



INL Lithologic Core Storage Library

Idaho National Laboratory
Building CFA-663

Operated by the U.S. Geological Survey
for the U.S. Department of Energy

Contact:
Linda C. Davis
PO Box 8072
Pocatello, ID.
83209

Official Name: USGS-129

Logged By: Reuben Johnson, Nov 2003

Selected Aliases:

USGS Site ID: 4330361113002701

Contractor Well ID: N/A

Drilling Agency: USGS

Year Drilled: 2001

Names of Drillers: Matson & Gilbert

Well Status: Water level monitoring

Total Depth of Hole (ft): 779.1

Total Core Recovered (ft): 769.9

Beginning Depth (ft): 9.2

Ending Depth (ft): 779.1

Continuous Recovery

Selected Intervals Recovered

Total # of Core Boxes: 150

Notes:

County & State: Butte Co., ID

Quadrangle Name: Arco Hills SE

Lat / Lng: 43°30' 36.52", 113°00'27.45" NAD27

Tns / Rng / Sec: T02N, R29E, Sec 09, CDA2

UTM Coordinates: N 672940.259 E 276899.939 NAD 27

Altitude (ft): 5,026.19 NGVD29

Core Geological Profile

Lithologic Patterns

-  Basalts
-  Rhyolites
-  Sedimentary Rock

Soil Patterns

(See Unified Soil Classification System.)

-  Gravels - clean
-  Gravels with fines
-  Sands - clean
-  Sands with fines
-  Silts and clays

Intervals in Absentia

-  Surficial material
-  Natural void
-  Interval not cored
-  Missing interval

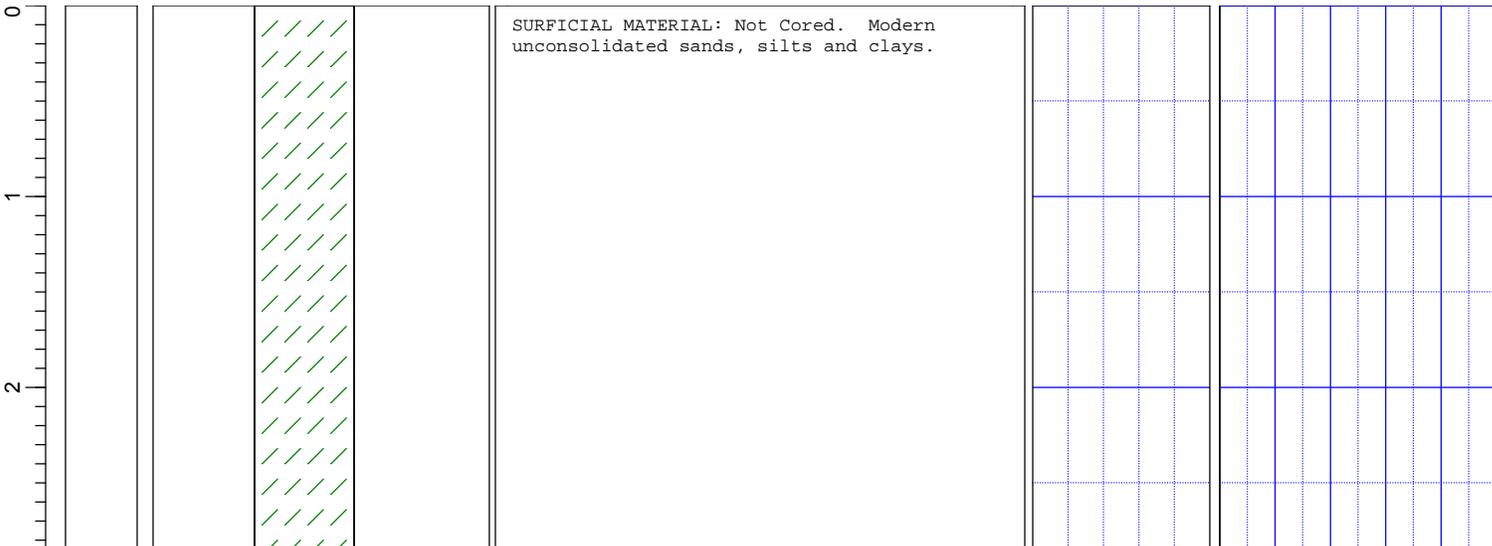
Igneous and Sedimentary Structure Symbols

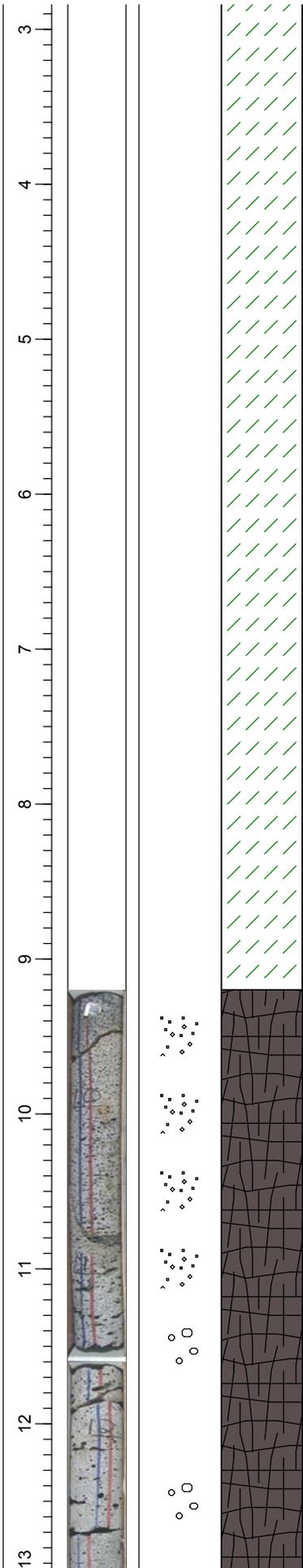
-  Vesicle zone
-  Large vesicles
-  Vesicle planes
-  Mega vesicles
-  Vesicle Cylinders
-  Pipe vesicles
-  Pillows
-  Vesicle Sheet
-  Flow/Mold
-  Spatter feature
-  Ripple marks
-  Mud cracks
-  Imbricated bedding
-  Graded bedding
-  Cross bedding

Soil Structure Symbols

-  Structureless - Single Grained
-  Structureless - Massive
-  Platy
-  Granular
-  Blocky
-  Prismatic
-  Columnar

| Depth (feet & tenths) | Core Photo | Igneous, Soil and Sed Structures | Lithology | Description | Fracture Frequency (See fracture classification on website.) | Vesicle Characteristics —■— Mean Size (in) 0 0.2 0.4 0.6 0.8 1.0 Volume Percentage 0 10 20 30 40 50 |
|-----------------------|------------|----------------------------------|-----------|--------------------|---|---|
| | | | | Miscellaneous Text | 0 1 2 3 4 5 | |





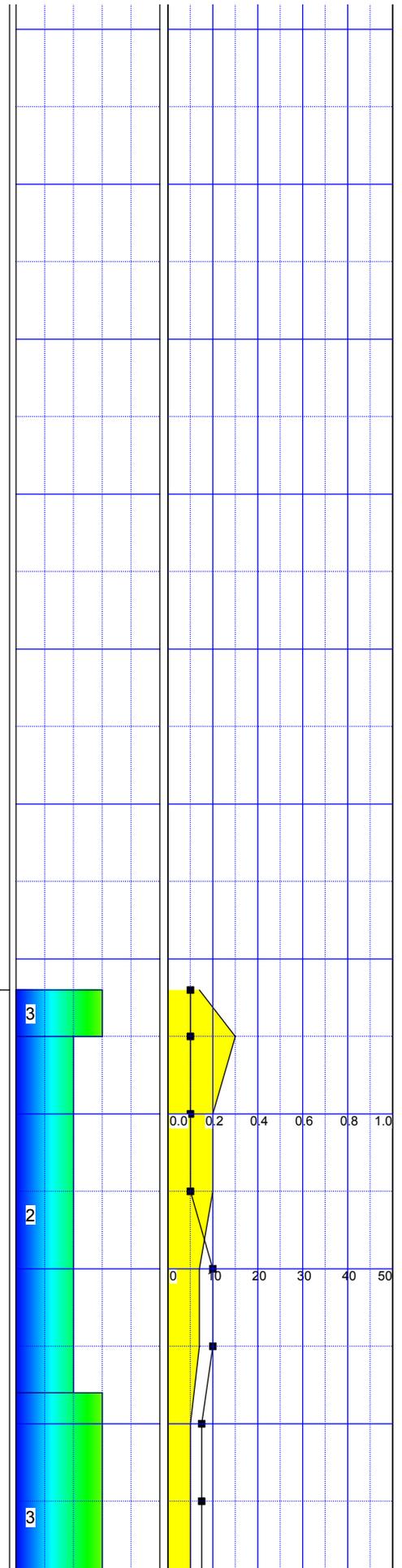
BASALT: Color: medium dark gray very dusky red, dark gray, and grayish red

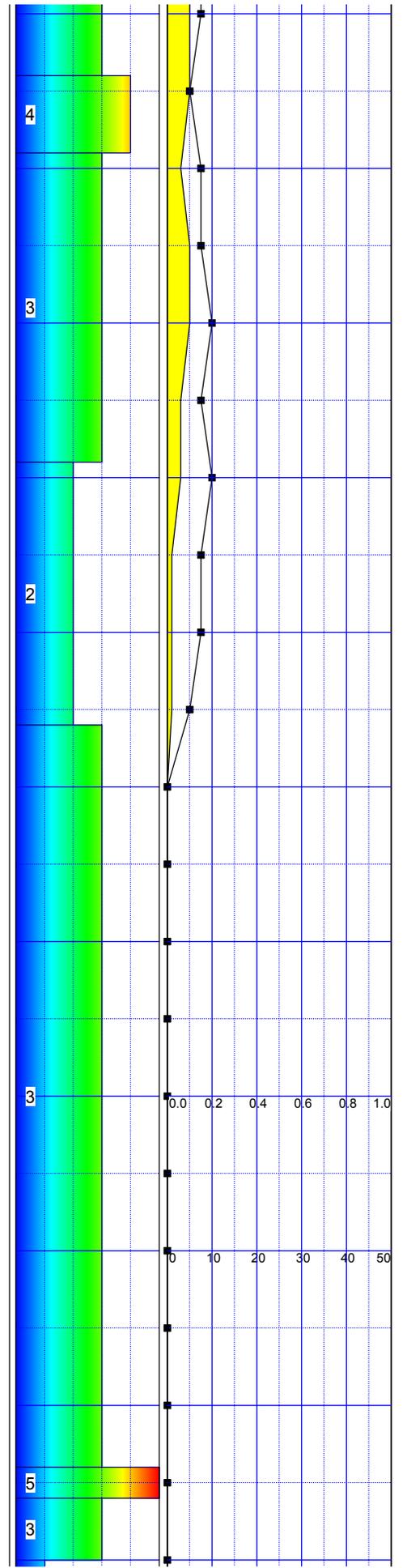
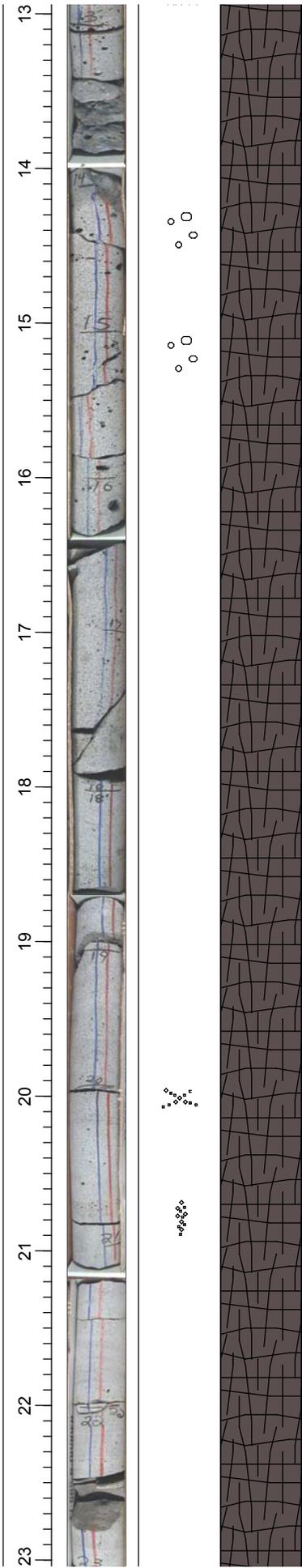
Magnetic Properties: Nonmagnetic

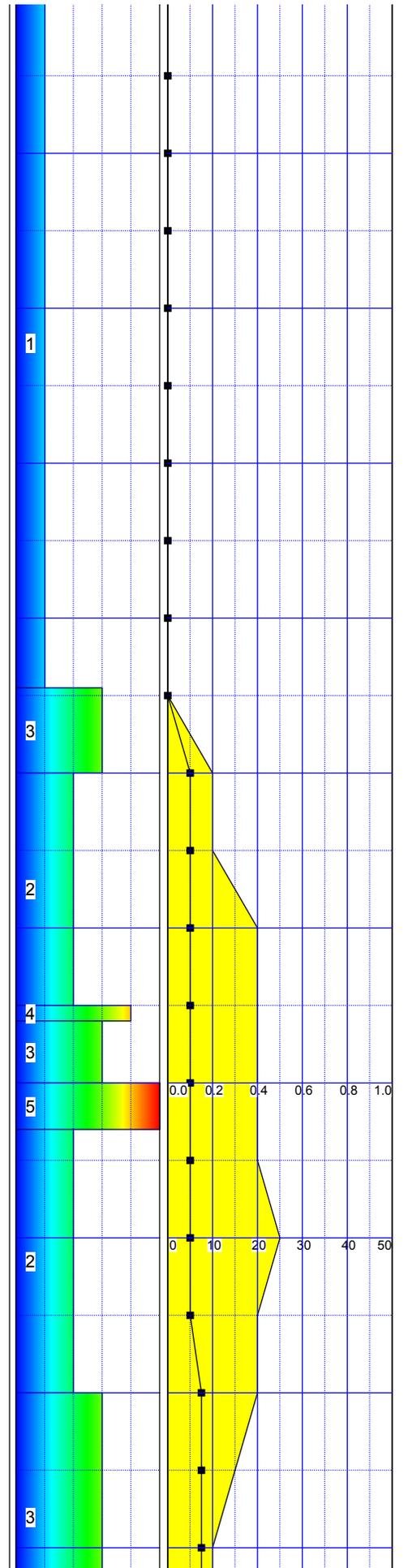
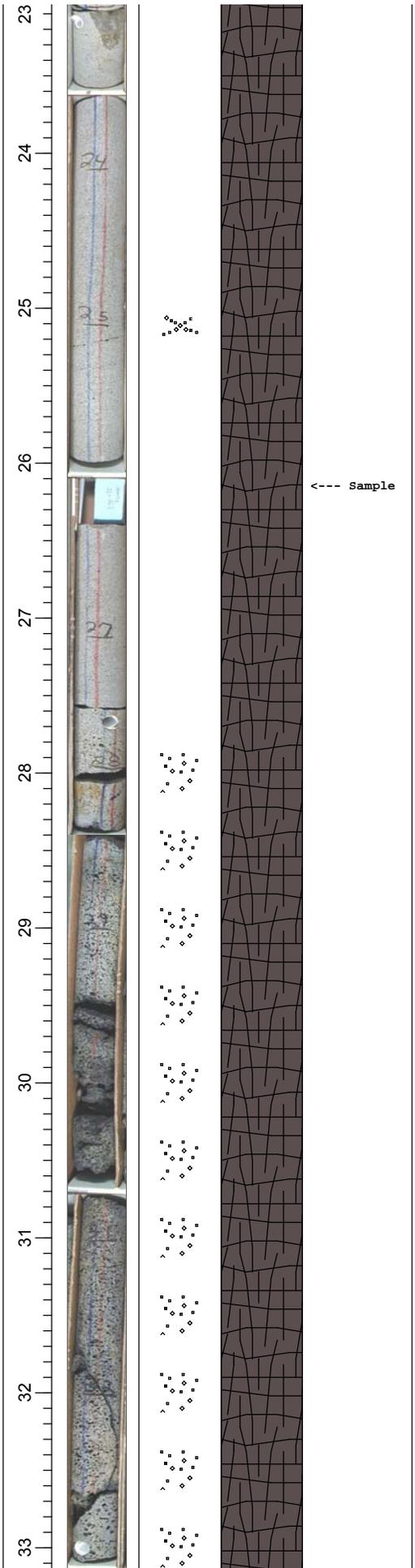
Texture/Composition: Fine-grained phaneritic groundmass throughout with some regions showing 1-3mm tabular and acicular plagioclase granular phenocrysts. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

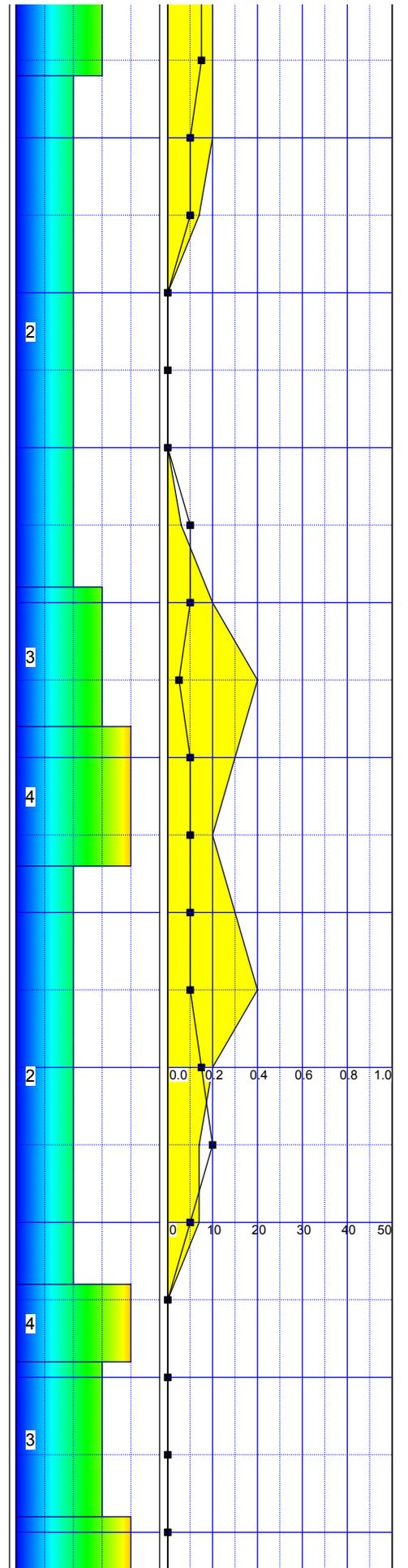
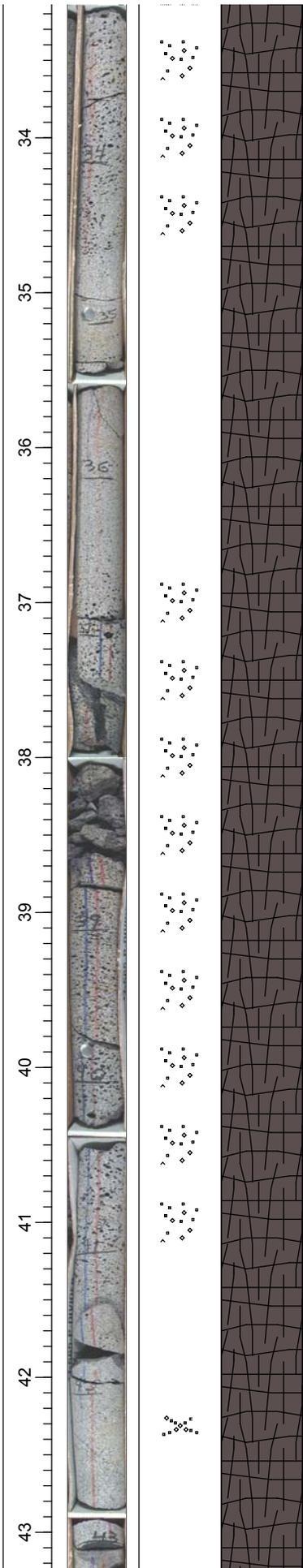
Xenoliths: None noted

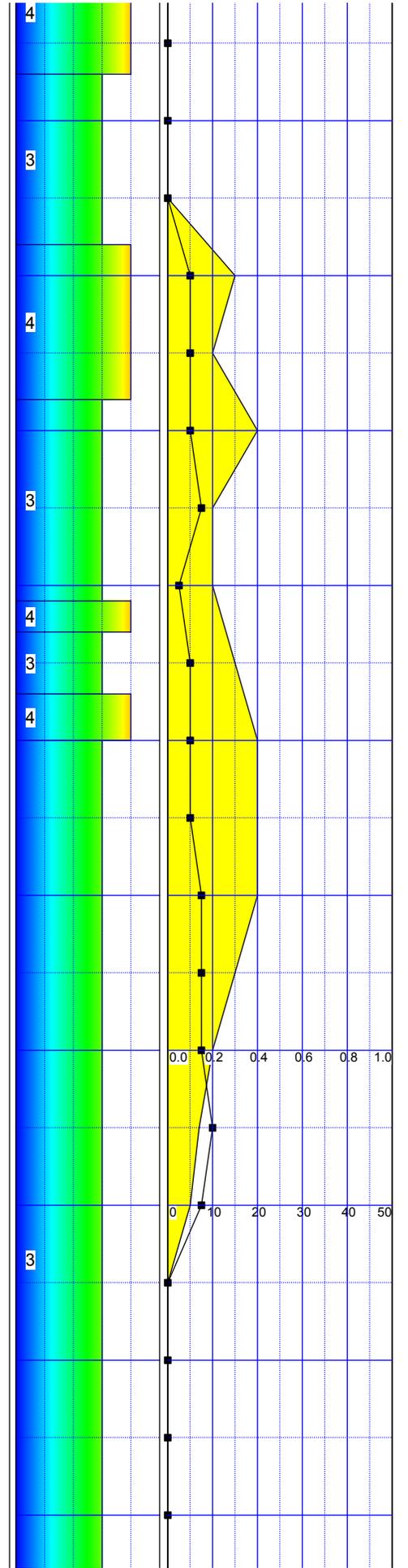
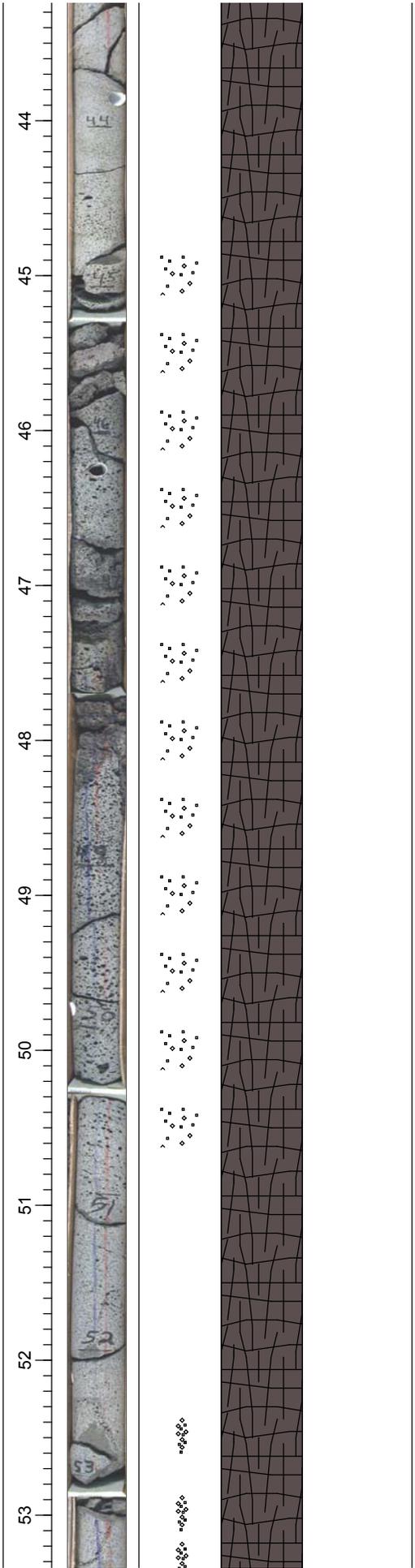
Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays and mild bleaching.

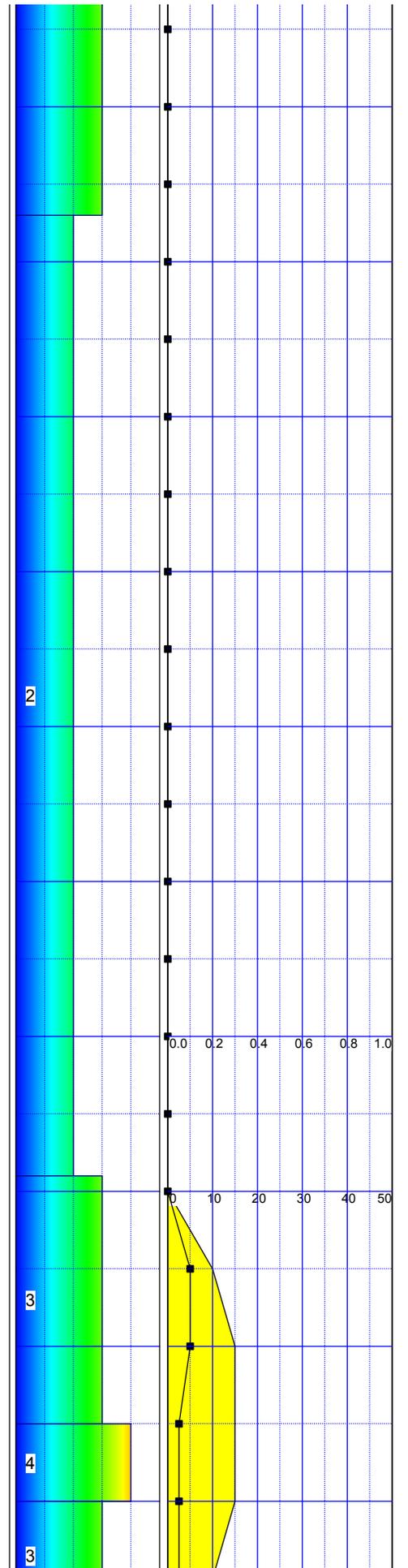
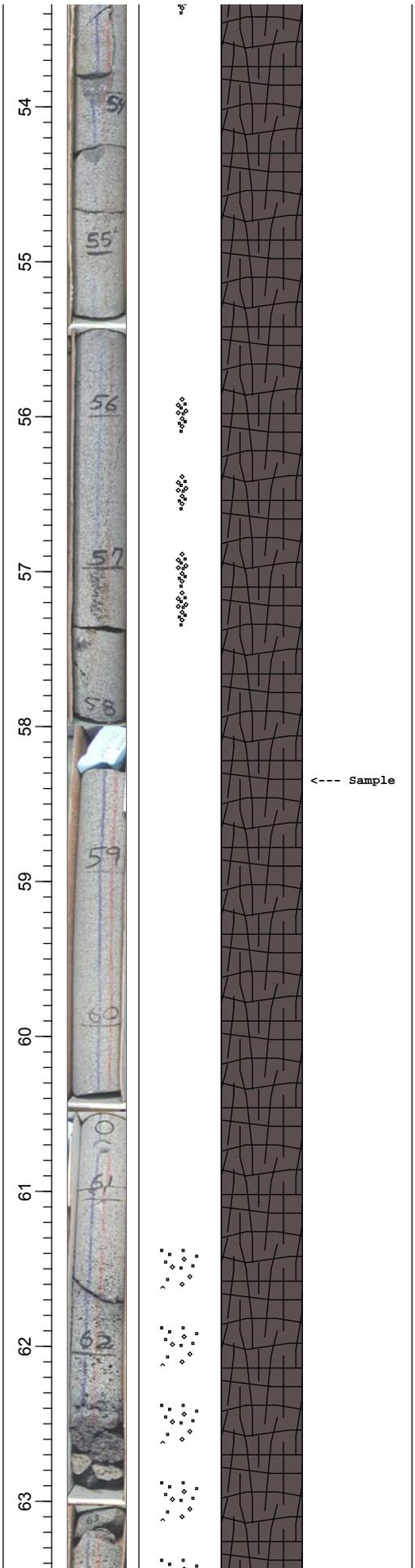


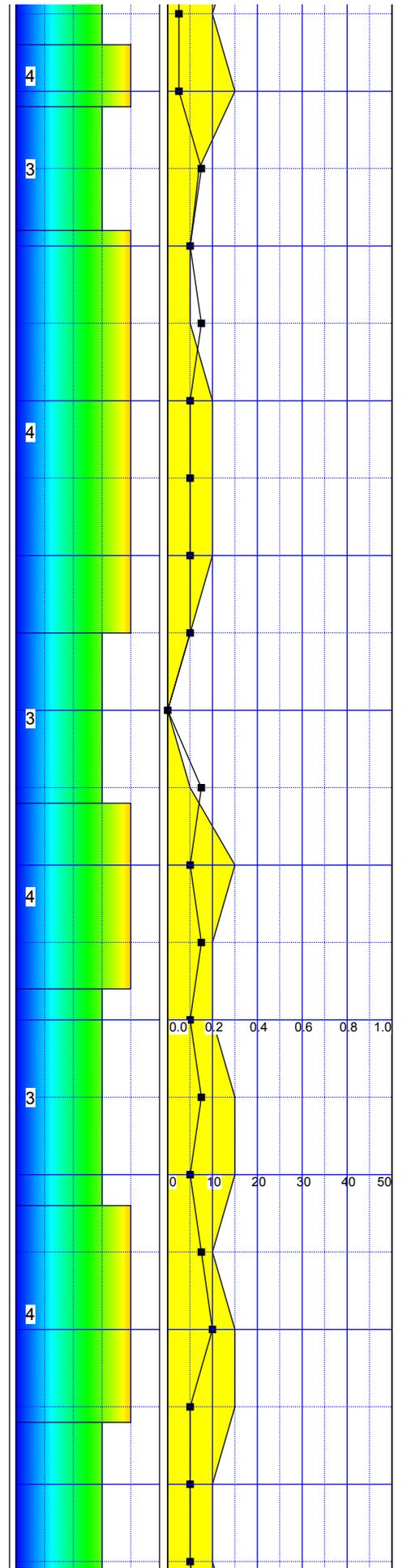
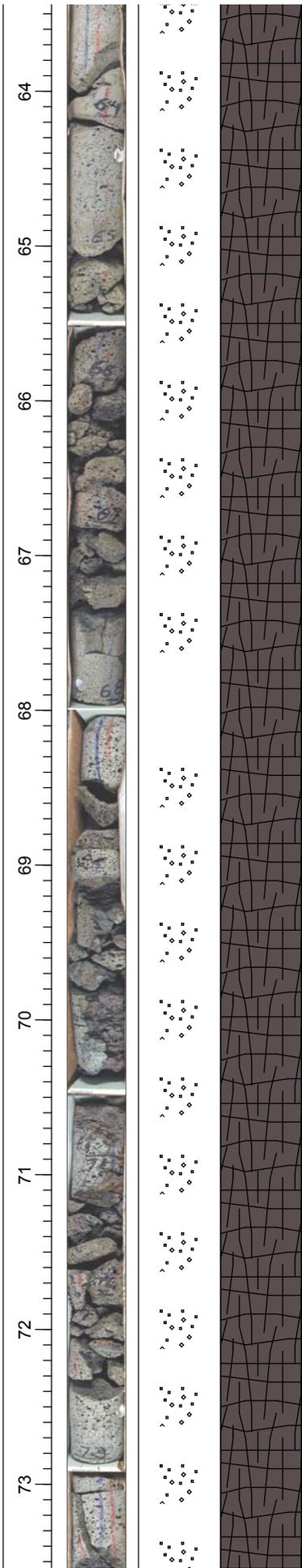


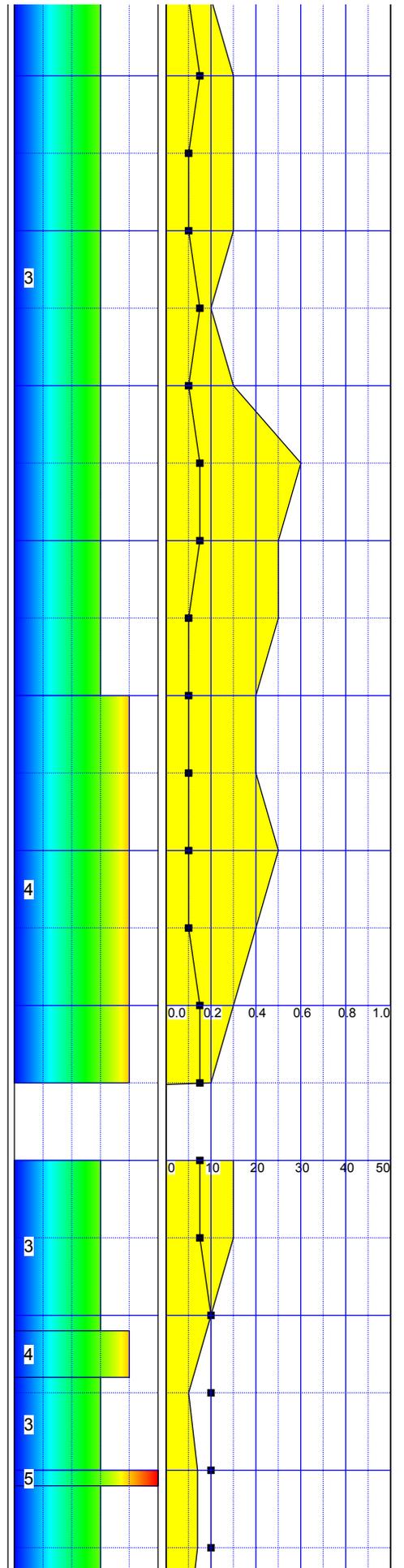
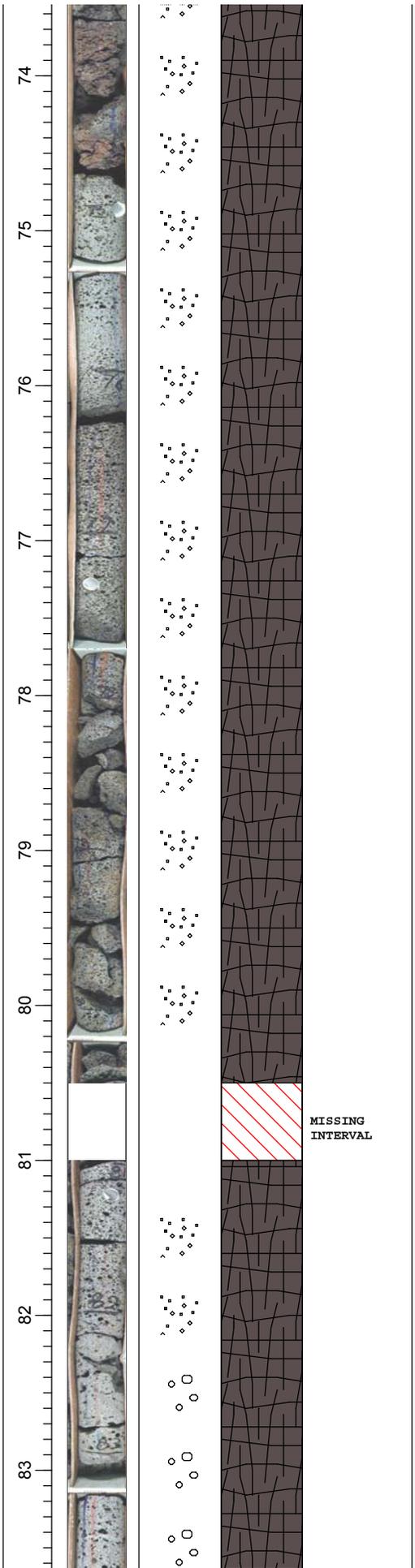


