

Well: MID-P-9 (USGS)  
 Farm: Camp Redskin  
 Driller: Fetterhoff Bros.  
 Location: Wilton Quadrangle  
 76°26' 15" W, 37°35'37" N

Elevation: 10'  
 Total Depth: 556'

Started drilling: July, 1967      Finished drilling: July, 1967  
 Sample description by: R. H. Teiske, Virginia Division of Mineral Resources  
 Reference: No specific reference

GEOLOGIC SUMMARY

Depth (feet)	Thickness (feet)	Formation (and remarks)
✓ 0.0-30.5	30.5	Columbia Group
30.5- <sup>82</sup> 112.5	82.0	Yorktown Formation
<sup>82</sup> 112.5-379	215.5	Calvert Formation
<del>328.0-379.0</del>	51.0	<del>Chickahominy Formation</del>
379.0-451.0-440	72.0	Nanjemoy Formation
440 451.0-522.5-522	71.5	Mattaponi Formation
✓ 522.5-556.0	33.5	Patuxent Formation

R. H. Teiske  
 3/7/72

County: Middlesex  
VDMR Well No. 2055

## GEOLOGIC LOG

Depth (feet)	Thickness (feet)	Description
COLUMBIA GROUP (0-30.5)		
0-10.0	10.0	Sand - light-orange-brown, very-slightly clayey; medium-grained, fairly-well-sorted, angular-to subrounded; slightly-feldspathic, accessory magnetite, small amounts of weathered glauconite and very coarse-grained blue quartz
10.0-20.5	10.5	Sand - orange-brown, very-slightly-clayey, a few granules, fine-to coarse-grained, rather-poorly-sorted, angular-to subangular; slightly-feldspathic; minor magnetite
20.5-30.5	10.0	Sand - orange-brown, trace of clay, trace of granule gravel; medium-grained, fairly well-sorted, subangular-to subrounded; small amounts feldspar, magnetite, weathered glauconite, and hornblende
YORKTOWN FORMATION (30.5- <sup>82'</sup> <del>42.5'</del> )		
30.5-41.0	10.5	Sand - greenish-brown, slightly clayey-clay is variably gray, to orange-brown (limonitic), to red (hematitic); medium-grained, well-sorted, subangular-to subrounded; clear and greenish quartz, with 5 percent small pelecypod shell fragments; minor weathered glauconite, magnetite, hornblende, and carbonophosphatic fragments; traces of garnet and epidote
41.0-51.0	10.0	Sand and shell - tan, clean; 25 percent pelecypod shell fragments, and 75 percent sand; medium-grained, well-sorted, subangular to rounded; clear and greenish quartz
51.0-61.5	10.5	Sand and shell - greenish-gray, clean; 50 percent pelecypod-scapopod-coral shell fragments, and 50 percent sand; fine-grained, well-sorted, angular; predominantly quartz

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Depth (feet)	Thickness (feet)	Description
61.5-71.5	10.0	Sand and shell - gray, moderately clayey (gray and pinkish-gray clays); 30 percent pelecypod and scaphopod shell fragments; and 70 percent sand; fine- to medium-grained, moderately sorted, poorly rounded; slightly glauconitic (fresh, autochthonous)
71.5-82.0	10.5	Clay and shell - 50 percent coarse pelecypod shell fragments; 50 percent pinkish-gray, sandy clay; sand is fine, well-sorted, angular, slightly glauconitic
<i>CALVERT FORMATION (82-379')</i>		
82.0-92.0	10.0	Sand and shell - gray, clayey, locally limonitic, 50 percent coarse pelecypod shell fragments, and 50 percent sand, in abundant matrix of gray and pinkish-gray clays; sand is fine- to medium-grained, fairly well-sorted, angular to subangular; slightly glauconitic; traces of muscovite and phosphorite; a few gastropods ( <u>Turritella</u> ) and scaphopods.
92.0-102.5	10.5	" moderately clayey; sand is fine-grained, well-sorted
102.5-112.5	10.0	Sand, clay and shell - 40 percent pelecypods, gastropod, and scaphopod shells and shell fragments; 60 percent fine-grained sand to coarse-grained silt with greenish-gray clay binder, interlaminated with pink pure clay; sand-silt fraction is slightly glauconitic
<del>CALVERT FORMATION (112.5-328')</del>		
112.5-123.0	0.5	Silt and clay - bluish-gray to greenish-gray clayey silt-to fine-grained sand with 10 percent glauconite; subordinate pinkish, relatively silty-and sand free clay; 5 percent shell fragments; minor muscovite, selenite, and bone and shell phosphorite; locally limonitic
123.0-133.0	10.0	"

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Depth (feet)	Thickness (feet)	Description
133.0-143.5	10.5	Silt and clay - bluish-gray-to greenish-gray clayey silt-to fine-grained sand with 10 percent glauconite; subordinate pinkish, relatively silty sand and sand free clay; 5 percent shell fragments; minor muscovite, selenite, and bone and shell phosphorite; locally limonitic
143.5-153.5	10.0	"
153.5-164.0	10.5	Clay - dark-gray and greenish-gray, silty-sandy; coarse silt-to very-fine-grained sand, well-sorted, angular, with 10 percent glauconite; traces of shell, phosphorite, muscovite, and pyrite
164.0-174.0	10.0	" small amount of gray, fine-grained limestone
174.0-184.5	10.5	Clay - gray, fairly compact, very-silty; silt is coarse, very well-sorted, angular, quartzose.
184.5-194.5	10.0	" greenish-gray; 20 percent shell fragments; selenite common
194.5-205.0	10.5	Clay - greenish-gray, compact, locally sandy, trace of shell fragments; sand is medium-grained, well-sorted, subangular to subrounded; clear quartz, with 5 percent abraded shell fragments, abundant selenite, and 2 percent phosphatic bone fragments.
205.0-215.5	10.5	Shell and sand - gray clay binder; 60 percent abraded pelecypod shell fragments; 40 percent medium-to coarse grained, fairly well-sorted, subangular, clear quartz sand; 2-3 percent phosphatic bone and shell fragments; foraminifers common, but not abundant
215.5-225.5	10.0	Sand - very clayey-brownish-gray clay, 5 percent shell fragments; fine-grained, well-sorted angular; clear quartz, with minor phosphorite and gypsum, and a trace of pyrite; foraminifers abundant ( <u>Uvigerina</u> , <u>Nonion</u> ) moderately diatomaceous

