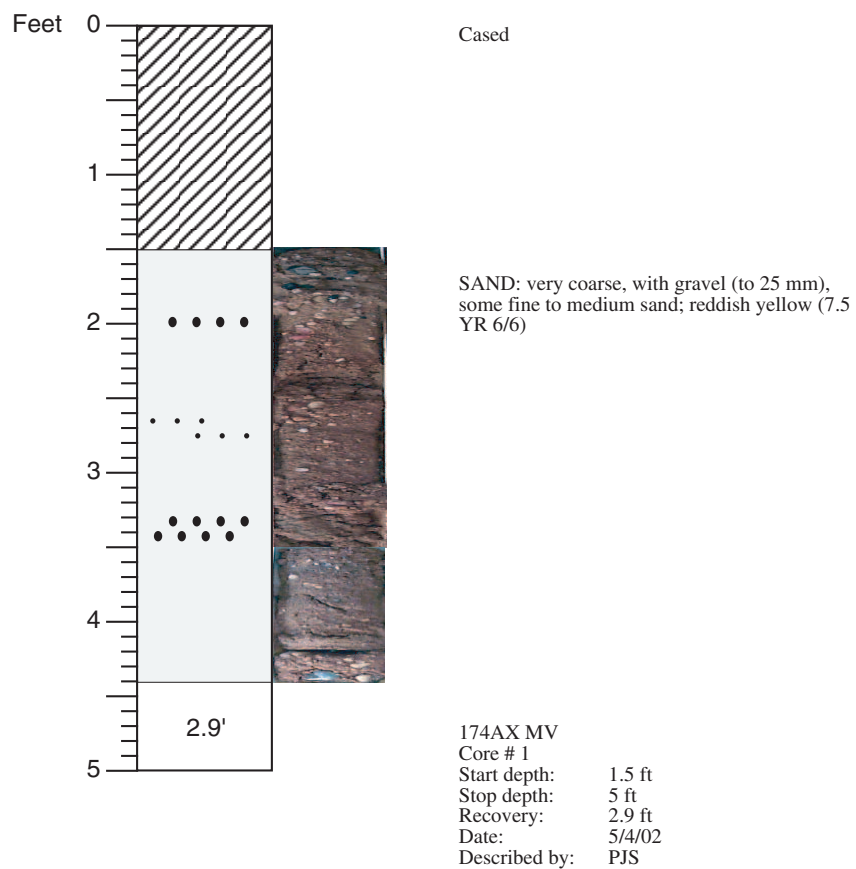


**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

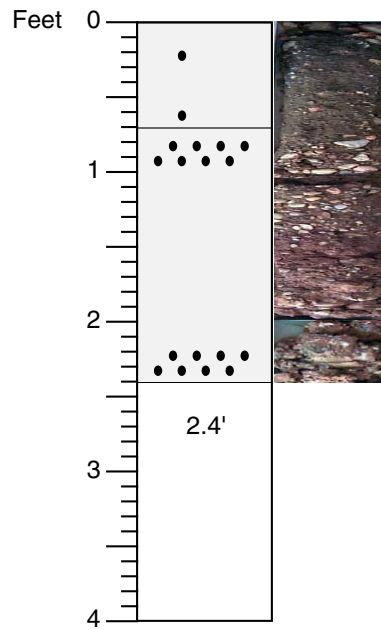
**1**



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

2



SAND; poorly sorted, fine to very coarse with some gravel, silty; yellowish brown (10YR 5/6)

SAND; medium to very coarse, gravelly (20-25 mm), some silt; reddish yellow (7.5 YR 6/6)

174AX MV

Core # 2

Start depth: 5 ft

Stop depth: 9 ft

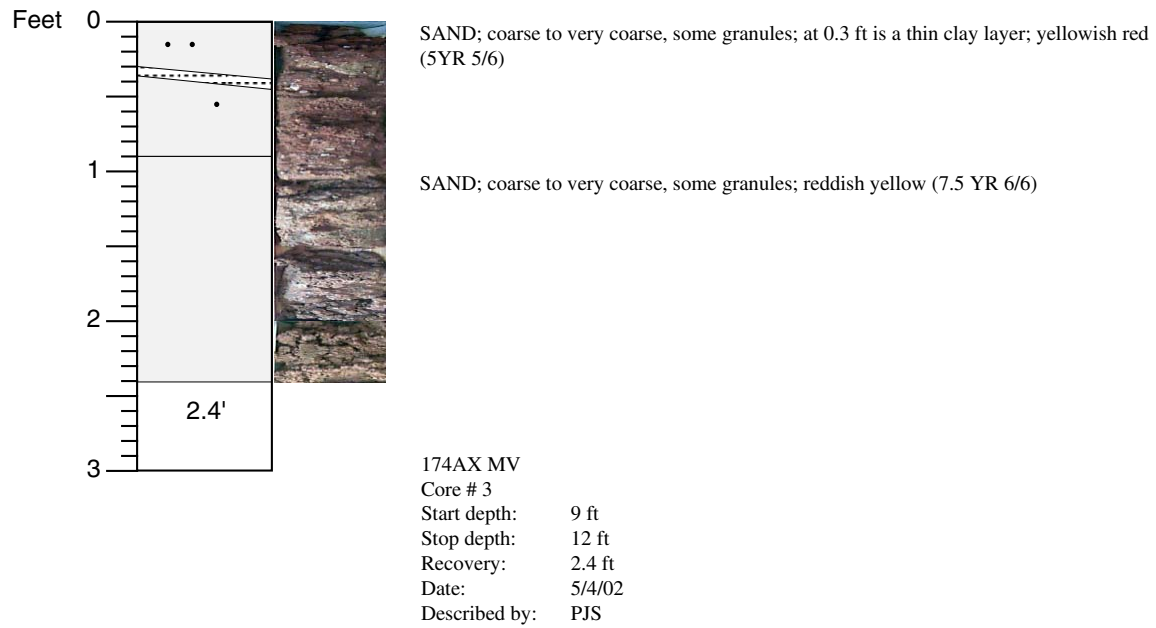
Recovery: 2.4 ft

Date: 5/4/02

Described by: PJS

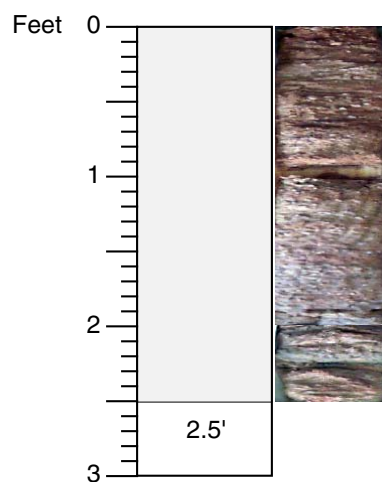
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**3**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**4**

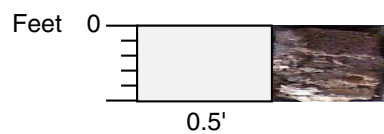


SAND; coarse to very coarse, some granules; some medium; very pale brown (10YR 7/4)

174AX MV  
Core # 4  
Start depth: 12 ft  
Stop depth: 15 ft  
Recovery: 2.5 ft  
Date: 5/4/02  
Described by: PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**5**

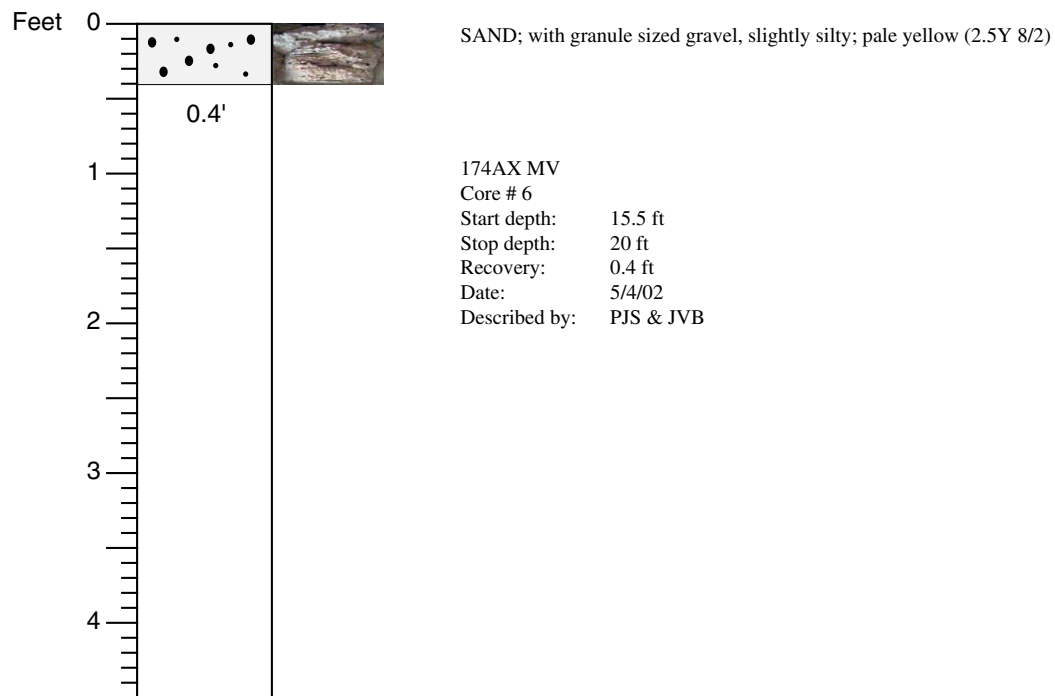


SAND; very coarse, with a trace of granules, some fine sand, slightly silty at base;  
light yellowish brown (10YR 6/4)

174AX MV  
Core # 5  
Start depth: 15 ft  
Stop depth: 15.5 ft  
Recovery: 0.5 ft  
Date: 5/4/02  
Described by: PJS

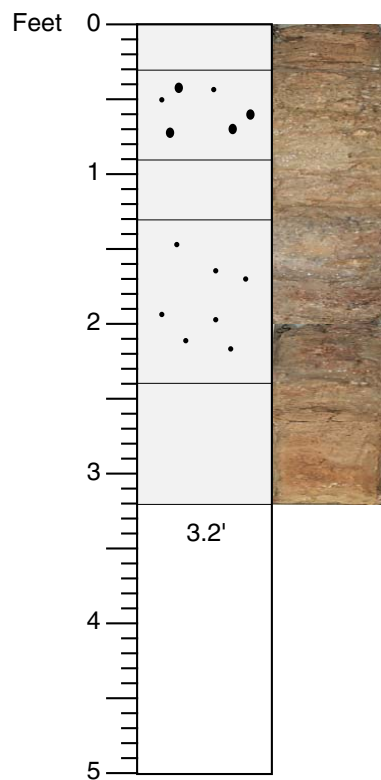
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**6**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

7



SAND; silty; very pale brown (10YR 7/3)

SAND; gravelly

SAND; medium to coarse; very pale brown (10YR 7/3)

SAND; medium to very coarse, granules; light gray (10YR 7/1)

SAND; medium to coarse, silty; reddish yellow (7.5 YR 6/8)

174AX MV

Core # 7

Start depth: 20 ft

Stop depth: 25 ft

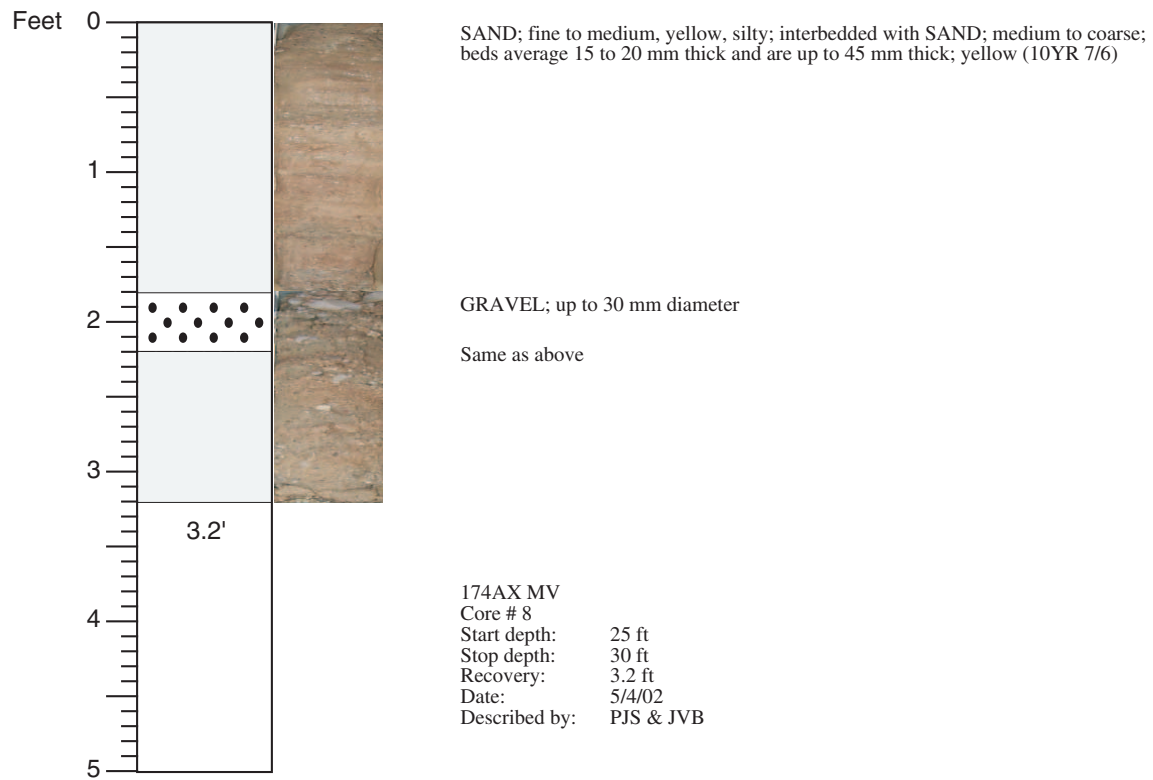
Recovery: 3.2 ft

Date: 5/4/02

Described by: JVB & PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

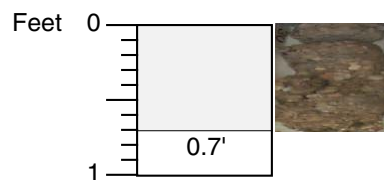
**8**





**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**9**

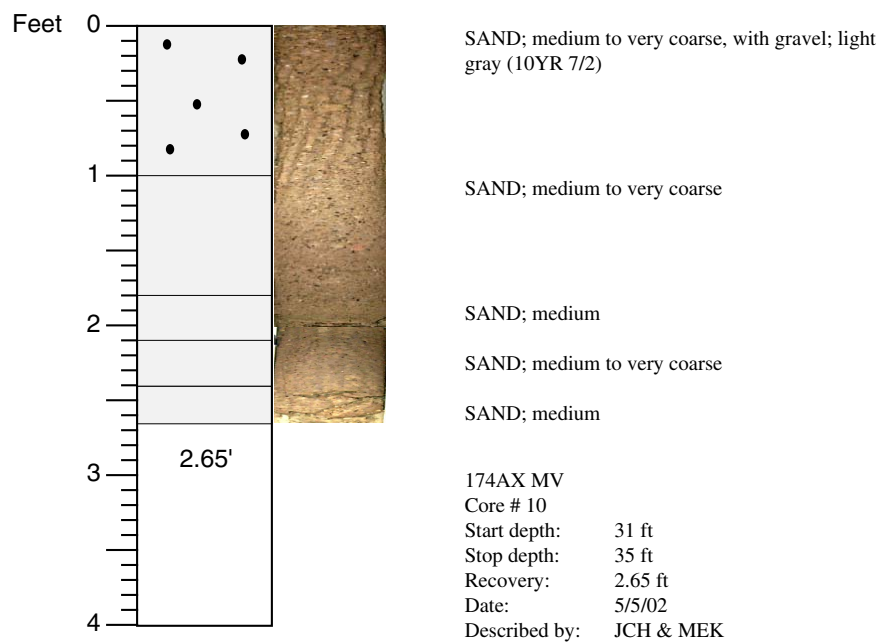


SAND; medium to coarse, some gravel (might be washed in); light gray (10YR 7/2)

174AX MV  
Core # 9  
Start depth: 30 ft  
Stop depth: 31 ft  
Recovery: 0.7 ft  
Date: 5/4/02  
Described by: PJS & JVB

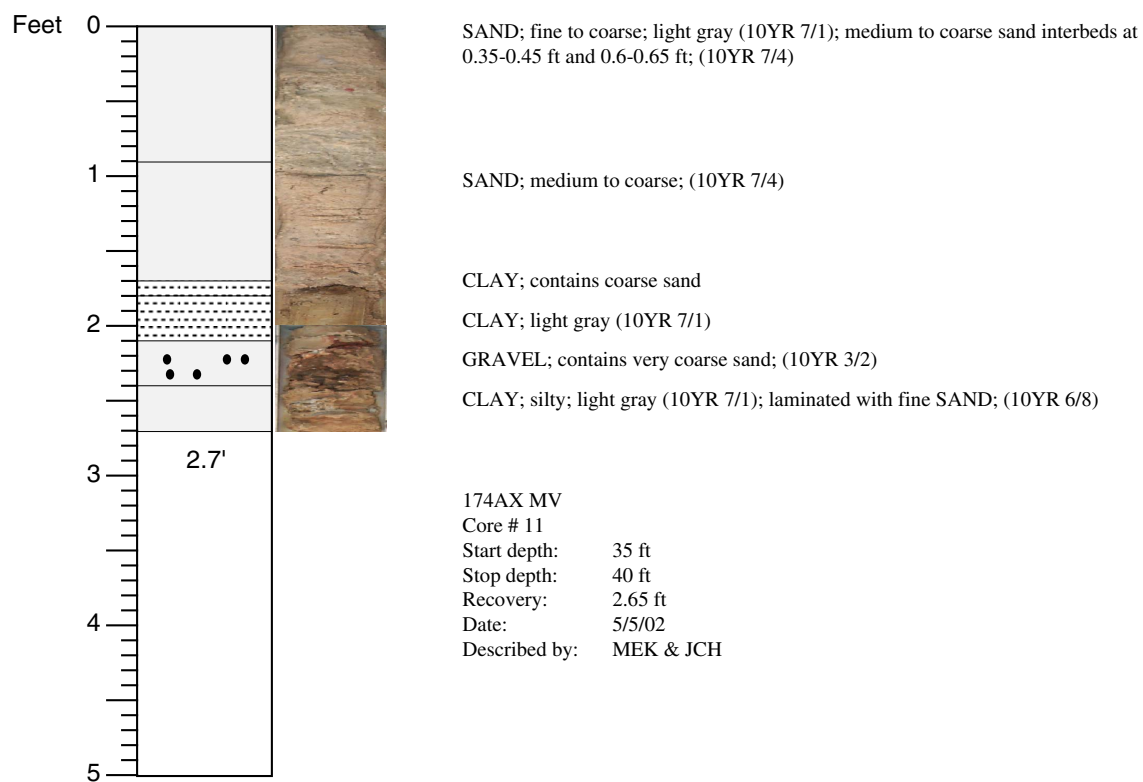
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**10**



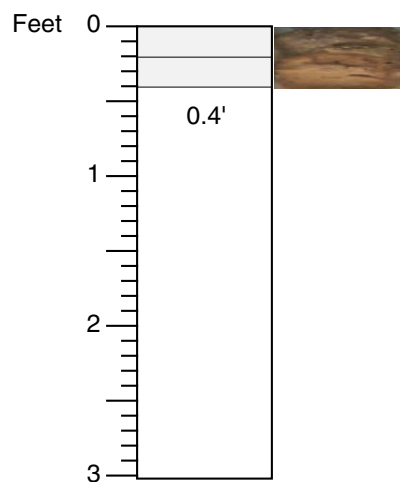
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**11**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**12**



SAND; medium to very coarse; (10YR 7/2)

CLAY; with silt and very fine sand; (10YR 7/6 to 10YR 6/6)

174AX MV

Core # 12

Start depth: 40 ft

Stop depth: 43 ft

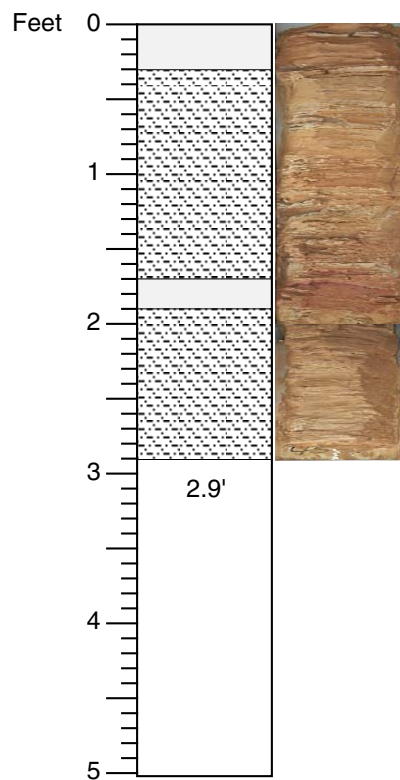
Recovery: 0.4 ft

Date: 5/5/02

Described by: JCH & MEK

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**13**



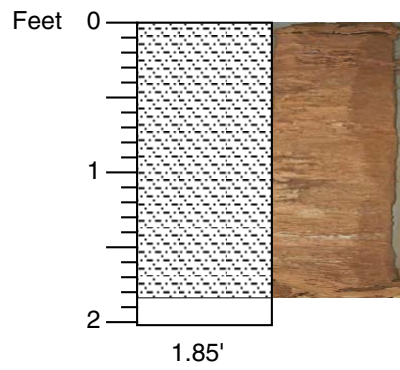
SAND; fine to very fine, silty; containing siderite nodules (0.25-0.35 ft)

CLAY; silty; (2.5Y 8/1); laminated with SAND, fine, silty; (10YR 6/8 to 7/6); red stained sand layer between 1.7-1.9 ft

174AX MV  
 Core # 13  
 Start depth: 43 ft  
 Stop depth: 48 ft  
 Recovery: 2.9 ft  
 Date: 5/5/02  
 Described by: MEK & JCH

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**14**

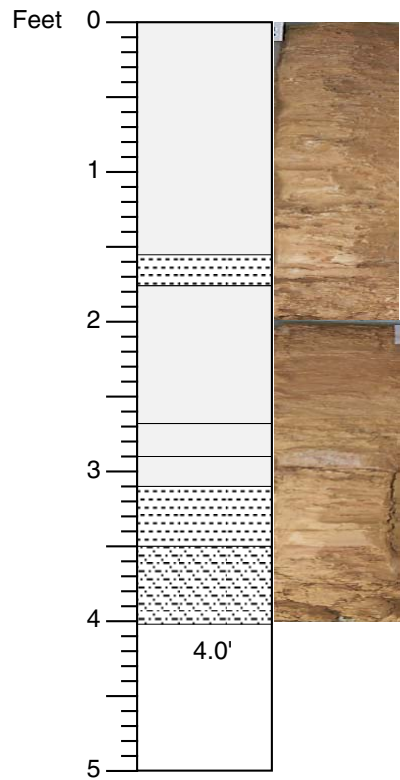


No field description

174AX MV  
Core # 14  
Start depth: 48 ft  
Stop depth: 50 ft  
Recovery: 1.85 ft  
Date: 5/5/02  
Described by: MEK & JCH

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**15**



SAND; fine to very fine, silty, rare thin clay laminae; (10YR 6/8)

CLAY; silty; (10YR 7/2)

SAND; fine to medium, rare thin clay laminae; (10YR 6/8)

SAND; fine to very coarse; (10YR 6/8)

SAND; clayey, with red streaks; (10YR 7/2)

CLAY; (10YR 6/8)

SAND; fine, silty and clayey; very coarse sand layer at 3.8 ft; (10YR 6/8)

174AX MV

Core # 15

Start depth: 50 ft

Stop depth: 55 ft

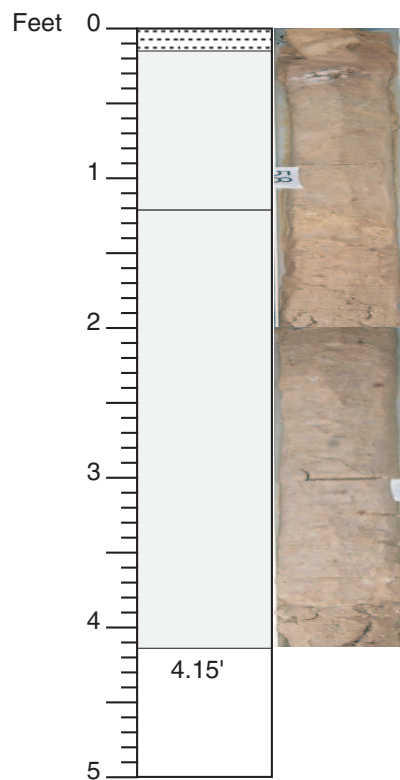
Recovery: 4.0 ft

Date: 5/5/02

Described by: JCH & MEK

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**16**



CLAY; silty; (10YR 6/8 to 8/2)

SAND; fine to medium; very little silt; (10YR 6/8 to 7/6)

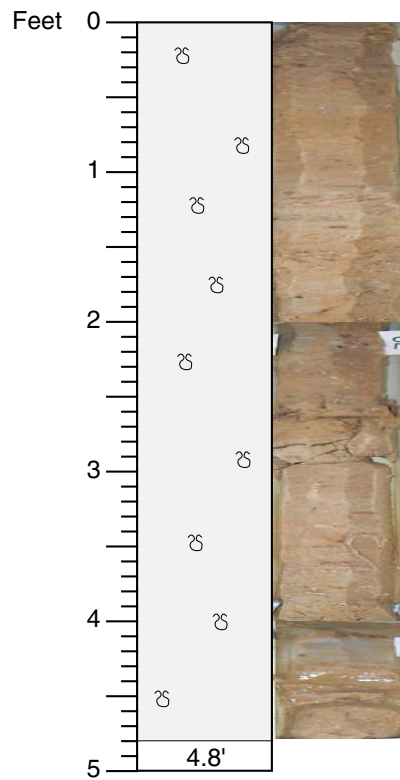
SAND; fine to medium; silty; becomes increasingly mottled down core; (10YR 7/4)

174AX MV  
 Core # 16  
 Start depth: 55 ft  
 Stop depth: 60 ft  
 Recovery: 4.15 ft  
 Date: 5/5/02  
 Described by: JCH & MEK



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**17**

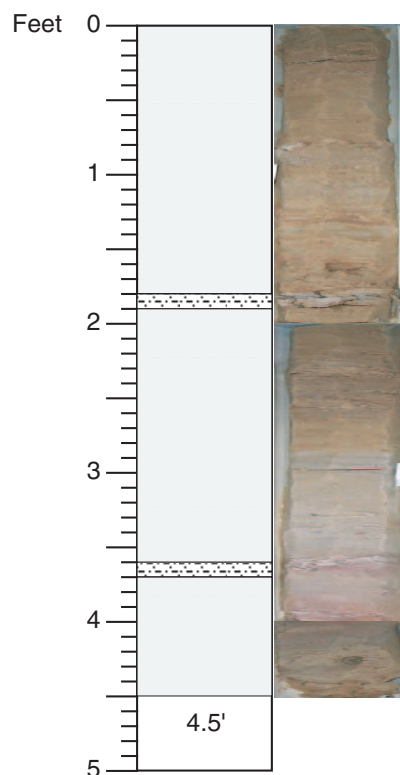


SAND; fine to medium, silty; mottled and burrowed throughout, sand in burrows is not silty; (10YR 7/6 to 8/1)

174AX MV  
Core # 17  
Start depth: 60 ft  
Stop depth: 65 ft  
Recovery: 4.8 ft  
Date: 5/5/02  
Described by: MEK & JCH

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**18**



SAND; fine to medium, silty, some clay laminae; (10YR 6/6)

CLAY; silty and fine sand; (10YR 8/2)

SAND; fine to medium, silty, clay laminae (more common than above); (10YR 6/6)

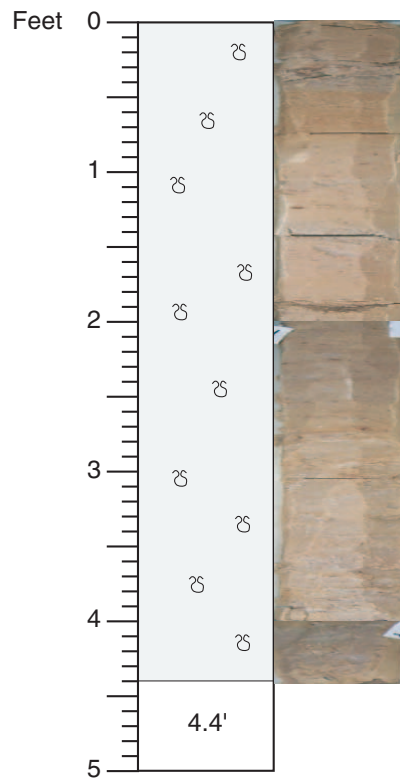
CLAY; silty and fine sand; (10YR 8/2 to 10R 5/4)

SAND; fine to medium, silty, clay laminae (more common than above); (10YR 6/6)

174AX MV  
 Core # 18  
 Start depth: 65 ft  
 Stop depth: 70 ft  
 Recovery: 4.5 ft  
 Date: 5/5/02  
 Described by: MEK & JCH

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**19**



SAND; fine to medium; mottled; (10YR 6/6 to 8/2)

174AX MV  
 Core # 19  
 Start depth: 70 ft  
 Stop depth: 75 ft  
 Recovery: 4.4 ft  
 Date: 5/5/02  
 Described by: MEK & JCH

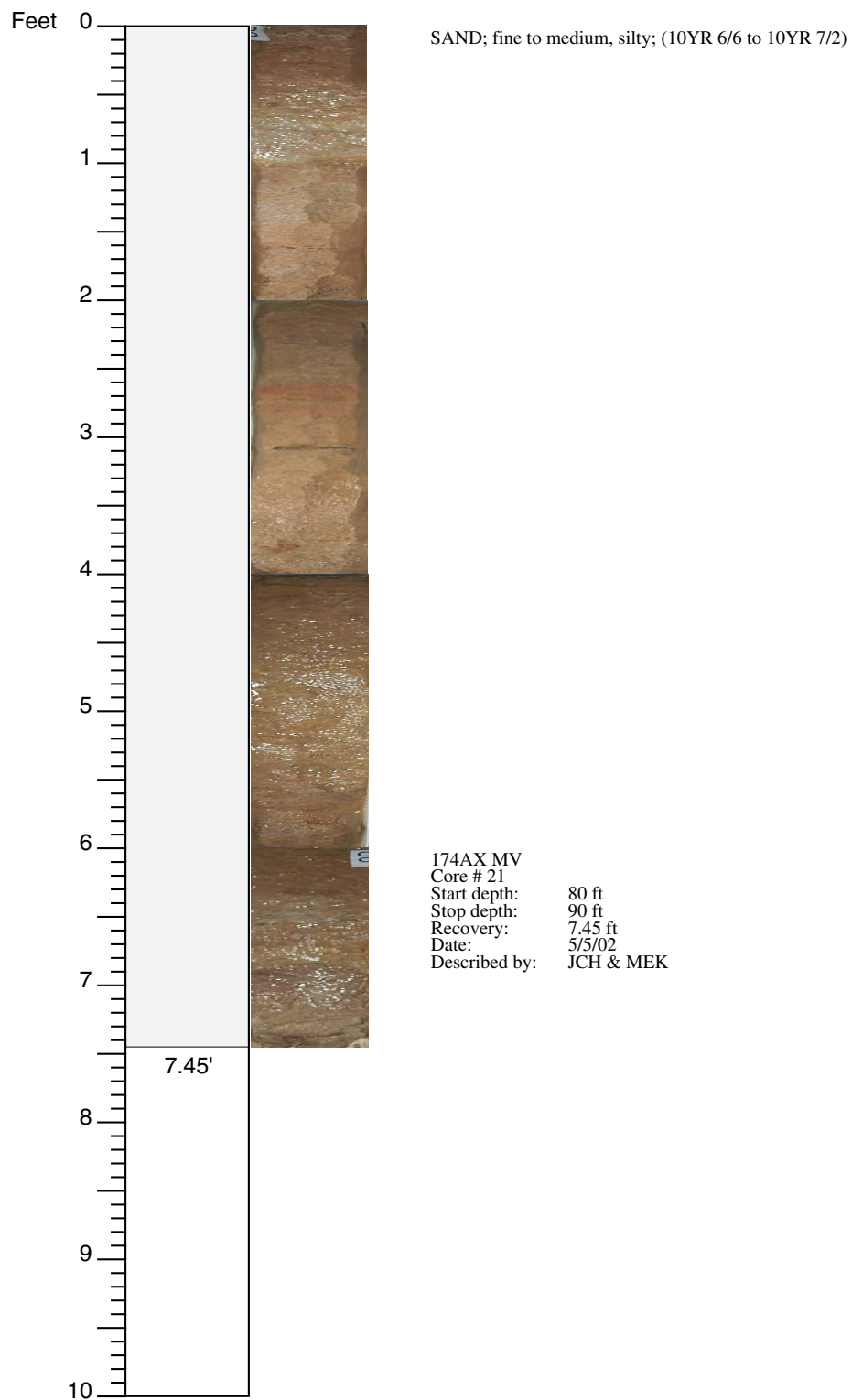
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

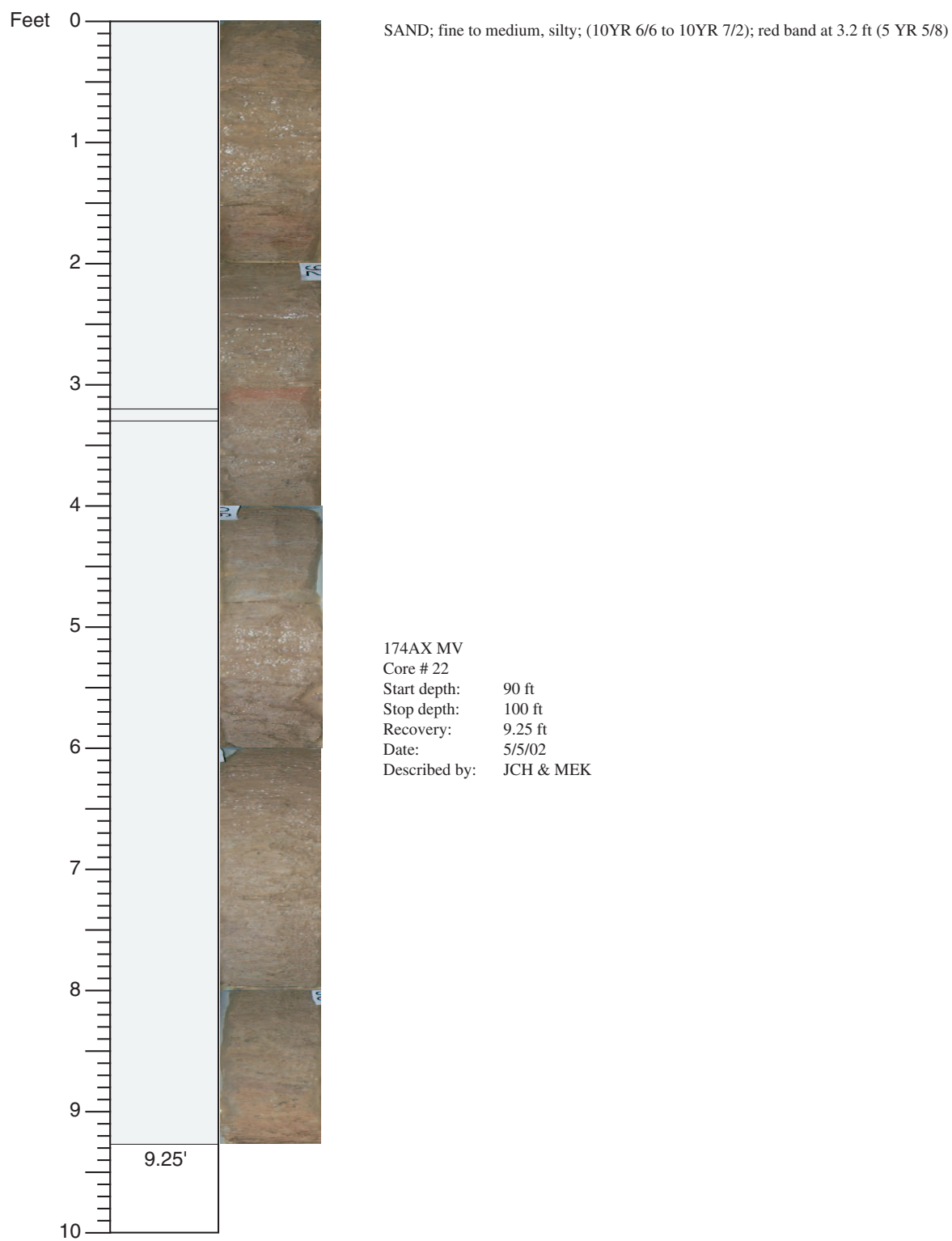
**20**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**21**





## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

23



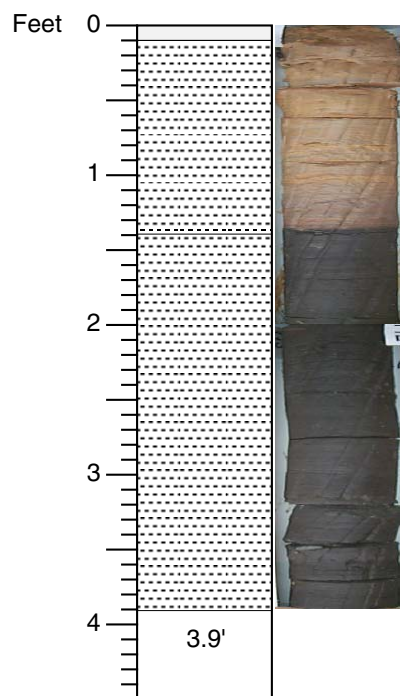
SAND; medium to coarse, to very coarse, quartz, 1-2% OHM; subrounded, subangular; yellowish brown (10YR 5/6); interbedded with CLAY; ranging from white (10YR 8/1) to brown (7.5YR 5/4)

SAND; fine; 1-2% OHM; heavily bioturbated; some parallel, discontinuous clay laminations; pale yellow (2.5 Y 7/4)

174AX MV  
Core # 23  
Start depth: 100 ft  
Stop depth: 110 ft  
Recovery: 8.15 ft  
Date: 5/6/02  
Described by: DHM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**24**



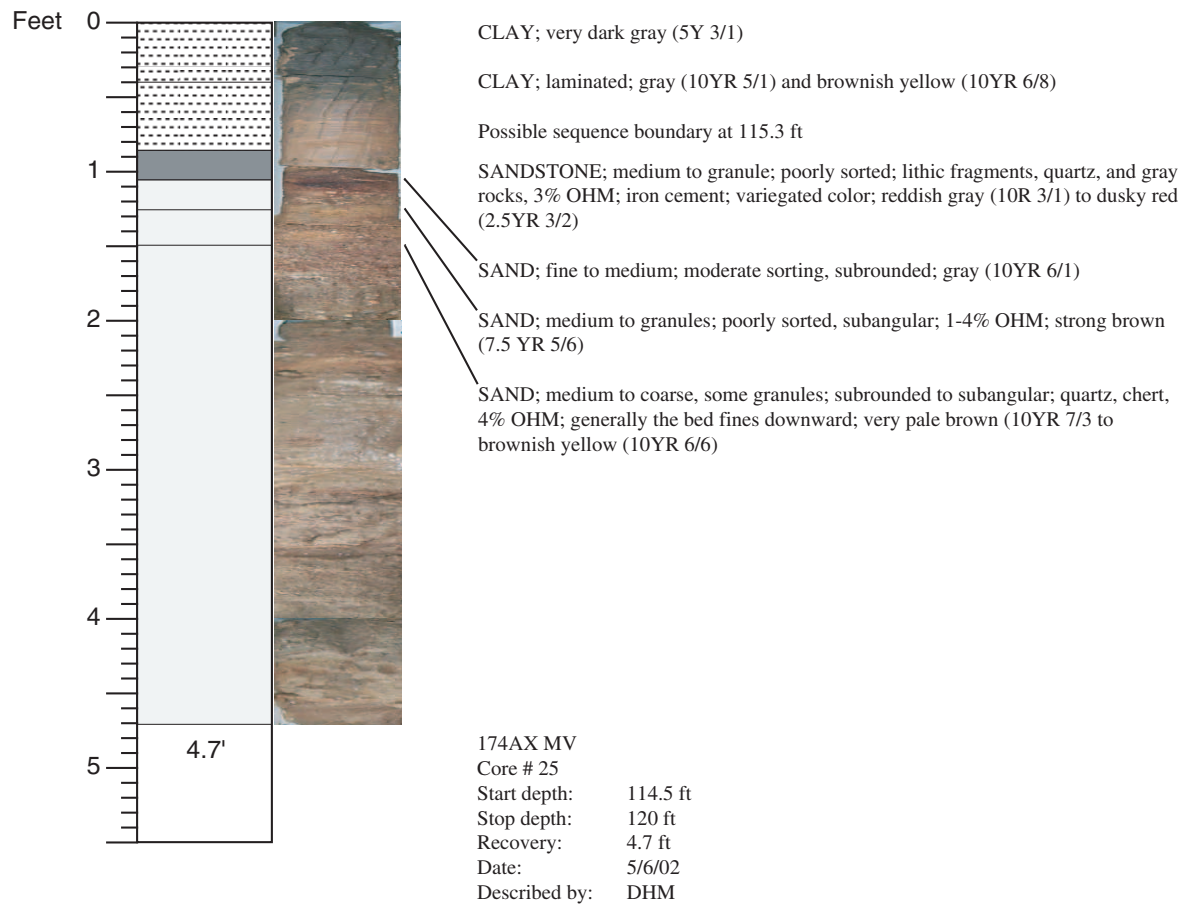
SAND; medium, clayey; brownish yellow (10YR 6/8)

CLAY; finely laminated; fine sand layers at 0.5 and 0.7 ft; light gray (10YR 7/2) and yellow (10YR 7/8)

CLAY; finely layered (shown by color variations), traces of lignite; pyrite nodule layer at top 3-4 mm thick and 1-1.5 cm long; very dark gray (5Y 3/1)

174AX MV  
 Core # 24  
 Start depth: 110 ft  
 Stop depth: 114.5 ft  
 Recovery: 3.9 ft  
 Date: 5/6/02  
 Described by: DHM

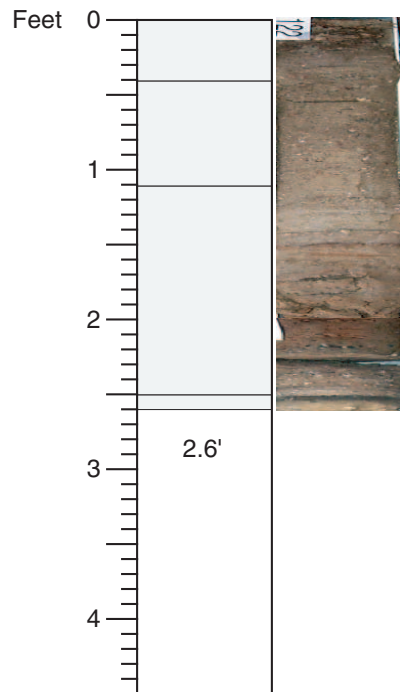




## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

26



SAND; medium to coarse, fining to fine sand at the base, subrounded; quartz, 1-2% OHM at top, OHM increases to 15-20% at 0.3 ft; granules present at 0.2 ft; very pale brown (10YR 7/4)

SAND; medium to coarse, poorly sorted; fining down to SAND, fine; >5% OHM between 0.4-0.5 ft; white clay laminae at 1.0 ft; strong iron stained layer at 1.5 ft; basal contact gradational; very pale brown (10YR 7/4)

SAND; medium, with granules, OHM content varies from 1-2% to 10-15%; parallel laminations at base; reddish yellow (7.5 YR 6/8) and light gray (10YR 7/2)

SAND; medium, subrounded; 20% OHM at very top; very pale brown (10YR 7/4)

174AX MV

Core # 26

Start depth: 120 ft

Stop depth: 124.5 ft

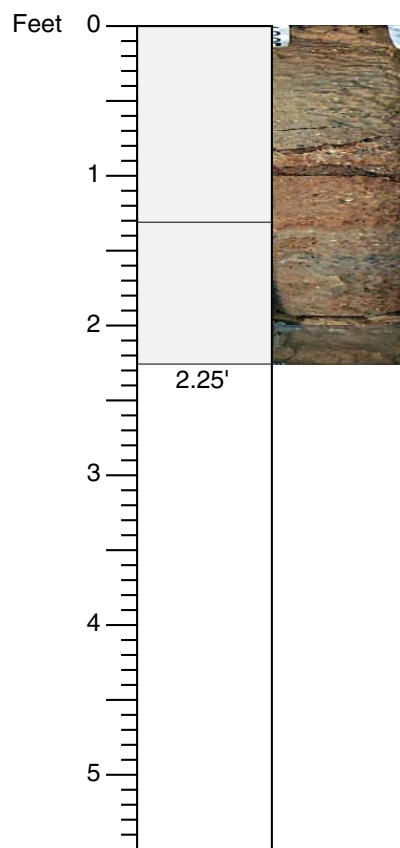
Recovery: 2.6 ft

Date: 5/6/02

Described by: DHM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**27**



SAND; medium coarsening downward to very coarse; moderately to poorly sorted quartz; 1-2% OHM; very pale brown (10YR 8/9) to brownish yellow (10YR 6/6)

SAND; medium coarsening downward to very coarse; similar to the cycle above moderately to poorly sorted quartz; 10% OHM at very top; very pale brown (10YR 8/9) to yellowish brown (10YR 5/8)

174AX MV  
 Core # 27  
 Start depth: 124.5 ft  
 Stop depth: 130 ft  
 Recovery: 2.25 ft  
 Date: 5/6/02  
 Described by: DHM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

28



SAND; fine; interlaminated with CLAY; dark reddish gray (10R 4/1) to white (10YR 8/1)

SAND; medium to coarse coarsening downward to coarse to very coarse, subrounded; quartz and chert granules; reddish yellow (7.5 YR 6/8) to brownish yellow (10YR 6/6)

SAND; medium to coarse, granules; strongly iron stained and partially cemented; dusky red (10R 3/2) to strong brown (7.5 YR 5/8)

SAND; 6 cycles repeated; medium to coarse coarsening downward to very coarse with granules; cycles are separated by inclined clay laminae; 1-2% OHM in very coarse sands; very pale brown (10YR 7/4) to yellow (10YR 7/6)

174AX MV

Core # 28

Start depth: 130 ft

Stop depth: 136 ft

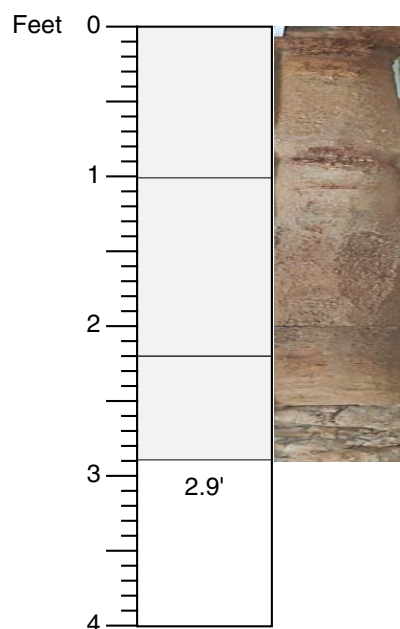
Recovery: 4.6 ft

Date: 5/6/02

Described by: DHM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**29**



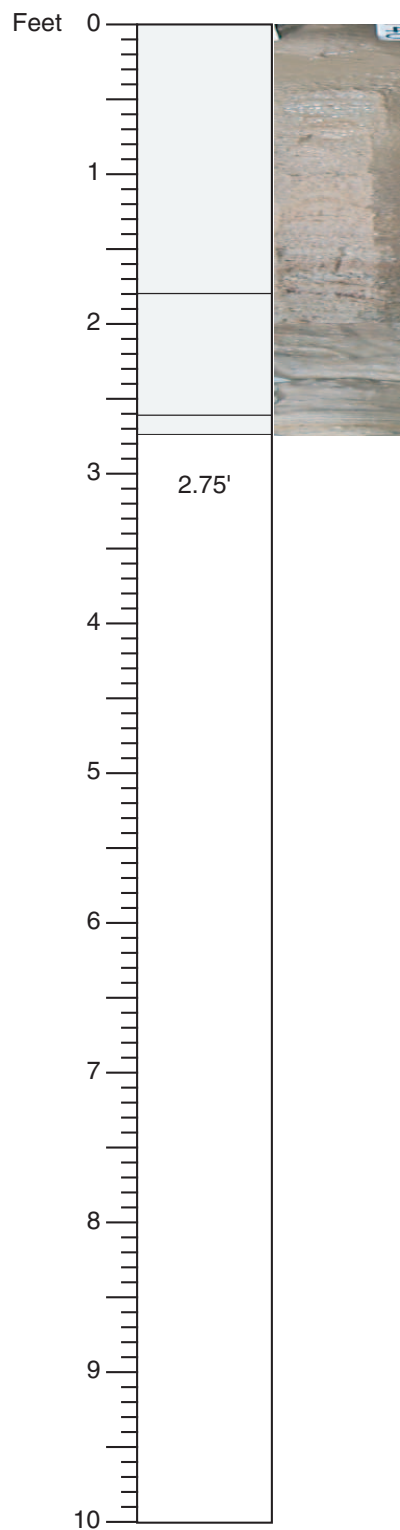
SAND; 3 cycles repeated; medium to coarse coarsening downward to very coarse with granules; inclined layers of silty sand between 0.3-0.4 ft; very pale brown (10YR 7/4) to yellow (10YR 7/6)

174AX MV  
Core # 29  
Start depth: 136 ft  
Stop depth: 140 ft  
Recovery: 2.9 ft  
Date: 5/6/02  
Described by: DHM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

30



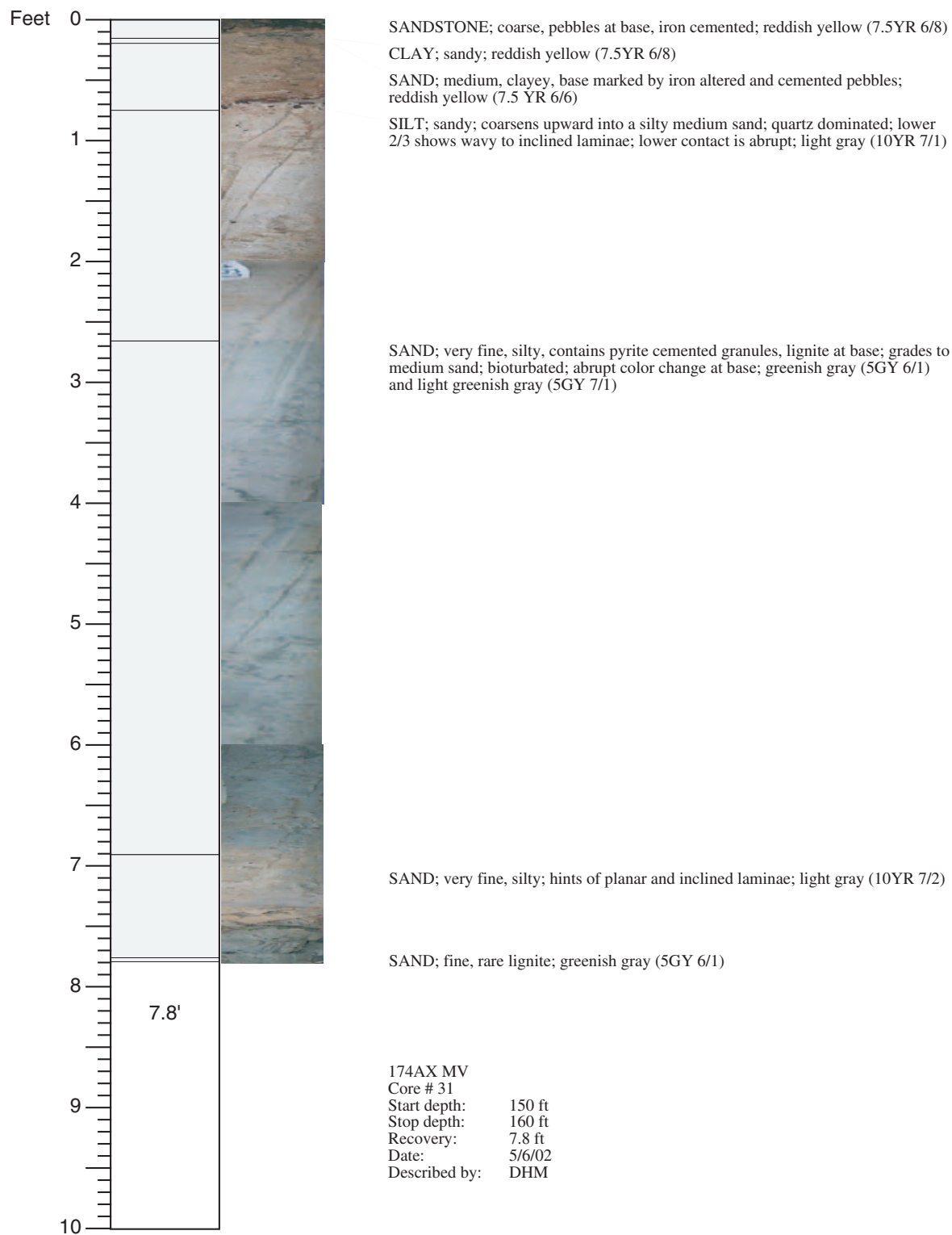
SAND; 3 cycles repeated; medium to coarse coarsening downward to very coarse with granules; base of units marked by iron stained quartz grains; planar laminae are common at the bottom of the core; light gray (10YR 7/2), very pale brown (10YR 8/4), strong brown (7.5 YR 5/6), reddish yellow (7.5YR 7/6)

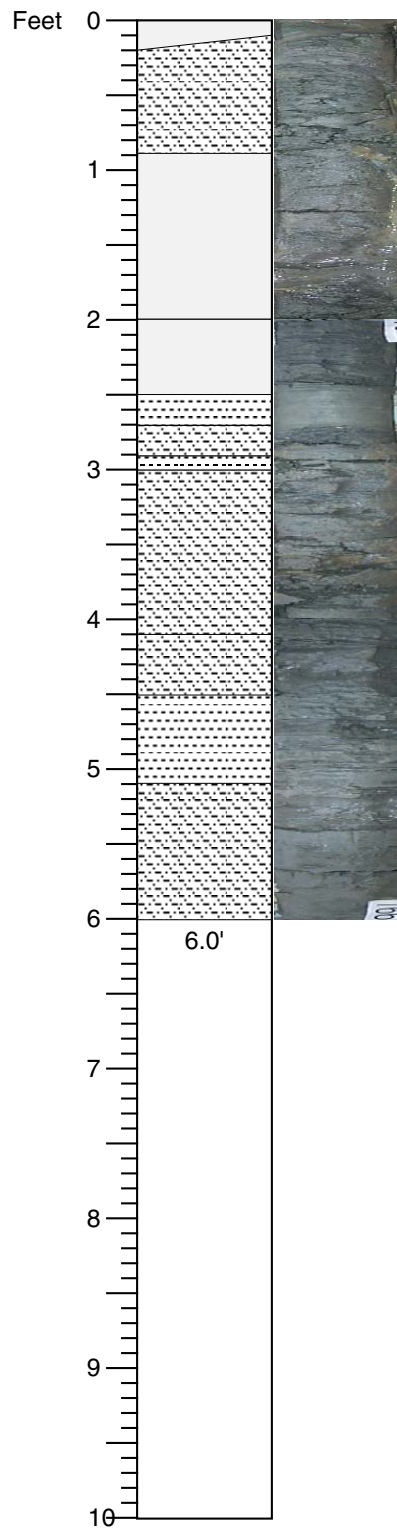
174AX MV  
Core # 30  
Start depth: 140 ft  
Stop depth: 150 ft  
Recovery: 2.75 ft  
Date: 5/6/02  
Described by: DHM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

31





SAND; medium; uniform, well sorted; inclined basal contact; gray (5Y 6/1)  
 SAND; fine to medium; interbedded with CLAY; clays are thicker than sands; clay color: greenish gray (5GY 5/1); sand color: bluish gray (5B 5/1)

SAND; medium to coarse; lignitic; well sorted; rare discontinuous clay laminae becoming more common near base; bluish gray (5B 5/1)

SAND; fine to medium; interbedded with CLAY; clays are thicker than sands; clay color: greenish gray (5GY 5/1); sand color: bluish gray (5B 5/1)

CLAY; hints of planar laminae; greenish gray (5GY 5/1)

SILT; dark bluish gray (5B 4/1)

CLAY; hints of planar laminae; greenish gray (5GY 5/1)