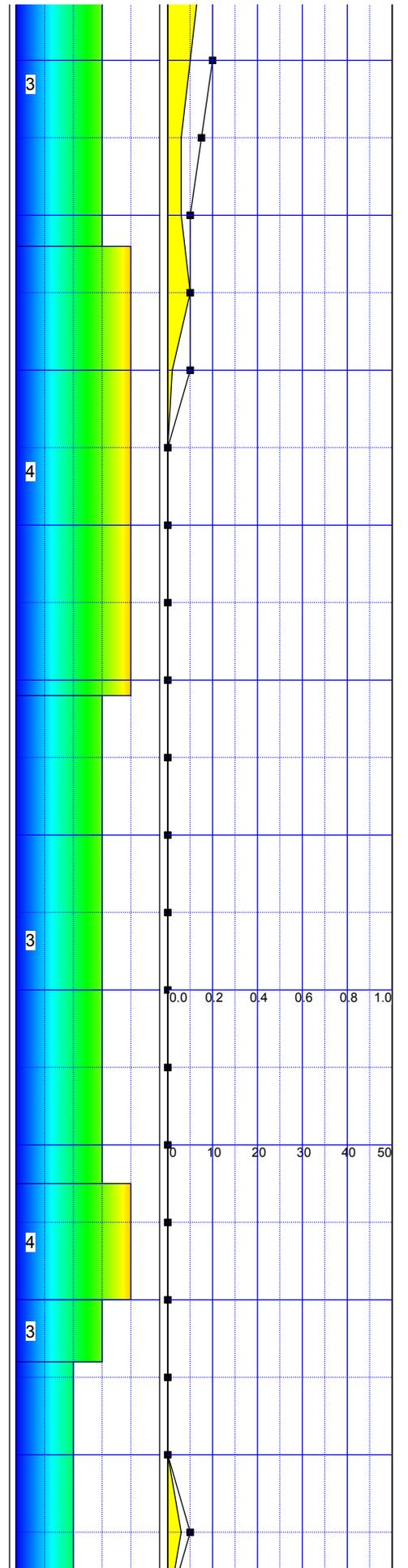
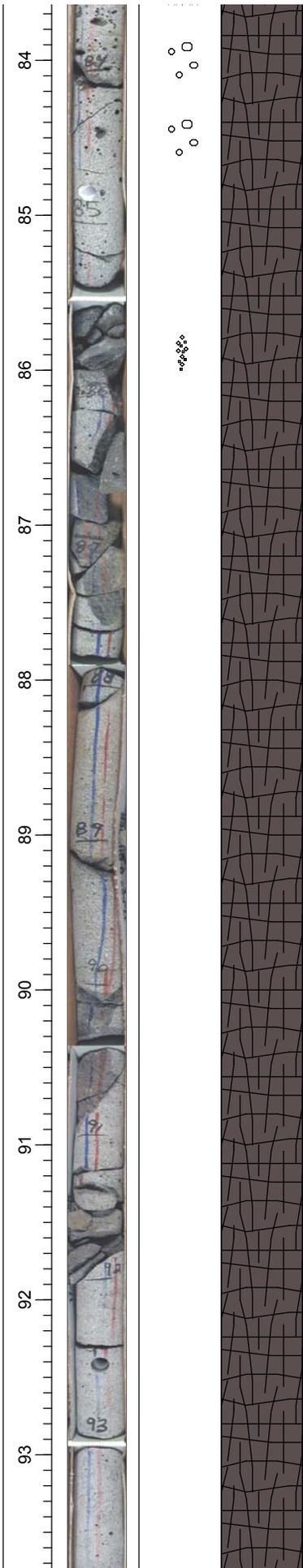


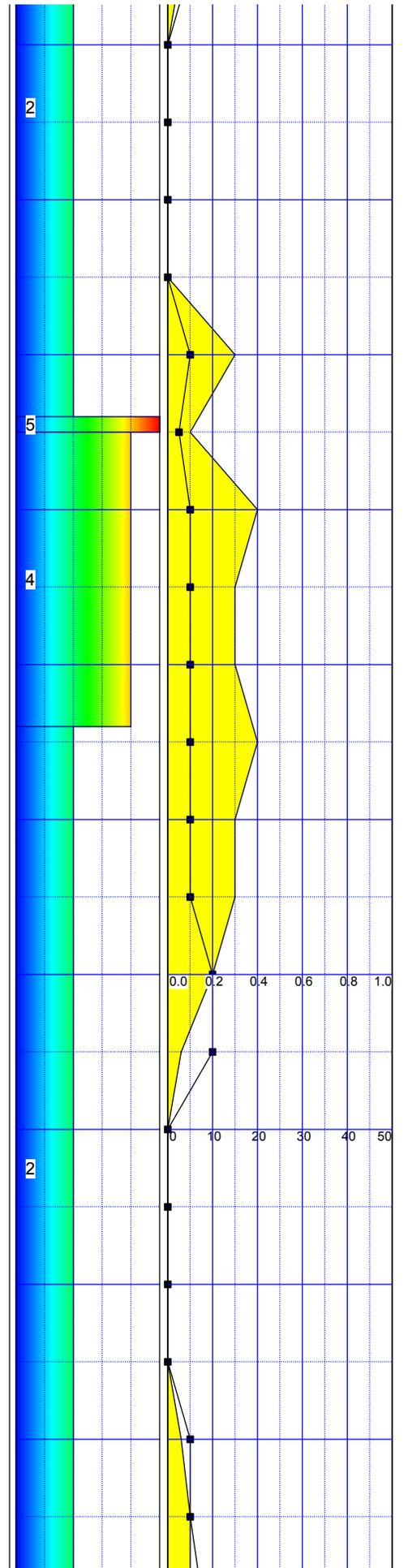
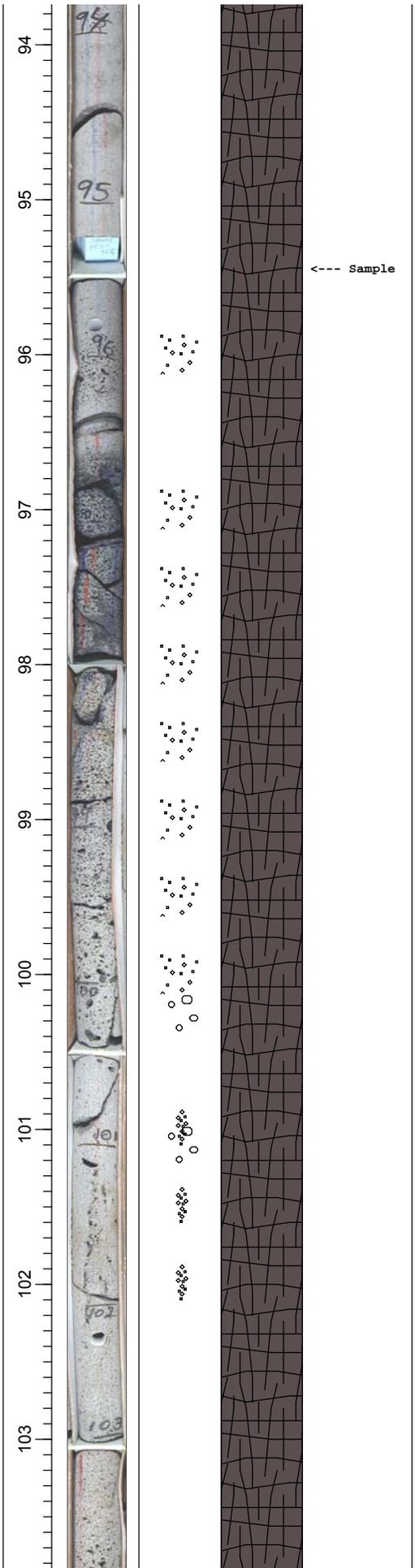


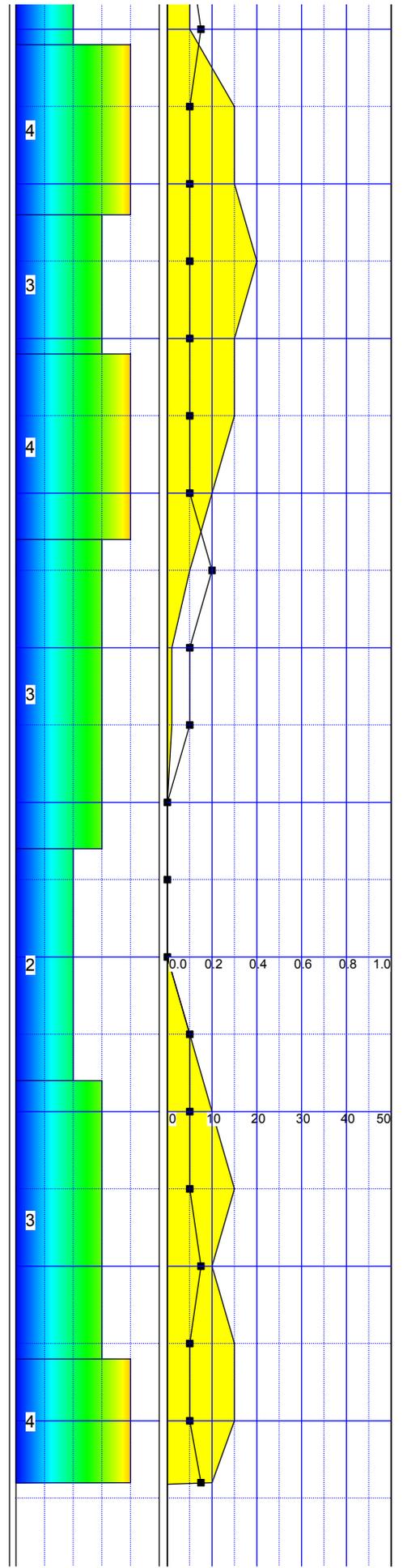
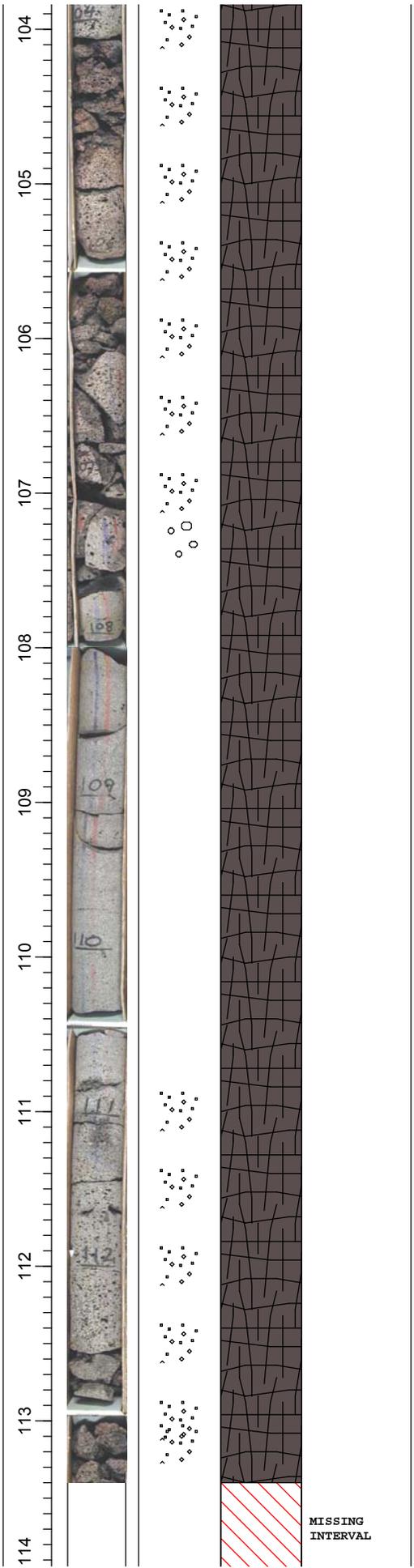


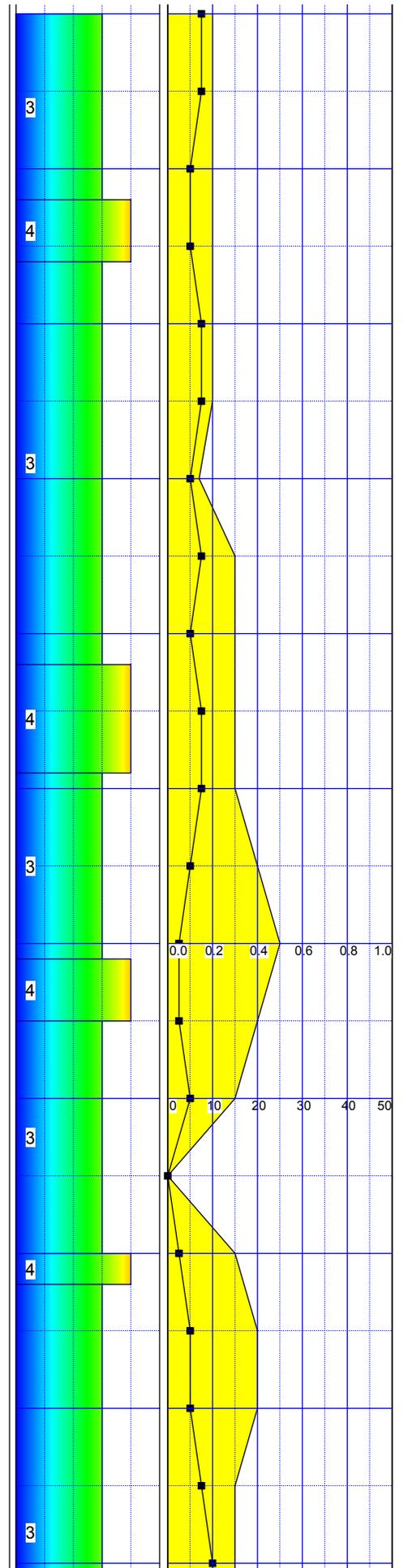
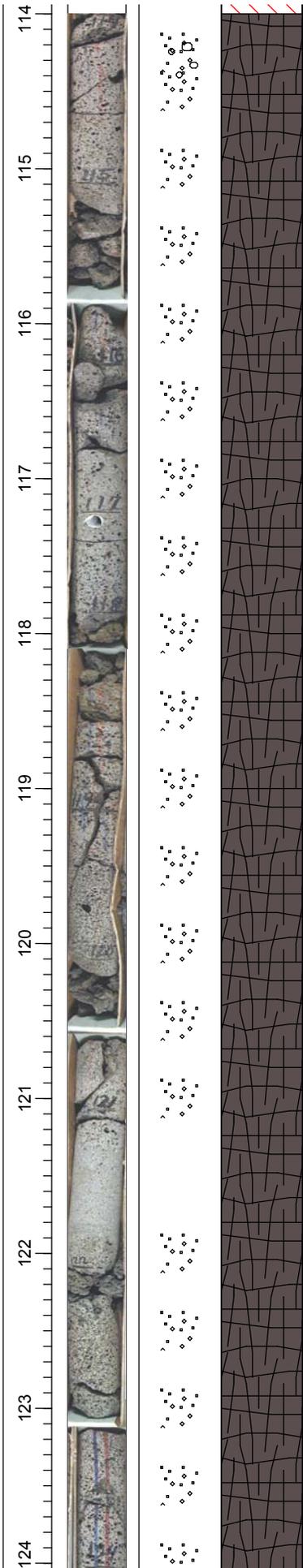


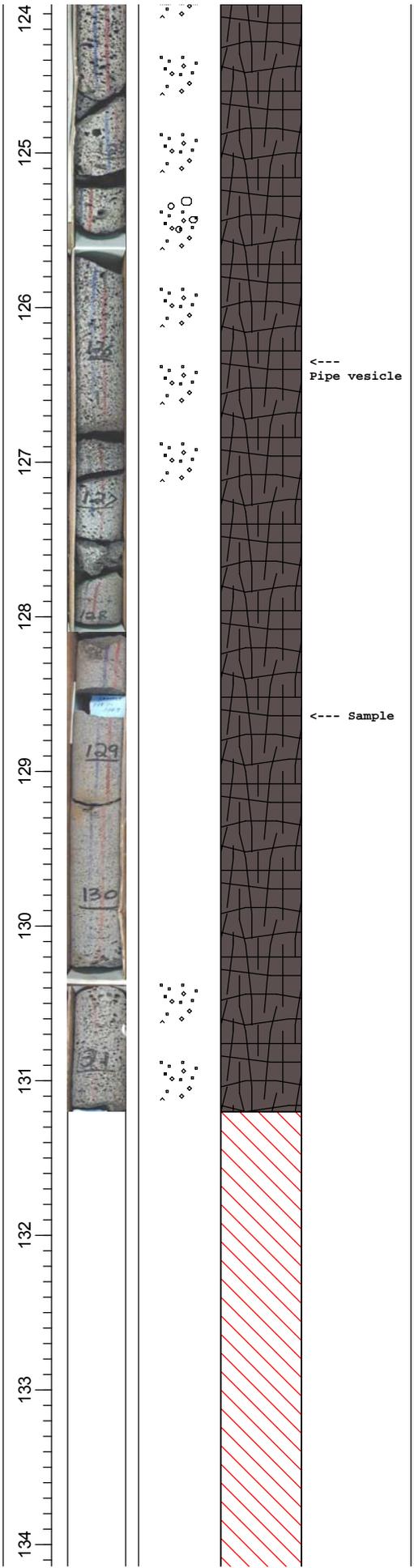




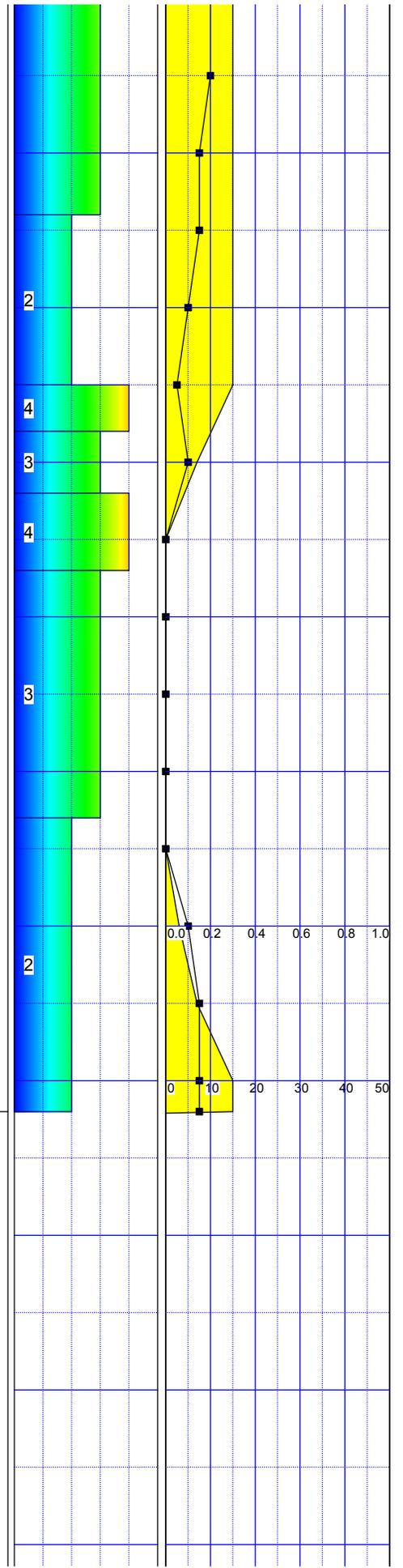


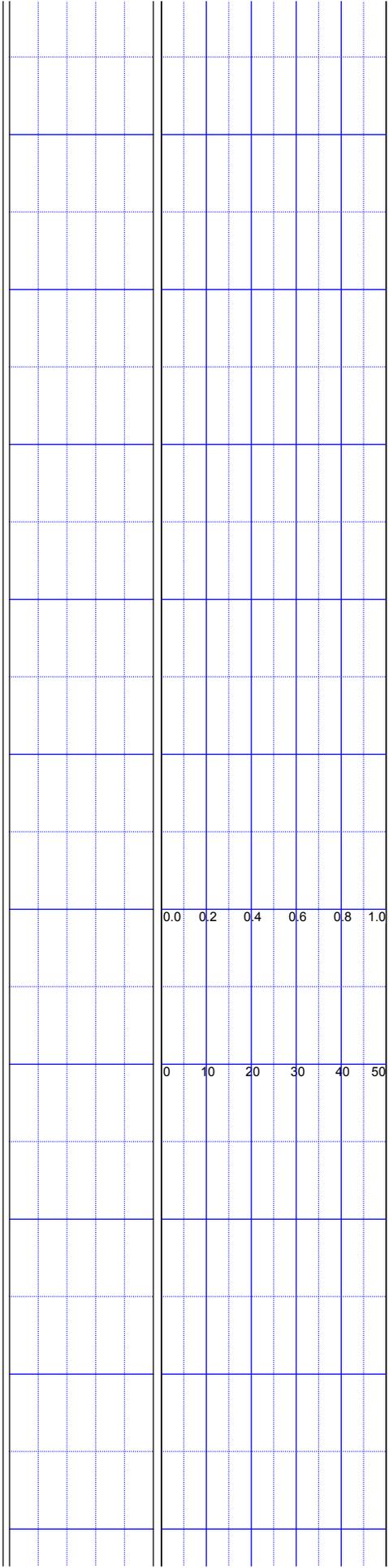
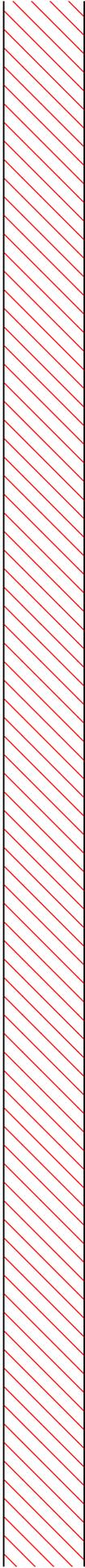
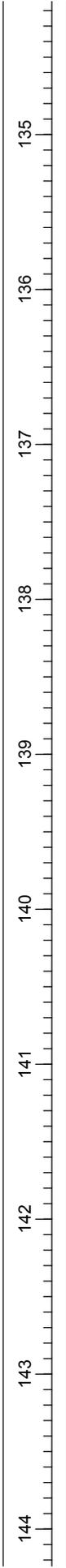


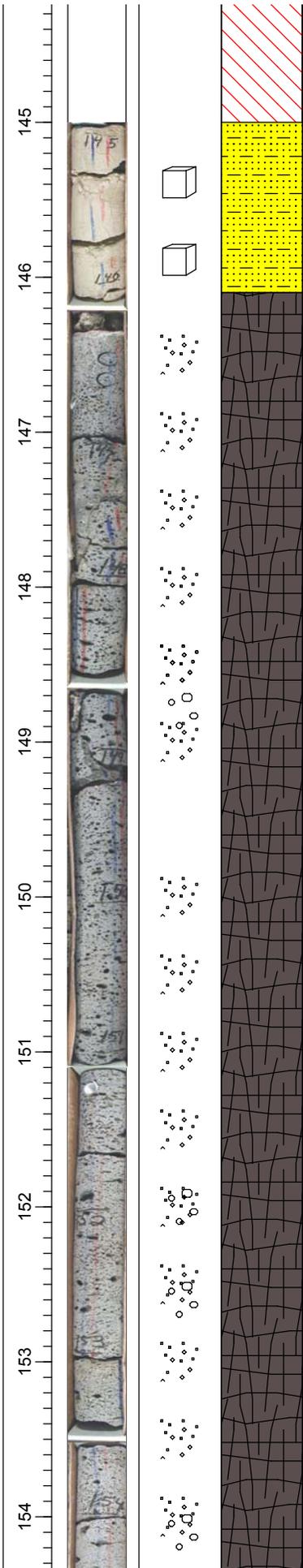




MISSING INTERVAL: Drillers report sands

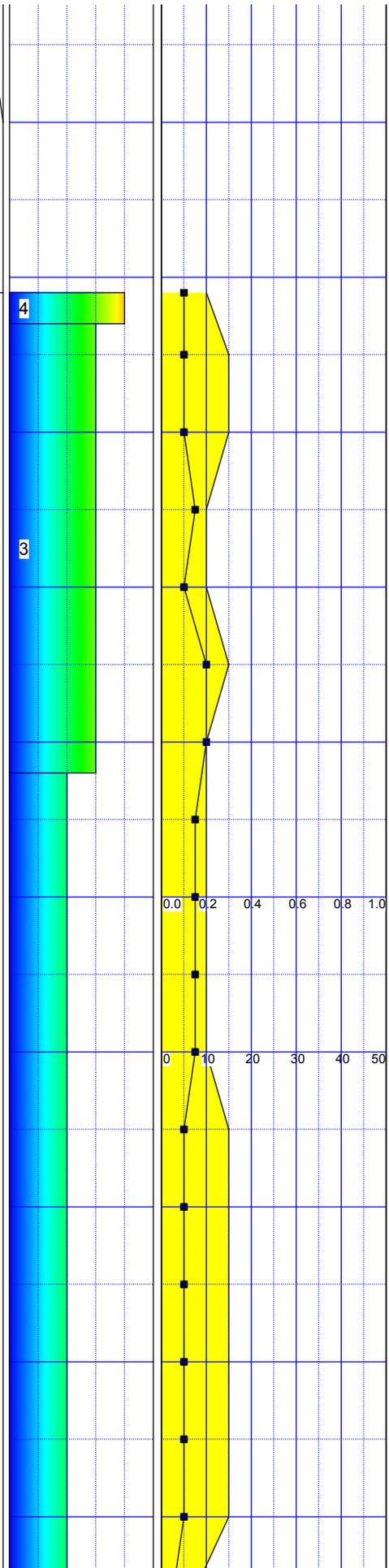


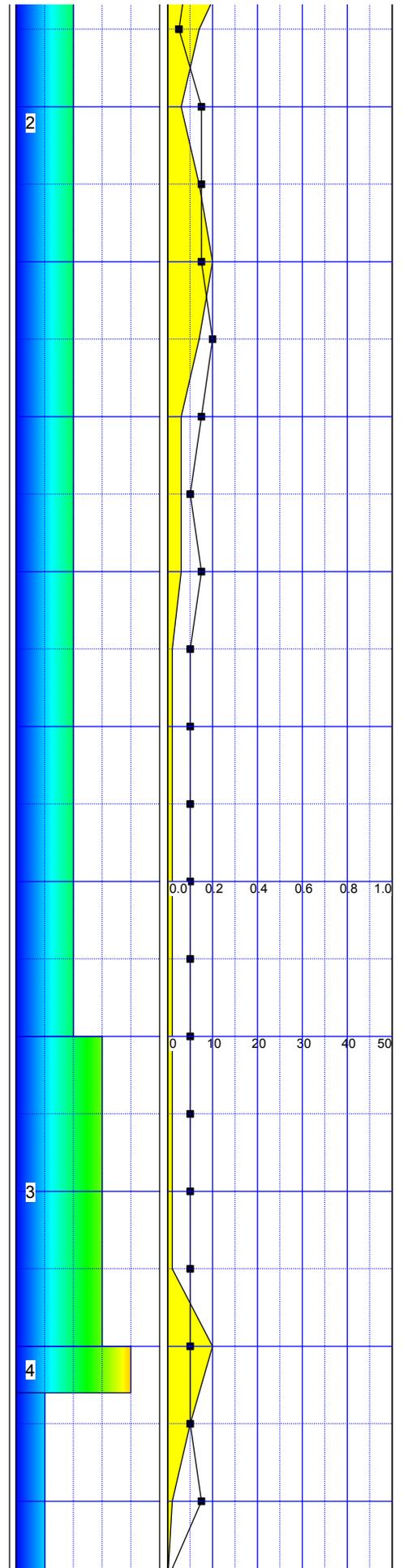
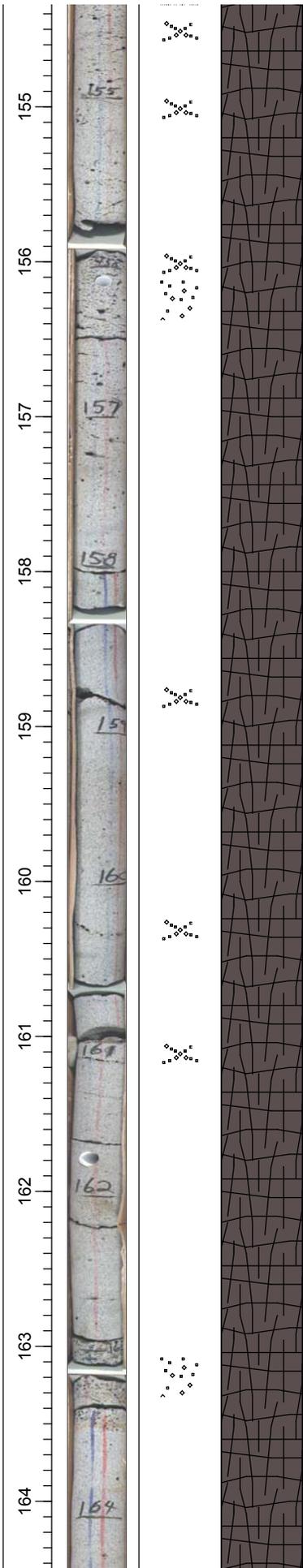


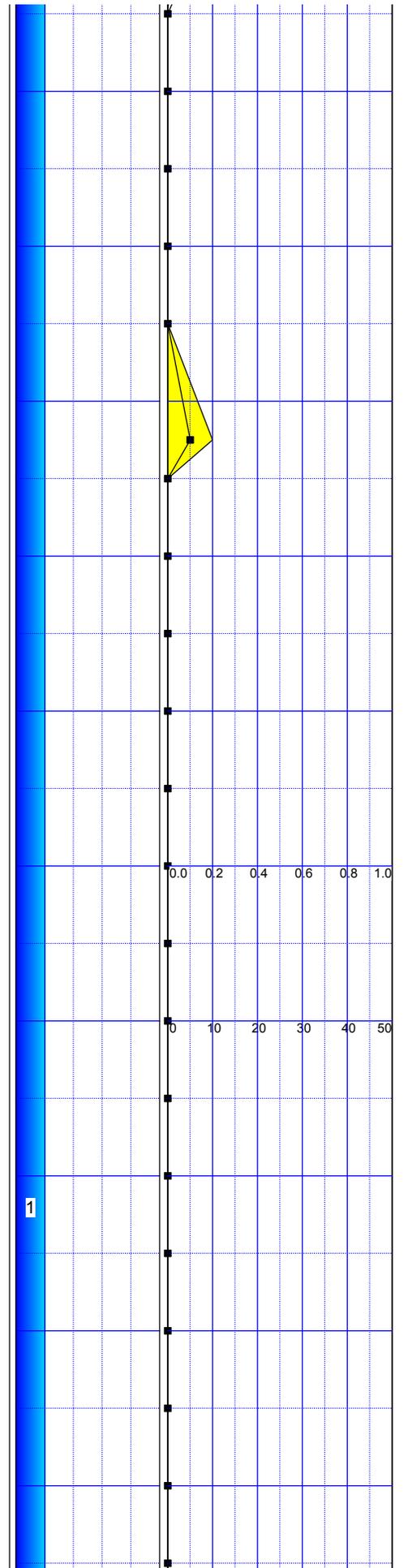
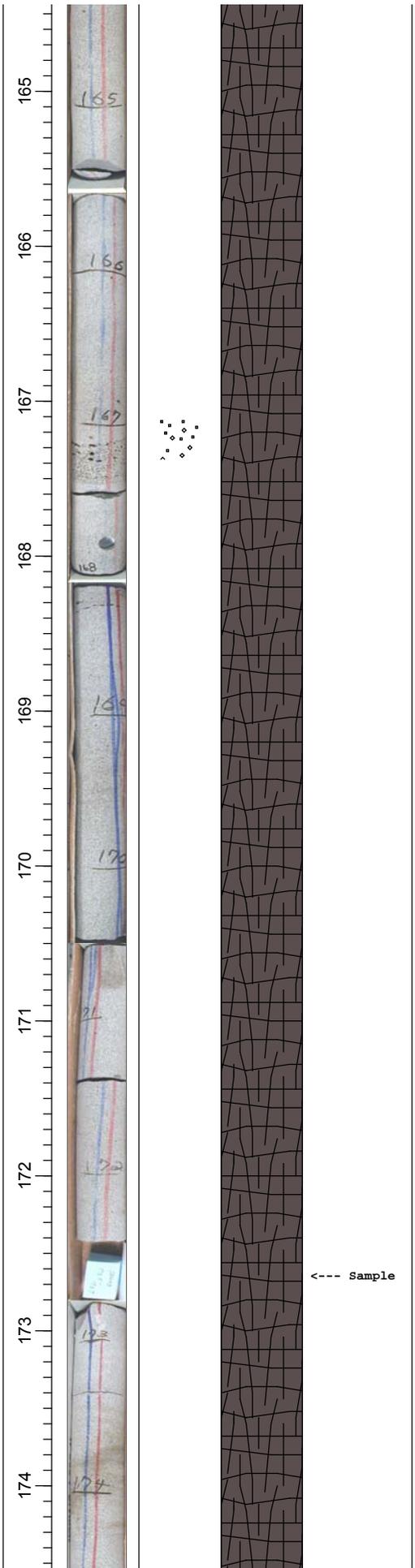


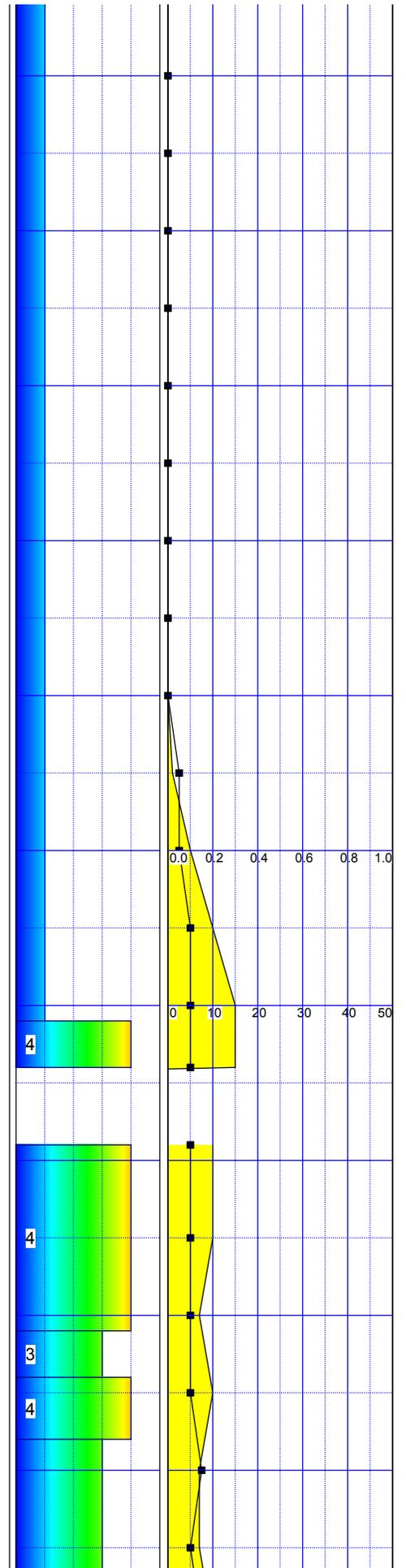
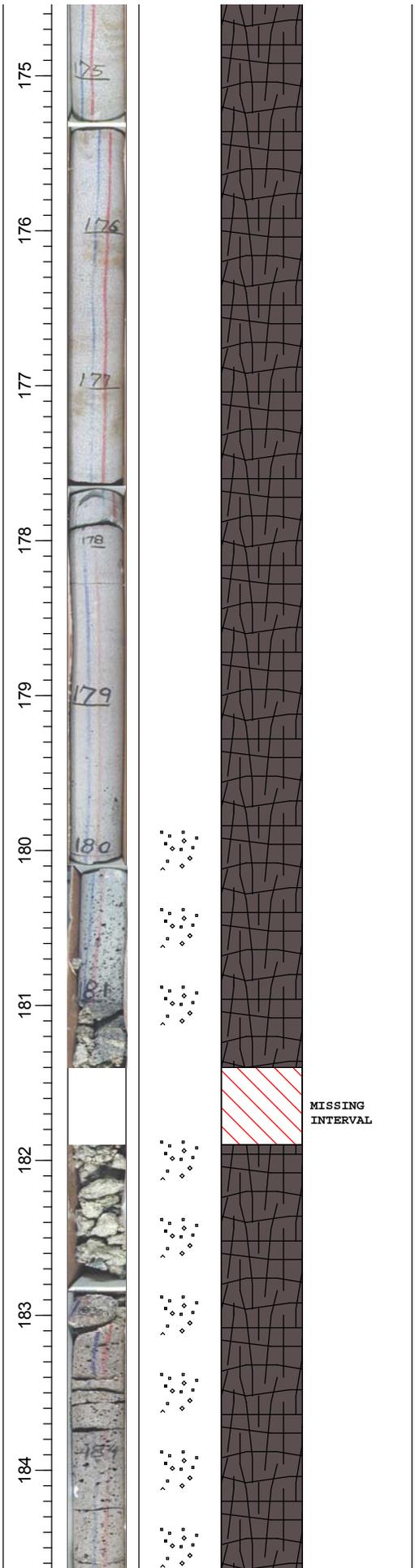
SANDS WITH FINES: Color: Moderate yellowish gray
 Consistence: Friable
 Structure: Single-grained
 Free Carbonates: Yes
 Rocks: Few 3-5 mm subrounded basalt fragments
 Roots / Fossils: None observed

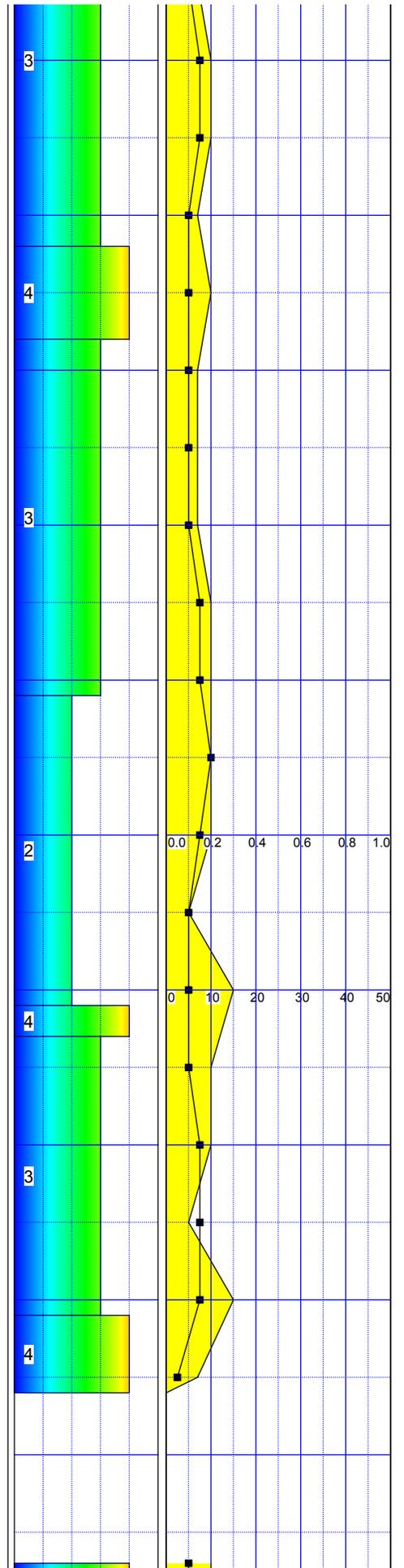
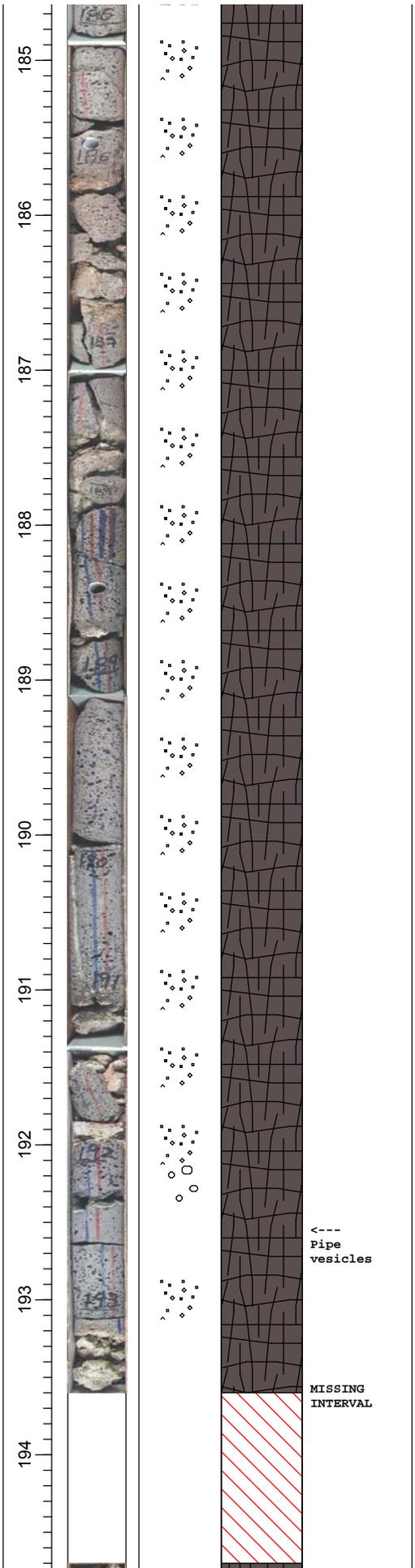
BASALT: Color: Dark gray, medium gray, and grayish red
 Magnetic Properties: Nonmagnetic
 Texture/Composition: Fine-grained phaneritic, granular groundmass alternates between diktytaxitic and massive texture. Grains are subhedral to anhedral, and evenly distributed throughout. Alternates between vesicular and massive.
 Xenoliths: None noted
 Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays and mild bleaching.

