

W-27399

County Polk

SE, NW, SW, NE

Sec. 2

T. 78N

R. 24W

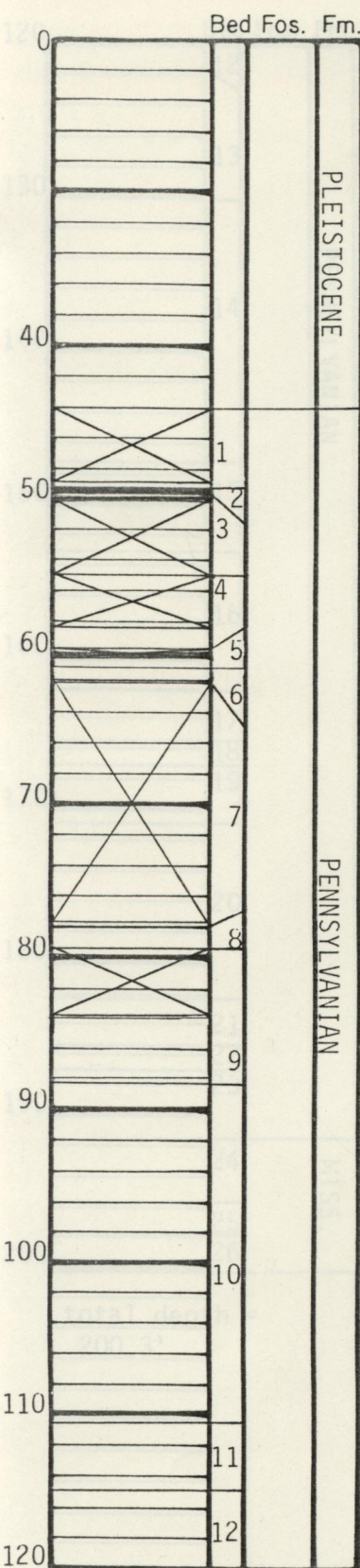
Location On east 19th Street, 115' north of Capitol Avenue center-line and 3½' east of west curb.

Altitude 825' (Des Moines SE 7½' quad)

Measured by PVD, MRH

Date 12/11-12/78

Remarks 0' to 120'



Bed	Description
PLEISTOCENE	
0' - 5'	Clay-brown.
5' - 8'	Clay-brown, sandy.
8' - 12'	Clay-brown to dark brown, sandy with minor gravel and sand stringers.
12' - 22'	Sand-dark brown, fine grained.
22' - 44'	Clay-dark brown, very sandy.
PENNSYLVANIAN	
44' - 48.9'	Shale-dark gray, minor pyrite. Reamed to set casing.
1) 48.9' - 49.3'	Shale-dark gray to black, silty, carbonaceous, with common pyritic plant debris. The lower approx. 1" contains abundant granular phosphate. Lower contact lost.
2) 49.3' - 49.8'	Coal-6", minor pyrite, highly fractured.
3) 49.8' - 55.0'	Mudstone and losses
a) 3"	mudstone-light to medium gray, silty, with common carbonaceous debris.
b) 4' 11"	core loss; diminished water return during drilling indicates some possible voids.
4) 55.0' - 59.8'	Core losses, mudstone and sandstone.
a) 3' 3"	core loss and possible voids. Drilling records indicate total loss of water circulation at 55'.
b) 1' 7"	mudstone and sandstone. Begins as mudstone-light gray, silty, rooted, with common carbonaceous debris. Mudstone grades to sandstone-light gray, argillaceous, silty, locally calcareous, with minor light gray mud pebbles and sparse carbonaceous debris. A sharp contact is followed by mudstone-light gray to dark gray, silty, which becomes weakly laminated.
5) 59.8' - 60.9'	Shale
a) 5"	core loss
b) 8"	shale-medium to dark gray, silty, laminated, with common carbonaceous debris.
6) 60.9' - 61.8'	Mudstone-light gray brown to white, silty, sandy, weakly laminated with sparse to common carbonaceous debris and pyrite nodules. Lower contact not recovered.
7) 61.8' - 78.0'	Disturbed interval, sandstone.
a) 16' 0"	core losses and voids.
b) 2"	sandstone-light gray to red gray, very fine grained, calcareous; only a few fragments recovered.
8) 78.0' - 79.4'	Coaly shale-dark green gray to black, carbonaceous, with abundant vitrain bands which diminish downward. Shale becomes increasingly silty and grades to siltstone-medium gray green, argillaceous, with abundant carbonaceous debris. Unit is moderately to strongly weathered throughout. Lower contact lost in drilling.
Reamed to 83.9'; 4" cave recovered on next run.	

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Bed Fos. Fm.

Location On east 19th Street, 115' north of Capitol Avenue center-line and 3 1/2' east of west curb.