SILT; interbedded layers of clay and silt; silt is very well sorted

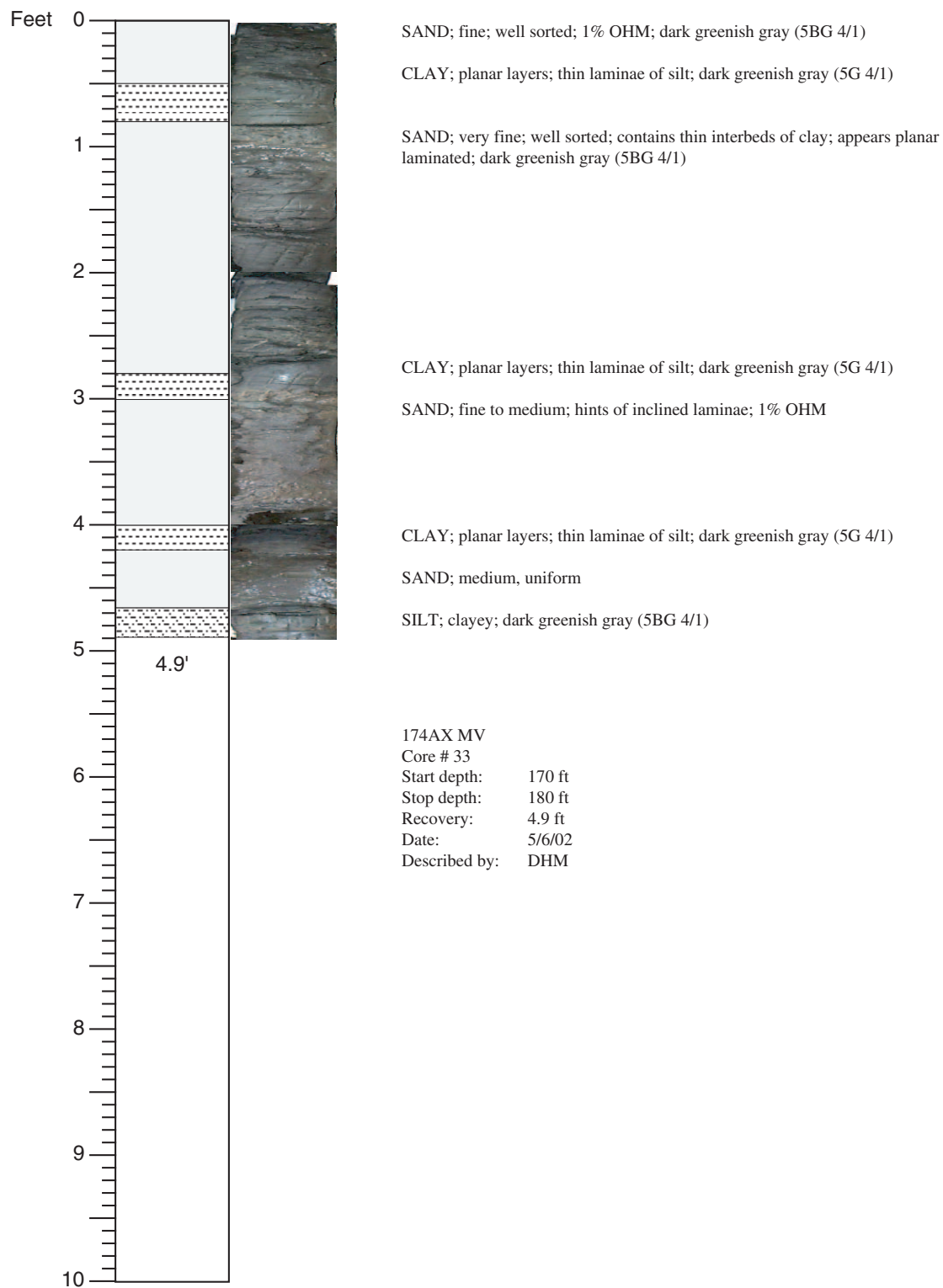
SILT; with very fine sand; well sorted; bluish gray (5B 5/1)

CLAY; interbedded layers of clay and silt; silt is very well sorted

SILT; uniform; well sorted; grades into a very fine sand

174AX MV  
 Core # 32  
 Start depth: 160 ft  
 Stop depth: 170 ft  
 Recovery: 6 ft  
 Date: 5/6/02  
 Described by: DHM

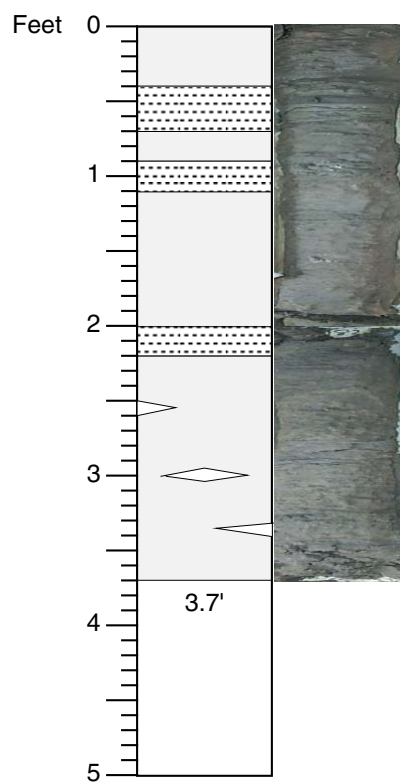




## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

34

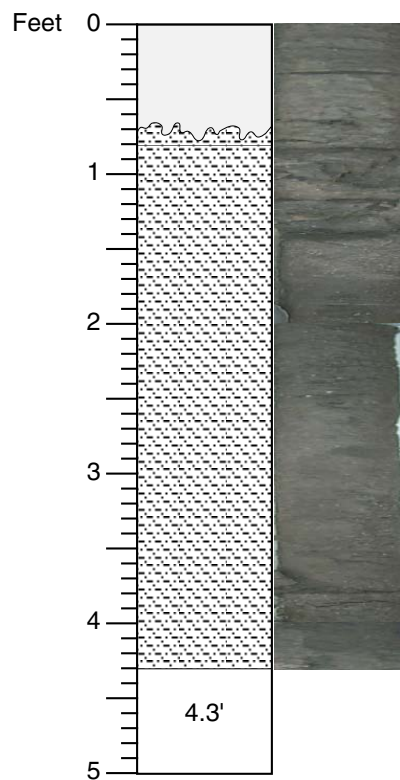


SAND; fine to medium, coarse sand at the base; lignitic with clay-silt interbeds; clay laminae are cross-bedded; sand color: grayish brown (2.5Y 5/2); clay color: olive gray (5Y 5/2)

174AX MV  
Core # 34  
Start depth: 180 ft  
Stop depth: 185 ft  
Recovery: 3.7 ft  
Date: 5/7/02  
Described by: PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**35**



SAND; medium to coarse; lignitic; gray (2.5Y 6/1)

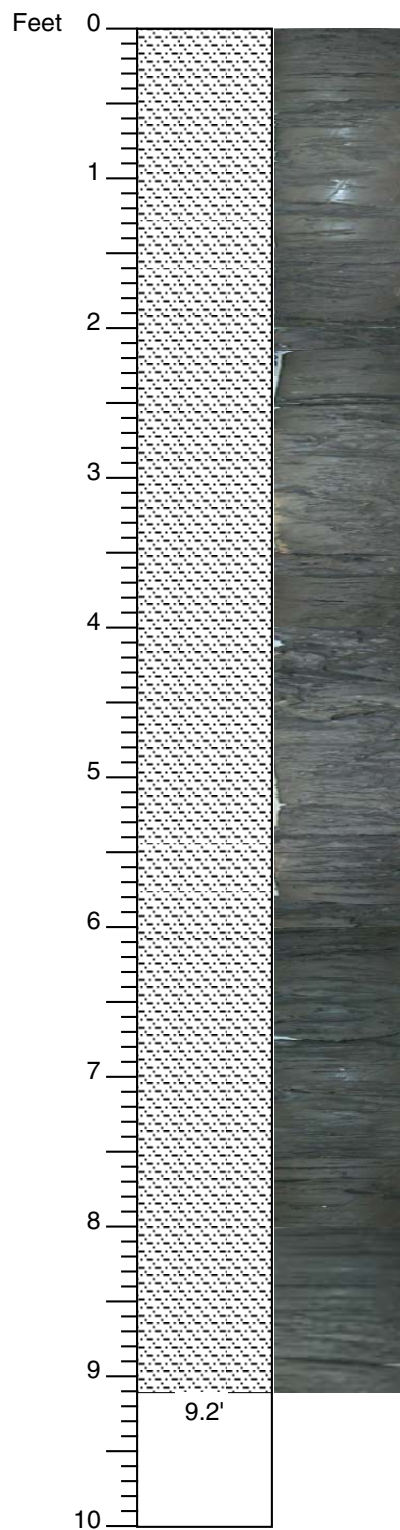
Burrowed contact at 0.7 ft; granules near contact

SILT; interbedded clayey silts; sandy silts, and silty clays; very finely disseminated mica; burrowed; very dark grayish brown (2.5Y 3/2)

174AX MV  
Core # 35  
Start depth: 185 ft  
Stop depth: 190 ft  
Recovery: 4.3 ft  
Date: 5/7/02  
Described by: PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**36**

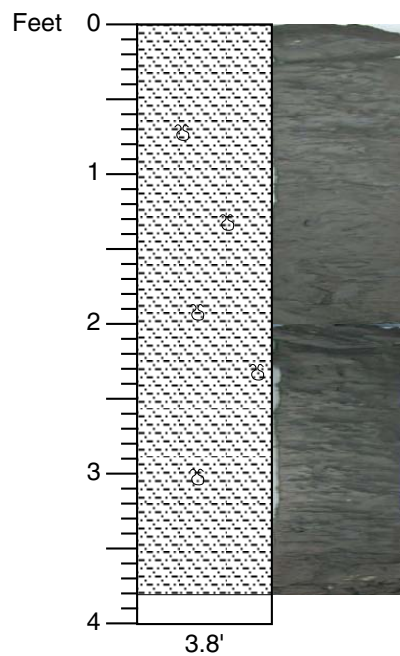


SILT; clayey; interbedded with SAND; medium with some fine; laminated, cross-laminated to thin bedded; slightly micaceous; some burrowing in the sand beds; very dark grayish brown (2.5Y 3/2)

174AX MV  
Core # 36  
Start depth: 190 ft  
Stop depth: 200 ft  
Recovery: 9.2 ft  
Date: 5/7/02  
Described by: PJS & JVB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**37**

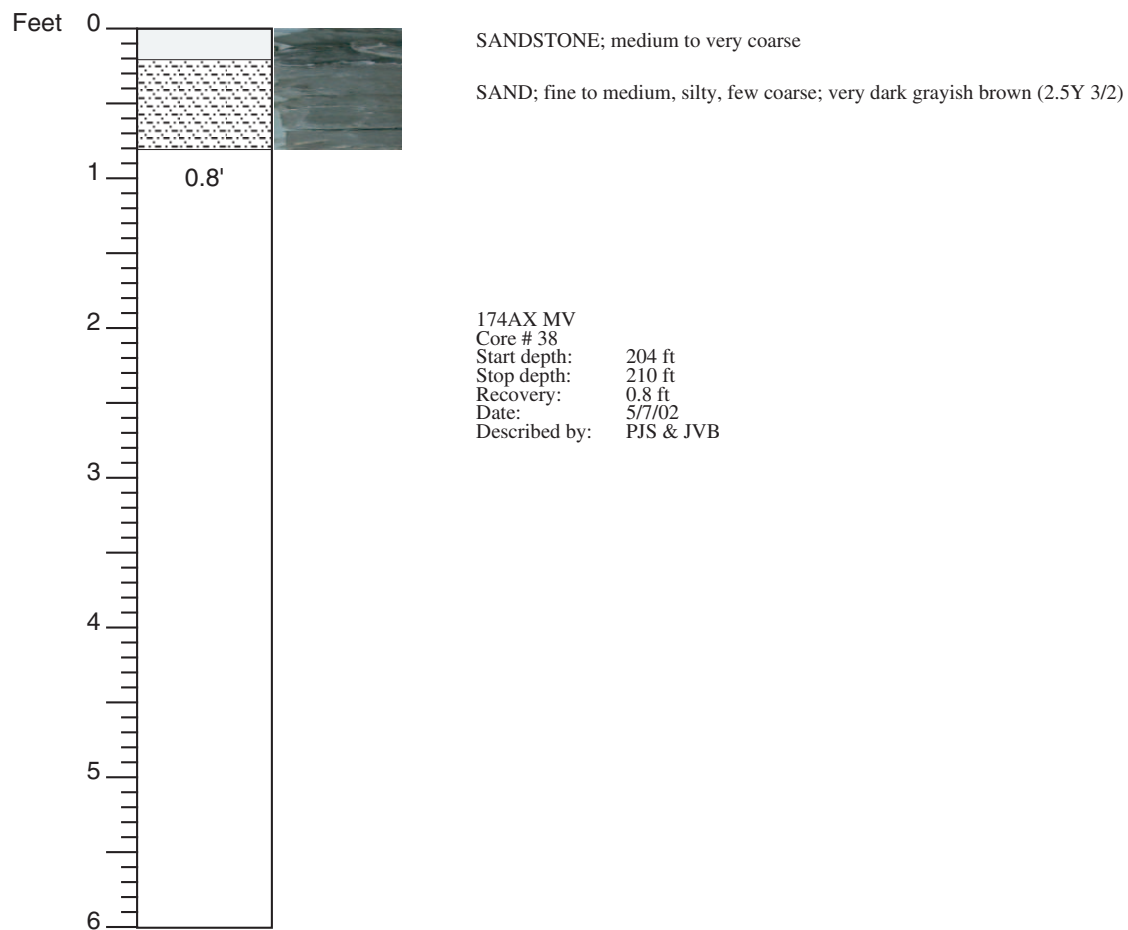


SAND; medium, some fine, slightly silty in places; occasional clay laminae; trace of plant material; dark gray (2.5Y 4/1) to very dark grayish brown (2.5Y 3/2)

174AX MV  
Core # 37  
Start depth: 200 ft  
Stop depth: 204 ft  
Recovery: 3.8 ft  
Date: 5/7/02  
Described by: PJS & JVB

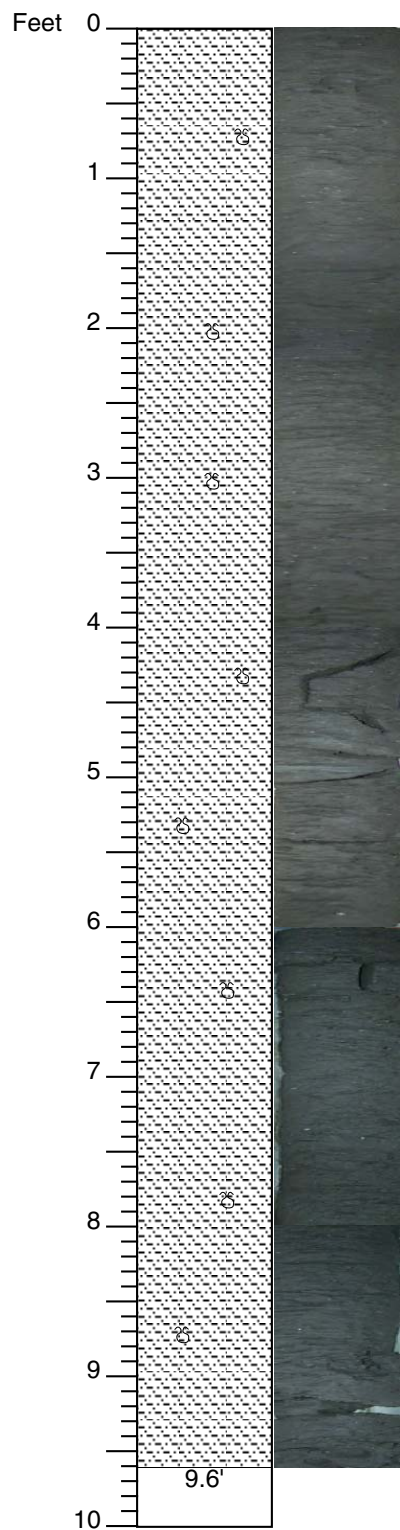
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**38**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**39**

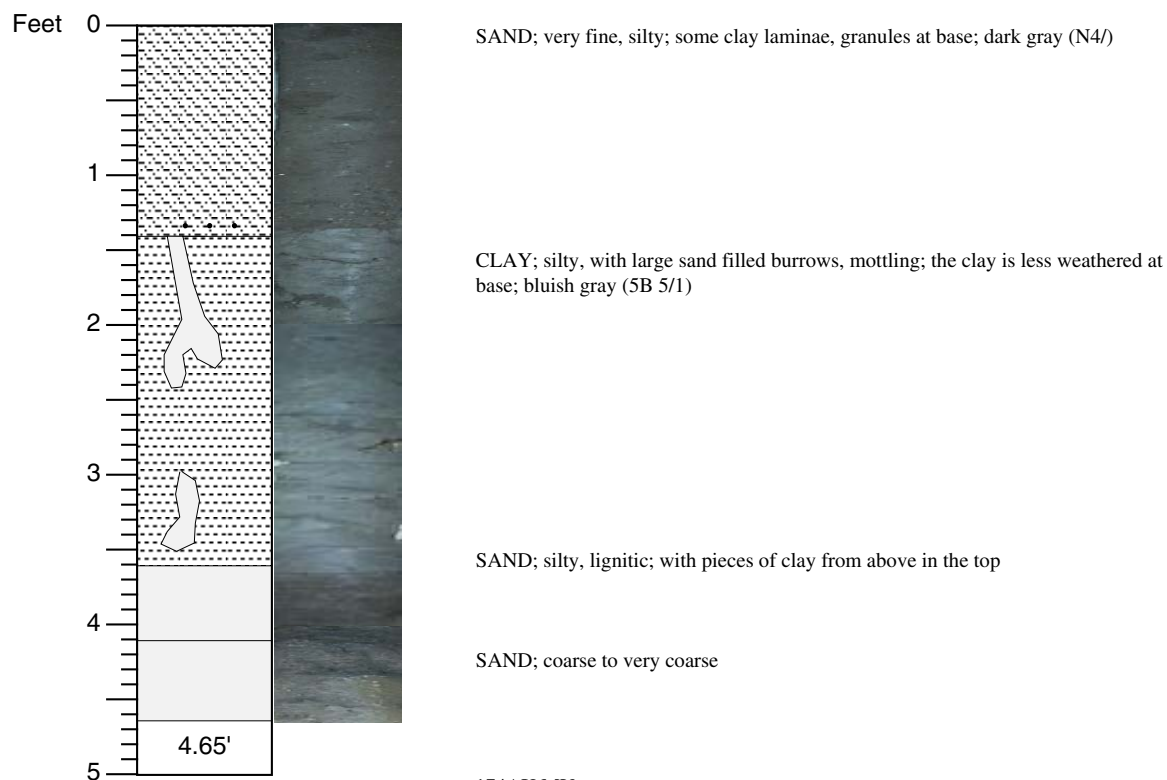


SAND; medium, some coarse, silty; burrowed; thin clay-silt burrowed laminae and thicker beds of silty fine to medium sand; non-burrowed finer beds are 0.2-0.3 ft thick; dark greenish gray (5GY 4/1)

174AX MV  
Core # 39  
Start depth: 210 ft  
Stop depth: 220 ft  
Recovery: 9.6 ft  
Date: 5/7/02  
Described by: PJS & JVB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**40**



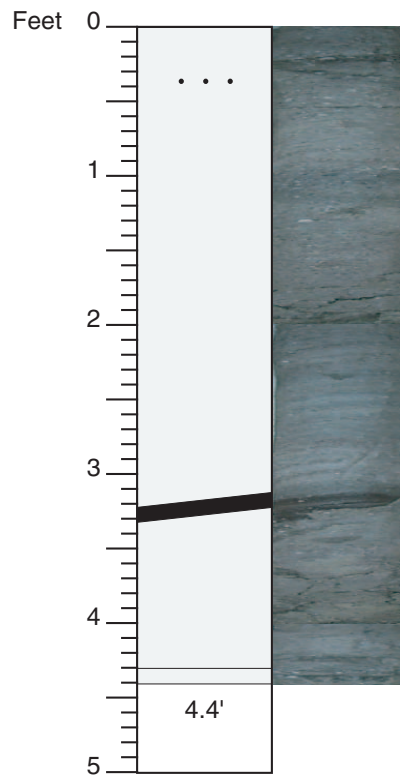
174AX MV  
 Core # 40  
 Start depth: 220 ft  
 Stop depth: 225 ft  
 Recovery: 4.65 ft  
 Date: 5/7/02  
 Described by: PJS & JVB



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

41



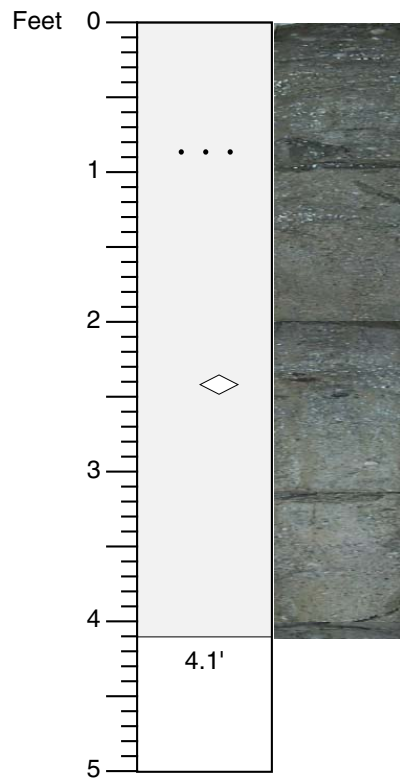
SAND; coarse to very coarse, with granules at top; grades to medium at 2 ft; organic rich laminae (up to 1 cm thick) are common; trace of mica, finely disseminated lignite, lignite bed at 3.1-3.2 ft; beds and cross-bedded (1 cm to 0.5 ft); gray (N5)

SAND; coarse to very coarse with granules

174AX MV  
Core # 41  
Start depth: 225 ft  
Stop depth: 230 ft  
Recovery: 4.4 ft  
Date: 5/7/02  
Described by: JVB

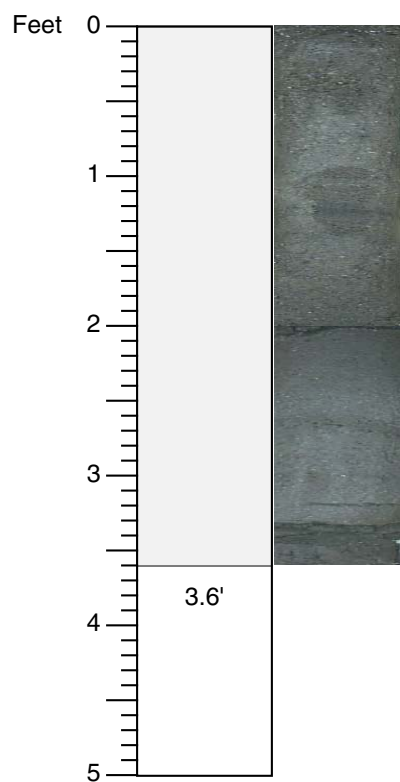
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**42**



SAND; coarse to very coarse, mainly quartz, 102% OHM; pebbles and very coarse sand at top; some granules at 0.9 ft; clay clast at 2.4 ft; gray (5Y 6/1)

174AX MV  
 Core # 42  
 Start depth: 230 ft  
 Stop depth: 235 ft  
 Recovery: 4.1 ft  
 Date: 5/7/02  
 Described by: JVB & PJS

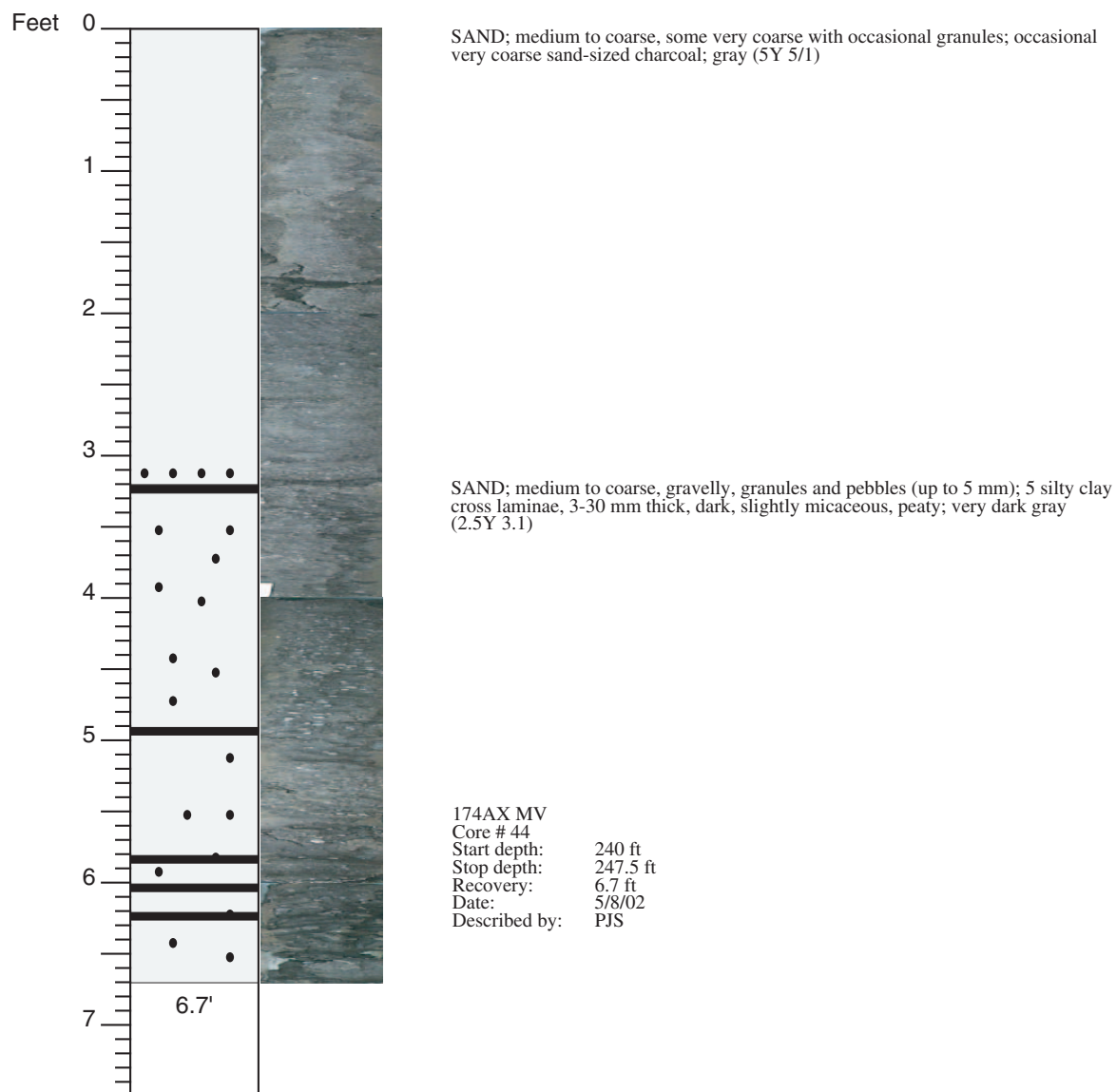


SAND; coarse to very coarse; some medium; hints of bedding with occasional organic layers containing sand sized lignite; otherwise appears massive; gray (5Y 6/1)

174AX MV  
Core # 43  
Start depth: 234 ft  
Stop depth: 240 ft  
Recovery: 3.6 ft  
Date: 5/7/02  
Described by: PJS

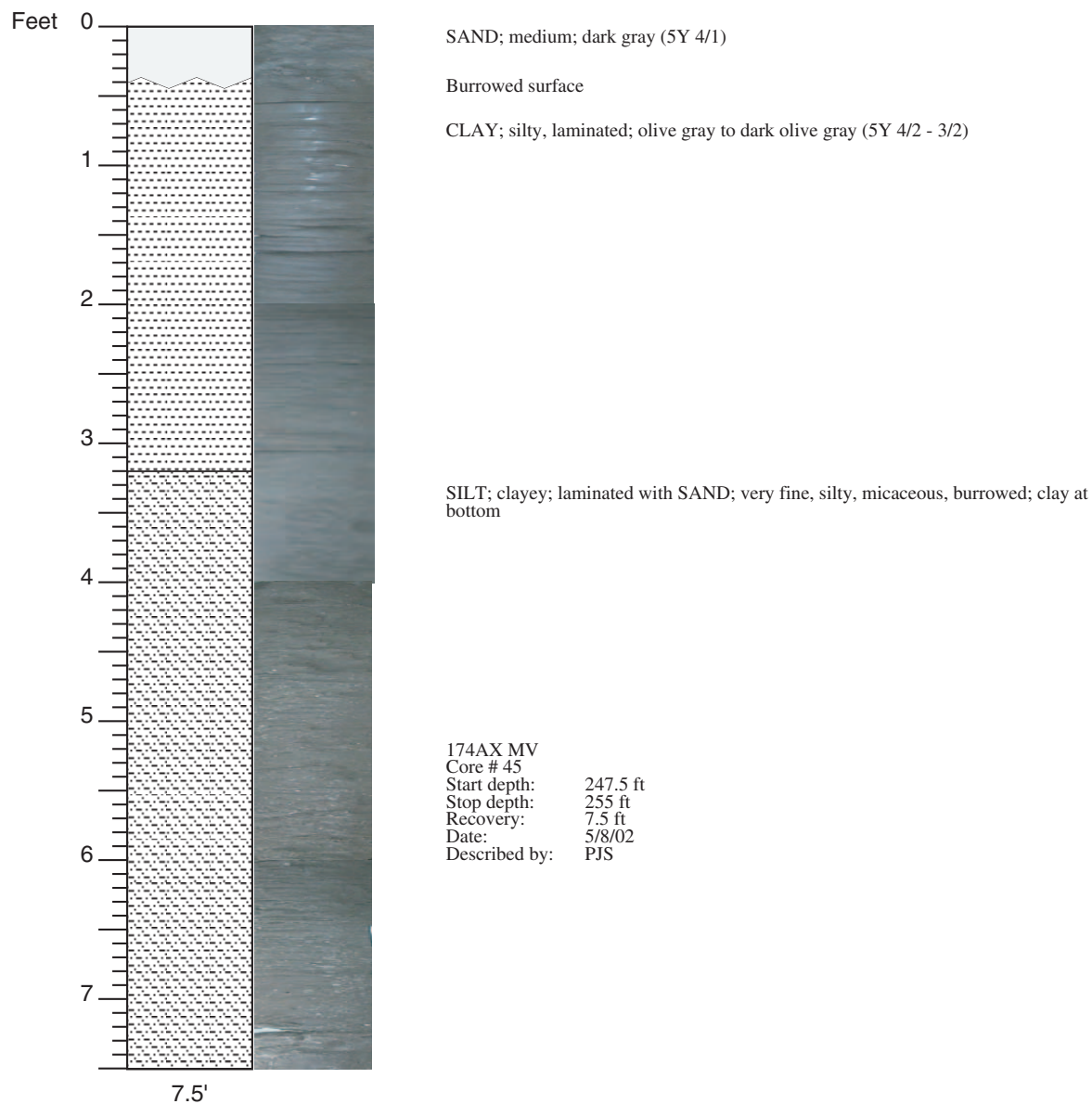
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**44**



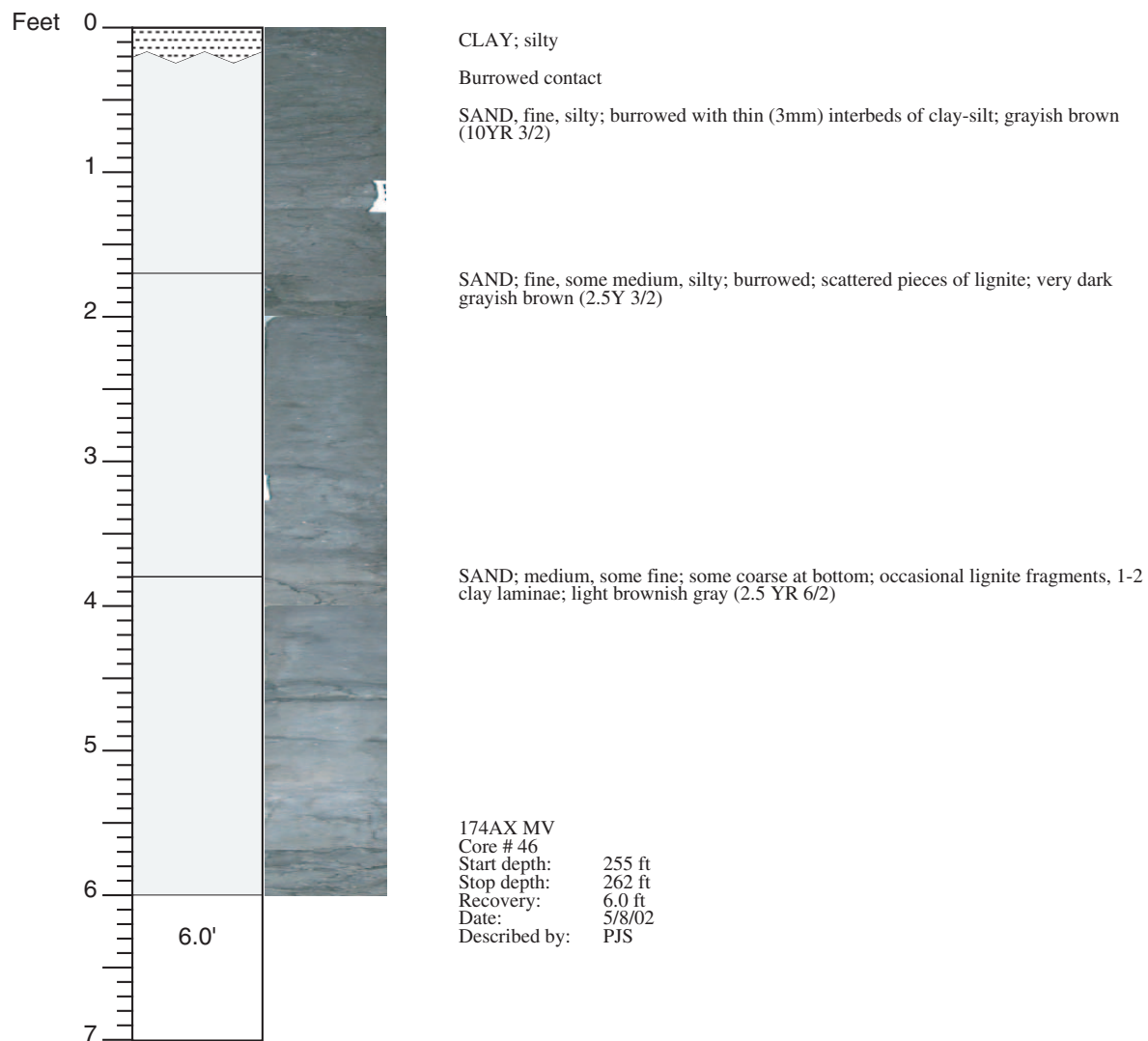
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**45**



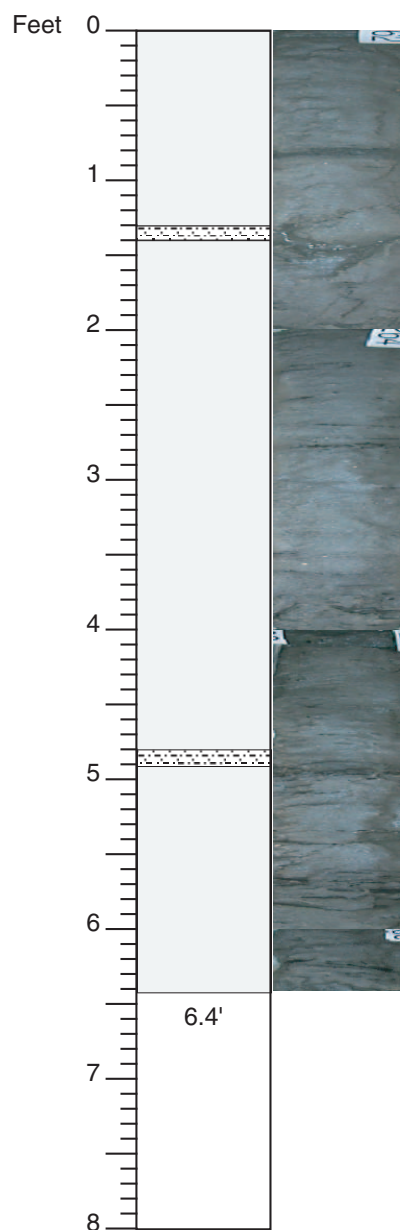
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**46**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**47**



SAND; medium, rare very coarse grains; moderate sorting, subangular; mostly quartz; very rare dark grains and ?feldspar; very clean

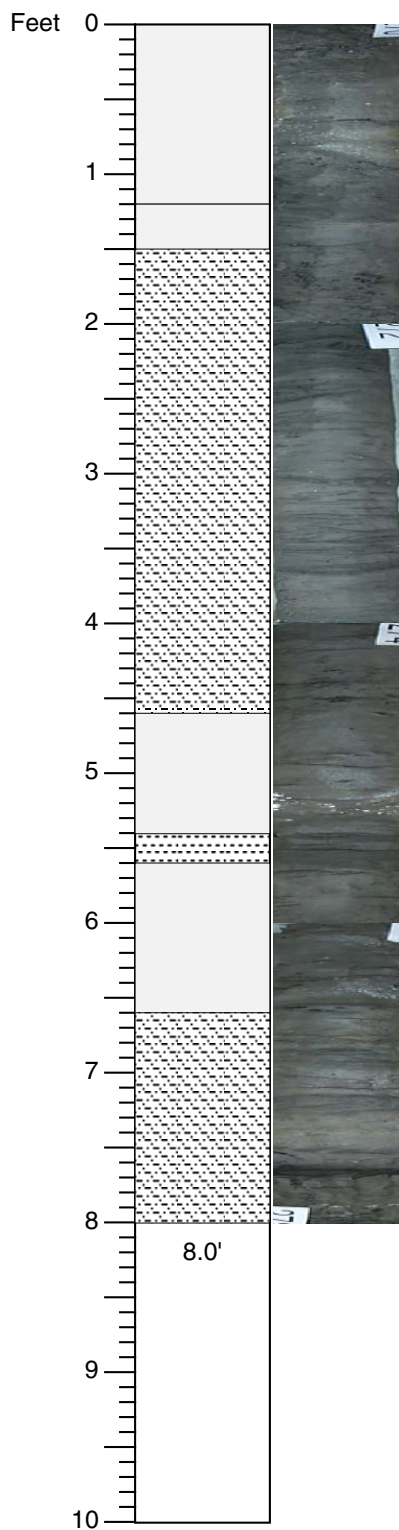
SAND; medium, very clayey; subangular; mostly quartz; (clayey bleb just beneath)

SAND; medium, rare very coarse grains; moderate sorting subangular; mostly quartz, rare dark grains, scattered lignitic zones aligned 1-2 mm, thick fragments, some slightly clayey lignitic zones; at 4.0 ft 1 x 2 cm lignite chunk

SAND; medium, clayey, abundant lignite fragments; subangular; mostly quartz

SAND; medium; moderate sorting; subangular; mostly quartz, scattered 1-2 mm lignite fragments dispersed throughout; lignite fragment rich zones @ 5.25, 5.5-5.6, and 6.2 ft

Core # 47  
 Start depth: 262 ft  
 Stop depth: 270 ft  
 Recovery: 6.4 ft  
 Date: 5/8/02  
 Described by: PJS & PPM



SAND; medium, a few coarse grains; moderate sorting; subangular to subrounded; mostly quartz, scattered small lignite; lignite lamination at 0.7 ft; gray (10YR 5/1)

SAND; very fine to fine, some medium; moderate sorting; subangular to subrounded; very clayey; alternating sandy clay and clayey sand laminations; very dark gray (10YR 3/1)

SAND; fine to very fine; moderate to well sorted; subangular to subrounded; with scattered common lignite fragments from <1 mm to ~3 mm long; with common, interlaminated, thin sandy micaceous CLAYS; mostly 1-5 mm thick, some bioturbation; overall flaser bedded appearance; clay laminae are discontinuous and uneven; more lignite between 1.7-2.3 ft; 15 mm thick sandy clay at 3.0 ft; gray (10YR 5/1) to very dark gray (10YR 3/1)

SAND; fine to medium, coarsens downward; moderate sorting; subangular to subrounded; quartz sand, scattered lignite chunks; thin lignitic clayey layers; gray (10YR 5/1)

CLAY; sandy, micaceous; some thin lenticular cleaner sand within; very dark gray (10YR 3/1)

SAND; fine; moderate sorting; subangular to subrounded; clean in places; slightly clayey/organic rich in places, scattered lignitic laminae; gray (10YR 5/1)

SAND; fine, some very fine; moderate sorting; subangular to subrounded; with interlaminated thin (1-3 mm) sandy micaceous CLAYS; clays more organic rich, scattered 1-10 mm lignitic fragments in the sand; colors as above

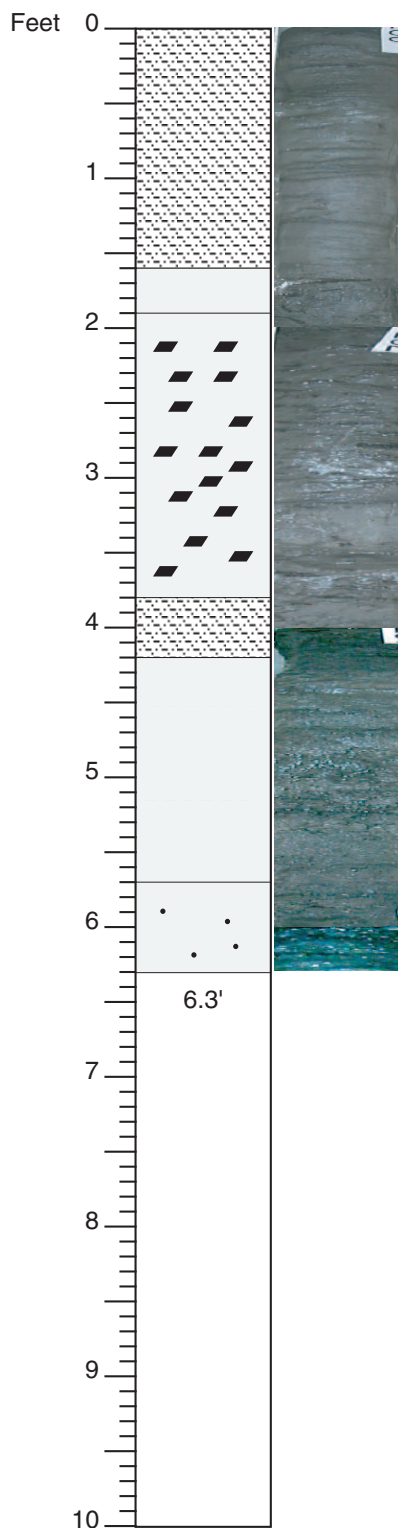
174AX MV  
 Core # 48  
 Start depth: 270 ft  
 Stop depth: 280 ft  
 Recovery: 8.0 ft  
 Date: 5/8/02  
 Described by: PPM



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

49



SAND; fine to medium; moderate sorting; subangular to subrounded; mostly quartz, mostly clean, with interlaminated thin sandy CLAY; 1-10 mm thick; very fine sand, micaceous, scattered lignitic chunks; some beds are irregular/less continuous (flasers?); gray (10YR 5/1)

SAND; medium to coarse, slightly clayey; moderate sorting; subangular to subrounded; mostly quartz, very fine organic chunks; very dark gray (10YR 3/1)

SAND; medium; moderate sorting; subangular to subrounded; mostly quartz, common lignitic material aligned in laminae; with black layers; gray (10YR 5/1)

SAND; medium to coarse; moderate to poor sorting; subangular to subrounded; mostly quartz; very clayey; very dark gray (10YR 3/1)

SAND; medium to very coarse, some granules; moderate to poor sorting; subangular to subrounded; a few sticky clayey layers/zones, otherwise fairly clean

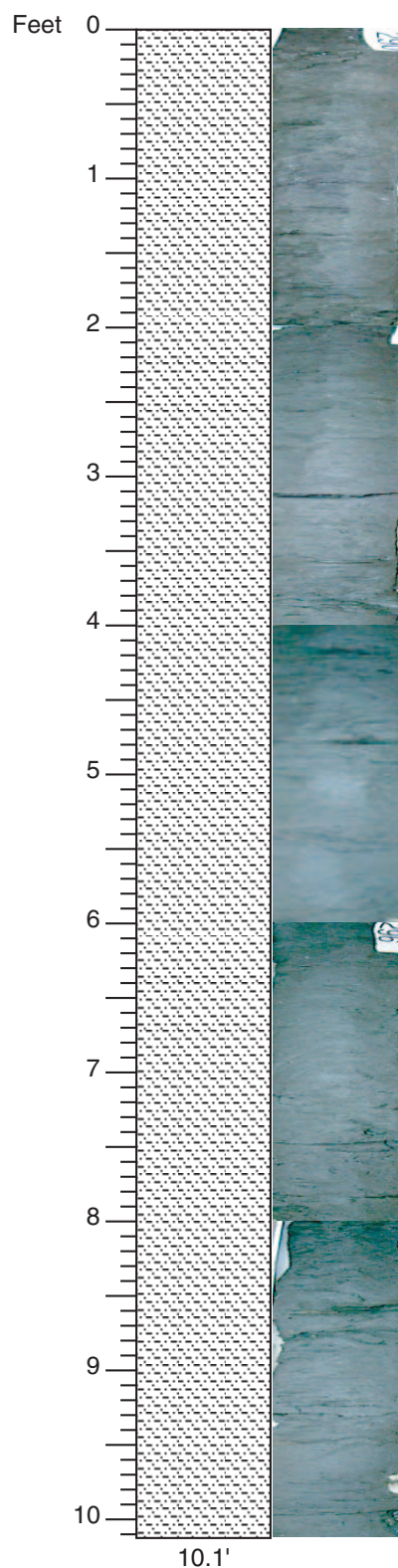
SAND; medium to very coarse, some granules; subangular to subrounded; mostly quartz in a very clayey matrix, slightly stiffer/stickier; black (10YR 2/1; (is this a clay with sand burrowed down from above?))

174AX MV  
Core # 49  
Start depth: 280 ft  
Stop depth: 290 ft  
Recovery: 6.3 ft  
Date: 5/8/02  
Described by: PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

50



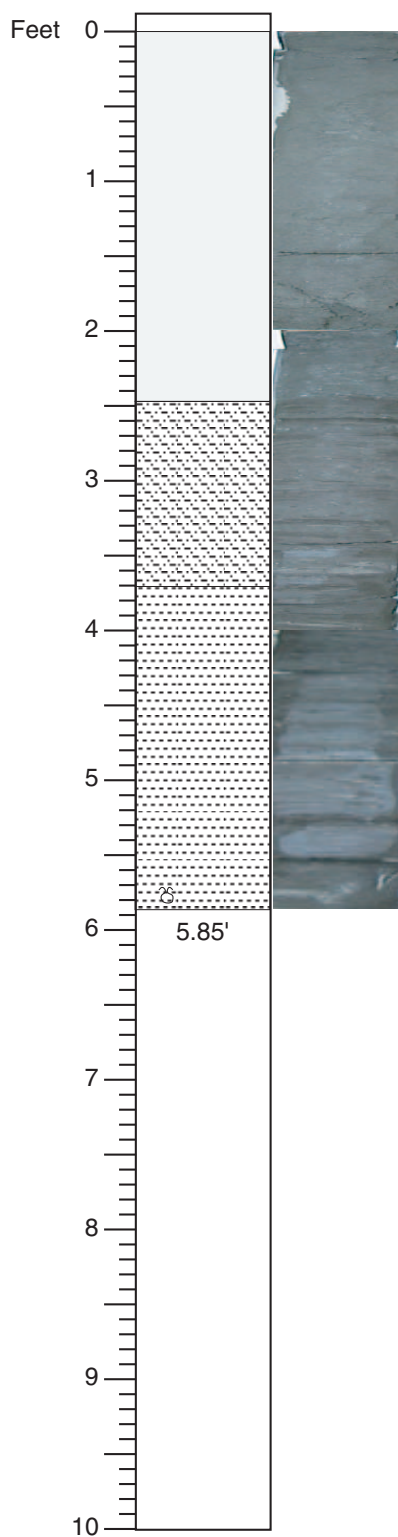
SAND; variably clayey, with thin sandy micaceous silty CLAYS; sand is mostly medium; quartz, clayey in most places, making it cohesive and slightly sticky; clay is silty, slightly micaceous and sandy, laminated, 1-5 mm thick laminations in packages up to 30 mm; in some places lamination is distinct, in others, slightly homogenized/less distinct laminae; no visible lignitic material

174AX MV  
Core # 50  
Start depth: 290 ft  
Stop depth: 300 ft  
Recovery: 10.1 ft  
Date: 5/8/02  
Described by: PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

51



SAND; medium to fine at top, medium to coarse with some very coarse grains and granules near base; moderate sorting, subangular-subrounded; mostly quartz, some thin (1-3 mm) slightly stickier clayey zones; dark gray (10YR 4/1)

Contact

CLAY; thinly laminated, interbedded with very clayey, granuliferous SAND; clay is only slightly silty, laminae  $\leq 1$  mm, vary from dark brown to tan, in zones 10-20 mm thick; sand is very clayey, stiff, with poorly sorted sand (medium to very coarse with granules), in zones 15-30 mm thick; clay is very dark grayish brown (10YR 3/2) mostly, some black (10YR 2/1) through (10YR 5/2)

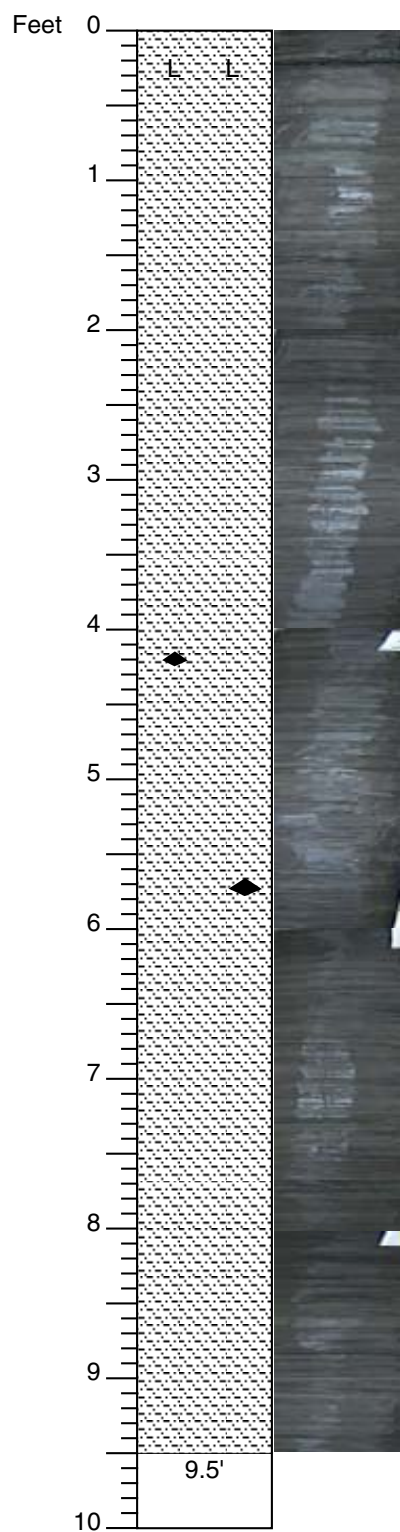
CLAY; as in interval above, but without sand, hard, stiff, some interlaminated laminae are very fine sand, discontinuous/lenticular, possible burrows at bottom

174AX MV  
Core # 51  
Start depth: 300 ft  
Stop depth: 310 ft  
Recovery: 5.85 ft  
Date: 5/8/02  
Described by: PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

52



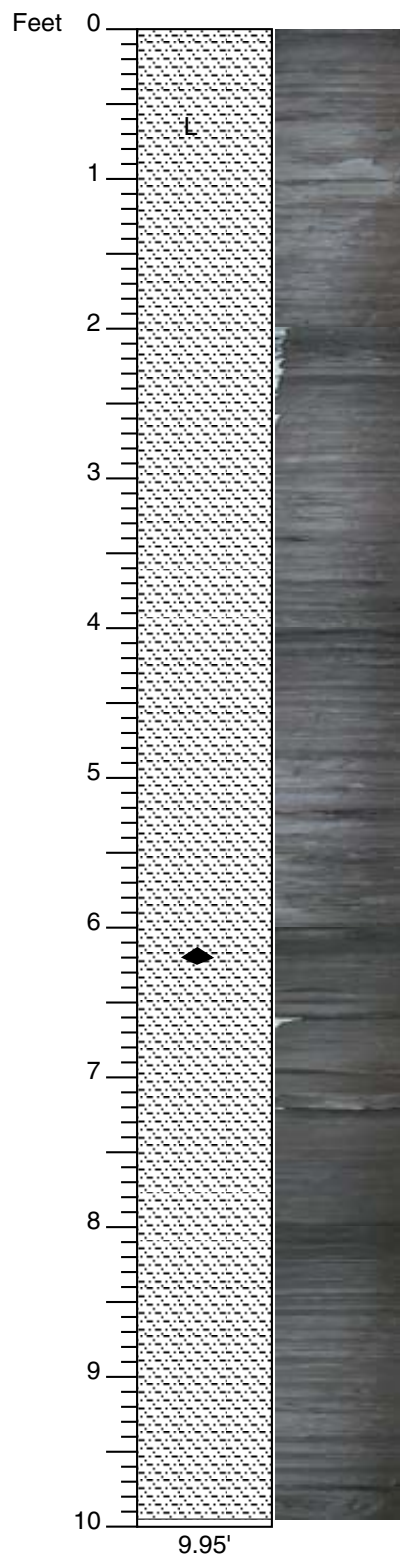
CLAY; micaceous, some slightly silty and sticky, some not silty and harder and drier, with interlaminated slightly clayey SILT and some silty very fine SAND or sandy silt, all micaceous; laminations ranges from <1 mm to 10 mm, with some laminae in 10-30 mm packages; some lignitic debris, especially at 0.25 ft, pyritic concretions at 4.7 and 5.7 ft; clay zones: very dark gray (10YR 3/1), sticky silty clay: very dark gray to dark gray (10YR 3/1-4/1), sandier zones: gray (10YR5/1-6/1)

174AX MV  
Core # 52  
Start depth: 310 ft  
Stop depth: 320 ft  
Recovery: 9.5 ft  
Date: 5/9/02  
Described by: PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

53

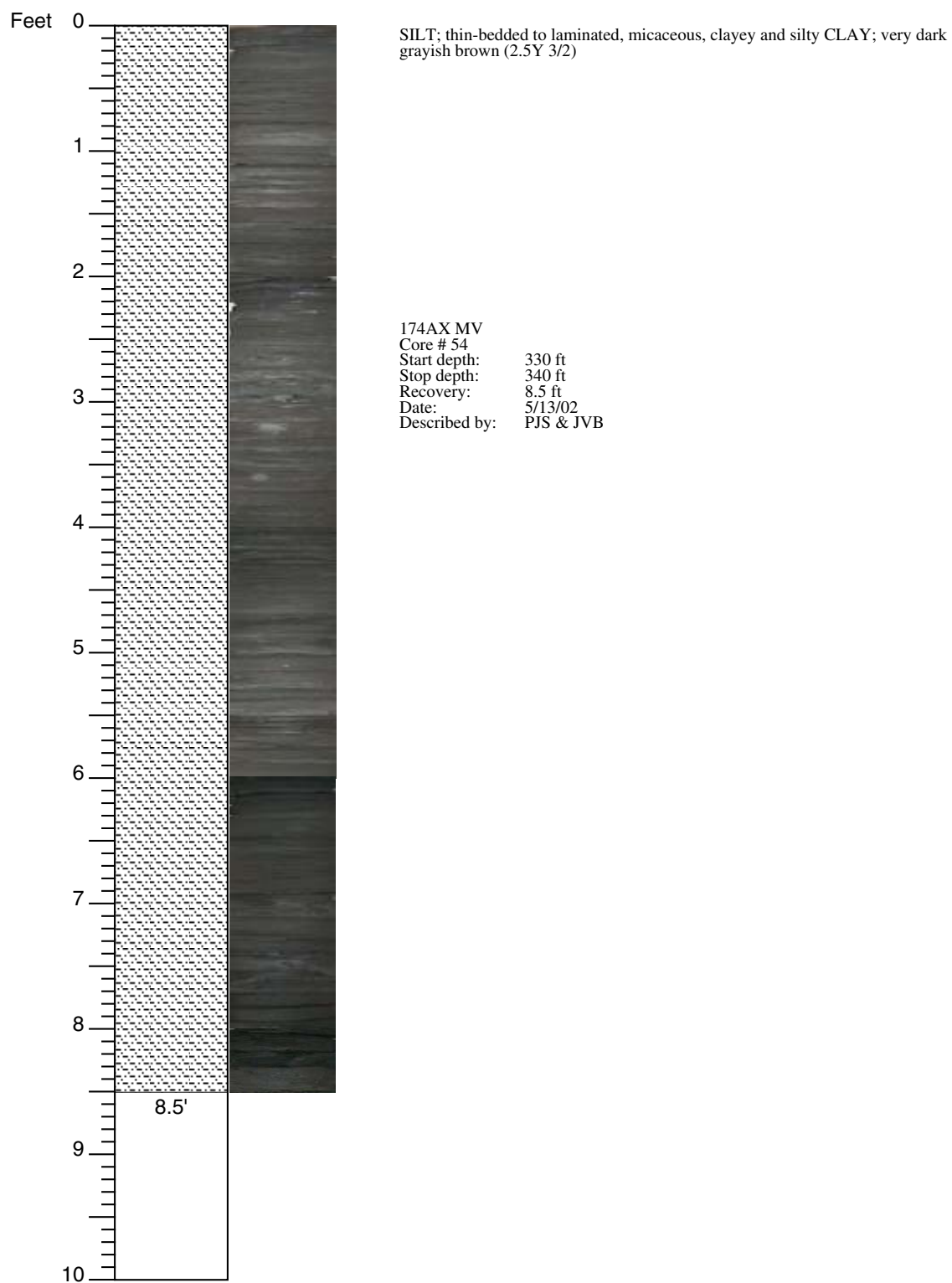


CLAY; micaceous, some slightly silty, with interlaminated slightly clayey SILT and some silty very fine SAND, all micaceous; laminations ranges from <1 mm to 10 mm, with some laminae in 10-30 mm packages; some lignitic debris, pyritic concretion at 6.2 ft; clay zones: very dark gray to dark gray (10YR 3/1-4/1), sandier zones: gray (10YR 5/1-6/1)

174AX MV  
Core # 53  
Start depth: 320 ft  
Stop depth: 330 ft  
Recovery: 9.95 ft  
Date: 5/13/02  
Described by: PJS

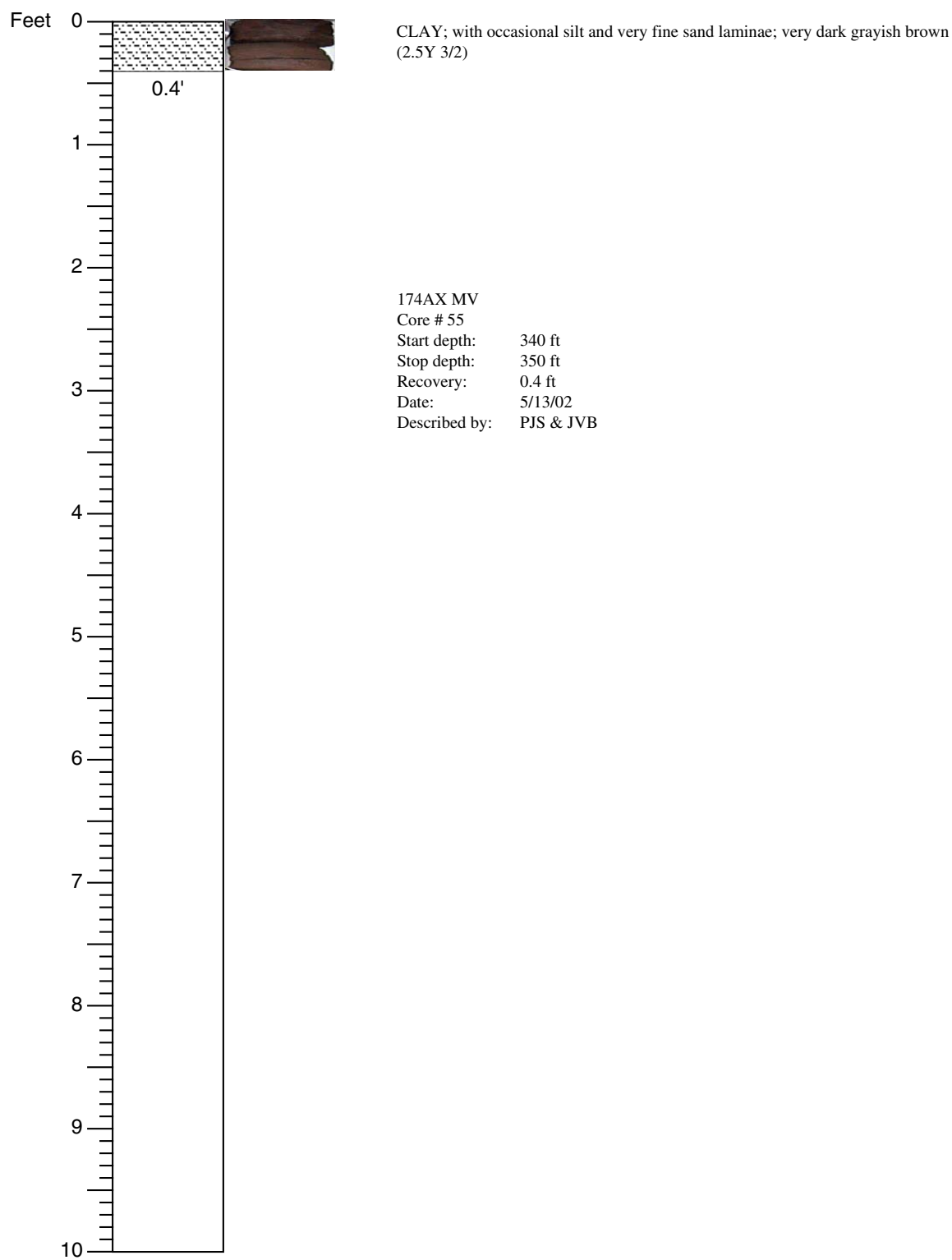
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**54**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

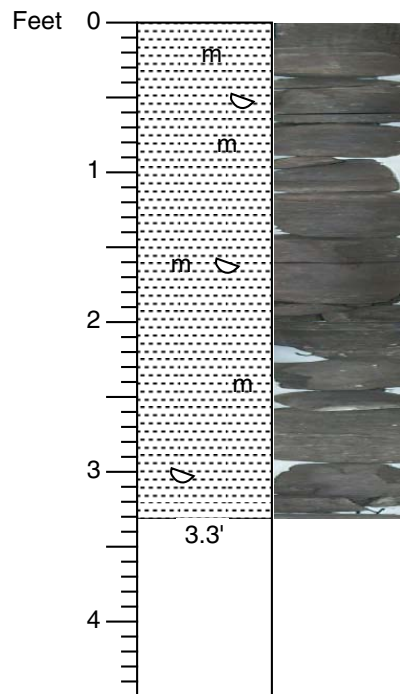
**55**



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

56



CLAY; silty; scattered quartz sand grains, slightly micaceous, finely laminated, burrowed in some intervals; shelly throughout, fewer shells between 0.5-1.8 ft; very dark gray (10YR 3/1)

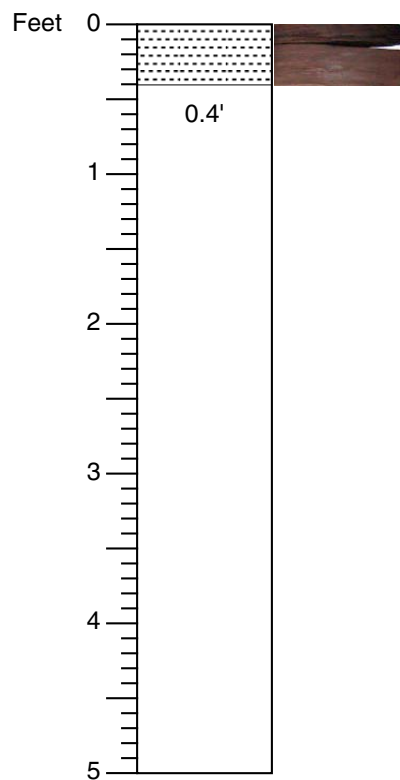
NOTE: This core was found lodged in the outer core barrel when the rods were pulled @ 355 ft. It is likely from 340.5-350 ft. The piece from 340-340.5 ft most likely blocked the barrel.