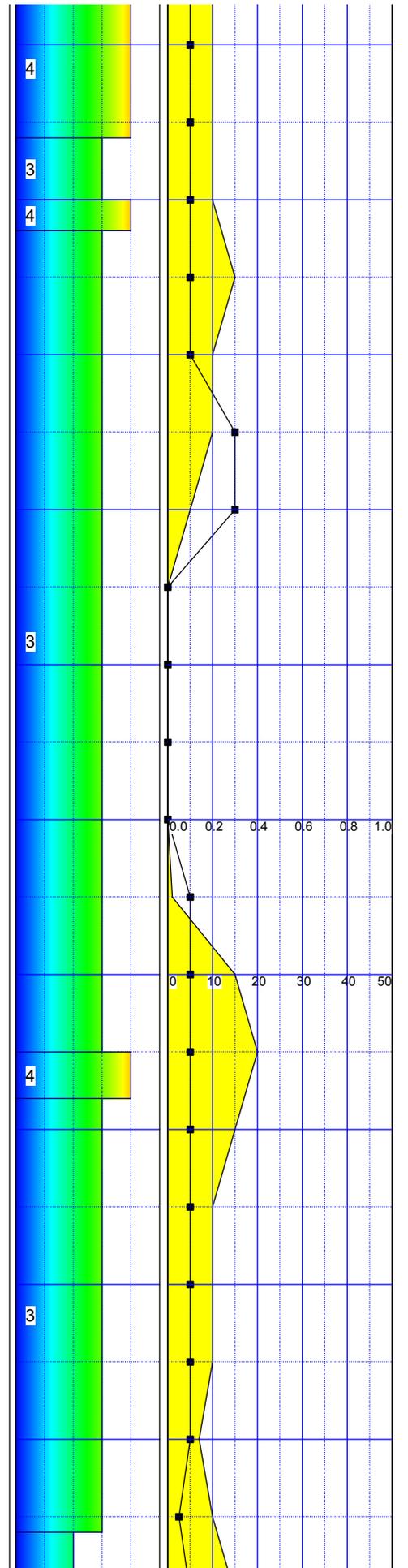
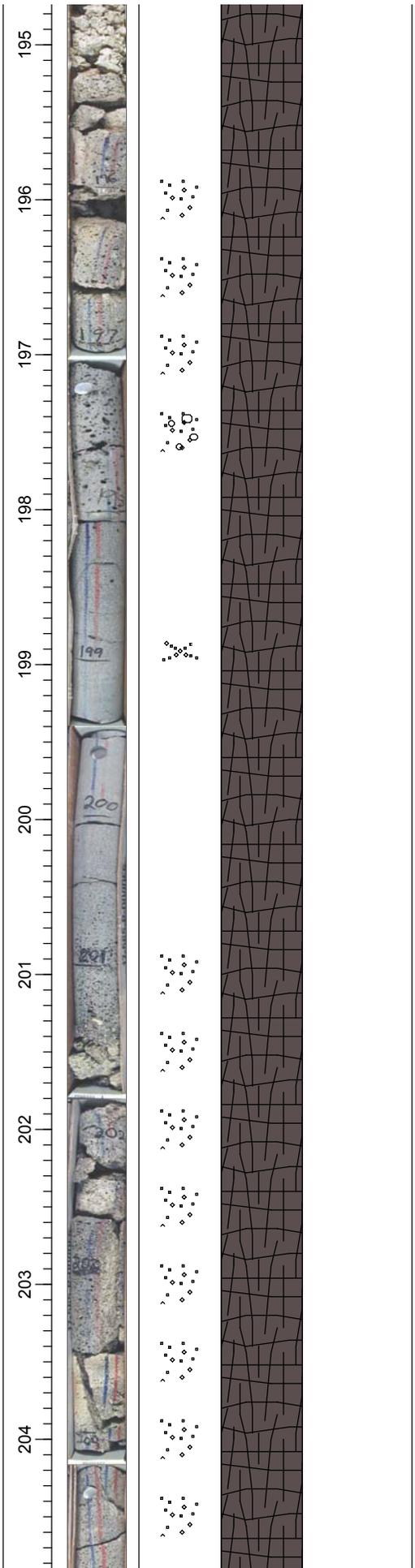


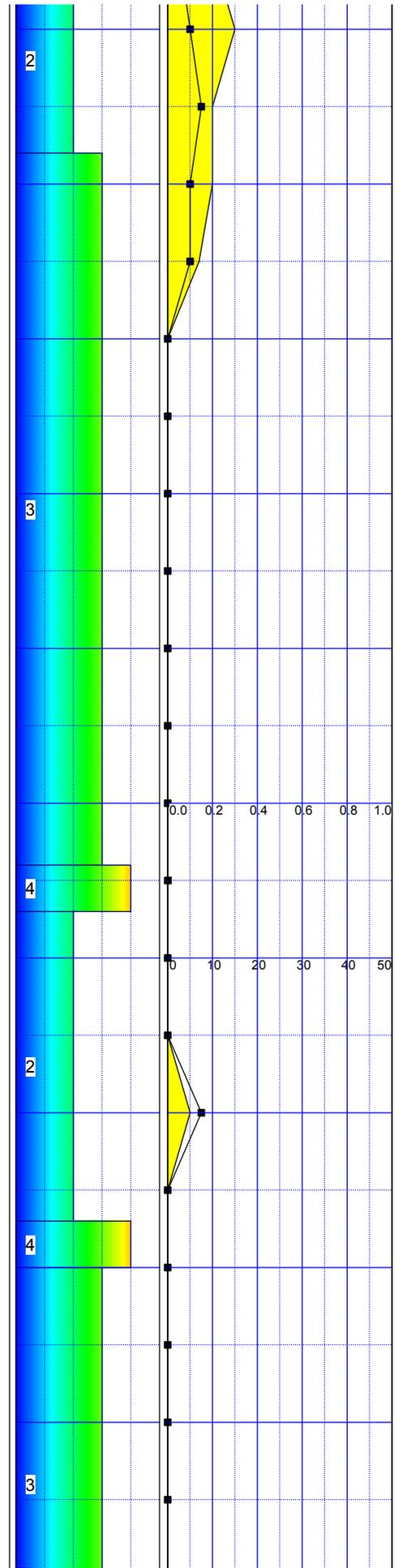
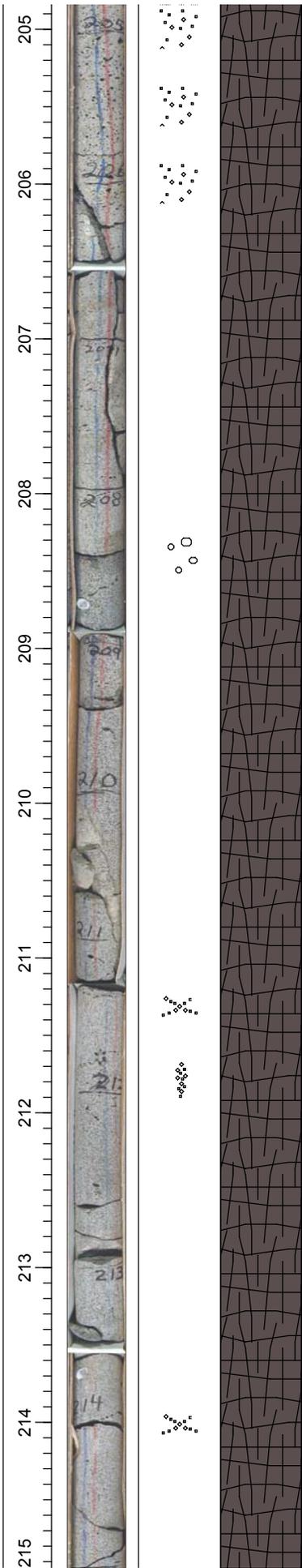


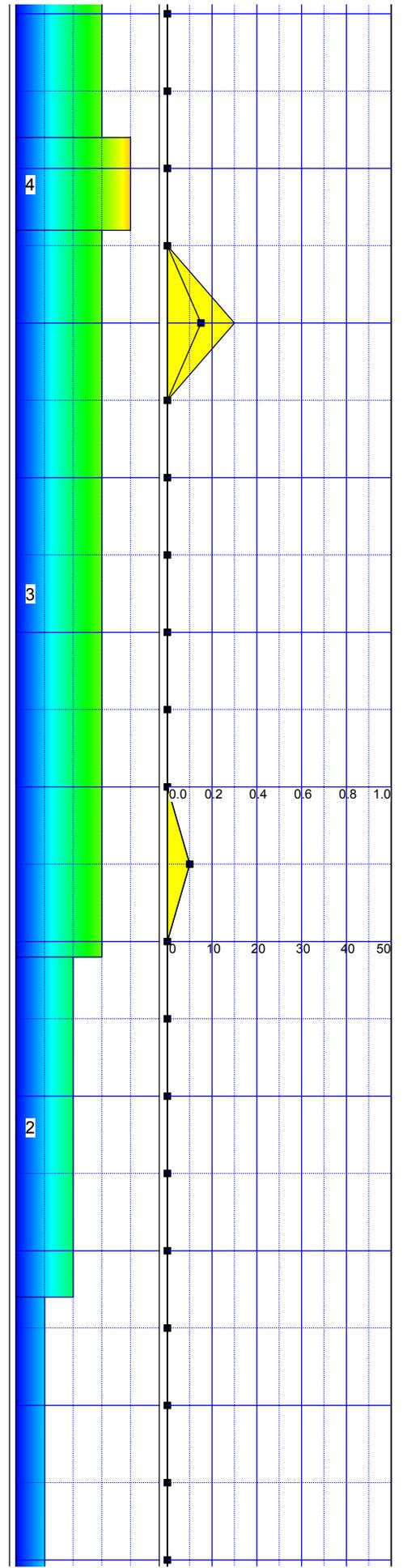
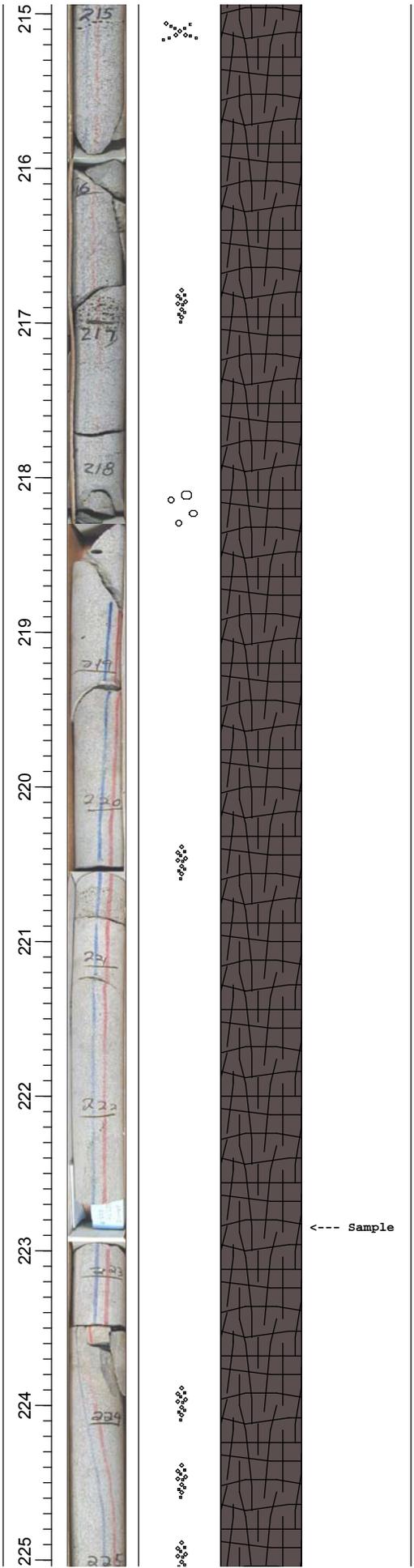


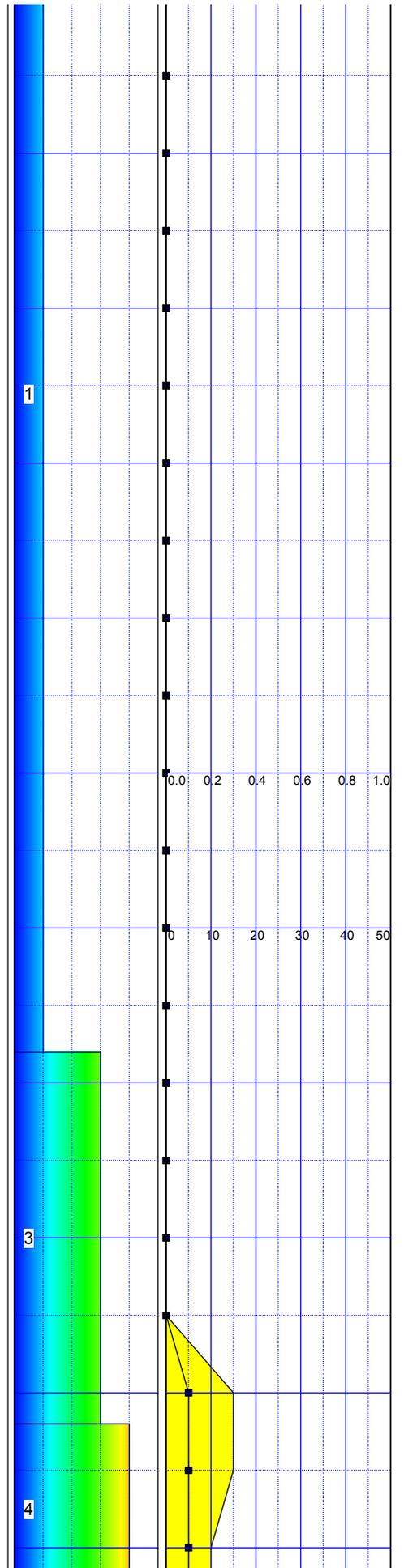
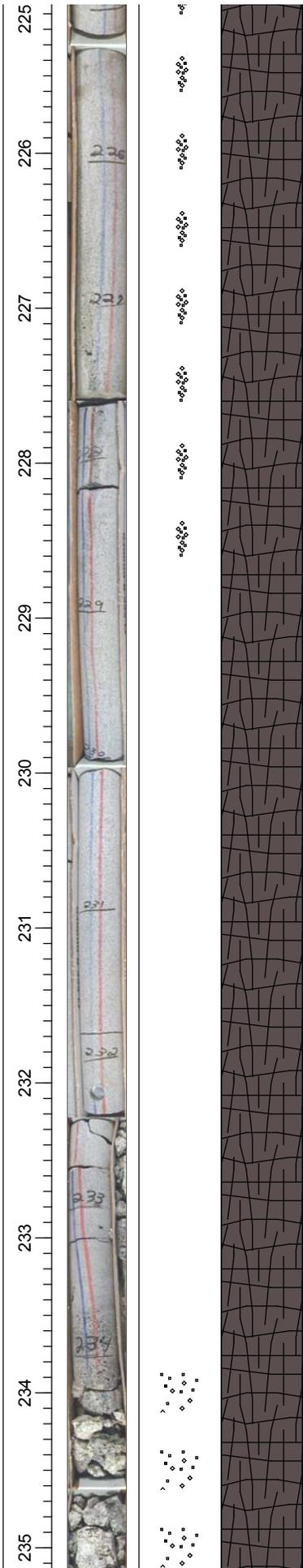


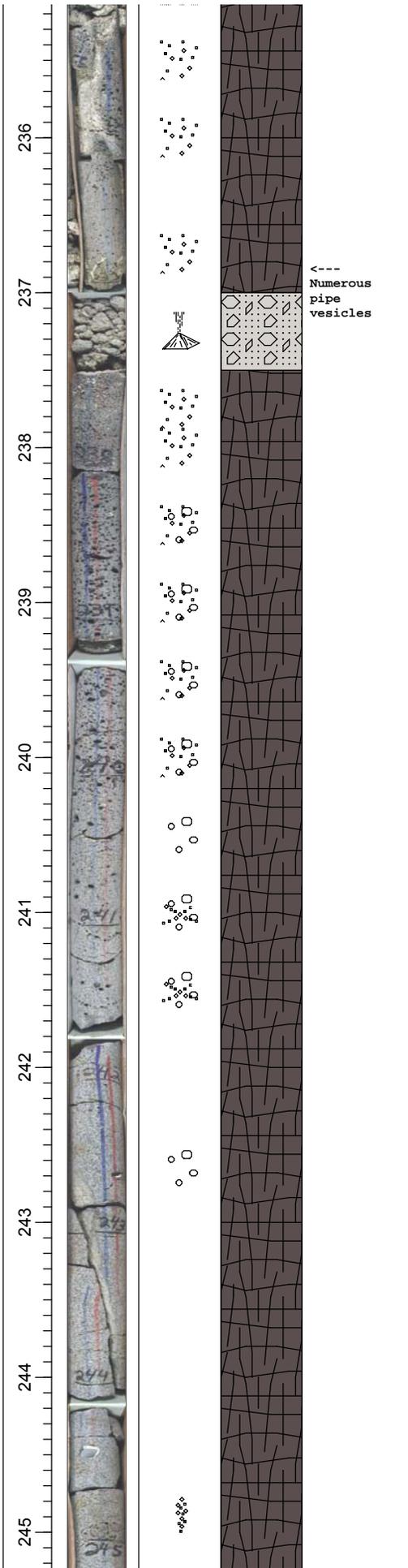












GRAVELS WITH FINES: Clast-supported gravel in matrix of silt and clay

Color: Matrix medium gray, rocks are dark gray to pale brown

Consistence: Loose

Structure: Single-grained

Free Carbonates: No

Rocks: Many 2 mm - > 5 cm clast-supported vesicular basalt fragments, subround to subangular, subprismoidal.

Roots / Fossils: None observed

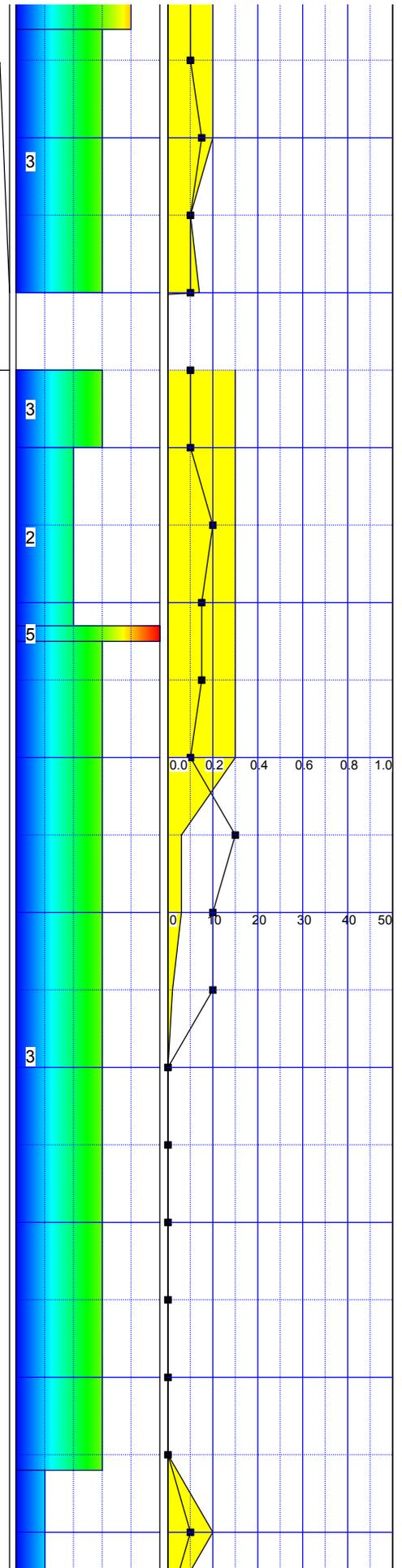
BASALT: Color: Dark gray, medium gray, and grayish red

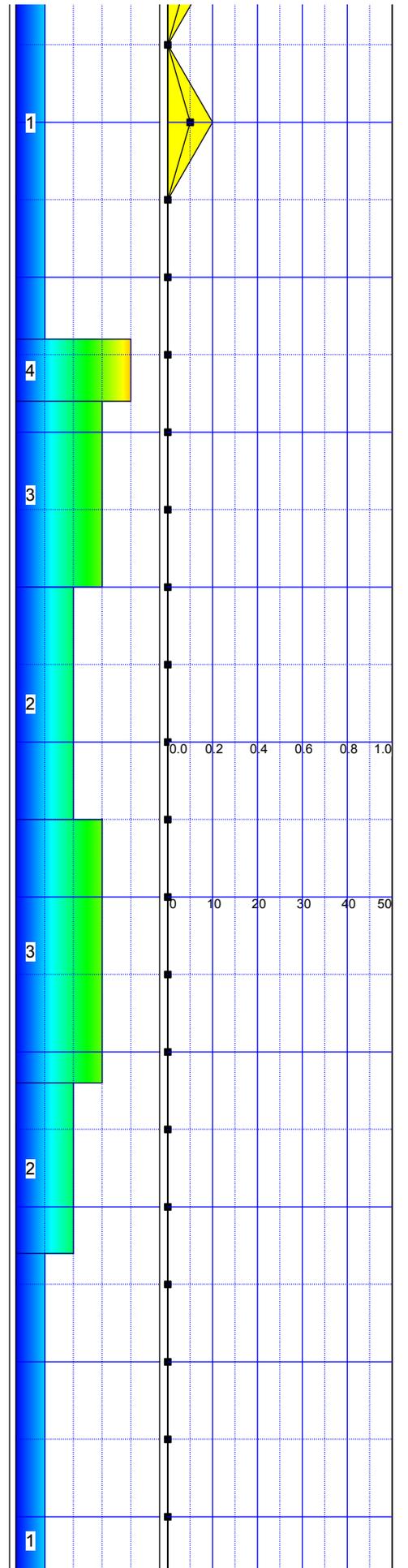
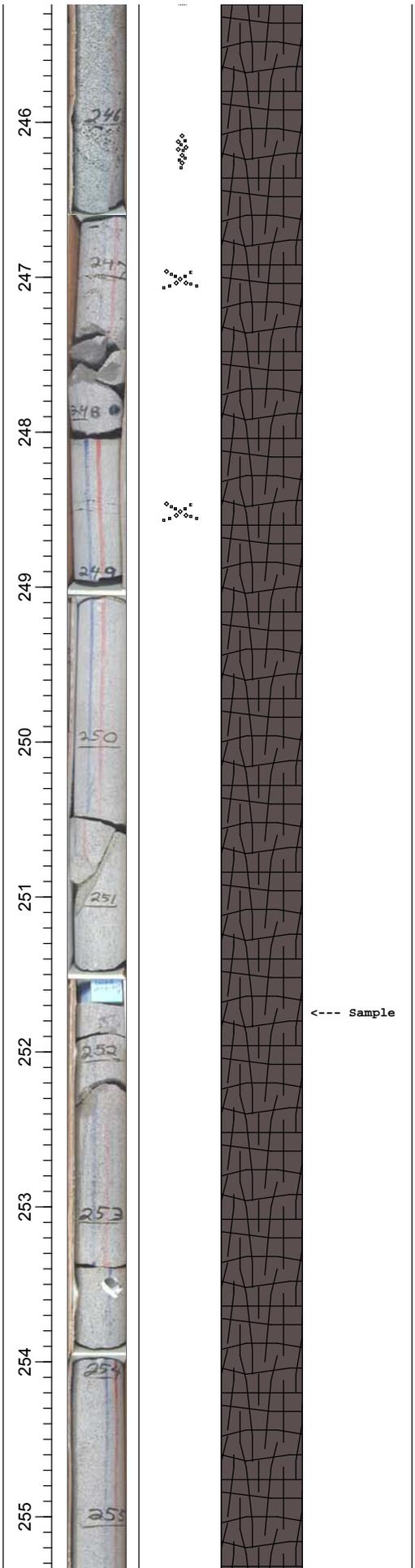
Magnetic Properties: Nonmagnetic

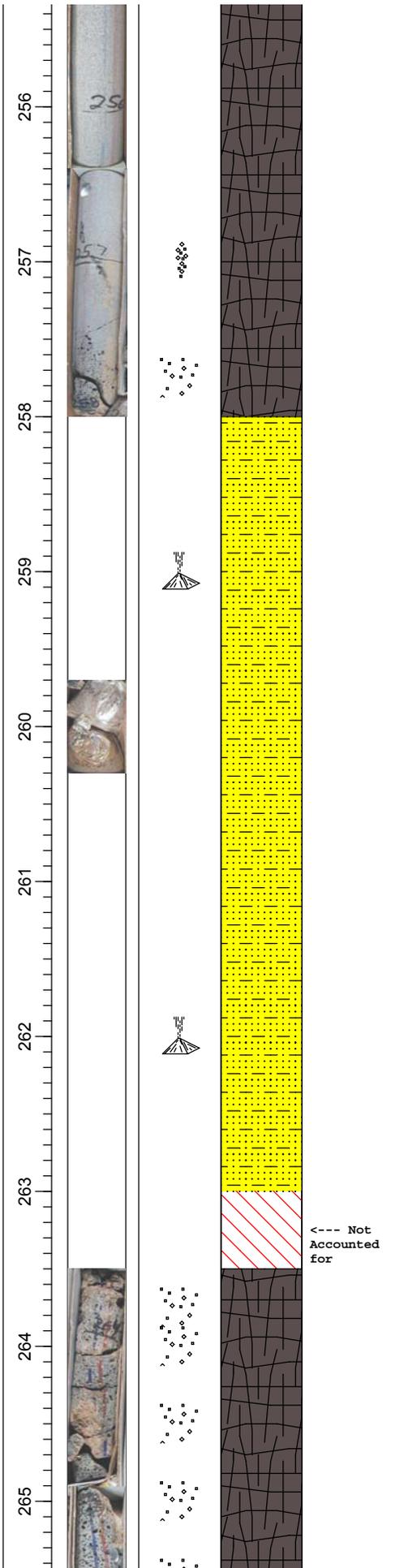
Texture/Composition: Fine-grained phaneritic, granular groundmass. Alternates between diktytaxitic and massive texture. Grains are subhedral to anhedral, and evenly distributed throughout. Alternates between vesicular and massive.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays and mild bleaching.







SANDS WITH FINES: Encased in plastic bags, not all sediment was recovered.

Color: Moderate reddish brown to moderate brown

Consistence: Loose

Structure: Single-grained

Free Carbonates: No

Rocks: None observed

Roots / Fossils: None observed

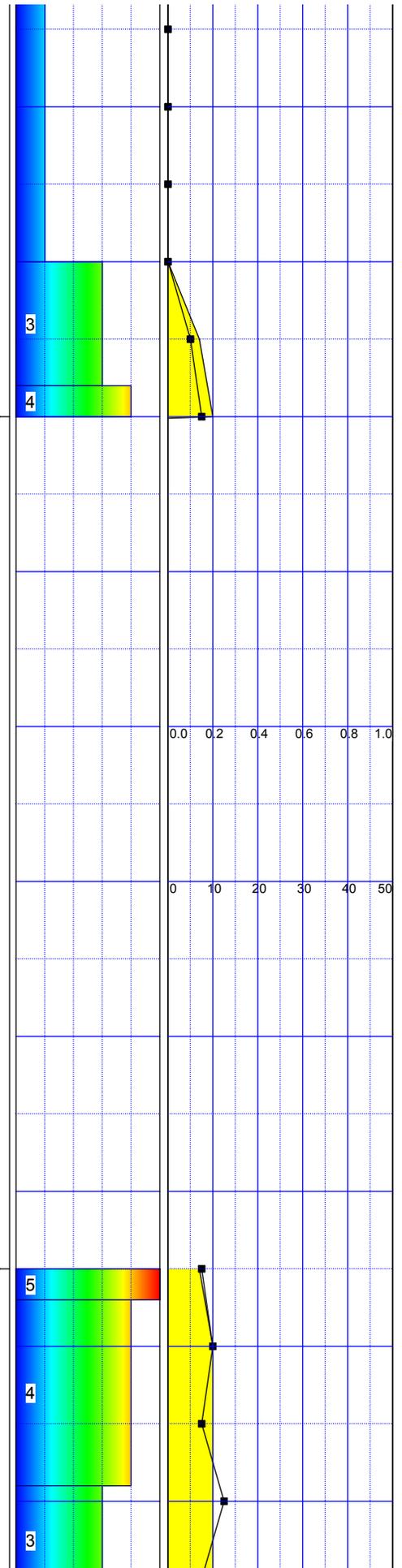
BASALT: Color: Dark gray to medium gray

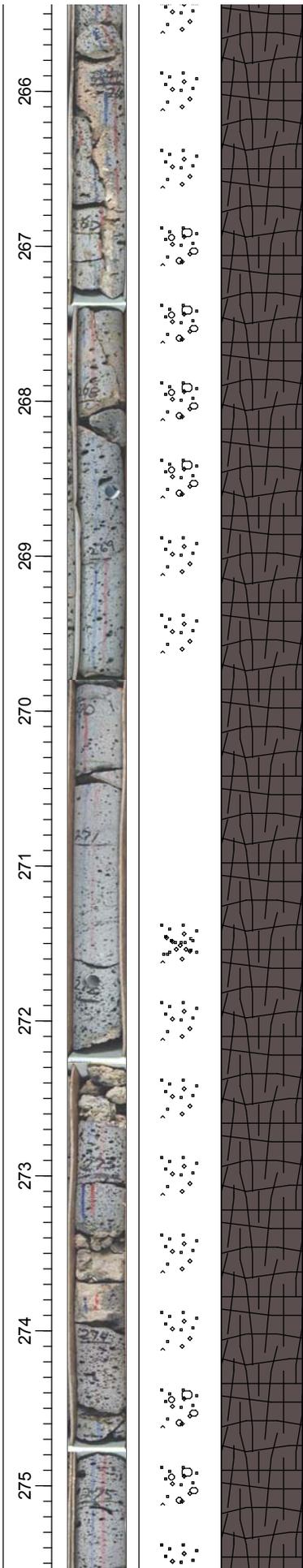
Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic, granular groundmass. Alternates between diktytaxitic and massive texture. Grains are subhedral to anhedral, and evenly distributed throughout. Alternates between vesicular and massive.