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Depth (feet)	Thickness (feet)	Description
225.5-235.5	10.0	Sand - very clayey-brownish-gray clay, 5 percent shell fragments; fine-grained, well-sorted angular; clear quartz, with minor phosphorite and gypsum, and a trace of pyrite; foraminifers abundant; ( <u>Uvigerina</u> , <u>Nonion</u> ) moderately diatomaceous; foraminifers moderately abundant
235.5-246.0	10.5	" foraminifers common, but not abundant
246.0-256.0	10.0	" foraminifers common, but not abundant
256.0-266.5	10.5	Clay - pale-brownish-gray, pulverulent, moderately sandy, a few shell fragments; sand is fine- to very-fine-grained, well-sorted, angular; clear quartz, with minor carbonophosphatic material; foraminifers common ( <u>Uvigerina</u> , <u>Nonion</u> , <u>Robulus</u> , <u>Textularia</u> ); diatomaceous
226.5-276.5	10.0	Clay - pale gray, pulverulent, slightly to moderately sandy, 5 percent shell fragments; sand is fine, fairly-well-sorted, angular, quartzose; foraminifers moderately abundant ( <u>Uvigerina</u> , <u>Cibicides</u> , <u>Nonion</u> , <u>Textularia</u> ) small amounts pyrite and carbonaceous material; diatomaceous
276.5-287.0	10.5	" foraminifers abundant ( <u>Uvigerina</u> , <u>Cibicides</u> , <u>Nonion</u> , <u>Textularia</u> , <u>Boluvina</u> , <u>Robulus</u> , <u>Lagena</u> ); a few bone and plant fragments
287.0-297.0	10.0	Clay - pale-brownish-gray, pulverulent, slightly sandy, 10 percent shell fragments; sand is fine, fairly-well-sorted, angular, quartzose; foraminifers abundant, including <u>Dentalina</u> ; bone fragments common; minor pyrite and carbonaceous material; diatomaceous
297.0-307.5	10.5	"
307.5-317.5	10.0	" abundant plant fragments

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Depth (feet)	Thickness (feet)	Description
317.5-328.0	10.5	Clay - pale brownish-gray, pulverulent, slightly sandy, a few shell fragments; sand is very fine- to coarse-grained; poorly-sorted, quartzose; small amounts of bone phosphorite and light-green glauconite; diatomaceous; foraminifers very abundant, with <u>Siphogenerina lamellata</u> conspicuous; <u>Robulus</u> , <u>Dentalina</u> , <u>Bolivina</u> , <u>Nonion</u> abundant
<del>CHICKAHOMINY FORMATION (328.0-379.0)</del>		
328.0-338.0	10.0	Sand - tan clay binder, 10 percent pelecypod shell fragments; medium- to very coarse-grained, fairly well-sorted, subangular - to subrounded; clear quartz, with 2-3 percent phosphatic bone and shell fragments
338.0-348.5	10.5	Sand - gray, very slightly-clayey, a few shell fragments; coarse-grained, well-sorted, subangular to subrounded; clear quartz, with minor phosphatic bone fragments
348.5-358.5	10.0	Sand - gray, slightly clayey, 5-10 percent shell fragments; medium-to very coarse-grained, fairly well-sorted, subangular to subrounded; clear quartz, with minor phosphatic bone and shell fragments
358.5-369.0	10.5	"
369.0-379.0	10.0	Sand - moderately clayey (grayish-green clay), 5 percent pelecypod shell fragments; fine- to very coarse-grained, poorly-sorted, angular to rounded; clear quartz, with accessory phosphatic in form of bone fragments and pellets; trace of garnet, abundant small foraminifers, and a few echinoid spines

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Depth (feet)	Thickness (feet)	Description
✓ <del>NANJEMOY FORMATION (379.0' - 451.0')</del> <sup>440'</sup>		
379.0-389.5	10.5	Sand - very-clayey (greenish-brown clay), a few rounded pebbles (about 5 mm) and coarse shell fragments; fine -to medium-grained, fairly well-sorted; 60 percent clear, sub-angular quartz, 15 percent glauconite, and 25 percent shell material, mostly foraminifers; astrocods common; minor pyrite and gypsum
389.5-399.5	10.0	" 40 percent quartz, 40 percent glauconite, 20 percent foraminiferal shell material
399.5-410.0	10.5	" "
410.0-420.0	10.0	" "
420.0-430.5	10.5	Sand - very-clayey (greenish-gray clay); fine-to very-coarse-grained, poorly sorted; coarse fraction (about 50 percent of sand) consists of stained quartz and oxidized glauconite; fine fraction consists of clear quartz, relatively fresh glauconite, and abundant foraminifers; minor shell material, phosphorite, and pyrite
430.5-440.5	10.0	"
440.5-451.0	10.5	"
MATTAPONI FORMATION <sup>(440-522')</sup> <del>(451.0' - 522.5')</del>		
<del>451.0-461.0</del> 440-451	10.0	Sand - clayey; fine- to coarse-grained, moderately-sorted; 75 percent blackish-green autochthonous glauconite, 25 percent clear, angular quartz; minor muscovite, pyrite, and phosphorite; foraminifers common, but not abundant ( <u>Robulus Dentalina</u> )
<del>451-461</del> 461.0-471.5	10.5	"
471.5-481.5	10.0	" 90 percent glauconite, 10 percent quartz; abundant small foraminifers

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Depth (feet)	Thickness (feet)	Description
481.5-492.0	10.5	Clay - drab-gray-to brown, sandy, 5 percent shell fragments; sand is fine-grained, fairly well sorted: 60 percent angular quartz, 30 percent glauconite, 10 percent foraminifers and fine shell debris; small amount of coarse- to very coarse-grained autochthonous glauconite; trace of pyrite; abundant plant fragments
492.0-502.0	10.0	Clay - tan-to gray, moderately-sandy; sand is fine- to coarse-grained, rather poorly sorted; very glauconitic; pyrite relatively abundant; a few shell and plant fragments
502.0-512.5	10.5	"
512.5-522.5	10.0	"
PATUXENT FORMATION (522.5'-556.0')		
522.5-533.0	10.5	Sand - tan, clay binder, 10 percent granule gravel; coarse- to very-coarse-grained, fairly well-sorted, subangular-to rounded; very-feldspathic; slightly-glauconitic in finest fraction; accessory garnet
533.0-543.0	10.0	"
543.0-556.0	13.0	"



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Farm: Camp Redskin

Driller: Fetterhoff Bros.