174AX MV  
Core # 56a  
Start depth: "340.5" ft  
Stop depth: "345" ft  
Recovery: 3.3 ft  
Date: 5/14/02  
Described by: KGM



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**57**



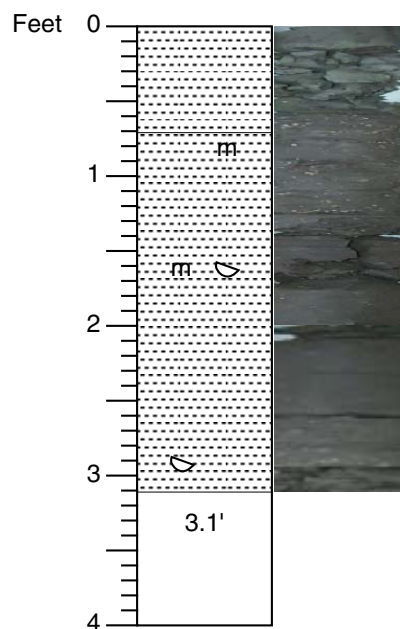
CLAY; slightly laminated, finely micaceous; with occasional silt and very fine sand laminae; very dark grayish brown (2.5Y 3/2)

NOTE: Placement of this core is uncertain

174AX MV  
 Core # 56  
 Start depth: "350" ft  
 Stop depth: "355" ft  
 Recovery: 0.4 ft  
 Date: 5/13/02  
 Described by: PJS & JVB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**58**



NOTE: the upper 0.7 ft of the core is not solid core, it contains glauconite

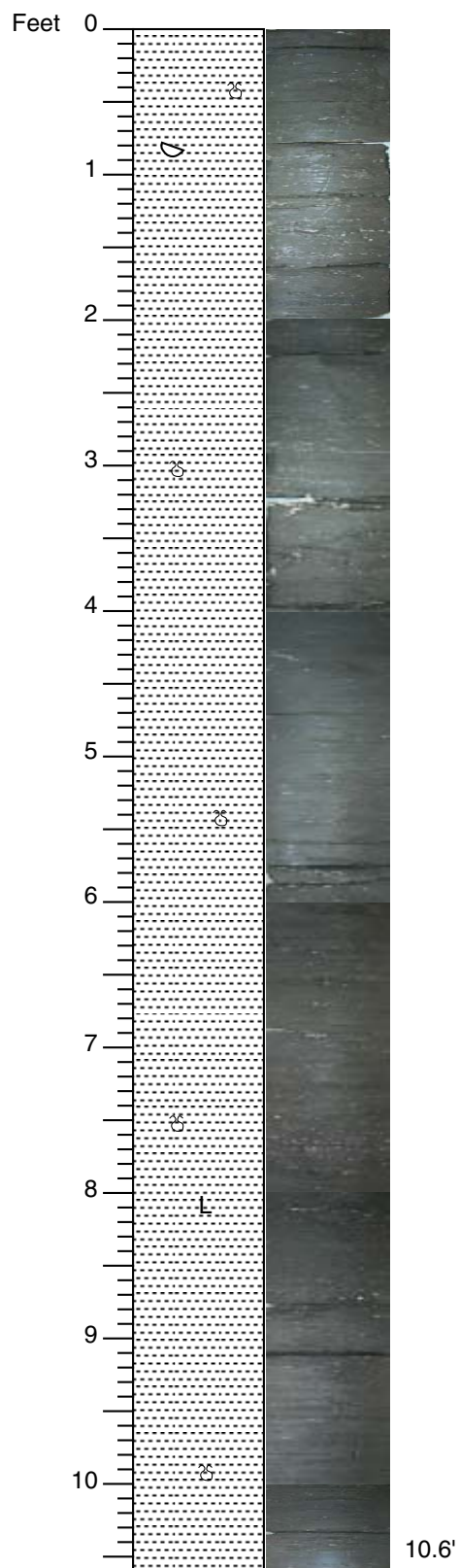
CLAY; slightly micaceous, shelly, silty; shellier at top 0.7-0.8 ft; some very fine quartz sand, occasional black blebs (lignite?); top: dark greenish gray (10YR 4/1); bottom: dark greenish gray (10YR 3/1)

174AX MV  
Core # 57  
Start depth: 355 ft  
Stop depth: 359 ft  
Recovery: 3.1 ft  
Date: 5/14/02  
Described by: KGM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

59

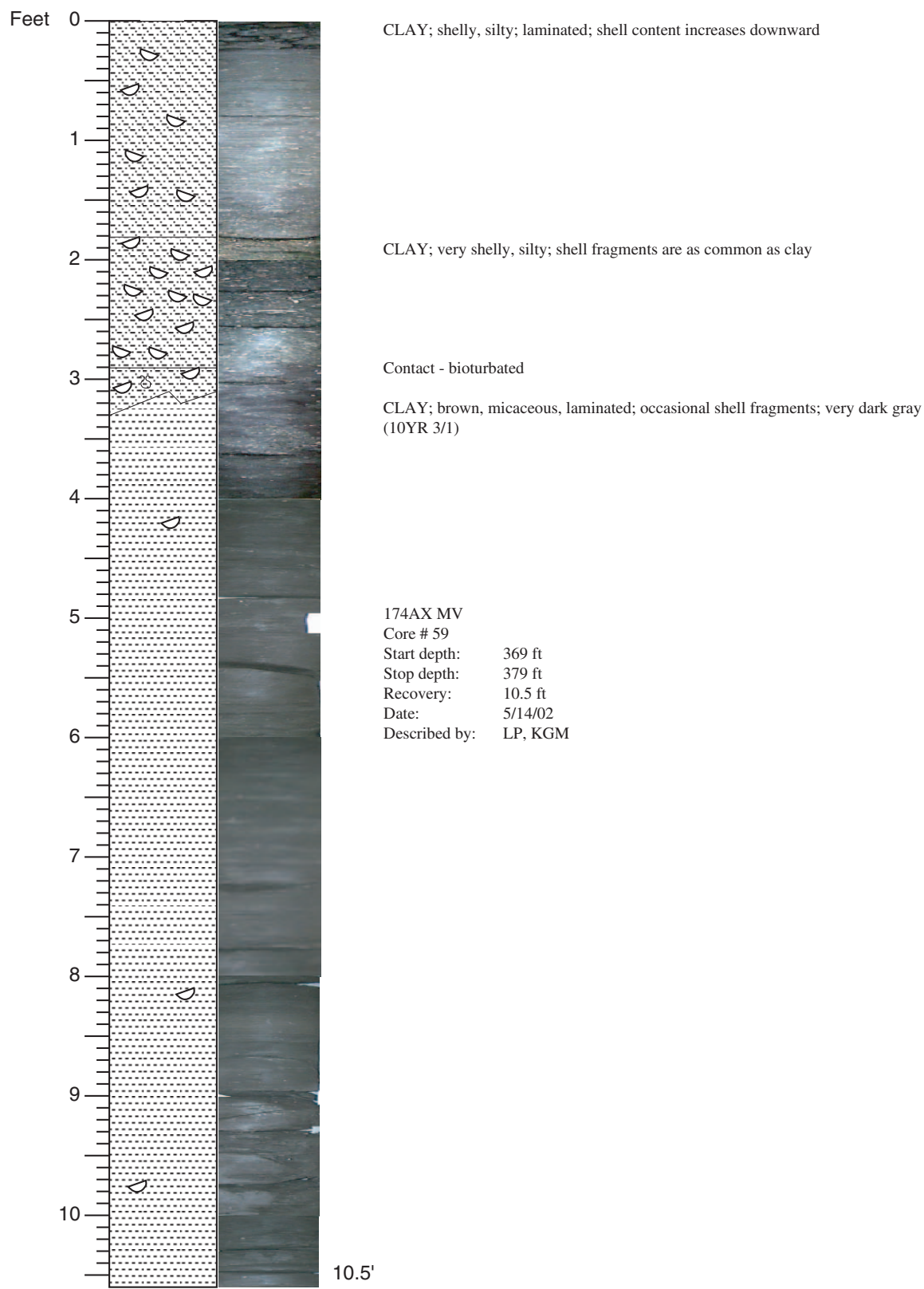


CLAY; silty, slightly shelly to shelly; black minerals probably lignite, slight concentration at 5.3 ft; lignite bed at 8.8 ft; large shell at 0.8 ft; shell concentration at 1.2-1.4, 2.7-2.8, 3.0-3.1, 7.2-7.3 ft; above 5.4 ft : dark greenish gray (10Y 3/), below 5.4 ft: very dark gray (10YR 3/1)

174AX MV  
Core # 58  
Start depth: 359 ft  
Stop depth: 369 ft  
Recovery: 10.6 ft  
Date: 5/14/02  
Described by: KGM

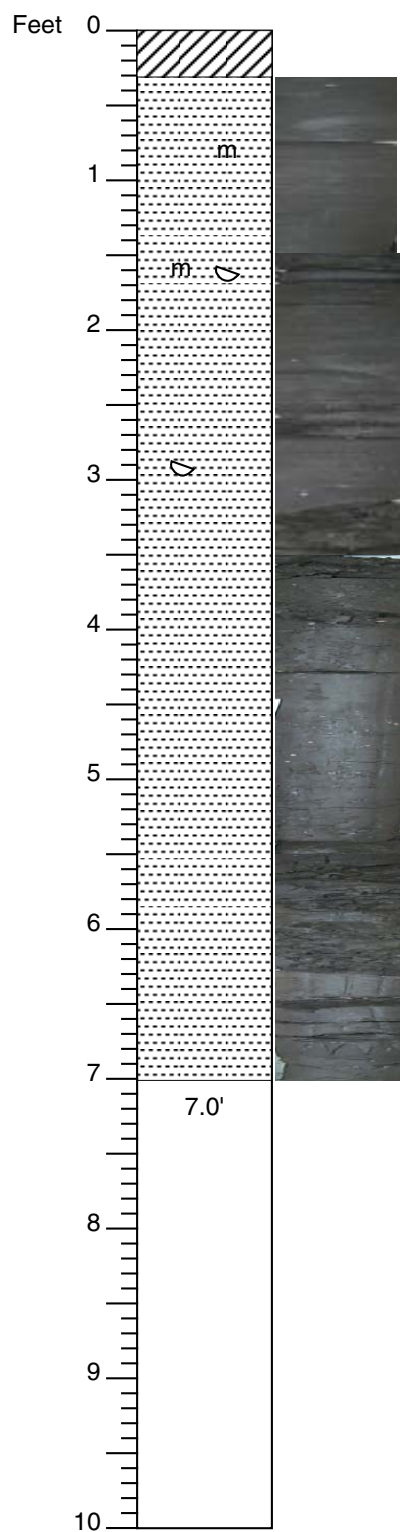
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

60



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**61**



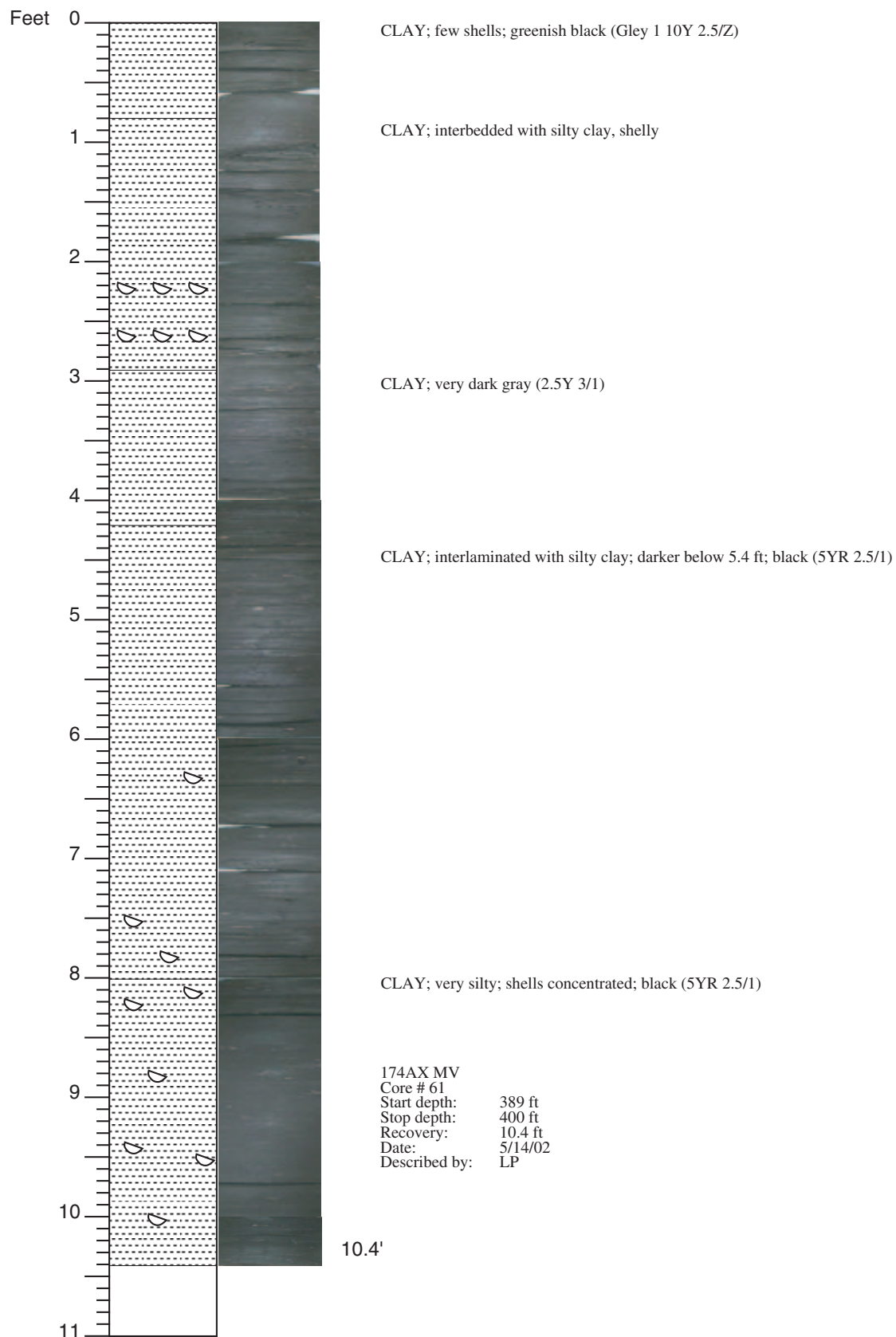
"Chewed" core washed away

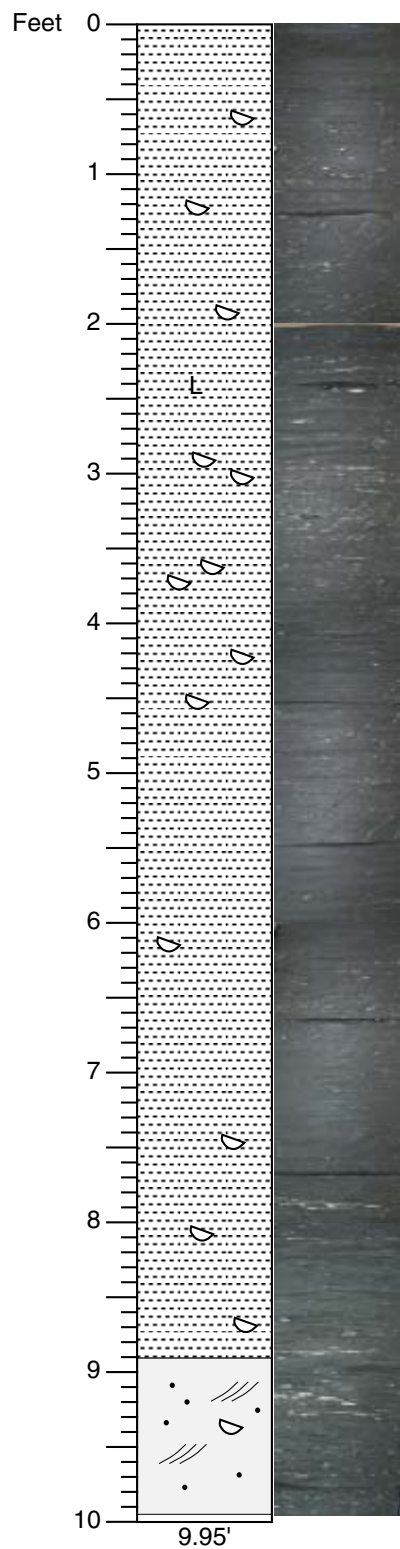
CLAY; uniform, silty, micaceous, laminated, sparse shells; (10YR 3/1); grading to CLAY at the bottom; no laminations, little/no mica; little/no silt; sparse shells; (10Y 3/1)

174AX MV  
 Core # 60  
 Start depth: 379 ft  
 Stop depth: 389 ft  
 Recovery: 7.0 ft  
 Date: 5/14/02  
 Described by: LP

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

62





CLAY; slightly micaceous, shelly, lignite at 2.4 ft; shells are particularly concentrated between 1-4 ft; very dark gray (2.5Y 3/1)

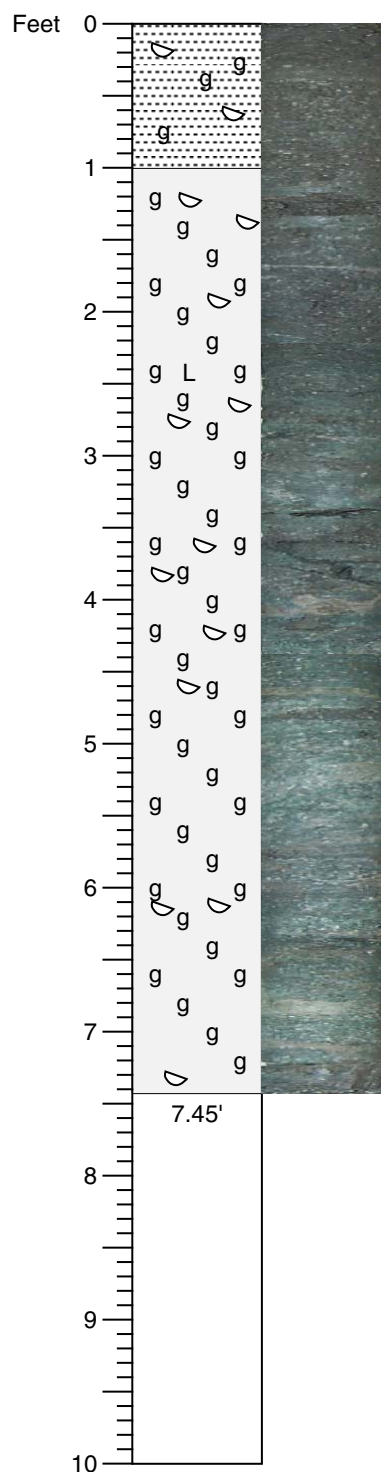
174AX MV  
 Core # 62  
 Start depth: 400 ft  
 Stop depth: 410 ft  
 Recovery: 9.95 ft  
 Date: 5/14/02  
 Described by: LP; KGM

Contact

SAND; fine to medium; sparse granules; cross bedded; mostly quartz, 3% OHM, some lithic fragments; shell concentrations at 8.9 and 9.1 ft; dark greenish gray (10Y 4/1)

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**64**



SAND; medium to coarse, sparse granules; shelly, slightly glauconitic (1-2%)

SAND; medium to coarse, sparse granules; shelly; glauconite increases from 2-20% to 30% by 3 ft; very porous and friable; green (5G 3/1) to dark greenish gray (10Y 3/1)

174AX MV  
 Core # 63  
 Start depth: 410 ft  
 Stop depth: 420 ft  
 Recovery: 7.45 ft  
 Date: 5/14/02  
 Described by: KGM

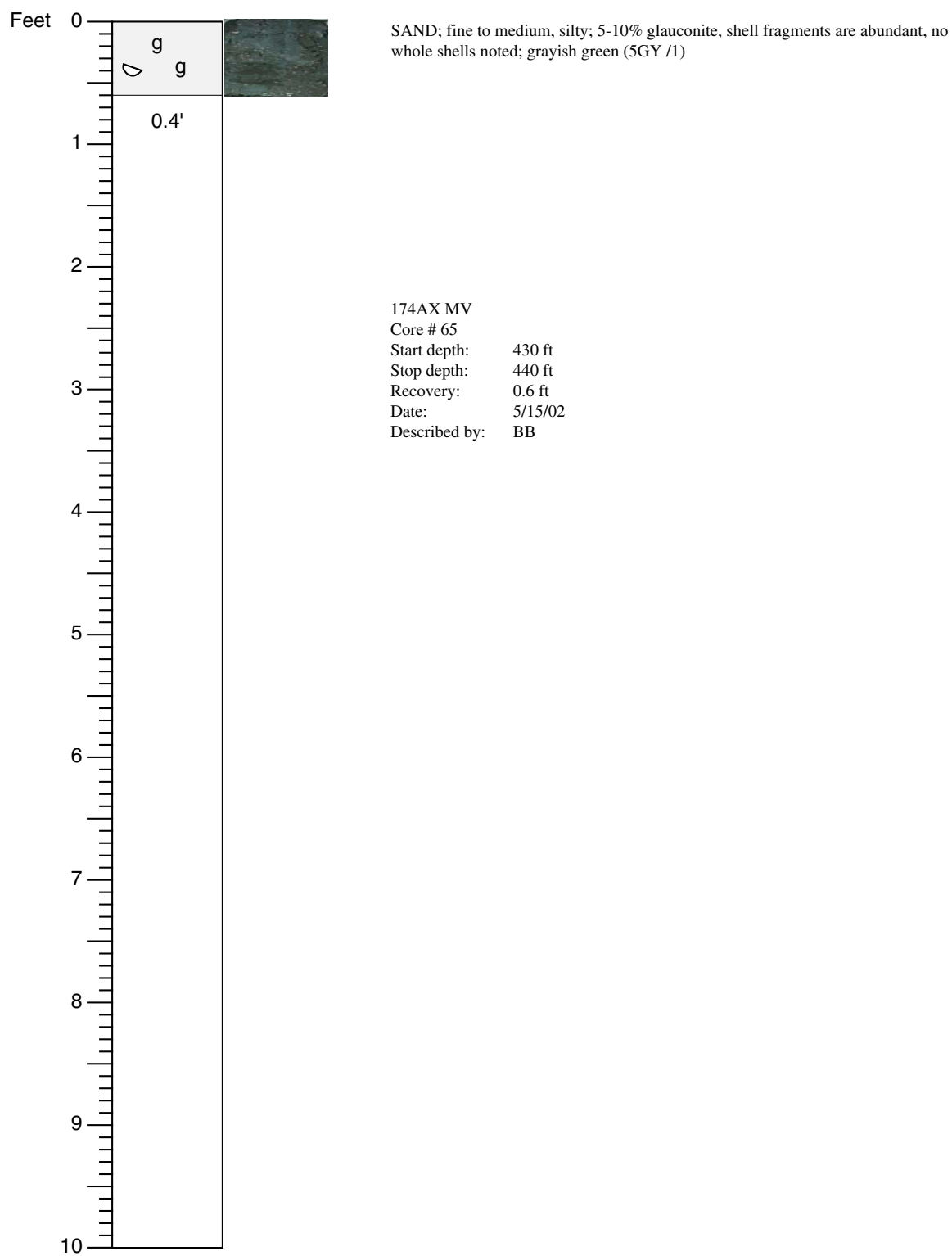


## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

174AX MV  
Core # 64  
Start depth: 420 ft  
Stop depth: 430 ft  
Recovery: 10.1 ft  
Date: 5/15/02  
Described by: JVB

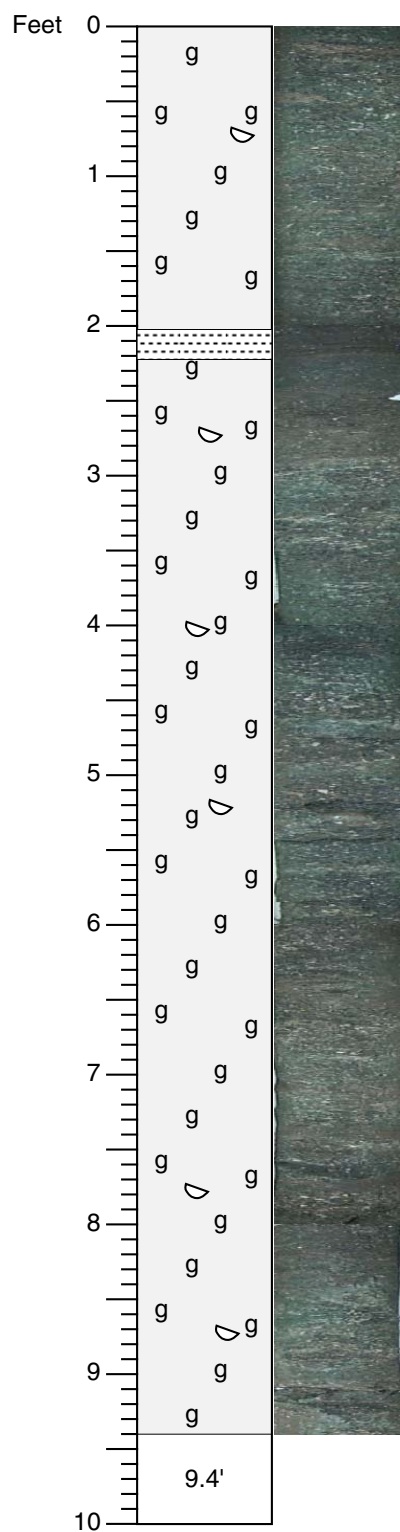
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

66



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

67

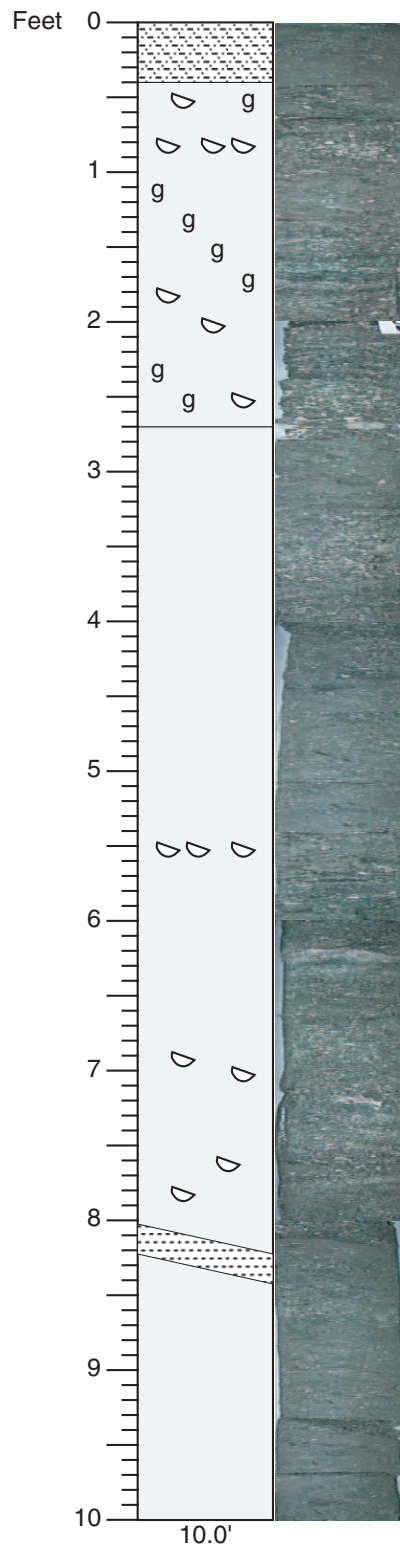


SAND; fine to very coarse, slightly silty; poorly sorted; 5-10% glauconite, shelly, some thin clay zones, 20-50 mm thick; pectenid shells; clay: dark grayish brown (2.5Y 4/2), glauconite: black (N2.5/)

174AX MV  
 Core # 66  
 Start depth: 440 ft  
 Stop depth: 450 ft  
 Recovery: 9.4 ft  
 Date: 5/15/02  
 Described by: PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

68



SAND; fine to medium; very fine glauconite, shell fragments

SAND; coarse, medium-grained glauconite; poorly sorted, subangular; glauconite enrichment at 1.3 and 2.0 ft; shell concentration at 0.8 and 2.3 ft

?channel base

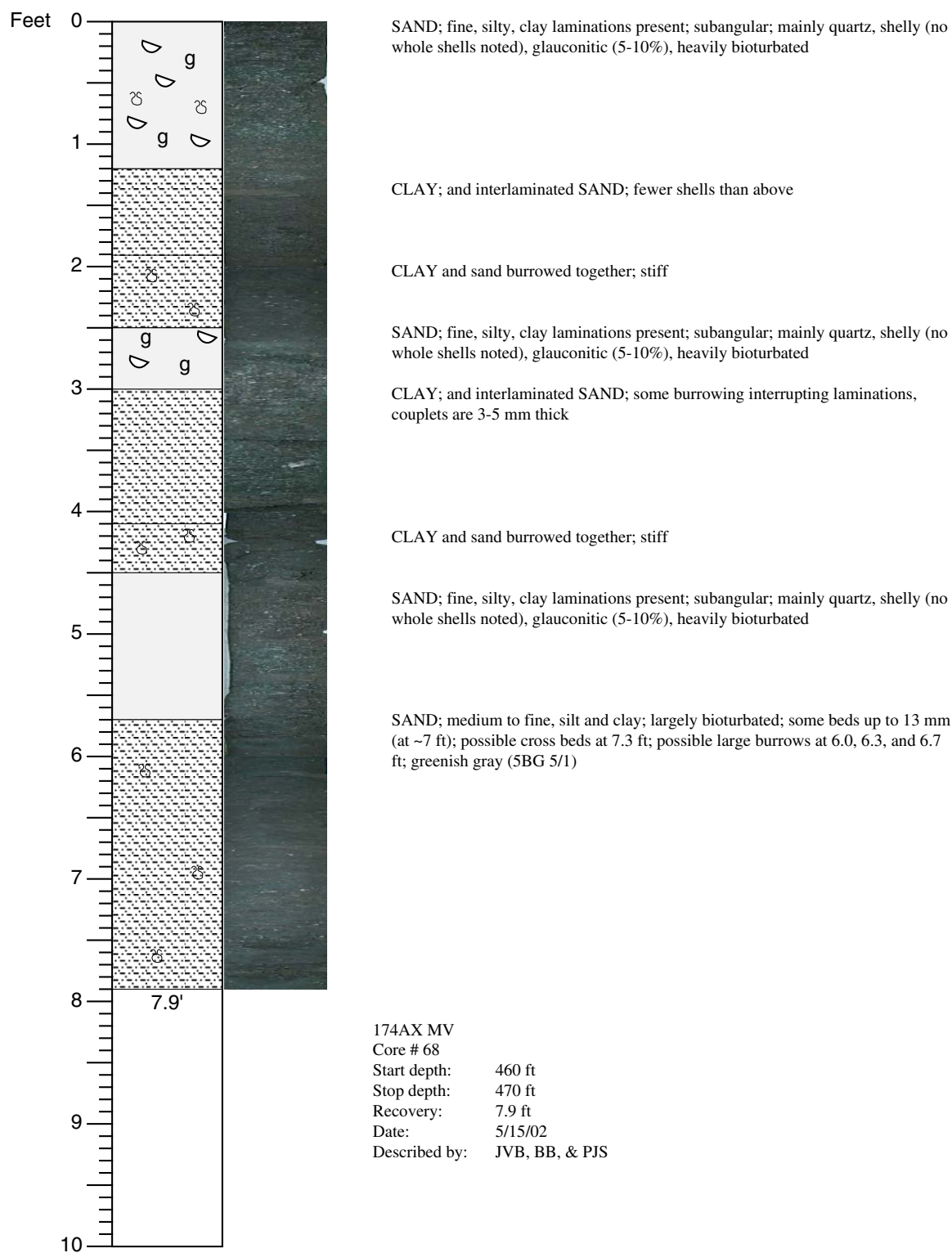
CLAY; heavily burrowed

SAND; clayey; heavily bioturbated; shells, shell fragments and medium glauconite appear below 5.3 ft; sand is finer with more clay below clay bed at 8.2 ft; greenish gray (5BG 5/1)

174AX MV  
 Core # 67  
 Start depth: 450 ft  
 Stop depth: 460 ft  
 Recovery: 10.0 ft  
 Date: 5/15/02  
 Described by: BB

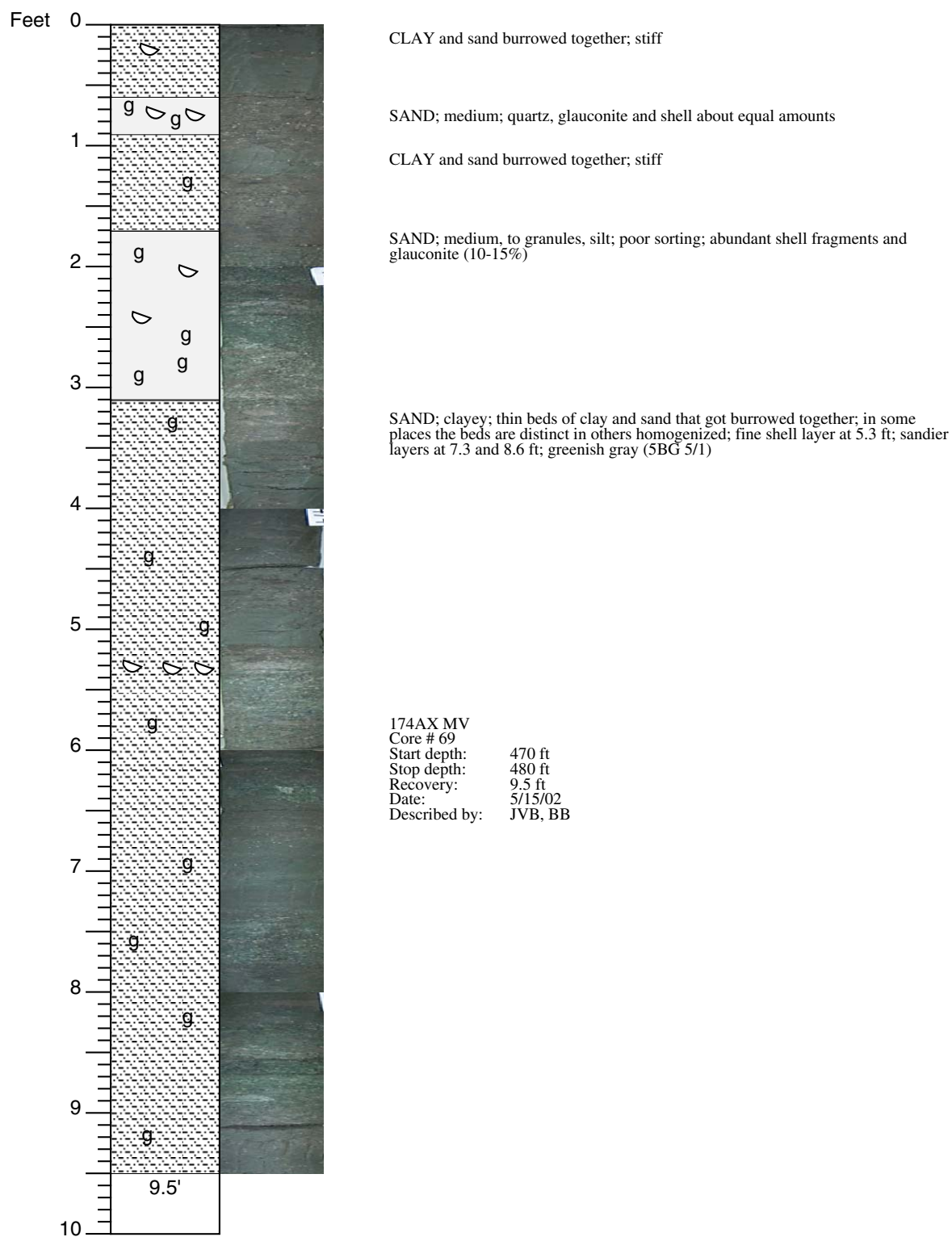
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

69



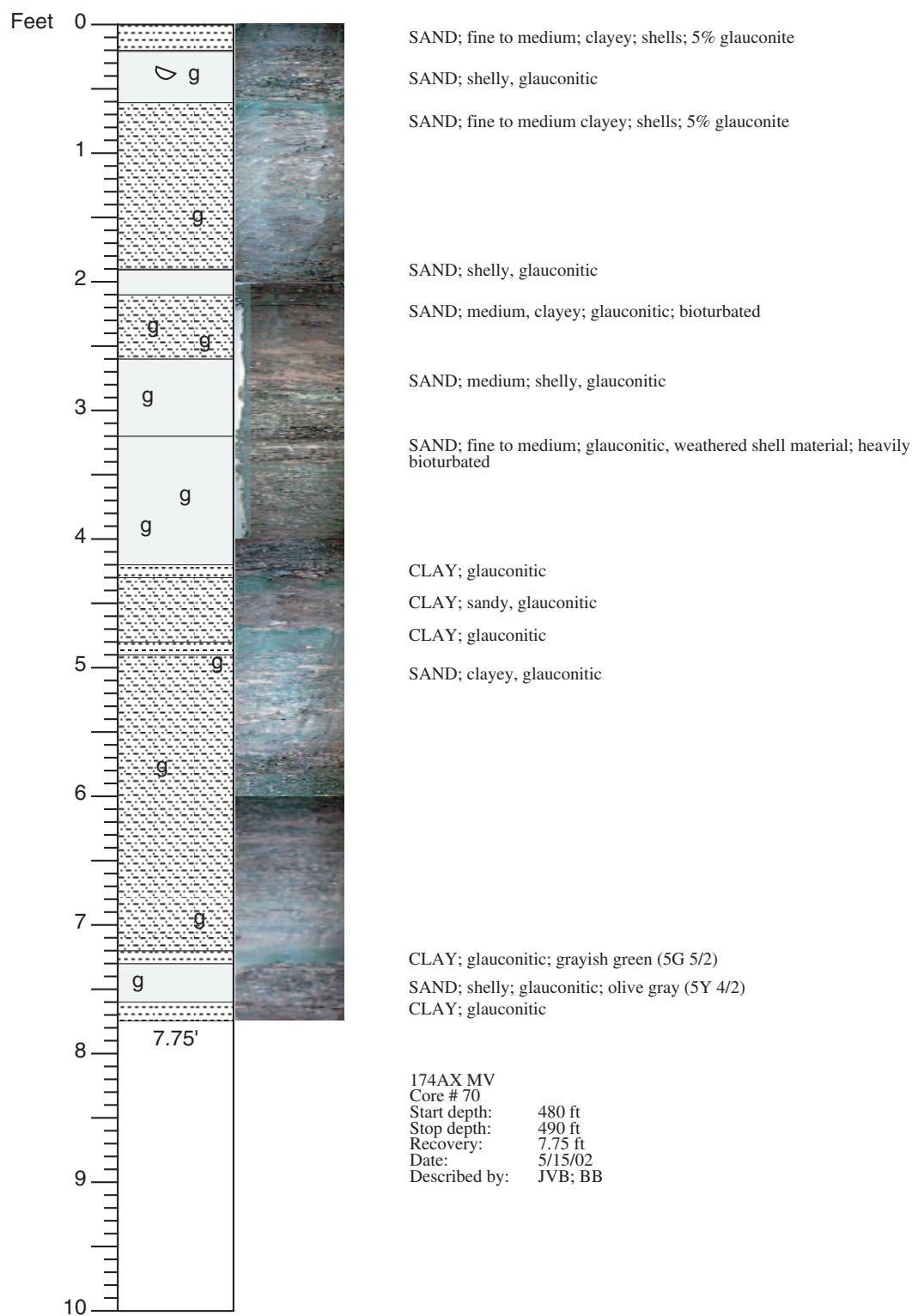
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

70



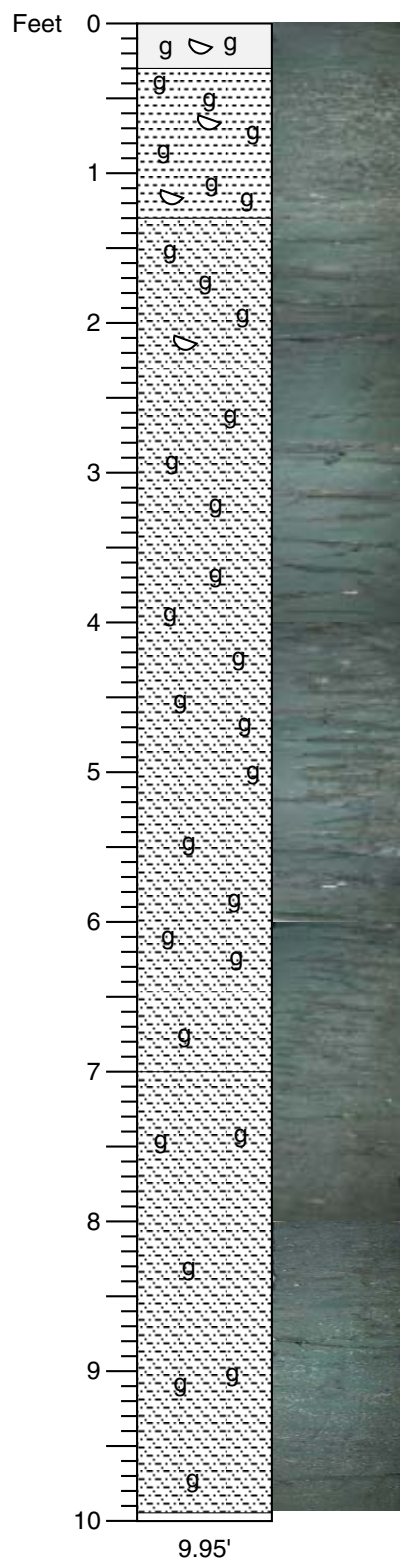
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**71**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

72



SAND; clayey; glauconitic

CLAY; interbedded with quartz glauconite SAND; slightly shelly, heavily bioturbated; quartz is medium; glauconite is fine; grayish green (5G 4/2)

SAND; clayey; glauconitic; with thin quartz-glauconite sand laminae (laminae have less clay)

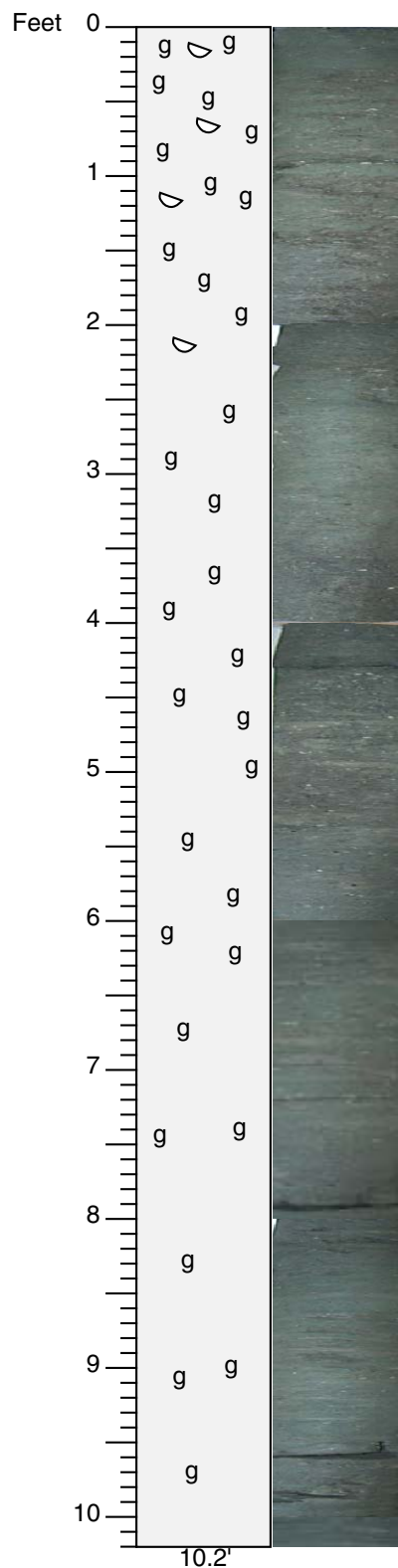
CLAY; quartz and glauconite sand; occasional clay laminae

174AX MV  
 Core # 71  
 Start depth: 490 ft  
 Stop depth: 500 ft  
 Recovery: 9.95 ft  
 Date: 5/16/02  
 Described by: KGM, ER



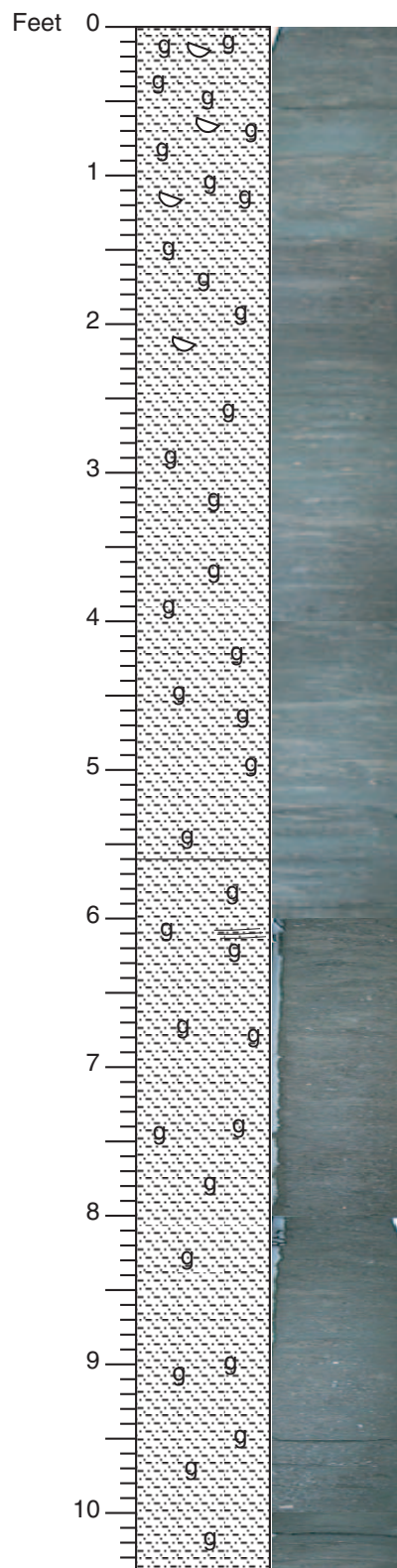
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

73



SAND; clayey, shelly, glauconitic, heavily bioturbated; below 4.6 ft laminae and burrows are more common; may be fining downward; grayish green (5GY 4/2)

174AX MV  
 Core # 72  
 Start depth: 500 ft  
 Stop depth: 510 ft  
 Recovery: 10.2 ft  
 Date: 5/16/02  
 Described by: KGM



SAND; clayey; quartz (medium), glauconite (fine); heavily bioturbated; some cross laminations but are broken by bioturbation; clay increases slightly downward

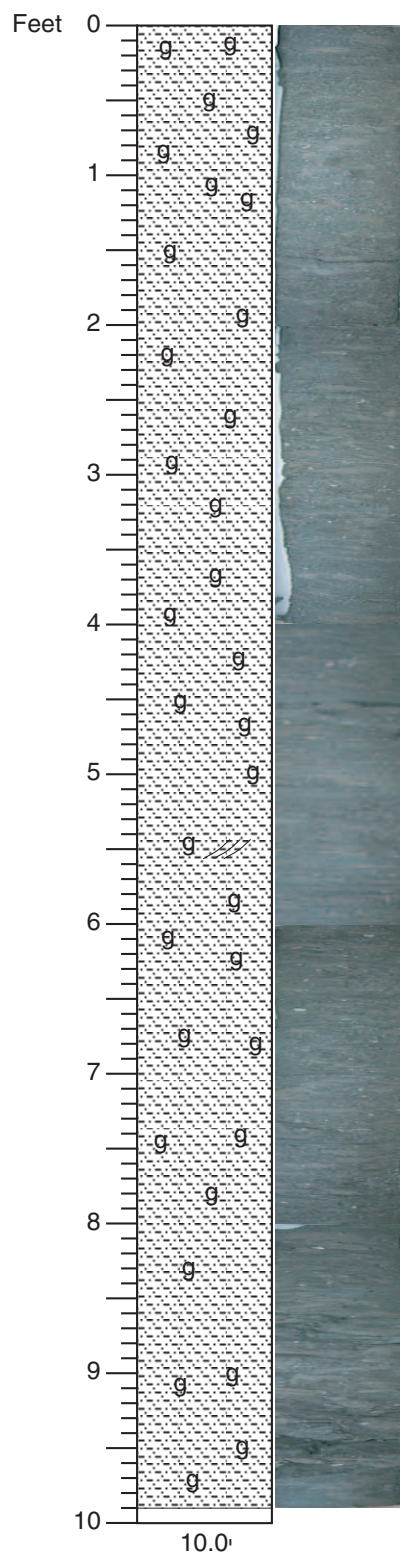
CLAY; sandy; heavily bioturbated; similar to above but with increased clay content; dark greenish gray (10GY 3/1)

174AX MV  
 Core # 73  
 Start depth: 510 ft  
 Stop depth: 520 ft  
 Recovery: 10.4 ft  
 Date: 5/16/02  
 Described by: BB, ER, KGM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

75



CLAY; silty glauconitic; interbedded with SAND; clayey, glauconitic, quartzose; 15% glauconite; heavily bioturbated; some cross laminations preserved, especially 3.3-3.7, and 5.3-5.7 ft; at 8.2 is a possible erosional surface, sand fraction increases; dark greenish gray (10GY 3/1)

174AX MV  
Core # 74  
Start depth: 520 ft  
Stop depth: 530 ft  
Recovery: 10 ft  
Date: 5/16/02  
Described by: BB, ER, KGM

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

Feet 0

1

2

3

4

5

6

7

8

9

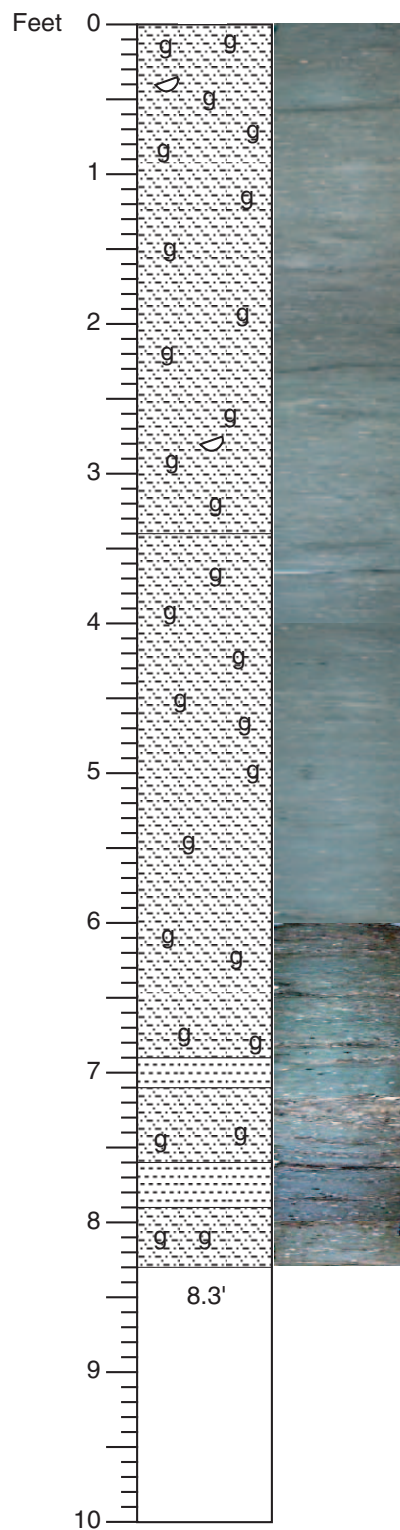
10

10.2'

174AX MV  
Core # 75  
Start depth: 530 ft  
Stop depth: 540 ft  
Recovery: 10.2 ft  
Date: 5/16/02  
Described by: BB, ER, KGM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

77



SAND; clayey; quartz, shelly, glauconite; heavily bioturbated, clay laminae broken by bioturbation; clay layers at 6.9-7.1, 7.6-7.9 ft; dark greenish gray (10GY 4/1)

SAND; clayey; quartz, glauconite; interbedded with SAND; very clayey; quartz, glauconite

