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase		23.3								
Clinopyroxene		7.7								
Fe-Ti-oxide		7.7								
Mesostasis		61								
Vesicles		40		0.8	4	2.5	subrounded		highly vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 45
Recrystallization extent: high
General alteration comment: high alteration, replacing intersertal zones, plagioclase and clinopyroxene, skeletal to embayed phenocrysts remain

Secondary mineral name	Present (%)	Comment
Clay, saponite	45	all
Sulfide, pyrite	0.5	vesicles

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	45	

THIN SECTION ID: **344-U1414A-56R-1-W 51/54-TSB-TS#30** Thin section no.: 344-30

PRIMARY MINERALOGY Observer: CSD

Lithology: **porphyritic, intersertal (hyalophitic), subophitic tholeiitic basalt**

Grain size: microcrystalline to fine grained Texture:
Sample domain comment: Moderate groundmass alteration within intersertal zones. Plagioclase crystals are lamellar in shape.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	25	0								
Plagioclase	18					1.5	subhedral			Twinning and oscillatory zoning is common, one oikocryst observed with plagioclase chadacrysts, typically clustered with clinopyroxene phenocrysts.
Clinopyroxene	7					1.5	anhedral to subhedral			clustered with plagioclase

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase		44.2								
Clinopyroxene		15.7								
Fe-Ti-oxide		5.1								
Mesostasis		34.8								
Vesicles		1.5		0.5	3	1	subrounded		0	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 25
Recrystallization extent: moderate
General alteration comment: moderate alteration, replacing intersertal zones

Secondary mineral name	Present (%)	Comment
Clay, smectite	25	int, cpx

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, smectite	25	

THIN SECTION ID: **344-U1414A-58R-1-W 36/40-TSB-TS#31** Thin section no.: 344-31

PRIMARY MINERALOGY Observer: CSD

Lithology: **banded benthic foraminifer-bearing, clayey sediment with minor heavy minerals**

Grain size: very fine grained Texture:

Sample domain comment: Within interflow sediment: clay groundmass, possibly volcanic in origin. Foraminifers range from intact to fragmented but are not deformed.

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature:

Total alteration (%):

Recrystallization extent:

General alteration comment: Sediment is composed of compacted clay, saponite, zeolite and mica(?). Together with heavy minerals, benthic foram tests (calcite or aragonite).

VEINS AND HALOS Observer: CSD

Vein type	Vein ave. thickness (mm)	Vein generation	Vein comment
lamellar	<0.1	One episode	Very narrow lamellar veins that are aligned to banding direction (previously bedding?)

THIN SECTION ID: **344-U1414A-58R-2-W 63/66-TSB_PC#6-TS#32** Thin section no.: 344-32

PRIMARY MINERALOGY Observer: CSD

Lithology: **sparsely phyric, intersertal (hyalophitic), seriate, spherulitic tholeiitic basalt**

Grain size: microcrystalline to cryptocrystalline Texture:
Sample domain comment: Mixed textures, high groundmass alteration, hard to discern groundmass - not point counted. Plagioclase crystals are lamellar in shape.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	1.2	0								
Plagioclase	1					1	subhedral			part corroded
Clinopyroxene	0.2					0.3	subhedral			part corroded

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase		20								
Clinopyroxene		5								
Fe-Ti-oxide		8								
Mesostasis		60								
Vesicles		10		0.6	6	1.5	irregular to sub-rounded		vesicular	towards cryptocrystalline portions of basaltic groundmass

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 55
Recrystallization extent: high
General alteration comment: Numerous discontinous microfractures filled with silicates flanked by narrow saponite alteration halos. Pyrite is disseminated in groundmass.

Secondary mineral name	Present (%)	Comment
Clay, saponite	54	all
Quartz	1	fractures
Sulfide, pyrite	1	

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	54	
Quartz	1	

VEINS AND HALOS Observer: CSD

Vein type	Vein ave. thickness (mm)	Vein generation	Vein comment
irregular	7	One episode	large irregular channels filled with saponite and silica that occur as spherulites

Halo type	Halo ave. thickness (mm)	Halo color	Halo comment
	20		

THIN SECTION ID: **344-U1414A-59R-2-W 47/51-TSB-TS#33** Thin section no.: 344-33

PRIMARY MINERALOGY Observer: CSD

Lithology: **phyric, intersertal, seriate, subophitic tholeiitic basalt**

Grain size: very fine grained Texture:
Sample domain comment: Mixed textures with moderate groundmass alteration within intersertal zones, plagioclase crystals are lamellar in shape

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	1	0								
Plagioclase	1					0.3	subhedral			twinning common