Location: Wilton Quadrangle

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Total Depth: 556'

Started drilling: July, 1967

Finished drilling: July, 1967

Sample description by: R. H. Teifke, Virginia Division of Mineral Resources

Reference: No specific reference

### GEOLOGIC SUMMARY

Depth (feet)	Thickness (feet)	Formation (and remarks)
0.0-30.5	30.5	Columbia Group
30.5-112.5	82.0	Yorktown Formation
112.5-328.0	215.5	Calvert Formation
328.0-379.0	51.0	Chickahominy Formation
379.0-451.0	72.0	Nanjemoy Formation
451.0-522.5	71.5	Mattaponi Formation
522.5-556.0	33.5	Patuxent Formation

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## GEOLOGIC LOG

Depth (feet)	Thickness (feet)	Description
COLUMBIA GROUP (0-30.5')		
0-10.0	10.0	Sand - light-orange-brown, very-slightly clayey; medium-grained, fairly-well-sorted, angular-to subrounded; slightly-feldspathic, accessory magnetite, small amounts of weathered glauconite and very coarse-grained blue quartz
10.0-20.5	10.5	Sand - orange-brown, very-slightly-clayey, a few granules, fine-to coarse-grained, rather-poorly-sorted, angular-to subangular; slightly-feldspathic; minor magnetite
20.5-30.5	10.0	Sand - orange-brown, trace of clay, trace of granule gravel; medium-grained, fairly well-sorted, subangular-to subrounded; small amounts feldspar, magnetite, weathered glauconite, and hornblende
YORKTOWN FORMATION (30.5'-112.5')		
30.5-41.0	10.5	Sand - greenish-brown, slightly clayey-clay is variably gray, to orange-brown (limonitic), to red (hematitic); medium-grained, well-sorted, subangular-to subrounded; clear and greenish quartz, with 5 percent small pelecypod shell fragments; minor weathered glauconite, magnetite, hornblende, and carbonophosphatic fragments; traces of garnet and epidote
41.0-51.0	10.0	Sand and shell - tan, clean; 25 percent pelecypod shell fragments, and 75 percent sand; medium-grained, well-sorted, subangular to rounded; clear and greenish quartz
51.0-61.5	10.5	Sand and shell - greenish-gray, clean; 50 percent pelecypod-scapopod-coral shell fragments, and 50 percent sand; fine-grained, well-sorted, angular; predominantly quartz

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Depth (feet)	Thickness (feet)	Description
61.5-71.5	10.0	Sand and shell - gray, moderately clayey (gray and pinkish-gray clays); 30 percent pelecypod and scaphopod shell fragments; and 70 percent sand; fine- to medium-grained, moderately-sorted, poorly-rounded; slightly-glauconitic (fresh, autochthonous)
71.5-82.0	10.5	Clay and shell - 50 percent coarse pelecypod shell fragments; 50 percent pinkish-gray, sandy clay; sand is fine, well-sorted, angular, slightly glauconitic
82.0-92.0	10.0	Sand and shell - gray, clayey, locally limonitic, 50 percent coarse pelecypod shell fragments, and 50 percent sand, in abundant matrix of gray and pinkish-gray clays; sand is fine- to medium-grained, fairly-well-sorted, angular-to subangular; slightly glauconitic; traces of muscovite and phosphorite; a few gastropods ( <u>Turritella</u> ) and scaphopods.
92.0-102.5	10.5	" moderately clayey; sand is fine-grained, well-sorted
102.5-112.5	10.0	Sand, clay and shell - 40 percent pelecypods, gastropod, and scaphopod shells and shell fragments; 60 percent fine-grained sand-to coarse-grained silt with greenish-gray clay binder, interlaminated with pink pure clay; sand-silt fraction is slightly glauconitic
CALVERT FORMATION (112.5'-328')		
112.5-123.0	0.5	Silt and clay - bluish-gray-to greenish-gray clayey silt-to fine-grained sand with 10 percent glauconite; subordinate pinkish, relatively silty-and sand free clay; 5 percent shell fragments; minor muscovite, selenite, and bone and shell phosphorite; locally limonitic
123.0-133.0	10.0	"

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Depth (feet)	Thickness (feet)	Description
133.0-143.5	10.5	Silt and clay - bluish-gray-to greenish-gray clayey silt-to fine-grained sand with 10 percent glauconite; subordinate pinkish, relatively silty- and sand free clay; 5 percent shell fragments; minor muscovite, selenite, and bone and shell phosphorite; locally limonitic
143.5-153.5	10.0	"
153.5-164.0	10.5	Clay - dark-gray and greenish-gray, silty-sandy; coarse silt-to very-fine-grained sand, well-sorted, angular, with 10 percent glauconite; traces of shell, phosphorite, muscovite, and pyrite
164.0-174.0	10.0	" small amount of gray, fine-grained limestone
174.0-184.5	10.5	Clay - gray, fairly compact, very-silty; silt is coarse, very-well-sorted, angular, quartzose.
184.5-194.5	10.0	" greenish-gray; 20 percent shell fragments; selenite common
194.5-205.0	10.5	Clay - greenish-gray, compact, locally sandy, trace of shell fragments; sand is medium-grained, well-sorted, subangular to subrounded; clear quartz, with 5 percent abraded shell fragments, abundant selenite, and 2 percent phosphatic bone fragments.
205.0-215.5	10.5	Shell and sand - gray clay binder; 60 percent abraded pelecypod shell fragments; 40 percent medium-to coarse grained, fairly well-sorted, subangular, clear quartz sand; 2-3 percent phosphatic bone and shell fragments; foraminifers common, but not abundant
215.5-225.5	10.0	Sand - very clayey-brownish-gray clay, 5 percent shell fragments; fine-grained, well-sorted angular; clear quartz, with minor phosphorite and gypsum, and a trace of pyrite; foraminifers abundant ( <u>Uvigerina</u> , <u>Nonion</u> ) moderately diatomaceous

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Depth (feet)	Thickness (feet)	Description
225.5-235.5	10.0	Sand - very clayey-brownish-gray clay, 5 percent shell fragments; fine-grained, well-sorted angular; clear quartz, with minor phosphorite and gypsum, and a trace of pyrite; foraminifers abundant; ( <u>Uvigerina</u> , <u>Nonion</u> ) moderately diatomaceous; foraminifers moderately abundant
235.5-246.0	10.5	" foraminifers common, but not abundant
246.0-256.0	10.0	" foraminifers common, but not abundant
256.0-266.5	10.5	Clay - pale-brownish-gray, pulverulent, moderately sandy, a few shell fragments; sand is fine- to very-fine-grained, well-sorted, angular; clear quartz, with minor carbonophosphatic material; foraminifers common ( <u>Uvigerina</u> , <u>Nonion</u> , <u>Robulus</u> , <u>Textularia</u> ); diatomaceous
226.5-276.5	10.0	Clay - pale gray, pulverulent, slightly to moderately sandy, 5 percent shell fragments; sand is fine, fairly-well-sorted, angular, quartzose; foraminifers moderately abundant ( <u>Uvigerina</u> , <u>Cibicides</u> , <u>Nonion</u> , <u>Textularia</u> ) small amounts pyrite and carbonaceous material; diatomaceous
276.5-287.0	10.5	" foraminifers abundant ( <u>Uvigerina</u> , <u>Cibicides</u> , <u>Nonion</u> , <u>Textularia</u> , <u>Boluvina</u> , <u>Robulus</u> , <u>Lagena</u> ); a few bone and plant fragments
287.0-297.0	10.0	Clay - pale-brownish-gray, pulverulent, slightly sandy, 10 percent shell fragments; sand is fine, fairly-well-sorted, angular, quartzose; foraminifers abundant, including <u>Dentalina</u> ; bone fragments common; minor pyrite and carbonaceous material; diatomaceous
297.0-307.5	10.5	"
307.5-317.5	10.0	" abundant plant fragments