CLAY  
Interbeds; as above

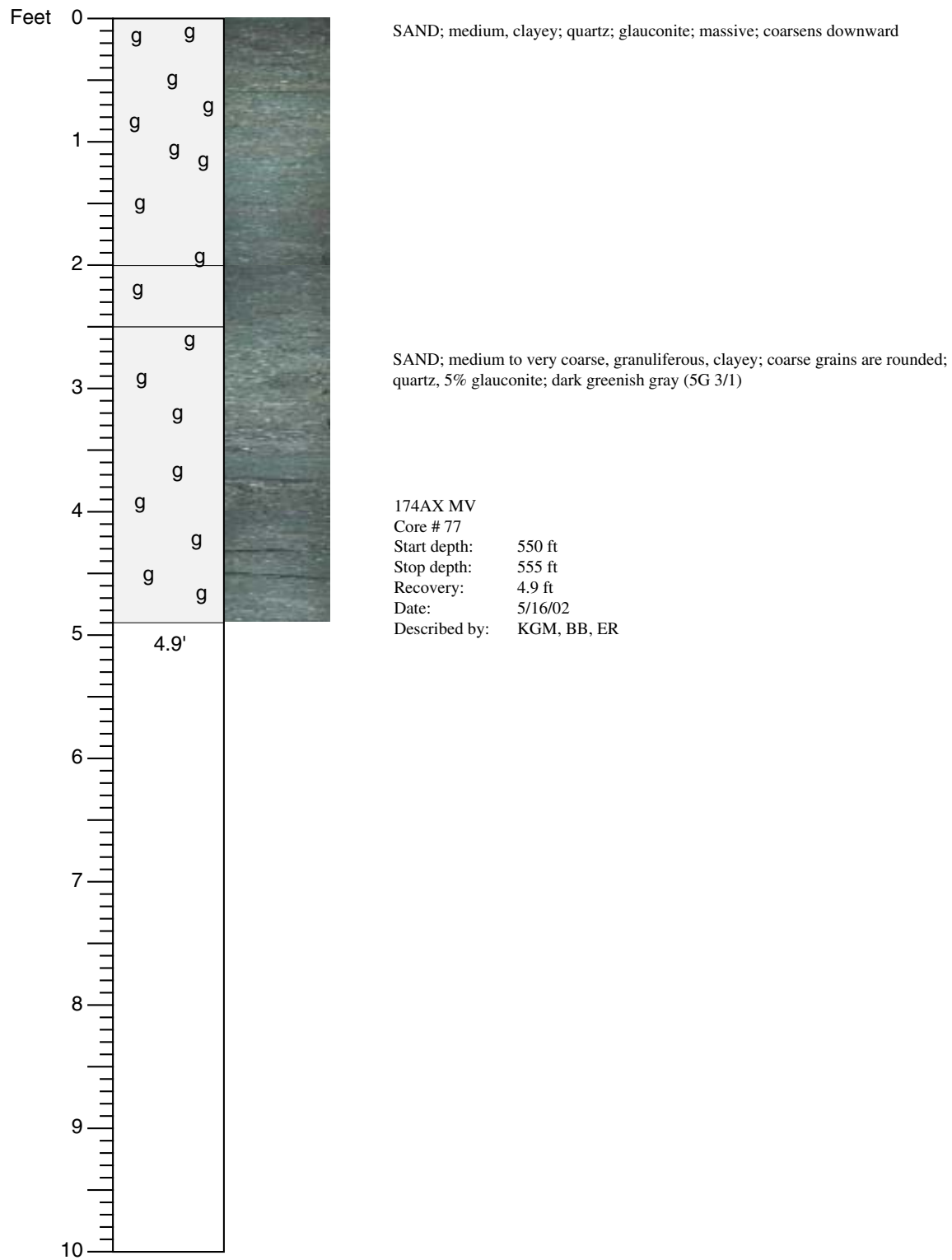
CLAY  
Interbeds; as above

174AX MV  
Core # 76  
Start depth: 540 ft  
Stop depth: 550 ft  
Recovery: 8.3 ft  
Date: 5/16/02  
Described by: KGM, BB, ER

## CORE DESCRIPTIONS

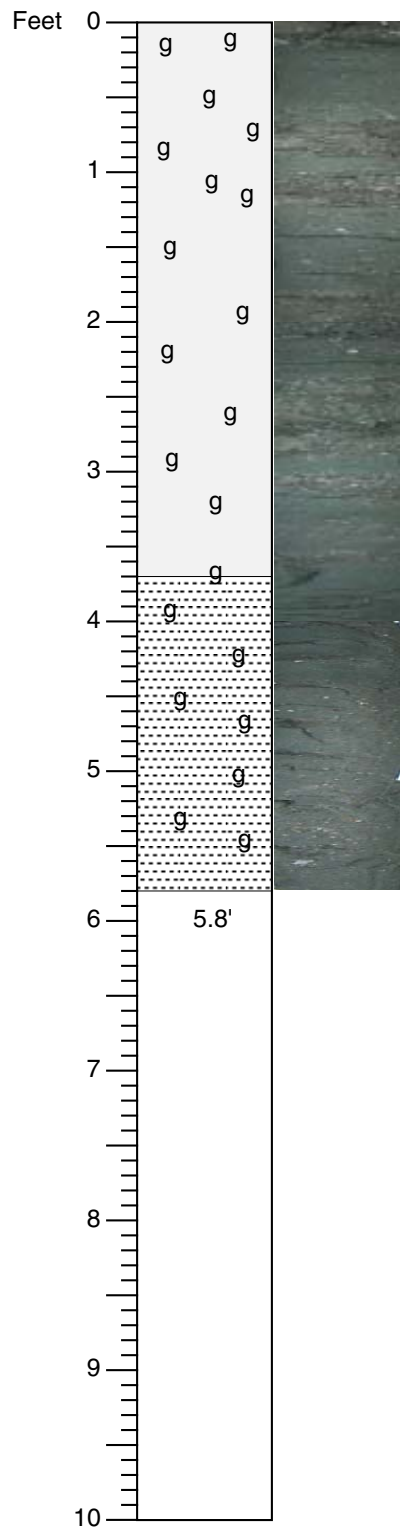
## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

78



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

79



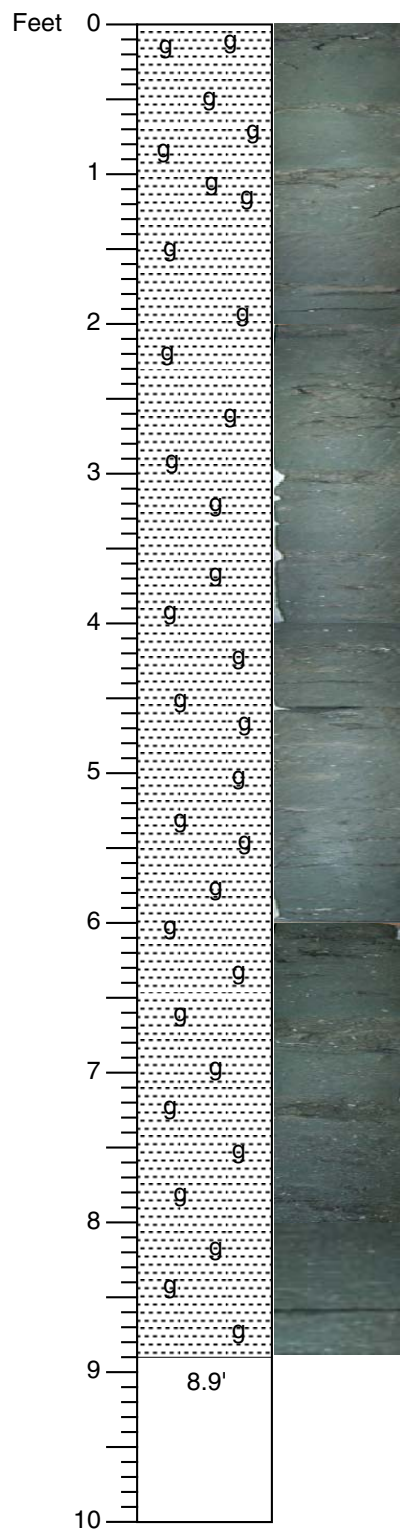
SAND; medium to very coarse, granulariferous, clayey; quartz, 25% glauconite; massive; interbedded with CLAY; sandy; quartz; slightly glauconitic; greenish gray (SGY 4/1)

CLAY; sandy; uniform, no interbeds; dark greenish gray (10GY 3/1)

174AX MV  
 Core # 78  
 Start depth: 555 ft  
 Stop depth: 560 ft  
 Recovery: 5.8 ft  
 Date: 5/16/02  
 Described by: KGM, BB, ER

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

80



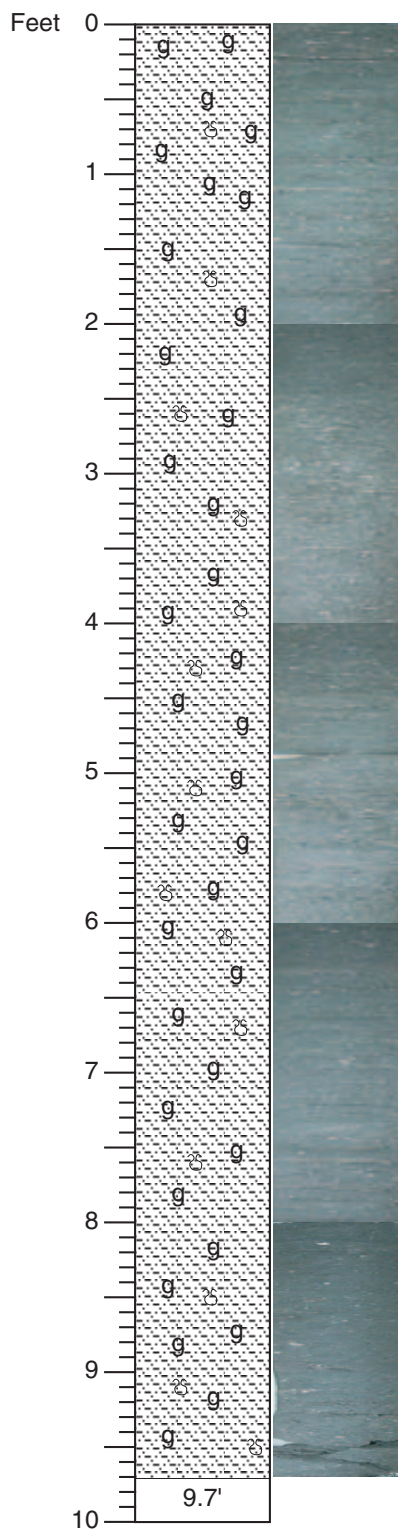
CLAY; very sandy; slightly shelly, 15% glauconite; burrowed to massive bedding; sandier zones at: 0.6-0.65, 1.0-1.05, 1.75-1.8, 3.0-3.1, 3.55-3.6, 4.2-4.25, 6.1-6.3, 6.6-6.85, 7.2-7.3; dark greenish gray (5GY 4/1)

174AX MV  
 Core # 79  
 Start depth: 560 ft  
 Stop depth: 570 ft  
 Recovery: 8.9 ft  
 Date: 5/16/02  
 Described by: KGM, BB, ER



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

81



SAND; medium, some intervals with more coarse; moderate sorting, subangular-subrounded; silty, clayey; mostly quartz; ~25% glauconite, mostly fine, subrounded –rounded; common shell debris, mostly in the coarse sand range, a few nearly whole shells; burrows, slightly clayier, 8-10 mm diameter, horizontal-subhorizontal; burrows: dark grayish brown (2.5Y 4/2), silty sand: dark greenish gray (GLEY1 5GY 3/1)

**Variations:**

0-0.3 ft: slightly coarser, 15-20% shell;

0.3-2.0 ft: less coarse sand and shell fragments; mostly ~10% shell with some zones with more

2.0-4.5 ft: gradational change; more coarse sand and shell fragments, generally homogenous, 30-40% shell debris, mostly bivalve fragments(?), lacks clear burrows and laminae

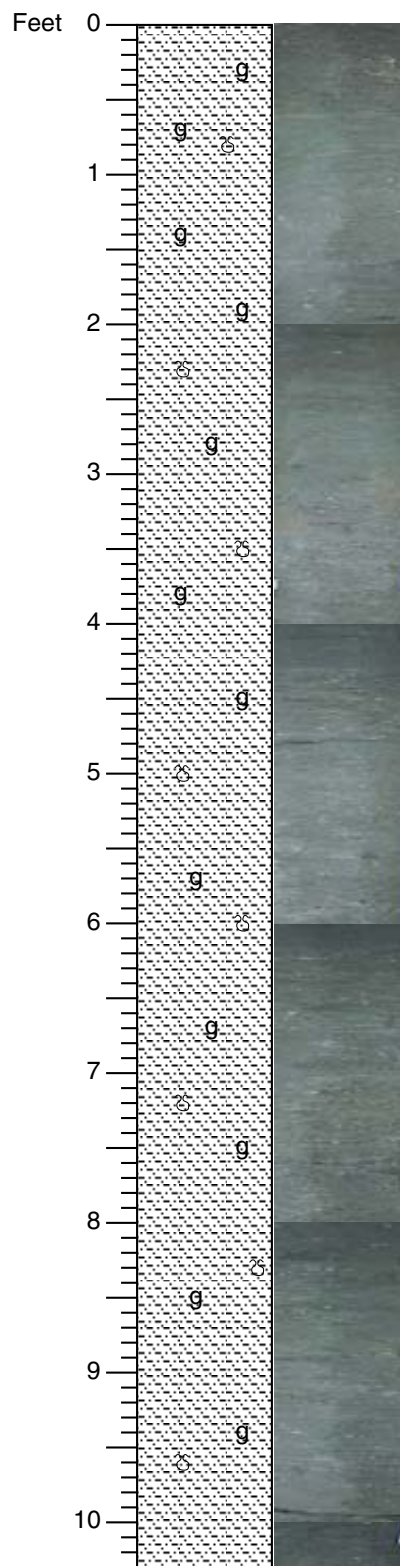
4.5-7.9 ft: scattered coarse sand and shell fragments, ~10%; small shells at 5.2, 6.1 and 7.5 ft

7.9-9.7 ft: less coarse sand and shell fragments

174AX MV  
 Core # 80  
 Start depth: 570 ft  
 Stop depth: 580 ft  
 Recovery: 9.7 ft  
 Date: 5/17/02  
 Described by: PPM, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

82



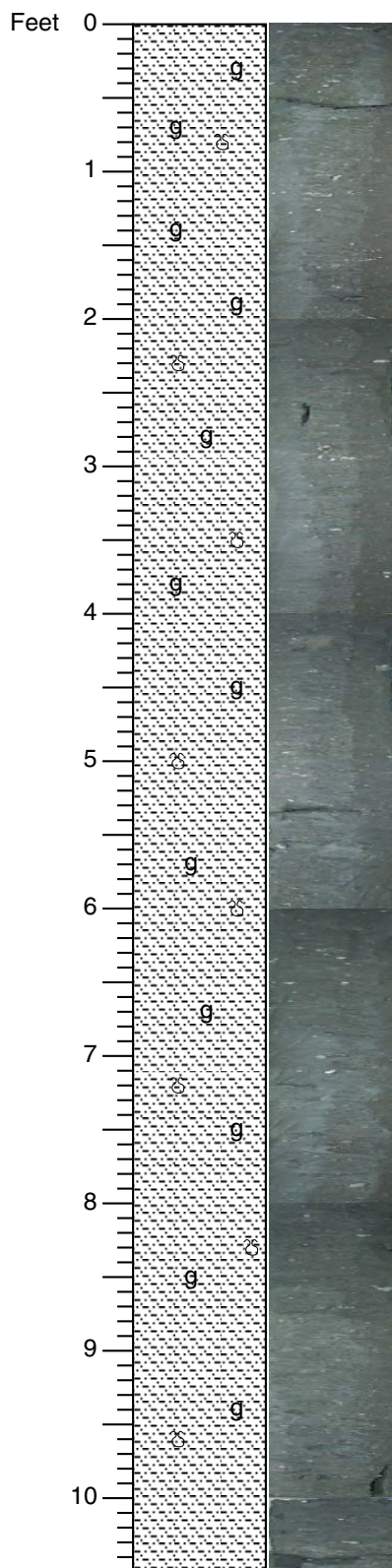
SAND; medium, rare coarse grains, silty, clayey, some variability; mostly quartz, subangular-subrounded; 15-20% glauconite, fine, subrounded-rounded; 1-3% mica, fine; scattered lignitic fragments (1.9, 2.9 ft), scattered medium-coarse shell fragments, mostly <5%, few concentrations of ~10% @ 0.3-0.4, ~4.4, 6.3-6.4, 7.1, 7.5, 10.0-10.3 ft; mostly homogenous, scattered indistinct burrows @ 2.4, 4.5, 7.2, 8.2, 8.8 ft; faint banding at scale of 1-3 cm, variable clay; silt and sand: dark greenish gray (GLY1 10Y 3/1); burrows: very dark gray (5Y 3/1)

174AX MV  
 Core # 81  
 Start depth: 580 ft  
 Stop depth: 590 ft  
 Recovery: 10.3 ft  
 Date: 5/17/02  
 Described by: PPM, BB

10.3'

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

83

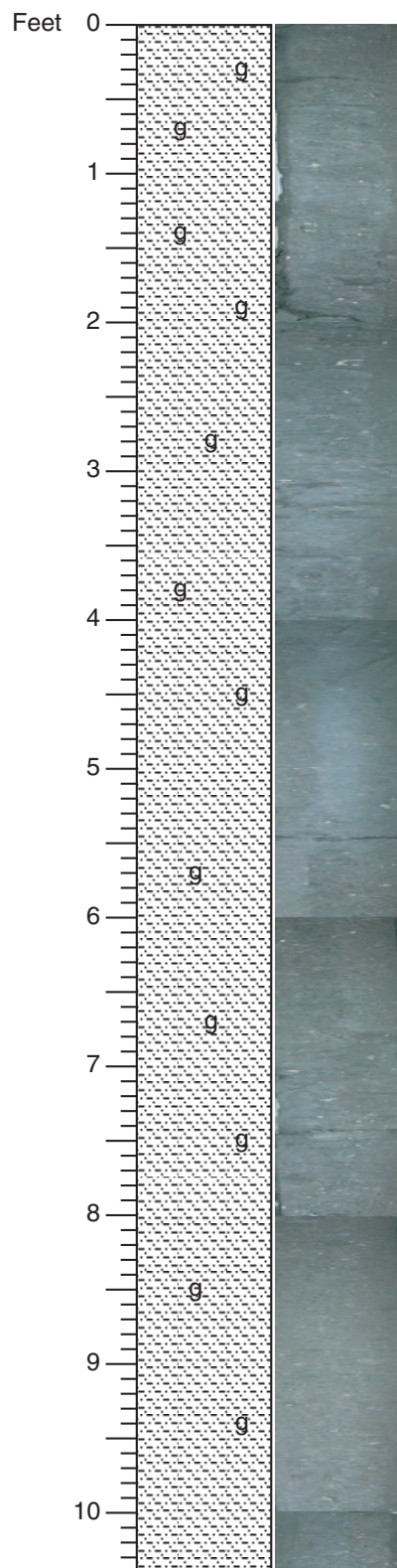


SAND; silty, clayey in places; mostly quartz, mostly medium, some coarse, subangular, moderately well sorted; 20-25% glauconite, mostly fine, well rounded; below 1 ft have thin bands of clayier sand, 3-10 mm thick, every 1-2 cm; scattered shells and shell fragments, up to 10%, often chalky; some burrows evident (4.3, 4.7 ft); 10 x 6 mm subrounded fragments of dark phosphate (?) at 1.9 ft; micaceous throughout (1-2%), larger shell fragments (0.5-1.5 cm) @ 1.0, 1.1, 1.6, 2.3, 2.9, 3.4 ft, concentration at 5.1, 5.5 ft; slight concentration at 7.6 ft

174AX MV  
 Core # 82  
 Start depth: 590 ft  
 Stop depth: 600 ft  
 Recovery: 10.5 ft  
 Date: 5/17/02  
 Described by: PPM, BB

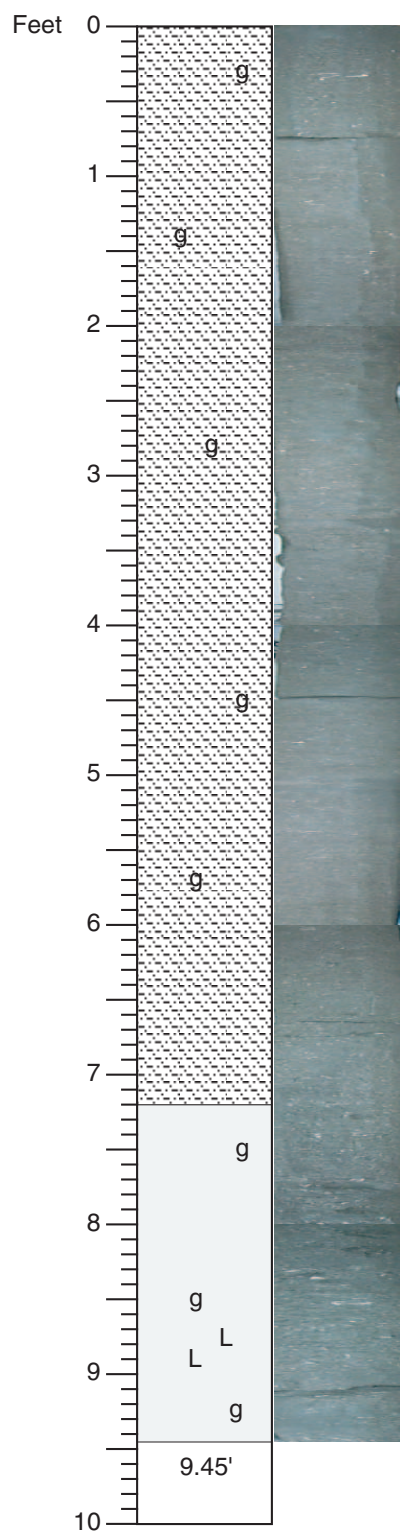
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**84**



SAND; mostly quartz, subangular, moderate sorting, mostly medium, some fine and coarse; silty and clayey near top, very silty and clayey toward bottom; 15-20%, glauconite very fine to fine; some alternating bands reflecting variable silt/clay content from 0.5-3.3 ft, some clay blebs; scattered shell debris, frequently larger pieces are whitish and chalky, shell fragments (medium to coarse) are up to 40% in lower part and little less in upper part; generally homogenous, no distinct burrows or bedding; top: dark greenish gray (GLE Y 10Y 3/1); bottom: dark olive gray (5Y 3/2)

174AX MV  
 Core # 83  
 Start depth: 600 ft  
 Stop depth: 610 ft  
 Recovery: 10.4 ft  
 Date: 5/17/02  
 Described by: PPM, BB



SAND, clayey, silty, moderately to well sorted; 40% quartz, medium to slightly coarse, subangular; 40%, shell, 20% subrounded glauconite, micaceous; fining upward succession from medium to fine toward the top; 1-3 mm clay laminae between 1.2-5 ft; at 6-7 ft sand becomes medium; olive gray (5Y4/2)

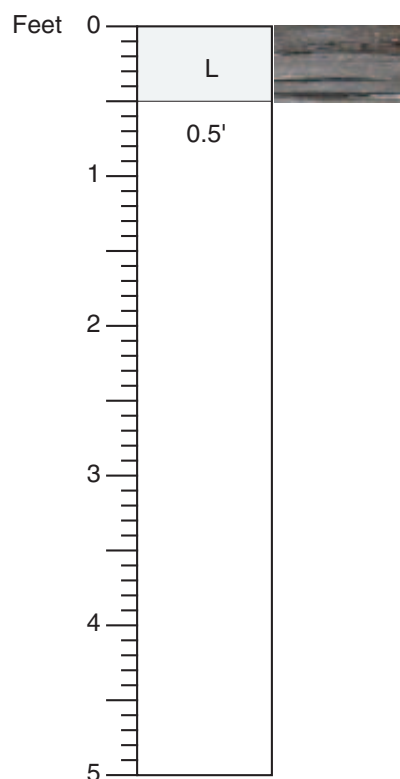
Gradational contact

SAND; medium quartz, rare coarse; larger shell fragments, 15-20% size, this part is softer than above with less clay/silt matrix; dark greenish gray (GLE 1 10Y 3/1)

174AX MV  
 Core # 84  
 Start depth: 610 ft  
 Stop depth: 620 ft  
 Recovery: 9.45 ft  
 Date: 5//02  
 Described by: PPM, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**86**



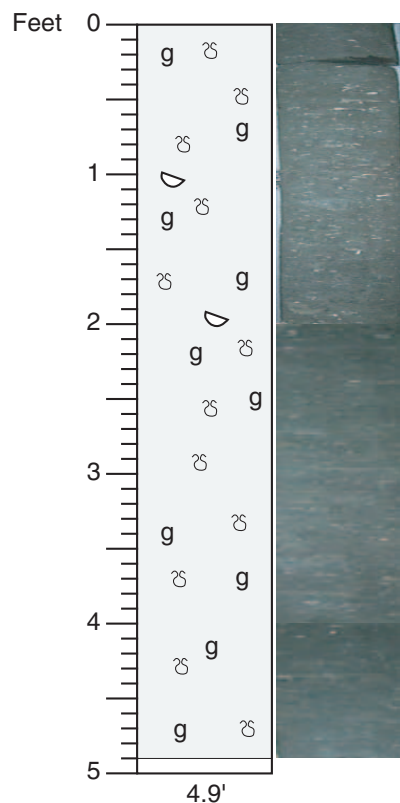
SAND; hard but can be cut with fingernail; quartz, fine to medium, subangular; 15-20% fine glauconite, subrounded to rounded; ~20% shells; a few scattered coarse, subangular-subrounded quartz grains; clay/silt matrix; lignite fragment; dark gray ?shale chip (does not look like shell; a few reddish grains; dark greenish gray) (GLEY 1 10Y 3/1)

174AX MV  
 Core # 85  
 Start depth: 620 ft  
 Stop depth: 625 ft  
 Recovery: 0.5 ft  
 Date: 5/17/02  
 Described by: PPM, BB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

87



SAND; heavily burrowed; quartz, fine to medium, scattered coarse and very coarse throughout, subangular; glauconite, fine, subrounded; common shells, including corals (up to 2 cm), bivalves, large foraminifers (including *Lenticulina*), shells and quartz decreases down, burrows and glauconite increase down; in upper part, more quartz than glauconite (~50% quartz, ~25% glauconite, ~25% shell); in lower part sand is ~60% silt/clay is ~40%; sand is ~60% glauconite, ~20% quartz, ~20% shell; sand: dark greenish gray (GLEY 1 10Y 3/1); burrows are dark olive gray (5Y 3/2)

174AX MV

Core # 86

Start depth: 625 ft

Stop depth: 630 ft

Recovery: 4.9 ft

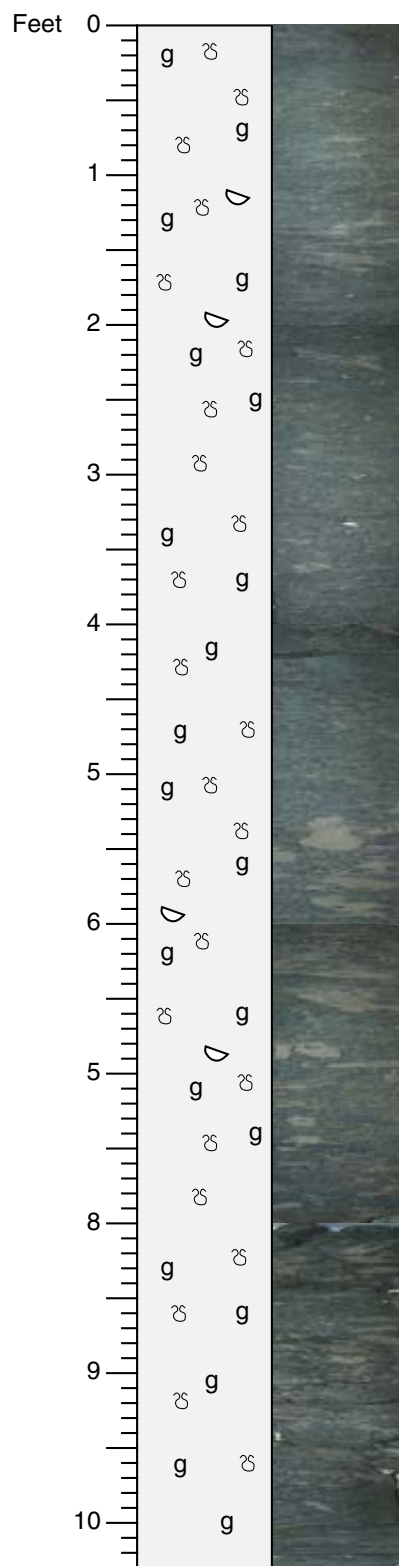
Date: 5/17/02

Described by: PPM, BB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

88



SAND; clayey; mainly glauconite (~70%), medium; quartz pebbles and granules are common; scattered shells and foraminifers including *Lenticulina*; clay lined and sand filled burrows are common, 5 mm to 2 cm diameter, subvertical to subhorizontal, burrow fill is mostly clay/quartz silt, burrows are larger and more conspicuous below 5.3 ft; hard dark phosphate pebble at 1.2 ft; light green grains/blebs/lenses 0.5 to 2 mm scattered throughout core but more common below 7 ft

174AX MV  
Core # 87  
Start depth: 630 ft  
Stop depth: 640 ft  
Recovery: 10.3 ft  
Date: 5/17/02  
Described by: PPM, BB, JVB

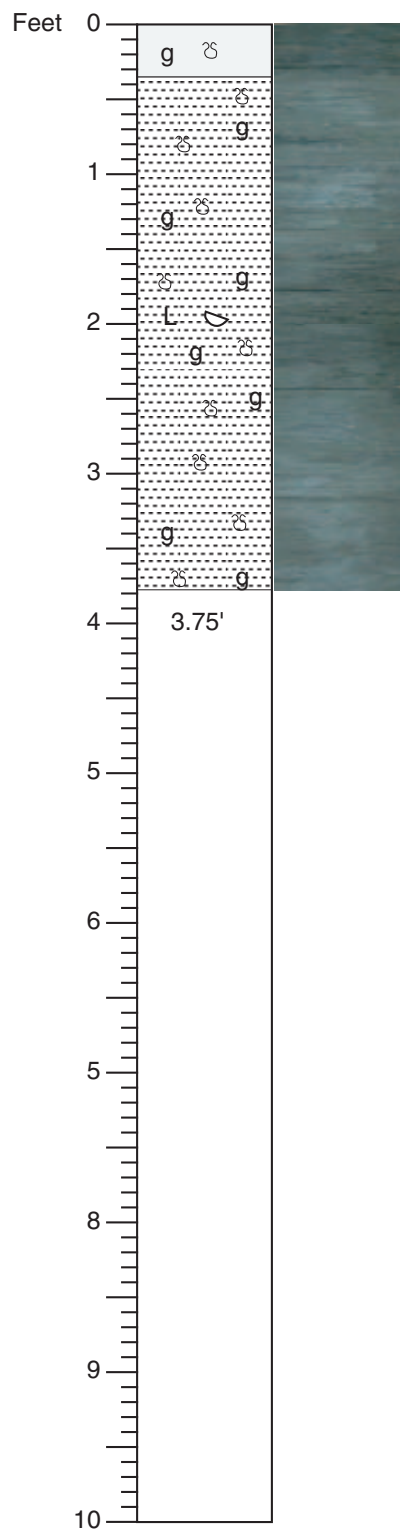
10.3'



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

89



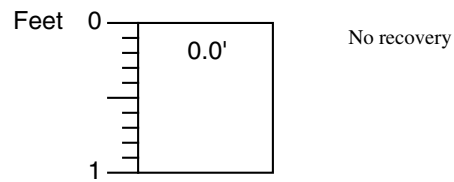
SAND; 60-70% glauconite, medium, some sand-sized shell fragments, minor (<10%) quartz sand, fine; large (>2 cm) coral fragment; same lithology as the bottom of the previous core; 2 cm silty/clay lined burrows; pebble at 0.25 ft; dark grayish brown (2.5Y 4/2)

CLAY; silty heavily burrowed; shells and shell fragments (including corals, foraminifers); burrow fill includes abundant glauconite sand, mostly medium, some quartz sand; one burrow at 0.45 ft includes pyritized silty fill; lignite/woody fragment at 2.0 ft; clays where not broken by burrows look laminated; still fairly dry core; overall glauconite decreases downward except for more glauconitic zone from 1.5-2.0 ft; dark greenish gray (10Y4/1)

174AX MV  
Core # 88  
Start depth: 640 ft  
Stop depth: 650 ft  
Recovery: 3.75 ft  
Date: 5/17/02  
Described by: PPM, BB, JVB

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

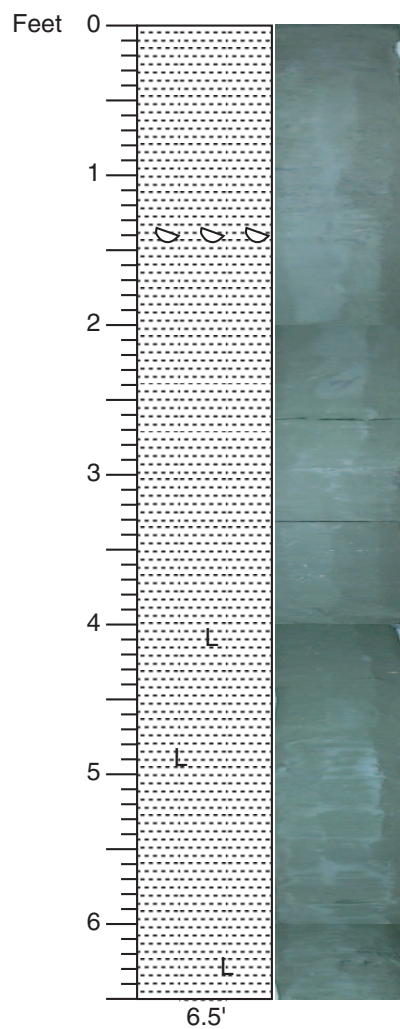
90



174AX MV  
Core # 89  
Start depth: 650 ft  
Stop depth: 651 ft  
Recovery: 0 ft  
Date: 5/18/02  
Described by: JH, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**91**

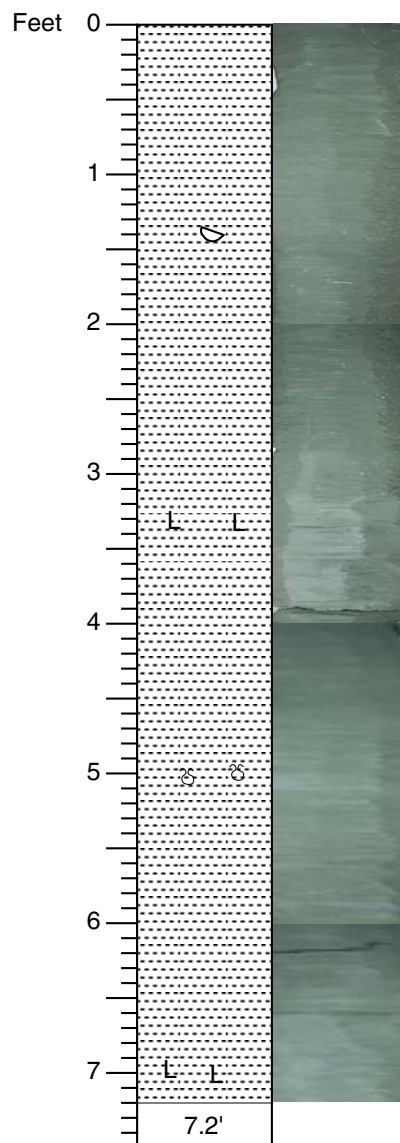


CLAY; slightly silty; glauconitic, glauconite decreases downward; fine shell hash and rare lignite; larger lignite chunk at 6.3; sand layer at 3.9 ft; weathered iron nodule at 4.4 ft; shells at 1.3-1.4 ft; (GLEY 1 5G 5/2)

174AX MV  
 Core # 90  
 Start depth: 651 ft  
 Stop depth: 657.5 ft  
 Recovery: 6.5 ft  
 Date: 5/?/02  
 Described by: JH, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

92



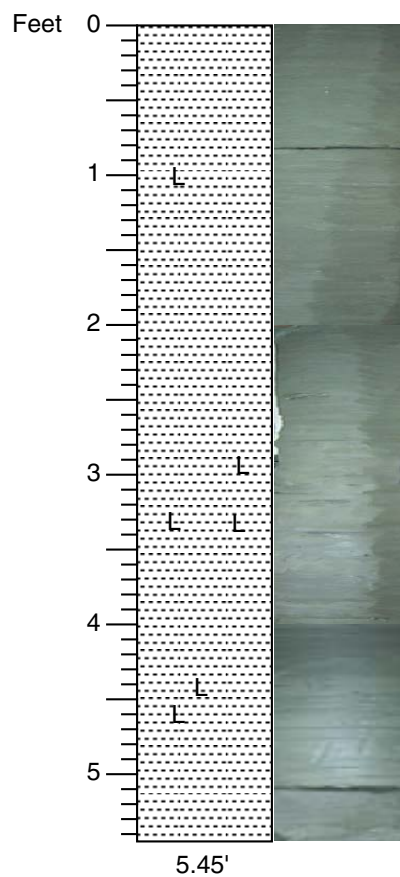
CLAY; rare lignite (3.3 ft), burrows (5.0 ft) and shells (1.5 ft), 1% glauconite;  
 (GLEY 1 5G -6.2 5/2)

NOTE: banding on the core may be due to injected drilling mud because of high  
 mud pressures

174AX MV  
 Core # 91  
 Start depth: 657.5 ft  
 Stop depth: 665 ft  
 Recovery: 7.2 ft  
 Date: 5/18/02  
 Described by: JH, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**93**

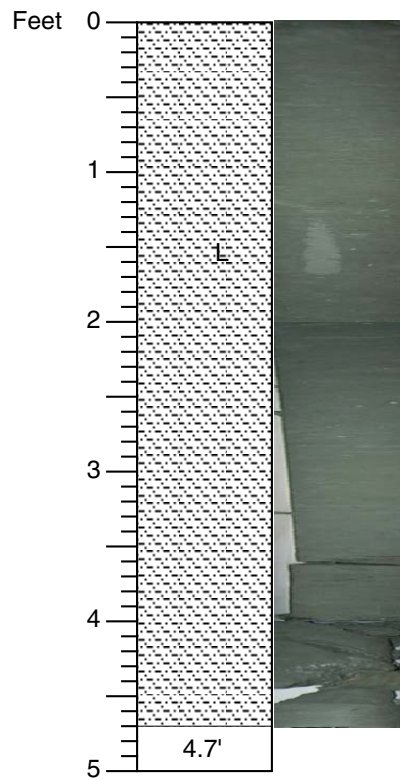


CLAY; with occasional bands of lignite; (GLEY 1 10GY 5/1)

174AX MV  
Core # 92  
Start depth: 665 ft  
Stop depth: 670 ft  
Recovery: 5.45 ft  
Date: 5/18/02  
Described by: JH, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**94**

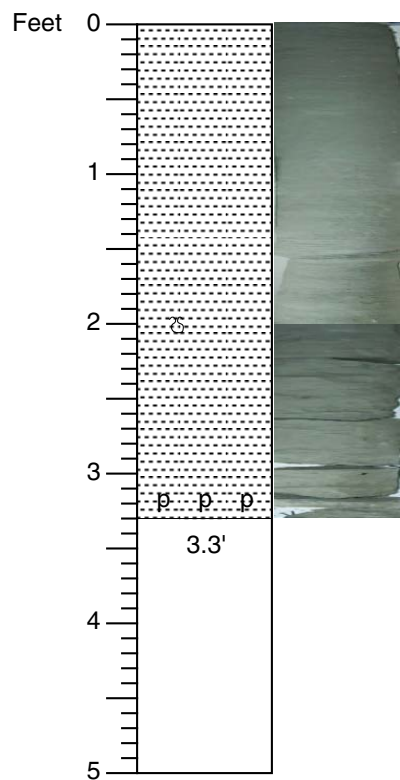


SILT; uniform; 1-2% very fine glauconite sand; small percent clay; appears massive, may have slight laminations; dark greenish gray (GLEY 1 5GY 4/)

174AX MV  
Core # 93  
Start depth: 670 ft  
Stop depth: 675 ft  
Recovery: 4.7 ft  
Date: 5/19/02  
Described by: BPL

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**95**

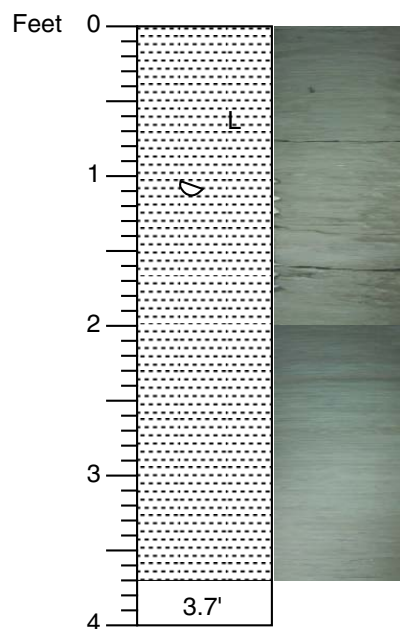


CLAY; uniform, massive core; interbeds of clay around 5 mm; burrow at 2 ft; porcellanite at the bottom (drilling was significantly harder); dark greenish gray (GLEY 1 5GY 4/)

174AX MV  
 Core # 94  
 Start depth: 675 ft  
 Stop depth: 680 ft  
 Recovery: 3.3 ft  
 Date: 5/19/02  
 Described by: BPL

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

96



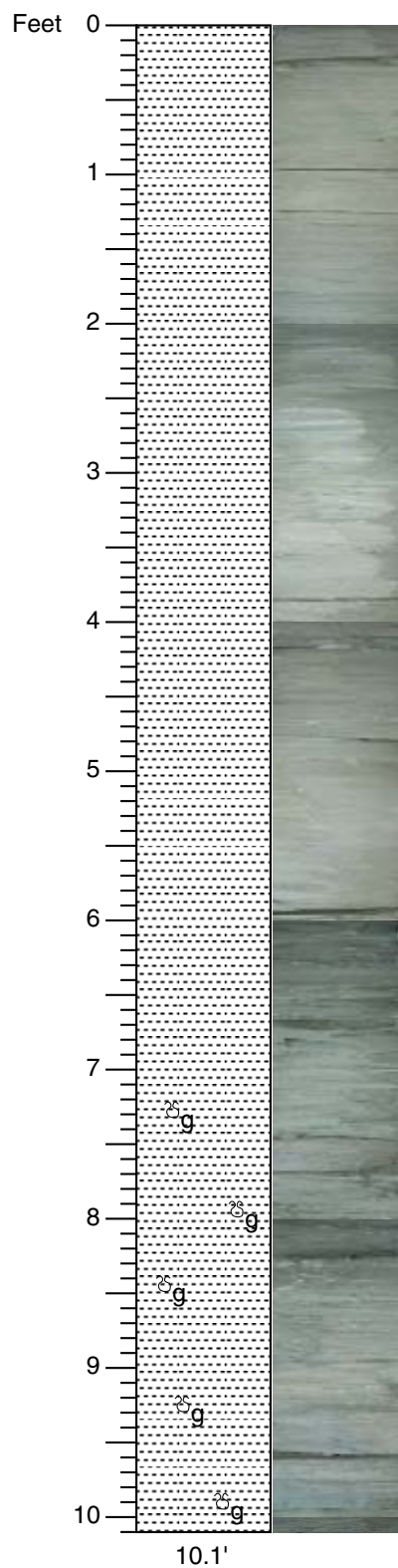
CLAY; laminated to thin bedded with silty clay; some shell and lignite; no porcellanite; 2-3% glauconite; dark greenish gray (GEY 1 5GY 4/)

174AX MV  
 Core # 95  
 Start depth: 680 ft  
 Stop depth: 684 ft  
 Recovery: 3.7 ft  
 Date: 5/19/02  
 Described by: PJS, BPL



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

97

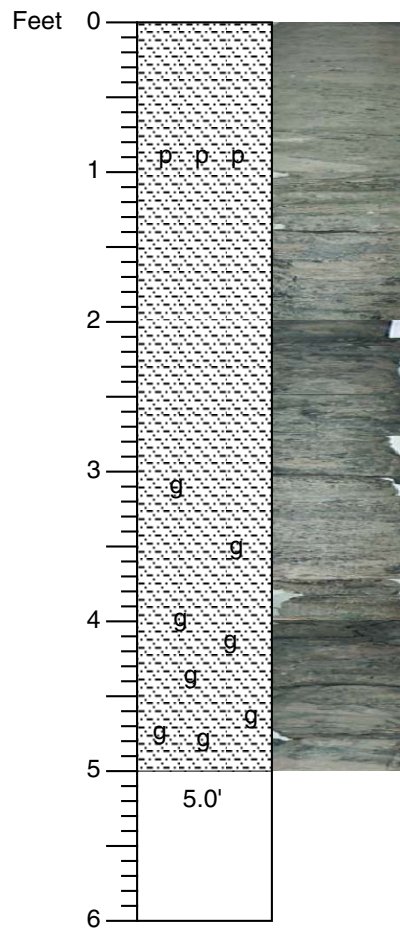


CLAY; silty, massive to slightly laminated; glauconite increases with depth (to 3-4%); glauconite burrows common in the lower 2-3 ft of core; greenish gray (GEY 1 5GY 5)

174AX MV  
Core # 96  
Start depth: 684 ft  
Stop depth: 694 ft  
Recovery: 10.1 ft  
Date: 5/19/02  
Described by: PJS, BPL

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

98

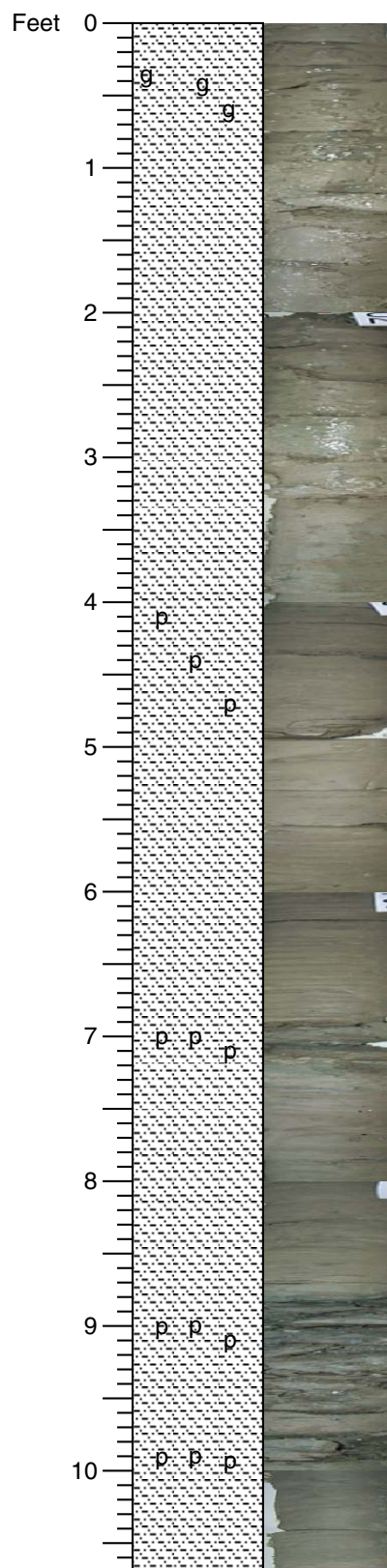


SILT; slightly clayey; glauconite increases toward the bottom (to 15-20%);  
indurated zone at 4.2 ft; greenish gray (GLEY 1 5GY 6/)

174AX MV  
Core # 97  
Start depth: 694 ft  
Stop depth: 700 ft  
Recovery: 5.0 ft  
Date: 5/19/02  
Described by: PJS, BPL

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

99

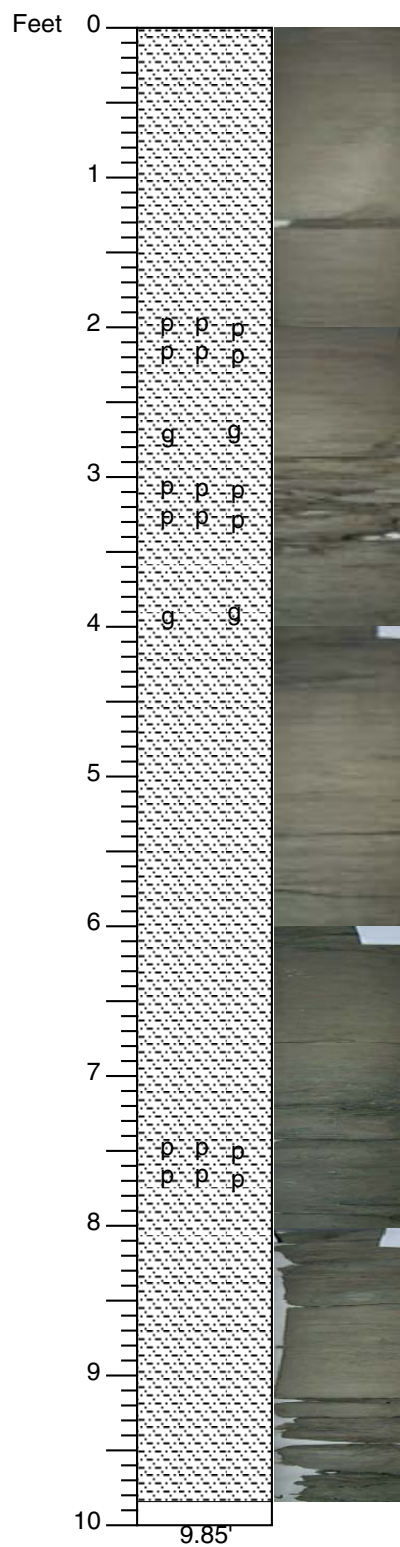


CLAY; silty, some very fine sand; laminated to thin bedded, some burrows; some beds contain 1-2% fine glauconite; the upper 1.5 ft is indurated; porcellanite at 4.0-4.9, 6.8-7.2, 8.8-9.2, 9.8-9.9 ft; olive gray (5Y 4/2)

174AX MV  
 Core # 98  
 Start depth: 700 ft  
 Stop depth: 710 ft  
 Recovery: 10.7 ft  
 Date: 5/19/02  
 Described by: PJS, BPL

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**100**



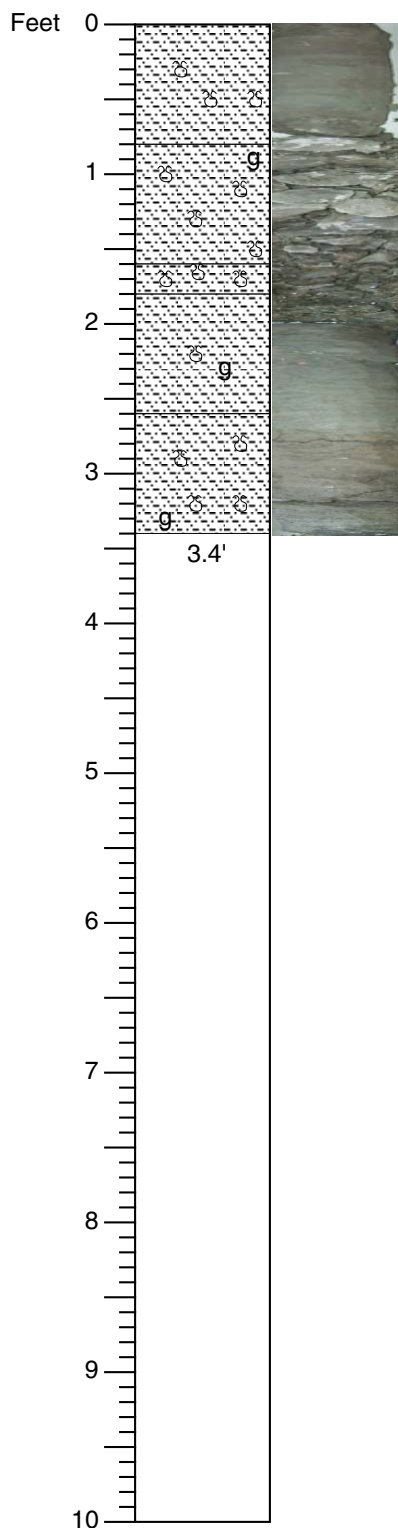
CLAY; silty, abundant porcellanite; glauconite at 2.4-2.9 ft; sand at the bottom; olive gray (5Y 4/2)

174AX MV  
 Core # 99  
 Start depth: 710 ft  
 Stop depth: 720 ft  
 Recovery: 9.85 ft  
 Date: 5/19/02  
 Described by: BPL

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

101



CLAY; "blotchy", 15-20% glauconite, fine to very fine, some medium, rounded to subrounded, very dark; lightly silty; blotches (3-8 mm diameter) may be burrows; abundant small burrows, 0.5-2 mm diameter, horizontal to subhorizontal, look like *Planolites*, mostly show up as lighter traces on darker blotches; foraminifers visible; 0.15, 0.4 a couple of lighter (shell?) fragments; light greenish gray (5Y 6/2)

CLAYSTONE; porcellanite, with patchily distributed glauconite sand from very fine to fine, some medium; broken into small fragments; common burrows, 1-3 mm, burrows are larger than in above interval, foraminifer evident; dark greenish gray (GLEY 1 10Y 4/1); burrows: light greenish gray (GLEY 1 5 GY 7/1)

CLAY; with abundant burrows concentrated at the top where it is intensely burrowed, burrow fill is similar color to above lithology, big burrow blotch at top; 10-15% glauconite, fine to very fine, some medium, with a few concentrated patches (burrow fill); abundant very small foraminifers; greenish gray (GLEY 1 10Y 6/1); burrows: light greenish gray (GLEY 1 5 GY 7/1)

CLAY; "blotchy", 15-20% glauconite, very fine to medium, medium is more common than in the top of the core, subrounded to rounded; visible foraminifers, larger than overlying interval; a cemented burrow fill at 2.0 ft is ~3mm wide by 15 mm long; rare small *Planolites*-like burrows; possible rip-ups of underlying lithology at 2.4 ft; greenish gray (GLEY 1 10Y 6/1); burrows: dark greenish gray (GLEY 1 10Y 4/1)

Uneven contact; ~0.1 ft relief

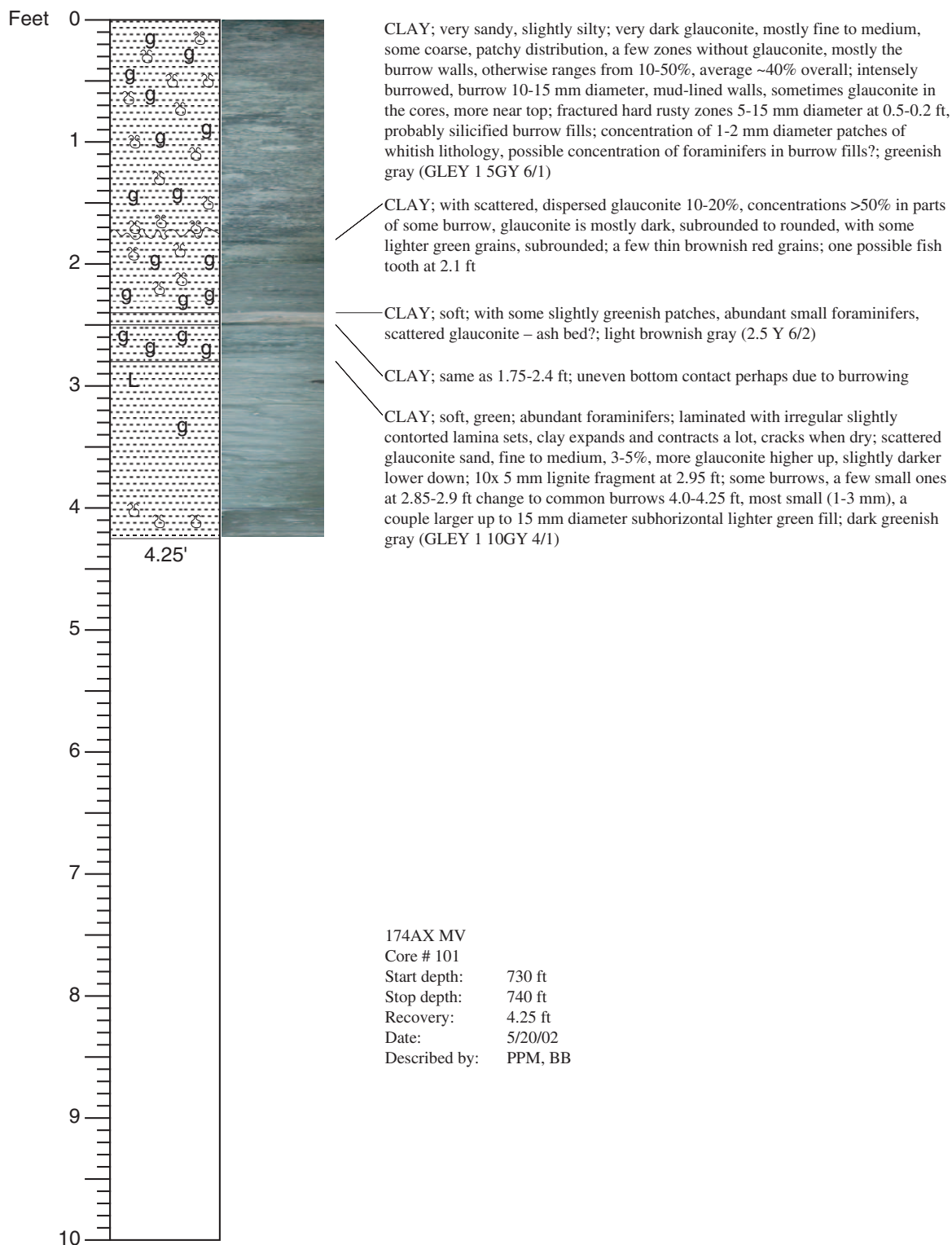
CLAY; 20-25% glauconite sand, mostly fine to medium, slightly patchy, especially larger and concentrated at bottom; abundant small (0.5-1.5 mm diameter) short *Planolites*-like burrows; olive gray (5Y 4/2); burrows: greenish gray (GLEY 1 10Y 6/1)

174AX MV  
Core # 100  
Start depth: 720 ft  
Stop depth: 730 ft  
Recovery: 3.4 ft  
Date: 5/20/02  
Described by: PPM, BB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