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase		54.7								
Clinopyroxene		19.9								
Fe-Ti-oxide		5.3								
Mesostasis		20.1								
Vesicles		10		0.3	4	1.5	irregular		vesicular	even distribution

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 16
Recrystallization extent: moderate
General alteration comment: moderate alteration, replacing intersertal zones. Pyrite almost always at centre of vesicles

Secondary mineral name	Present (%)	Comment
Clay, saponite	15	int, cpx, ves
Sulfide, pyrite	1	int, ves

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	15	

THIN SECTION ID: **344-U1414A-61R-1-W 40/44-TSB-TS#34** Thin section no.: 344-34

PRIMARY MINERALOGY Observer: CSD

Lithology: **aphyric, intersertal (hyalophitic), subophitic, intergranular tholeiitic basalt**

Grain size: microcrystalline Texture:
Sample domain comment: Massive with moderate groundmass alteration, alteration most intense within intersertal zones, plagioclase crystals are bladed to lamellar in shape

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Plagioclase	<0.1					0.2	subhedral			cluster of small phenocrysts in one isolated zone

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		3.1								
Plagioclase		52.2								
Clinopyroxene		14								
Fe-Ti-oxide		5.7								
Mesostasis		24.8								

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 25
Recrystallization extent: moderate
General alteration comment: moderate alteration, replacing intersertal zones, cpx. Olivine is entirely replaced by iddingsite

Secondary mineral name	Present (%)	Comment
Clay, saponite	22.4	int, cpx

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	22.4	

VEINS AND HALOS Observer: CSD

Vein type	Vein ave. thickness (mm)	Vein generation	Vein comment
planar	0.3	One episode	saponite vein

THIN SECTION ID: **344-U1414A-62R-1-W 69/72-TSB-TS#35** Thin section no.: 344-35

PRIMARY MINERALOGY Observer: CSD

Lithology: **phyric, intersertal (hyalophitic), subophitic, intergranular tholeiitic basalt**

Grain size: fine grained Texture:
Sample domain comment: Mixed textures with slight groundmass alteration within intersertal zones. Olivine is replaced by iddingsite, few but relatively large pheocrysts. Plagioclase in groundmass is lamellar to bladed.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	2.3	0.3								entirely altered - iddingsite pseudomorphs only
Plagioclase	1.8					3	subhedral			Twinning common
Clinopyroxene	0.2					1	anhedral			occurs with plagioclase

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		3.1								
Plagioclase		55.1								
Clinopyroxene		22.8								
Fe-Ti-oxide		5.4								
Mesostasis		12.8								

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 4
Recrystallization extent: slight
General alteration comment: slight alteration, replacing intersertal zones, cpx. Olivine is entirely replaced by iddingsite

Secondary mineral name	Present (%)	Comment
Clay, saponite	3.7	int, cpx
Sulfide, pyrite	0.5	int

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	3.7	

VEINS AND HALOS Observer: CSD

Halo type	Halo ave. thickness (mm)	Halo color	Halo comment
	15	brown	No vein in thin section though abundance of intersertal zones is higher within the halo; mottled, irregular alteration front

THIN SECTION ID: **344-U1414A-63R-3-W 39/43-TSB-TS#36** Thin section no.: 344-36

PRIMARY MINERALOGY Observer: CSD

Lithology: **phyric, intersertal (hyalophitic), subophitic, intergranular tholeiitic basalt**

Grain size: very fine grained Texture:
Sample domain comment: Mixed textures, moderate groundmass alteration, alteration most intense within intersertal zones. Plagioclase crystals are lamellar to bladed, however they exhibit a high degree of corrosion and fracturing.

Phenocrysts:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine	0.7	0								
Plagioclase	0.6					0.6	subhedral			twinning and oscillatory zoning is common, plagioclase is part-corroded
Clinopyroxene	0.1					0.3	anhedral to subhedral			

Groundmass:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Special features	Comment
Olivine		2								
Plagioclase		58.5								
Clinopyroxene		18								
Fe-Ti-oxide		4.2								
Mesostasis		17.1								
Vesicles		7		0.2	1.5	2	irregular		vesicular	abundance greatest near middle of thin section

SECONDARY MINERALOGY Observer: CSD

Alteration domain type/feature: **background**
Total alteration (%): 18
Recrystallization extent: moderate
General alteration comment: moderate alteration, replacing intersertal zones, cpx. Olivine is entirely replaced by iddingsite

Secondary mineral name	Present (%)	Comment
Clay, saponite	16	int, cpx, plag

Vesicle fillings:

Secondary mineral name	Present (%)	Comment
Clay, saponite	16	