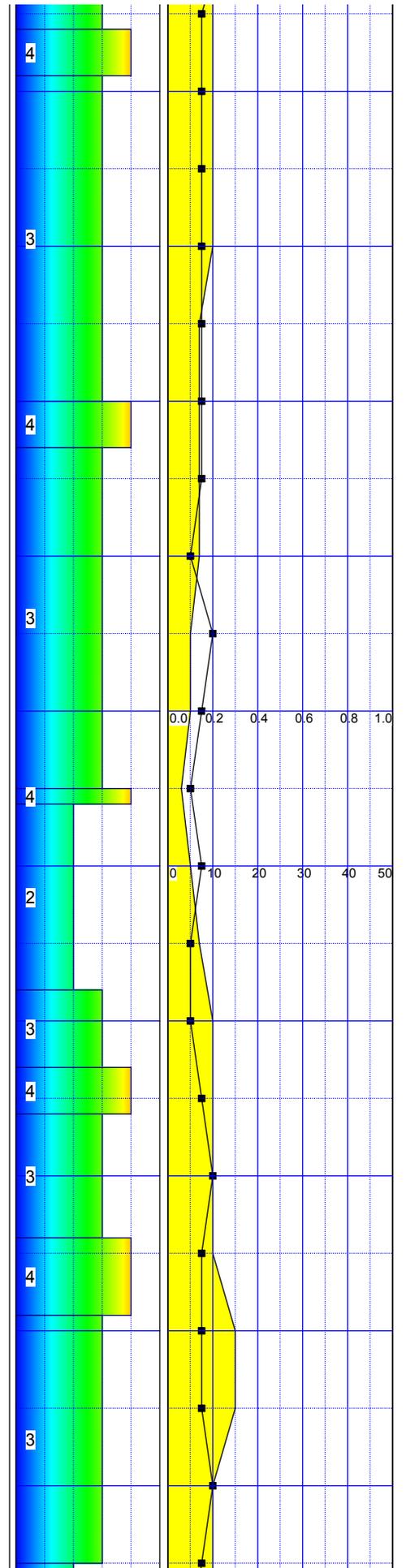
Xenoliths: None noted

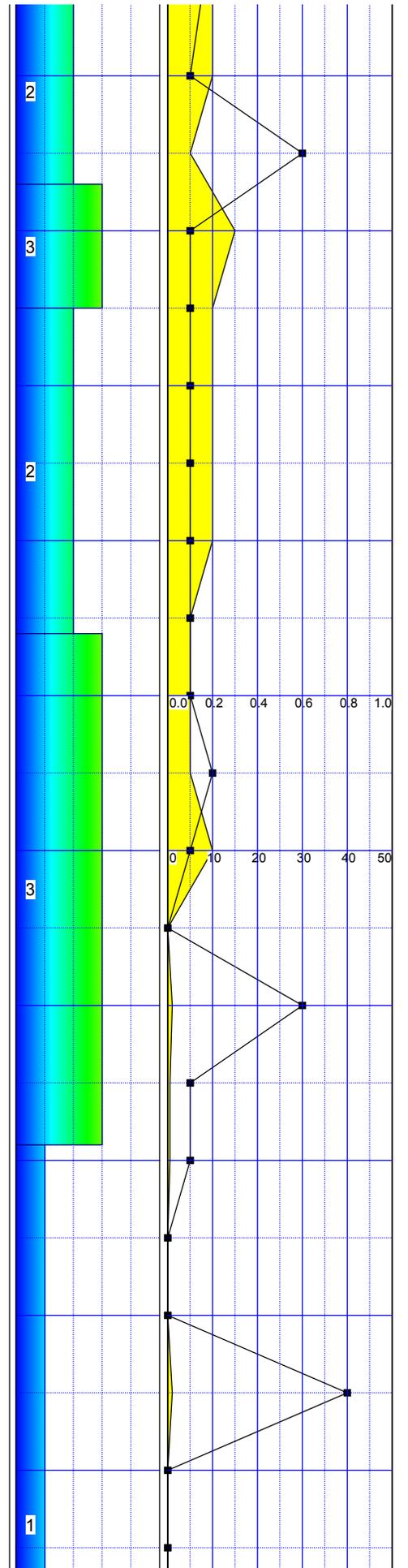
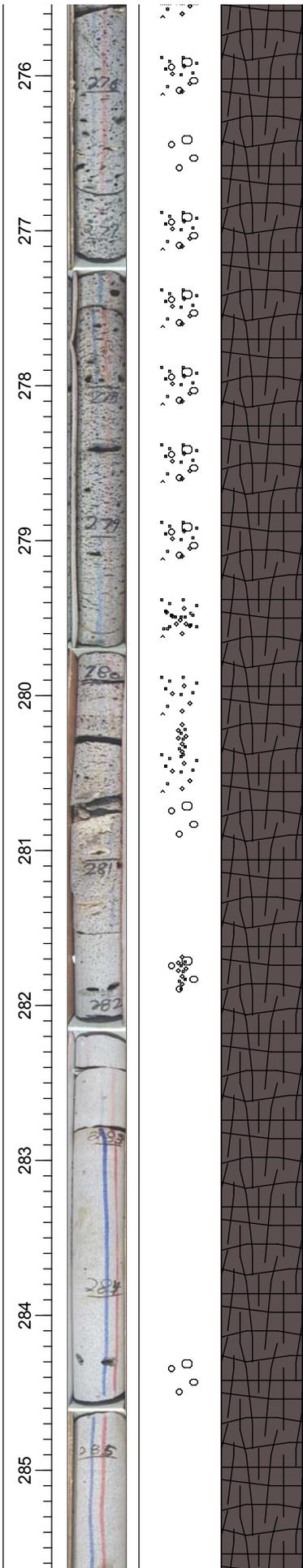
Alteration Activity: Some fractures

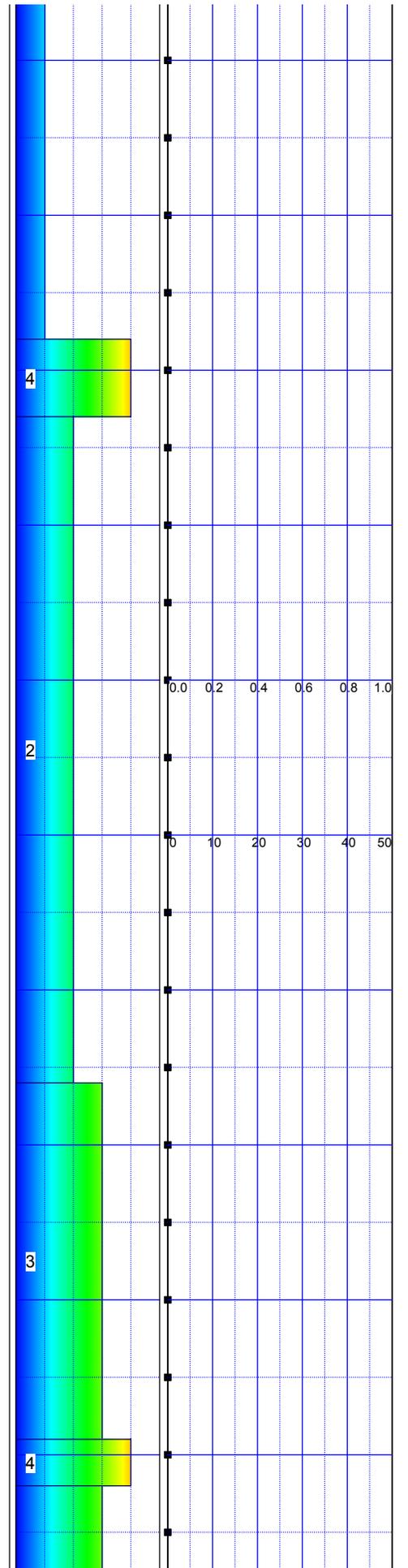
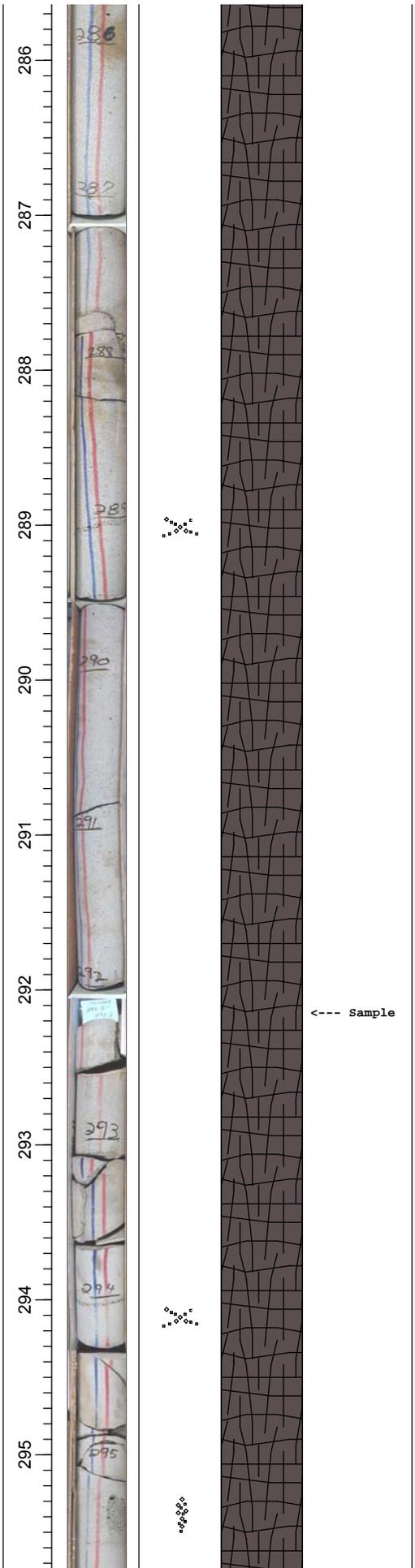


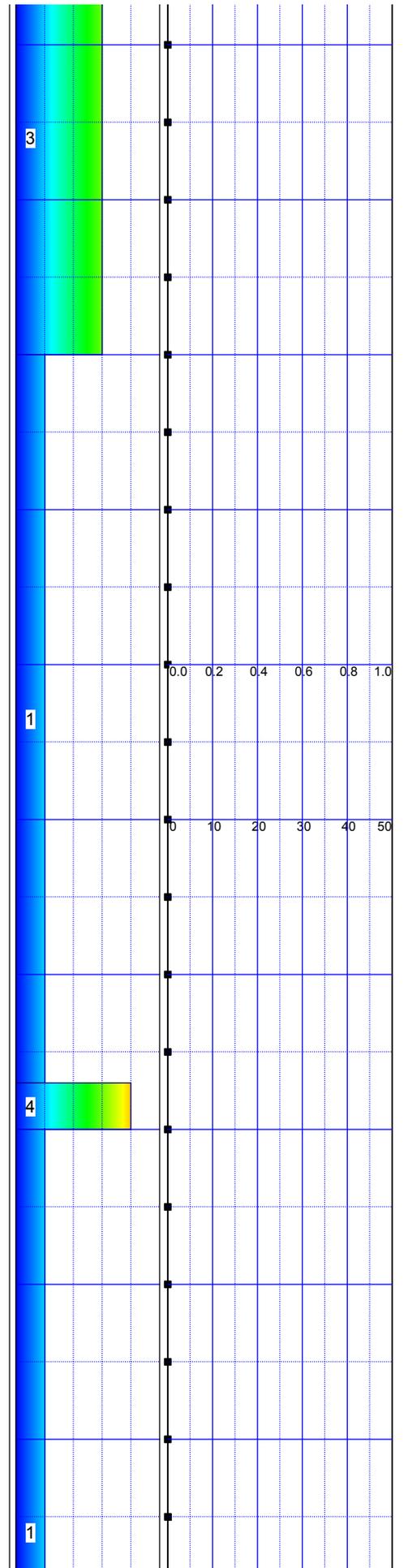
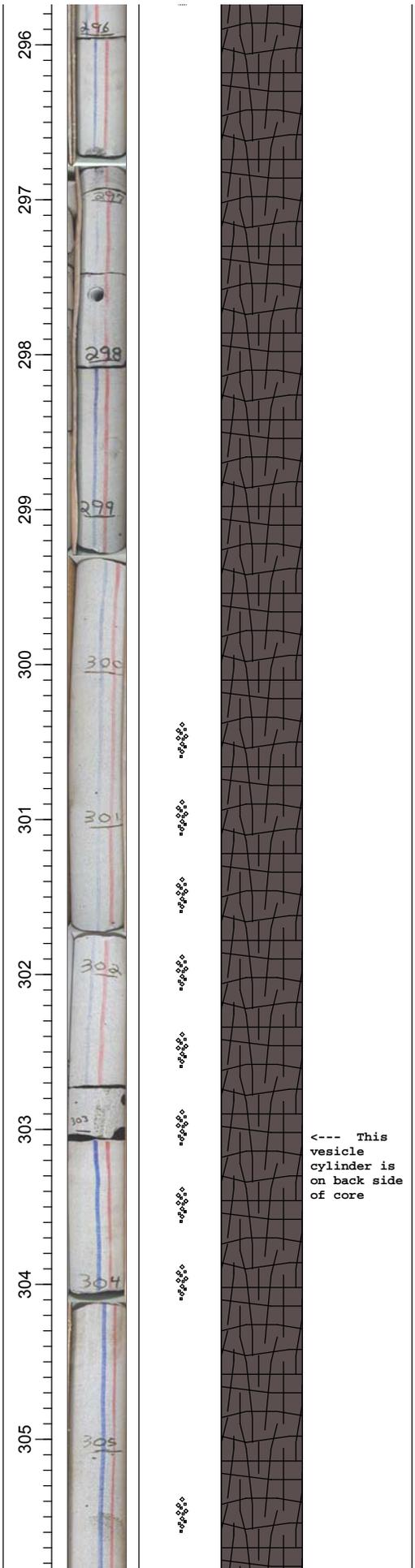


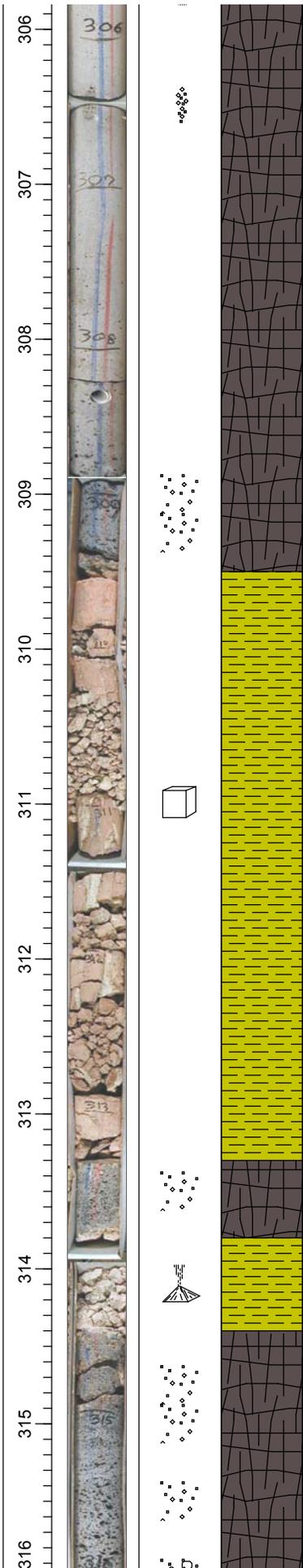
and nearby vesicles show infilling with silts and clays and mild bleaching.











SILT AND CLAY: Color: Light brown with very pale orange clay filling the fractures

Consistence: Firm

Structure: Massive

Free Carbonates: Main body of this interval, no free carbonate, fracture-filling clay contains free carbonate

Rocks: Few, < 1 cm vesicular basalt, subangular and subprismoidal

Roots / Fossils: Few < 1 mm sinuous tubules.

BASALT: Lost in borehole

SILT AND CLAY: Color: Very pale orange

Consistence: Loose

Structure: Single-grained

Free Carbonates: Yes

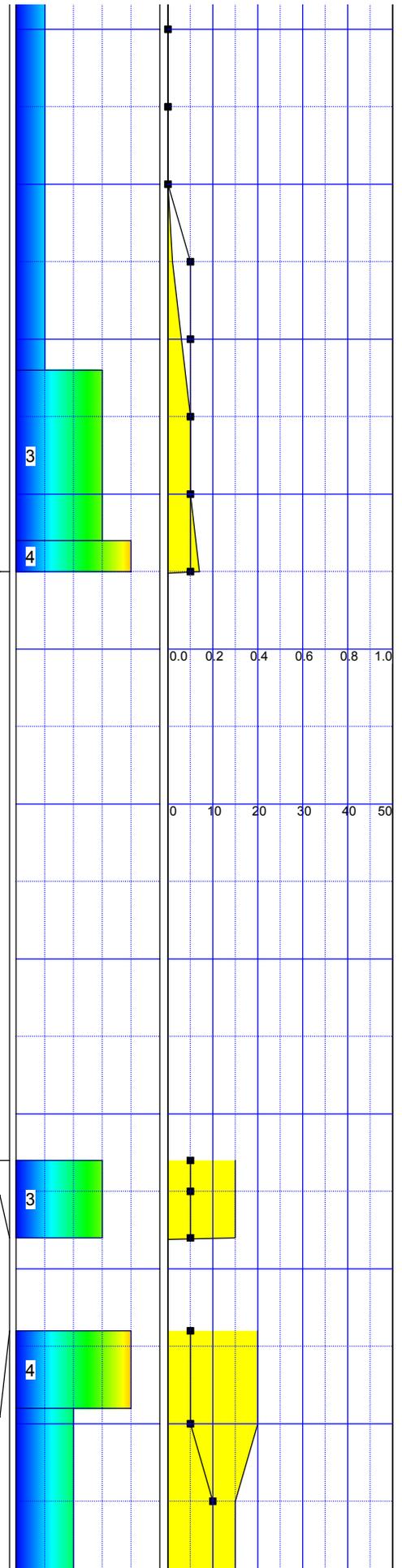
Rocks: Many, 1 - 3 cm vesicular basalt, subangular and subprismoidal

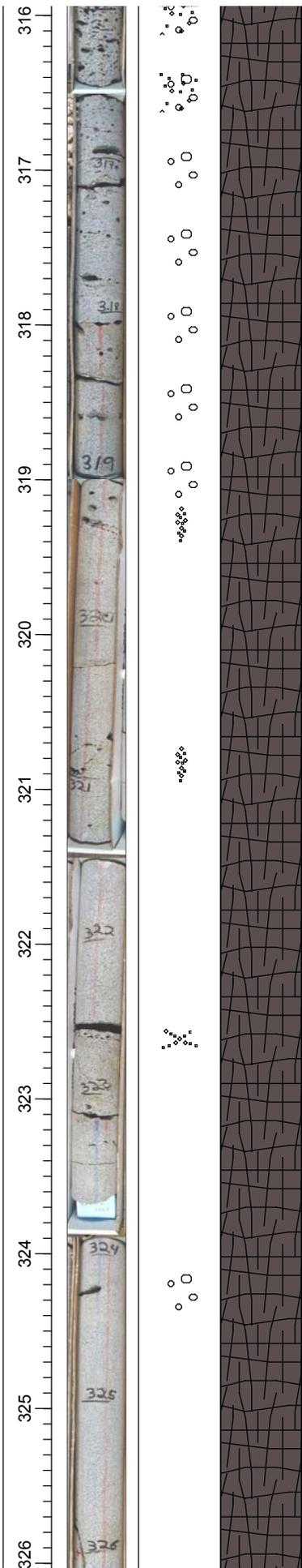
Roots / Fossils: None observed

BASALT: Color: Medium gray to medium dark gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic, granular groundmass alternates between diktytaxitic and massive texture. Grains

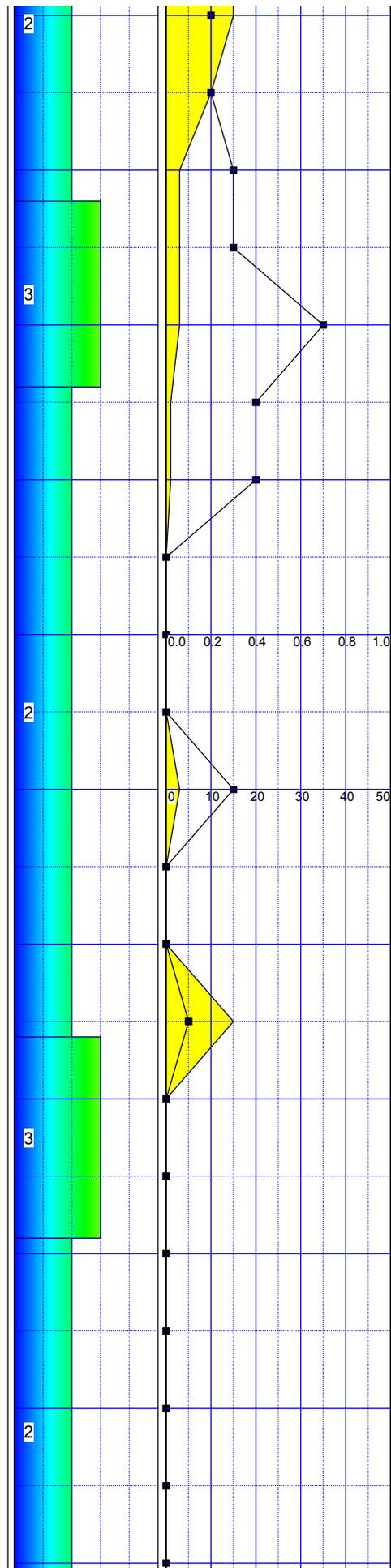


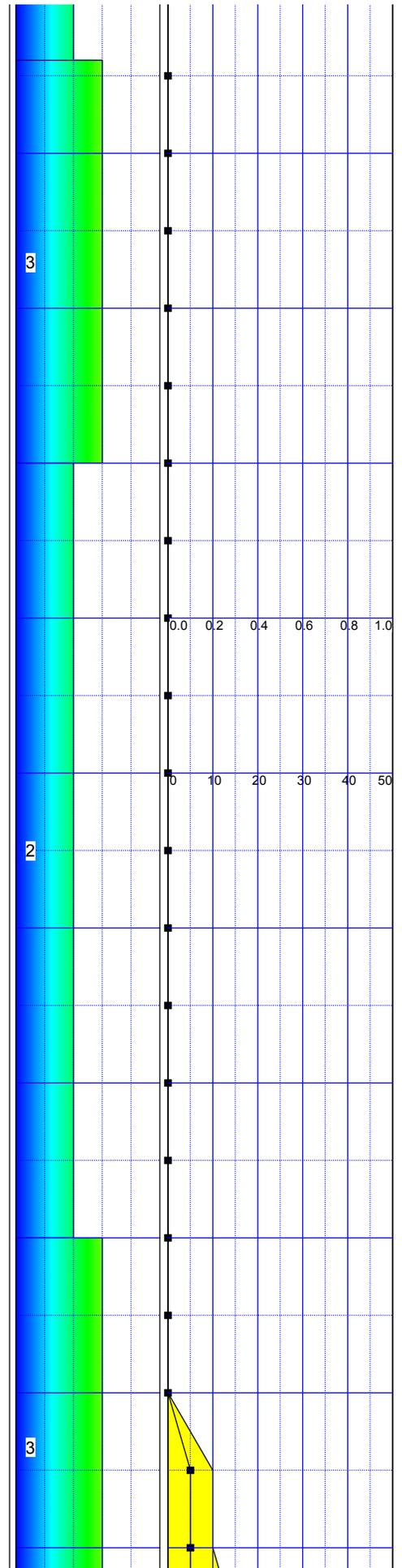
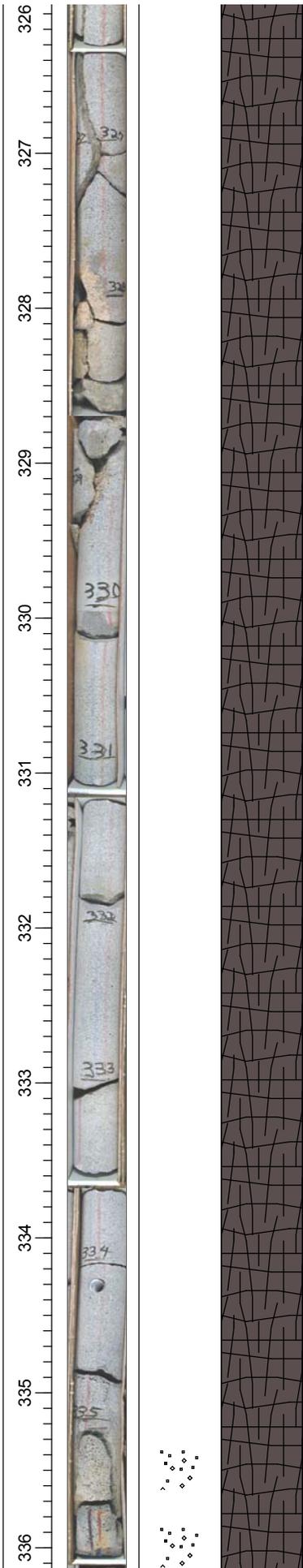


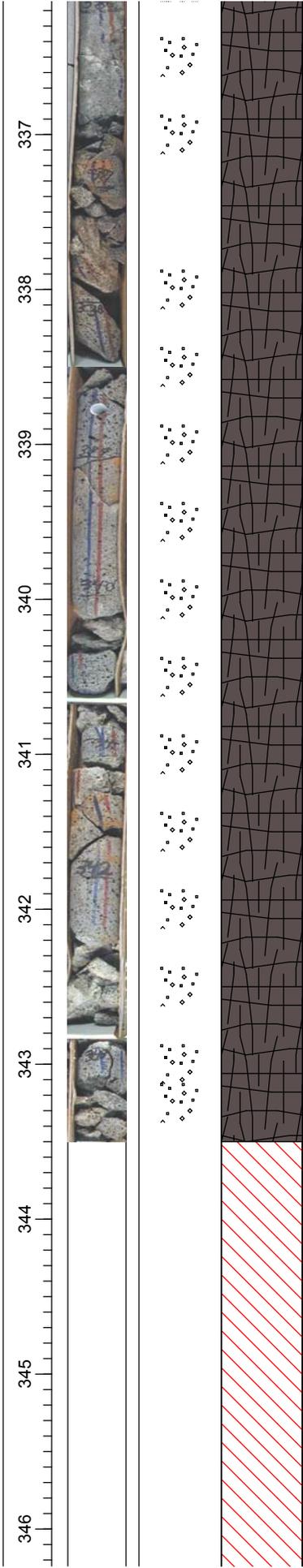
are subhedral to anhedral, and evenly distributed throughout. Alternates between vesicular and massive.

Xenoliths: None noted

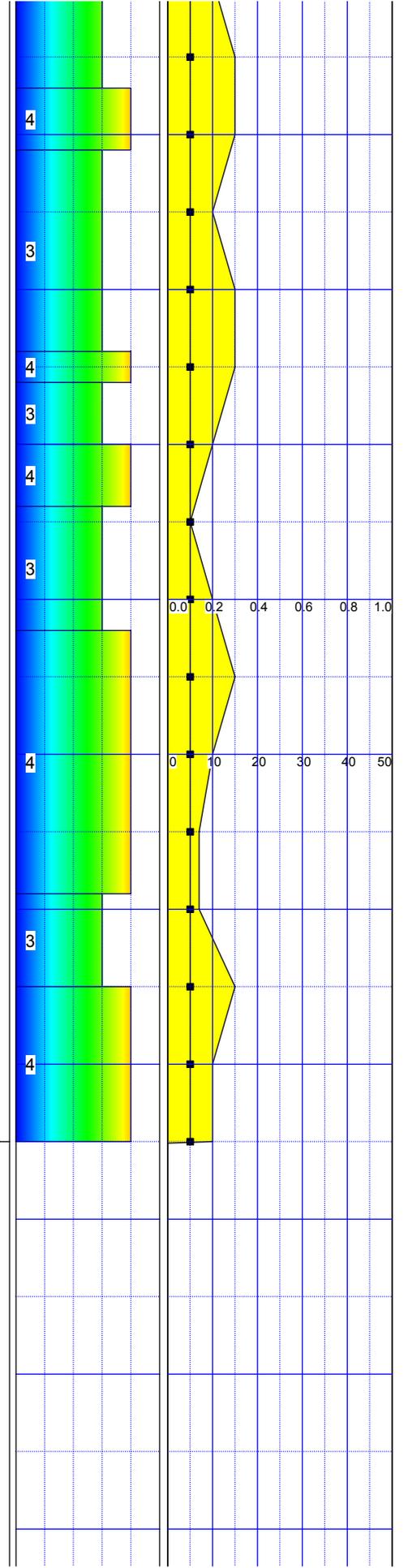
Alteration Activity:
Some fractures and nearby vesicles show infilling with silts and clays and mild bleaching.

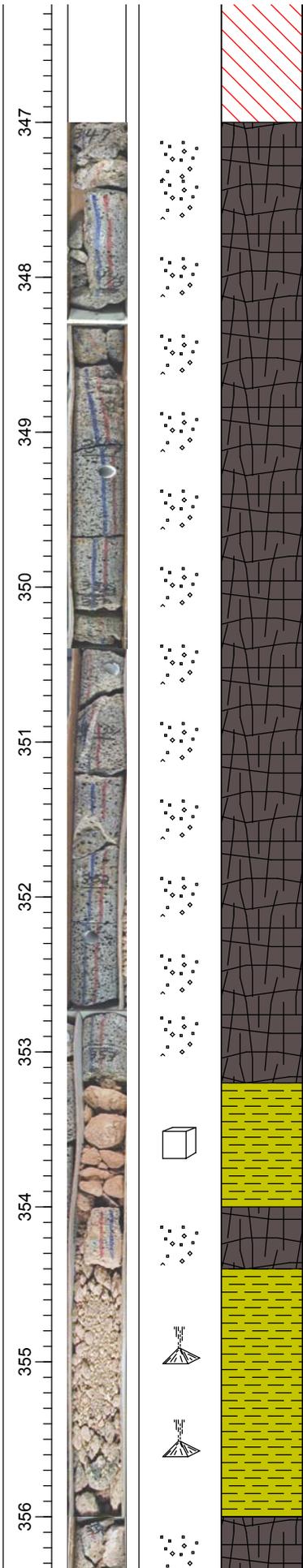






MISSING INTERVAL: Lost in borehole





BASALT: Color: Dark gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic, granular groundmass alternates between diktytaxitic and massive texture. Grains are subhedral to anhedral, and evenly distributed throughout. Alternates between vesicular and massive.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

SILT AND CLAY: Color: Light brown

Consistence: Firm to extremely firm

Structure: Massive

Free Carbonates: No at 353.4', yes at 354'

Rocks: Many, ~1 cm vesicular basalt, subangular and subprismoidal, but only in the unit's top two inches.

Roots / Fossils: None observed

BASALT

SILT AND CLAY: Color: Light brown

Consistence: Friable

Structure: Single-grained

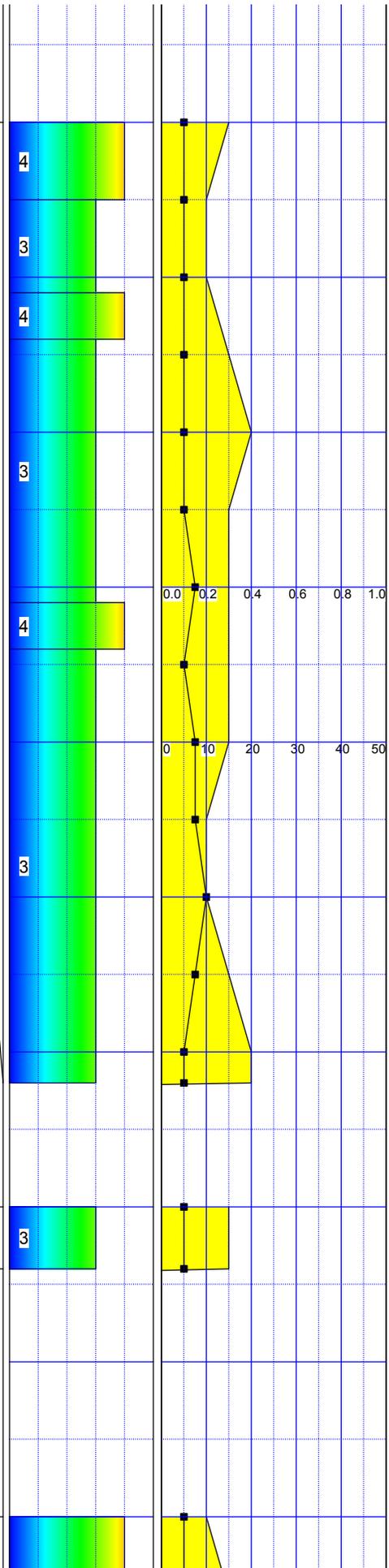
Free Carbonates: Yes

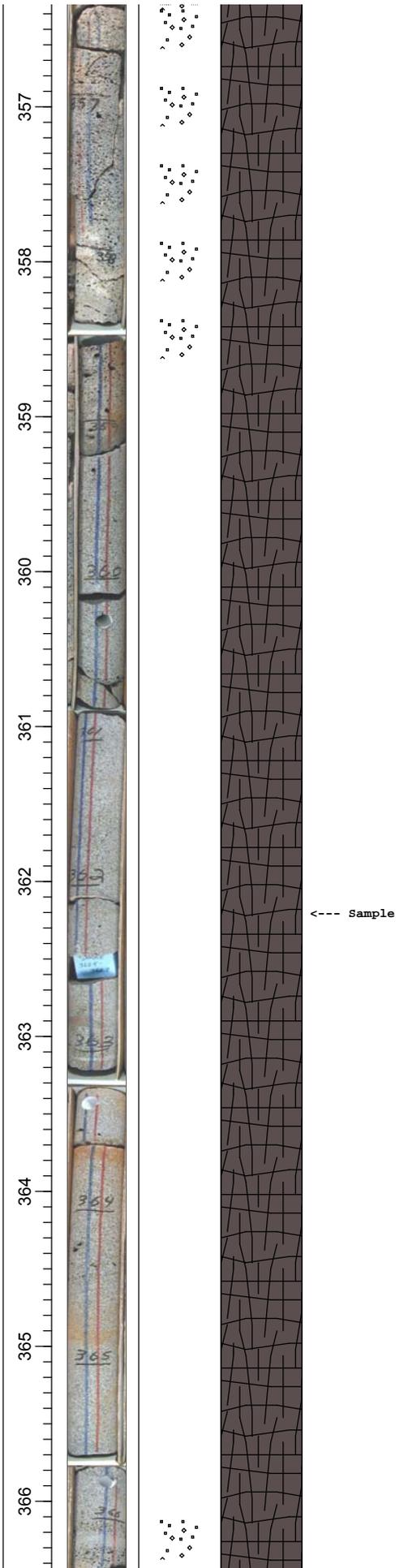
Rocks: Many, ~1 cm vesicular basalt, subangular and subprismoidal, but only in the unit's top two inches.