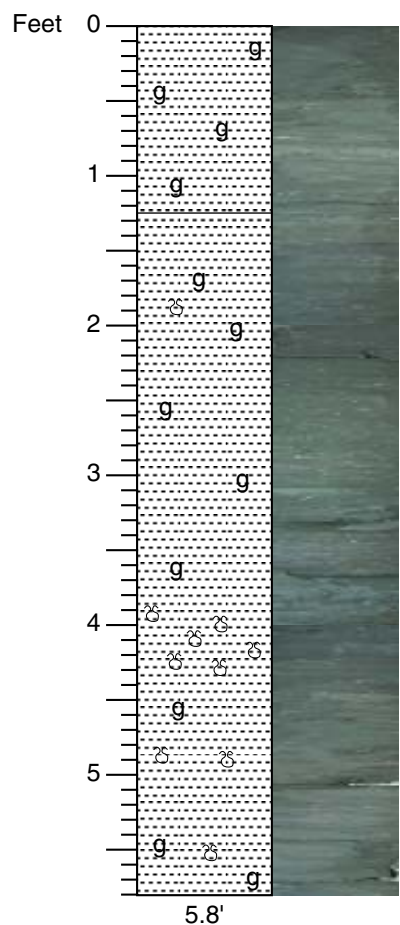
102



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

103



CLAY; foraminifer rich, softer than below, slightly contorted, burrows uncommon; ~5% glauconite sand, mostly medium, subrounded to rounded; dark greenish gray (GLEY 1 5GY 4/1)

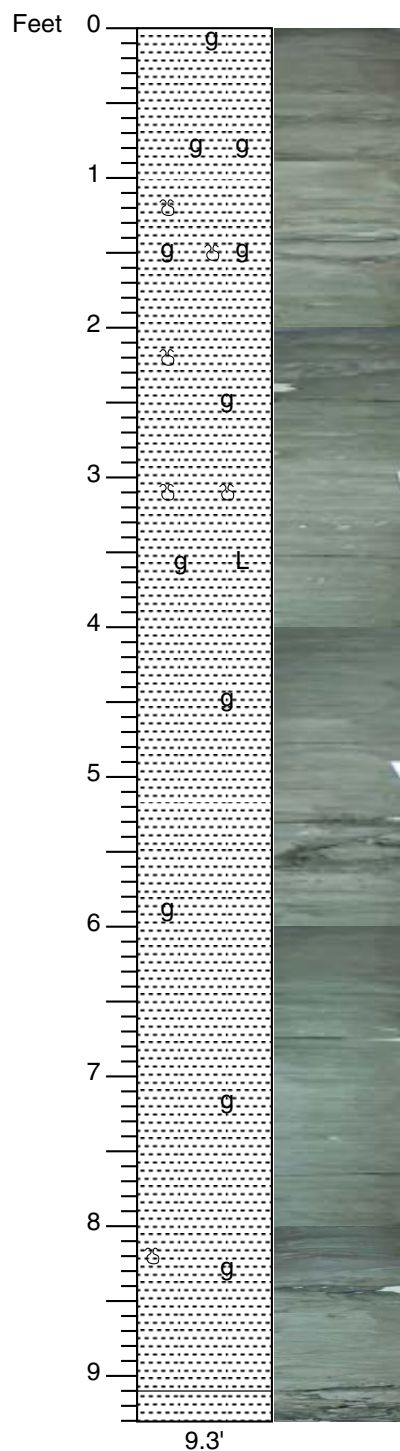
CLAY; foraminifer rich, harder than above; some glauconite sand, mostly fine, some medium, 5-10% above 3.7 ft, 15% below; common small (0.5-1 mm diameter), mostly subhorizontal burrows, especially 3.9-4.4 ft; between 4.85-5.0 ft two silicified burrows fills (10 x 8 mm and 20 x 15 mm); lower part slightly harder: dark greenish gray, (GLEY 1 5 GY 4/1); upper part: (GLEY 1 10GY 4/1), dark greenish gray

174AX MV  
Core # 102  
Start depth: 740 ft  
Stop depth: 745 ft  
Recovery: 5.8 ft  
Date: 5/20/02  
Described by: PPM, BB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

104



CLAY; clay, slightly silty, abundant (~10%) foraminifers; 5-10% glauconite sand, mostly fine to very fine, some zones with scattered medium, more concentrated near 0.8, 1.1, 8.5 ft; hard, ~10 mm nodules (?silicified) may be burrows; softer, large burrows at 1.8, 2.5 ft; small, 1-2 mm diameter *Planolites*-like subhorizontal burrows at 3.2-3.3 ft and scattered throughout; lignite fragment at 3.5 ft; no clear lamination (perhaps subtly), banding is a drilling artifact; dark greenish gray (GLEY 1 5 GY 4/1)

174AX MV  
Core # 103  
Start depth: 745 ft  
Stop depth: 754 ft  
Recovery: 9.3 ft  
Date: 5/20/02  
Described by: PPM, BB, BL

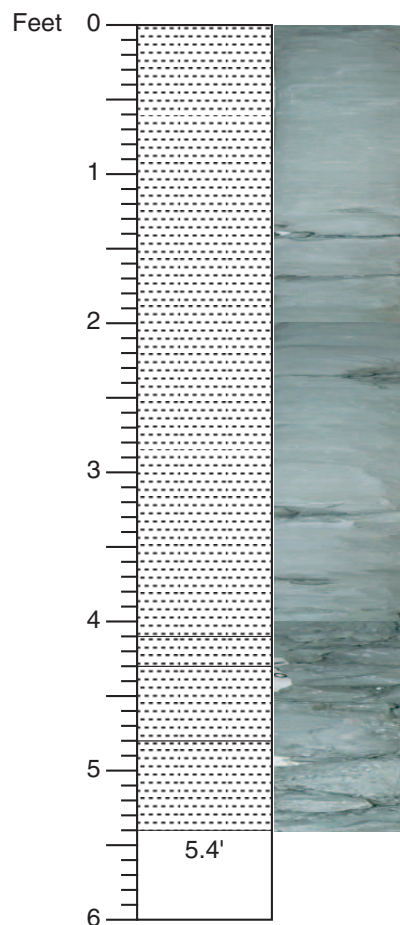
CLAYSTONE; crumbly, weak fizz, may be from foraminifers in siliceous porcellanite, or dolostone; 2-3% glauconite sand; some foraminifers



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

105



CLAY; silty, foraminifer rich, scattered small (0.5-1.5 mm) mostly subhorizontal *Planolites*-like burrows; also hard-cemented zones (?burrows), 10-15 mm diameter at 0.0-0.1, 0.2, 1.4, 2.3, 3.2, 3.65, 3.85 ft; scattered (3-5%) glauconite, very fine, glauconite-rich streaks at 0.4, 0.55, 0.7 ft; greenish gray (GLEY 1 5GY 5/1)

CLAYSTONE; crumbly, similar to bottom

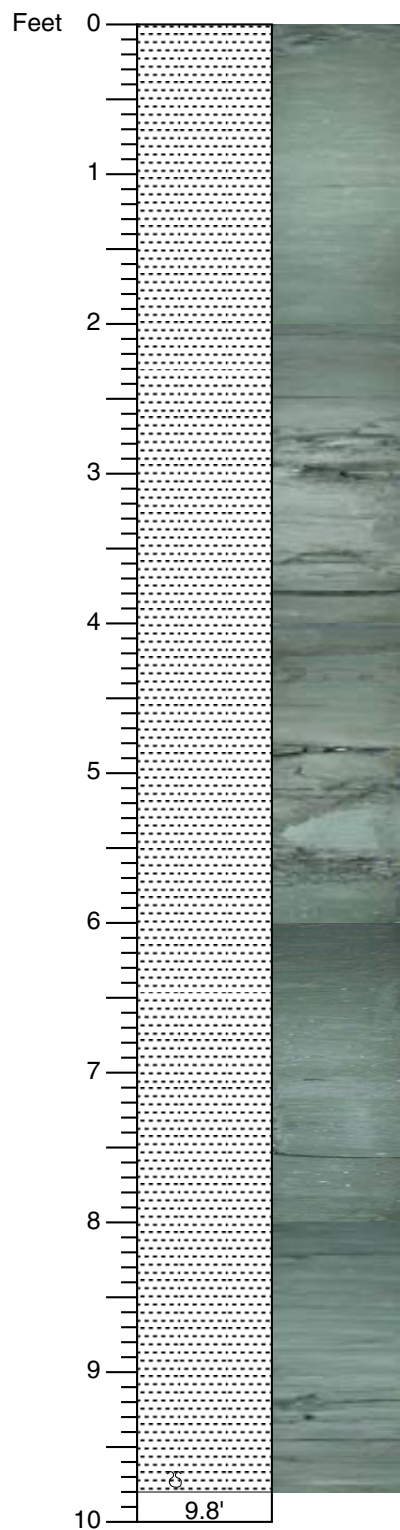
CLAY; same as at top

CLAYSTONE; similar to the clay but cemented; mild fizz

174AX MV  
Core # 104  
Start depth: 754 ft  
Stop depth: 760 ft  
Recovery: 5.4 ft  
Date: 5/20/02  
Described by: PPM, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**106**



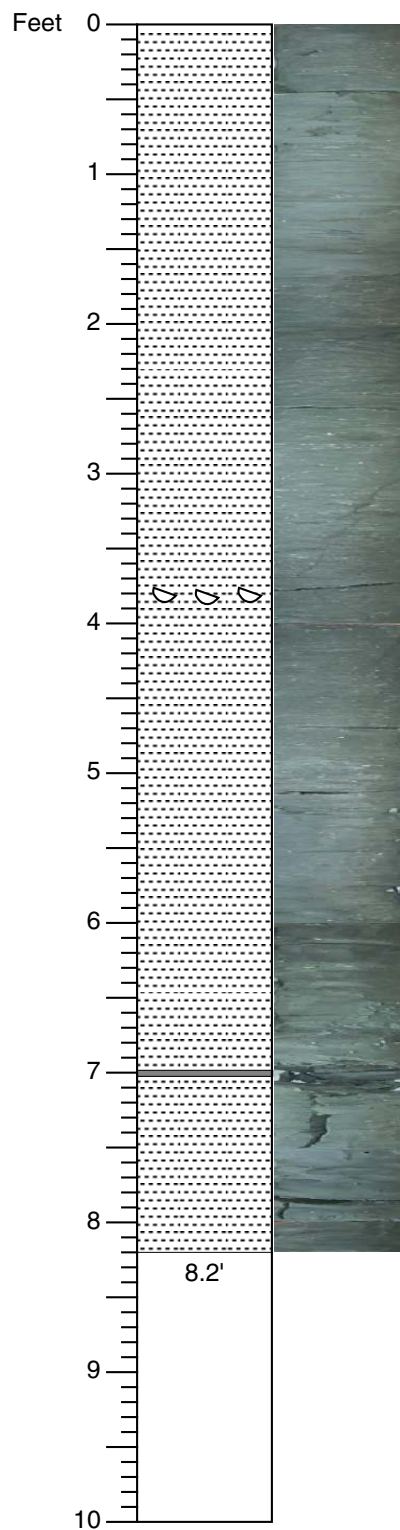
CLAY; silty (siltier than above); abundant foraminifers (less than above); sparse glauconite, very fine, less than above (1-3%), some lignite fragments (2.35, 5.9, 7.0, 7.1, 7.6, 8.4 ft); scattered zones of small (0.5-1.0 mm) horizontal-subhorizontal burrows (*Planolites*-like); small shell fragment at 7.5 ft, big nodosarid at 7.7 ft; hard cemented zones at top of core 2.8-3.1 ft, 3.5-4.5 ft (not entire diameter of core), 4.8-5.8 ft (not entire diameter of core); greenish gray (GLEY 1 10GY 5/1)

174AX MV  
 Core # 105  
 Start depth: 760 ft  
 Stop depth: 770 ft  
 Recovery: 9.8 ft  
 Date: 5/20/02  
 Described by: PPM, BB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

107

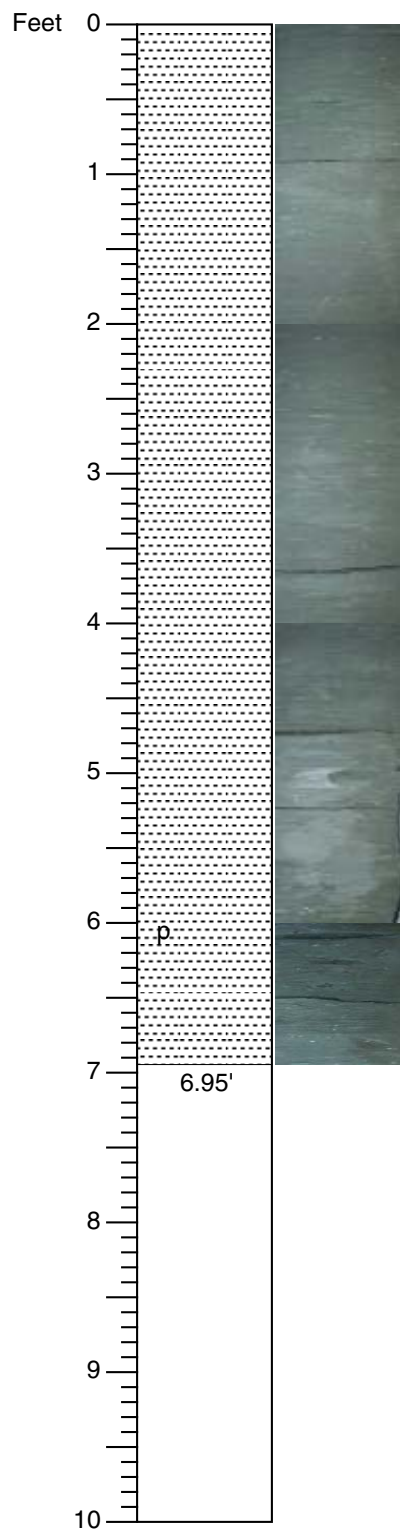


CLAY; slightly silty; abundant foraminifers; thin shells scattered throughout. concentration of shells and foraminifer at 3.9 ft; trace (1-3%) very fine glauconite throughout; heavily bioturbated, discrete burrows rare; cemented zone at 7.0 ft; less silt below 7.0 ft; dark greenish gray (GEY 1 10GY 4/1)

174AX MV  
Core # 106  
Start depth: 770 ft  
Stop depth: 780 ft  
Recovery: 8.2 ft  
Date: 5/21/02  
Described by: JVB, LP

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**108**

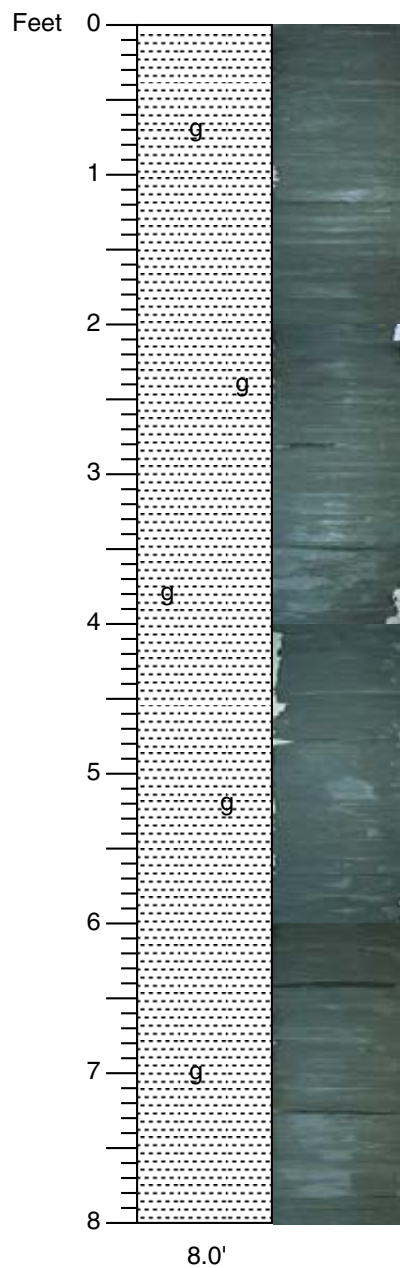


CLAY; very slightly silty, less silty than last core, fewer foraminifers, less glauconite (1-2%), very slightly micaceous, scattered thin shells; heavily bioturbated, some discrete burrows; siltier between 4.9-6.7 ft; dark greenish gray (10GY 4/1)

174AX MV  
Core # 107  
Start depth: 780 ft  
Stop depth: 790 ft  
Recovery: 6.95 ft  
Date: 5/21/02  
Described by: JVB, LP

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**109**

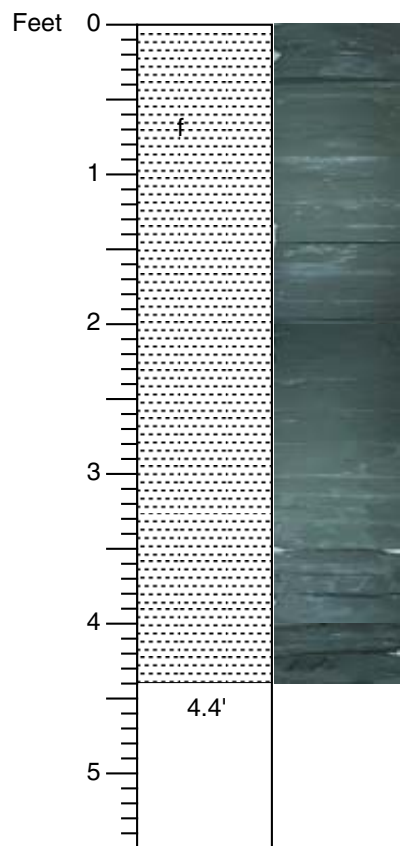


CLAY; uniform; slightly silty, abundant foraminifers; very fine to silt sized glauconite; trace mica; not as fossiliferous as above; laminations may be a drilling artifact; dark greenish gray (10GY 4/1)

174AX MV  
Core # 108  
Start depth: 790 ft  
Stop depth: 797.5 ft  
Recovery: 8.0 ft  
Date: 5/21/02  
Described by: JVB, LP

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**110**



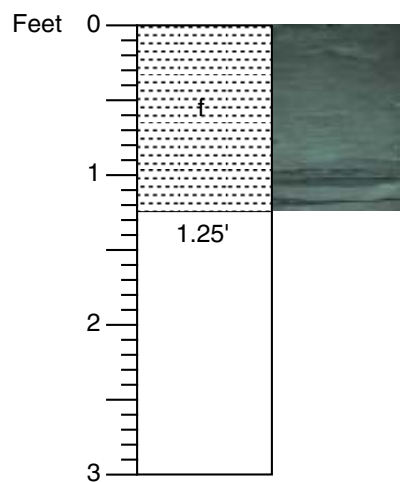
CLAY; very slightly silty; foraminifers common but not as common as above; very little glauconite; dark greenish gray (10GY 4/1)

174AX MV  
 Core # 109  
 Start depth: 797.5 ft  
 Stop depth: 803 ft  
 Recovery: 4.4 ft  
 Date: 5/21/02  
 Described by: JVB, LP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

111

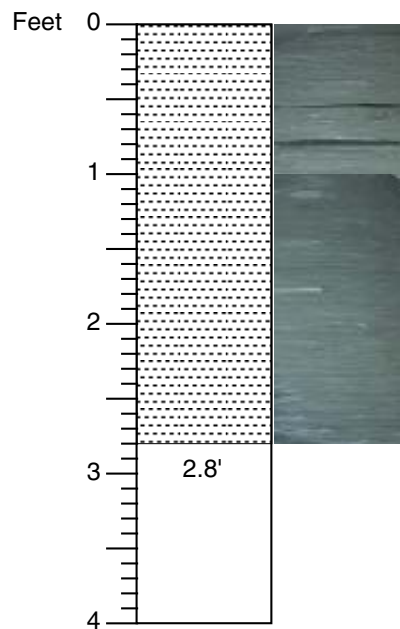


CLAY; very slightly silty in top 1 ft; foraminifers common, trace of glauconite; heavily bioturbated, bottom 0.25 ft from drilling shoe is clean clay; dark greenish gray (5GY 4/1)

174AX MV  
Core # 110  
Start depth: 803 ft  
Stop depth: 806 ft  
Recovery: 1.25 ft  
Date: 5/22/02  
Described by: KGM, ER, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**112**



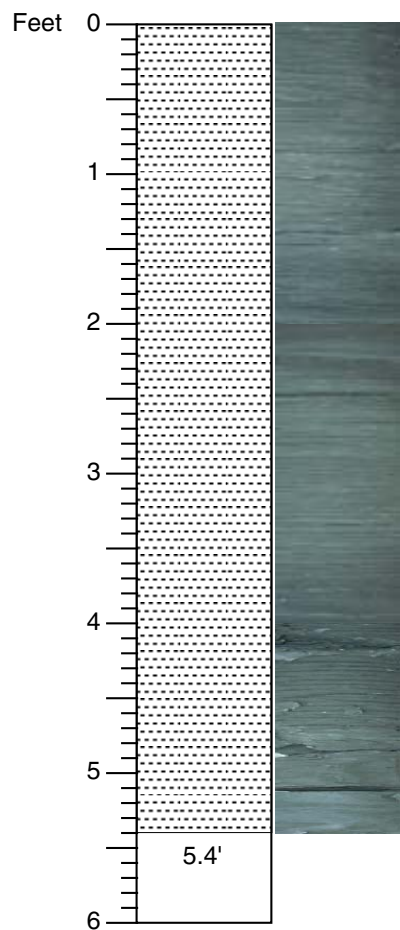
CLAY; little to no silt; slightly bioturbated (2-10%; foraminifer >10%; laminated to bioturbated; dark greenish gray (5GY 4/1-3/1)

174AX MV  
Core # 111  
Start depth: 806 ft  
Stop depth: 810 ft  
Recovery: 2.8 ft  
Date: 5/22/02  
Described by: KGM, ER, BB



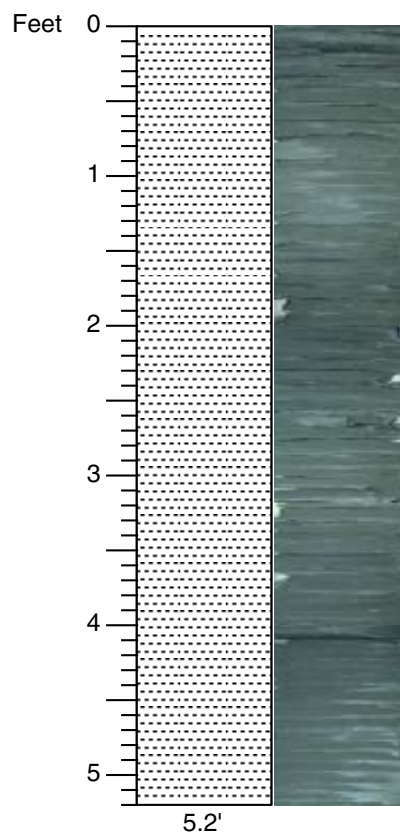
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**113**



CLAY; slightly silty, slightly glauconitic (~10%); foraminifers; more massive in top 1.5 ft, more laminations 1.5-5.0 ft; dark greenish gray (SGY 4/1-3/1)

174AX MV  
Core # 112  
Start depth: 810 ft  
Stop depth: 816 ft  
Recovery: 5.4 ft  
Date: 5/22/02  
Described by: KGM, ER, BB

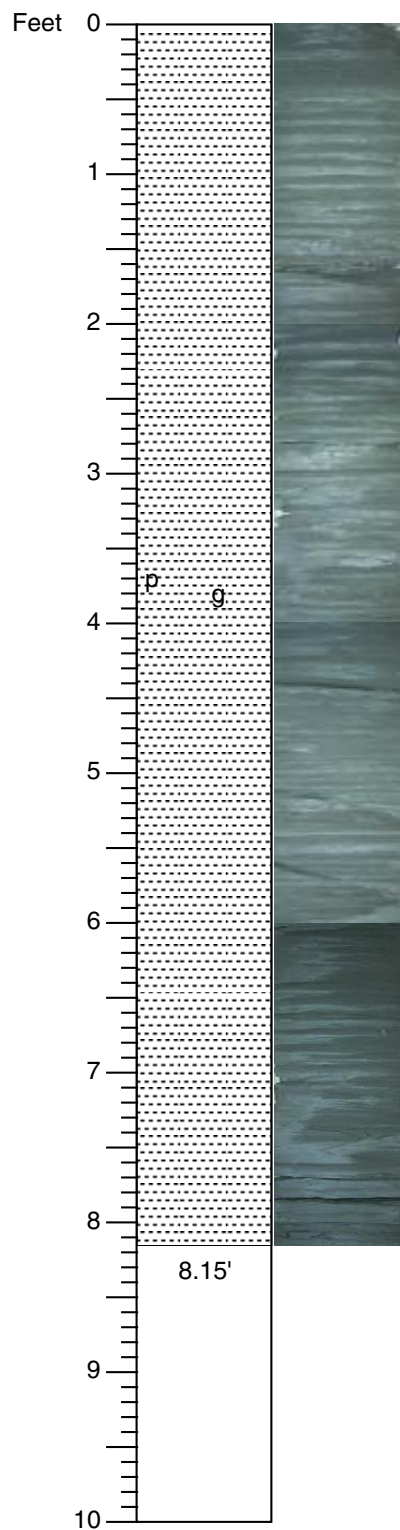


CLAY; 1-3% glauconite; fewer foraminifers than above; uniform, laminated to bioturbated laminations nearly preserved to partially destroyed, trace mice, greenish gray (5GY 5/1)

174AX MV  
Core # 113  
Start depth: 816 ft  
Stop depth: 820 ft  
Recovery: 5.2 ft  
Date: 5/22/02  
Described by: KGM, ER, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**115**

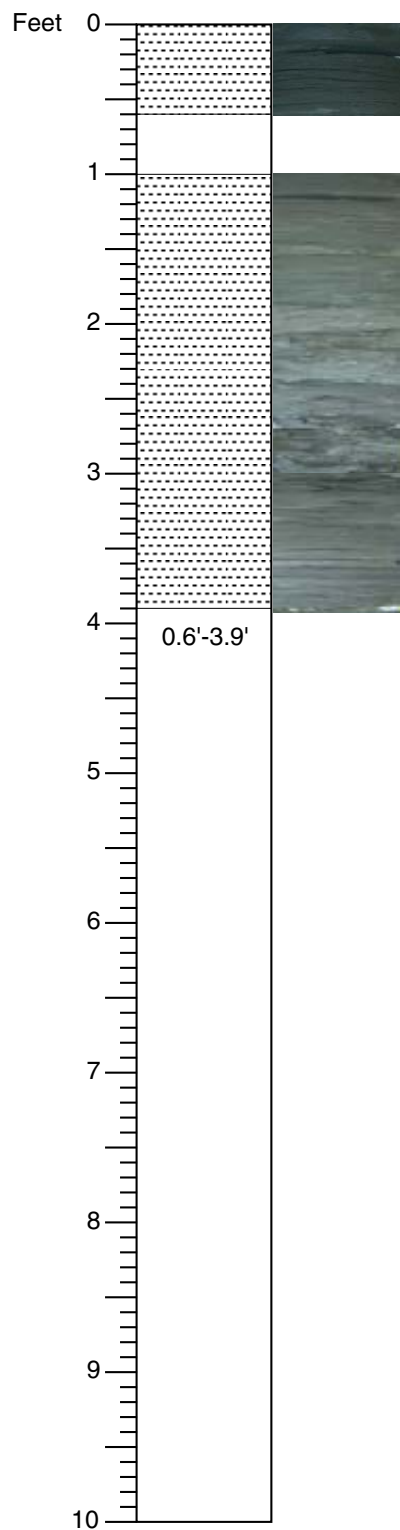


CLAY; trace glauconite (<1%); few foraminifers (~5%); bioturbation destroys laminations, glauconite burrows at 3.9 ft; pyrite burrow at 3.75 ft; greenish gray (5GY 5/1)

174AX MV  
 Core # 114  
 Start depth: 820 ft  
 Stop depth: 830 ft  
 Recovery: 8.15 ft  
 Date: 5/22/02  
 Described by: KGM, ER, BB

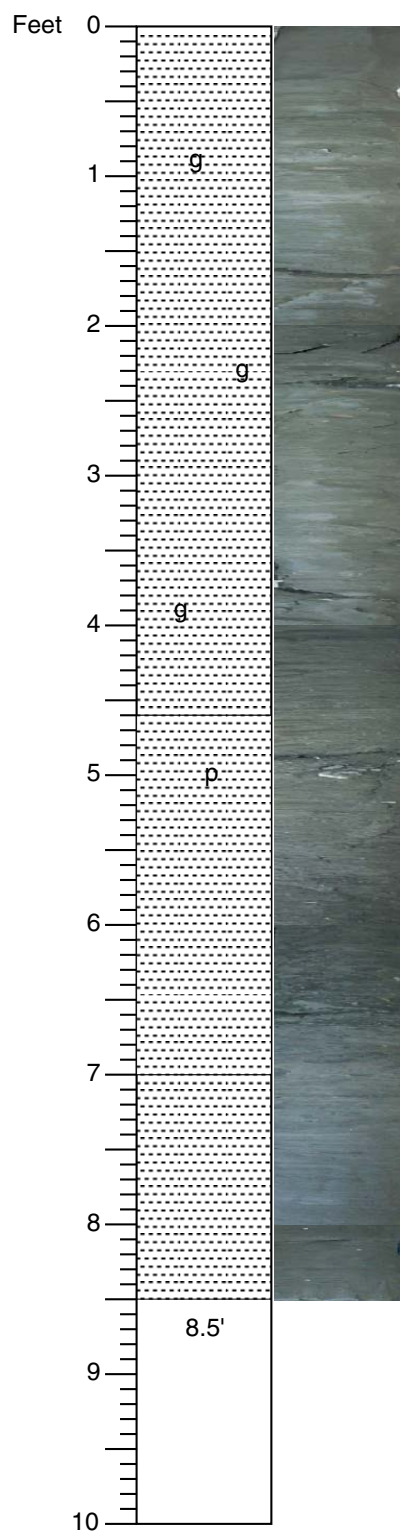
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**116**



CLAY; slightly glauconitic, foraminiferal bearing, more bioturbated than laminated; dark greenish gray (5GY 4/1)

174AX MV  
 Core # 115  
 Start depth: 830 ft  
 Stop depth: 840 ft  
 Recovery: 0.6 ft; (3.9 ft?)  
 Date: 5/22/02  
 Described by: KGM, ER, BB



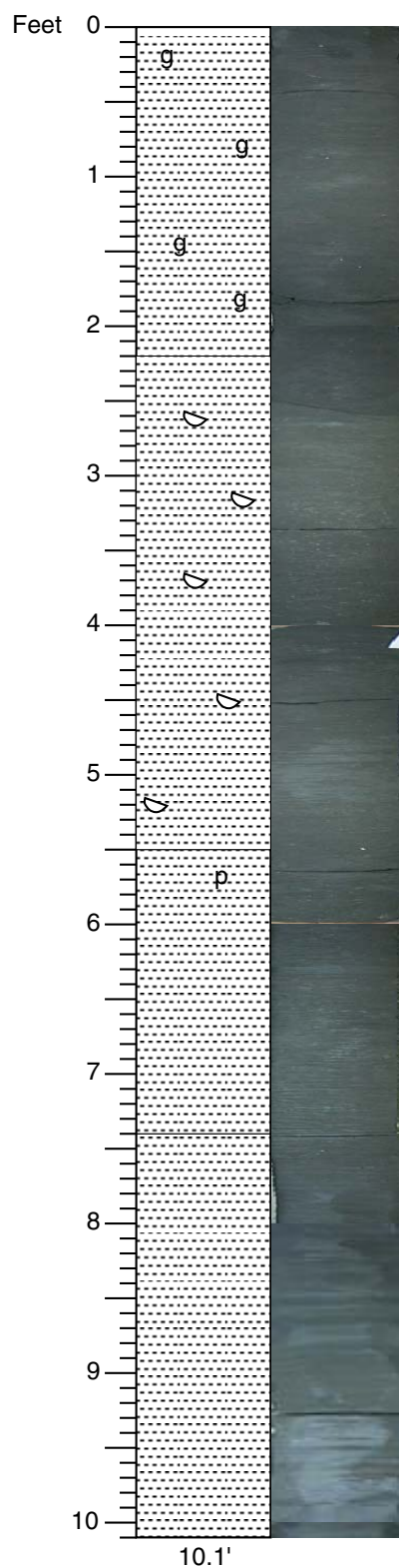
CLAY; laminated, slightly micaceous; slightly glauconitic (1%), foraminifer rich; glauconite is more common at bottom very fine grained (1-3%); rare very fine quartz; dark greenish gray (5GY 4/1)

CLAY; glauconite sand; very fine; glauconite content increases from 3% at top to 50% at bottom, especially concentrated in burrow fills, trace very fine mica, heavily bioturbated; little quartz; no visible foraminifers

Contact – bioturbated

CLAY; lightly micaceous, slightly laminated, glauconite 1-2%; browner than the clay on top; dark greenish gray (GEY 1 5GY 3/1)

174AX MV  
 Core # 116  
 Start depth: 840 ft  
 Stop depth: 850 ft  
 Recovery: 8.5 ft  
 Date: 5/23/02  
 Described by: JVB, PJS, BL



CLAY; very silty; slightly micaceous, finely disseminated; 10% fine quartz and glauconite, slightly more quartz than glauconite; a few foraminifers; burrowed; greenish black; (GLEY 1 10GY 2.5/1)

Possible sequence boundary

Clay; micaceous, <1% glauconite; thin shells and foraminifers common, burrowed; dark greenish gray (GLEY 1 10Y 3/1)

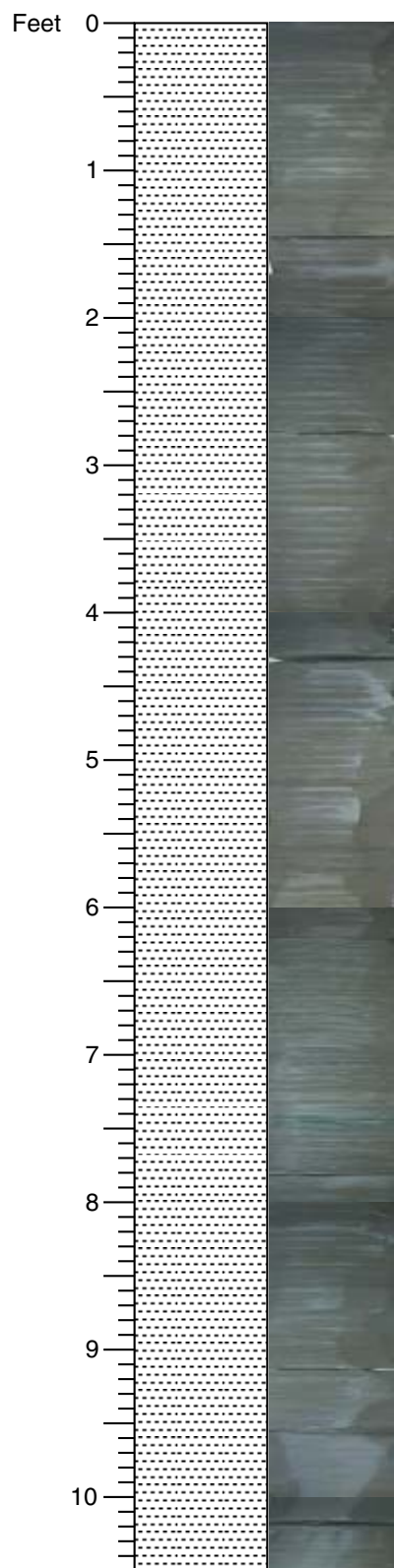
CLAY; slightly silty, fine mica throughout, very few shells; laminated; dark greenish gray (GLEY 1 10Y 3/1)

CLAY; very little silt, slightly glauconitic; slightly micaceous; overall the core clays down section

174AX MV  
 Core # 117  
 Start depth: 850 ft  
 Stop depth: 860 ft  
 Recovery: 10.1 ft  
 Date: 5/23/02  
 Described by: JVB, PJS, BL

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**119**



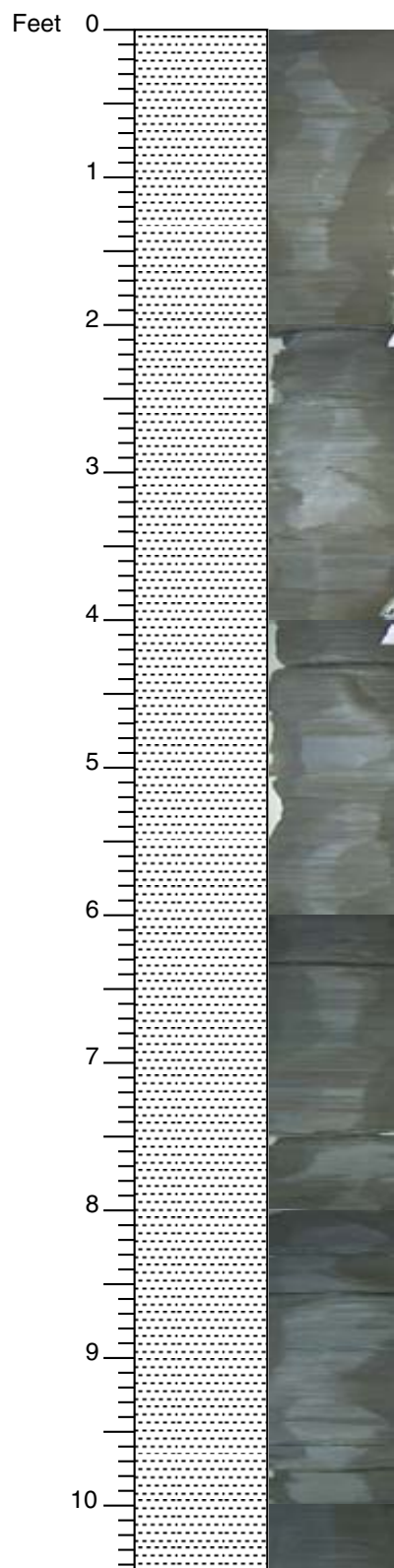
CLAY; slightly micaceous (fine; little silt; laminated and thin bedded; beds range from 5-15 mm, beds look rhythmic, black beds are 3 mm, greener beds (may be siltier) are 12 mm; dark greenish gray (GLEY 1 5GY 4/1)

174AX MV  
Core # 118  
Start depth: 860 ft  
Stop depth: 870 ft  
Recovery: 10.5 ft  
Date: 5/23/02  
Described by: JVB, PJS, BL

10.5'

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

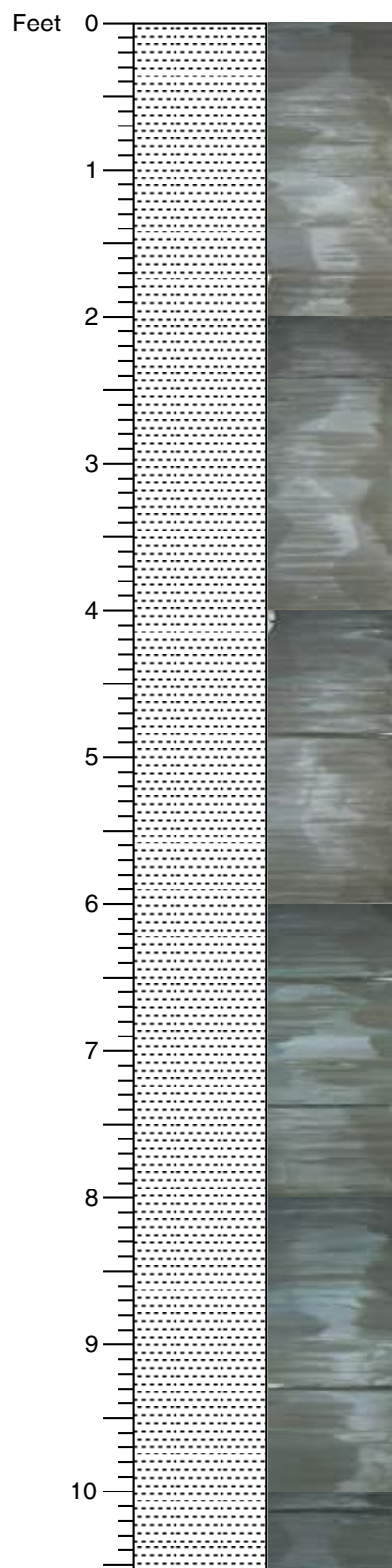
**120**



CLAY; similar to last core; uniform core; laminated and thinly bedded, may be more clay rich than the last core; trace mica; dark greenish gray (GLEY 1 5GY 4/1)

174AX MV  
Core # 119  
Start depth: 870 ft  
Stop depth: 880 ft  
Recovery: 10.45 ft  
Date: 5/23/02  
Described by: JVB, PJS, BL

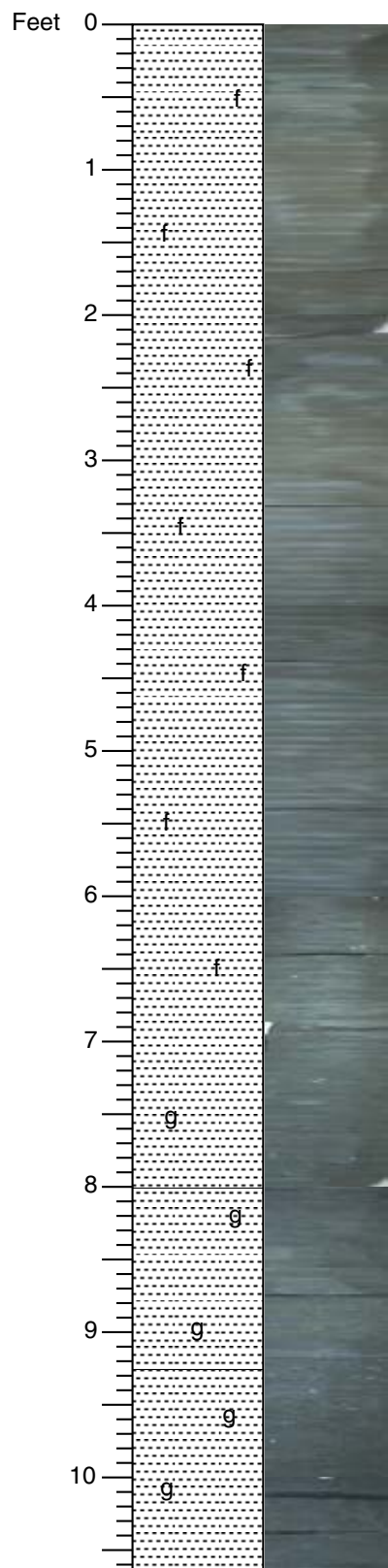




CLAY; laminations and thin bedding as above; no glauconite; trace of very fine silt; a few clay blebs scattered throughout; dark greenish gray (GEY 1 5GY 4/1)

174AX MV  
Core # 120  
Start depth: 880 ft  
Stop depth: 890 ft  
Recovery: 10.55 ft  
Date: 5/23/02  
Described by: PJS, BL

10.55'

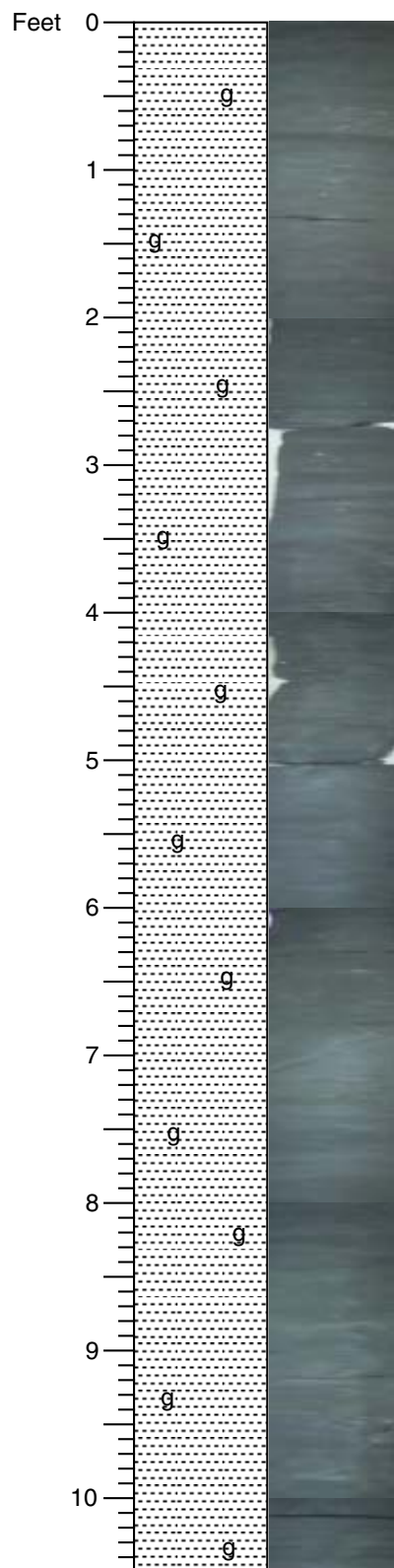


CLAY; foraminiferal; trace mica; trace scattered glauconite; laminations are probably a drilling artifact

174AX MV  
 Core # 121  
 Start depth: 890 ft  
 Stop depth: 900 ft  
 Recovery: 10.65 ft  
 Date: 5/24/02  
 Described by: KGM, BSC, MJW

Transition zone; some glauconite burrowed up to 6.8 ft

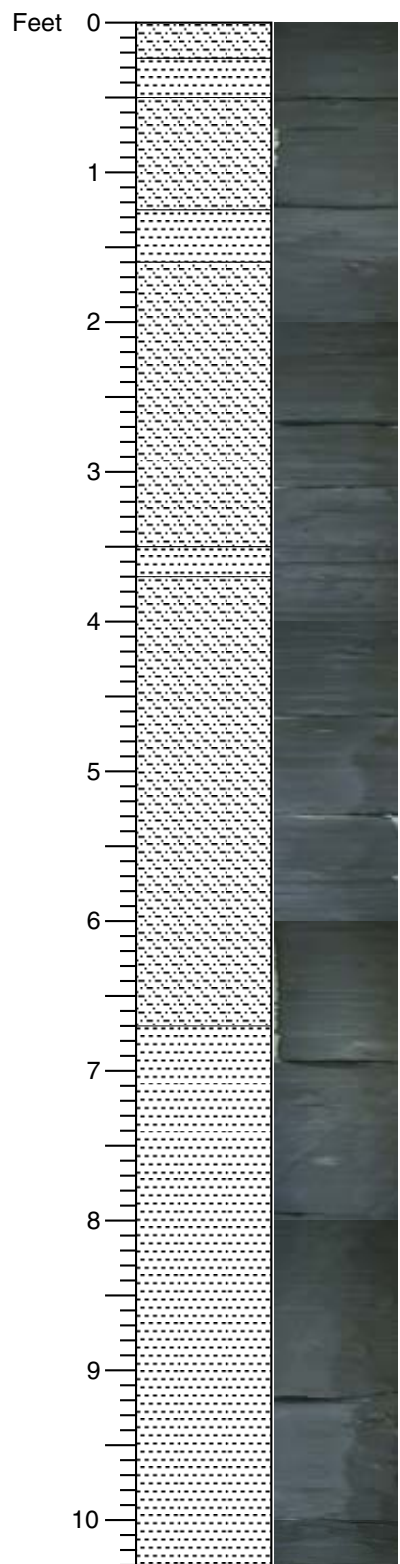
CLAY; slightly silty, glauconitic; glauconite content increases downsection to 10%



CLAY; silty, glauconitic, slightly micaceous, possibly foraminiferal bearing, very slightly shelly; heavily bioturbated with traces of laminations; some color variation/laminations; phosphatized pellet at 9.0 ft; dominant: greenish gray (5GY 5/1); dark greenish gray (5GY 4/1)

174AX MV  
 Core # 122  
 Start depth: 900 ft  
 Stop depth: 910 ft  
 Recovery: 10.5 ft  
 Date: 5/24/02  
 Described by: MJW, BSC, KGM

10.5'



CLAY; silty to slightly silty, 10% glauconite, micaceous, bioturbated and laminated sections; slightly silty intervals are more laminated, silty intervals are more bioturbated; laminae are faint color variations (gray versus darker gray)

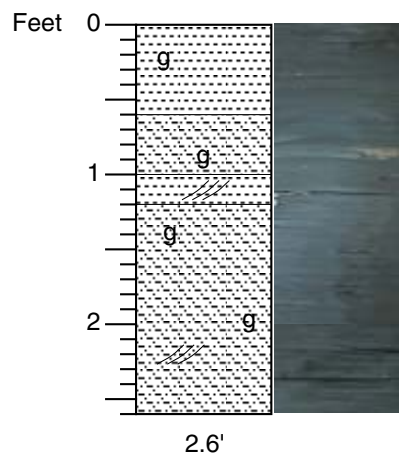
174AX MV  
Core # 123  
Start depth: 910 ft  
Stop depth: 920 ft  
Recovery: 10.3 ft  
Date: 5/24/02  
Described by: KGM, BSC, MJW

10.3'

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

125



CLAY; silty, small percentage of fine to very fine sand; slightly micaceous, slightly (3-5%) glauconitic (fine to very fine); 2-3 cm beds; small amounts of organic material throughout the core; very coarse to granule size quartz on outside of core; dark greenish gray (GLEY 1 10Y 3/1)

SILT; more very fine sand than above; micaceous, glauconitic; some laminations and cross beds; brown clay clast at 0.95 ft; possibly a rip-up clast; olive brown (2.5 Y 4/3)

CLAY; similar to top of core; laminations are 1-2 mm

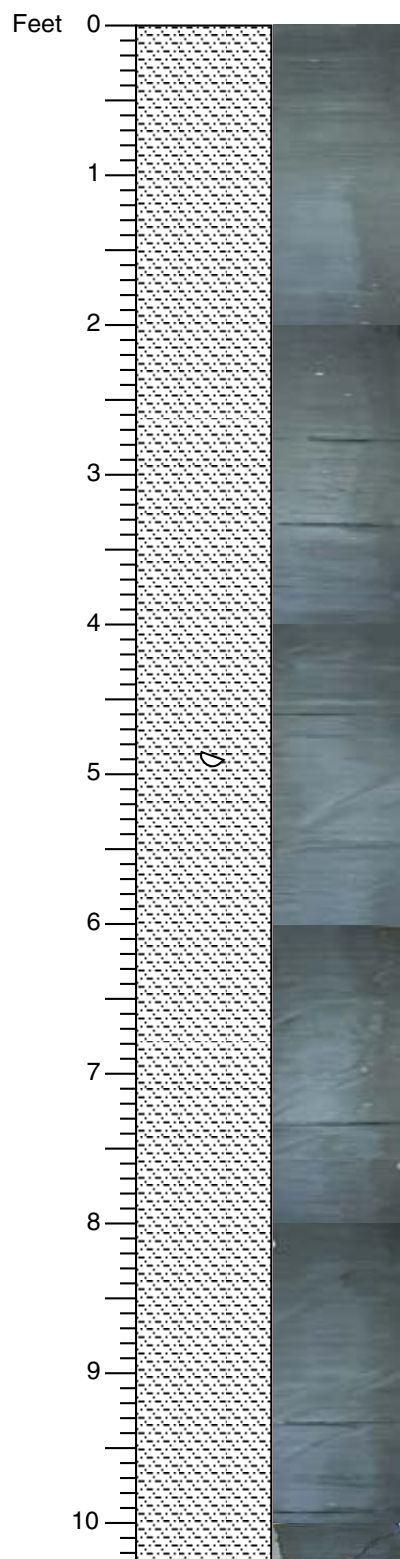
SILT; similar to above

174AX MV  
Core # 124  
Start depth: 908B ft  
Stop depth: 910B ft  
Recovery: 2.6 ft  
Date: 5/29/02  
Described by: JVB, BB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

126

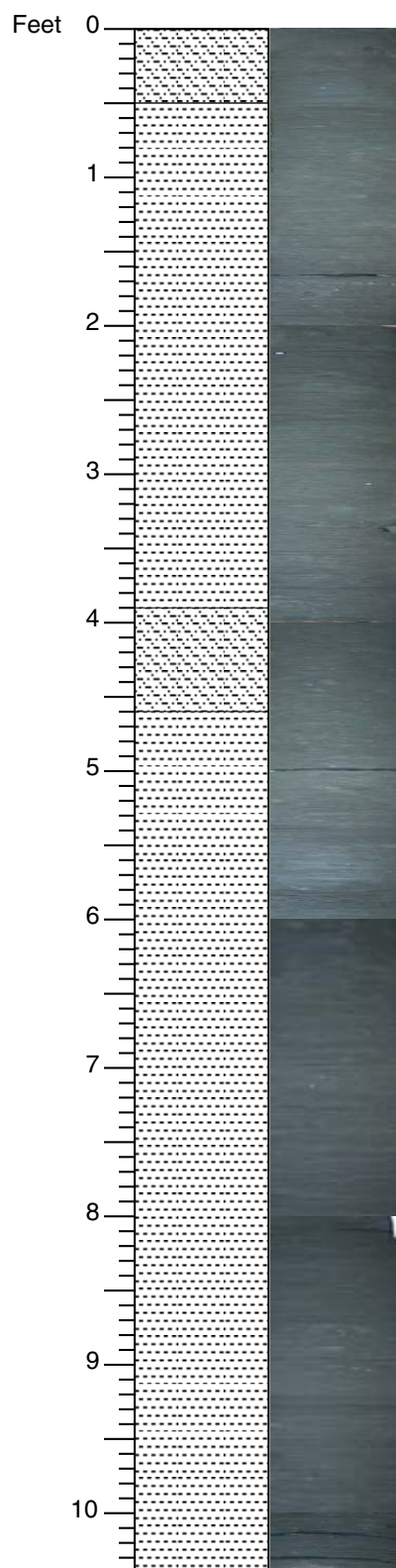


SILT; interbedded with CLAY; cross beds are common, no obvious burrows; slightly micaceous, 1-3% glauconite; shell fragments at 1.95, 4.9, 6.6 ft; dispersed fragments of brown fragments in a lens at 6.7 ft; brown fragments at 4.7, 4.8, and 4.9 ft; scattered quartz grains on outside of core to granule size

174AX MV  
Core # 125  
Start depth: 910B ft  
Stop depth: 920B ft  
Recovery: 10.25 ft  
Date: 5/29/02  
Described by: JVB, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**127**



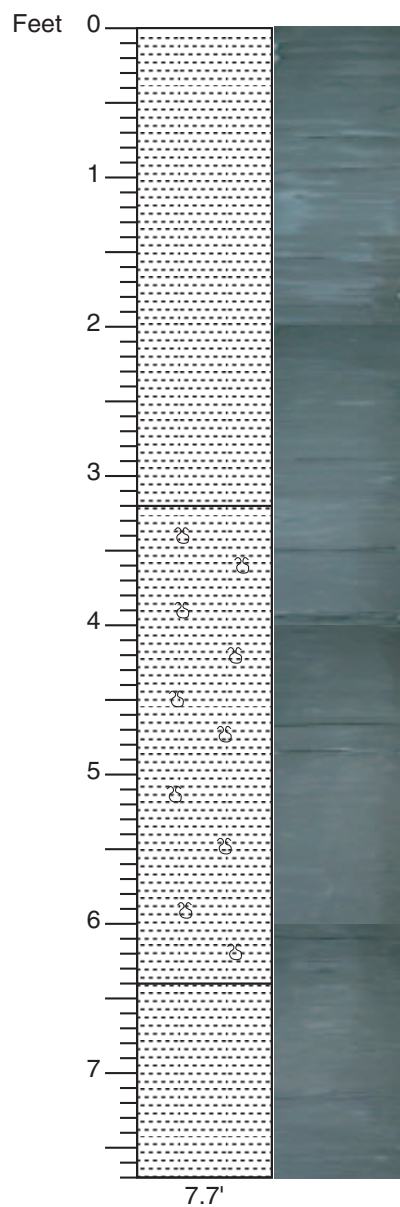
SILT; interlaminated with CLAY; slightly micaceous, slightly glauconitic; dark greenish gray (GLEY 1 10Y 3/1)

CLAY; silty, slightly micaceous, trace glauconite and quartz; laminated; limonitic concretion at 4.15-4.25 ft; small concretions at 6.2 ft; the interval between 3.9-4.6 is slightly silty; dark greenish gray (GLEY 1 5GY 3/1)

174AX MV  
Core # 126  
Start depth: 920 ft  
Stop depth: 930 ft  
Recovery: 10.4 ft  
Date: 5/29/02  
Described by: JVB, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**128**



CLAY; silty, massive; dark greenish gray (GLEY 1 10Y 3/1)

CLAY; slightly silty, finely micaceous; small percentage of very fine glauconite in burrows heavily burrowed, burrows 1 mm diameter

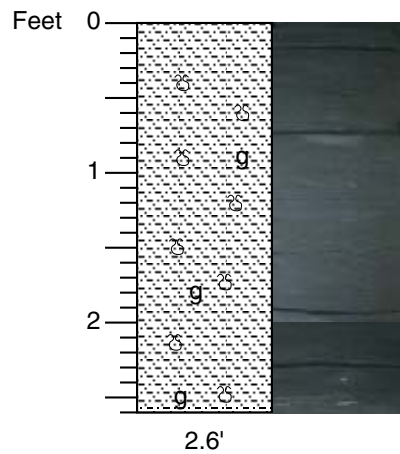
CLAY; massive, no obvious burrows, very dense clay

174AX MV  
 Core # 127  
 Start depth: 930 ft  
 Stop depth: 937.5 ft  
 Recovery: 7.7 ft  
 Date: 5/29/02  
 Described by: JVB, BB



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**129**

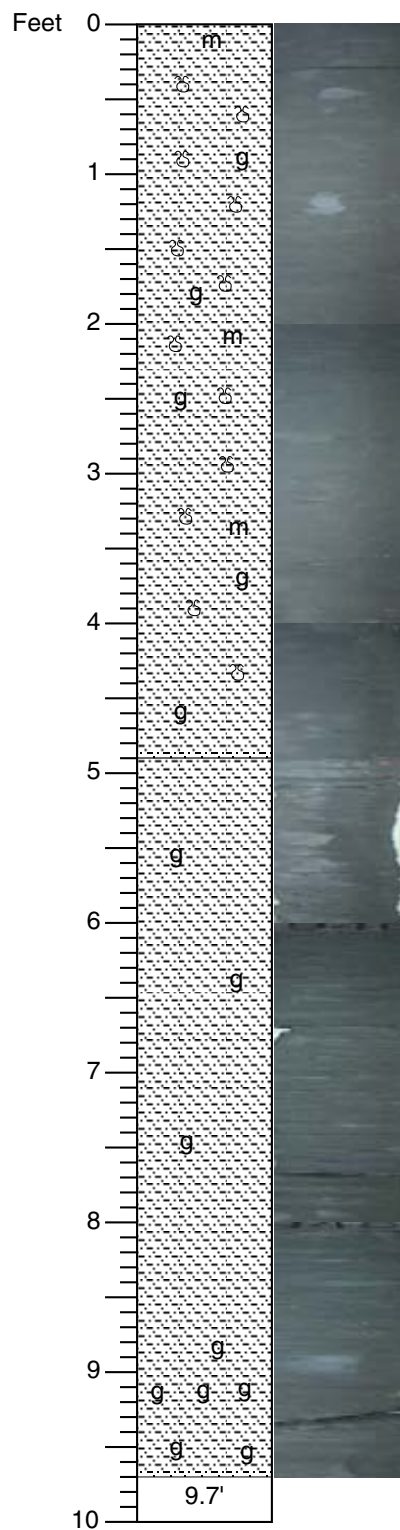


CLAY; silty; slightly (5-10% glauconitic), maybe slightly more glauconitic downsection; heavily bioturbated; dark greenish gray (5GY 3/1)

