

INTERVAL SHEET

WWCR 178

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VDMR Well No.: Well No. 1305

Date 5/11/65

Sample Interval: from 0 to 500

PROP: Sydnor Pump & Well Co., Inc.
Chamberlayne Hills

Total depth 508

COMP: Sydnor Pump & Well Co.

Oil Gas Water Exploratory

COUNTY: Henrico (Richmond)

Cuttings Core Other

VDMR Well No: W-1305

Washed samples

From-To	From-To	From-To	From-To	From-To
-	-	0 - 10	300 - 310	-
-	-	10 - 20	310 - 320	-
-	-	20 - 30	320 - 330	-
-	0 to 130 left	30 - 40	330 - 340	-
-	unwashed	40 - 50	340 - 350	-
-	-	50 - 60	350 - 360	-
-	-	60 - 70	360 - 370	-
-	-	70 - 80	370 - 380	-
-	-	80 - 90	380 - 390	-
-	-	90 - 100	390 - 400	-
-	-	100 - 110	400 - 410	-
-	-	110 - 120	410 - 420	-
-	-	120 - 130	420 - 430	-
-	140 to 500	130 - 140	No sample	-
-	were washed	140 - 150	430 - 440	-
-	-		440 - 450	-
-	-	150 - 160	450 - 460	-
-	-	160 - 170	460 - 470	-
-	-	170 - 180	470 - 480	-
-	-	180 - 190	480 - 490	-
-	-	190 - 200	490 - 500	-
-	-	200 - 210	500 - 508	No sample -
-	-	210 - 220	-	-
-	-	220 - 230	-	-
-	-	230 - 240	-	-
-	-	240 - 250	-	-
-	-	250 - 260	-	-
-	-	260 - 270	-	-
-	-	270 - 280	-	-
-	-	280 - 290	-	-
-	-	290 - 300	-	-

OWNER: Sydnor Pump & Well Co., Inc.
(Chamberlayne Hills Subdivision)
DRILLER: Sydnor Pump & Well Co., Inc.
COUNTY: Henrico (Richmond)

VDMR #1305
WWCR #178
TOTAL DEPTH: 508'

GEOLOGIC LOG

Terrace Deposits (0-40')

- 0-10 Sand — yellow-brown, argillaceous (ferriferous, yellow-brown clay), very-fine- to coarse-grained, poorly sorted, angular to subangular clear quartz; small amount hematitic clay; traces of heavy minerals.
- 10-20 Sand — light-brown; moderately argillaceous (clay is variegated-yellow, brown, red gray, white, and pink); fine- to coarse-grained, poorly to moderately sorted, subangular quartz with trace of plagioclase; scattered grains of tourmaline, biotite, chlorite, magnetite; scattered plant remains.
- 20-30 Sand and Clay — buff, medium- to coarse-grained, moderately sorted, angular to subangular clear quartz sand with subordinate white, relatively coarse-grained potash feldspar and small amount of subrounded magnetite; locally cemented by limonite; clay subordinate to sand, medium-gray, and slightly sandy.
- 30-40 Sand and Clay — buff; medium- to very-coarse-grained, poorly sorted, angular to subangular clear quartz sand with subordinate, white to gray K-feldspar; some of quartz and feldspar is strained green; a few small rounded pebbles of quartz, feldspar, phosphate; small amount "blue" quartz; locally cemented by limonite; a few grains of chert, garnet, and brown epidote; clay medium gray, slightly sandy.

Calvert Formation (40-120')

- 40-50 Sand and Clay — gray; poorly sorted and poorly rounded, slightly arkosic (white potash feldspar) quartz sand with small amounts of magnetite, fine-grained pyrite, garnet, brown epidote, muscovite, chlorite, and phosphorite; medium-gray clay, (clay: sand= 1:1); trace of plant remains.
- 50-60 Clay — greenish-gray; sandy (clay: sand= 2:1); sand poorly sorted, slightly arkosic, slightly micaceous.
- 60-70 As above — but with a small amount of chalky shell debris (pelecypods and gastropods).

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- 70-80 Sand — gray; argillaceous; fine-grained, moderately well- to well-sorted, subangular quartz sand; moderate amount chalky shell fragments (pelecypods, gastropods including Turitella, and scaphopods).
- 80-90 As above.
- 90-100 As above.
- 100-110 As above.
- 110-120 Clay — brownish-gray; sandy; sand very-fine- to very-coarse-grained, poorly sorted, variably rounded; scattered chalky shell fragments (pelecypods and gastropods).
- Aquia Formation (120-190')
- 120-130 Sand — gray; moderately argillaceous; coarse- to very-coarse-grained, moderately sorted, subrounded; slightly glauconitic; much of quartz is stained green; scattered grains of brown biotite, muscovite, phosphorite; scattered chalky shell fragments.
- 130-140 No sample.
- 140-150 Sand and Gravel — gray; medium- to very-coarse-grained, moderately sorted, angular to subangular sand (80%) and fine (2-10 mm with a few pebbles up to 25 mm) subangular to subrounded gravel (20%); clear quartz dominant, fresh gray to white feldspar (microcline) abundant, and small amounts of weathered green glauconite, brown epidote, muscovite, magnetite, dark-gray to red chert, and a trace of pink garnet; trace of plant material.
- 150-160 As above.
- 160-170 As above — but with about 10% well-sorted granules (2-4 mm) and no coarser gravel.
- 170-180 Sand — gray; a few subrounded quartz pebbles (up to 15 mm); medium- to very-coarse-grained, moderately sorted, angular to subrounded; slightly glauconitic and arkosic; much of quartz is stained green; some lumps of dark-gray clay with included glauconite grains; traces of muscovite, biotite, chert, brown epidote, and garnet; trace of plant material.
- 180-190 As above — but without pebbles.