Roots / Fossils: None observed

BASALT: Color: Medium gray and dark gray

Magnetic Properties: Nonmagnetic

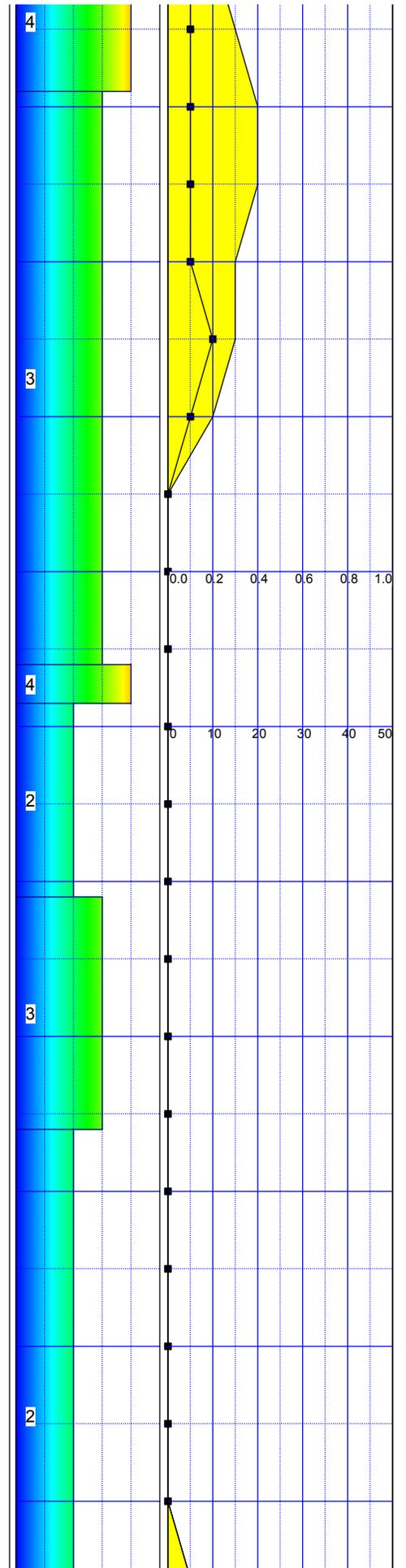


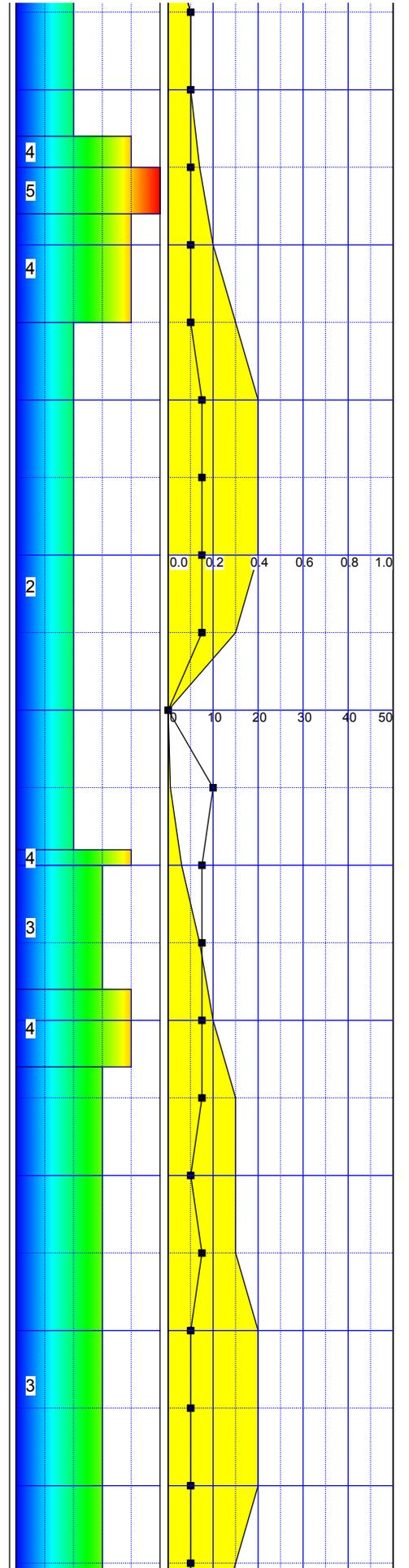
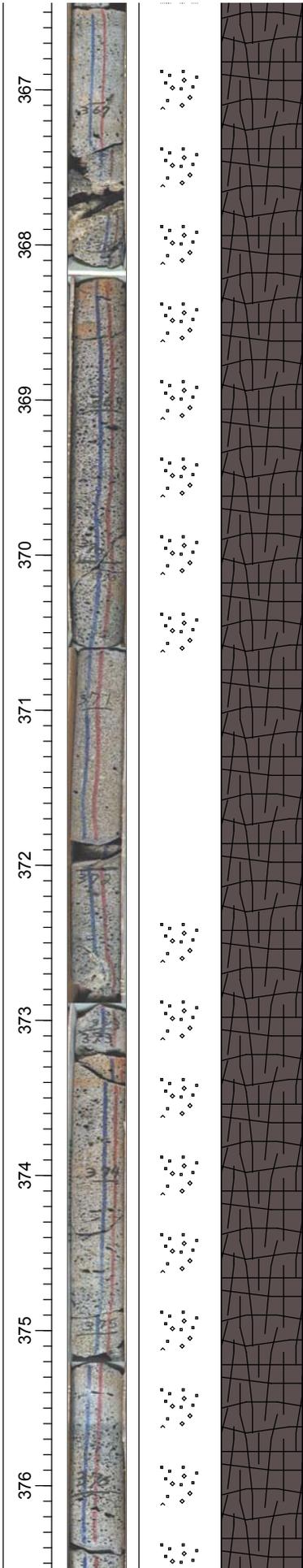


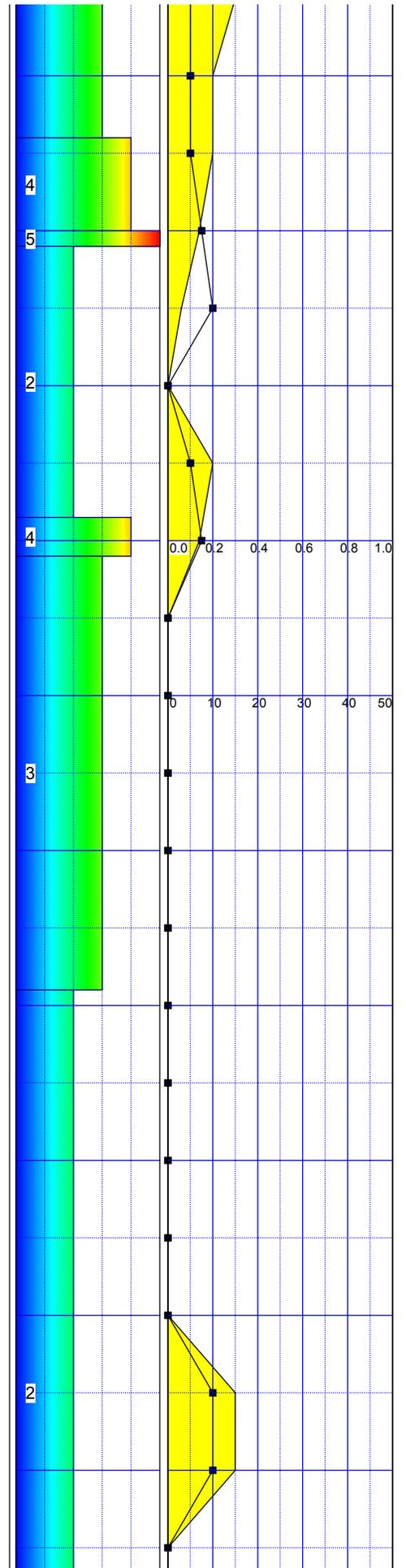
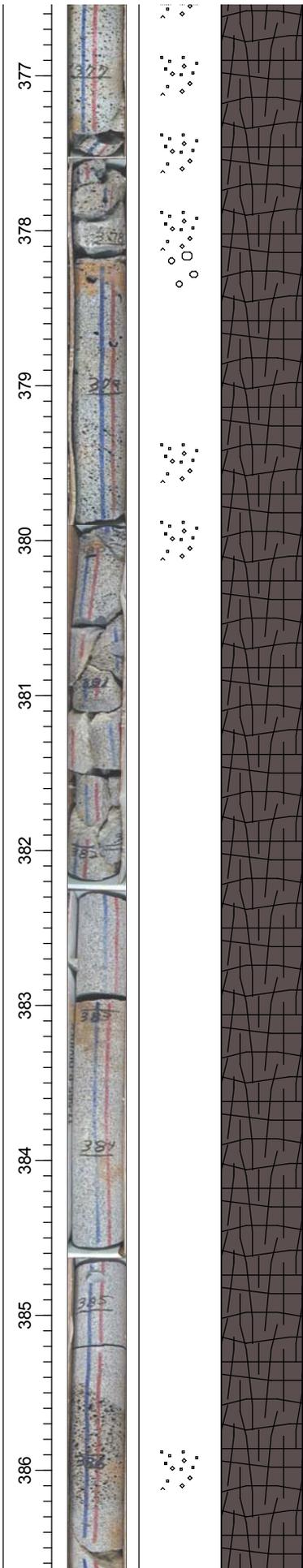
Texture/Composition: Fine-grained phaneritic groundmass throughout with some regions showing 1-3mm tabular and acicular plagioclase granular phenocrysts. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

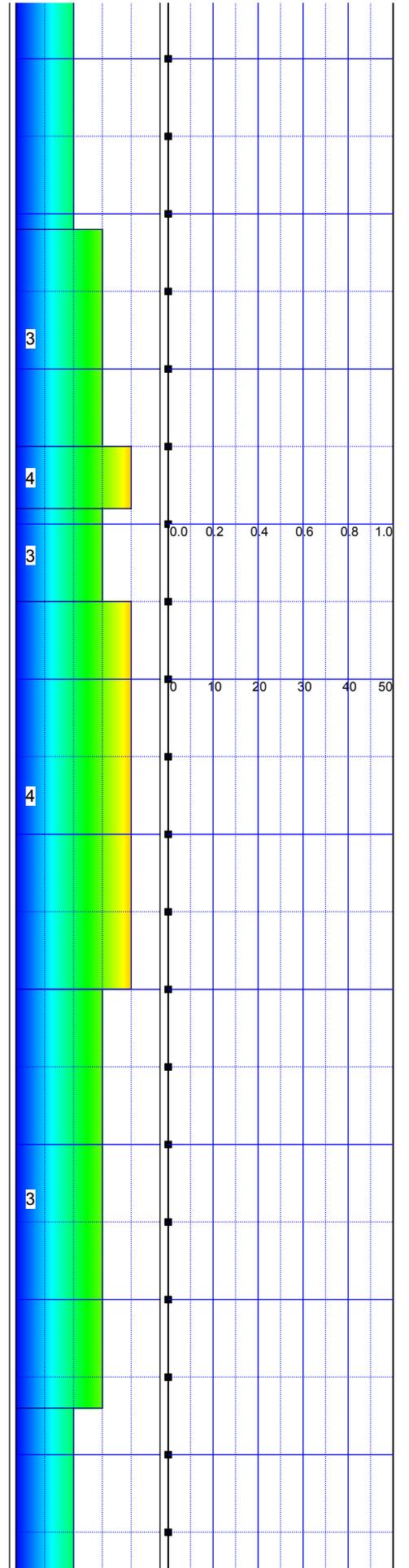
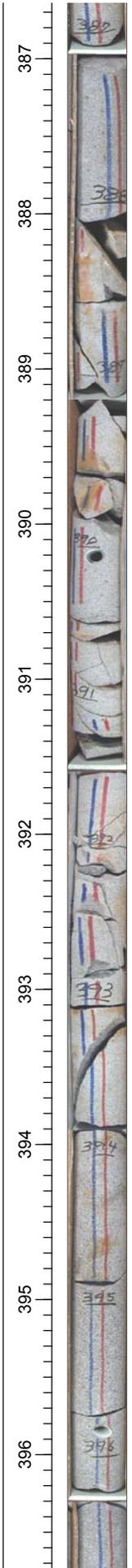
Xenoliths: None noted

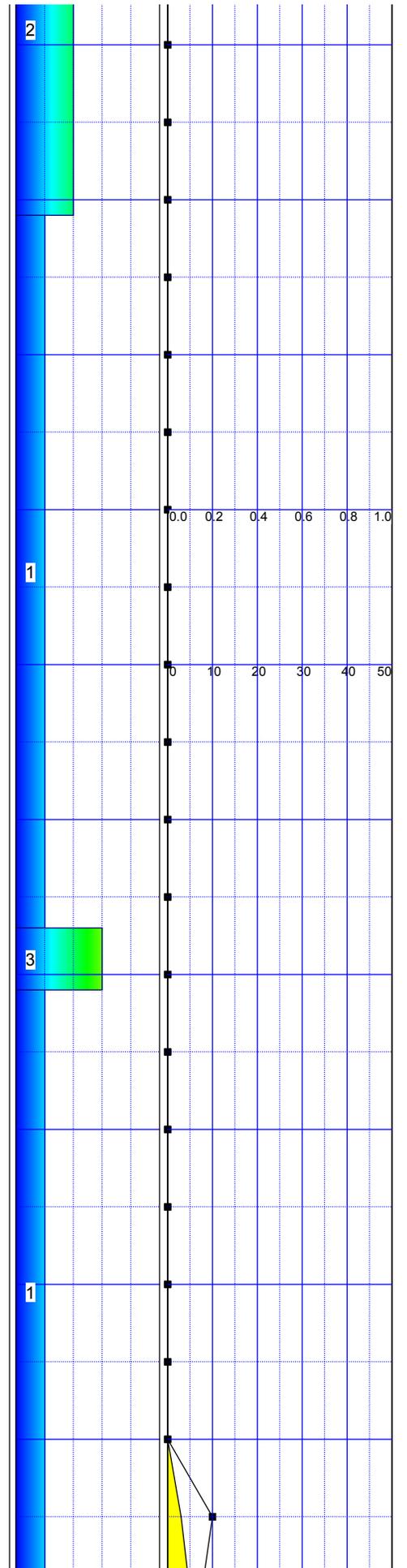
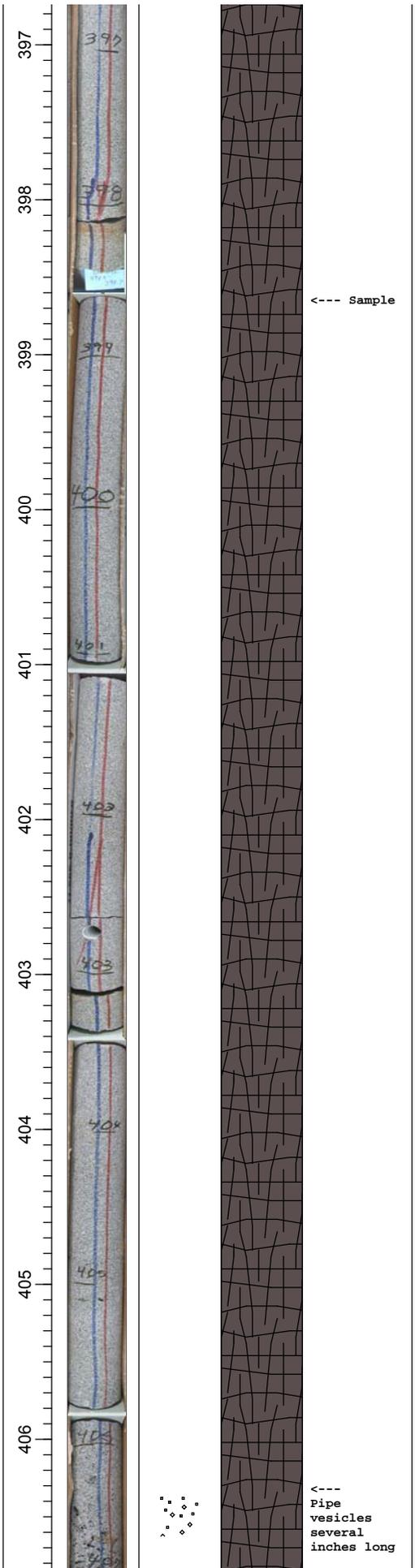
Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

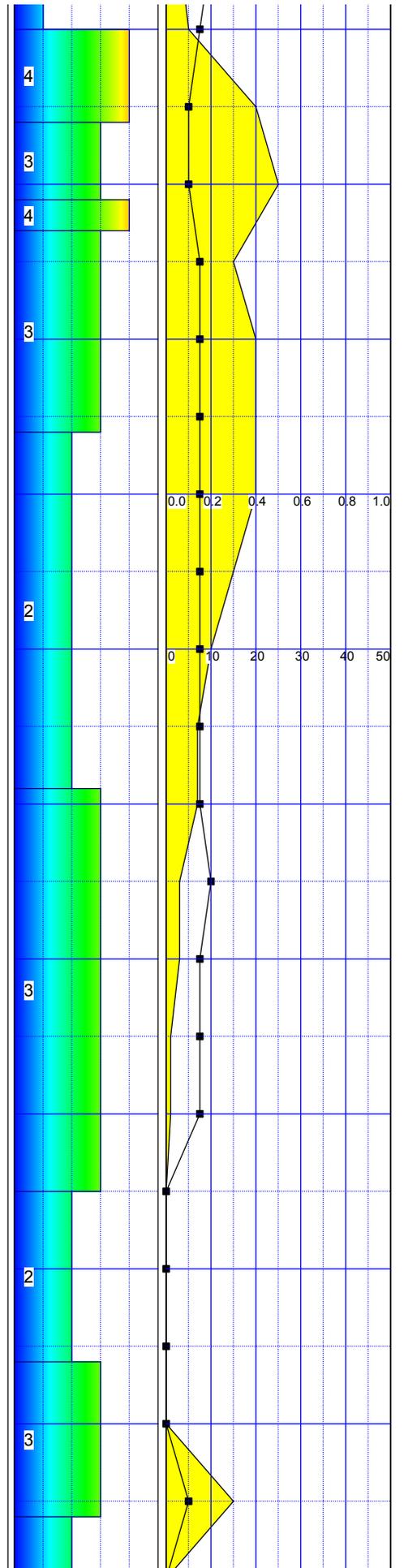
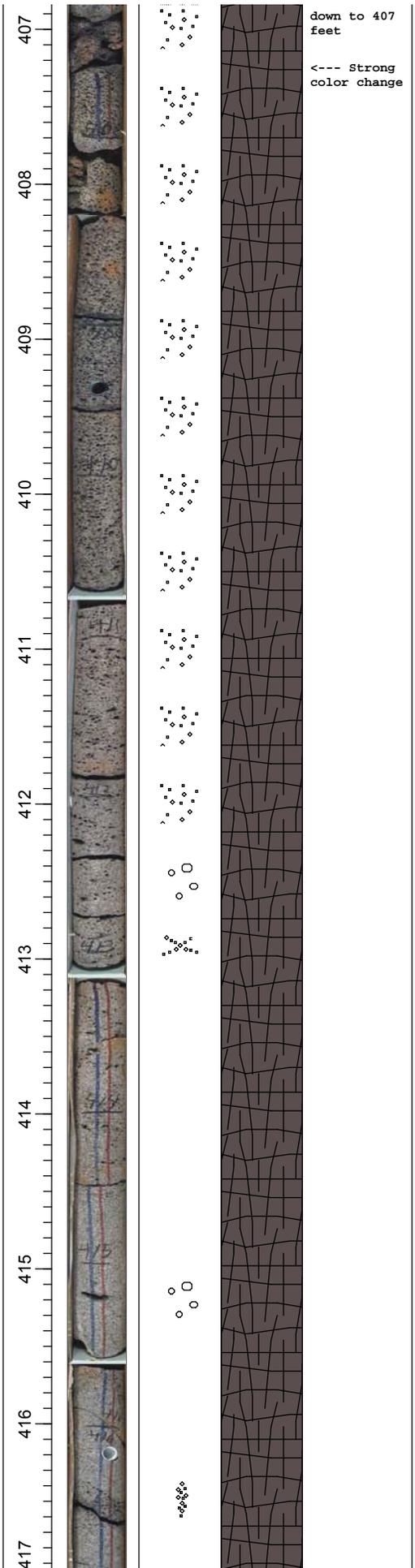


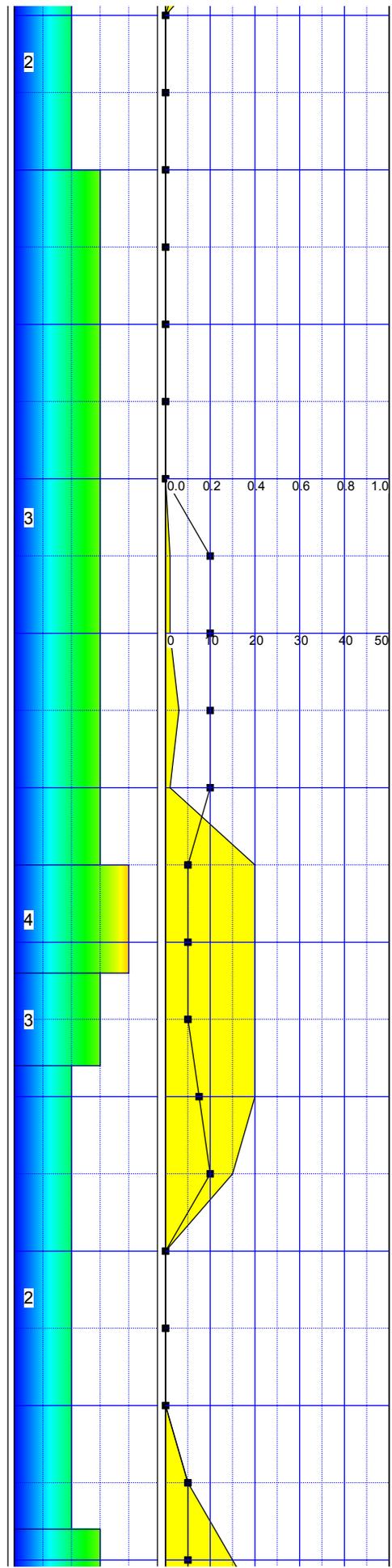
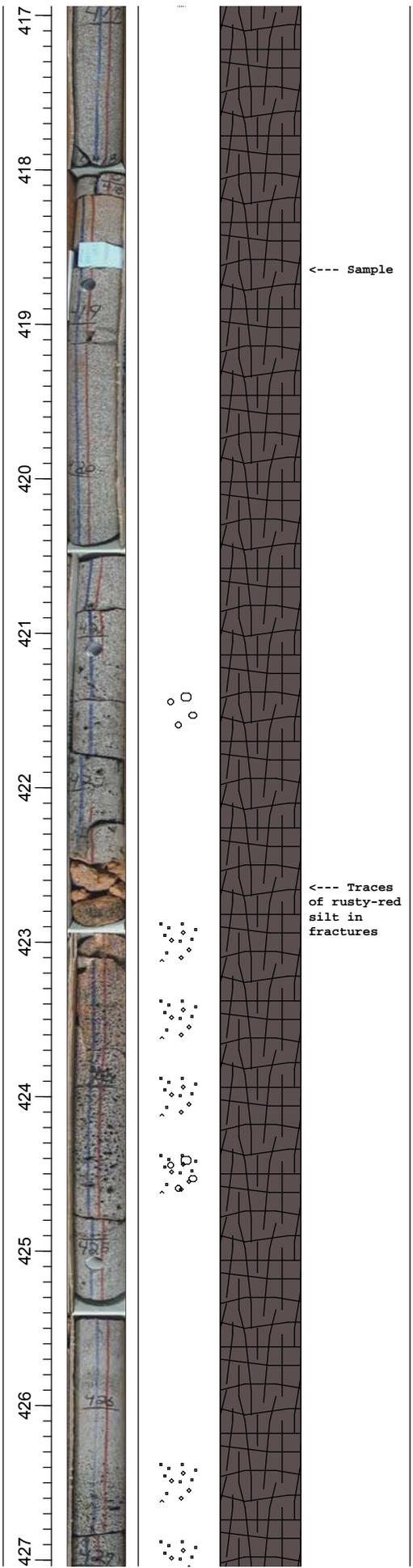


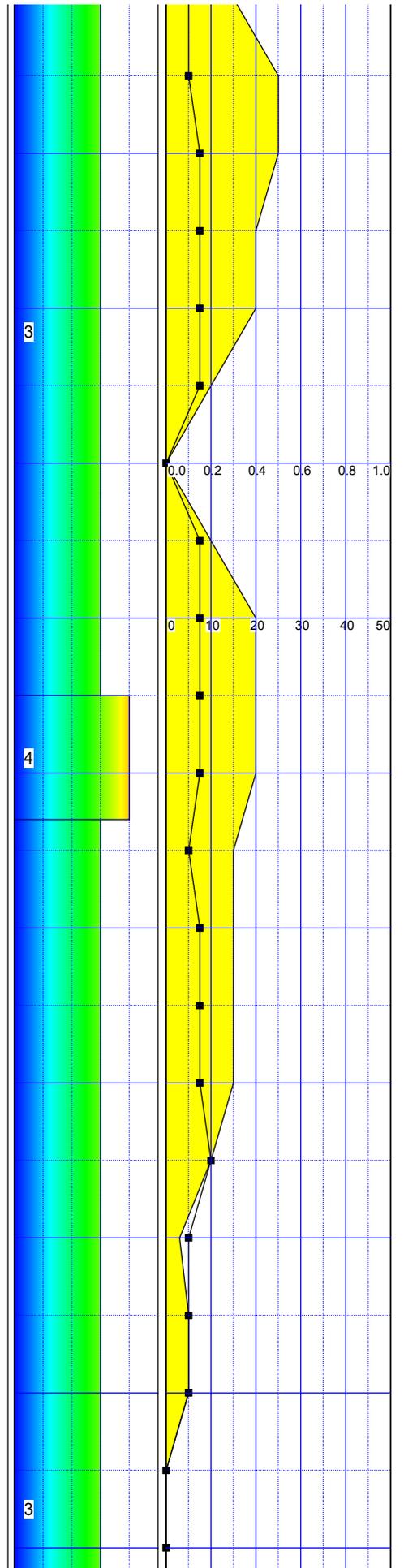
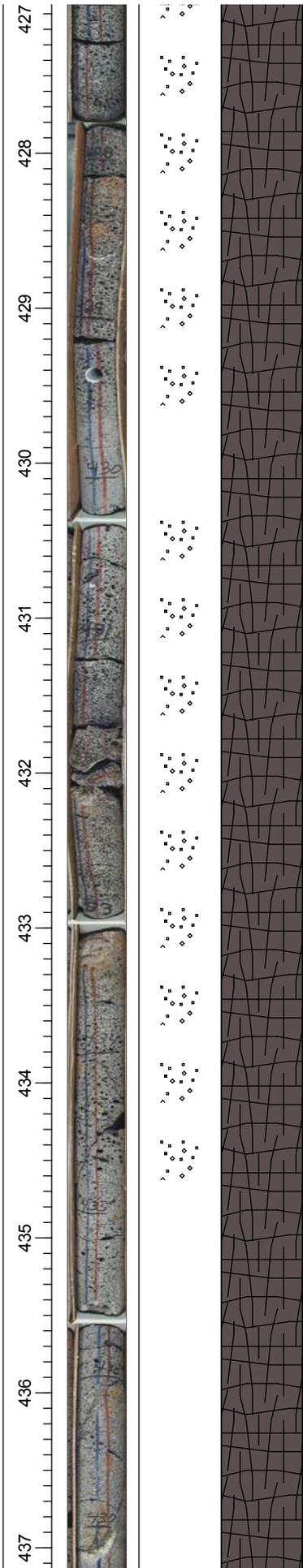


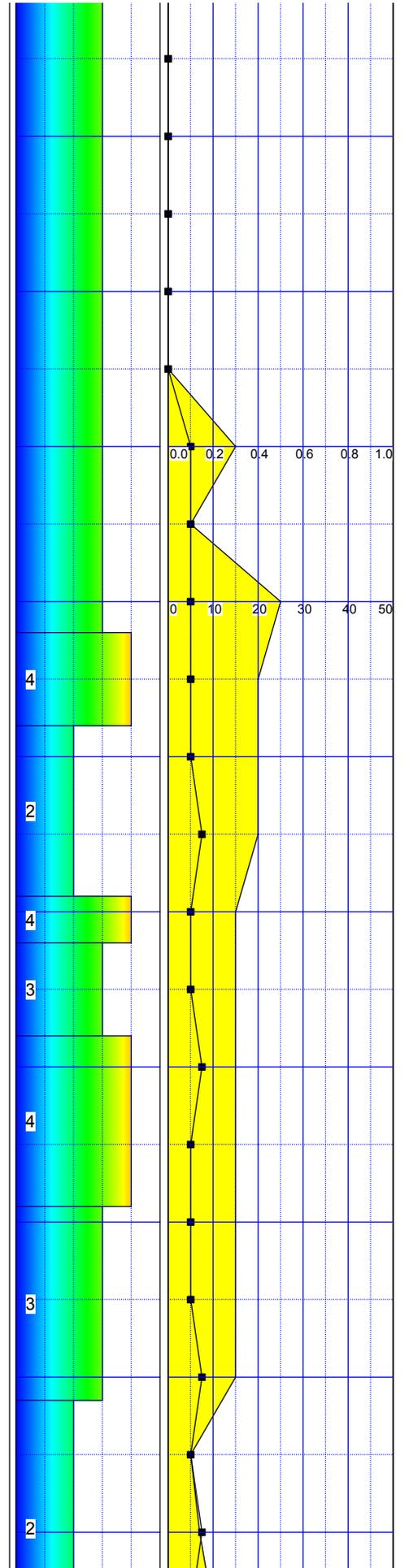
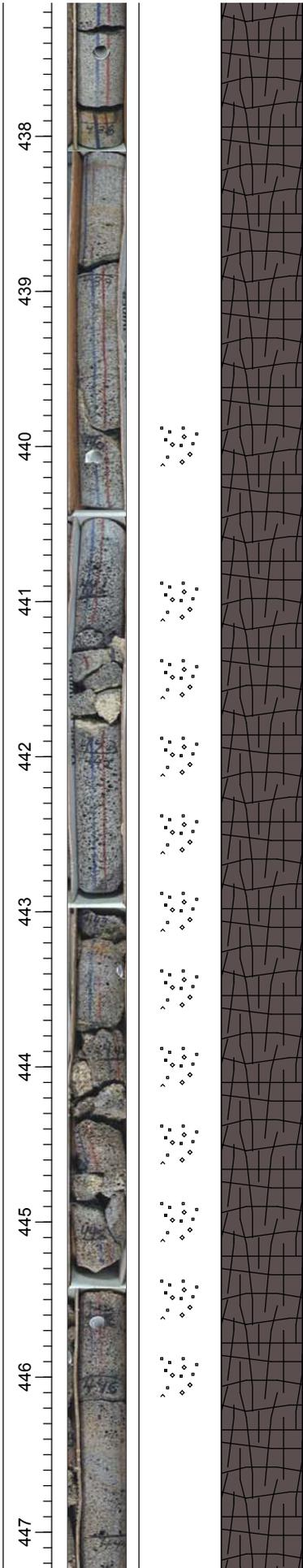


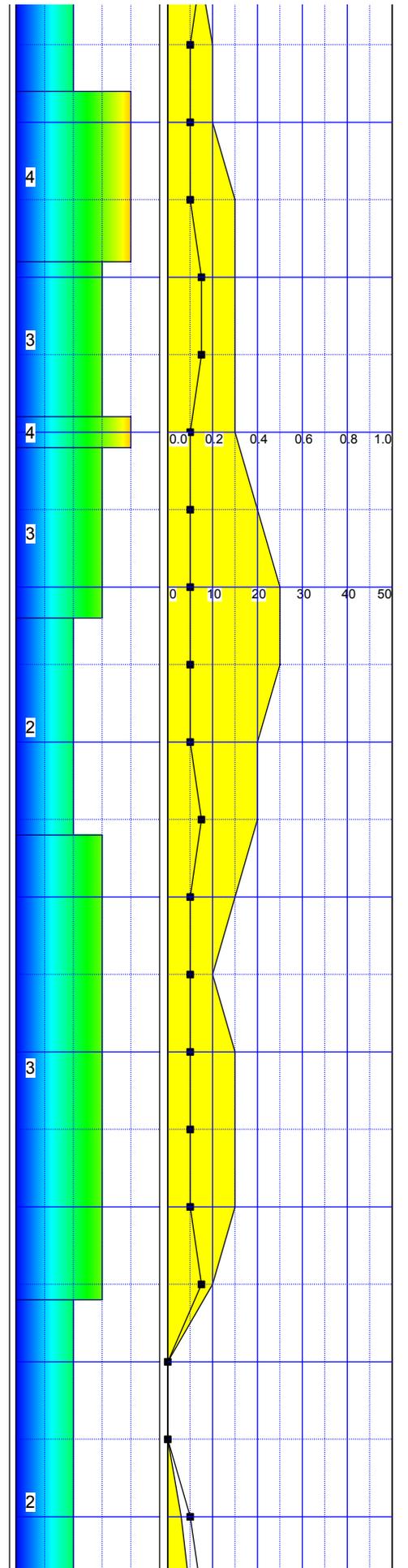
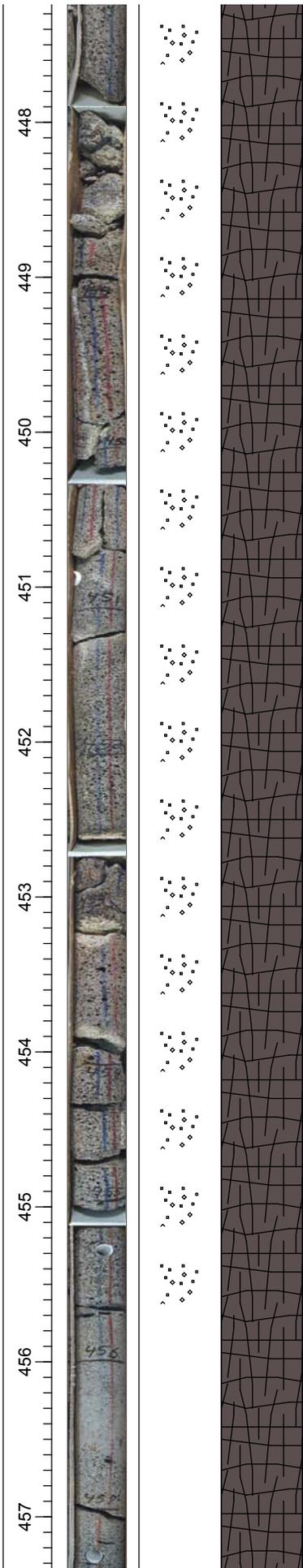


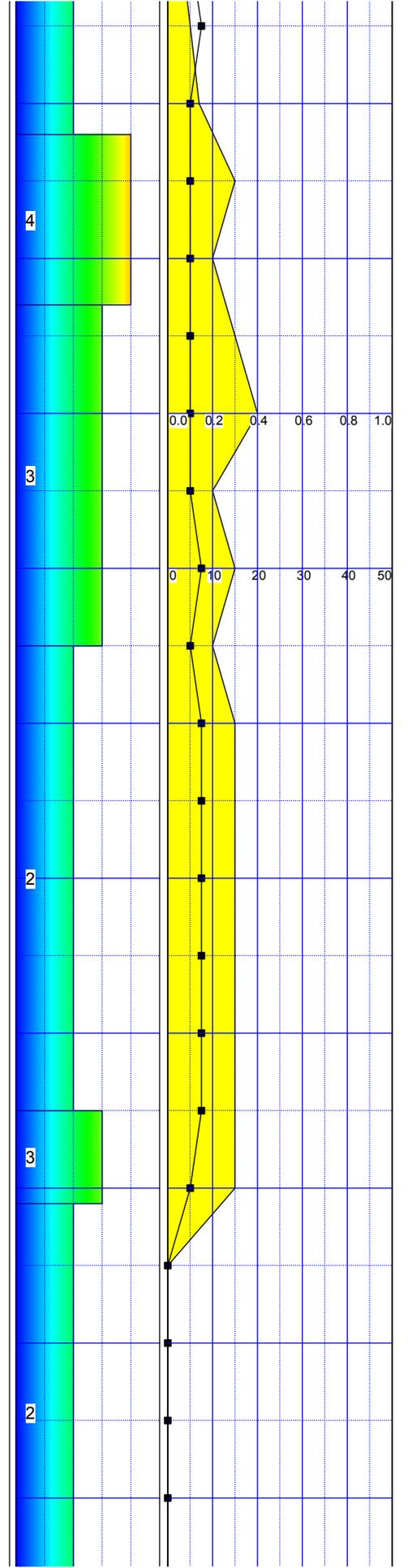
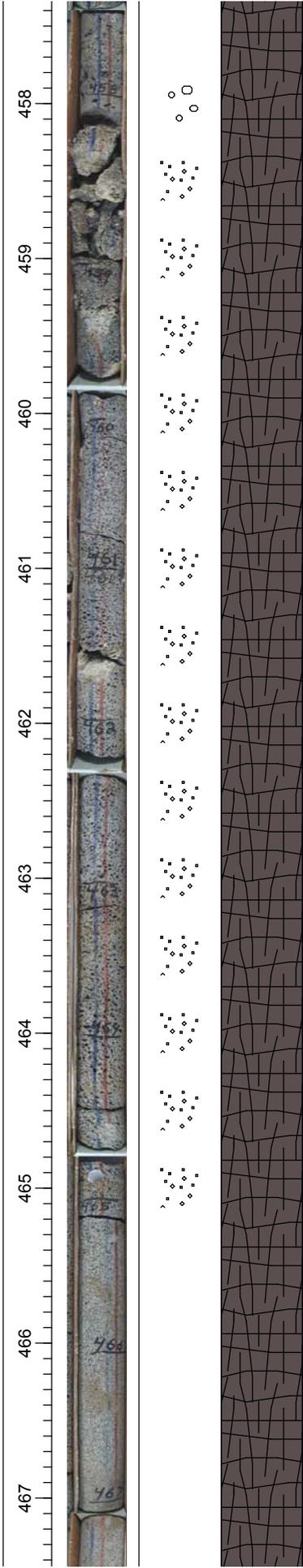


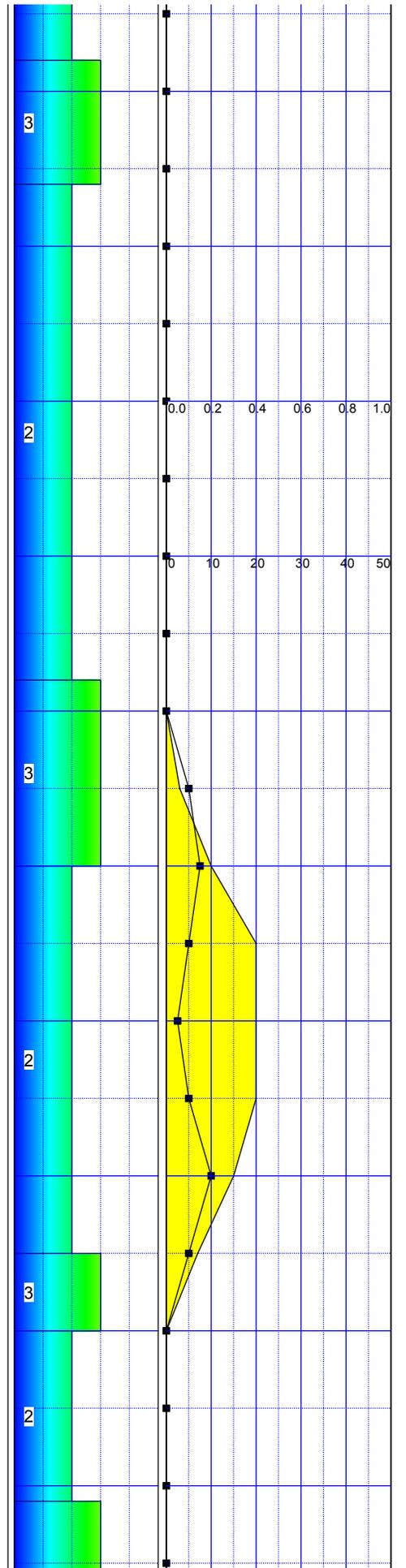
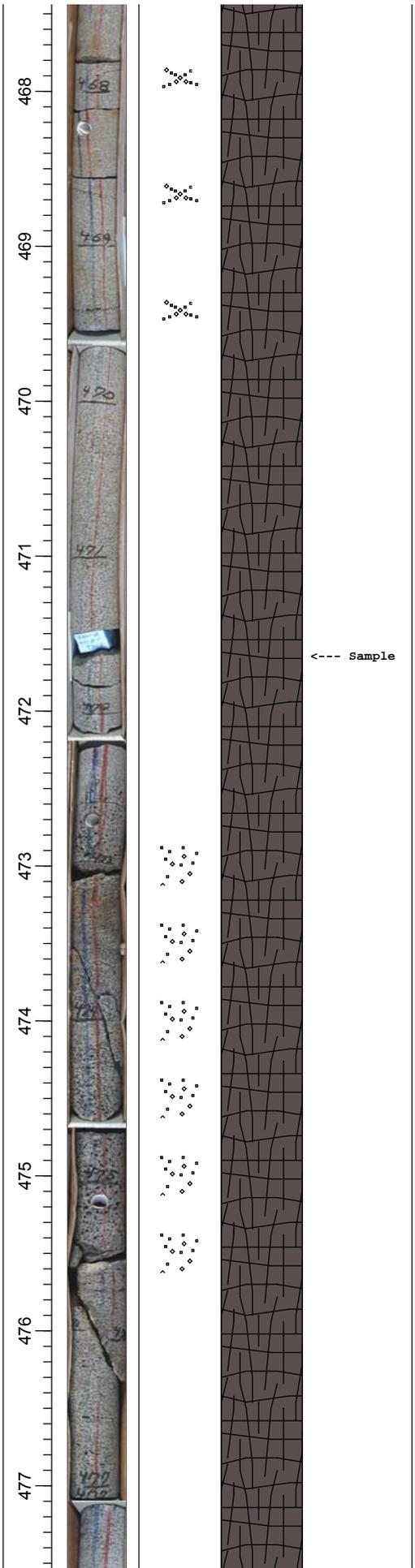