174AX MV  
Core # 128  
Start depth: 937.5 ft  
Stop depth: 940 ft  
Recovery: 2.6 ft  
Date: 5/30/02  
Described by: KGM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**130**



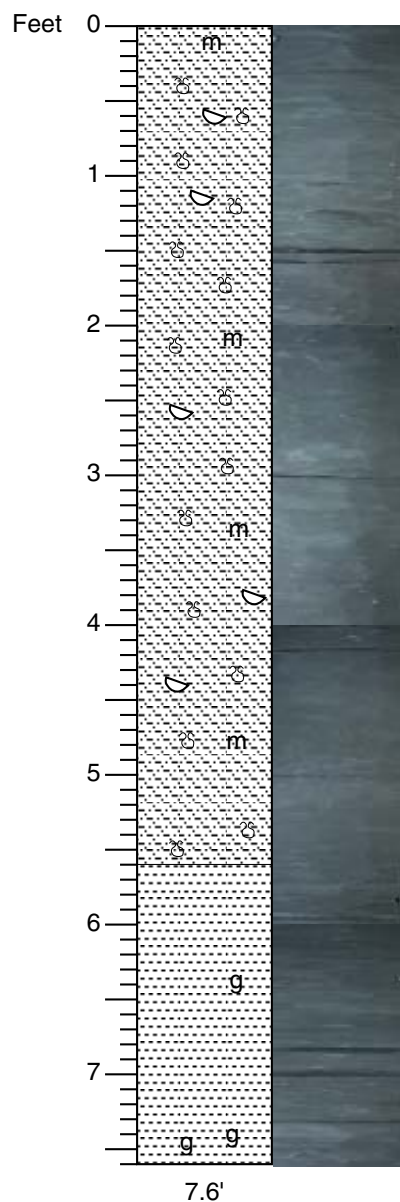
CLAY; slightly silty, slightly glauconitic, micaceous, seems less silty than above; heavily bioturbated; dark greenish gray (5GY 3/1)

174AX MV  
 Core # 129  
 Start depth: 940 ft  
 Stop depth: 950 ft  
 Recovery: 9.7 ft  
 Date: 5/30/02  
 Described by: KGM, MW

CLAY; and interlaminated slightly silty CLAY; glauconite concentrations at the base; regular bedding (some picked out by intrusions of drilling mud; dark greenish gray (5GY 3/1)

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**131**



CLAY; very silty; slightly micaceous; little to no glauconite; many foraminifers and shell fragments visible on outside of core; heavily burrowed; small concretion at 1.1 ft; two large pieces of pyritized lignite at 1.6 ft; dark greenish gray (GLEW 1 10Y 3/1)

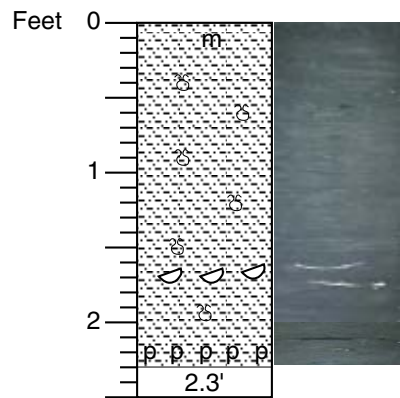
CLAY; similar to above but glauconite is more common to bottom; glauconite 5-10% in burrows; trace quartz, trace mica; laminations from 5.6-5.9 ft

174AX MV  
 Core # 130  
 Start depth: 950 ft  
 Stop depth: 957.5 ft  
 Recovery: 7.6 ft  
 Date: 5/30/02  
 Described by: KGM, JVB

## CORE DESCRIPTIONS

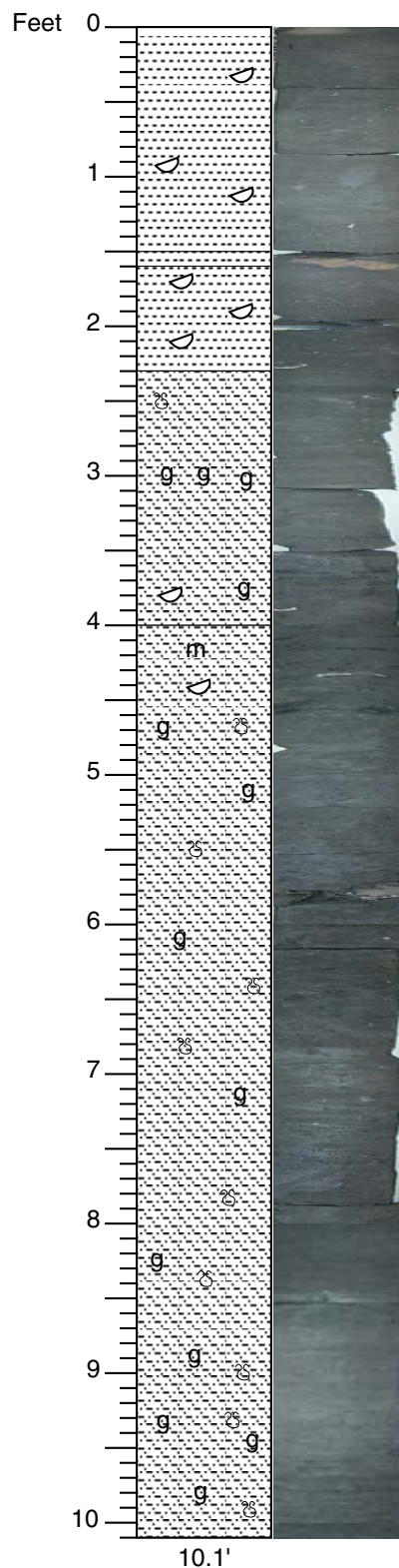
### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

132



CLAY; silty, glauconitic; slightly micaceous; many foraminifers; heavily burrowed, clay-lined burrows and glauconite filled burrows; glauconite is up to 10% at top and 15% in burrows; quartz is common; pyrite filled burrows are common at bottom; a pyrite nodule cuts across the core at 2.2 ft; shells at 1.6-1.8 ft (*Gryphaea dissimilis*); there is a subtle color change at 1.9 ft; dark greenish gray (GLEY 1 5GY 4/1)

174AX MV  
Core # 131  
Start depth: 957.5 ft  
Stop depth: 960 ft  
Recovery: 2.33 ft  
Date: 5/30/02  
Described by: JVB, KGM



CLAY; slightly silty; 5-10% glauconite; very slightly micaceous; foraminifers common

CLAY; clast, looks like altered shells

CLAY; similar to above; glauconite starts to increase

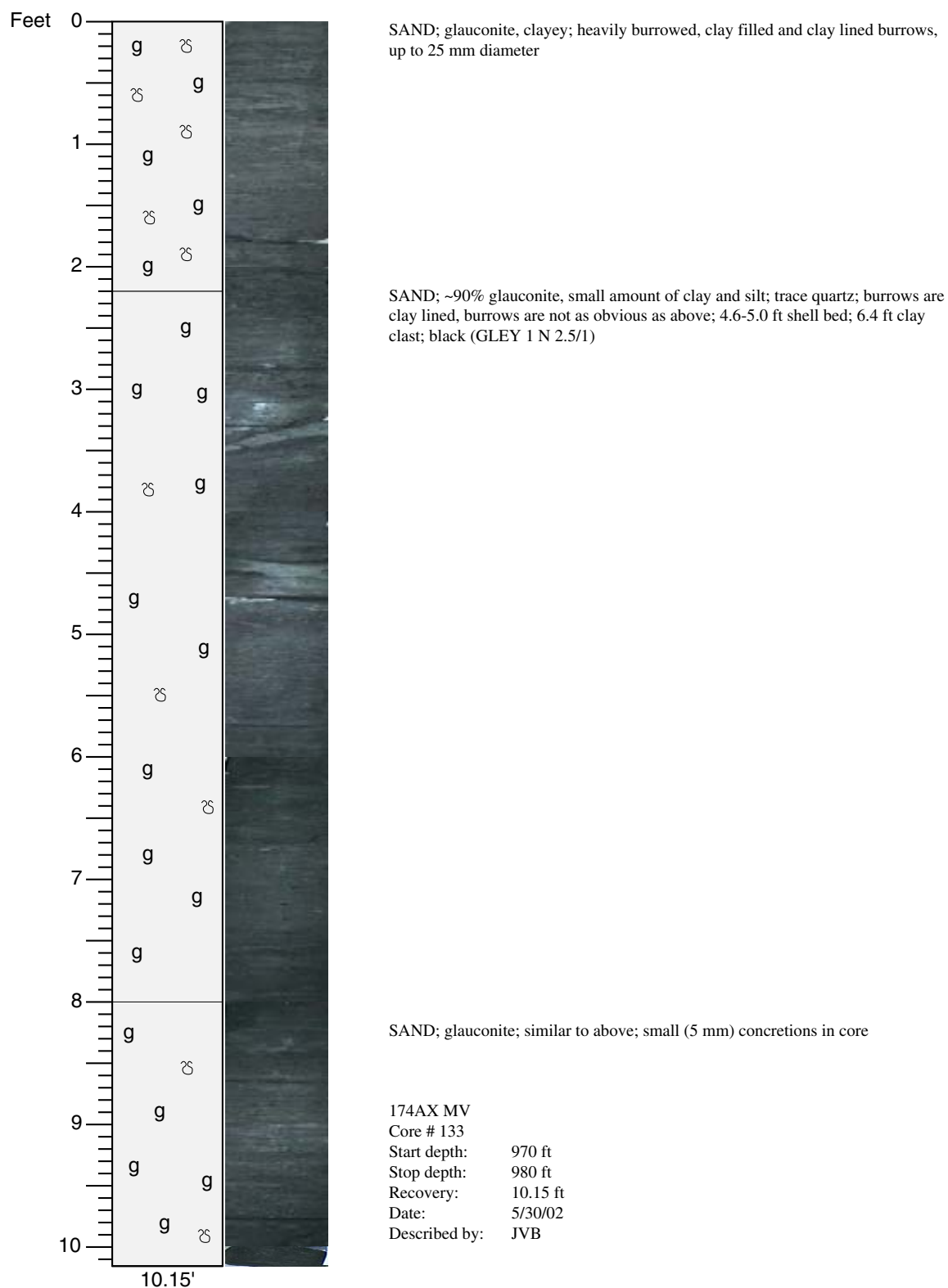
CLAY; very silty; glauconite increases especially in burrows; heavily burrowed; glauconite concentration at 3.0 ft

CLAY; with interbeds of very glauconitic clay (approaching sand) to glauconitic clay; slightly micaceous; many foraminifers; heavily burrowed, burrows 2-5 mm diameter; clay clast/replaced shells at 5.5, 7.5 ft; possible sequence boundary at 4.5 ft, dark greenish gray (GLEY 1 10Y 3/1)

174AX MV  
 Core # 132  
 Start depth: 960 ft  
 Stop depth: 970 ft  
 Recovery: 10.12 ft  
 Date: 5/30/02  
 Described by: JVB, KGM

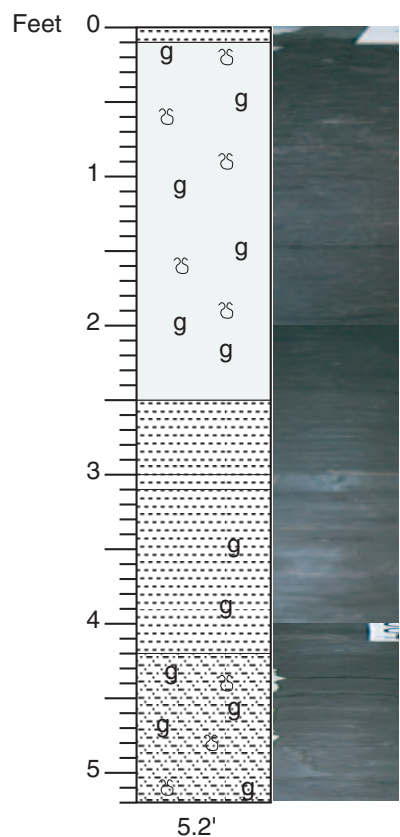
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**134**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**135**



CLAY; slightly glauconitic; dark greenish gray (5G 4/1)

SAND; glauconite, clayey, highly bioturbated; shell fragments at 0.6-0.65, 0.8-0.85 ft

CLAY; and interbedded glauconite clay; 3-4 cms thick

CLAY; greenish black (5 GY 2.5/1)  
 ?Contact

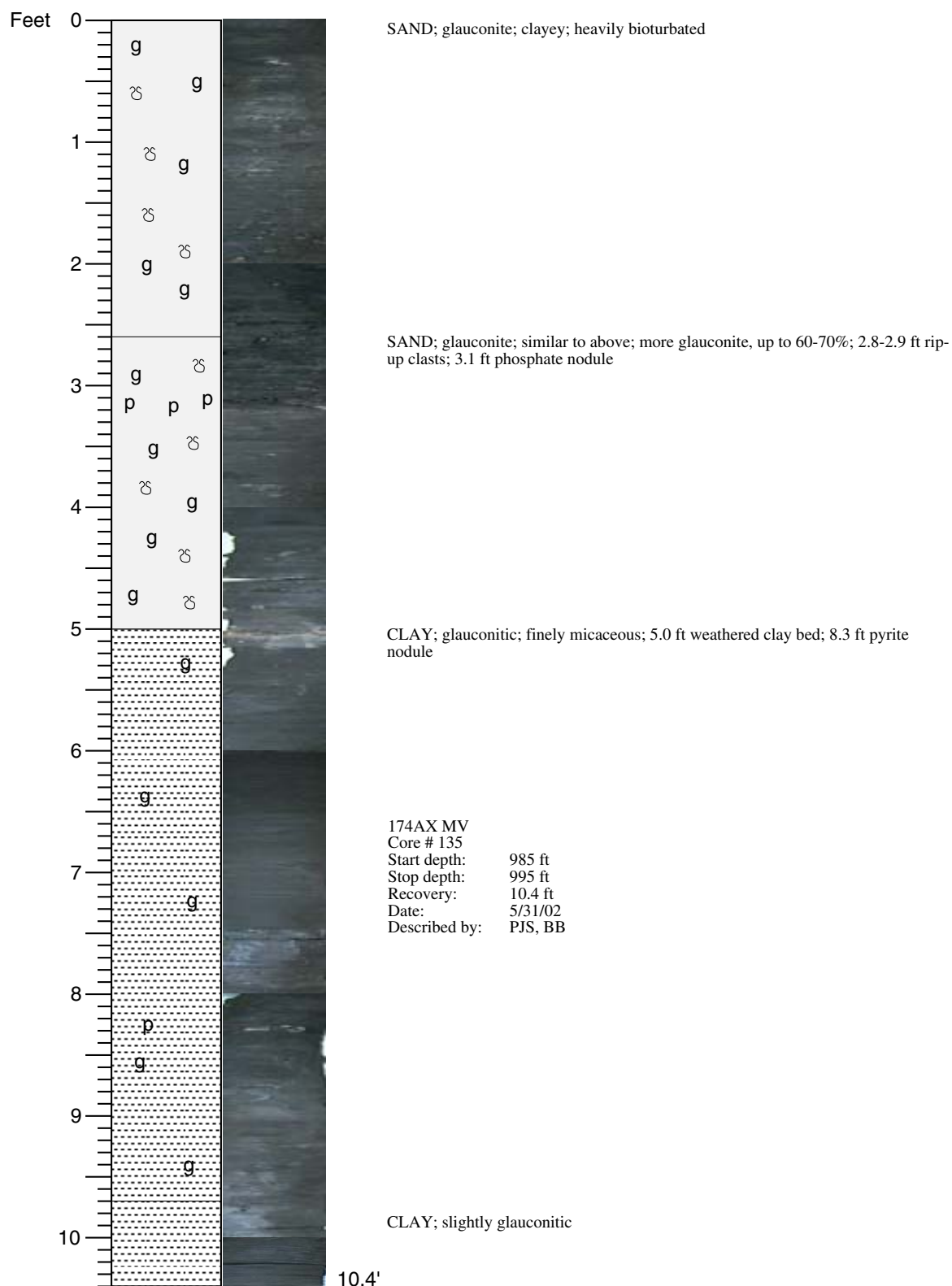
CLAY; 10% fine glauconite and fine mica; rip-up clasts at 3.35 ft

CLAY; 20% glauconite; heavily bioturbated

174AX MV  
 Core # 134  
 Start depth: 980 ft  
 Stop depth: 985 ft  
 Recovery: 5.2 ft  
 Date: 5/31/02  
 Described by: PJS, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

136

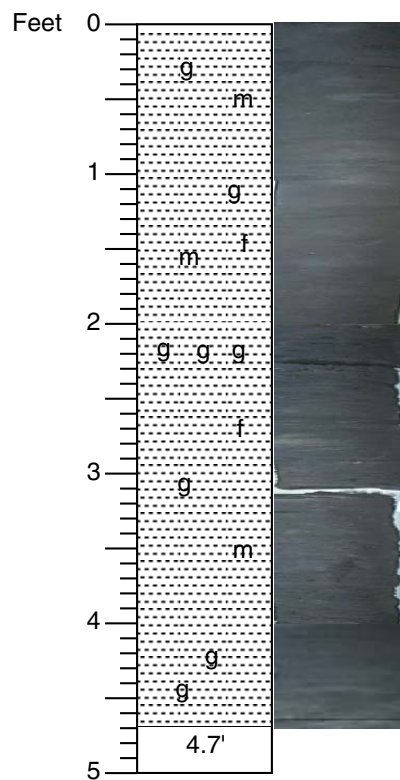




## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

137

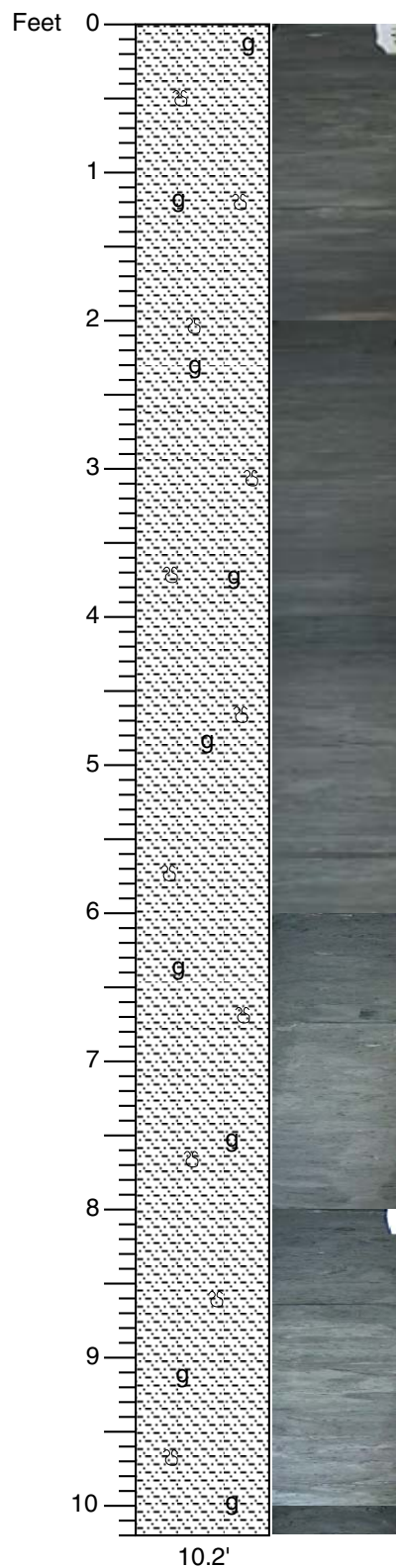


CLAY; with thin zones of glauconite filled burrows; finely micaceous; some silt; occasional thin shell pieces; slight increase in glauconite at the base; glauconite is up to 70% in a thin burrowed zone at 2.2-2.3 ft; medium to coarse; foraminifer bearing; greenish black (10Y 2.5/1)

174AX MV  
Core # 136  
Start depth: 995 ft  
Stop depth: 1000 ft  
Recovery: 4.7 ft  
Date: 5/31/02  
Described by: PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**138**

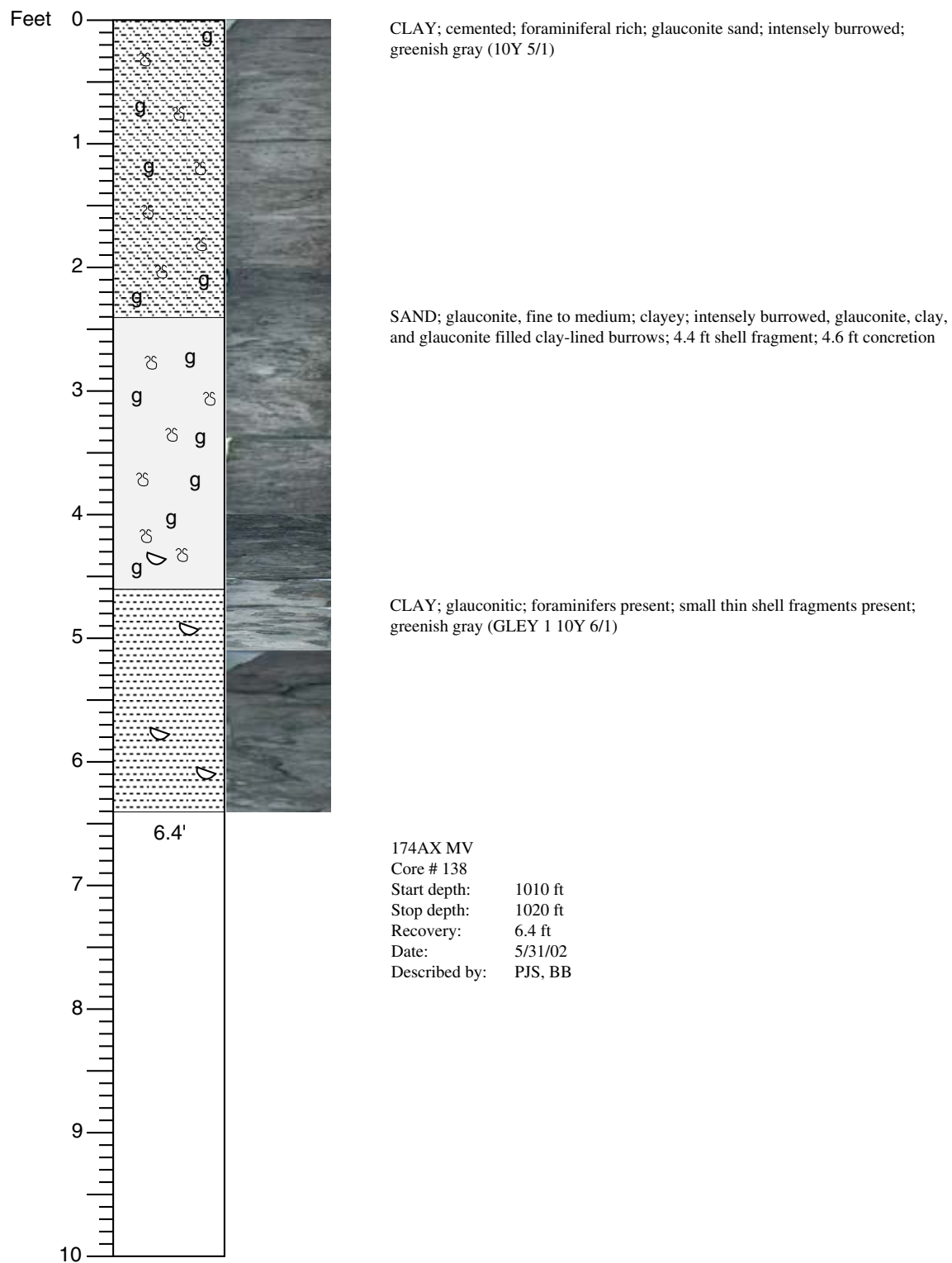


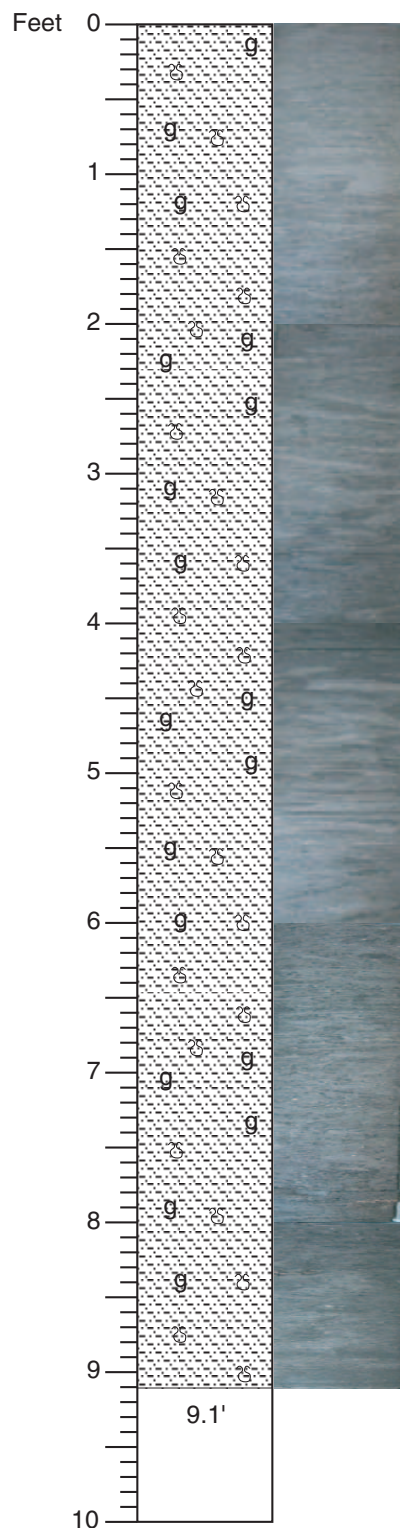
CLAY; silty; glauconite varies from 5-30%; intensely bioturbated, clay-lined burrows and glauconite filled burrows; 0.7 ft pyrite nodule; large burrows at 1.1, 1.9 ft; shell fragments at 2.6, 3.8, 8.1; glauconite content increases at bottom of core; color change at 3.0 ft; top: greenish black (10Y 2.5/1); bottom: greenish gray (10Y 5/1)

174AX MV  
 Core # 137  
 Start depth: 1000 ft  
 Stop depth: 1010 ft  
 Recovery: 10.2 ft  
 Date: 5/31/02  
 Described by: PJS, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

139

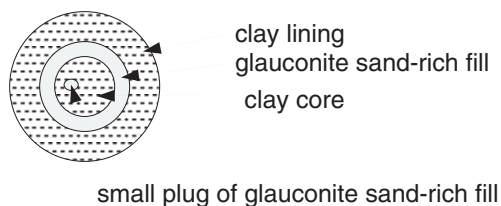


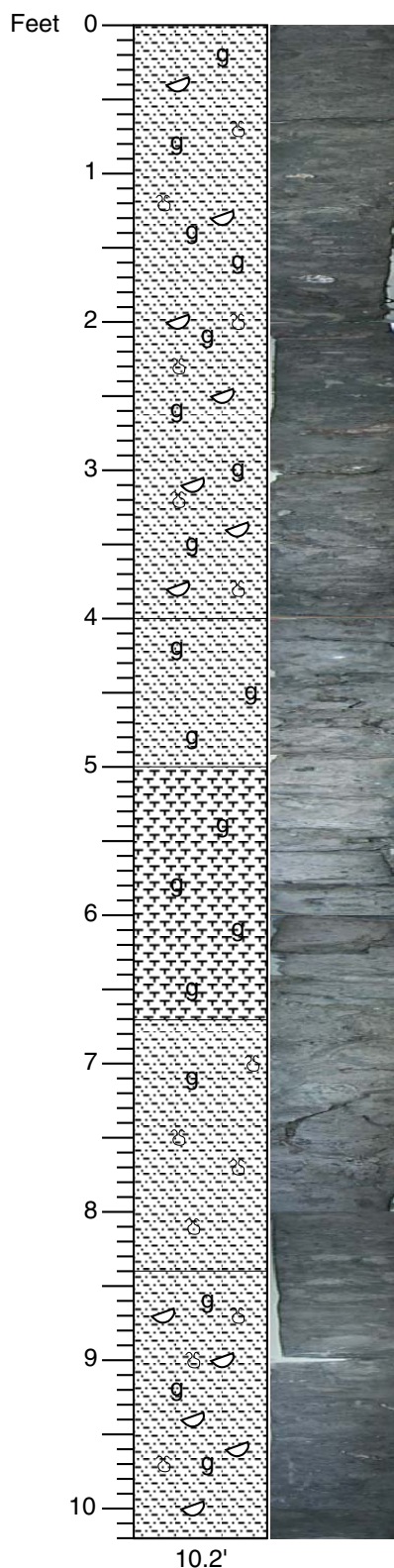


SILT; clayey, with ~20% medium to fine subrounded glauconite sand; scattered (<1%) quartz sand, fine to coarse; minor very fine mica; intensely burrowed, gives a mottled look, burrows are 5-20 mm diameter (10mm average), some with glauconite rich fill, some with more clayey linings, horizontal to subvertical; brownish concretions common, at 2.0, 4.75, 7.7 (10 x 30 mm), 8.2 (10 x 20 mm), 8.5 ft (very small); 5.9 ft pyritic nodule; scattered thin shells, including 4.9 ft; foraminifers and ostracods evident with hand lens; fairly hard, stiff lithology; dark greenish gray (GLEY 1 10Y 4/1-3/1) to greenish gray (GLEY 1 10Y 6/1)

174AX MV  
 Core # 139  
 Start depth: 1020 ft  
 Stop depth: 1030 ft  
 Recovery: 9.1 ft  
 Date: 6/1/02  
 Described by: PPM, BB

Typical Burrow





CLAY/SILT; clayey silt or silty clay; ~25% fine to medium glauconite sand, rounded-subrounded; ~10% quartz sand, coarse to medium (some fine), subangular-subrounded; extensive bioturbation with burrows 5-15 mm diameter (most <10mm); a number of large fossil fragments (0.4, 0.8, 1.1, 1.15, 1.2-1.4, 1.8, 1.85-2.0, 2.1-2.2, 2.3, 2.5, 2.7-2.9 (20 x 50 mm), 3.1, 3.2, 3.4, 3.5-3.6, 3.8, 3.9 ft); fossil at 1.15 ft is ~10 mm diameter hollow tube with glauconite mud fill; fossil at 1.2-1.4 ft is a 30-40 mm diameter glauconite mud filled shell (?end of a straight ammonite), at 1.8 ft may be a belemnite; shell at 2.7-2.9 ft is 15 mm thick x 50 mm long and curved; at 3.1 ft is a conical, hollow, glauconite filled shell element (ammonite?), 20 mm diameter and longer than core diameter, horizontal; from 3.1-4.0, color gets gradually lighter and core becomes slightly softer, transitioning to underlying bed; mottled; the upper 0.35 ft has granule size fragments/clasts of hard silt, plus fragments of shells/concretions (some pyritic) and medium glauconite suspended in a silty matrix that transitions downward (finer grains and less grains) into the glauconite silt; looks like grains were from sediment ripped up and moved around, but no clear base to it, looks transitional; dark greenish gray (GEY 1 10Y 3/1) to greenish gray (GEY 1 10Y 5/1)

SILT; clayey, less than above; common glauconite sand but less than above (10-15%); lighter color; less distinct burrows and less color mottling than above; 4.2 ft large fossil fragment (?ammonite); greenish gray (GEY 1 10Y 6/1)

CLAYSTONE; (micrite?), very hard with softer zones at 5.3, 5.5, 5.8 ft; 10% glauconite, up to 15% in some places, fine to medium, subrounded-rounded; concretions (or hardground pebbles), 5-10 mm diameter, some dark colored; hints of burrowing by distribution of glauconite (some likely follows burrow traces); large fossils at 6.3 ft includes possible tooth and possible ammonite fragment; greenish gray (GEY 10Y 7/1)

SILT; slightly clayey, contains ~15% glauconite sand, fine to medium subrounded to rounded; mottled look from extensive burrowing, some burrows lined with cleaner (no glauconite) clay, some with more glauconite-rich fill, burrows mostly subhorizontal-horizontal, 3-20 mm (mostly ~10 mm); contains pyritic nodule at 7.6 ft (10 x 20 mm diameter - burrow fill?); transitional into unit below; fairly hard and stiff; greenish gray (GEY 1 10Y 6/1)

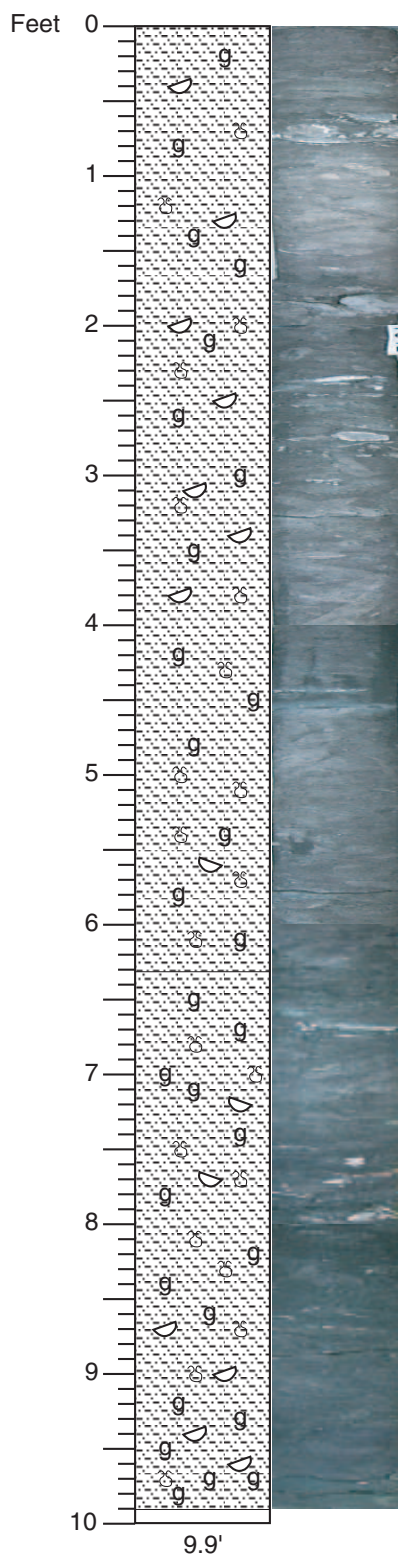
SILT; slightly clayey; darker than above; slightly harder?; ~15% glauconite, up to 25% in lower part; extensively burrowed including same types as above and also vertical to subvertical narrow (1-3 mm) not present above; thick (~10 mm diameter) pyritic horizontal burrow at 9.9 ft; shells at very base; common small shell fragment dispersed through core, especially at 9.0, 9.2, 9.5, 9.7, 9.9 ft; dark greenish gray (GEY 1 10Y 4/1)

174AX MV  
Core # 140  
Start depth: 1030 ft  
Stop depth: 1040 ft  
Recovery: 10.2 ft  
Date: 6/1/02  
Described by: PPM, BB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

142



SILT; slightly clayey, glauconite ranges from ~15-20% near top to up to 40% near bottom of interval, transitions downward; extensively burrowed, some clay-lined, some with glauconite-rich fill, mostly 5-15 mm; common shells, mostly *Exogyra* type oysters, especially 0.65-0.85, 1.56, 1.75-1.95 (large, thick), 2.4, 2.5, 2.7-2.8, 3.0, 4.5, 5.7, 6.0 ft, thin bivalve at 6.0 ft, fewer shells lower in interval; pyritic zones common (e.g., 5.5 ft), associated with burrows and shells; color from greenish gray (GLEY 1 10Y 5/1) near top darkening gradually downward to dark greenish gray (GLEY 1 10Y 3/1)

Very diffuse/gradational transition

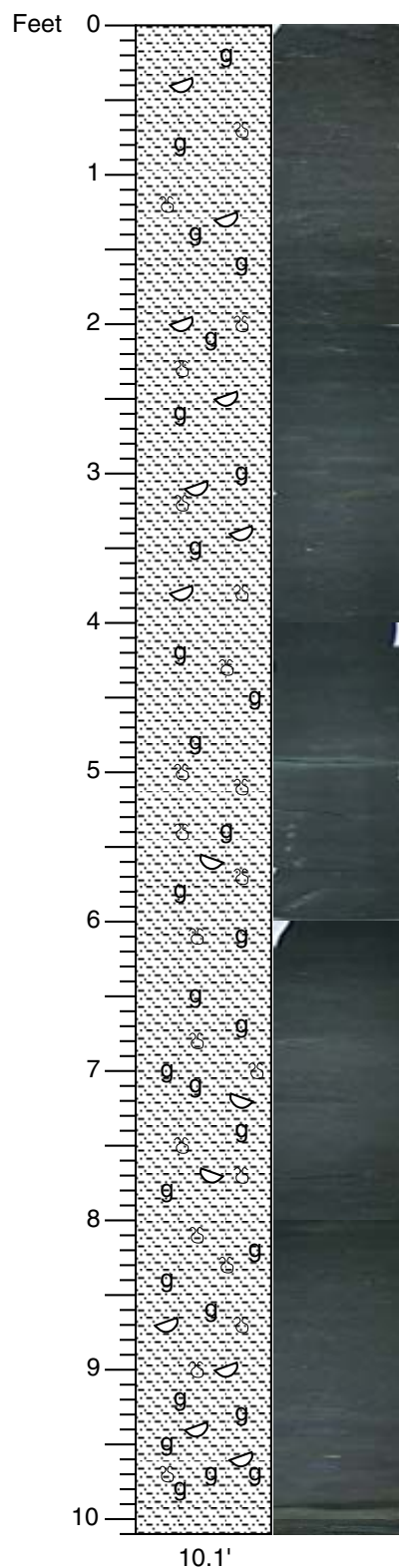
SILT; clayey (more than above), silty; to silty quartzose glauconite SAND; glauconite sand content from 40% near top to ~60% at bottom, glauconite is very fine to medium, rounded-subrounded; sand increases from ~20% quartz near top to 20% near bottom; shells at 6.7-6.8, 7.5-8.0 (abundant shells), 8.3, 8.6, 8.8 ft; abundant burrows, many with mud-lined walls, pyritic zone (in burrow fill) at 7.0 ft; slightly lighter near top and darker near bottom; greenish black (GLEY 1 10Y 2.5/1)

174AX MV  
Core # 141  
Start depth: 1040 ft  
Stop depth: 1050 ft  
Recovery: 9.9 ft  
Date: 6/1/02  
Described by: PPM, BB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

143



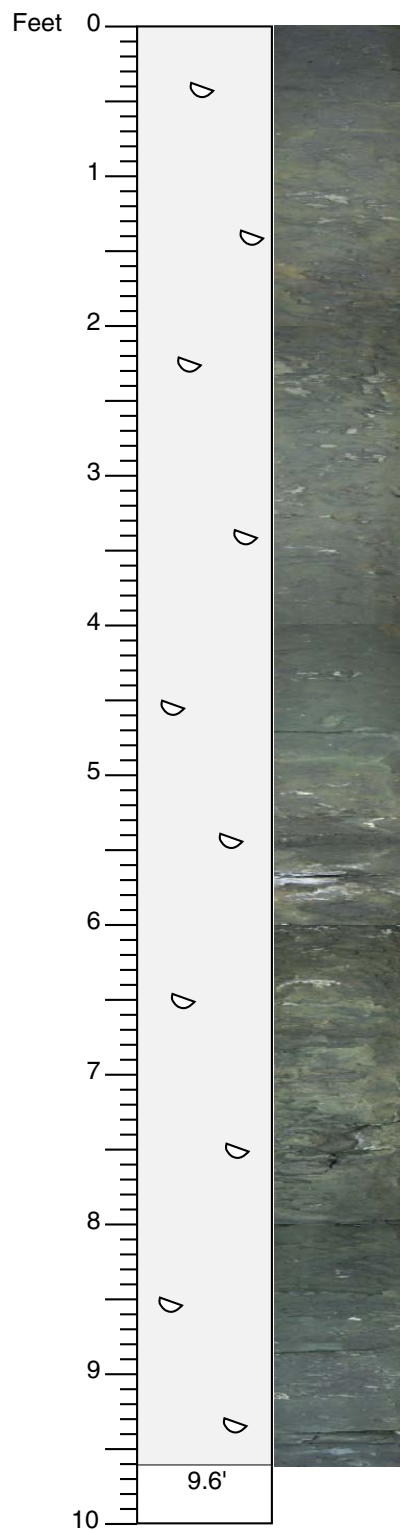
SAND/SILT; glauconite-rich, sandy, silty lithology with about equal amounts of sand and silt; somewhat clayey; very fine to medium glauconite sand, rounded-subrounded, >90% of sand is glauconite, much of the glauconite (10-20%) is weathered brown grains, gives a browner, lighter color; <10% of sand is quartz, medium to fine, subangular-subrounded, many grains are yellowish (especially in specific zones - stained?), lower 0.3-0.4 ft is especially rich in yellowish grains; scattered shell fragments (0.25, 0.6, 1.95, 2.2, 3.5 ft (small), and a few small ones below), some small pyrite nodules, some small ovoid grains?; slightly mottled (burrowed) reflecting varying silt and sand amounts; greenish black (GEY 1 5GY 2.5/1); dark greenish gray (GEY 1 10Y 3/1)

174AX MV  
Core # 142  
Start depth: 1050 ft  
Stop depth: 1060 ft  
Recovery: 10.1 ft  
Date: 6/1/02  
Described by: PPM, BB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

144



SAND; very fine to fine, subangular to subrounded, moderate sorting, variably silty; mostly quartz with common yellow to orange tinted grains comprising an average of ~30% of the sand (variable though); 1-3% glauconite, mostly very fine to fine; hints of bioturbation in mottled yellowish patches with variable distribution; common shells, mostly thinner shelled bivalves or bivalve fragments, some thicker (probably *Exogyra* shells) at 0.0, 5.6, 7.4, 9.1 ft; some small ovoid grains; above 0.8 ft and below 8.3 ft: very dark gray (5Y 3/1) (brownish to more yellowish); below 0.8 ft and above 8.3 ft: olive (5Y 4/3) to olive yellow (5Y 6/8) at the extreme

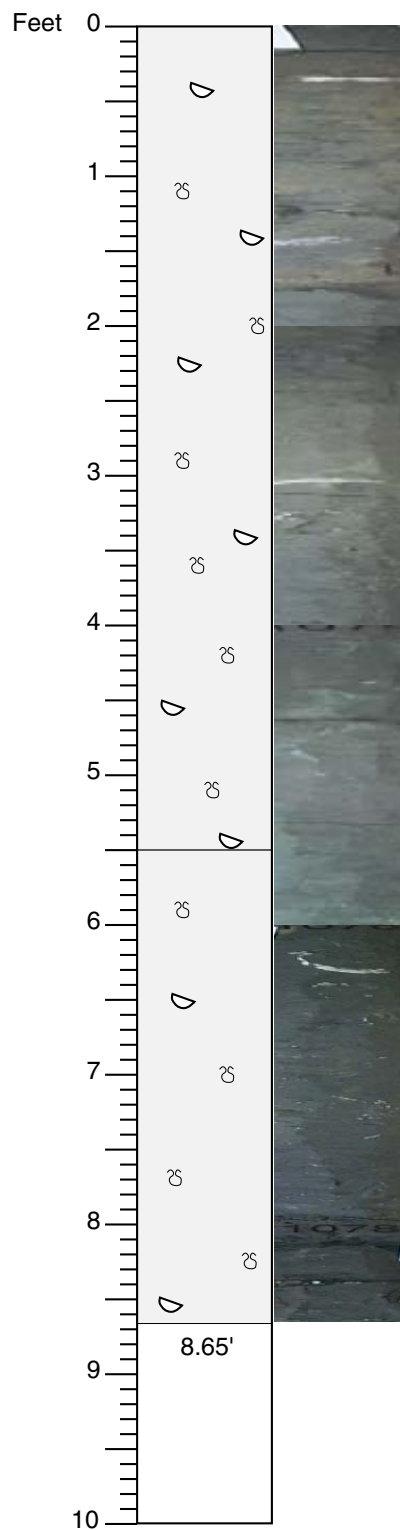
174AX MV  
Core # 143  
Start depth: 1060 ft  
Stop depth: 1070 ft  
Recovery: 9.6 ft  
Date: 6/1/02  
Described by: PPM, BB



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

145



SAND; medium to fine quartz, subangular; silty; little glauconite at top, glauconite content increases down core, fine to very fine; trace mica; heavily burrowed, at 1.0 ft is a 15 mm diameter clay-lined burrow; scattered thin shells, large shells 0.45, 1.45, 3.05, 3.25 ft, most are chalky, maybe dolomitized, shell at 3.25 ft fizzes vigorously and may be good for strontium analysis; many yellow-stained grains; olive gray (5Y 5/2)

SAND; fine; core is siltier and firmer than above; slightly micaceous; less glauconite; heavily burrowed, sand lined burrows; scattered thin shells; dark greenish gray (GLEY 1 10Y 3/1)

174AX MV  
Core # 144  
Start depth: 1070 ft  
Stop depth: 1080 ft  
Recovery: 8.65 ft  
Date: 6/2/02  
Described by: JVB, MJW

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

146



SAND; mainly fine, subangular-subrounded, abundant silt, silt content increases downcore; 2-3% glauconite, slightly micaceous, thin shells scattered throughout, larger shells at 3.3, 8.25 ft; heavily burrowed, subhorizontal to subvertical burrows, some burrows contain clay; greenish black (10Y2.5/1)

Contact – burrowed; material from above burrowed down; underlying material ripped up

SAND; fine to medium; silty; clay filled burrows; slightly micaceous; 1-2% glauconite; yellow stained quartz grains; heavily burrowed; dark olive gray (5Y 3/2)

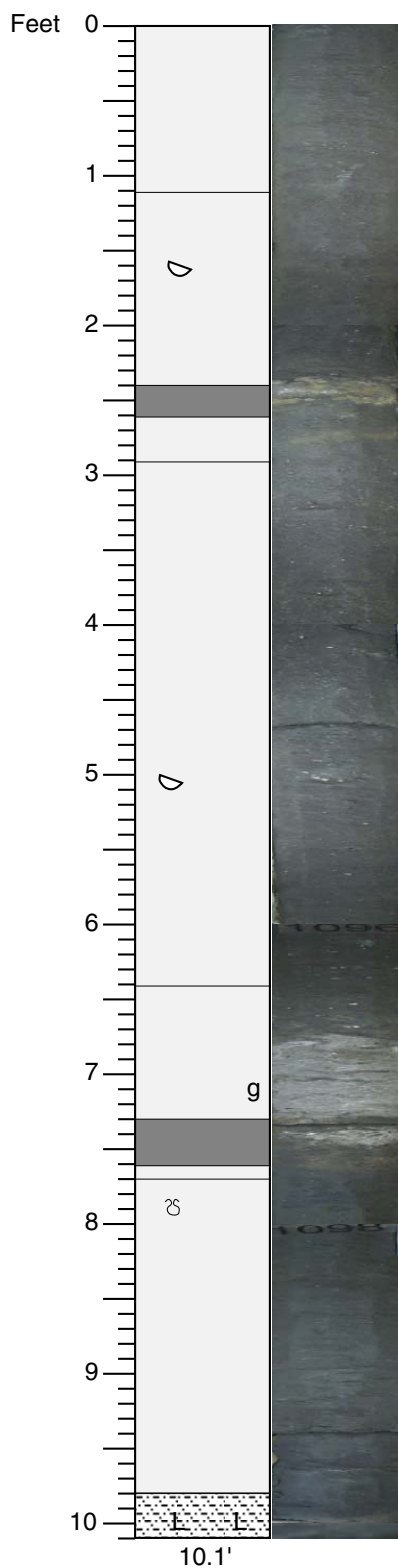
174AX MV  
Core # 145  
Start depth: 1080 ft  
Stop depth: 1090 ft  
Recovery: 10.3 ft  
Date: 6/2/02  
Described by: JVB, MJW

10.3'

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

147



SAND; fine, subangular-subrounded; silty; slightly clayey; micaceous, trace glauconite; heavily burrowed, average 3 mm diameter; scattered shells; dark greenish gray (GLEY 1 10Y 3/1)

SAND; medium-fine; silty, little to no clay; yellowish grains, slightly micaceous; 1.4 ft small shell; 2.4-2.6 ft indurated with calcite cement; heavily burrowed; dark greenish gray (GLEY 1 10Y 3/1); indurated zone: olive (5Y 4/4)

SAND; similar to the top but less clay; lots of silt; micaceous; no yellow grains; more clear quartz on the outside of core; shelly throughout; dark greenish gray (GLEY 1 10Y 3/1)

174AX MV  
Core # 146  
Start depth: 1090 ft  
Stop depth: 1100 ft  
Recovery: 10.1 ft  
Date: 6/2/02  
Described by: JVB, MJW

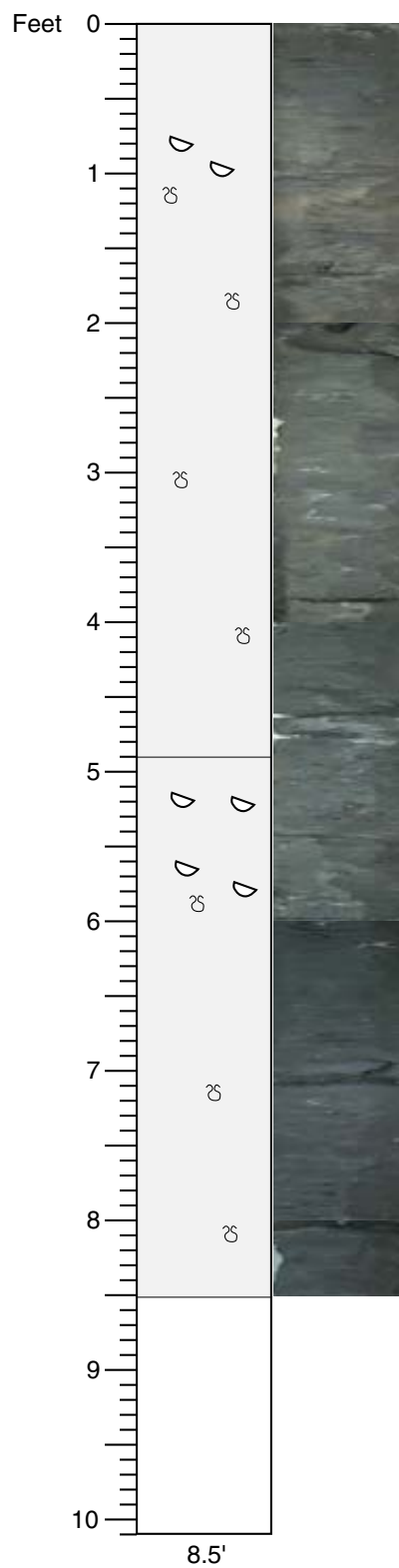
SAND; medium to fine; as above; many yellow grains; some brown glauconite; 7.3-7.6 ft indurated, with calcite cement, shelly; dark greenish gray (GLEY 1 10Y 3/1)

SAND; fine; silty; large (18 mm) clay lined burrow at 7.8 ft; dark greenish gray (GLEY 1 10Y 3/1)

SILT; lignitic; greenish gray (10Y 5/1)

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**148**



SAND; medium to fine; subrounded; 97% quartz, 2-3% glauconite; abundant silt; soft core; heavily bioturbated; a few scattered shells; greenish gray (10Y 5/1)

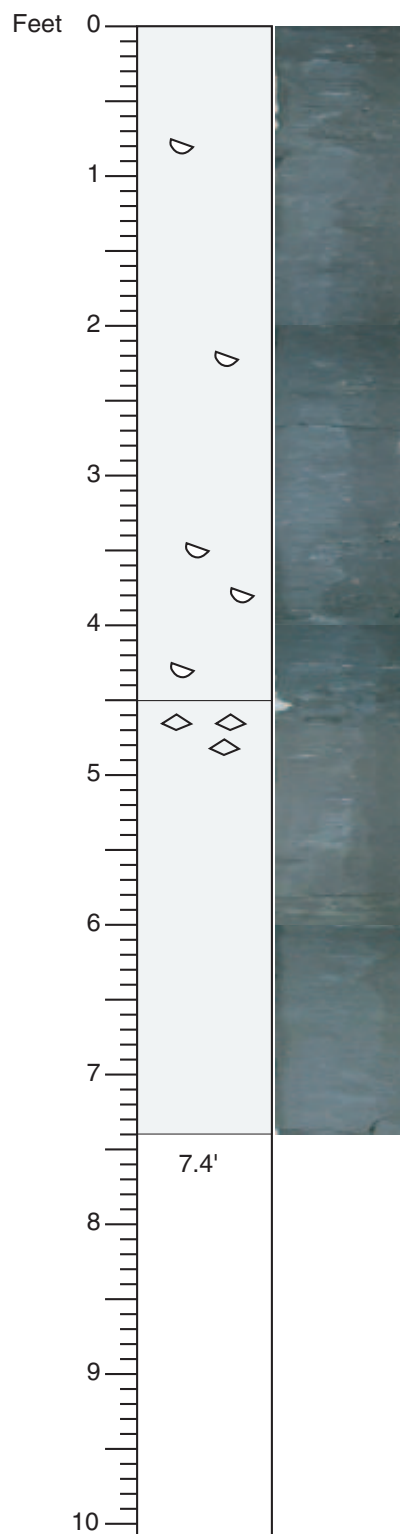
SAND; similar to above; silt and clay content increases to bottom; heavily bioturbated; shells are common in the upper 1 ft and are less common below; shell layer at 5.8 ft; dark gray (N4/)

174AX MV  
 Core # 147  
 Start depth: 1070B ft  
 Stop depth: 1080B ft  
 Recovery: 8.5 ft  
 Date: 6/13/02  
 Described by: JVB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

149



SAND; silty; fine to very fine quartz; subrounded; 1-3% glauconite; glauconite increases slightly down to 4.5 ft (10-15%); heavily bioturbated, clay lined, subhorizontal, a few scattered whole shells, more common at bottom

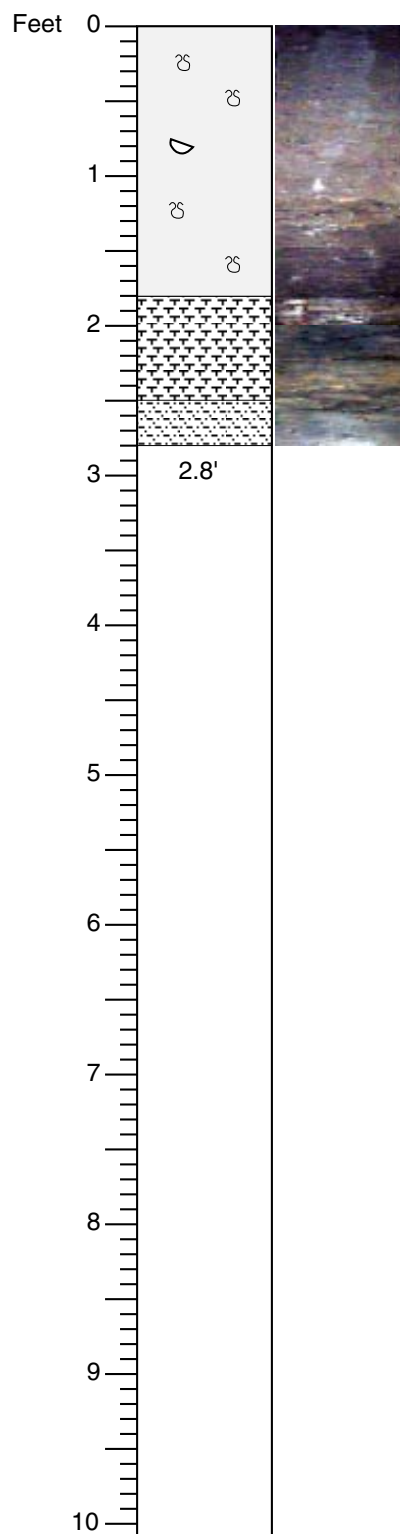
Contact - sharp, no evidence of burrowing across; numerous ?limonitic concretions (to 1 cm) in sand under contact

SAND; medium, silty, quartz, subrounded-subangular; little glauconite, heavily bioturbated, a few shell fragments on outside of core numerous yellow stained grains

174AX MV  
Core # 148  
Start depth: 1080B ft  
Stop depth: 1090B ft  
Recovery: 7.4 ft  
Date: 6/13/02  
Described by: JVB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**150**



SAND; silty, fine to medium; subangular-subrounded; heavily bioturbated; scattered shell fragments