Altitude 825' (Des Moines SE 7 1/2' quad)

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Date 12/11-12/78

Remarks

Bed	Description
13)	cont. and locally mottled by bioturbation and abundant light gray sand filled grazing trails. Grades to lower 1 1/2'; siltstone-medium to dark gray, argillaceous, with sandy zones; laminated. Rare pyrite nodules occur throughout. Sharp lower contact.
14)	130.3'-147.3' Gradational unit, sandstone to shale. Begins as approx. 6' sandstone-medium gray, very fine grained, argillaceous, silty, laminated grading to approx. 6' siltstone-medium to dark gray, argillaceous, sandy diminishing downward, with minor sand laminae. Siltstone grades to shale-medium gray, silty, grading to dark gray, slightly silty, and becoming slightly sandy in the lower 1 1/2' and with minor white, very fine grained sandstone laminae. Minor to moderate ironstone lenses and laminae and pyrite nodules occur throughout. Sharp, irregular lower contact.
15)	147.3'-153.2' Interlaminated sandstones, conglomerate. Upper approx. 5' is interlaminated sandstone-light gray, very fine to fine grained, argillaceous, silty; and sandstone-light gray to white, fine grained, micaceous, increasing downward from a trace to 95%; with sparse to common carbonaceous debris at contacts between laminae. The upper 3' is irregularly laminated to locally mottled by bioturbation followed by a 1'3" zone of cross-bedding and cross-lamination. The lower 1' is conglomerate-light gray to white siltstone, sandstone, pyritic mudstone, and coal clasts in matrix of light gray sandstone which is strongly pyritic in the lower 2/3. Sharp lower contact.
16)	153.2'-162.1' Interbedded sandstone and siltstone and sandstone, interlaminated. Sandstone-white to light gray to gray brown, very fine to fine grained, micaceous locally calcareous; with common conglomeratic zones with clasts consisting of interlaminated siltstone and sandstone and sandstone which are strongly deformed in some zones, and with common to abundant carbonaceous debris; interbedded with interlaminated siltstone and sandstone. Siltstone-medium gray, argillaceous, laminated, with common carbonized plant debris; sandstone-white to light gray, very fine to fine grained, micaceous, locally calcareous, 50% to 70%; laminae are regular to mottled by burrowing and grazing trails with zones of cross-bedding and high angle laminae. Contacts between beds are sharp and irregular to slickensided, with zones of common microfaults occurring within beds. Minor pyrite nodules occur throughout. Sharp, very irregular, pyritic lower contact.
17)	162.1'-165.5' Sandstone and interlaminated sandstone and siltstone. Begins as sandstone-light to medium gray and light buff, fine grained, laminated, grading to massive with moderate microfaulting; with common coal fragments and minor small pyrite nodules. Following a slickensided contact sandstone is interlaminated with siltstone-medium gray argillaceous. Sharp, very irregular lower contact.

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18)	165.5'-166.9' Mudstone, sandstone, shale. Begins as approx. 1' mudstone-dark gray to black, silty, extensively slickensided with moderate, disseminated granular pyrite. A sharp, irregular contact is followed by 3" sandstone-light gray brown with thin, dark gray clay laminae, and which is about 30% pyritized. A slickensided contact is followed by shale-dark gray brown to dark gray, silty. Lower contact is sharp and slickensided.
19)	166.9'-170.8' Gradational unit, sandstone to siltstone. Begins as approx. 6" siltstone-medium gray, argillaceous, slightly sandy increasing downward and grading to approx. 2' sandstone-light to medium gray, very fine grained, argillaceous, silty. The remainder grades through medium gray, argillaceous siltstone to shale-dark gray, silty. Slickensides and minor microfaults occur throughout. Carbonaceous debris is common to abundant and pyrite nodules and stringers and ironstone lenses are minor to moderate locally. Sharp, slickensided lower contact.
20)	170.8'-182.2' Interlaminated siltstone, shale, and sandstone. Siltstone-medium gray, argillaceous, trace sand, laminated, micaceous; shale-medium to dark gray, silty to very silty and slightly sandy; sandstone-light to medium gray, very fine grained, argillaceous, silty, micaceous. Laminae are slightly irregular in the upper approx. 6' becoming thin and regular downward with shale increasing from 40% to 70% and sandstone decreasing from approx. 10% as thin, discontinuous laminae and grazing trail fills, to a trace. The lower approx. 1' is shale-dark gray, silty, weakly laminated. Carbonaceous debris is common to abundant throughout the unit and pyritic plant debris and sparse megaspores occur in the lower 2' to 3'. Lower contact lost.
21)	182.2'-185.4' Conglomerate and shale. Begins as approx. 1' conglomerate-light gray to light brown mud pebbles and light gray, very fine sandstone clasts in matrix of light to medium gray, sandy mudstone, approx. 60%; laminated with minor interlaminated silty, gray shale. Followed by shale-medium brown grading to dark gray and medium brown mottled, silty, weakly laminated, with abundant carbonaceous debris in the lower 1'.
22)	185.4'-186.9' Sandstone and siltstone. Sandstone-light brown gray, very fine grained, irregularly interlaminated to mottled with siltstone-medium brown gray, argillaceous; with sparse to common carbonaceous debris throughout.
23)	186.9'-191.5' Interlaminated sandstones; siltstone. Sandstone-light buff to white, fine grained, locally calcareous, micaceous, is interlaminated with sandstone-light gray brown, very fine grained, silty, argillaceous increasing downward from 10% to 60% and grading to siltstone-medium gray brown, argillaceous. Following a sharp contact siltstone decreases to 20%. The upper 1' to 2' is cross-bedded followed by a zone of burrows and grazing trails; minor microfaulting is present throughout. The lower 6" is obscured by pyrite.