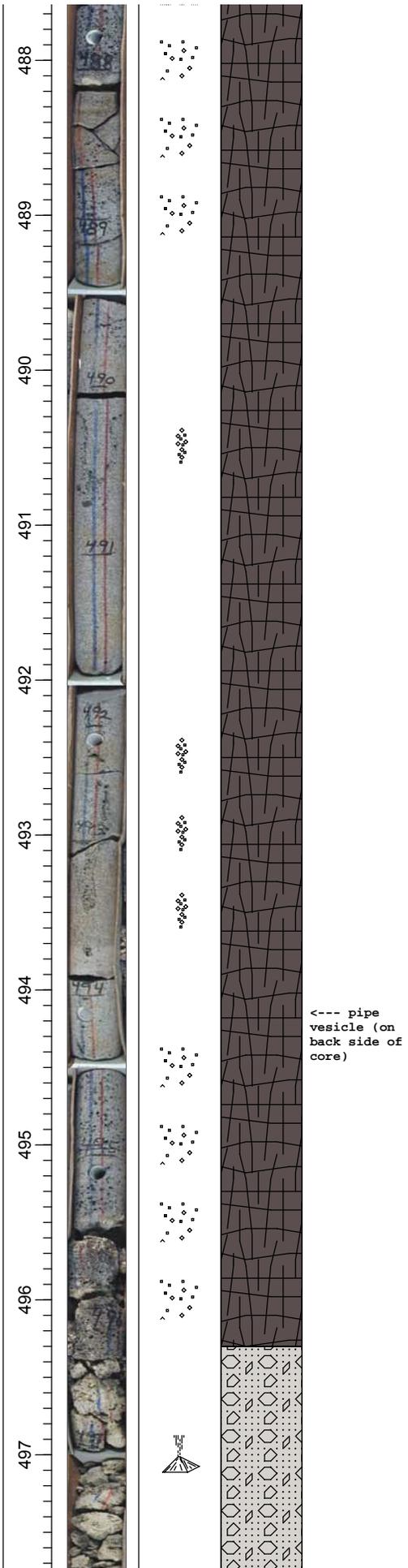












GRAVELS WITH FINES: Clast-supported gravel in matrix of silt and clay

Color: Matrix is yellowish gray, rocks are dark gray to pale brown

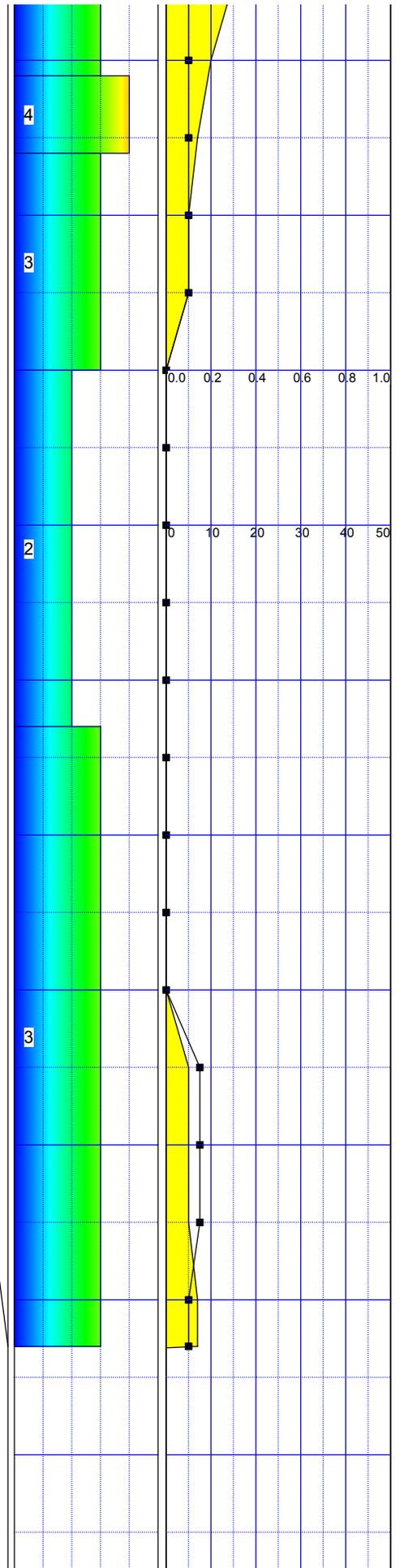
Consistence: Loose

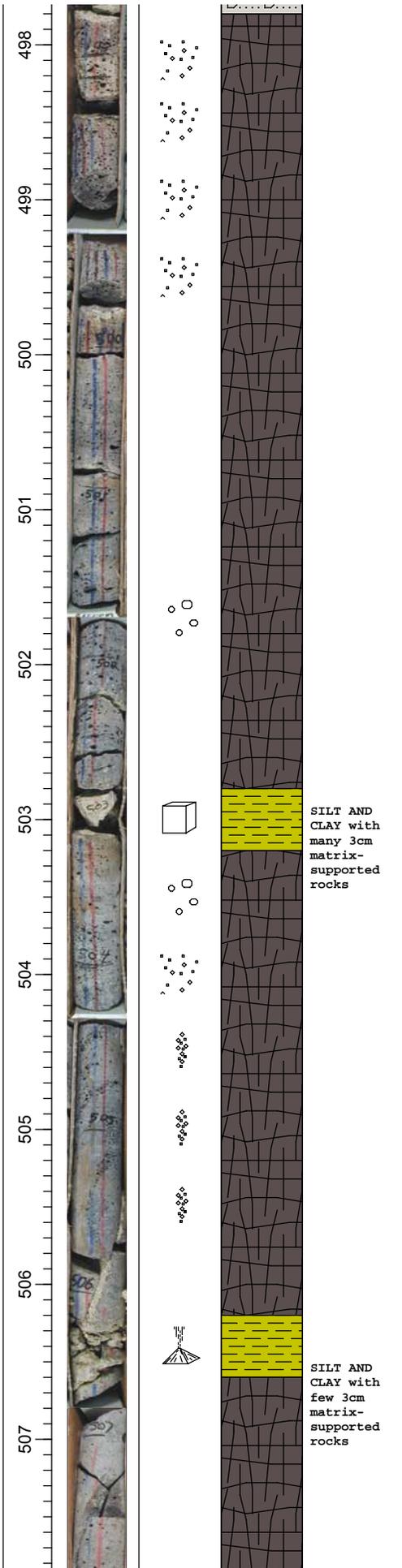
Structure: Single-grained

Free Carbonates: Yes

Rocks: Many 2 mm - > 5 cm clast-supported vesicular basalt fragments, subround to subangular, subprismatic.

Roots / Fossils: None observed





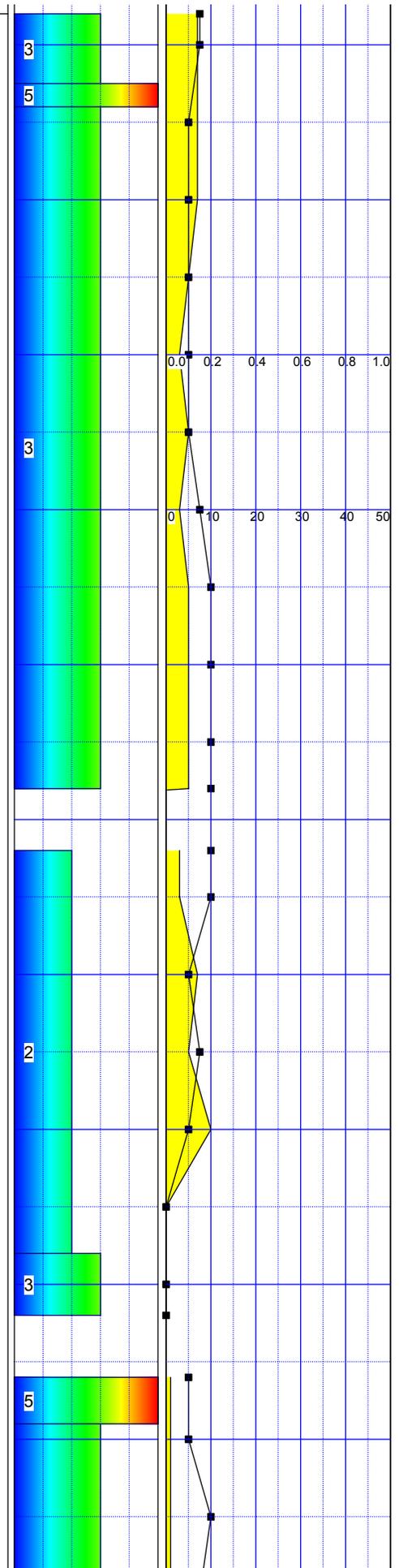
BASALT: Color: Grayish red to medium and dark gray

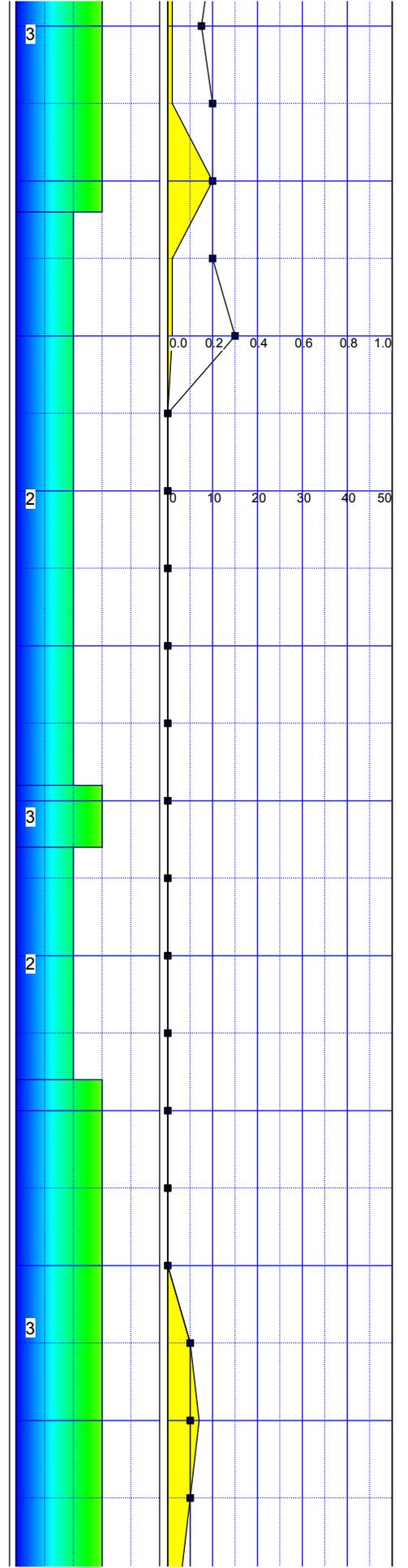
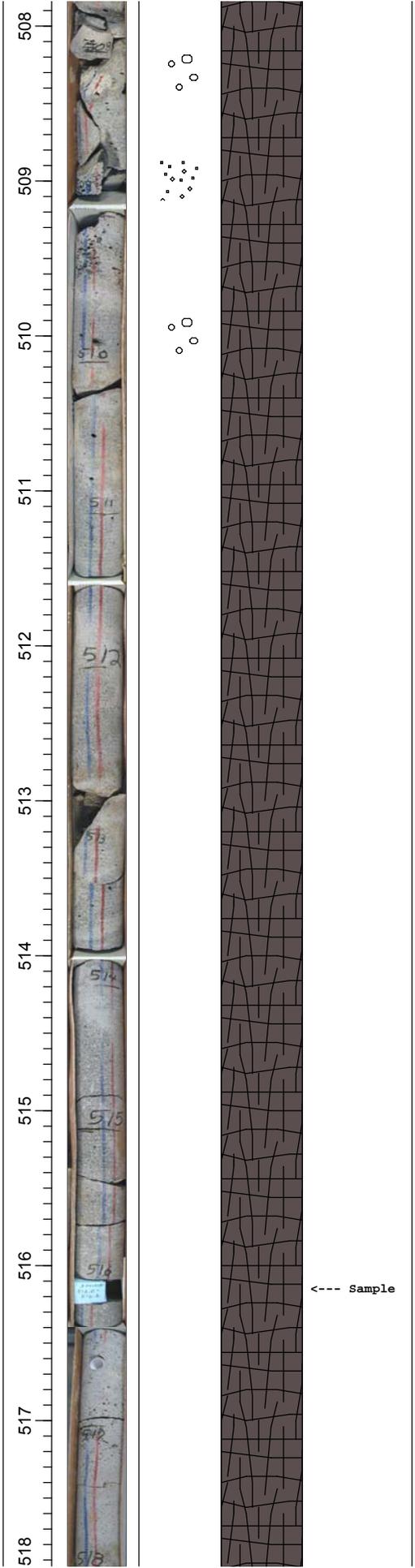
Magnetic Properties: Nonmagnetic

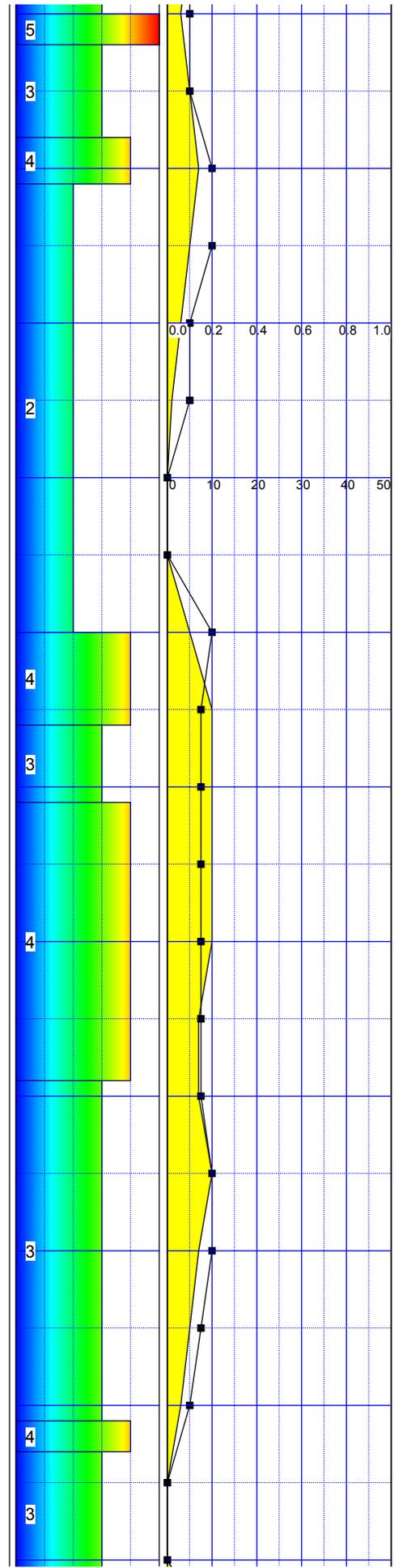
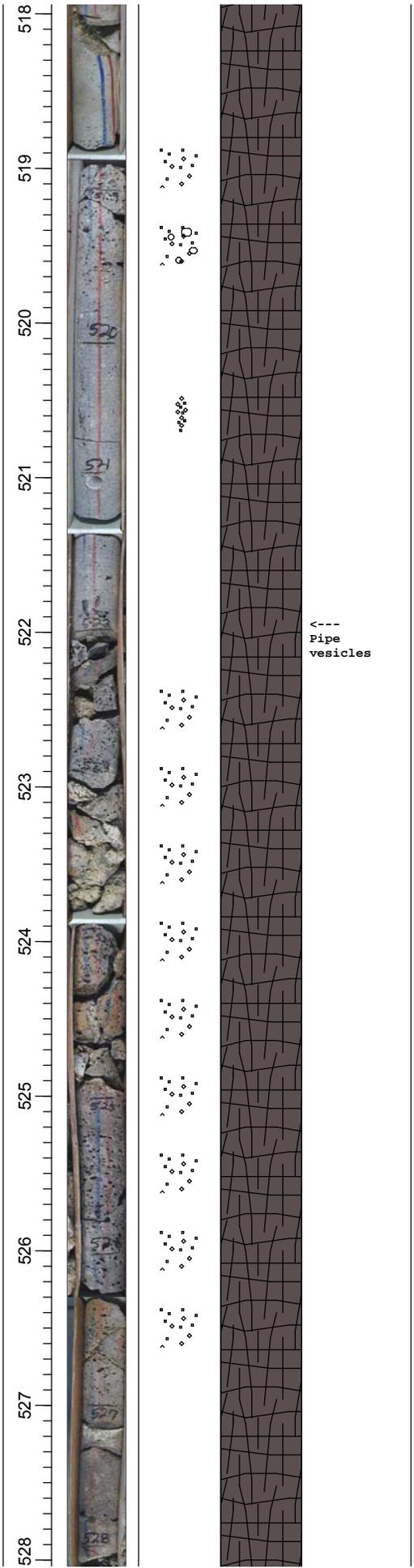
Texture/Composition: Fine-grained phaneritic groundmass throughout with some regions showing 1-3 mm tabular and acicular plagioclase granular phenocrysts. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

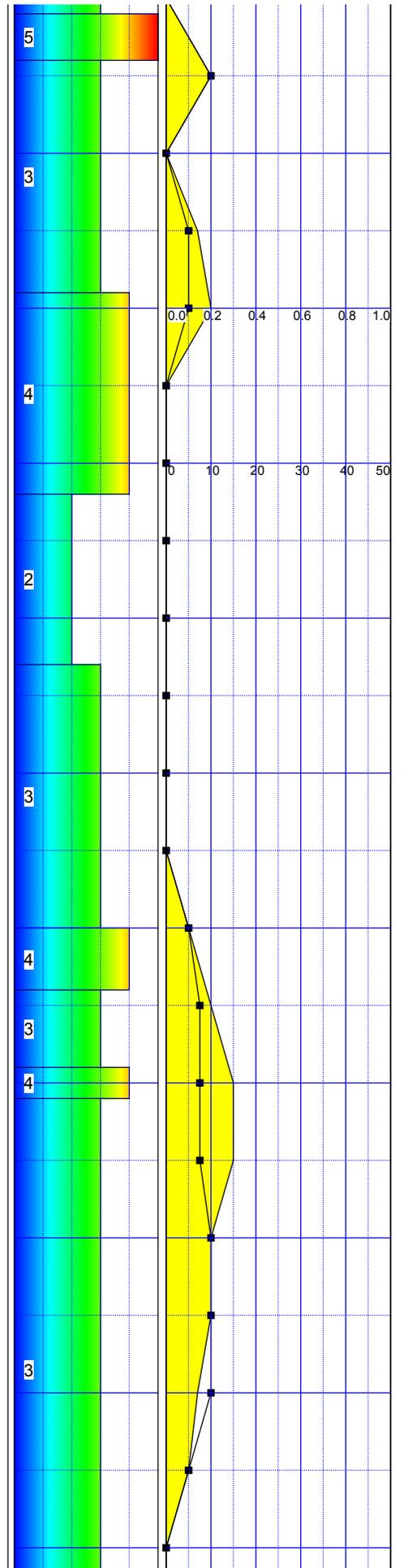
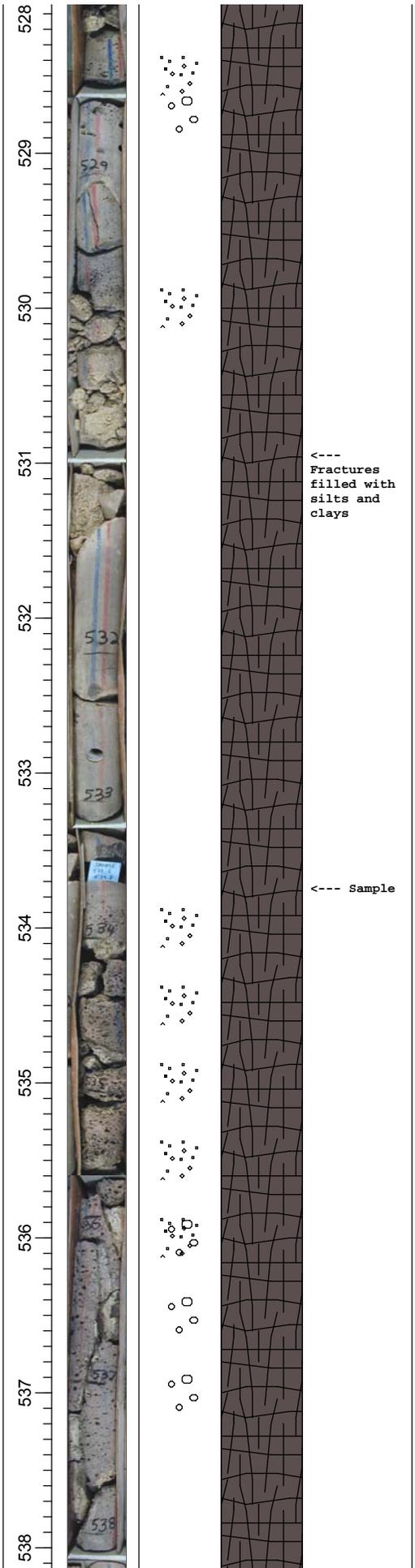
Xenoliths: None noted

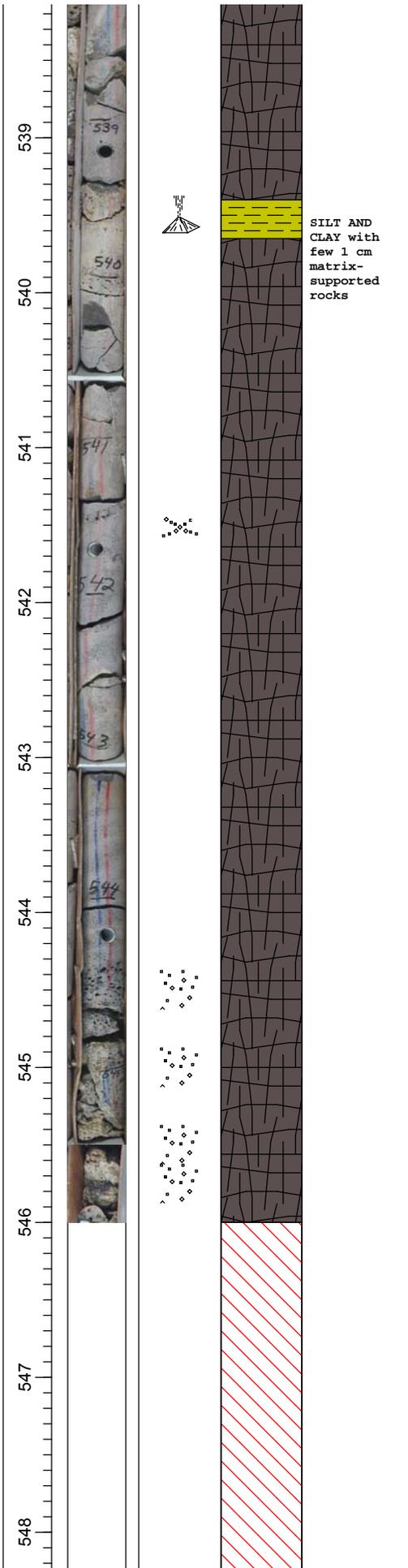
Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays and mild bleaching.



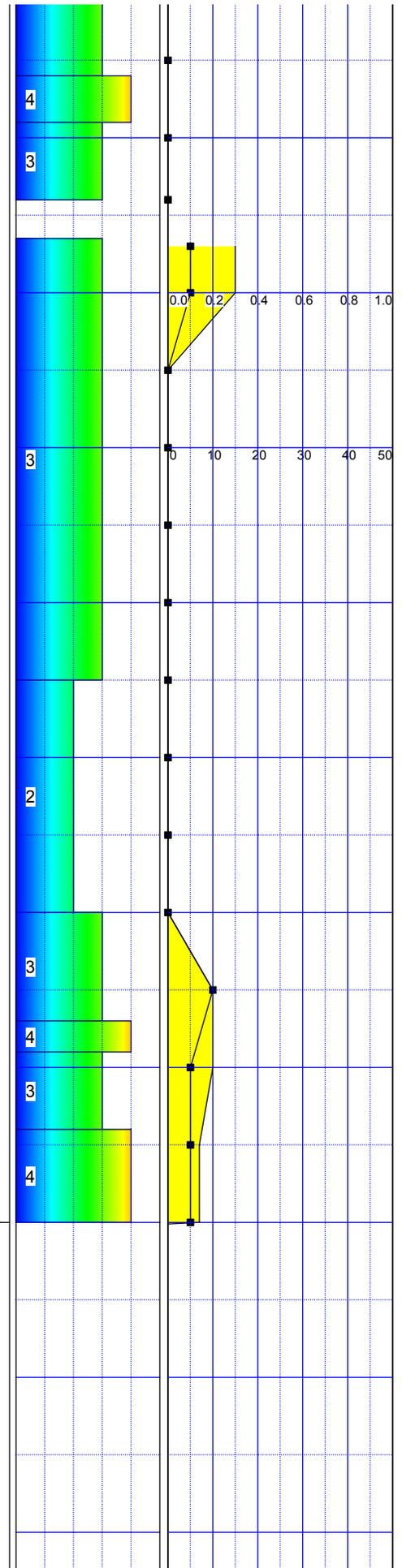


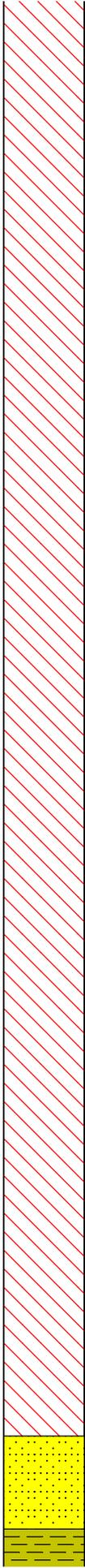
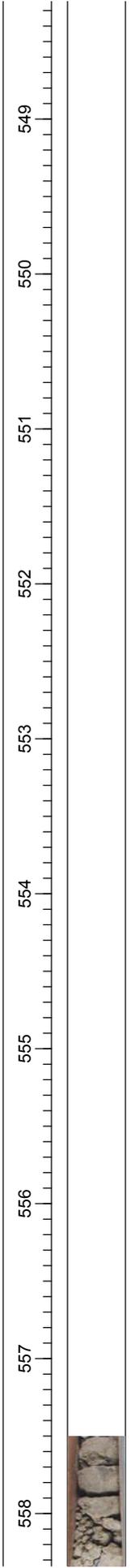






MISSING INTERVAL: Lost in borehole





SANDS - CLEAN: Moderately to poorly sorted, very fine to coarse volcanic and lithic sands, subangular to subround, prismatic to spherical. Bedding seems massive, though contact with lower soil is gradational over about three inches.

Color: Pale yellowish brown

Consistence: Friable

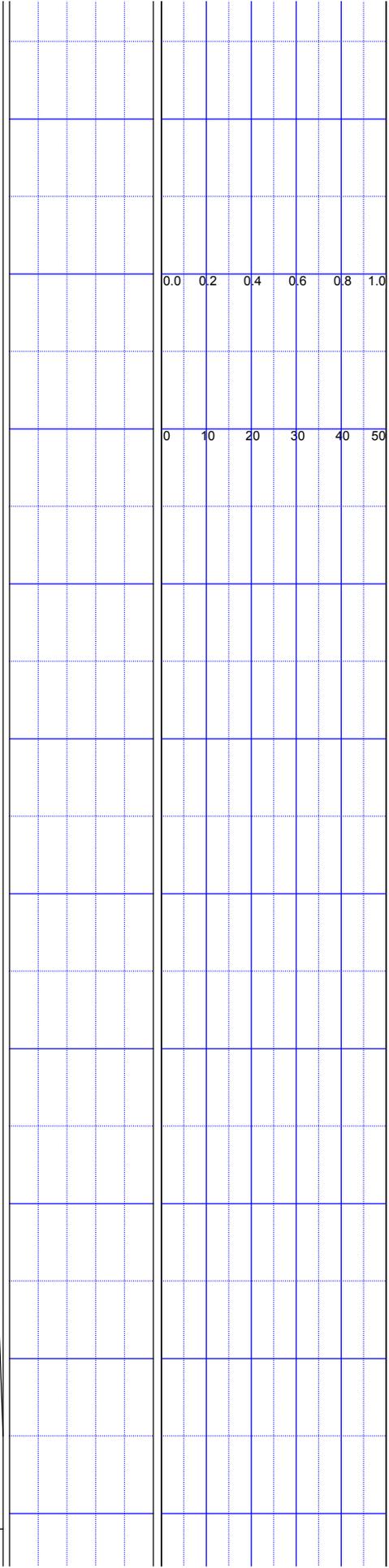
Structure: Single-grained

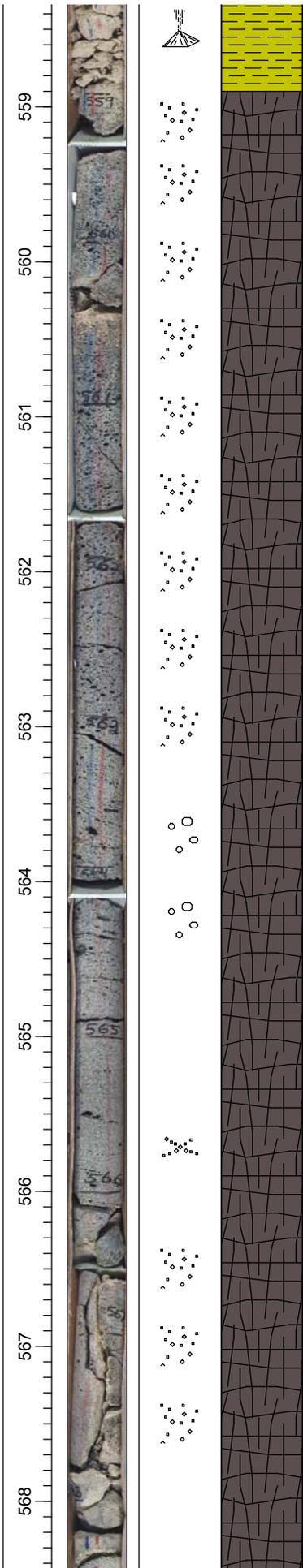
Free Carbonates: No

Rocks: Few matrix-supported 2 cm vesicular basalt fragments, subangular and subprismatic

Roots / Fossils: None observed

SILT AND CLAY: Color: Yellowish gray





Consistence: Friable

Structure: Single-grained

Free Carbonates: No

Rocks: Few, matrix-supported, 5 mm - 2 cm angular, subprismoidal vesicular basalt fragments

Roots / Fossils: None observed

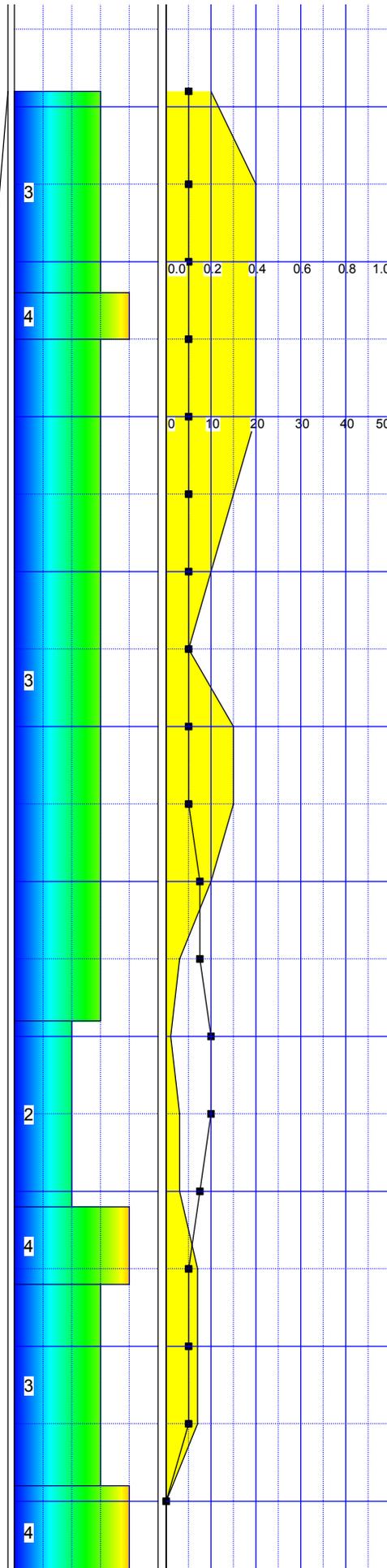
BASALT: Color: Medium and dark gray to dusky brown

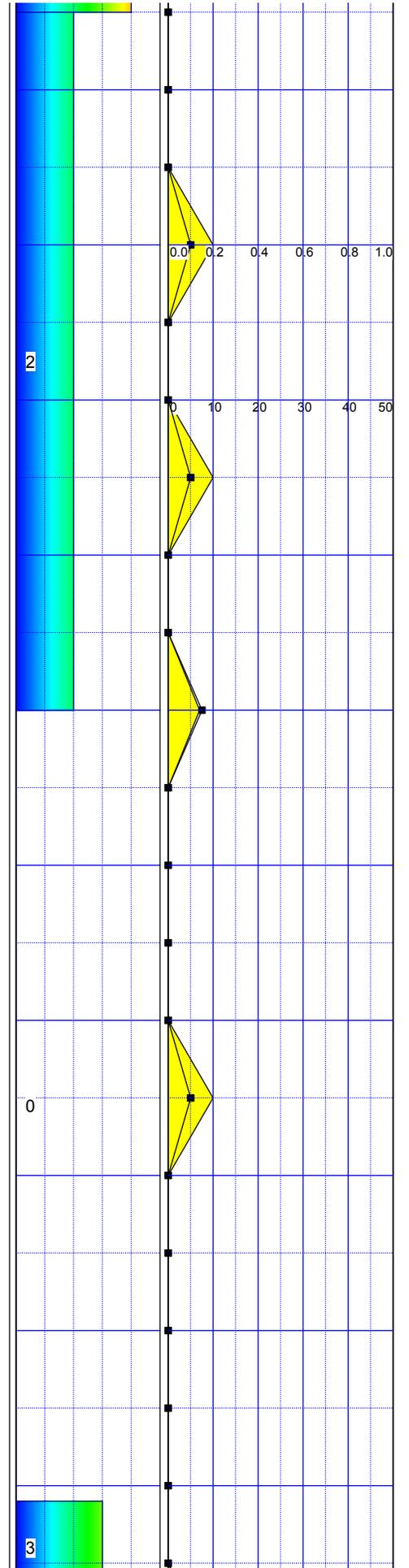
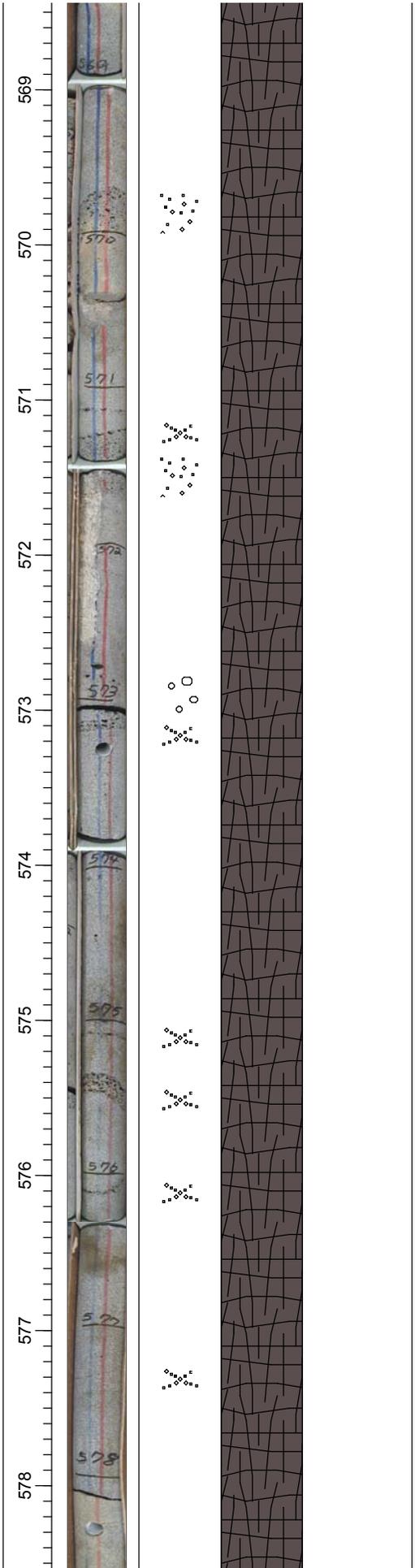
Magnetic Properties: Nonmagnetic