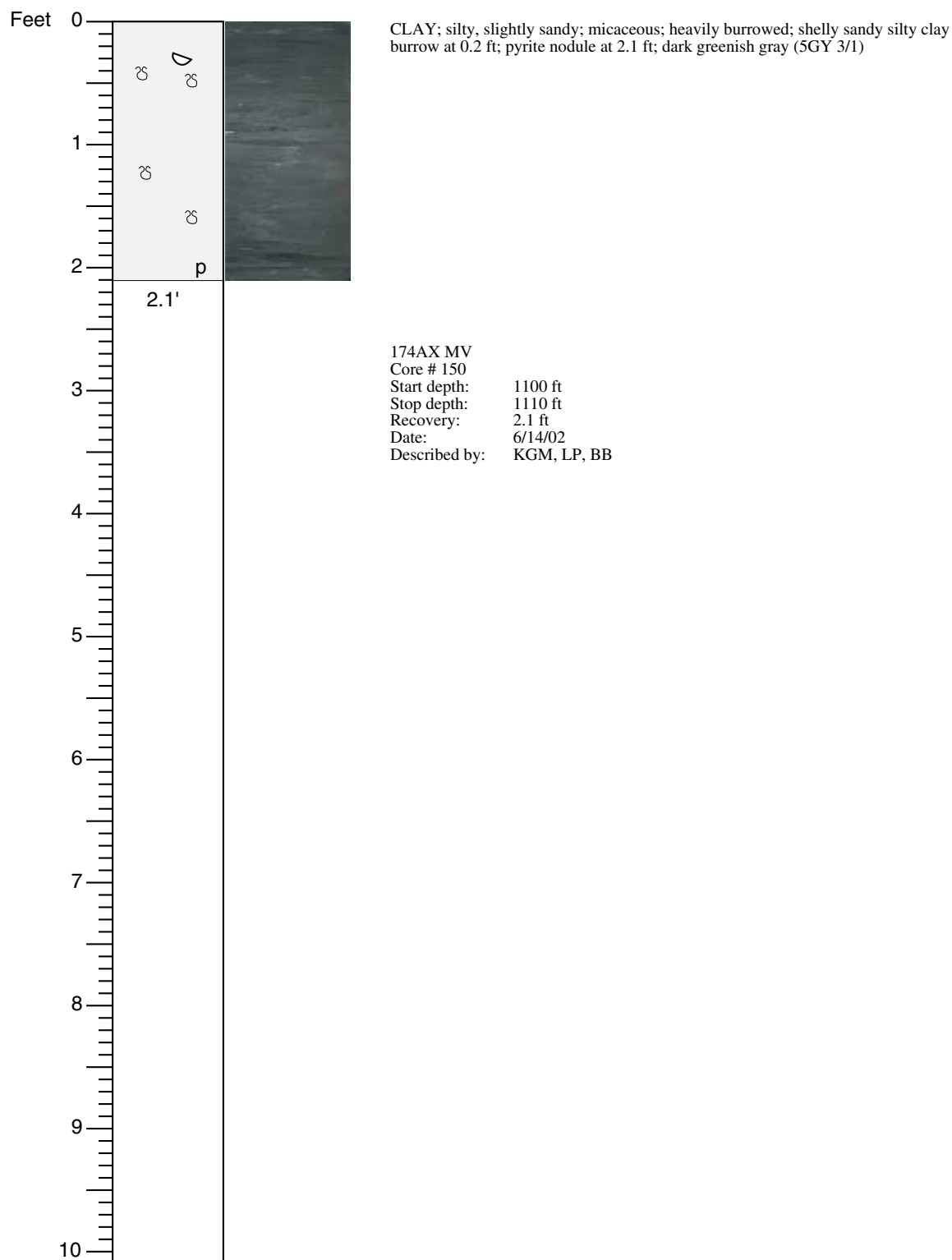
SANDSTONE; fine to medium; upper part is more indurated, yellow stained

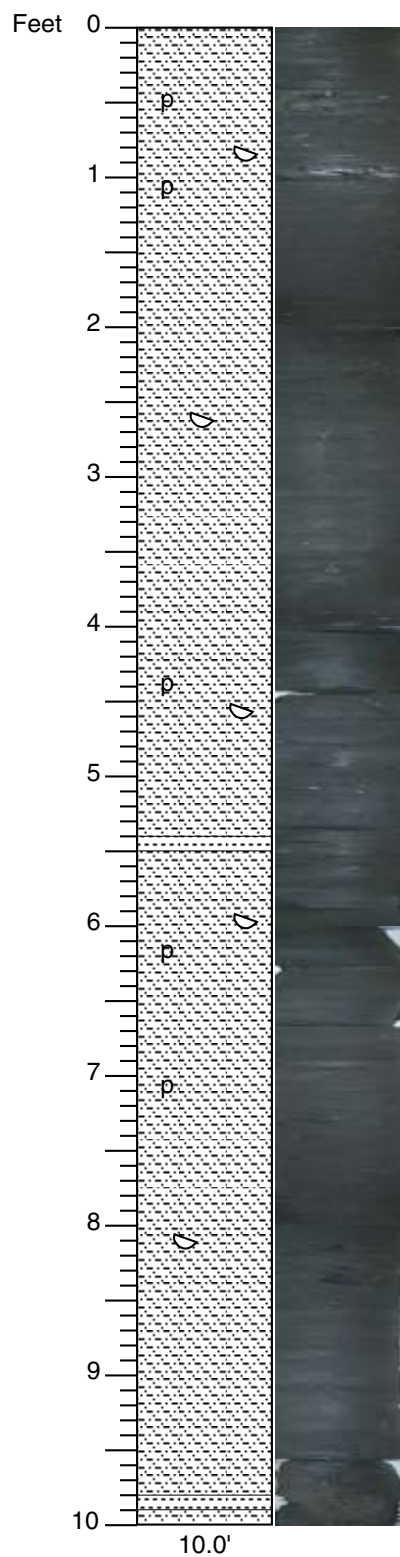
CLAY; silty, sandy, micaceous

174AX MV  
 Core # 149  
 Start depth: 1090B ft  
 Stop depth: 1100B ft  
 Recovery: 2.8 ft  
 Date: 6/13/02  
 Described by: JVB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**151**

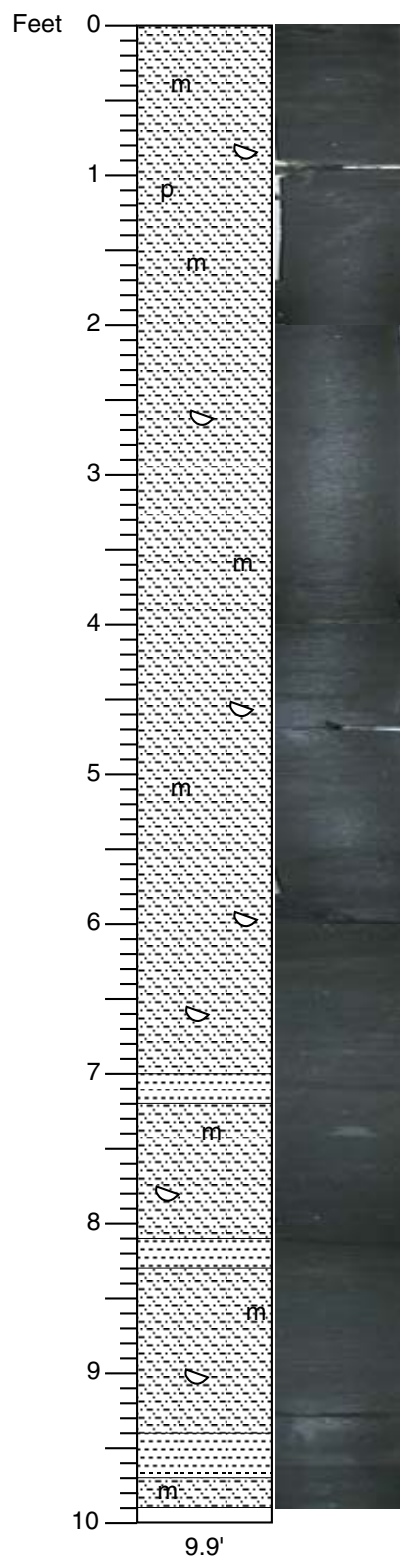




CLAY; silty; slightly sandy, glauconite and quartz sand, trace glauconite at top, up to 5% down section; shell fragments scattered throughout; clay laminae at 5.4-5.5, 9.8-9.9 ft; pyrite nodules near top and scattered throughout

174AX MV  
 Core # 151  
 Start depth: 1110 ft  
 Stop depth: 1120 ft  
 Recovery: 10.0 ft  
 Date: 6/14/02  
 Described by: LP, KGM



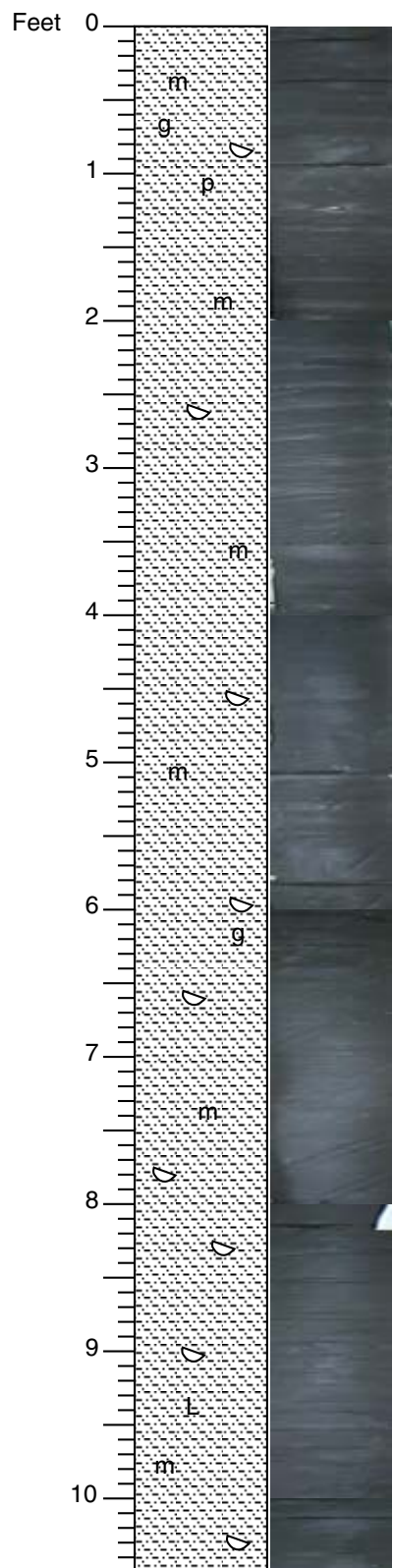


CLAY; silty, clayier than core 151; slightly sandy, quartz and glauconite, glauconite ranges from 1-5%; micaceous; some shell fragments, smaller than core 151; heavily bioturbated; pyrite nodule at 1 ft; lignite at 4.8 ft; clay laminae at 7.1, 8.2, 9.5, 9.6 ft

174AX MV  
 Core # 152  
 Start depth: 1120 ft  
 Stop depth: 1130 ft  
 Recovery: 9.9 ft  
 Date: 6/14/02  
 Described by: LP, KGM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

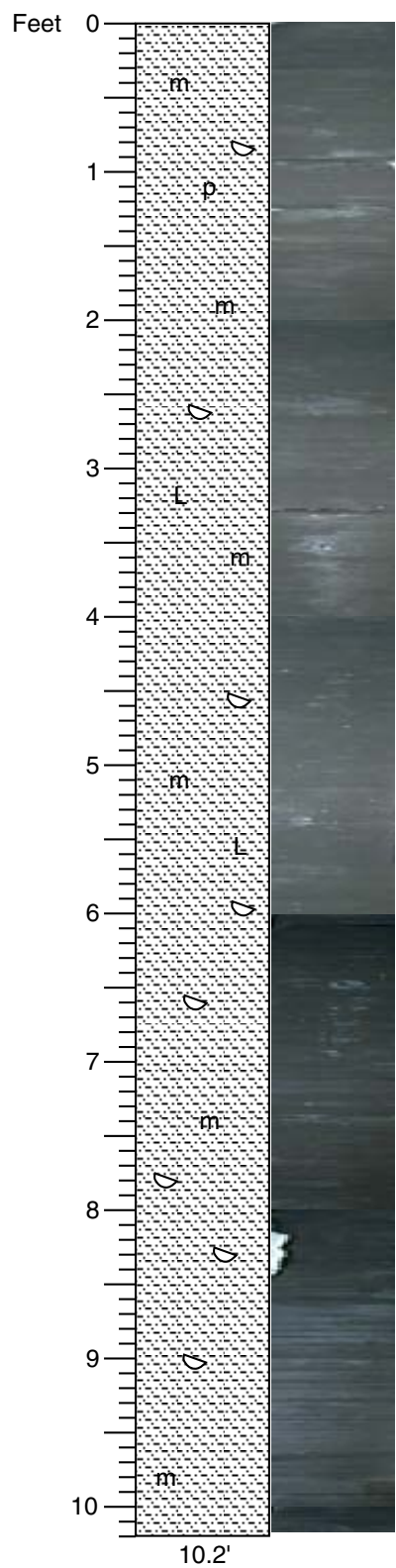
**154**



CLAY; silty to slightly silty; glauconitic, glauconite occurs in burrows at 0.5, and 6.2 ft and in thin beds at 8.6, 8.7 ft; slightly micaceous, less mica than in core 152, mica decreases downsection; pyrite occurs scattered throughout, esp. 1.12, 6.1 ft; concretions of clay shell? at 4.05, 8.0 ft, may be siderite; lignite at 9.55 ft, slightly lignitic below 9.5; shell fragments throughout

174AX MV  
 Core # 153  
 Start depth: 1130 ft  
 Stop depth: 1140 ft  
 Recovery: 10.5 ft  
 Date: 6/14/02  
 Described by: KGM, BB, LP

10.5'



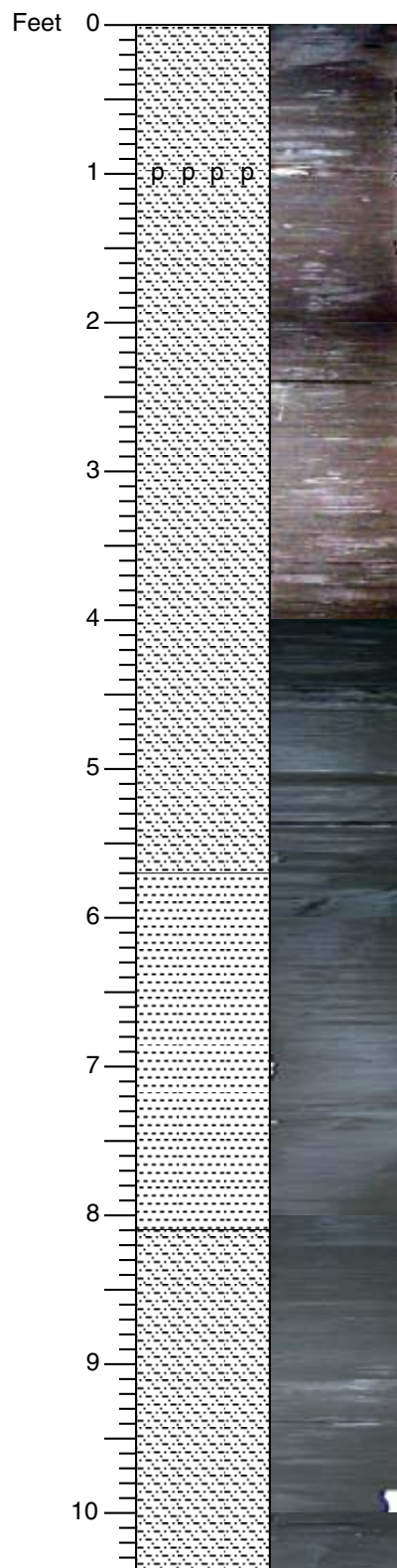
CLAY; silty to slightly silty; slightly micaceous, finely disseminated; small shell fragments throughout; some lignite, various sizes; some pyrite, nodule at 0.9 ft; 1-2% glauconite; thin bedded when not burrowed

174AX MV  
 Core # 154  
 Start depth: 1140 ft  
 Stop depth: 1150 ft  
 Recovery: 10.2 ft  
 Date: 6/15/02  
 Described by: PJS, BAH

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

156

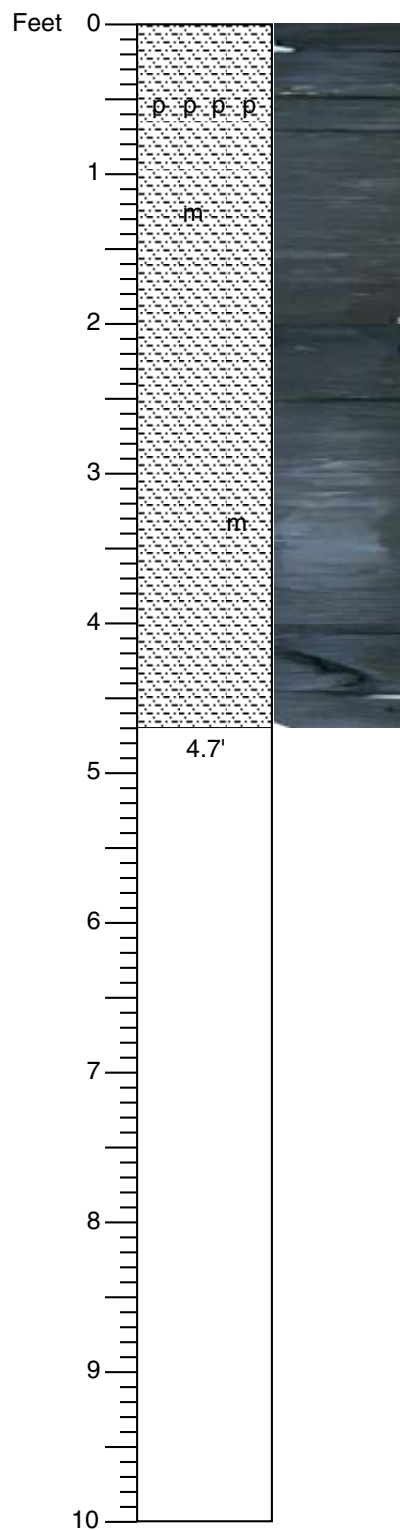


CLAY; silty; some clayey silt; laminated; laminae of very fine sand; very micaceous; lignitic; shelly; trace glauconite; some large burrows; large pyrite concretion at 1.0 ft; clayey interval between 5.7-8.1 ft; greenish black (GEY 1 10Y 2.5/)

174AX MV  
Core # 155  
Start depth: 1150 ft  
Stop depth: 1160 ft  
Recovery: 10.4 ft  
Date: 6/15/02  
Described by: PJS, BAH

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**157**

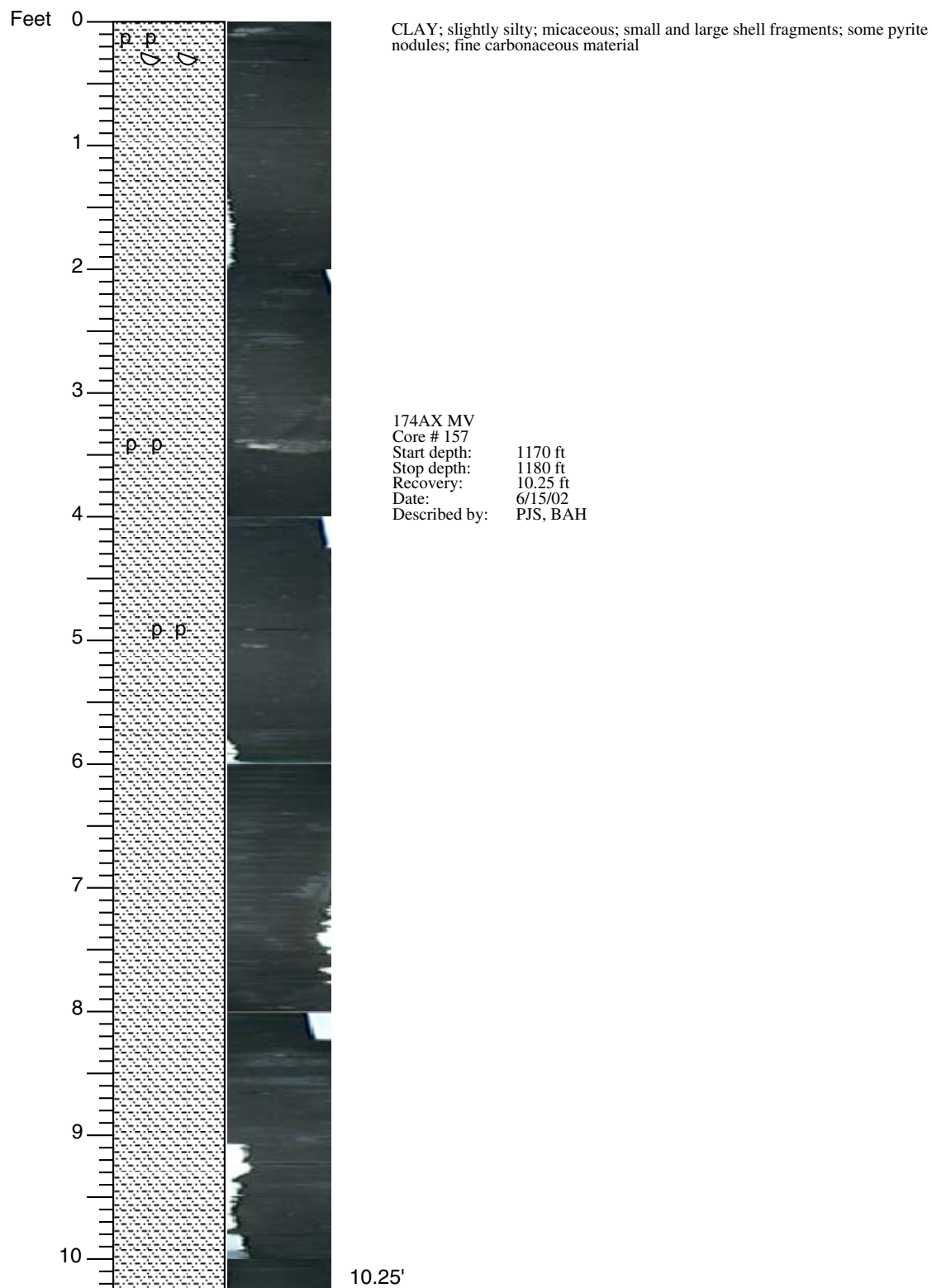


CLAY; slightly silty; trace of very fine sand; some finely disseminated mica, less than before; occasional pyrite nodule; some fine shell hash; laminated to thin bedded when not bioturbated; greenish black (GLEY 110Y 2.5/)

174AX MV  
 Core # 156  
 Start depth: 1160 ft  
 Stop depth: 1170 ft  
 Recovery: 4.7 ft  
 Date: 6/15/02  
 Described by: PJS, BAH

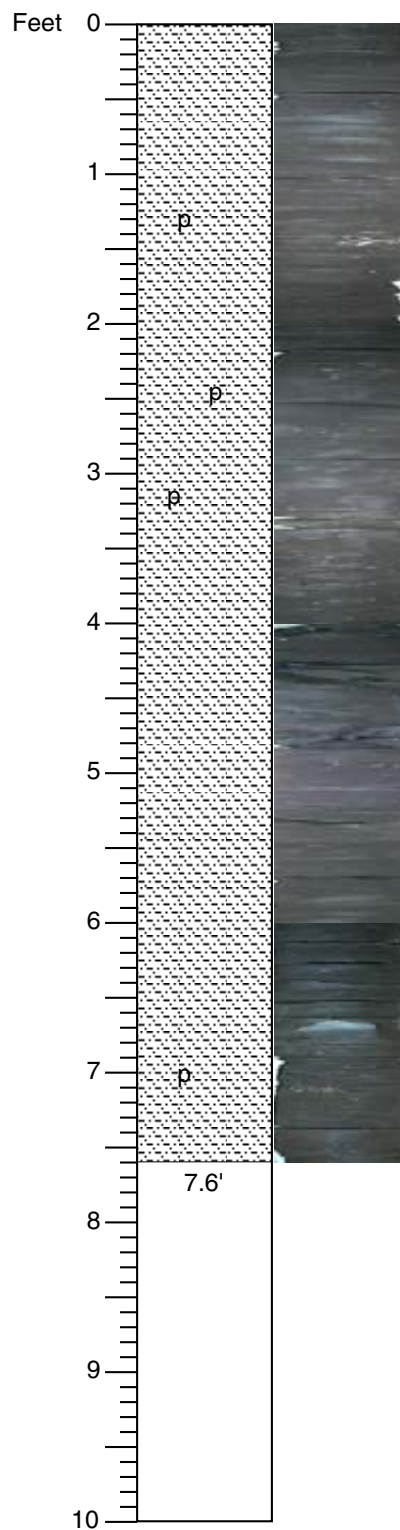
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**158**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**159**



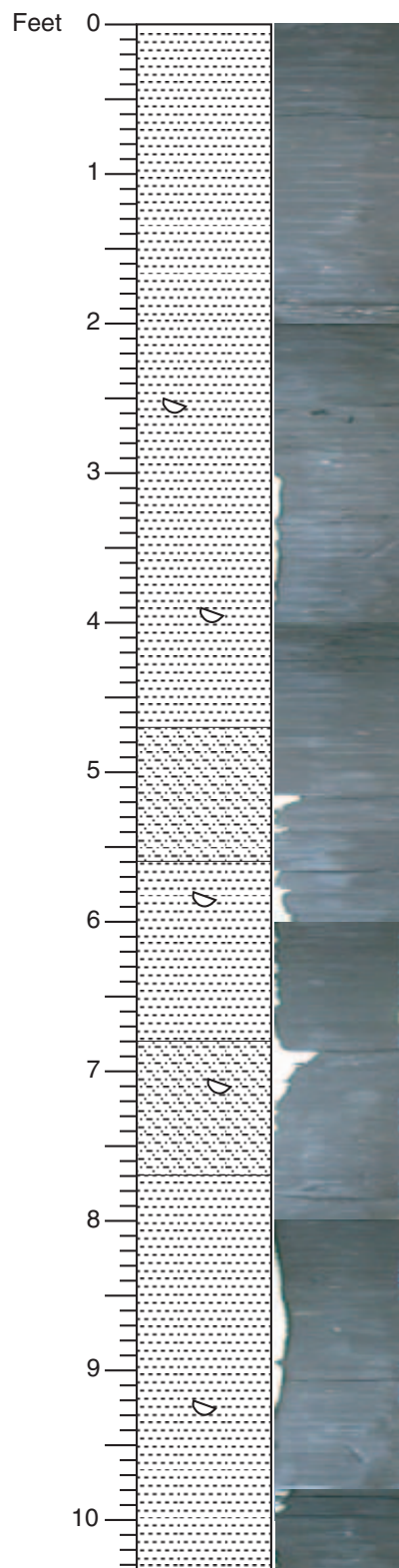
SILT; clayey, micaceous; pyrite nodules at 1.35, 2.6, 3.25, 7.0 ft; scattered thin shells throughout; heavily bioturbated, no visible burrows; pyrite is scattered throughout on the outside of the core; black (2.5Y 2.5/1)

174AX MV  
Core # 158  
Start depth: 1180 ft  
Stop depth: 1190 ft  
Recovery: 7.6 ft  
Date: 6/16/02  
Described by: JVB, SM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

160



CLAY: silty, especially 0-0.1 ft; very slightly sandy, very fine; slightly micaceous; many shells, very thin bivalves, echinoderm spines, foraminifers abundant; inoceramid at 1.08 ft; bedding, 15-20 mm, up to 35 mm, drilling fluid is squeezed in core, accentuating bedding, changes a little from darker to lighter; between 4.8-5.6 and 6.8-7.7 ft more very fine sand and silt, these siltier units show some burrows; black (2.5Y 2.5/1), siltier units: black (10YR 2/1)

174AX MV  
Core # 159  
Start depth: 1190 ft  
Stop depth: 1200 ft  
Recovery: 10.35 ft  
Date: 6/16/02  
Described by: JVB, SM

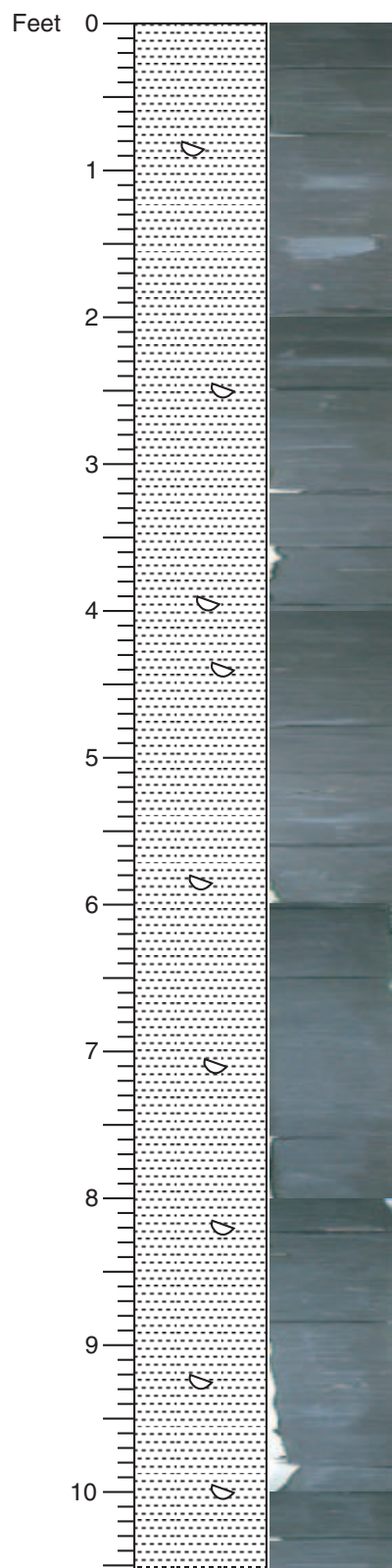
10.35'



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

161

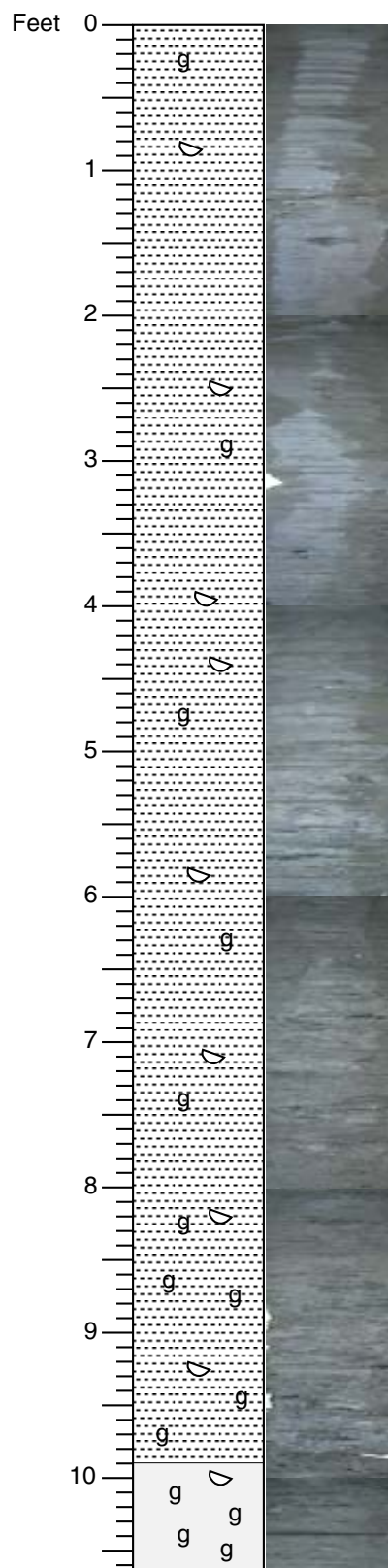


CLAY; silty; slightly micaceous; thin shells and foraminifers common, some shells are aragonitic (e.g., 8.0 ft); pyrite at 8.2, 8.4, 9.0 ft; bedding is not as obvious as in last core; bedding (15-20 cm) is found between 6-8 ft; black (2.5Y 2.5/1)

174AX MV  
Core # 160  
Start depth: 1200 ft  
Stop depth: 1210 ft  
Recovery: 10.55 ft  
Date: 6/16/02  
Described by: JVB, SM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**162**



CLAY; very slightly silty; glauconitic, 2-3% at top and increases regularly to 50% at bottom, toward the bottom the glauconite is concentrated in burrows; soft core, very slightly micaceous, fine shell fragments and foraminifers present throughout, pyrite in burrows; no bedding noted; dark gray (2.5Y 4/1)

174AX MV  
 Core # 161  
 Start depth: 1210 ft  
 Stop depth: 1220 ft  
 Recovery: 10.65 ft  
 Date: 6/16/02  
 Described by: JVB, SM

SAND; clayey; glauconite

10.65'

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

[illegible]

174AX MV  
Core # 162  
Start depth: 1220 ft  
Stop depth: 1230 ft  
Recovery: 10.33 ft  
Date: 6/16/02  
Described by: JVB, SM

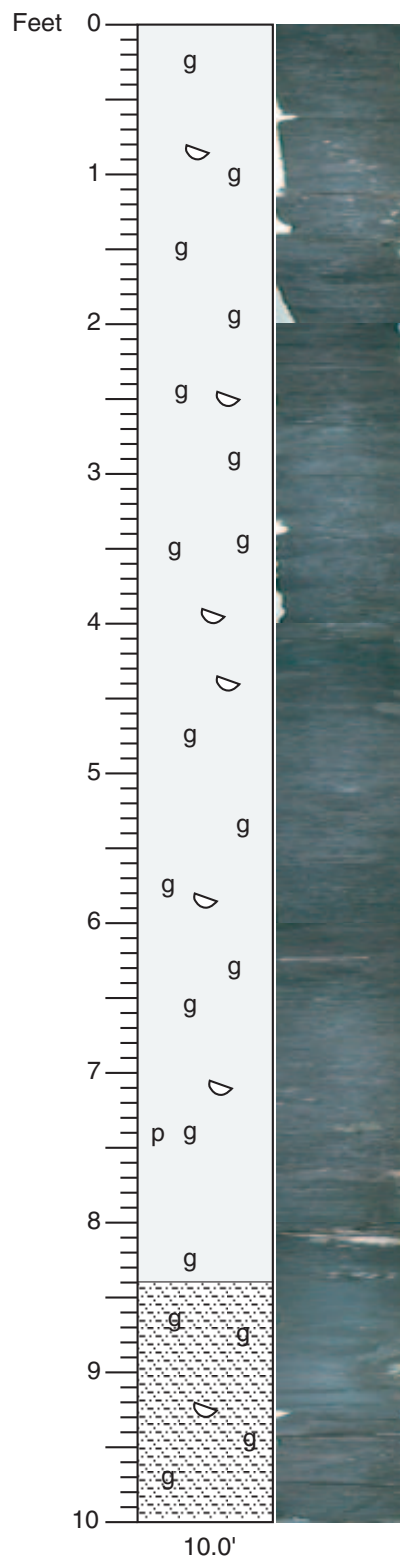
SAND; similar to above but there is more clay; 50% glauconite

10.33'

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

164



SAND; glauconite, up to 80%; clayey; slightly quartzose; heavily bioturbated, many clay filled burrows, shells at 1.1, 6.2, 7.7, 8.1, 8.3 ft; small pyrite nodules present, larger nodule at 7.4 ft; clay content increases below 8.4 ft; greenish black (GLEY 1 10Y 2.5/1)

174AX MV  
Core # 163  
Start depth: 1230 ft  
Stop depth: 1240 ft  
Recovery: 10.0 ft  
Date: 6/16/02  
Described by: JVB, SM

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

Feet 0

g S

1 D g S

g

2 S g S

g D

3 g

g g

4 D

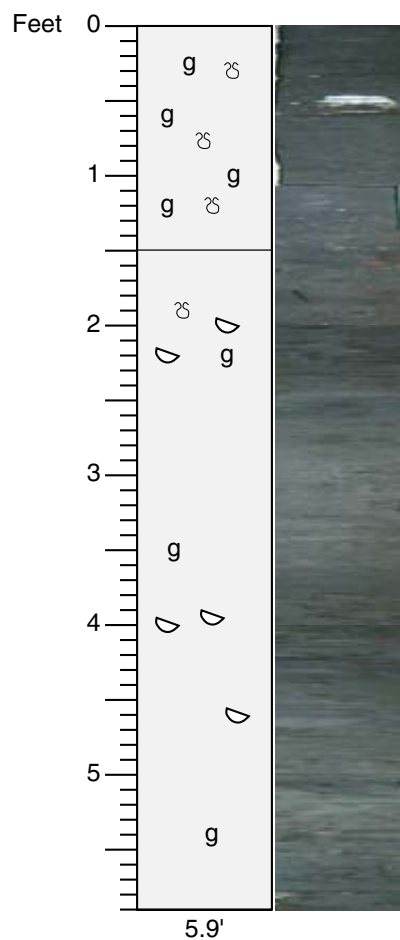
D

4.6'

5

SAND; glauconite; medium sand; burrowed but less than above, both fresh and altered glauconite, micaceous; dark grains (2 cm) at 2.6, 3.6 ft

174AX MV  
Core # 164  
Start depth: 1240 ft  
Stop depth: 1245 ft  
Recovery: 4.6 ft  
Date: 6/17/02  
Described by: DHM



SAND; medium, glauconite, rare weathered grains; quartz; clayey but not as clay rich as core 164; burrowed, some clasts at base of interval; black (N2.5)

**Contact**

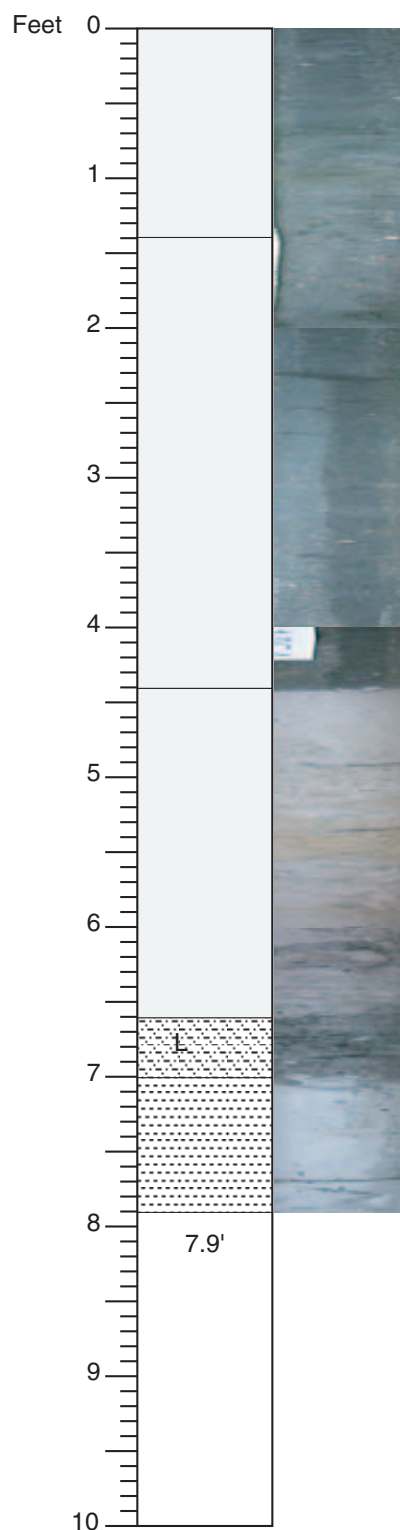
SAND; fine to medium; 10-20% glauconite, fine; quartz rich, subangular; clayey matrix; hints of cross laminations that are burrowed, thicker beds towards bottom (<0.1 ft); interbedded clays towards bottom; shells at 1.9, 2.2, 4.0 ft; lignite at 1.9 ft; near the base is an inclined contact between clayey quartz sand on top of glauconite medium sand; dark greenish gray (10Y 3/1) to greenish black (10Y 2.5/1)

174AX MV  
 Core # 165  
 Start depth: 1245 ft  
 Stop depth: 1250 ft  
 Recovery: 5.9 ft  
 Date: 6/17/02  
 Described by: PJS, DH

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

167



SAND; medium, quartz, subangular; micaceous; slightly clayey near top of interval, less clay down in interval; shells at 0.3 ft; lignitic; generally massive; dark olive gray (5Y 3/2)

SAND; medium, clayey, micaceous, some small pebbles (to 1.2 cm) at base of interval; greenish black (GLE 1 10Y 2.5/1)

Contact

SAND; very fine, quartz, microsphaerosiderite grains; massive, some thin discontinuous layers; slight color change at 6.1 ft where lignite is present; 5.2-5.5 ft slightly disrupted zone, fine sand, irregular upper contact; pinkish gray (7.5YR 6/2); 5.2-5.5 ft: light olive brown (2.5Y 3/4)

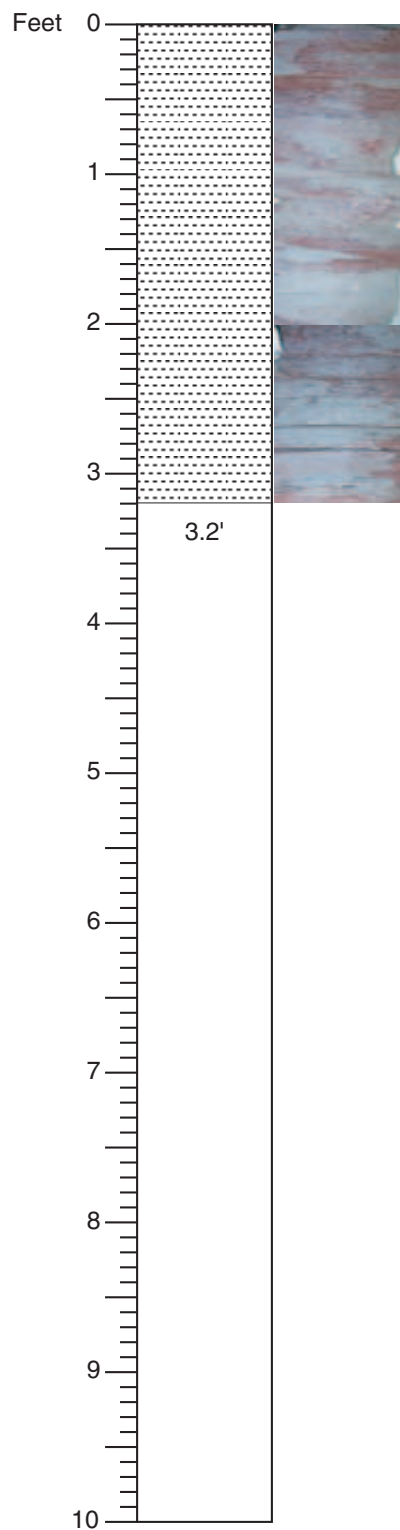
SILT; very lignite enriched, pieces up to 1.1 cm in long axis; pyrite on lignite; rip-ups of lower clay at lower contact; very dark gray (2.5Y 3/1)

CLAY; hints of laminations that could be drilling artifact; light brownish gray (10YR 6/2)

174AX MV  
Core # 166  
Start depth: 1250 ft  
Stop depth: 1260 ft  
Recovery: 7.9 ft  
Date: 6/17/02  
Described by: DHM, PJS

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**168**



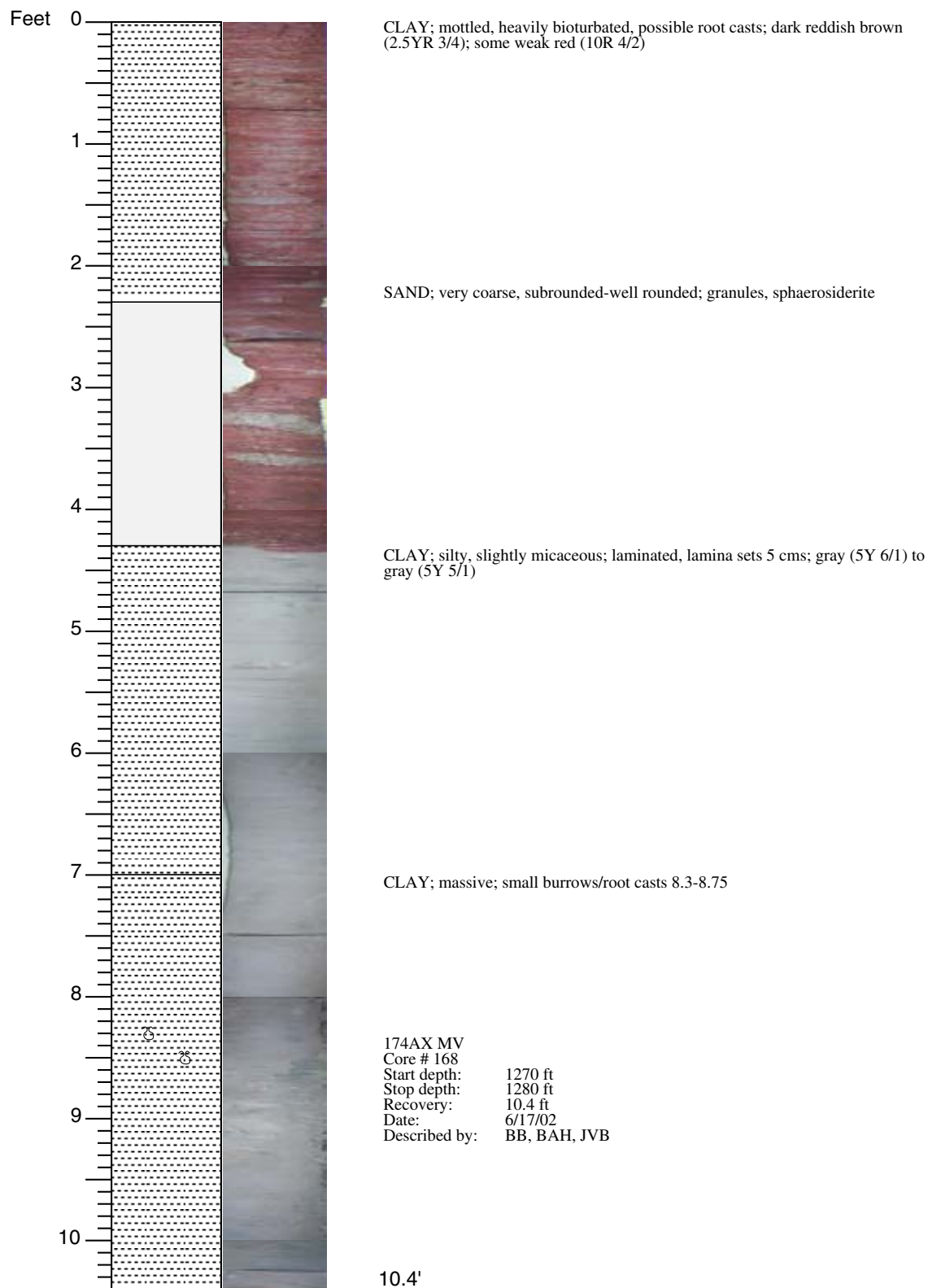
CLAY; mottled, root zones, oxidized, dominant color is white; root zones are red oxidized, there also appears to be a vertical reddish band in core; light gray (2.5Y 7/1), red (10R 4/6)

174AX MV  
Core # 167  
Start depth: 1260 ft  
Stop depth: 1270 ft  
Recovery: 3.2 ft  
Date: 6/17/02  
Described by: DHM



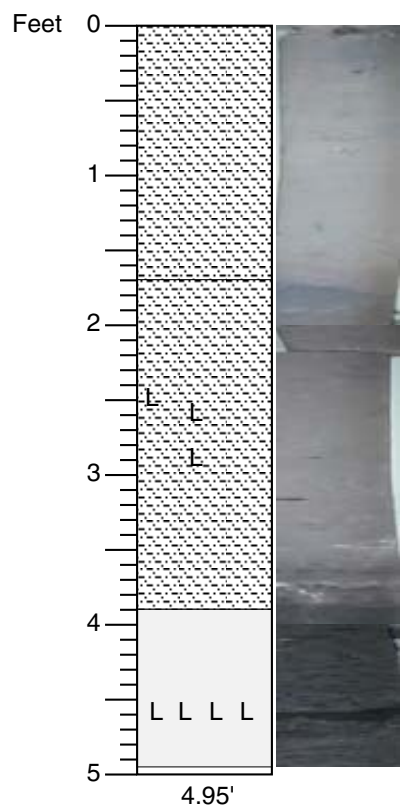
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**169**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**170**



SILT; some very fine sand; slightly micaceous; homogenous; clay content increases down core; gray (10YR 6/1)

Irregular surface with 25 mm relief

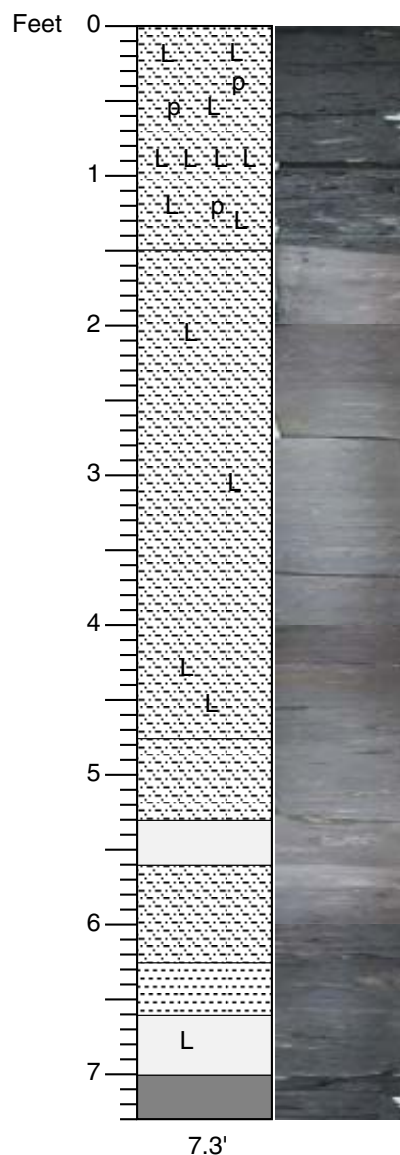
SILT; slightly micaceous, scattered lignite, increases to bottom; grain size increases through interval; gray (10YR 5/1)

SAND; very fine; slightly silty; lignite concentration at 4.6 ft; pyrite at 3.9, 4.6, 4.7 ft; amber at 4.3, 4.9 ft; very dark gray (10YR 3/1)

174AX MV  
 Core # 169  
 Start depth: 1280 ft  
 Stop depth: 1285 ft  
 Recovery: 4.95 ft  
 Date: 6/18/02  
 Described by: BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**171**



SILT; clayey; lignitic; slightly micaceous; coarsening downward to fine to very fine SAND; amber at 1.15 ft; large band of lignite at 0.9-0.95 ft; pyrite at 0.1, 0.6, 0.9, 1.0, 1.2 ft; some pink quartz, clay blebs, rip up clasts; very dark gray (10YR 3/1)

Irregular contact

SILT; clayey, trace mica; coarsens downward; yellowish discoloration at 3.7, 4.3-4.45 ft; root at 2.3-2.45 ft; gray (10YR 5/1)

SILT; with fine grained sand

SAND; medium, subangular, well sorted

SILT; slightly micaceous, clayey; lignite chunks; gray (10YR 6/1)

CLAY; silty (dark gray (10YR 4/1)

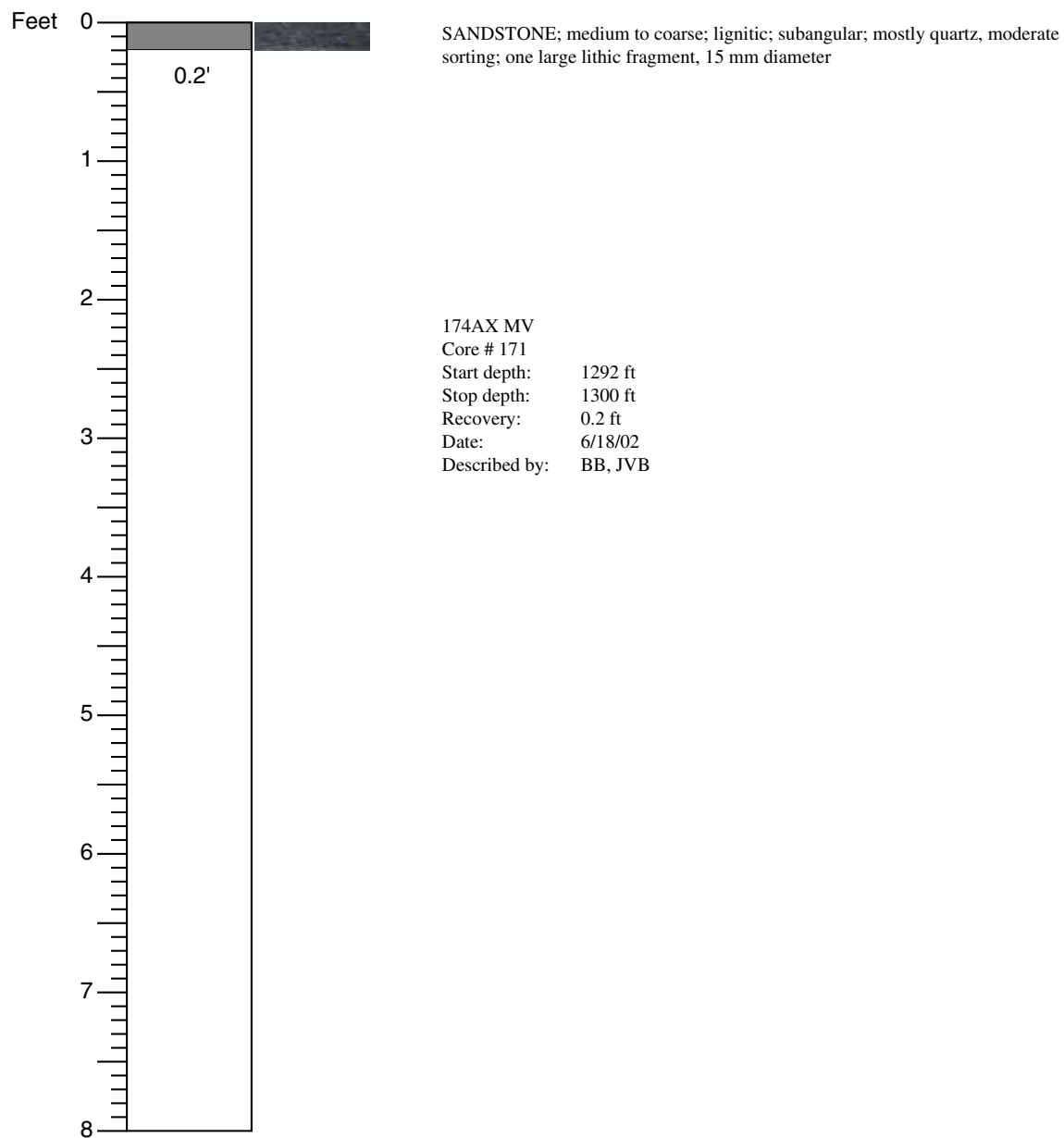
SAND, medium, silty; lignite throughout; dark gray (10YR 4/1)

SANDSTONE; very coarse; highly lignitic; amber present

174AX MV  
 Core # 170  
 Start depth: 1285 ft  
 Stop depth: 1292 ft  
 Recovery: 7.3 ft  
 Date: 6/18/02  
 Described by: BB, JVB

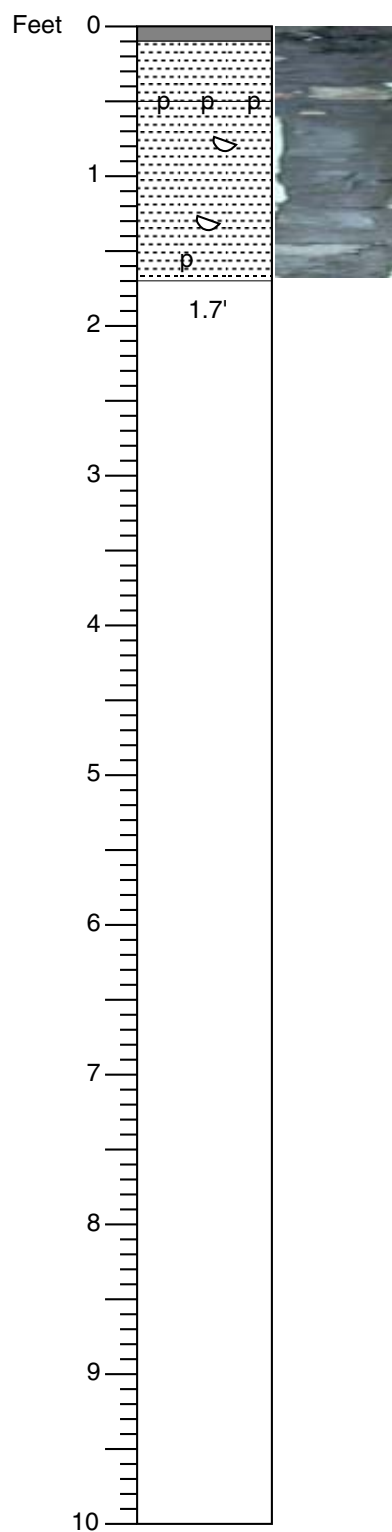
**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**172**



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**173**



SANDSTONE; medium; angular-subangular; mostly quartz; moderate to poor sorting; 5% lignite; pyrite nodule, 45 by 25 mm

CLAY; silty; slightly micaceous; some very fine sand; lignitic; possible laminations; gray (10YR 5/1)

Irregular contact marked with pyrite nodules (25 by 25 mm) mixed with sandstone nodules

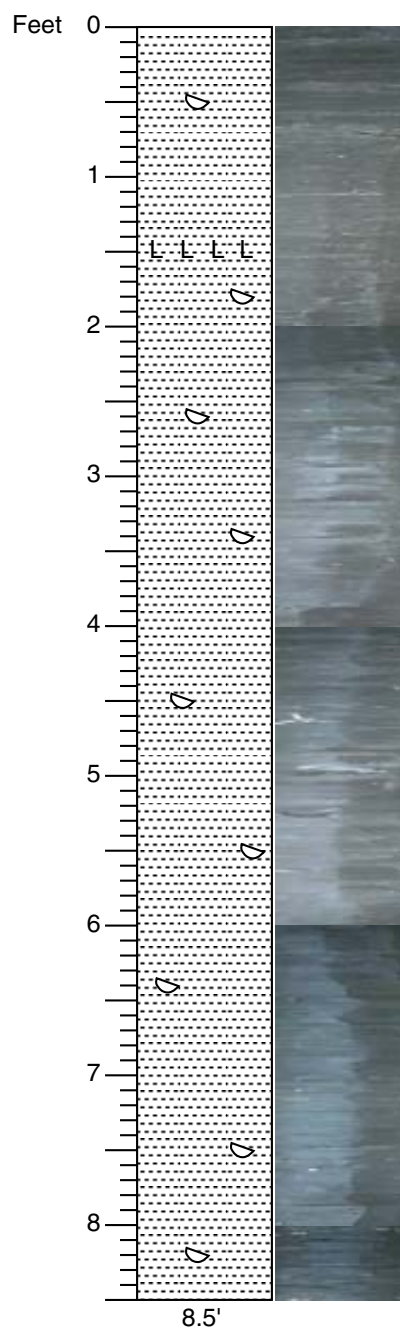
CLAY; slightly silty; slightly micaceous; abundant shell fragments, only bivalves noted; lignite at 1.1 ft; pyrite at 1.5 ft; dark gray (10YR 4/1)