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Depth (feet)	Thickness (feet)	Description
317.5-328.0	10.5	Clay - pale brownish-gray, pulverulent, slightly sandy, a few shell fragments; sand is very fine- to coarse-grained; poorly-sorted, quartzose; small amounts of bone phosphorite and light-green glauconite; diatomaceous; foraminifers very abundant, with <u>Siphogenerina lamellata</u> conspicuous; <u>Robulus</u> , <u>Dentalina</u> , <u>Bolivina</u> , <u>Nonion</u> abundant
CHICKAHOMINY FORMATION (328.0'-379.0')		
328.0-338.0	10.0	Sand - tan clay binder, 10 percent pelecypod shell fragments; medium- to very coarse-grained, fairly well-sorted, subangular - to subrounded; clear quartz, with 2-3 percent phosphatic bone and shell fragments
338.0-348.5	10.5	Sand - gray, very-slightly-clayey, a few shell fragments; coarse-grained, well-sorted, subangular to subrounded; clear quartz, with minor phosphatic bone fragments
348.5-358.5	10.0	Sand - gray, slightly clayey, 5-10 percent shell fragments; medium-to very coarse-grained, fairly well-sorted, subangular to subrounded; clear quartz, with minor phosphatic bone and shell fragments
358.5-369.0	10.5	"
369.0-379.0	10.0	Sand - moderately-clayey (grayish-green clay), 5 percent pelecypod shell fragments; fine- to very-coarse-grained, poorly-sorted, angular-to rounded; clear quartz, with accessory phosphatic in form of bone fragments and pellets; trace of garnet, abundant small foraminifers, and a few echinoid spines

County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
NANJEMOY FORMATION (379.0'-451.0')		
379.0-389.5	10.5	Sand - very-clayey (greenish-brown clay), a few rounded pebbles (about 5 mm) and coarse shell fragments; fine -to medium-grained, fairly well-sorted; 60 percent clear, sub-angular quartz, 15 percent glauconite, and 25 percent shell material, mostly foraminifers; astrocods common; minor pyrite and gypsum
389.5-399.5	10.0	" 40 percent quartz, 40 percent glauconite, 20 percent foraminiferal shell material
399.5-410.0	10.5	" "
410.0-420.0	10.0	" "
420.0-430.5	10.5	Sand - very-clayey (greenish-gray clay); fine-to very-coarse-grained, poorly sorted; coarse fraction (about 50 percent of sand) consists of stained quartz and oxidized glauconite; fine fraction consists of clear quartz, relatively fresh glauconite, and abundant foraminifers; minor shell material, phosphorite, and pyrite
430.5-440.5	10.0	"
440.5-451.0	10.5	"
MATTAPONI FORMATION (451.0'-522.5')		
451.0-461.0	10.0	Sand - clayey; fine- to coarse-grained, moderately-sorted; 75 percent blackish-green autochthonous glauconite, 25 percent clear, angular quartz; minor muscovite, pyrite, and phosphorite; foraminifers common, but not abundant ( <u>Robulus Dentalina</u> )
461.0-471.5	10.5	"
471.5-481.5	10.0	" 90 percent glauconite, 10 percent quartz; abundant small foraminifers

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Depth (feet)	Thickness (feet)	Description
481.5-492.0	10.5	Clay - drab-gray-to brown, sandy, 5 percent shell fragments; sand is fine-grained, fairly well sorted: 60 percent angular quartz, 30 percent glauconite, 10 percent foraminifers and fine shell debris; small amount of coarse- to very coarse-grained autochthonous glauconite; trace of pyrite; abundant plant fragments
492.0-502.0	10.0	Clay - tan-to gray, moderately-sandy; sand is fine- to coarse-grained, rather poorly sorted; very glauconitic; pyrite relatively abundant; a few shell and plant fragments
502.0-512.5	10.5	"
512.5-522.5	10.0	"
PATUXENT FORMATION (522.5'-556.0')		
522.5-533.0	10.5	Sand - tan, clay binder, 10 percent granule gravel; coarse- to very-coarse-grained, fairly well-sorted, subangular-to rounded; very-feldspathic; slightly-glauconitic in finest fraction; accessory garnet
533.0-543.0	10.0	"
543.0-556.0	13.0	"



INTERVAL SHEET

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VDMR Well No: 2055

Date rec'd: 11/27/67

Sample Interval: from 0 to: 556

PROP: MID-P-9

Number of samples: 54

COMP:

Total Depth: 556

COUNTY: Middlesex

Oil or Gas: Water: XExploratory:

From-To	From-To	From-To	From-To
0 - 10	307.5 - 317.5	-	-
10 - 20.5	317.5 - 328	-	-
20.5 - 30.5	328 - 338	-	-
30.5 - 41.	338 - 348.5	-	-
41. - 51	348.5 - 358.5	-	-
51 - 61.5	358.5 - 369	-	-
61.5 - 71.5	369 - 379	-	-
71.5 - 82	379 - 389.5	-	-
82 - 92	389.5 - 399.5	-	-
92 - 102.5	399.5 - 410	-	-
102.5 - 112.5	410 - 420	-	-
112.5 - 123	420 - 430.5	-	-
123 - 133	430.5 - 440.5	-	-
133 - 143.5	440.5 - 451	-	-
143.5 - 153.5	451 - 461	-	-
153.5 - 164	461 - 471.5	-	-
164 - 174	471.5 - 481.5	-	-
174 - 184.5	481.5 - 492	-	-
184.5 - 194.5	492 - 502	-	-
194.5 - 205	502 - 512.5	-	-
205 - 215	512.5 - 522.5	-	-
215 - 225.5	522.5 - 533	-	-
225.5 - 235.5	533 - 543	-	-
235.5 - 246	543 - 556	-	-
246 - 256	-	-	-
256 - 266.5	-	-	-
266.5 - 276.5	-	-	-
276.5 - 287	-	-	-
287 - 297	-	-	-
297 - 307.5	-	-	-

All intervals have both washed and unwashed samples

County: Middlesex  
VDMR Well No. 2056

Well: MID-P-8 (USGS)

Farm: Carlston

Driller: Fetterhoff Bros.