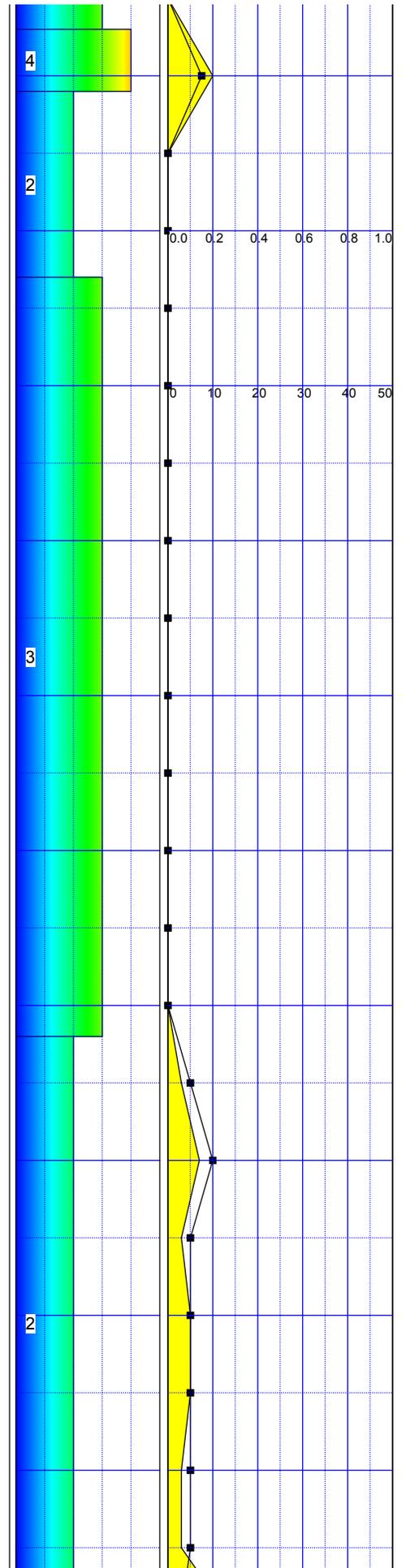
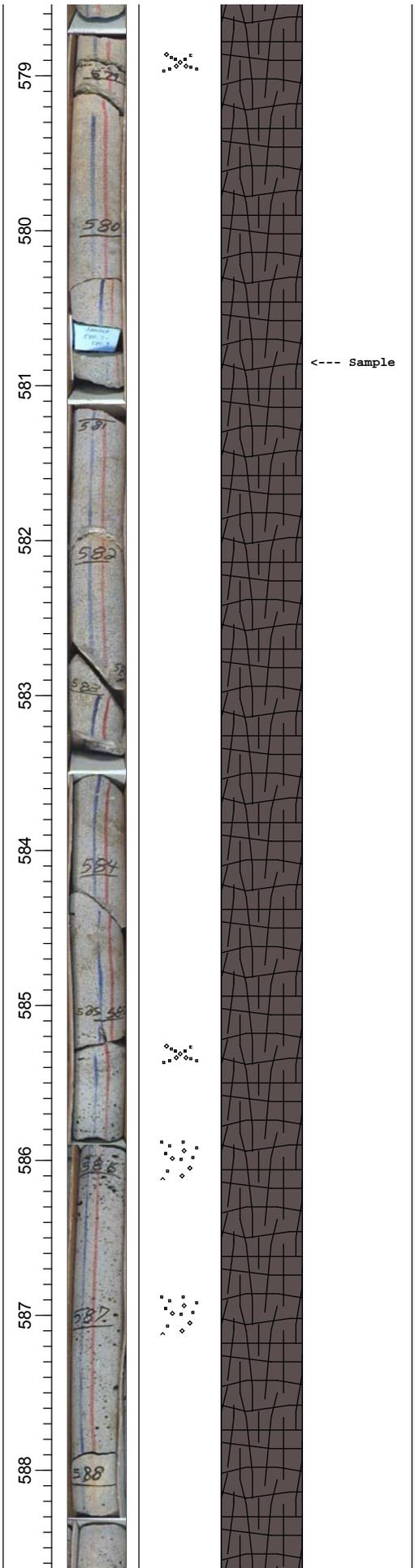
Texture/Composition: Fine-grained phaneritic groundmass throughout. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

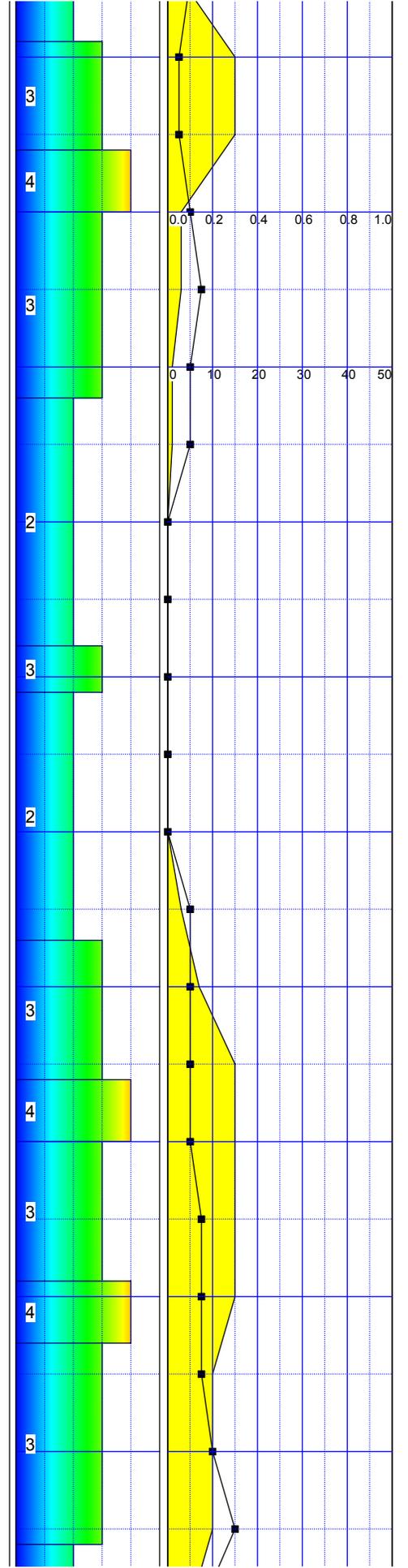
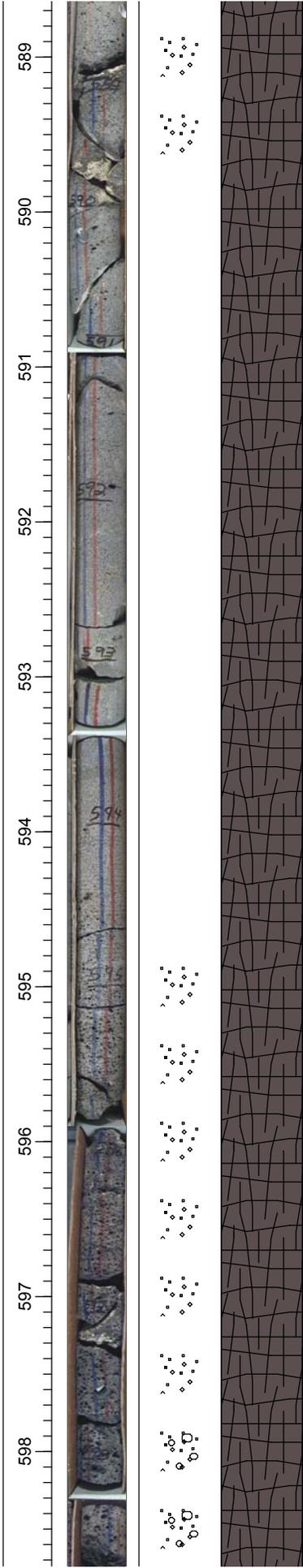
Xenoliths: None noted

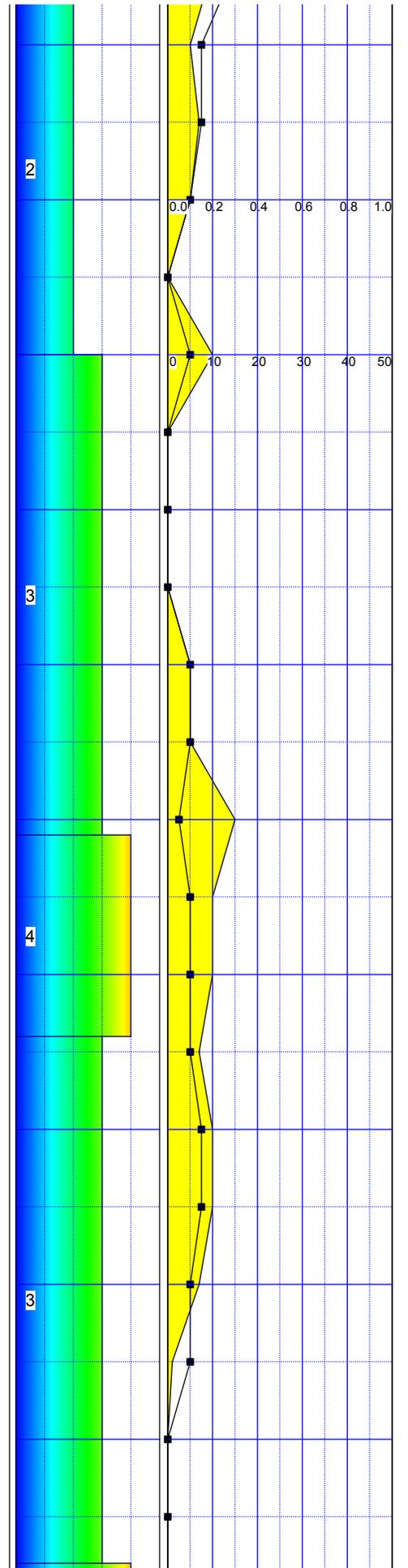
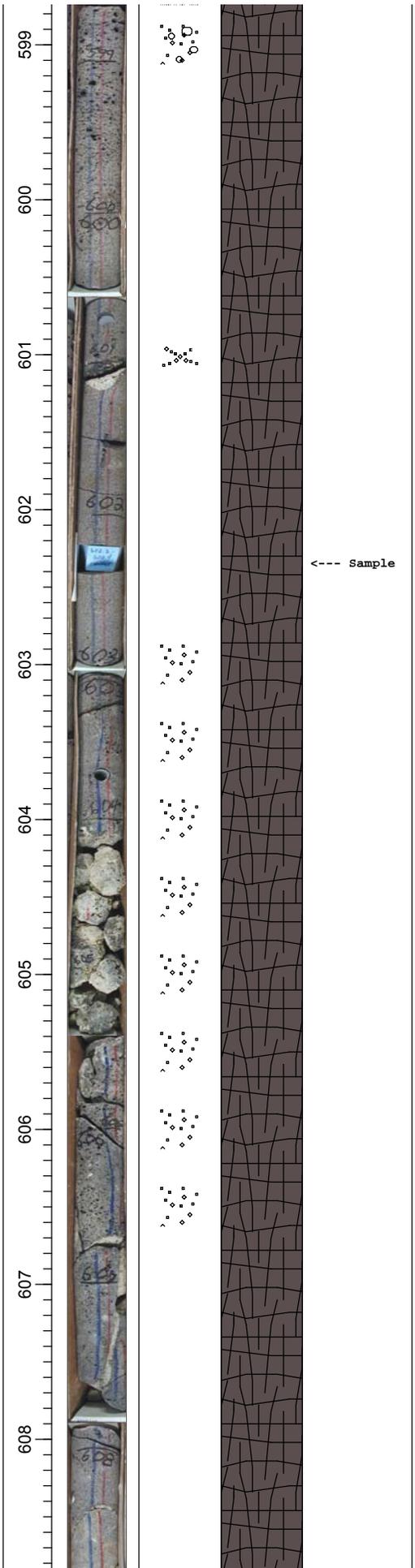
Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

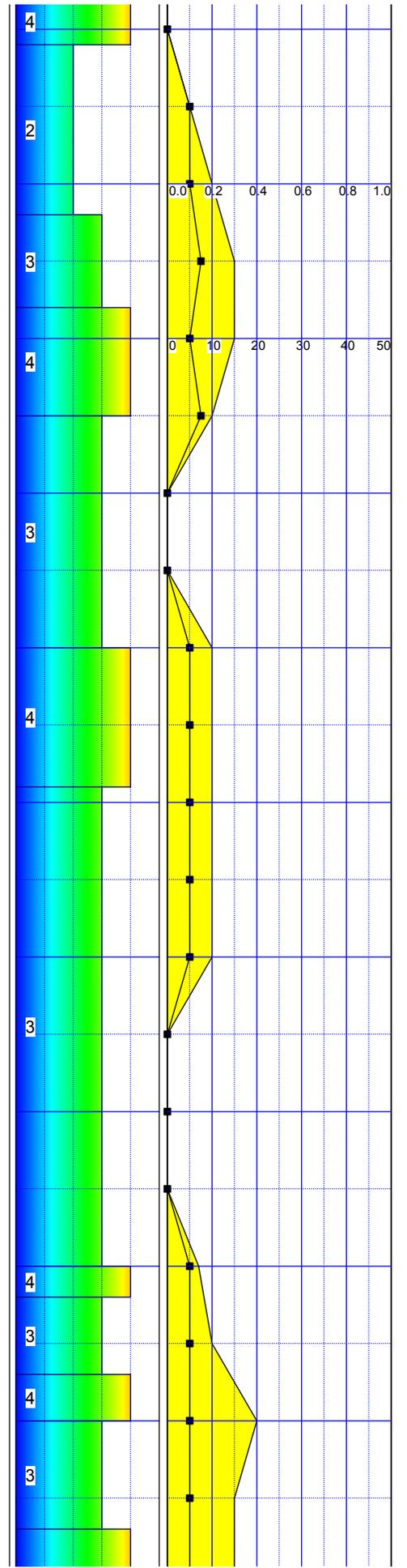
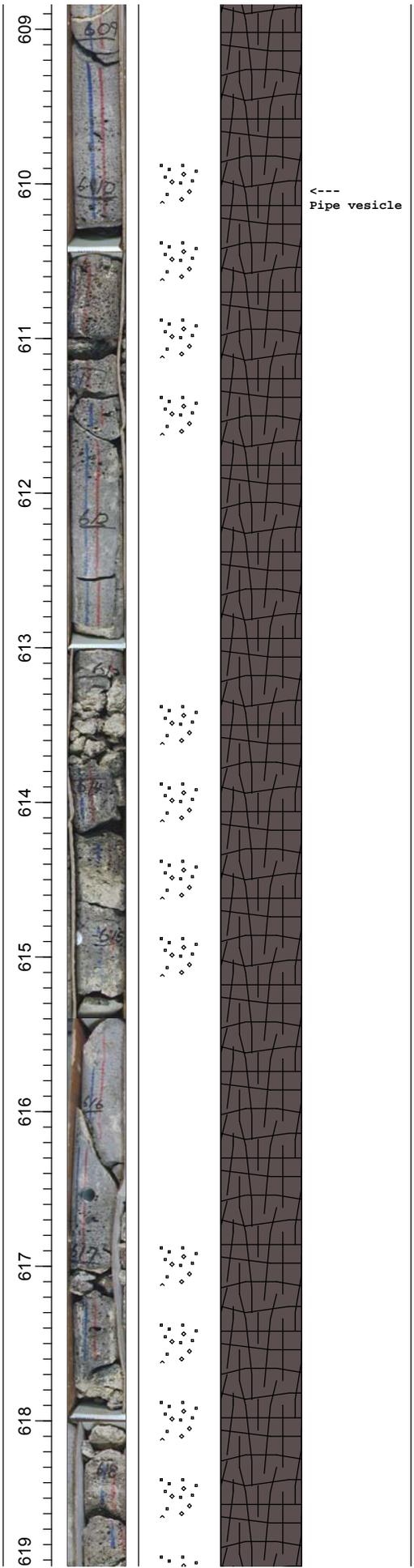


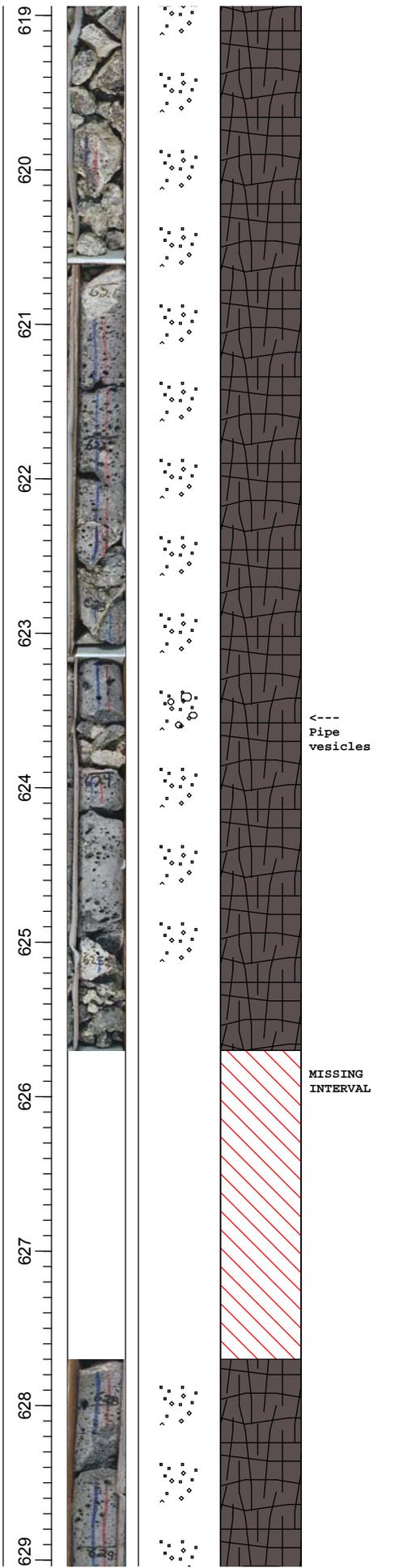










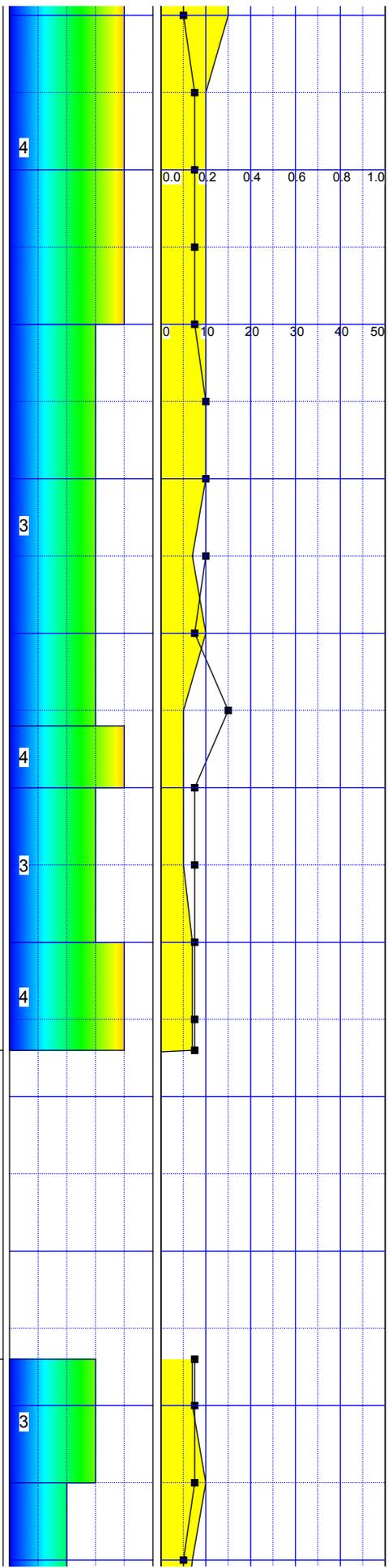


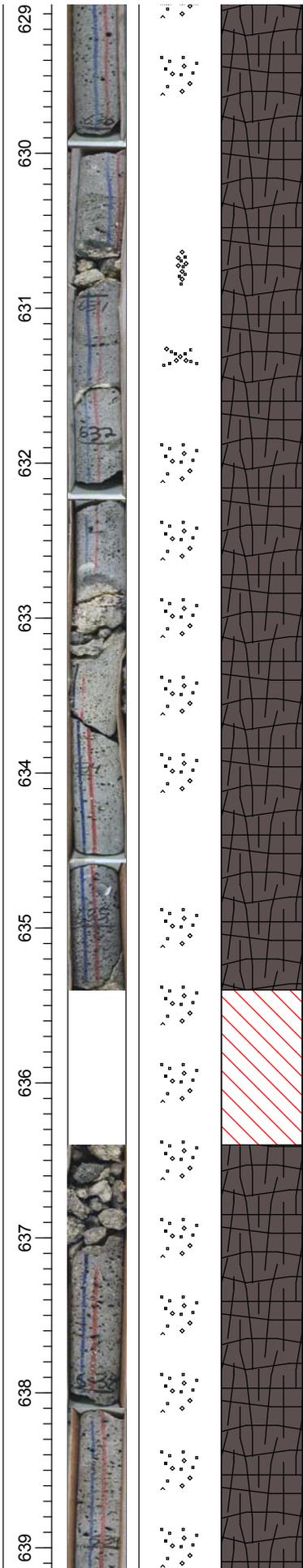
MISSING INTERVAL:

BASALT: Color: Medium and dark gray to dusky brown

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic groundmass throughout. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.





Xenoliths: None noted

Alteration Activity:
Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

MISSING INTERVAL

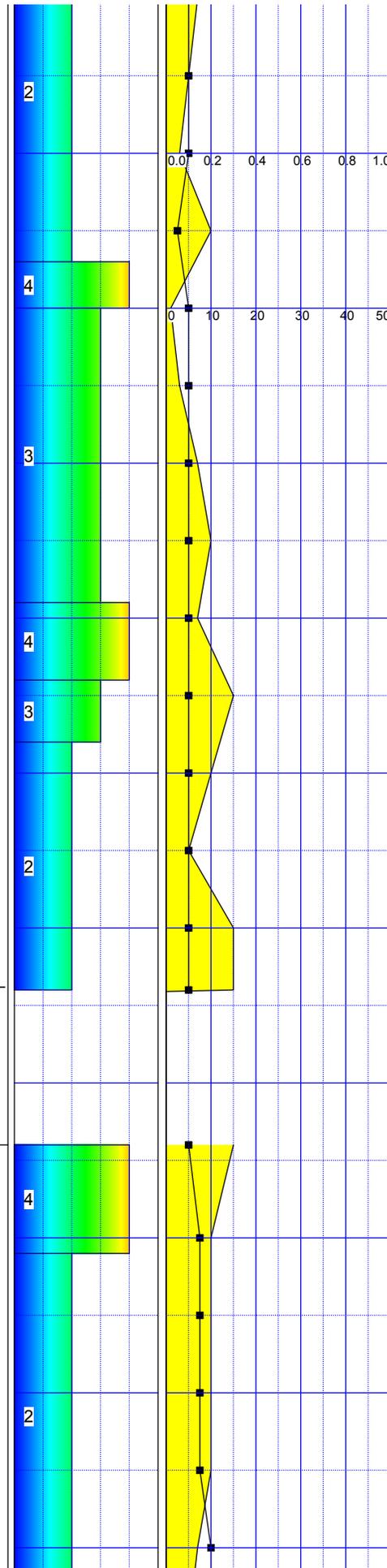
BASALT: Color: Medium and dark gray to dusky brown

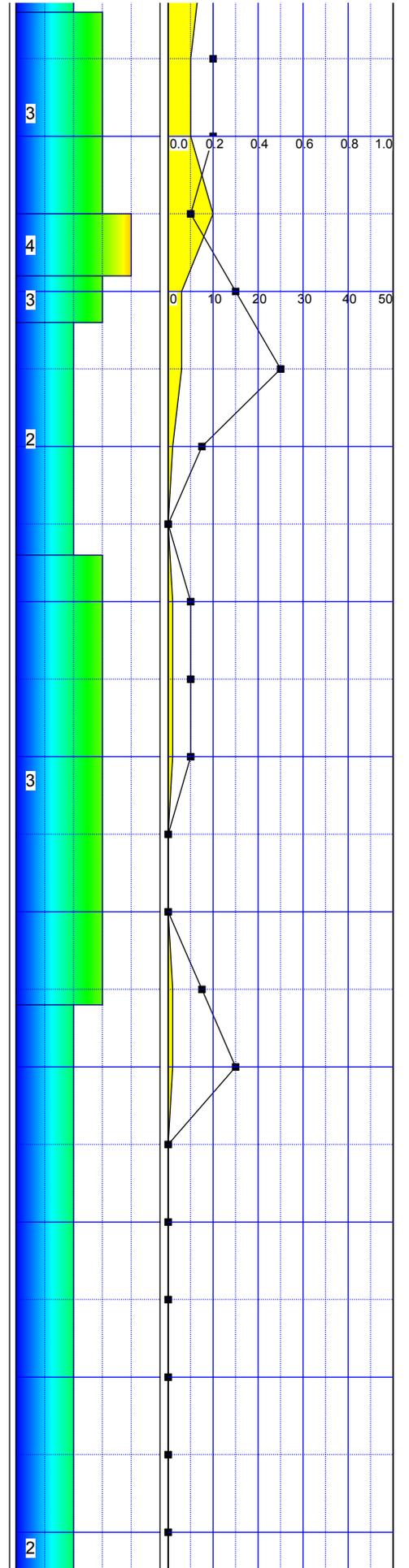
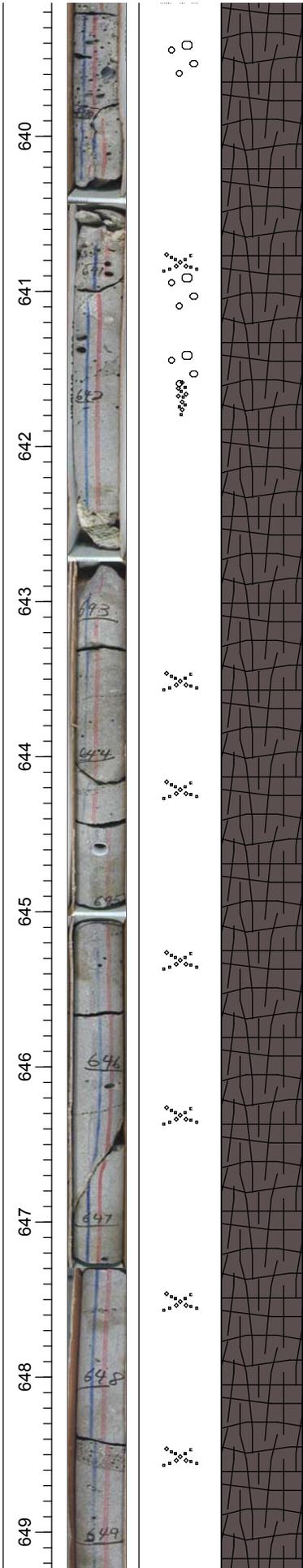
Magnetic Properties: Nonmagnetic

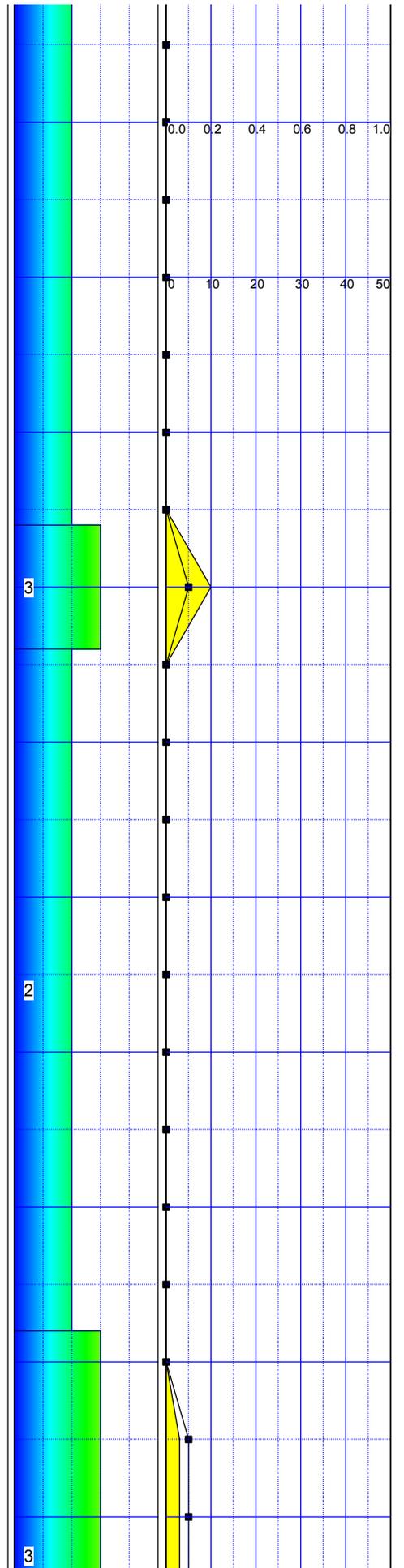
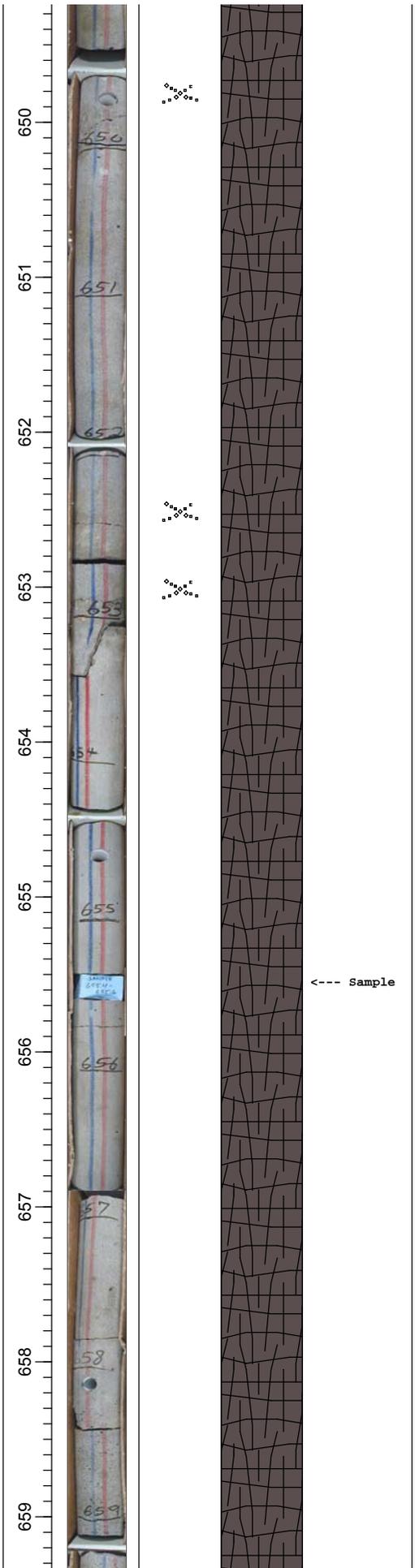
Texture/Composition: Fine-grained phaneritic groundmass throughout. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

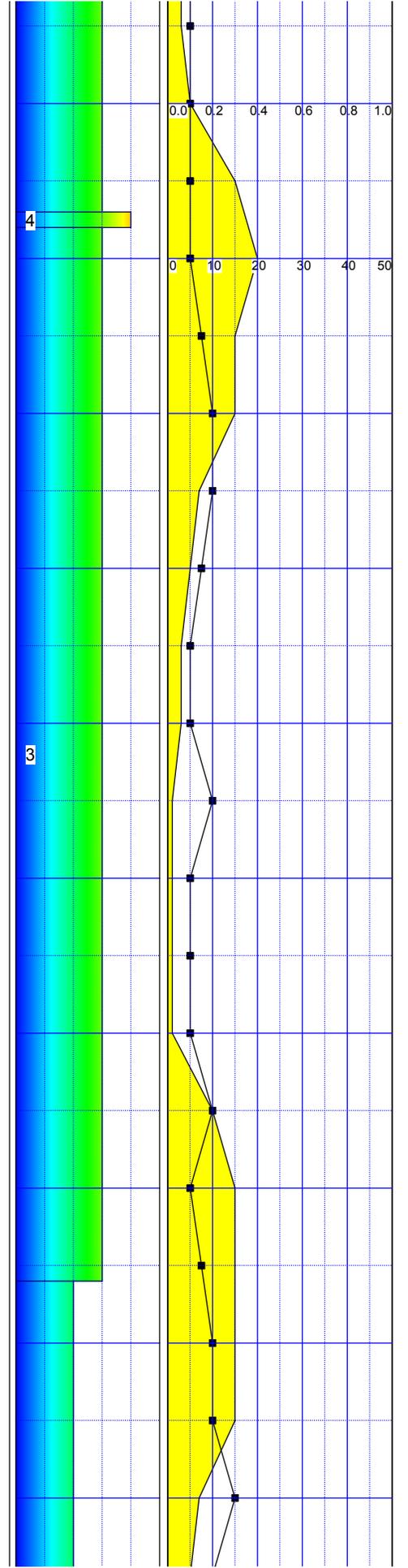
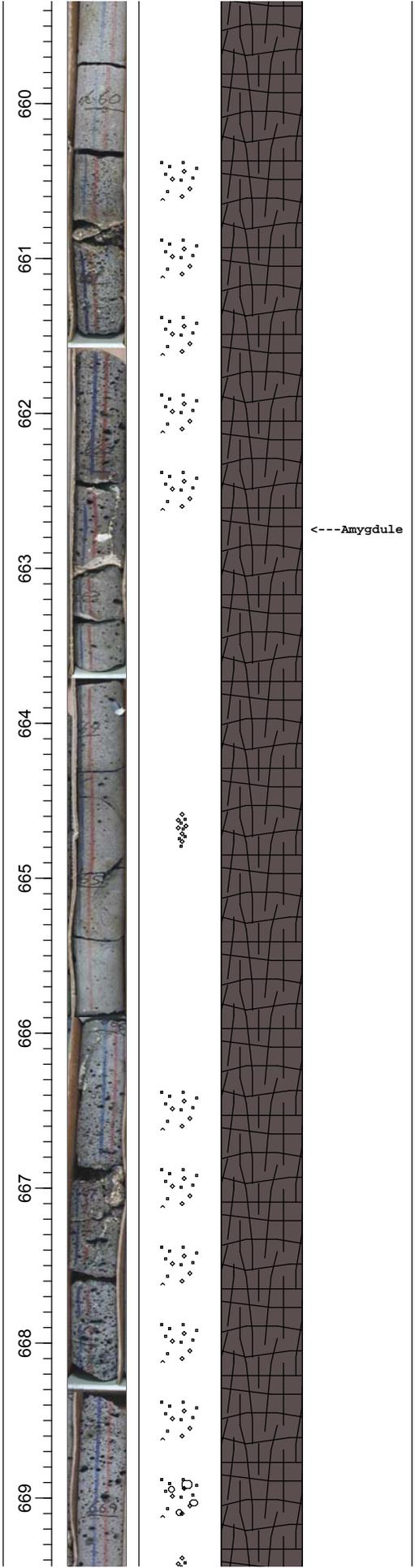
Xenoliths: None noted

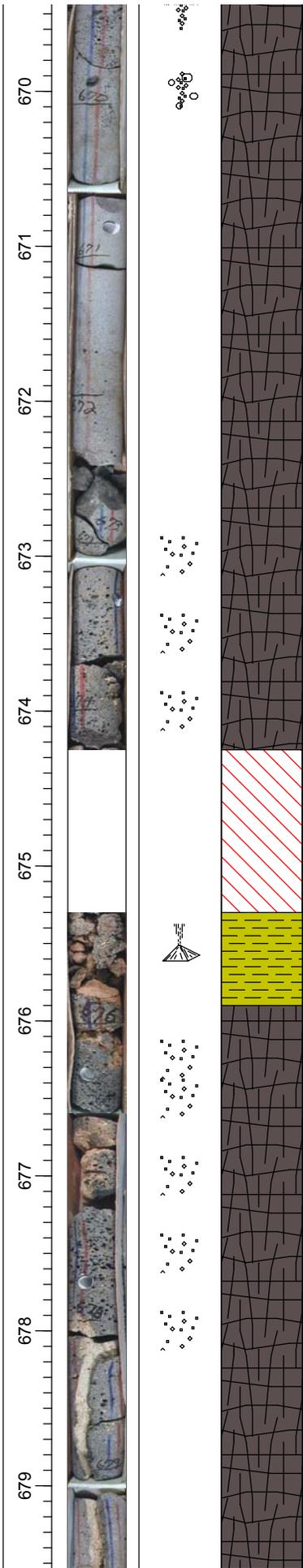
Alteration Activity:
Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.