174AX MV  
 Core # 172  
 Start depth: 1300 ft  
 Stop depth: 1310 ft  
 Recovery: 1.7 ft  
 Date: 6/18/02  
 Described by: BB, JVB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

174



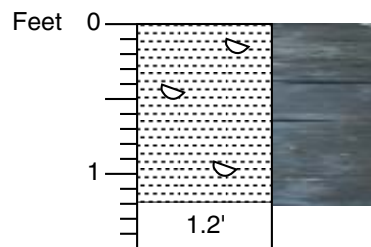
CLAY; very slightly silty; upper 1.6 ft is siltier, contains burrows; many thin-walled shells, mostly fragments; some inoceramids; lignite layer at 1.6 ft; dark gray (10YR 4/1)

174AX MV  
Core # 173  
Start depth: 1310 ft  
Stop depth: 1318.5 ft  
Recovery: 8.5 ft  
Date: 6/18/02  
Described by: BB, JVB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

175



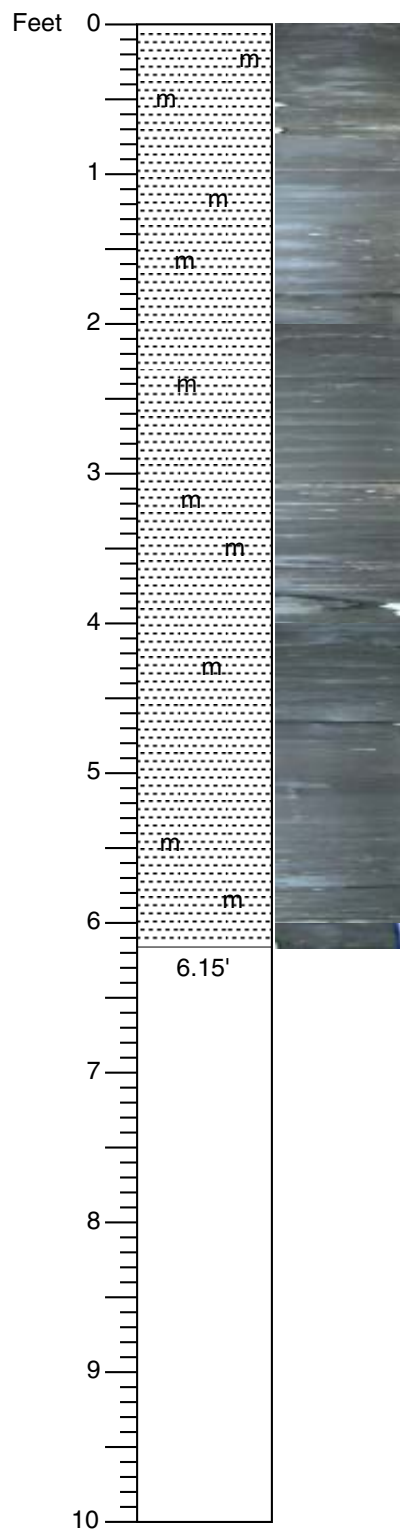
CLAY; very slightly silty; shelly, ammonite at 0.3 ft; micaceous, chloritic; top 0.3 ft is somewhat indurated; dark greenish gray (10Y 3/1)

174AX MV  
Core # 174  
Start depth: 1318.5 ft  
Stop depth: 1320 ft  
Recovery: 1.2 ft  
Date: 6/19/02  
Described by: KGM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

176



CLAY; shelly, some shell laminations, shell concentrations at 0.75, 0.95, 2.05, 3-3.05, 3.65, 75.275 ft; micaceous, chloritic; very slightly glauconitic throughout; slightly silty 0.55-0.75 ft; dark greenish gray (10Y 4/1)

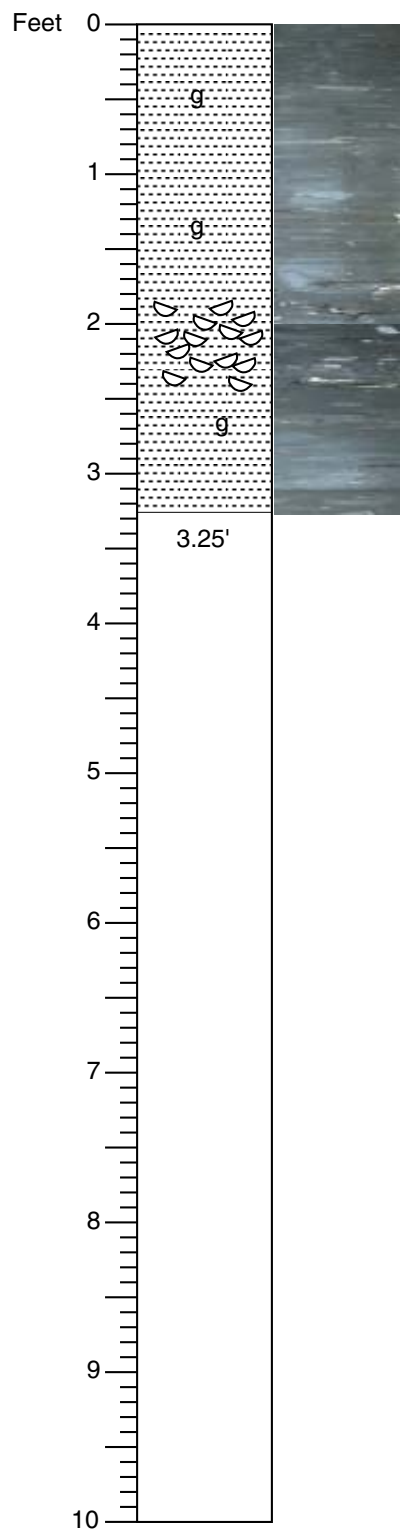
4.95-5.25 ft; very slightly micaceous (less mica), darker, heavy bioturbation, less shell; greenish black (10Y 2.5/1)

174AX MV  
Core # 175  
Start depth: 1320 ft  
Stop depth: 1330 ft  
Recovery: 6.15 ft  
Date: 6/19/02  
Described by: KGM



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**177**

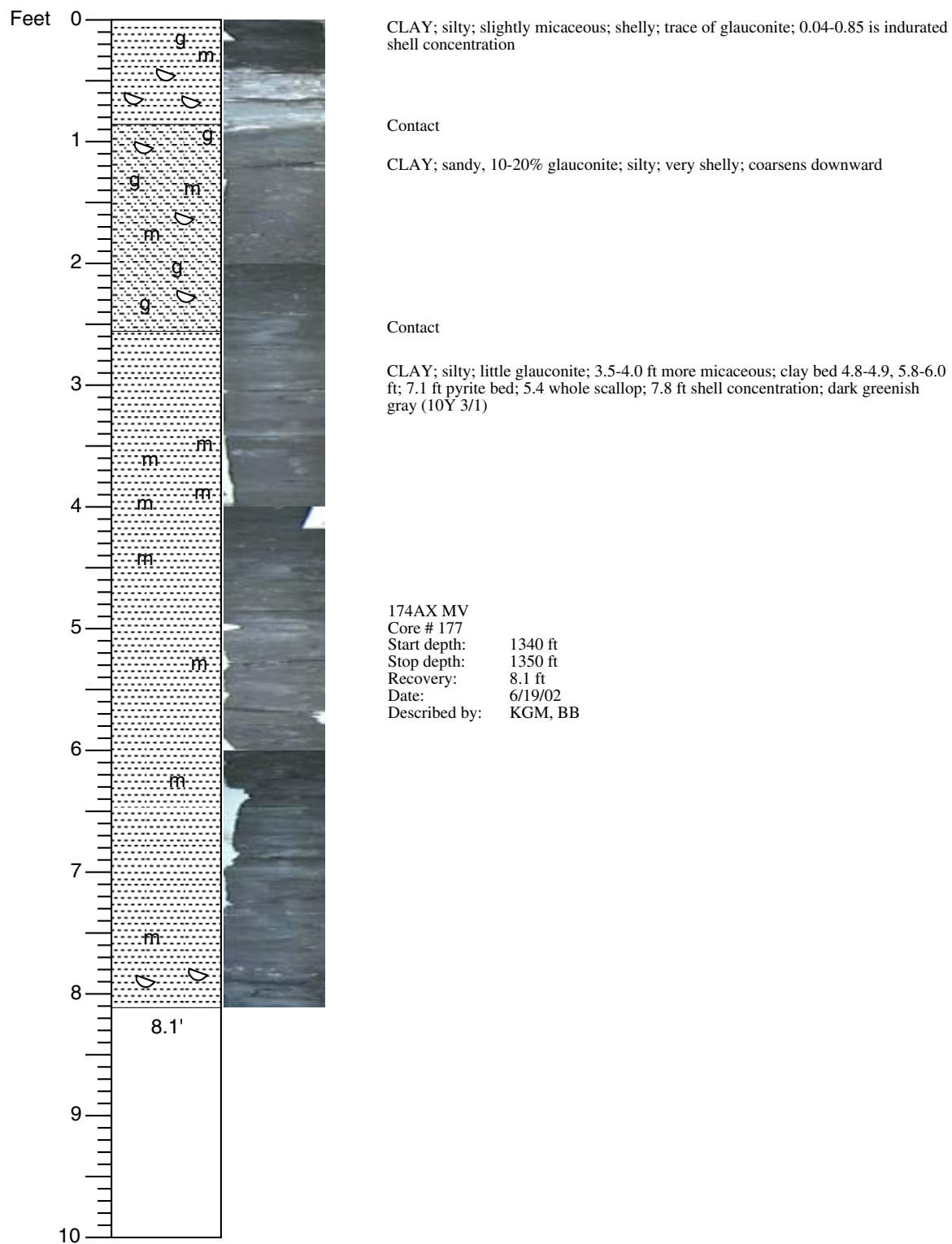


CLAY; in places slightly silty; shelly; heavily burrowed; traces of disseminated glauconite throughout; slightly micaceous; shell concentration 1.8-2.4 ft; 2.8-3.25 ft mostly shelly clay; dark greenish black (5GY 3/1)

174AX MV  
 Core # 176  
 Start depth: 1330 ft  
 Stop depth: 1340 ft  
 Recovery: 3.25 ft  
 Date: 6/19/02  
 Described by: KGM, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

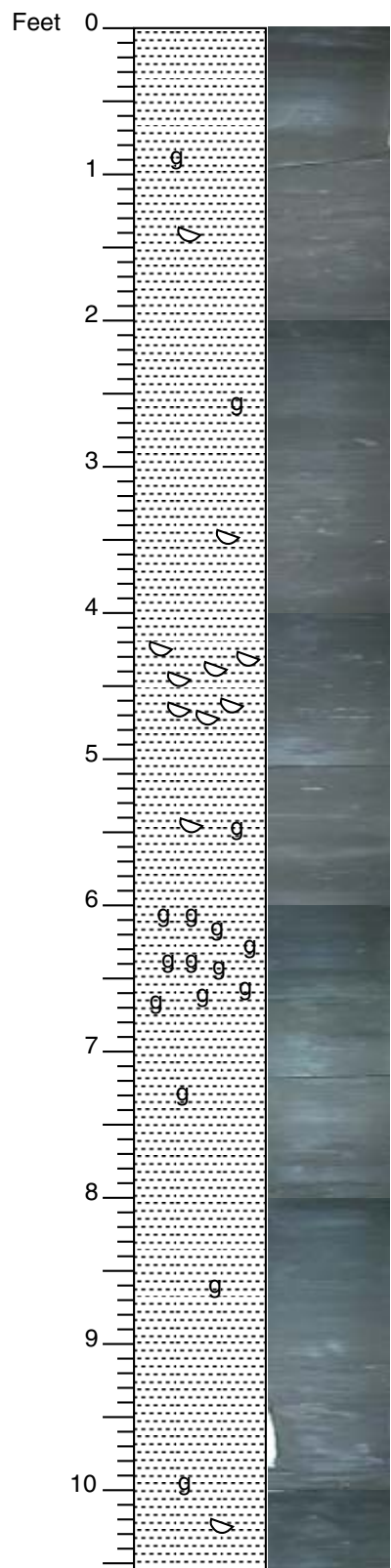
**178**



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

179



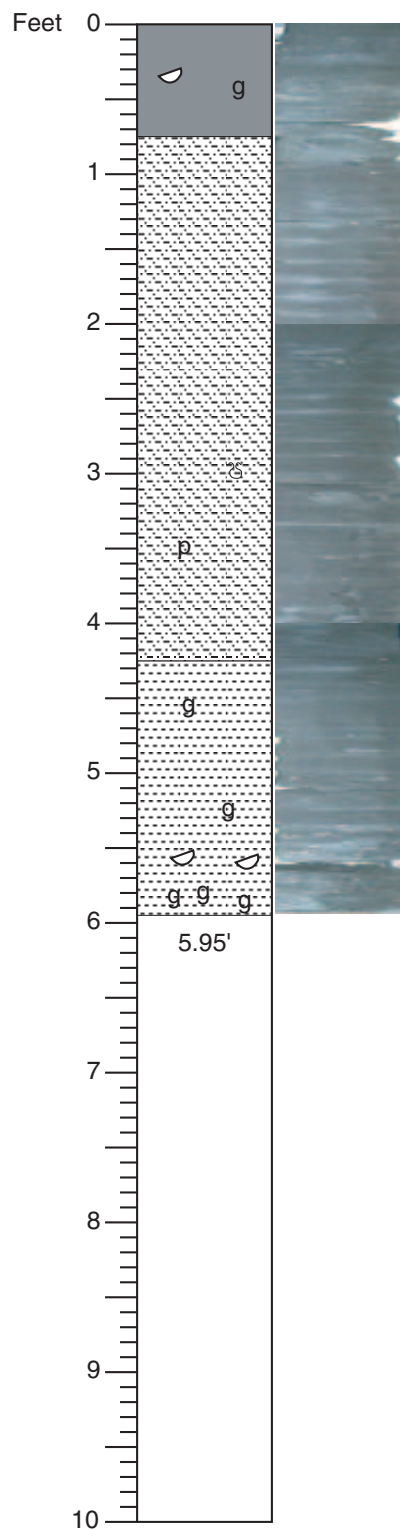
CLAY; silty; micaceous; some foraminifers, shells scattered throughout, shell concentration between 4.3-5.0 ft; 1-3% glauconite, 5.9-6.7 ft glauconite grades to 20%; 3.8 ft pyrite; 3.5 ft lignite; dark greenish gray (GLEY 1 10Y 3/1)

174AX MV  
Core # 178  
Start depth: 1350 ft  
Stop depth: 1360 ft  
Recovery: 10.55 ft  
Date: 6/19/02  
Described by: BB, BAH

10.55'

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**180**



SANDSTONE; fine to very fine; 10% glauconite; shelly, especially at 0.3 ft, bivalves and foraminifers; abundant silt; trace mica

Irregular contact

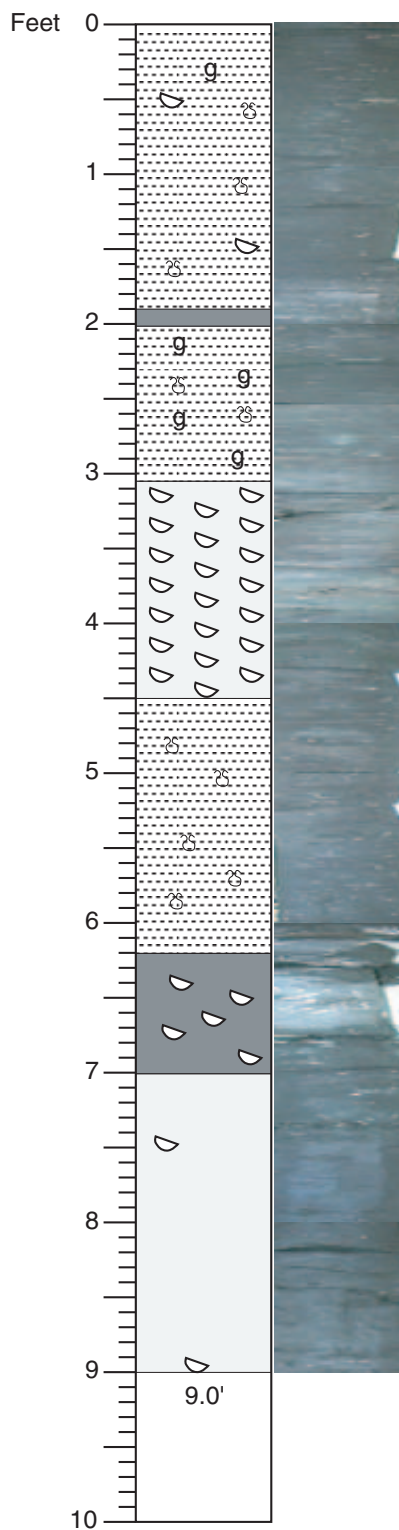
SILT; micaceous, chloritic; slightly shelly, mostly bivalve fragments; 3.6 ft pyrite nodule (2 mm), possible burrow fill; 3.1 ft sand filled (quartz and glauconite) lenticular burrow

CLAY; silty; glauconitic, increases from 1% at top to 15-20% at bottom; micaceous, chloritic, 10-15% at bottom; shells are rare at top, common at bottom, thicker shells than above

174AX MV  
 Core # 179  
 Start depth: 1360 ft  
 Stop depth: 1370 ft  
 Recovery: 5.95 ft  
 Date: 6/20/02  
 Described by: JVB, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

181



CLAY; sandy; 10% glauconite; 15% quartz, mostly fine to granule, subangular; finely micaceous, chloritic; shelly, thin whole shells and fragments to 10 mm; heavily bioturbated, many clay-filled burrows; pyrite nodule at 0.6 ft; 1.9-2.1 ft indurated; greenish black (5GY 2.5/1)

SAND; very fine to very coarse with clay matrix, moderate sorting; many shell fragments, almost a coquina; 5% quartz, 5% glauconite; pyrite 1-2 mm at 4.3 ft; hard to lithified at top and soft at bottom; surface at 4.35 ft; dark greenish gray (10Y 4/1)

CLAY; silty; poorly sorted; shells, glauconite, quartz (subangular), very fine to granule; equal amounts glauconite and chlorite; micaceous, chlorite; some thin whole shells; heavily burrowed

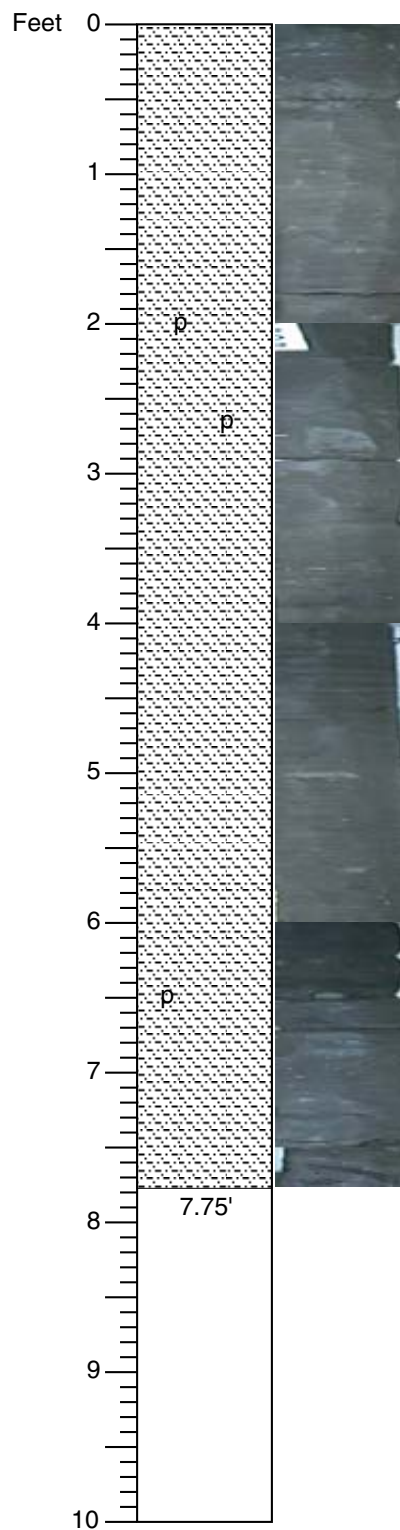
SANDSTONE; very fine; 5-10% glauconite; large shells common, up to 25 mm long and 2-3 mm wide (?trigonids)

SAND; silty, clayey; micaceous, less chlorite; very fine sand, little/no glauconite; shelly, large shell at 7.5 ft; bioturbated

174AX MV  
 Core # 180  
 Start depth: 1370 ft  
 Stop depth: 1380 ft  
 Recovery: 9.0 ft  
 Date: 6/20/02  
 Described by: JVB, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

182

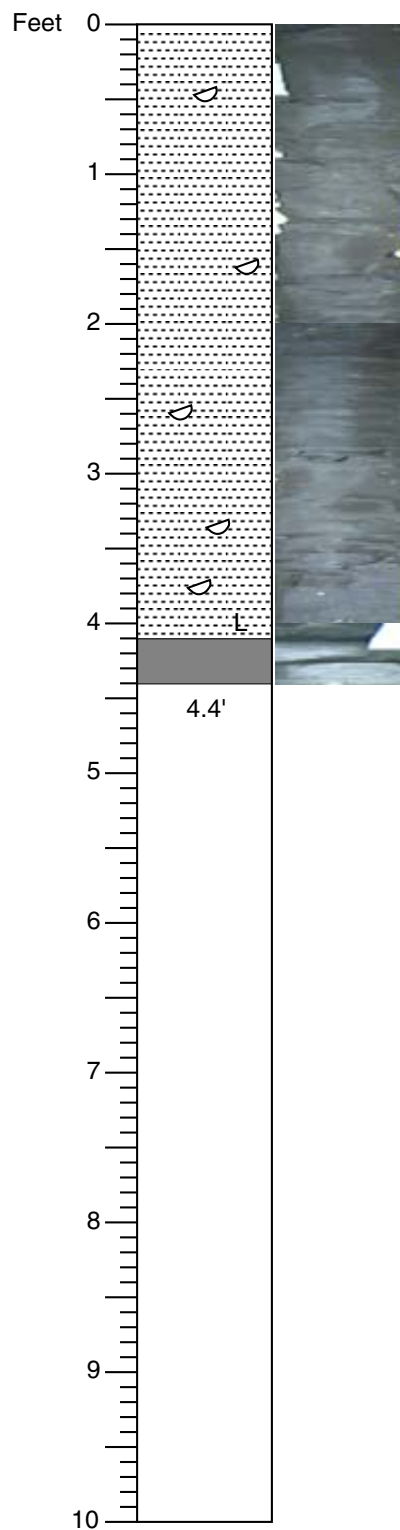


SILT; some very fine sand; micaceous, trace glauconite; pyrite at 2.0, 2.7, 6.5 ft; shelly throughout, generally thin walled, whole shells; heavily bioturbated; at 6.3 ft laminations of lignite and mica

174AX MV  
 Core # 181  
 Start depth: 1380 ft  
 Stop depth: 1390 ft  
 Recovery: 7.75 ft  
 Date: 6/20/02  
 Described by: JVB, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**183**



CLAY; micaceous, shelly, many fine shell fragments, bivalves and gastropods, sand sized lignite at bottom of core; fine sand-filled burrows at 3.7 ft

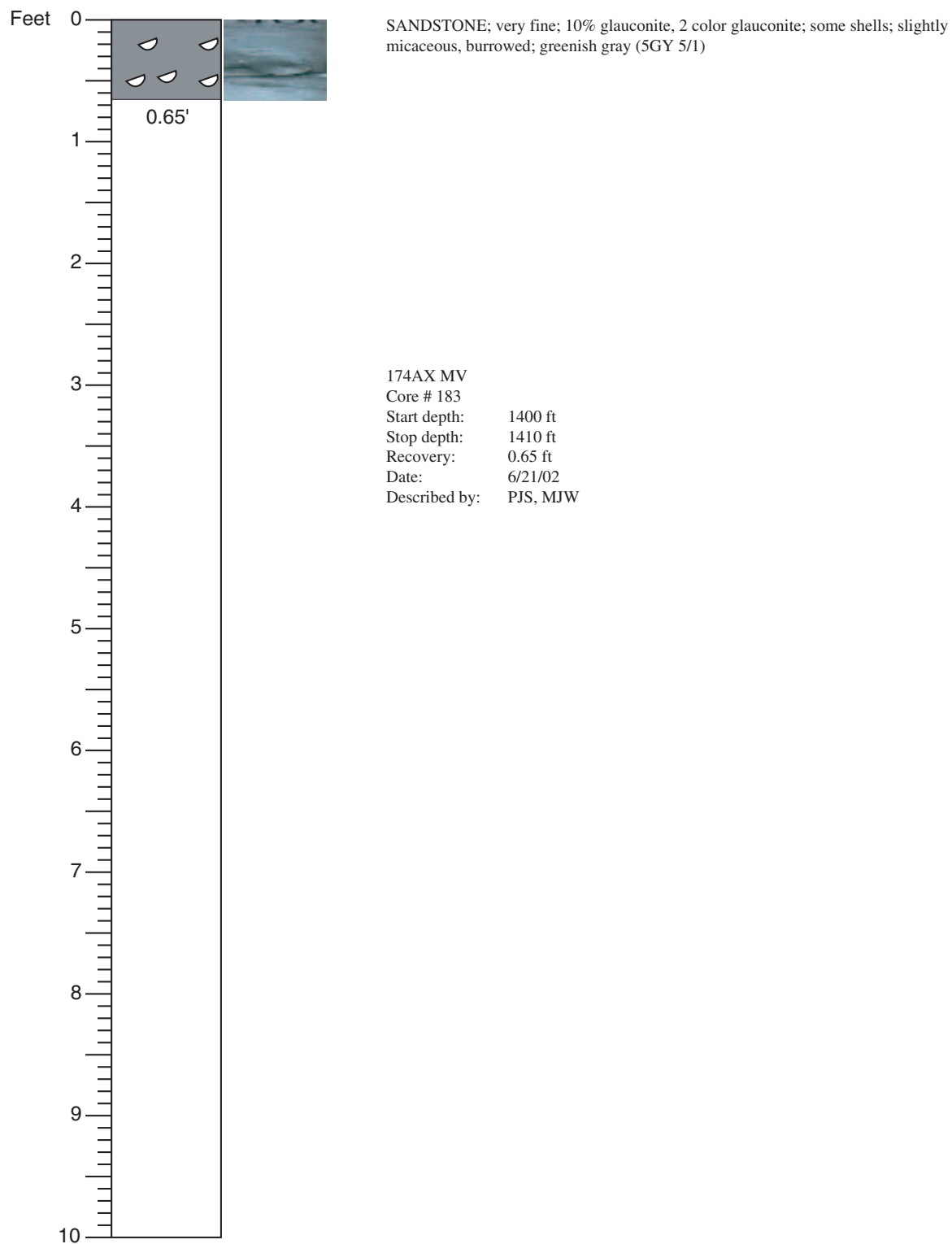
SILTSTONE; a few shells

NOTE: the missing interval is believed to be above the siltstone

174AX MV  
Core # 182  
Start depth: 1390 ft  
Stop depth: 1400 ft  
Recovery: 4.4 ft  
Date: 6/20/02  
Described by: JVB, BB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

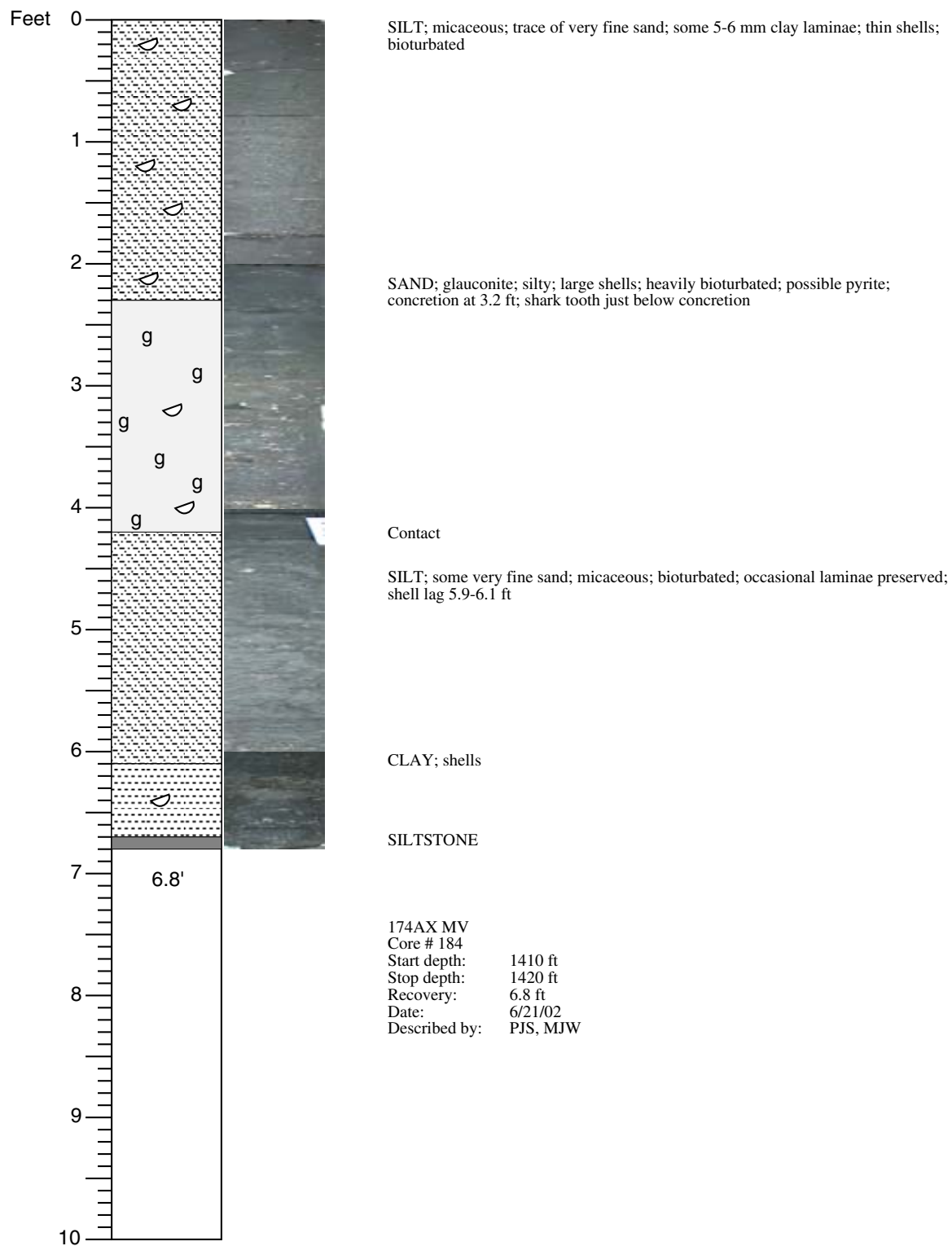
**184**

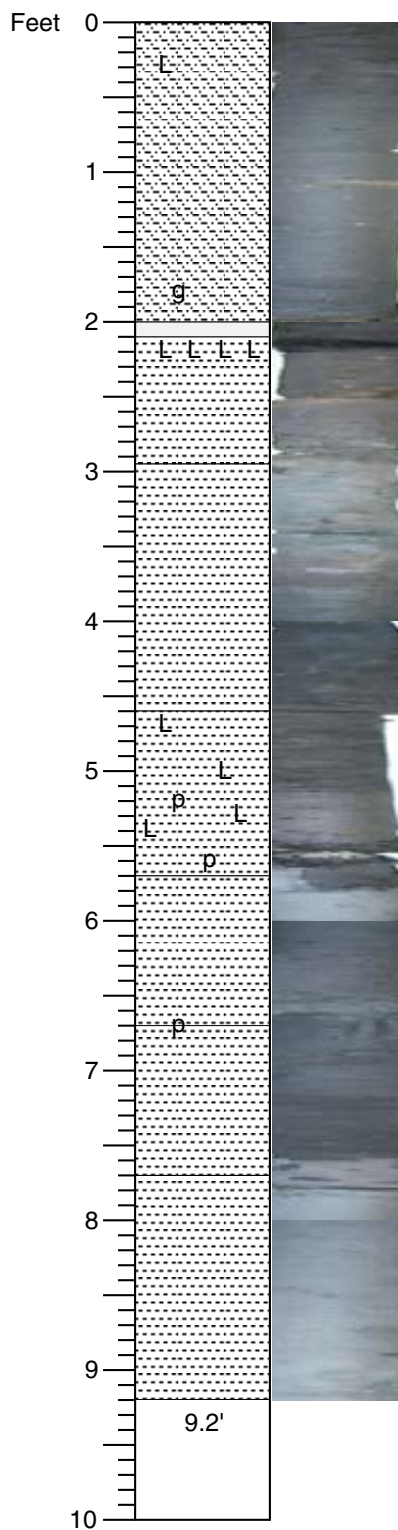




**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**185**





CLAY; silty, lignitic intervals; glauconite filled burrows between 1.7-1.9 ft; scattered shell fragments throughout; glauconite increases to 20% at base of interval; very dark gray (5Y 3/1)

SILTSTONE; with lignite and pyrite; olive (5Y4/3)

SILT; clayey; with lignite; olive gray (5Y 4/2)

CLAY; ?silt-filled burrows; slightly micaceous; dark gray (5Y 4/1)

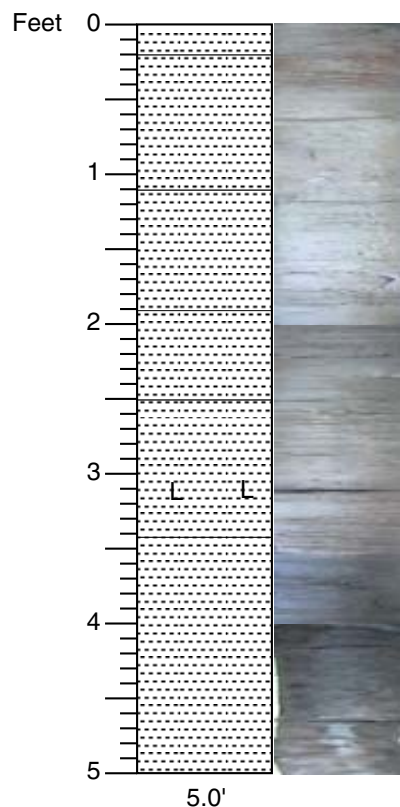
CLAY; with lignite; large pyrite nodule at 5.3 ft; very dark gray (5Y3/1)

CLAY; pyrite nodule at 6.7 ft; gray (5Y 6/1)

CLAY; dark gray (5Y 4/1)

CLAY; some silt, dark gray clay from above is ?burrowed down into this unit; light gray

174AX MV  
 Core # 185  
 Start depth: 1420 ft  
 Stop depth: 1430 ft  
 Recovery: 9.2 ft  
 Date: 6/21/02  
 Described by: PJS, BAH



CLAY; gray (5Y 6/1) with dark gray to black flecks or fine mottles; common sphaerosiderite, fine (<1 mm)

CLAY; gray (5Y 6/1); with minor red mottling (dark red, 2.5Y 4/8) and dark gray to black flecks/streaks as fine mottling; abundant sphaerosiderite (~1 mm)

CLAY; gray (5Y 6/1); with dark gray to black flecks, streaks and mottles to ~3 mm; scattered very light gray mottles; little to no silt

CLAY; gray (2.5Y 5/1-6/1) slightly browner than above; dark gray to black streaks and small mottles

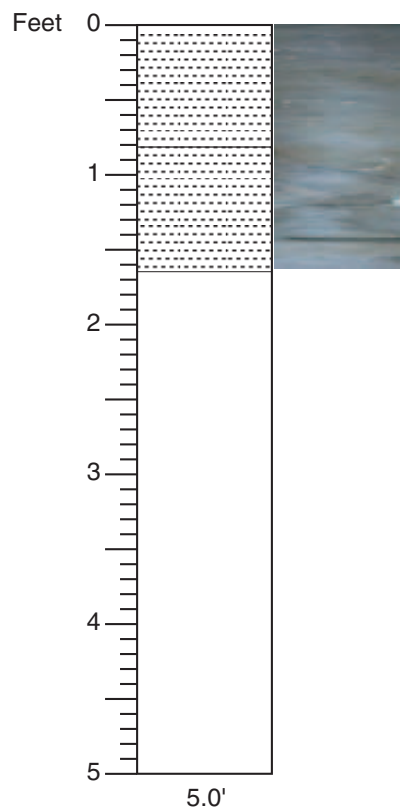
CLAY; gray (2.4Y 5/1), dark gray to black flecks and fine mottles, lignite/charcoal laminae (1-2 mm) at 3/1 ft and a few other plant flecks

CLAY, mottled from very dark gray (5Y 3/1) to dark gray (2.5 Y 4/1); with the lighter tone predominant below 4.8 ft and some banding below 4.8 ft

Core # 186  
 Start depth: 1430 ft  
 Stop depth: 1435 ft  
 Recovery: 5.0 ft  
 Date: 6/21/02 (described on 6/22)  
 Described by: PPM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**188**



CLAY; gray (2.5Y 5/1); mottled from dark gray (2.5Y 4/1); to very dark gray (2.5Y 3/1) and olive yellow (2.5Y 6/6)

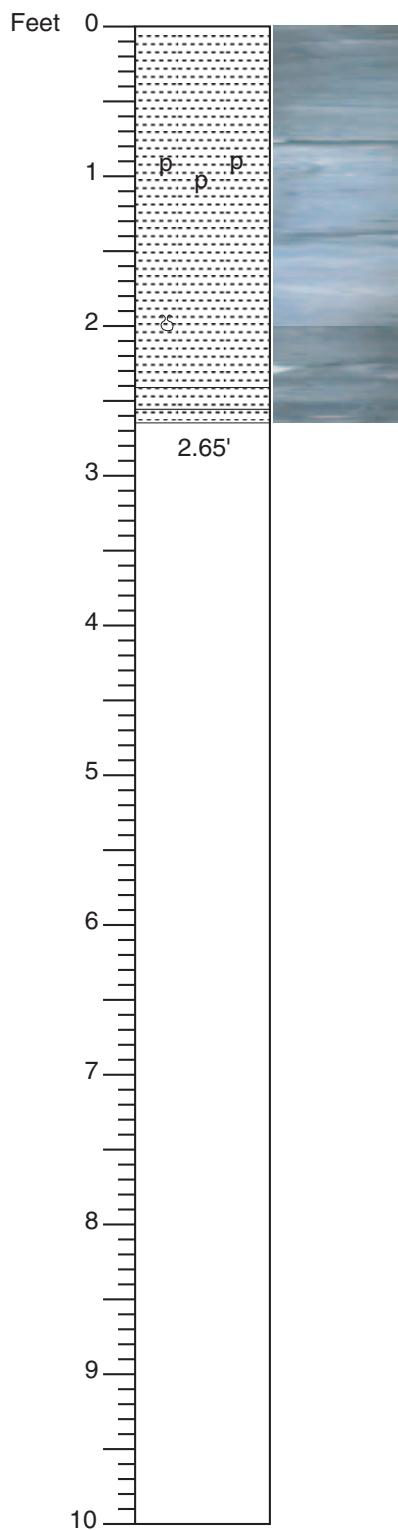
CLAY; gray (2.5Y 5/1); mottled from dark gray (2.5Y 4/1) to very dark gray (2.5Y 3/1), and olive yellow (2.5Y 6/6); also red mottling; 2-3 mm dark gray streaks; banded from 1.2 ft down; sphaerosiderite from 1.3-1.6 ft

174AX MV  
Core # 187  
Start depth: 1435 ft  
Stop depth: 1440 ft  
Recovery: 1.65 ft  
Date: 6/22/02  
Described by: BAH, PPM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

189



CLAY; gray (2.4Y 5/1) with very dark gray (2.5Y 3/1); specks and streaks; scattered pyrite (~2 mm) throughout especially abundant at 0.9-1.1 ft; wisps of very fine sand as streaks below 1.5 ft; some look a bit like burrows especially ~2.1-2.4 ft; from 1.9-2.4 ft is a generally increasing amount of sphaerosiderite

CLAY; banded from dark gray (2.5Y 4/1) to dark grayish brown (2.5Y 4/2) to light brownish gray (2.5Y 6/2), with browning ~0.5-.75 mm (<1 mm) and smaller especially in the lighter bands which have very fine sand in them; darker bands are likely more clayey; very fine pyrite sparkles in the dark brownish gray sands

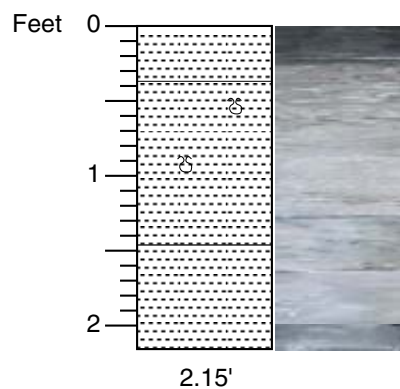
CLAY; sandy, ?silty, sand is very fine; some 1 cm scale banding with lighter bands, especially near top, overall color, very dark gray (2.5Y 3/1)

174AX MV  
Core # 188  
Start depth: 1440 ft  
Stop depth: 1450 ft  
Recovery: 2.65 ft  
Date: 6/22/02  
Described by: PPM, BAH

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

190



CLAY, some silt very dark gray (2.5Y 3/1); faint laminations of light brown silt with possible plant debris; 2-3 mm band of fine sand at 0.2 ft may be a burrow

SAND; very fine; silty; light gray (2.5Y 7/1); slightly micaceous; irregular distribution of very fine sand, ?burrows; minor sphaerosiderite (<1 mm) throughout, some with reddish tint, ?hematite; also wisps of dark gray; pyrite (~1 mm) present toward bottom of interval

CLAY; very silty; with some very fine sand; gray (2.5Y 6/1); very minor amounts of siderite and pyrite, large concentration (~30 mm) of many micro-sphaerosiderite nodules

174AX MV

Core # 189

Start depth: 1450 ft

Stop depth: 1452 ft

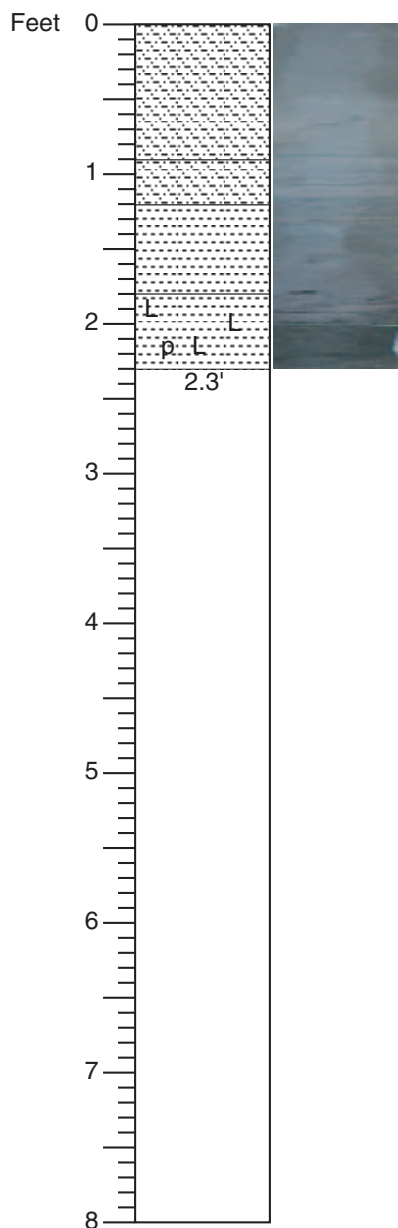
Recovery: 2.15 ft

Date: 6/22/02

Described by: BAH, PPM

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**191**



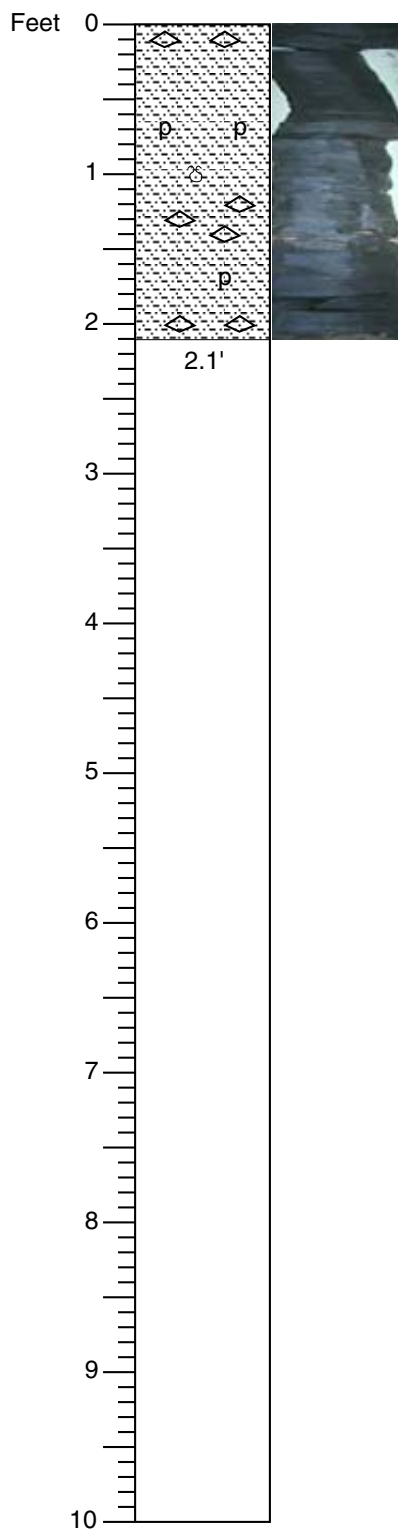
SILT; clayey; sandy, very fine to fine; gray (2.5Y 5/1); two zones (0.0-0.2, 0.65-0.9 ft) of abundant sphaerosiderite; dark gray specks throughout, some pyrite

SILT; clay; sand, very fine, banded (<1 to 10 mm); gray (2.5Y 5/1) with dark gray bands (2.5Y 4/1); lighter bands (2.5Y 6/2) contain more sand; scattered very small (~1 mm) pyrite concretions, some elongated (~4 mm)

CLAY; dark gray (92.5Y 5/1); with streaks of very fine sand (2.5Y 5/2); also black streaks (2.5Y 2.5/1); minor lignite/charcoal and pyrite; brownish ?plant debris

CLAY; silty; with very fine sand; very dark gray (2.5Y 3/1); abundant fine lignite throughout; also brownish plant debris; large concretions of pyrite (~5 by 10 mm), with sand and lignite at bottom, also small pyrite (~2 mm) scattered throughout; large hard tan concretion (10 by 15 mm) with woody debris (not charcoal) possibly siltstone

174AX MV  
 Core # 190  
 Start depth: 1452 ft  
 Stop depth: 1460 ft  
 Recovery: 2.3 ft  
 Date: 6/22/02  
 Described by: BB, PPM



CLAY; gray, fairly stiff; with concretions

upper (0.0-0.7 ft): black (2.5Y 2.5/1) with some slightly lighter bands and mottles (?burrows), siltier in places, abundant fine organic debris (especially 0.4-0.7 ft)

middle (0.7-1.45 ft): banded/laminated and mottled (burrowed?) shades of dark gray, from dark gray (GLEY N4/) to gray (GLEY N5/), possible small burrows ranging from 2-5 mm diameter, some olivish tint to clay around concretions

bottom (1.45 to 2.1 ft): also dark (very dark gray to black; 2.5Y 3/1 to 2.5Y 2.5/1), some laminations evident; not as rich in plant debris as top part

Concretions: broken up; top: slightly pyritic cemented siltstone, 20 x 20 mm down to 10 x 10 mm; 1.3-1.4 ft: fractured tan mudstone, with a few pieces of cemented pyrite and sand; 1.65 ft: a 5 x 5 mm pyritic sand nodule; bottom: a 50 x 40 mm concretion of cemented siltstone?; pyritic zone at 0.65 ft

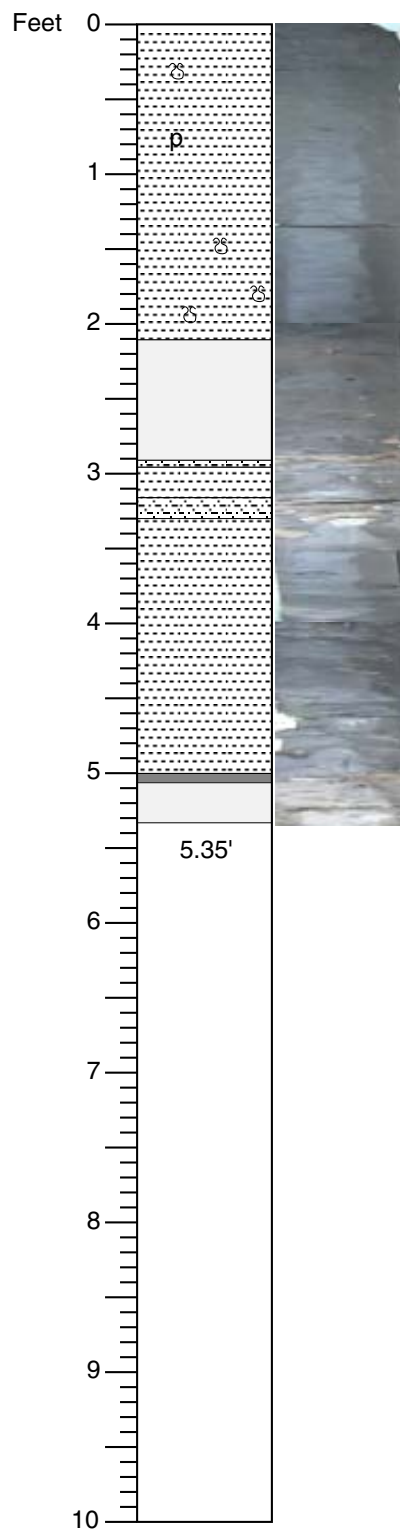
At 1.8 ft, possible small shell fragments in thin dark laminae; may be in place indicating marine influence or may be trash from higher in hole [drillers have to raise rods to 1420 ft in order to send overshot device down for inner barrel - cable too short - this introduces some junk into barrel]

174AX MV  
 Core # 191  
 Start depth: 1460 ft  
 Stop depth: 1470 ft  
 Recovery: 2.1 ft  
 Date: 6/22/02  
 Described by: PPM, BB



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**193**



CLAY; laminated, burrows disrupt laminae, silt is more common above 0.9 ft; more massive below 0.9 ft, fine lignite throughout, pyrite in a burrow at 0.8 ft; lignite fragment at 0.1 ft; very dark gray (10YR 3/1)

SAND; very fine to silt; quartz; many lignite fragments; silt at top and sand below; dark gray (10YR 4/1)

Discontinuous siltstone layer

CLAY; and interbedded SAND

SILTSTONE; no reaction with acid; lignite and plant fossils on inside

CLAY; some interbedded fine sand at 4-4.1 ft; dark colored and looks organic rich

SANDSTONE and pyrite

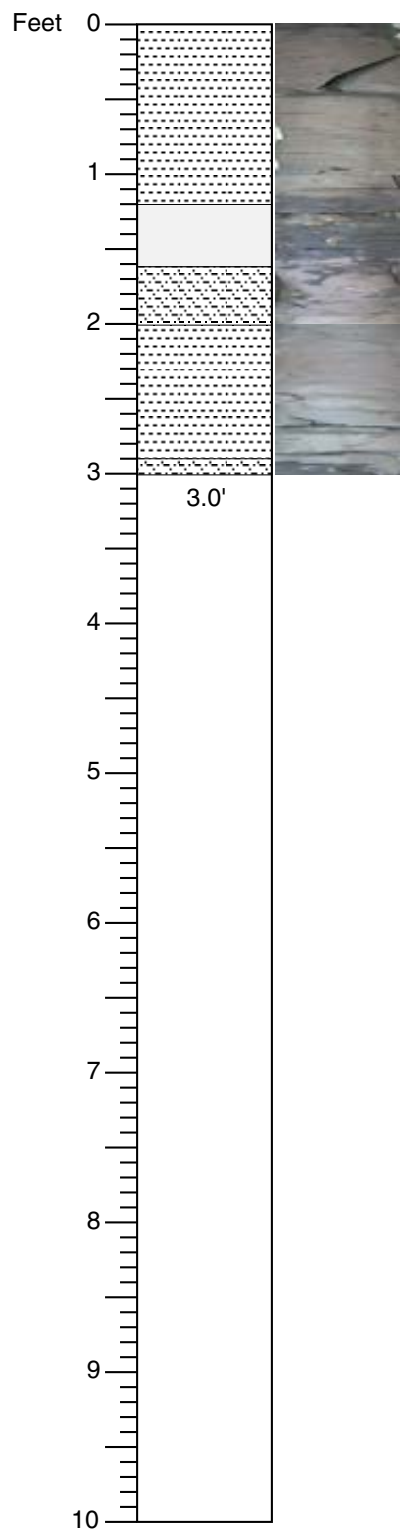
SAND; fine to very fine quartz with lignite chunks

174AX MV  
 Core # 192  
 Start depth: 1470 ft  
 Stop depth: 1480 ft  
 Recovery: 5.35 ft  
 Date: 6/23/02  
 Described by: JVB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, MILLVILLE SITE

194



SAND; fine; well sorted, rounded, quartz; a few percent OHM; several lignitic laminae; at the base is a 0.5 ft layer of indurated SILTSTONE; gray (10YR 6/1)

CLAY; interbedded with sand; siltstone and pyrite nodules at 1.4 ft (may be from higher up); lignite layers; very dark gray (10YR 3/1)

CLAY; silty; gray (10YR 6/1)

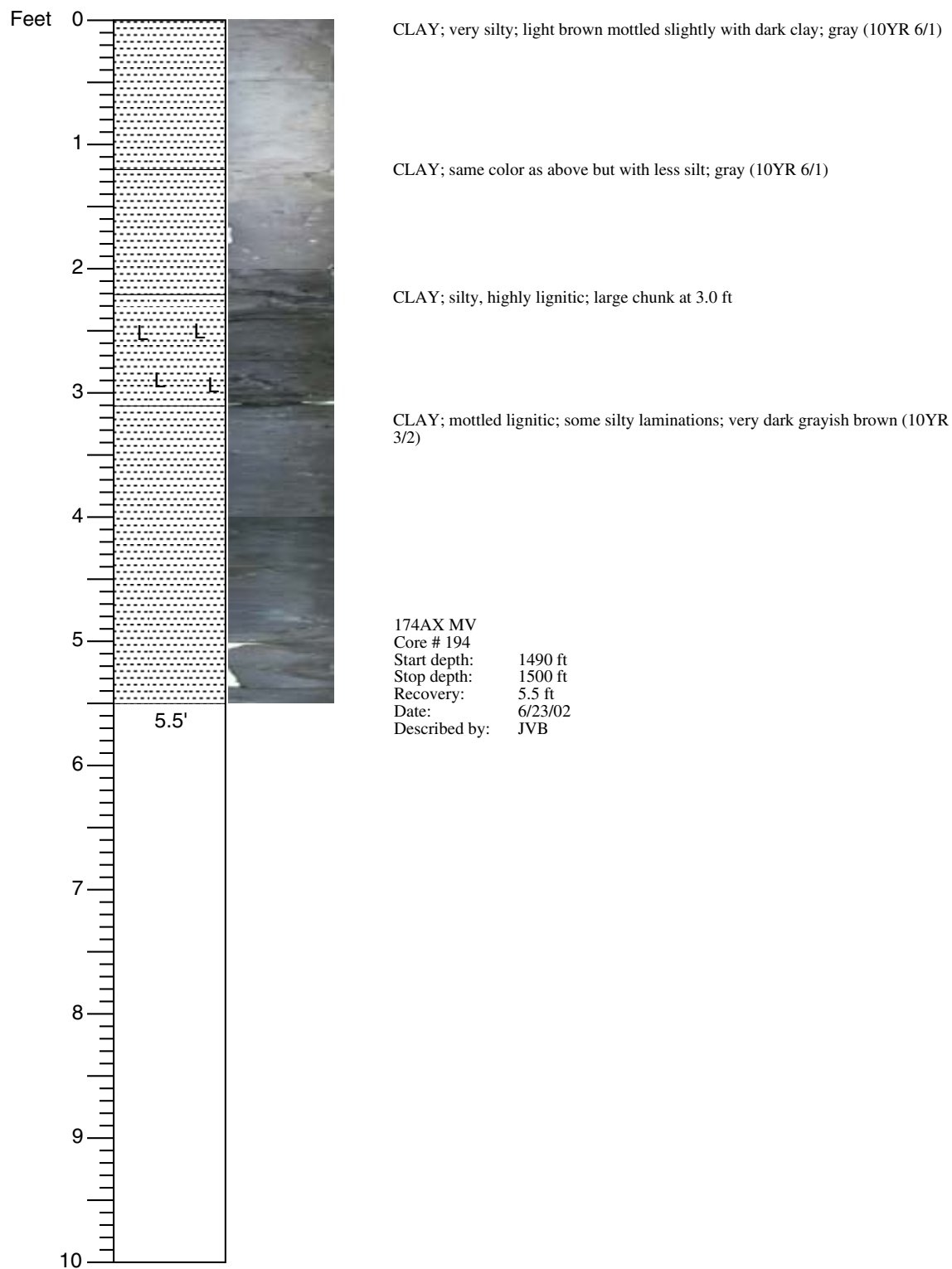
CLAY; little silt; sphaerosiderite; dark layers; light gray (10YR 7/1)

CLAY; hard; silty; nodule at bottom; black (10YR 2/1)
















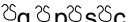










Core # 193  
 Start depth: 1480 ft  
 Stop depth: 1490 ft  
 Recovery: 3.0 ft  
 Date: 6/23/02  
 Described by: JVB

**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, MILLVILLE SITE**

**195**



## Key

	limestone
	silty sand
	sand
	clay
	claystone
	peat
	pebbles
	granules
	shells
	cross beds
	laminations
	sand laminae
	clay laminae
	silt laminae
	burrows
	burrows filled with glauconite, pyrite, sand or clay
	nodule
	foraminifers
	lignite
	glauconite
	mica
	calcite cemented
	fining upward
	coarsening upward
	porcellanite
	cemented