Location: Urbanna Quadrangle

in NNE Urbanna on Rappahannock River

E. of 76°35', S of 37°40'

Elevation: 7'

Total depth: 542'

Started drilling: June, 1967

Completed drilling: June, 1967

Sample description by: R. H. Teifke, Virginia Division of Mineral Resources

References: No specific reference

#### GEOLOGIC SUMMARY

Depth (feet)	Thickness (feet)	Formation (and remarks)
0.0-61.0	61.0	Yorktown Formation
61.0-215.0	154.0	Calvert Formation
215.0-256.0	41.0	Chickahominy Formation
256.0-348.0	92.0	Nanjemoy Formation
348.0-461.0	113.0	Mattaponi Formation
461.0-542.0	81.0	Patuxent Formation

## GEOLOGIC LOG

Depth (feet)	Thickness (feet)	Description
YORKTOWN FORMATION (0-61')		
0.0-10.0	10.0	Sand - tan, clean; fine- to medium-grained, well sorted, angular-to subangular; clear quartz, with accessory magnetite and muscovite
10.0-20.0	10.0	Sand - light-brown, sparse ferruginous clay binder; fine-grained, well-sorted, angular; clear quartz, with accessory magnetite, muscovite, and light-green weathered glauconite
20.0-30.0	10.0	Sand - light-grayish-brown, trace of clay, trace of shell; fine-grained, well-sorted angular; minor hornblende, weathered glauconite, muscovite; trace of echinoid spines and foraminifers
30.0-41.0	11.0	Sand - gray, trace of clay; fine-grained, fairly well-sorted, angular to subangular; clear to greenish quartz, with small amounts of glauconite and muscovite; 10 percent pelecypod shell fragments, and a few echinoid spines and ostracods
41.0-51.0	10.0	" 25 percent shell fragments
51.0-61.0	10.0	Sand and shell - tan, very slightly clayey; 50 percent sand, fine-grained, well-sorted, angular; 50 percent pelecypod shell fragments, and a few echinoid spines and <u>Turritella</u>
CALVERT FORMATION (61.0'-215.0')		
61.0-71.0	10.0	Shell and clay - 50 percent pelecypod shell fragments; 50 percent brownish-gray, vertically sand-free clay; a very few foraminifers and gastropods; trace of diatoms
71.0-82.0	11.0	" 65 percent shell, 35 percent clay

County: Middlesex  
VDMR Well No. 2056

Depth- (feet)	Thickness (feet)	Description
82.0-92.0	10.0	Clay - brownish-gray, with 15 percent shell fragments; small amount of fine-grained sand, with traces of glauconite, pyrite, carbonaceous material; a very few foraminifers; trace of diatoms
92.0-102.0	10.0	" with 30 percent shell fragments
102.0-112.0	10.0	" with 15 percent shell fragments
112.0-129.0	17.0	Clay - gray, trace of fine sand, 10 percent shell fragments; traces of phosphorite and glauconite; a few foraminifers; very slightly diatomaceous
123.0-133.0	10.0	" diatomaceous, trace of shell material
133.0-143.0	10.0	" "
143.0-153.0	10.0	" "
153.0-164.0	11.0	" "
164.0-174.0	10.0	Clay - pale-gray, pulverulent, trace of fine sand; very diatomaceous; foraminifers ( <u>Nonion</u> , <u>Uvigerina</u> ) common but not abundant
174.0-184.0	10.0	" foraminifers moderately abundant ( <u>Nonion</u> , <u>Uvigerina</u> , <u>Bolivina</u> , <u>Virgulina</u> )
184.0-194.0	10.0	" foraminifers abundant ( <u>Nonion</u> , <u>Uvigerina</u> , <u>Bolivina</u> , <u>Virgulina</u> , <u>Dentalina</u> , <u>Nodosavia</u> , <u>Cibicides</u> , <u>Textuloria</u> )
194.0-205.0	11.0	Diatomaceous earth - moderately foraminiferal ( <u>Siphogenerina lamellata</u> zone), with a few <u>Nonion</u> , <u>Uvigerina</u>
205.0-215.0	10.0	"

County: Middlesex  
VDMR Well No. 2056

Depth (feet)	Thickness (feet)	Description
CHICKAHOMINY FORMATION (215.0'-256.0')		
215.0-225.0	10.0	Sand and shell - moderately clayey (brownish-gray clay); 60 percent pelecypod shell fragments; 40 percent sand - medium- to coarse-grained, fairly well-sorted, subangular to subrounded; clear quartz with 5 percent phosphatic bone fragments
225.0-235.0	10.0	Sand - greenish-gray, clay binder, 3 percent shell fragments, medium- to coarse-grained, fairly well-sorted, subangular to rounded; clear quartz; a few phosphatic nodules, bone fragments, and shell fragments
235.0-246.0	11.0	Sand - abundant matrix of dark greenish-gray clay; fine- to very coarse-grained, rather poorly-sorted, variably rounded; clear quartz, with 5 percent pelecypod shell fragments; foraminifers common, but not abundant; a few echinoid spines and ostracods
246.0-256.0	10.0	"
NANJEMOY FORMATION (256.0-348.0')		
256.0-266.0	10.0	Sand - clayey, clay is locally calcareous, 10 percent shell fragments and fragments of arenaceous shell limestone; fine- to medium-grained, moderately sorted, angular to subrounded; calcarenitic (bioclastic), slightly to moderately glauconitic; poorly-preserved foraminifers abundant, abraded echinoid spines common
266.0-276.0	10.0	"
276.0-287.0	11.0	Sand and shell - abundant matrix of tan clay, about 30 percent shell material, mostly pelecypods, with a few bryozoans, echinoid remains, and fragments of arenaceous shell limestone; fine- to very coarse-grained, poorly-sorted, variably rounded; clear quartz, with about 5 percent fresh glauconite; phosphatic, shell, and bone fragments common; poorly-preserved (reworked) foraminifers common

County: Middlesex  
VDMR Well No. 2056

Depth (feet)	Thickness (feet)	Description
287.0-297.0	10.0	Sand and limestone - 40 percent arenaceous, moderately-fossiliferous limestone containing quartz, goethite after glauconite, bryozoans, pelecypods, and a few algal structures; 60 percent fine- to very coarse-grained, poorly-sorted, rounded sand; clear to stained quartz and goethite after glauconite in subequal amounts; minor phosphorite; poorly-preserved foraminifers moderately abundant
297.0-307.0	10.0	Sand - moderately abundant matrix of dark-gray clay; fine- to very coarse-grained, poorly-sorted, rounded; coarse fraction consists of well rounded and polished goethite after glauconite, and stained quartz; fine fraction consists of moderately-altered glauconite and subordinate quartz; moderately foraminiferal, including some planktonic forms
307.0-317.0	10.0	"
317.0-328.0	11.0	"
328.0-338.0	10.0	"
338.0-348.0	10.0	"
MATTAPONI FORMATION (348.0'-461.0')		
348.0-358.0	10.0	Sand - gray clay binder; medium- to coarse-grained, moderately-sorted; blackish-green autochthonous glauconite with subordinate quartz; a few foraminifers
358.0-369.0	11.0	Clay - light-brown, very-sandy, a few large pelecypod shell fragments; sand is medium- to very-coarse-grained, moderately-sorted; predominantly fresh autochthonous glauconite
369.0-379.0	10.0	"
379.0-389.0	10.0	"