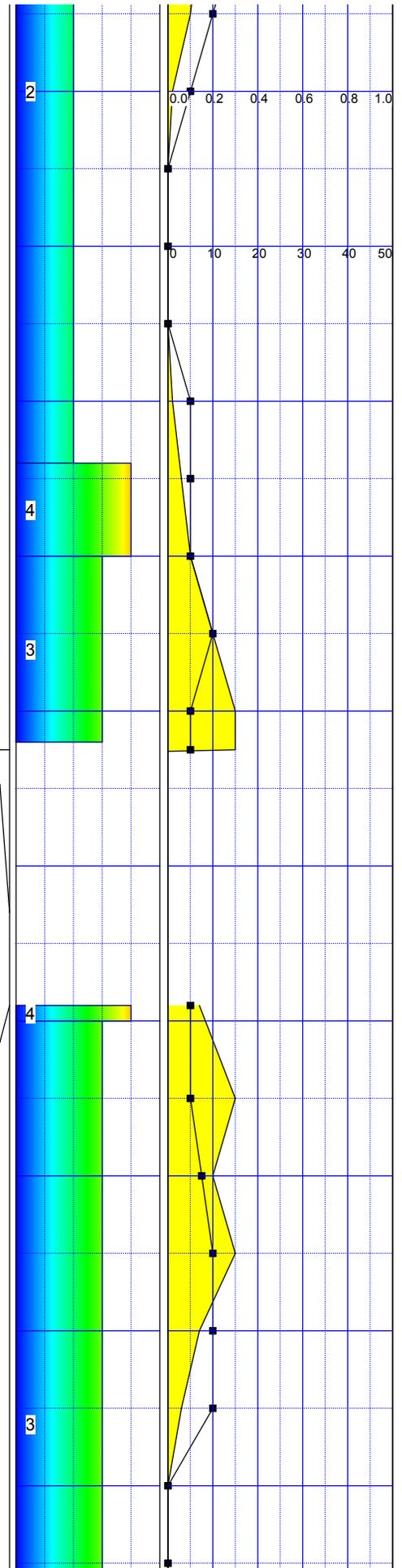


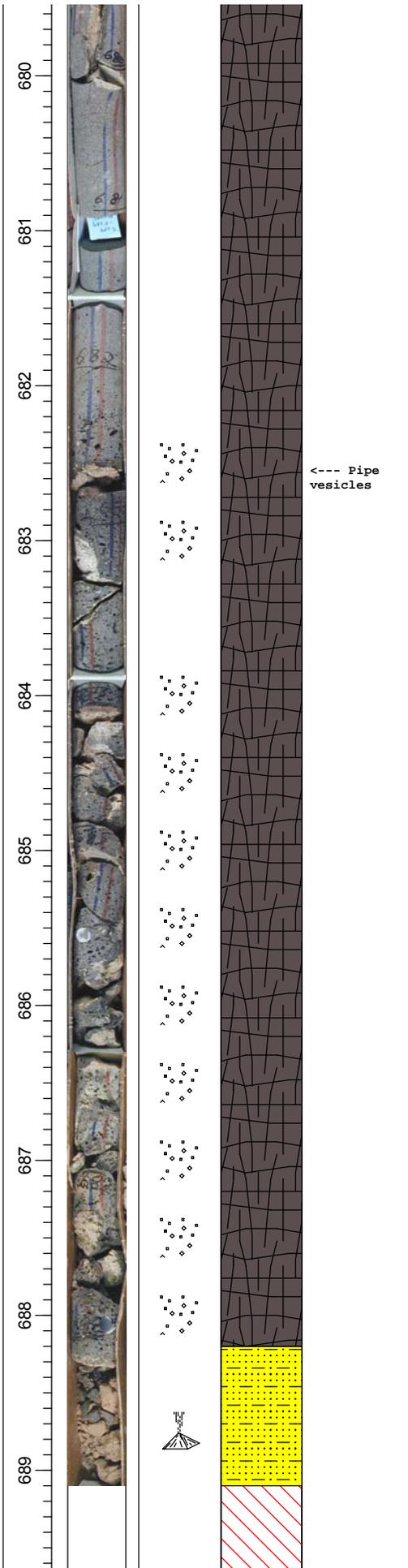


MISSING INTERVAL

SILT AND CLAY: Color: Light brown
 Consistence: Extremely firm
 Structure: Massive
 Free Carbonates: No
 Rocks: Many, loose, 1 - 2 cm angular, subprismoidal vesicular basalt fragments
 Roots / Fossils: Few <1 mm sinuous tubules

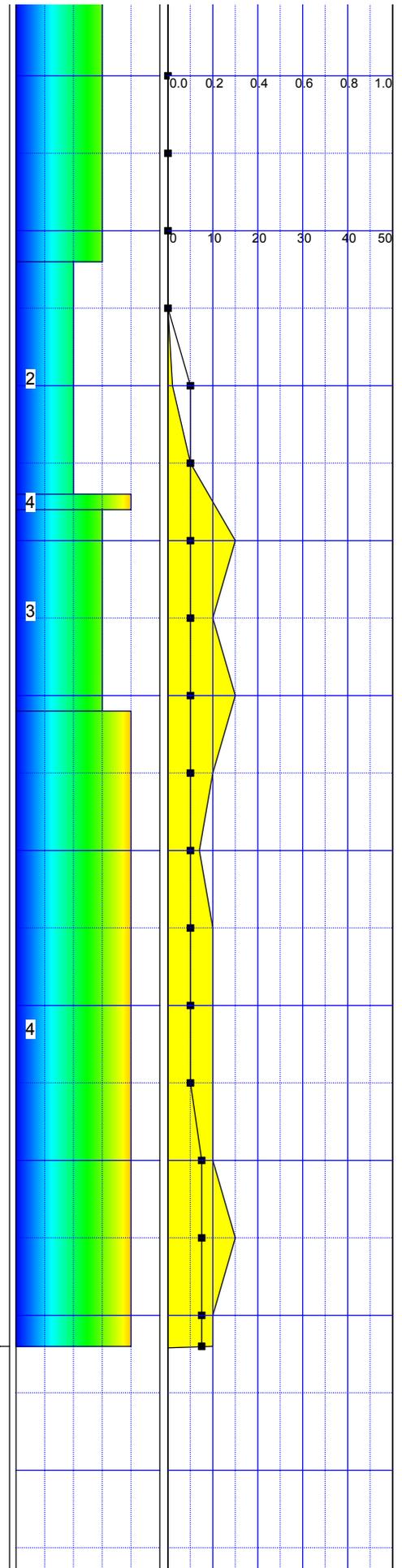
BASALT: Color: Medium and dark gray
 Magnetic Properties: Nonmagnetic
 Texture/Composition: Fine-grained phaneritic groundmass throughout. Exhibits diktytaxitic and massive textures. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.
 Xenoliths: None noted
 Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays and mild bleaching.

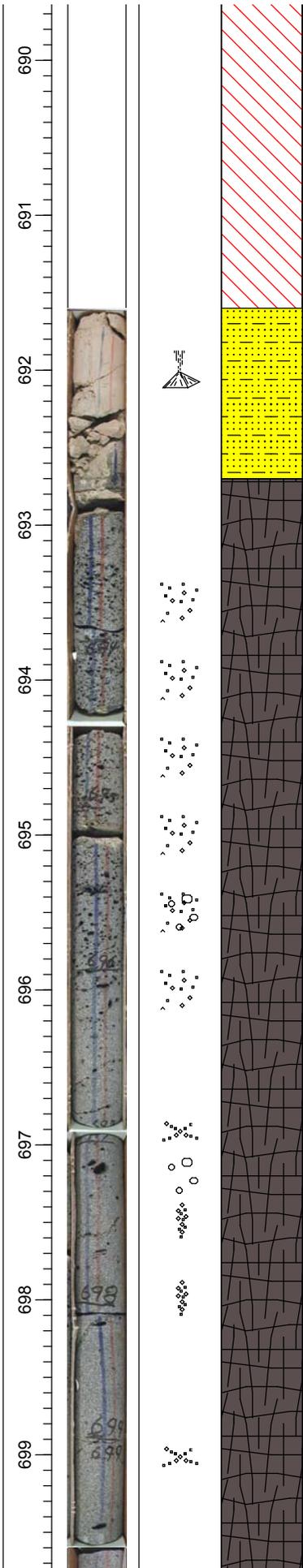




SANDS WITH FINES: Moderately sorted, very fine to medium volcanic and lithic sands, subangular to subround, subprismatic to spherical. Matrix fines upward.

- Color: Light brown
- Consistence: Friable
- Structure: Single-grained
- Free Carbonates: No





Rocks: Many matrix-supported 2cm vesicular and massive basalt fragments, subrounded to well rounded and subprismoidal to prismoidal.

Roots / Fossils: None observed

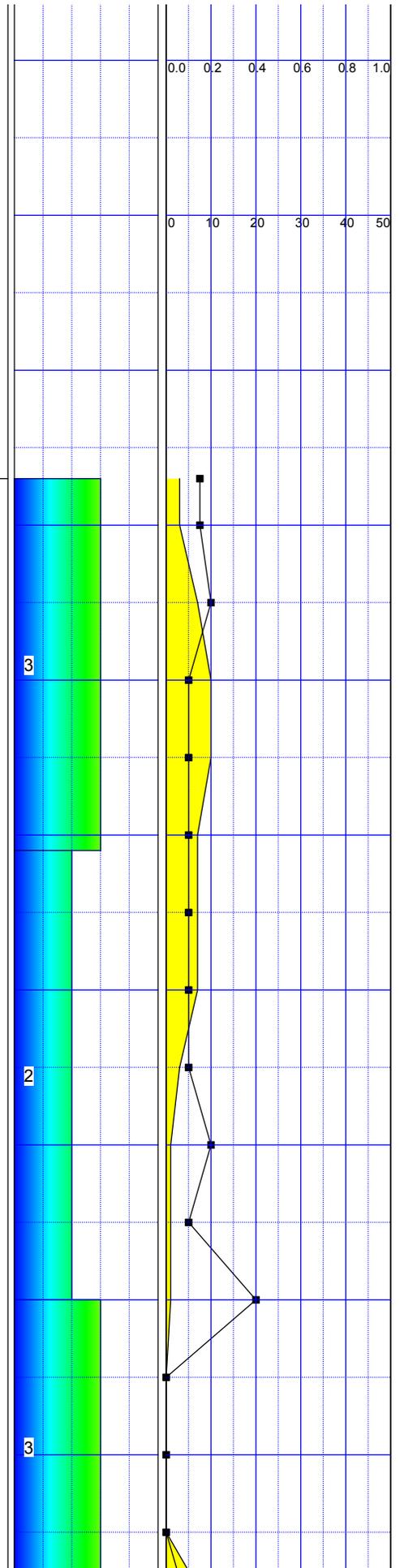
BASALT: Color: Medium and dark gray

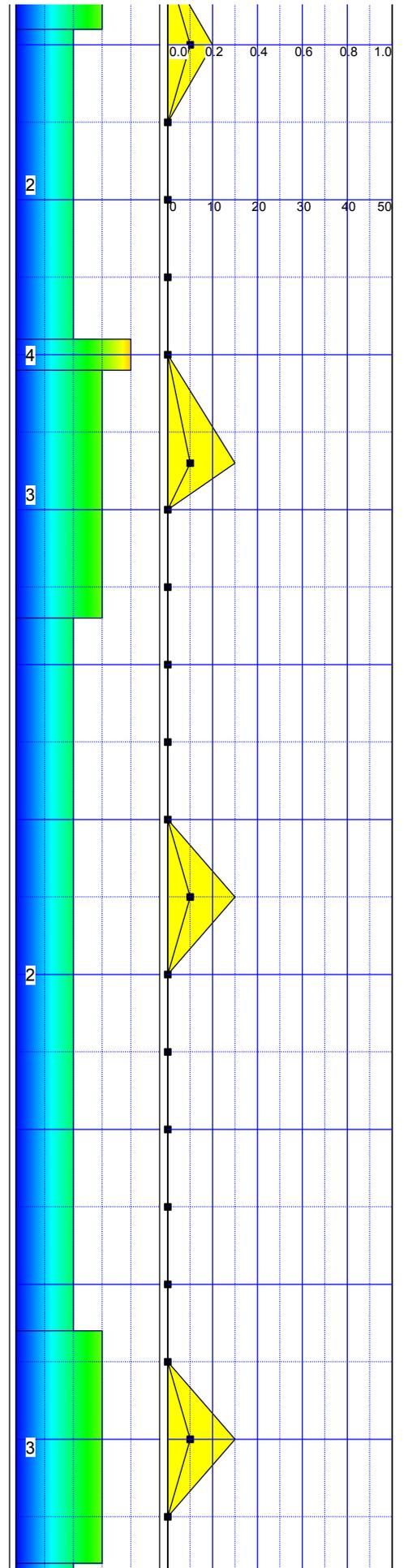
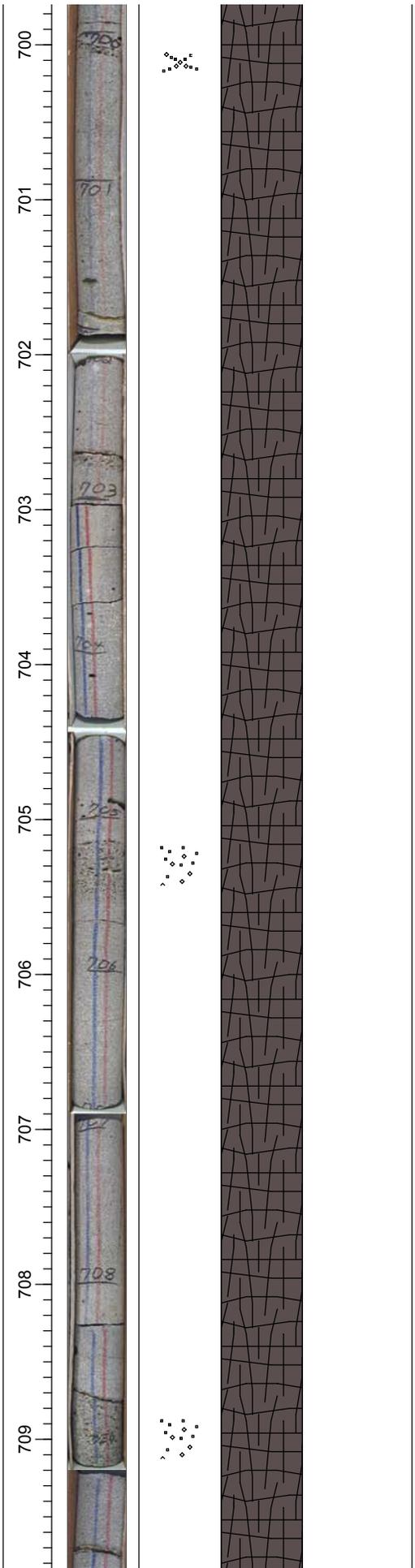
Magnetic Properties: Nonmagnetic

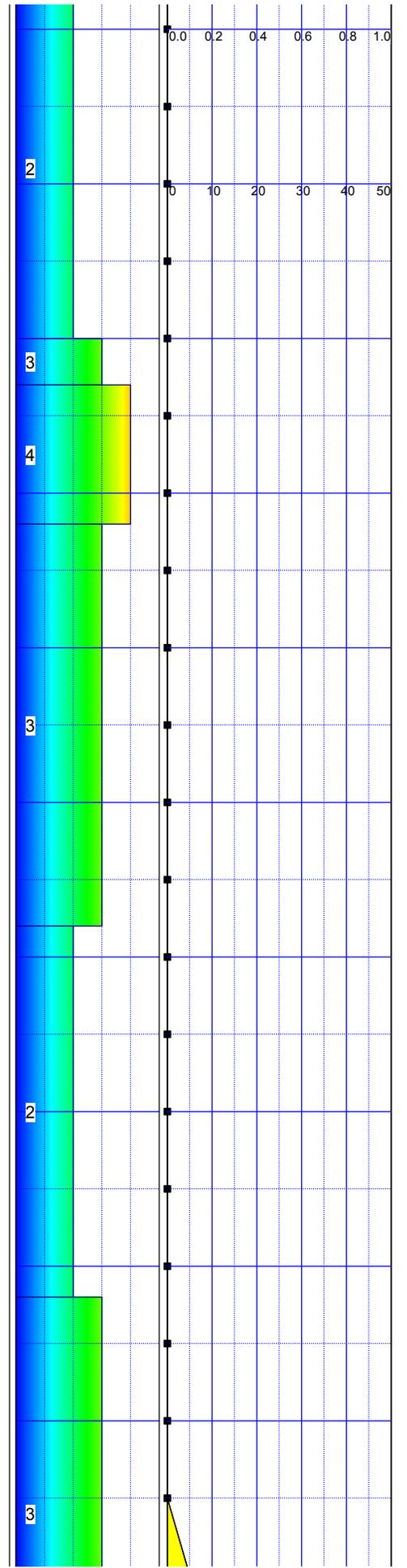
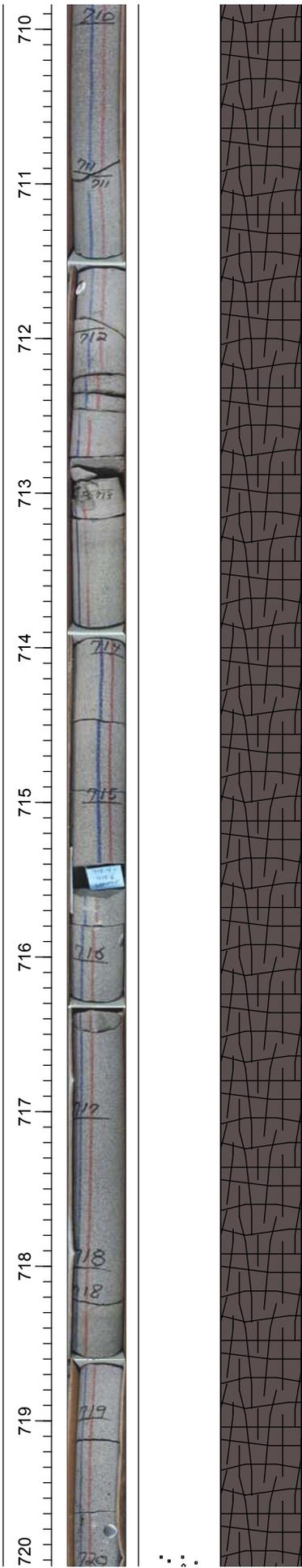
Texture/Composition: Fine-grained phaneritic groundmass throughout with some regions showing 1-3mm tabular and acicular plagioclase granular phenocrysts. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

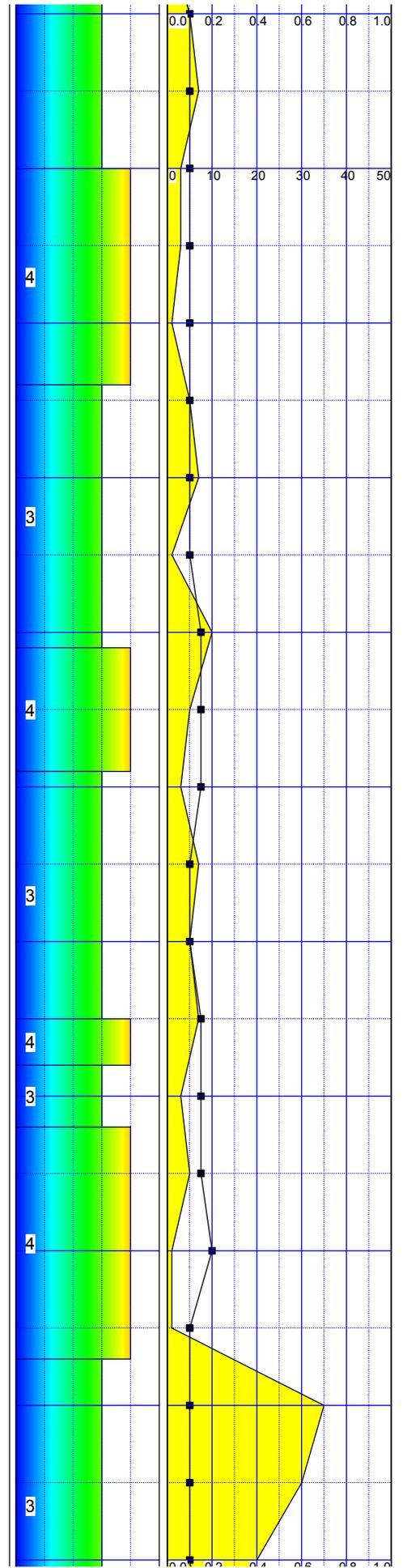
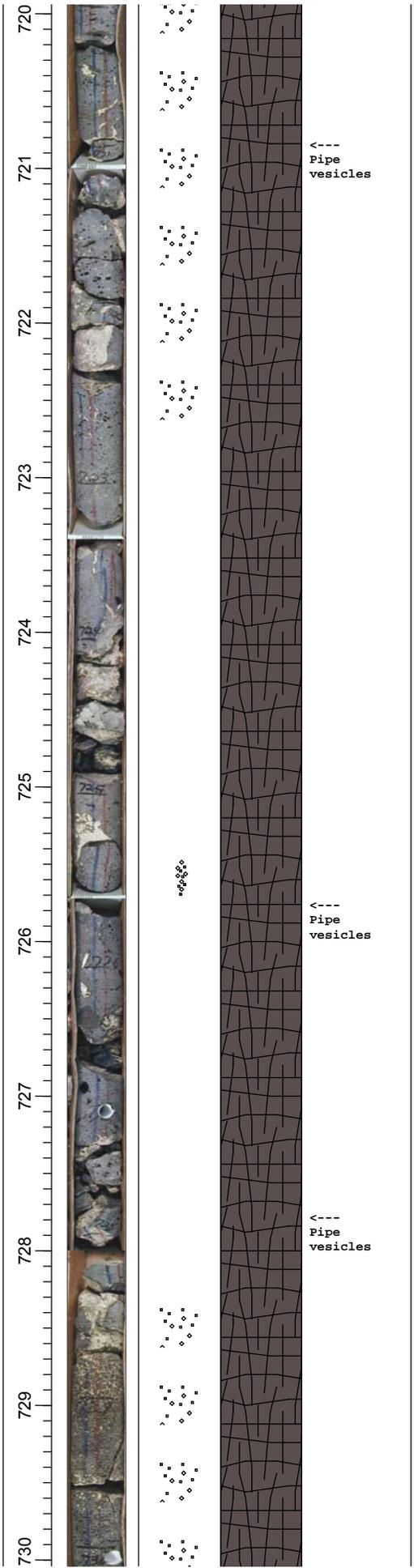
Xenoliths: None noted

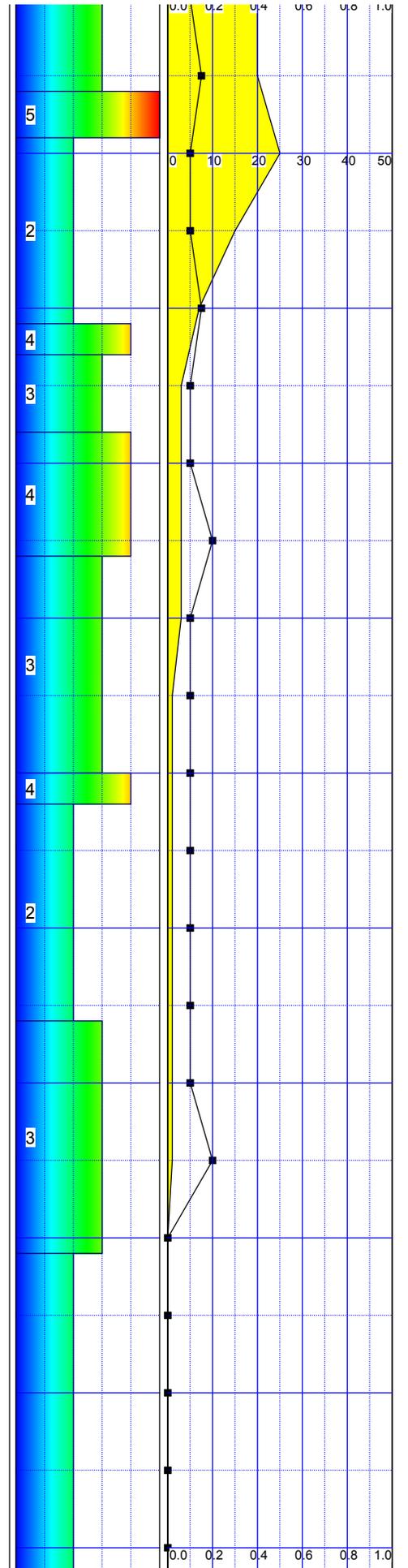
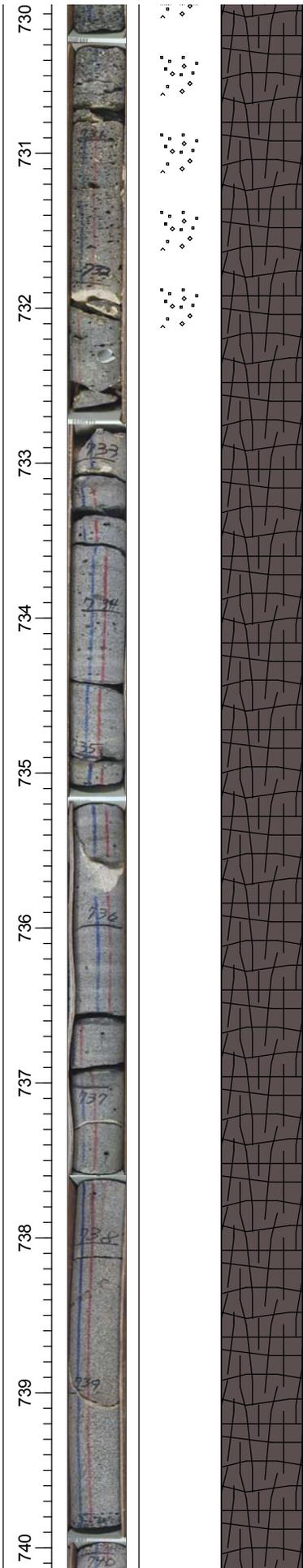
Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

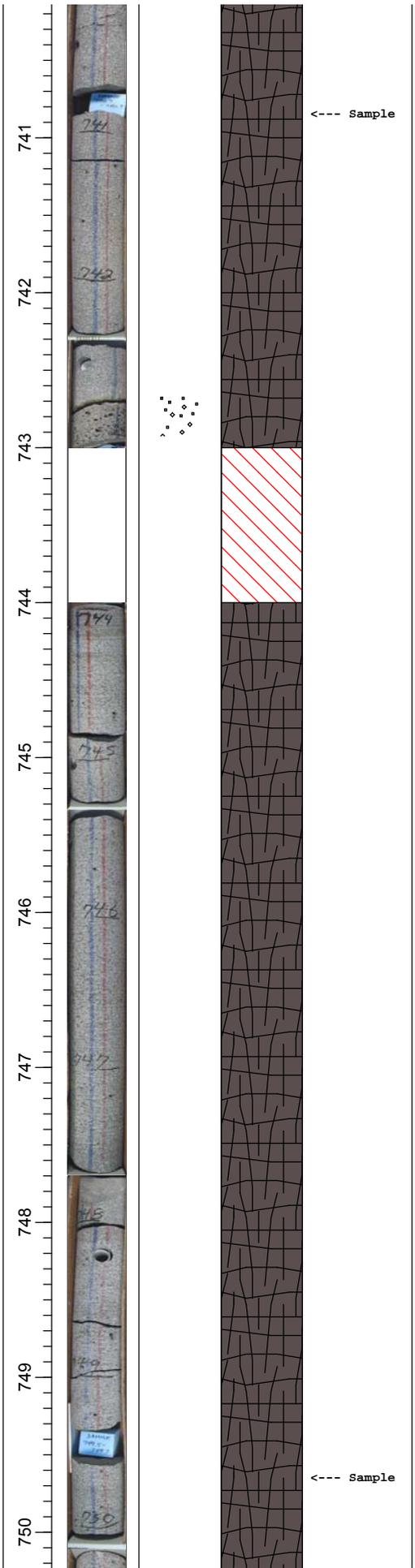












MISSING INTERVAL

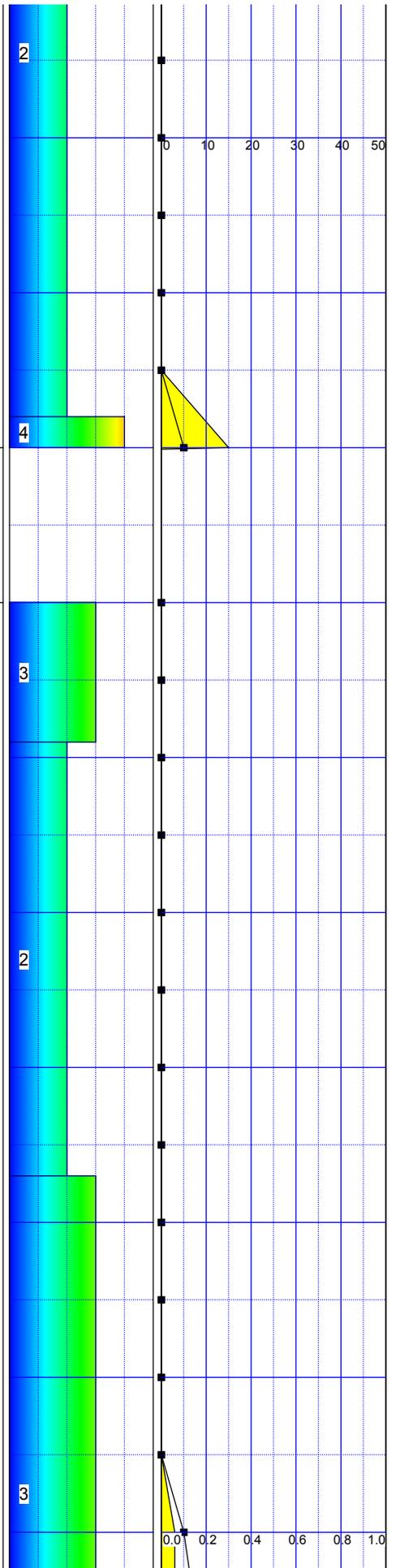
BASALT: Color: Medium and dark gray

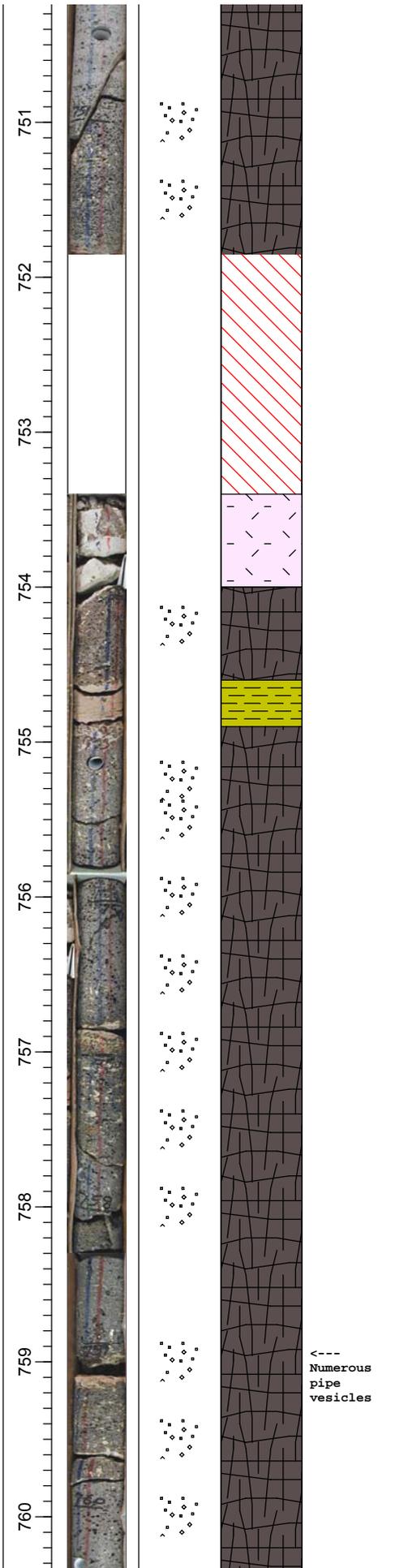
Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic groundmass throughout with some regions showing 1-3 mm tabular and acicular plagioclase granular phenocrysts. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

Xenoliths: None noted

Alteration Activity:
Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.





RHYOLITE ASH: One of a family of Bishop-like ashes, identified by A. Sarna-Wojcicki, Champion and others, in press

Color: Pinkish gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine grained, poorly consolidated. < 1% mafic minerals.

Xenoliths: Many 3 mm - > 5cm vesicular basalt fragments, angular to subangular, subprismatic to spherical. Geologic characteristics match those of underlying basalt unit.

Alteration Activity: None noted

BASALT: BASALT

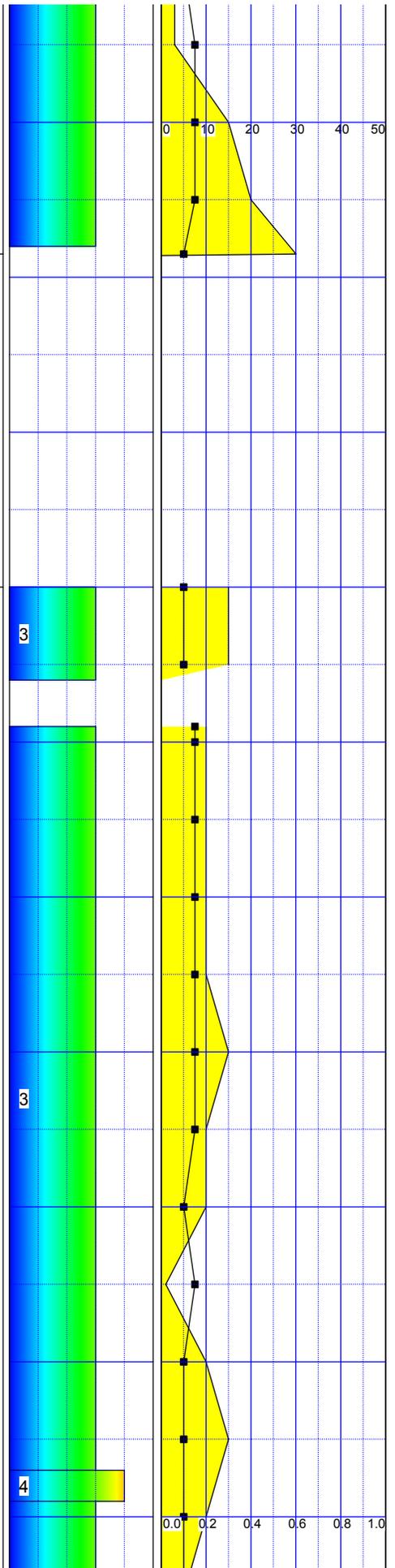
Color: Medium gray throughout. Prominent color change to dark gray at base (761.2 feet)

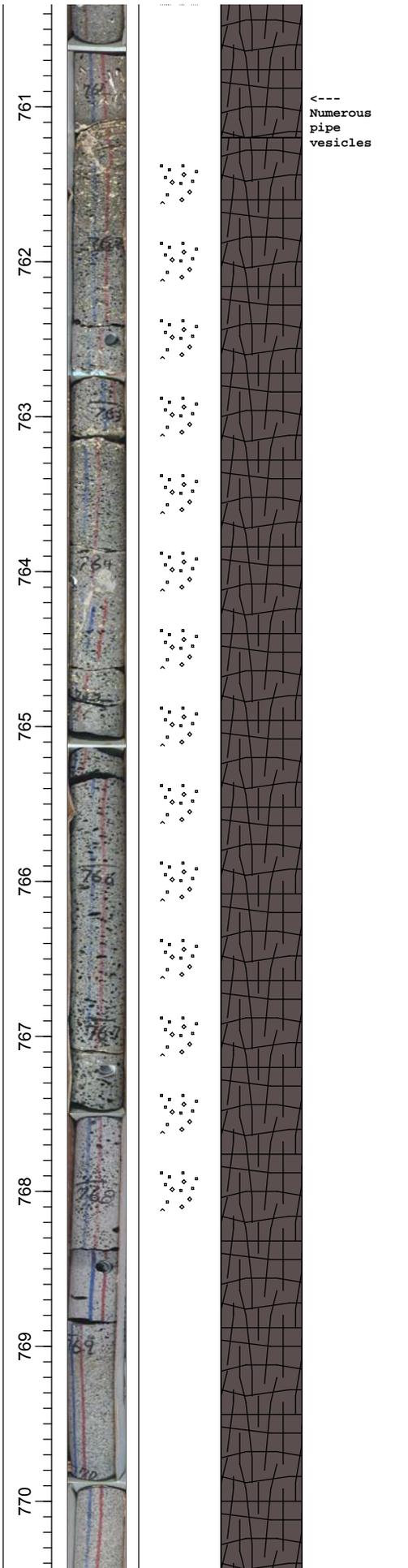
Magnetic Properties: Nonmagnetic

Texture/Composition: Porphyritic throughout. Fine-grained phaneritic groundmass, some regions showing 1-3 mm tabular and acicular plagioclase granular phenocrysts. Also includes 3 mm - 1 cm tabular and acicular plagioclase phenocrysts, 5 - 10% composition. Some phenocrysts suggest a possible fluidal texture. Overall, grains are euhedral to subhedral, and evenly distributed throughout. Primarily vesicular with two slightly more massive, though thin, zones each with prominent pipe vesicles.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.





BASALT: Color: Medium and dark gray. Lowermost 6 inches are stained medium gray by silt and clay from 1 inch thick bed at 778.7 feet.

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic groundmass throughout with some regions showing 1-3mm tabular and acicular plagioclase granular phenocrysts. Alternates between diktytaxitic and massive texture. Grains are euhedral to subhedral, and evenly distributed throughout. Alternates between vesicular and massive.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