County: Middlesex  
VDMR Well No. 2056

Depth (feet)	Thickness (feet)	Description
389.0-399.0	10.0	Clay - gray, very sandy, a few shell fragments; sand is fine- to very coarse-grained, poorly sorted; 50 percent fine- to medium-grained, angular quartz, 50 percent medium- to very coarse-grained, fresh, autochthonous glauconite; trace of muscovite; a few phosphatic nodules; a few fish teeth, bryozoans, and foraminifers ( <u>Robulus</u> , <u>Nodosaria</u> )
399.0-410.0	11.0	" sand fraction coarser, more glauconitic
410.0-420.0	10.0	" "
420.0-430.0	10.0	Clay - interlaminated pink and greenish-gray; moderately sandy (pink) to sandy (greenish-gray); sand is dark-green, autochthonous glauconite, with subordinate quartz; a few foraminifers ( <u>Robulus</u> , <u>Nodosaria</u> )
430.0-440.0	10.0	" very sandy, 10 percent coarse shell material
440.0-451.0	11.0	" very sandy, 20 percent coarse shell material
451.0-461.0	10.0	" very sandy, 5 percent shell material, very slightly feldspathic
PATUXENT FORMATION (461.0'-542.0')		
461.0-471.0	10.0	Sand - gray, clean; coarse-grained, fairly well-sorted, subangular to subrounded; feldspathic; 5 percent glauconite
471.0-481.0	10.0	" coarse- to very coarse-grained
481.0-490.0	9.0	" "
490.0-492.0	2.0	No sample

County: Middlesex  
VDMR Well No. 2056

Depth (feet)	Thickness (feet)	Description
492.0-502.0	10.0	Sand and gravel - gray, trace of clay; 50 percent granule gravel, 50 percent coarse- to very-coarse-grained, subangular to subrounded sand; both fractions feldspathic; sand fraction moderately glauconitic; garnet commo
502.0-512.0	10.0	" very slightly glauconitic
512.0-522.0	10.0	" "
522.0-532.0	10.0	" "
532.0-542.0	10.0	" "
542.0		Clay - mottled gray and brown, sandy; sand is poorly sorted, very glauconitic



INTERVAL SHEET

Page 1 of 1

VDMR Well No: 2055

Date rec'd: 11/27/67

Sample Interval: from 0 to: 556

PROP: MID-P-9

Number of samples: 54

COMP:

Total Depth: 556

COUNTY: Middlesex

Oil or Gas: Water: XExploratory:

From-To	From-To	From-To	From-To
0 - 10	307.5 - 317.5	-	-
10 - 20.5	317.5 - 328	-	-
20.5 - 30.5	328 - 338	-	-
30.5 - 41.	338 - 348.5	-	-
41. - 51	348.5 - 358.5	-	-
51 - 61.5	358.5 - 369	-	-
61.5 - 71.5	369 - 379	-	-
71.5 - 82	379 - 389.5	-	-
82 - 92	389.5 - 399.5	-	-
92 - 102.5	399.5 - 410	-	-
102.5 - 112.5	410 - 420	-	-
112.5 - 123	420 - 430.5	-	-
123 - 133	430.5 - 440.5	-	-
133 - 143.5	440.5 - 451	-	-
143.5 - 153.5	451 - 461	-	-
153.5 - 164	461 - 471.5	-	-
164 - 174	471.5 - 481.5	-	-
174 - 184.5	481.5 - 492	-	-
184.5 - 194.5	492 - 502	-	-
194.5 - 205	502 - 512.5	-	-
205 - 215	512.5 - 522.5	-	-
215 - 225.5	522.5 - 533	-	-
225.5 - 235.5	533 - 543	-	-
235.5 - 246	543 - 556	-	-
246 - 256	-	-	-
256 - 266.5	-	-	-
266.5 - 276.5	-	-	-
276.5 - 287	-	-	-
287 - 297	-	-	-
297 - 307.5	-	-	-

All intervals have both washed and unwashed samples

Drilled 7/18/67

E/G (Southcoming)

M-5

MID-P-9

Fetterhoff Bros.

at Camp Redskin (nearest Syringa)

250 yds. due S. of  
Benny Fetterhoff

INTERVAL SHEET

Page 1 of 1

VDMR Well No: **WELL NO. 2055**

Date rec'd: 7/21/67

Sample Interval: from 0 to 556

PROP:

Number of samples: 54

COMP:

Total Depth: 556

COUNTY: Middlesex

Oil or Gas: Water:  Exploratory:

UNW From-To	From-To	From-To	From-To
0 - 10	307.5 - 317.5	-	-
10 - 20.5	317.5 - 328	-	-
20.5 - 30.5	328 - 338	-	-
30.5 - 41	338 - 348.5	-	-
41 - 51	348.5 - 358.5	-	-
51 - 61.5	358.5 - 369	-	-
61.5 - 71.5	369 - 379	-	-
71.5 - 82	379 - 389.5	-	-
82 - 92	389.5 - 399.5	-	-
92 - 102.5	399.5 - 410	-	-
102.5 - 112.5	410 - 420	-	-
112.5 - 123	420 - 430.5	-	-
123 - 133	430.5 - 440.5	-	-
133 - 143.5	440.5 - 451	-	-
143.5 - 153.5	451 - 461	-	-
153.5 - 164	461 - 471.5	-	-
164 - 174	471.5 - 481.5	-	-
174 - 184.5	481.5 - 492	-	-
184.5 - 194.5	492 - 502	-	-
194.5 - 205	502 - 512.5	-	-
205 - 215	512.5 - 522.5	-	-
215 - 225.5	522.5 - 533	-	-
225.5 - 235.5	533 - 543	-	-
235.5 - 246	543 - 556	-	-
246 - 256	-	-	-
256 - 266.5	-	-	-
266.5 - 276.5	-	-	-
276.5 - 287	-	-	-
287 - 297	-	-	-
297 - 307.5	-	-	-

Well: MID-P-9 (USGS)

Farm: Camp Redskin

Driller: Fetterhoff Bros.

Location: Wilton Quadrangle  
76°26' 15" W, 37°35'37" N

Elevation: 10'

Total Depth: 556'

Started drilling: July, 1967

Finished drilling: July, 1967

Sample description by: R. H. Teifke, Virginia Division of Mineral Resources

Reference: No specific reference

### GEOLOGIC SUMMARY

Depth (feet)	Thickness (feet)	Formation (and remarks)
0.0-30.5	30.5	Columbia Group
30.5-112.5	82.0	Yorktown Formation
112.5-328.0	215.5	Calvert Formation
328.0-379.0	51.0	Chickahominy Formation
379.0-451.0	72.0	Nanjemoy Formation
451.0-522.5	71.5	Mattaponi Formation
522.5-556.0	33.5	Patuxent Formation

County: Middlesex  
VDMR Well No. 2055

## GEOLOGIC LOG

Depth (feet)	Thickness (feet)	Description
COLUMBIA GROUP (0-30.5')		
0-10.0	10.0	Sand - light-orange-brown, very-slightly clayey; medium-grained, fairly-well-sorted, angular-to subrounded; slightly-feldspathic, accessory magnetite, small amounts of weathered glauconite and very coarse-grained blue quartz
10.0-20.5	10.5	Sand - orange-brown, very-slightly-clayey, a few granules, fine-to coarse-grained, rather-poorly-sorted, angular-to subangular; slightly-feldspathic; minor magnetite
20.5-30.5	10.0	Sand - orange-brown, trace of clay, trace of granule gravel; medium-grained, fairly well-sorted, subangular-to subrounded; small amounts feldspar, magnetite, weathered glauconite, and hornblende
YORKTOWN FORMATION (30.5'-112.5')		
30.5-41.0	10.5	Sand - greenish-brown, slightly clayey-clay is variably gray, to orange-brown (limonitic), to red (hematitic); medium-grained, well-sorted, subangular-to subrounded; clear and greenish quartz, with 5 percent small pelecypod shell fragments; minor weathered glauconite, magnetite, hornblende, and carbonophosphatic fragments; traces of garnet and epidote
41.0-51.0	10.0	Sand and shell - tan, clean; 25 percent pelecypod shell fragments, and 75 percent sand; medium-grained, well-sorted, subangular-to rounded; clear and greenish quartz
51.0-61.5	10.5	Sand and shell - greenish-gray, clean; 50 percent pelecypod-scapopod-coral shell fragments, and 50 percent sand; fine-grained, well-sorted, angular; predominantly quartz

County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
61.5-71.5	10.0	Sand and shell - gray, moderately clayey (gray and pinkish-gray clays); 30 percent pelecypod and scaphopod shell fragments; and 70 percent sand; fine- to medium-grained, moderately-sorted, poorly rounded; slightly-glaucous (fresh, autochthonous)
71.5-82.0	10.5	Clay and shell - 50 percent coarse pelecypod shell fragments; 50 percent pinkish-gray, sandy clay; sand is fine, well-sorted, angular, slightly glauconitic
82.0-92.0	10.0	Sand and shell - gray, clayey, locally limonitic, 50 percent coarse pelecypod shell fragments, and 50 percent sand, in abundant matrix of gray and pinkish-gray clays; sand is fine- to medium-grained, fairly well-sorted, angular-to subangular; slightly glauconitic; traces of muscovite and phosphorite; a few gastropods ( <u>Turritella</u> ) and scaphopods.
92.0-102.5	10.5	" moderately clayey; sand is fine-grained, well-sorted
102.5-112.5	10.0	Sand, clay and shell - 40 percent pelecypods, gastropod, and scaphopod shells and shell fragments; 60 percent fine-grained sand to coarse-grained silt with greenish-gray clay binder, interlaminated with pink pure clay; sand-silt fraction is slightly glauconitic
CALVERT FORMATION (112.5'-328')		
112.5-123.0	0.5	Silt and clay - bluish-gray-to greenish-gray clayey silt-to fine-grained sand with 10 percent glauconite; subordinate pinkish, relatively silty-and sand free clay; 5 percent shell fragments; minor muscovite, selenite, and bone and shell phosphorite; locally limonitic
123.0-133.0	10.0	"

County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
133.0-143.5	10.5	Silt and clay - bluish-gray-to greenish-gray clayey silt-to fine-grained sand with 10 percent glauconite; subordinate pinkish, relatively silty- and sand free clay; 5 percent shell fragments; minor muscovite, selenite, and bone and shell phosphorite; locally limonitic
143.5-153.5	10.0	"
153.5-164.0	10.5	Clay - dark-gray and greenish-gray, silty-sandy; coarse silt-to very-fine-grained sand, well-sorted, angular, with 10 percent glauconite; traces of shell, phosphorite, muscovite, and pyrite
164.0-174.0	10.0	" small amount of gray, fine-grained limestone
174.0-184.5	10.5	Clay - gray, fairly compact, very silty; silt is coarse, very well-sorted, angular, quartzose.
184.5-194.5	10.0	" greenish-gray; 20 percent shell fragments; selenite common
194.5-205.0	10.5	Clay - greenish-gray, compact, locally sandy, trace of shell fragments; sand is medium-grained, well-sorted, subangular to subrounded; clear quartz, with 5 percent abraded shell fragments, abundant selenite, and 2 percent phosphatic bone fragments.
205.0-215.5	10.5	Shell and sand - gray clay binder; 60 percent abraded pelecypod shell fragments; 40 percent medium-to coarse-grained, fairly well-sorted, subangular, clear quartz sand; 2-3 percent phosphatic bone and shell fragments; foraminifers common, but not abundant
215.5-225.5	10.0	Sand - very clayey-brownish-gray clay, 5 percent shell fragments; fine-grained, well-sorted, angular; clear quartz, with minor phosphorite and gypsum, and a trace of pyrite; foraminifers abundant ( <u>Uvigerina</u> , <u>Nonion</u> ) moderately diatomaceous

County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
225.5-235.5	10.0	Sand - very clayey, brownish-gray clay, 5 percent shell fragments; fine-grained, well-sorted angular; clear quartz, with minor phosphorite and gypsum, and a trace of pyrite; foraminifers abundant; ( <u>Uvigerina</u> , <u>Nonion</u> ) moderately diatomaceous; foraminifers moderately abundant
235.5-246.0	10.5	" foraminifers common, but not abundant
246.0-256.0	10.0	" foraminifers common, but not abundant
256.0-266.5	10.5	Clay - pale-brownish-gray, pulverulent, moderately sandy, a few shell fragments; sand is fine- to very-fine-grained, well-sorted, angular; clear quartz, with minor carbonophosphatic material; foraminifers common ( <u>Uvigerina</u> , <u>Nonion</u> , <u>Robulus</u> , <u>Textularia</u> ); diatomaceous
226.5-276.5	10.0	Clay - pale gray, pulverulent, slightly to moderately sandy, 5 percent shell fragments; sand is fine, fairly well-sorted, angular, quartzose; foraminifers moderately abundant ( <u>Uvigerina</u> , <u>Cibicides</u> , <u>Nonion</u> , <u>Textularia</u> ) small amounts pyrite and carbonaceous material; diatomaceous
276.5-287.0	10.5	" foraminifers abundant ( <u>Uvigerina</u> , <u>Cibicides</u> , <u>Nonion</u> , <u>Textularia</u> , <u>Boluvina</u> , <u>Robulus</u> , <u>Lagena</u> ); a few bone and plant fragments
287.0-297.0	10.0	Clay - pale-brownish-gray, pulverulent, slightly sandy, 10 percent shell fragments; sand is fine, fairly well-sorted, angular, quartzose; foraminifers abundant, including <u>Dentalina</u> ; bone fragments common; minor pyrite and carbonaceous material; diatomaceous
297.0-307.5	10.5	"
307.5-317.5	10.0	" abundant plant fragments

County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
317.5-328.0	10.5	Clay - pale brownish-gray, pulverulent, slightly sandy, a few shell fragments; sand is very fine- to coarse-grained; poorly-sorted, quartzose; small amounts of bone phosphorite and light-green glauconite; diatomaceous; foraminifers very abundant, with <u>Siphogenerina lamellata</u> conspicuous; <u>Robulus</u> , <u>Dentalina</u> , <u>Bolivina</u> , <u>Nonion</u> abundant
CHICKAHOMINY FORMATION (328.0'-379.0')		
328.0-338.0	10.0	Sand - tan clay binder, 10 percent pelecypod shell fragments; medium- to very coarse-grained, fairly well-sorted, subangular - to subrounded; clear quartz, with 2-3 percent phosphatic bone and shell fragments
338.0-348.5	10.5	Sand - gray, very slightly clayey, a few shell fragments; coarse-grained, well-sorted, subangular to subrounded; clear quartz, with minor phosphatic bone fragments
348.5-358.5	10.0	Sand - gray, slightly clayey, 5-10 percent shell fragments; medium-to very coarse-grained, fairly well-sorted, subangular to subrounded; clear quartz, with minor phosphatic bone and shell fragments
358.5-369.0	10.5	"
369.0-379.0	10.0	Sand - moderately clayey (grayish-green clay), 5 percent pelecypod shell fragments; fine- to very coarse-grained, poorly-sorted, angular-to rounded; clear quartz, with accessory phosphatic in form of bone fragments and pellets; trace of garnet, abundant small foraminifers, and a few echinoid spines



County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
<b>NANJEMOY FORMATION (379.0'-451.0')</b>		
379.0-389.5	10.5	Sand - very-clayey (greenish-brown clay), a few rounded pebbles (about 5 mm) and coarse shell fragments; fine -to medium-grained, fairly well-sorted; 60 percent clear, sub-angular quartz, 15 percent glauconite, and 25 percent shell material, mostly foraminifers; astrocods common; minor pyrite and gypsum
389.5-399.5	10.0	" 40 percent quartz, 40 percent glauconite, 20 percent foraminiferal shell material
399.5-410.0	10.5	" "
410.0-420.0	10.0	" "
420.0-430.5	10.5	Sand - very-clayey (greenish-gray clay); fine-to very-coarse-grained, poorly-sorted; coarse fraction (about 50 percent of sand) consists of stained quartz and oxidized glauconite; fine fraction consists of clear quartz, relatively fresh glauconite, and abundant foraminifers; minor shell material, phosphorite, and pyrite
430.5-440.5	10.0	"
440.5-451.0	10.5	"
<b>MATTAPONI FORMATION (451.0'-522.5')</b>		
451.0-461.0	10.0	Sand - clayey; fine- to coarse-grained, moderately-sorted; 75 percent blackish-green, autochthonous glauconite, 25 percent clear, angular quartz; minor muscovite, pyrite, and phosphorite; foraminifers common, but not abundant ( <u>Robulus</u> , <u>Dentalina</u> )
461.0-471.5	10.5	"
471.5-481.5	10.0	" 90 percent glauconite, 10 percent quartz; abundant small foraminifers

County: Middlesex  
VDMR Well No. 2055

Depth (feet)	Thickness (feet)	Description
481.5-492.0	10.5	Clay - drab-gray-to brown, sandy, 5 percent shell fragments; sand is fine-grained, fairly well-sorted; 60 percent angular quartz, 30 percent glauconite, 10 percent foraminifers and fine-shell debris; small amount of coarse- to very coarse-grained autochthonous glauconite; trace of pyrite; abundant plant fragments
492.0-502.0	10.0	Clay - tan-to gray, moderately sandy; sand is fine- to coarse-grained, rather poorly-sorted; very glauconitic; pyrite relatively abundant; a few shell and plant fragments
502.0-512.5	10.5	"
512.5-522.5	10.0	"
PATUXENT FORMATION (522.5'-556.0')		
522.5-533.0	10.5	Sand - tan, clay binder, 10 percent granule gravel; coarse- to very coarse-grained, fairly well-sorted, subangular-to rounded; very-feldspathic; slightly-glauconitic in finest fraction; accessory garnet
533.0-543.0	10.0	"
543.0-556.0	13.0	"

INTERVAL SHEET

Page 1 of 1

VDMR Well No: 2055

Date rec'd: 11/27/67

Sample Interval: from 0 to: 556

PROP: MID-P-9

Number of samples: 54

COMP:

Total Depth: 556

COUNTY: Middlesex

Oil or Gas: Water:  Exploratory:

From-To	From-To	From-To	From-To
0 - 10	307.5 - 317.5	-	-
10 - 20.5	317.5 - 328	-	-
20.5 - 30.5	328 - 338	-	-
30.5 - 41.	338 - 348.5	-	-
41. - 51	348.5 - 358.5	-	-
51 - 61.5	358.5 - 369	-	-
61.5 - 71.5	369 - 379	-	-
71.5 - 82	379 - 389.5	-	-
82 - 92	389.5 - 399.5	-	-
92 - 102.5	399.5 - 410	-	-
102.5 - 112.5	410 - 420	-	-
112.5 - 123	420 - 430.5	-	-
123 - 133	430.5 - 440.5	-	-
133 - 143.5	440.5 - 451	-	-
143.5 - 153.5	451 - 461	-	-
153.5 - 164	461 - 471.5	-	-
164 - 174	471.5 - 481.5	-	-
174 - 184.5	481.5 - 492	-	-
184.5 - 194.5	492 - 502	-	-
194.5 - 205	502 - 512.5	-	-
205 - 215	512.5 - 522.5	-	-
215 - 225.5	522.5 - 533	-	-
225.5 - 235.5	533 - 543	-	-
235.5 - 246	543 - 556	-	-
246 - 256	-	-	-
256 - 266.5	-	-	-
266.5 - 276.5	-	-	-
276.5 - 287	-	-	-
287 - 297	-	-	-
297 - 307.5	-	-	-

All intervals have both washed and unwashed samples