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Patuxent Formation (190-200')

190-200 Sand — gray, with violet cast, coarse- to very-coarse-grained, well-sorted, angular to subangular; slightly arkosic (white potash feldspar), clear quartz; small amounts muscovite, biotite, and glauconite; some of quartz has biotite inclusions; trace of garnet.

Petersburg Granite (200-500')

200-210 Granite Gneiss — gray; clear to milky quartz, white microcline, black to dark-green biotite; minor colorless to pale-green muscovite, sodic plagioclase, and pale-pink to pale-orange garnet; trace of pyrite; foliation marked.

210-220 As above.

220-230 As above.

230-240 As above.

240-250 As above — but foliation much less pronounced.

250-260 Granite — gray; clear to milky quartz, white microcline, and black to brown biotite; minor muscovite, plagioclase, magnetite, and pink garnet; traces of pyrite and green epidote.

260-270 As above.

270-280 Granite — pink; clear to milky quartz; orange K-feldspar, and black to dark brown biotite (very abundant); minor plagioclase, muscovite, and pyrite; trace of hornblende.

280-290 As above.

290-300 Granite — gray; quartz, white microcline, and biotite; traces of pyrite and pink garnet; biotite abundant but less so than in higher intervals.

300-310 As above.

310-320 As above.

320-330 Granite — gray; clear quartz, white potash-feldspar (mostly untwinned), and dark-brown to black biotite; minor green hornblende, muscovite, pink garnet, pyrite, and pale-green epidote; pyrite and epidote are associated in most occurrences.

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- 330-340 Granite — gray; clear quartz, white, untwinned potash-feldspar, and brown biotite; accessory apatite, blue-green hornblende, sphene, magnetite, and pyrite.
- 340-350 As above.
- 350-360 As above.
- 360-370 As above — but with abundant coarse-grained muscovite, and a trace of pale-green epidote.
- 370-380 Granite — dark-gray, locally pink; clear quartz, white to orange-pink untwinned potash-feldspar, and purplish-brown biotite; subordinate amount of muscovite; accessory pink garnet, pyrite, blue-green hornblende, zircon, and acicular apatite; lineation of micas pronounced, but segregation of minerals absent.
- 380-390 Granite — gray, clear quartz, white potash feldspar, and brown biotite; abundant colorless to greenish, coarse-grained muscovite; minor pyrite and pink garnet.
- 390-400 As above.
- 400-410 Granite — buff; clear quartz, hematite-stained microcline and micropertthite, subequal amounts of biotite and muscovite; some plagioclase; accessory garnet, zircon, and apatite.
- 410-420 As above.
- 420-430 As above.
- 430-440 As above.
- 440-450 As above.
- 450-460 As above.
- 460-470 As above.
- 470-480 As above.
- 480-490 As above.
- 490-500 As above.
- 500-508 No sample.

OWNER: Sydnor Pump & Well Co., Inc., (Chamberlayne Hills Subdivision)

GEOLOGIC SUMMARY

	<u>ROCK UNIT</u>	<u>TIME ROCK UNIT</u>
0-40	Terrace deposits	Pleistocene
40-120	Calvert Formation	Miocene
120-190	Aquia Formation	Eocene - Paleocene
190-200	Patuxent Formation	Lower Cretaceous
200-500	Petersburg Granite	Paleozoic
500-508	No sample	

Virginia Division of Mineral Resources
Robert H Teifke, Geologist
June 9, 1965

OWNER: Sydnor Pump & Well Co., Inc.
(Chamberlayne Hills Subdivision)
DRILLER: Sydnor Pump & Well Co., Inc.
COUNTY: Henrico (Richmond)

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TOTAL DEPTH: 508'

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Calvert Formation (40-120')

- 40-50 Sand and Clay — gray, poorly sorted and poorly rounded, slightly arkosic (white potash feldspar) quartz sand with small amounts of magnetite, fine-grained pyrite, garnet, brown epidote, muscovite, chlorite, and phosphorite; medium-gray clay, (clay: sand= 1:1); trace of plant remains.
- 50-60 Clay — greenish-gray; sandy (clay: sand= 2:1); sand poorly sorted, slightly arkosic, slightly micaceous.
- 60-70 As above — but with a small amount of chalky shell debris (pelecypods and gastropods).

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- 70-80 Sand — gray; argillaceous; fine-grained, moderately well- to well-sorted, subangular quartz sand; moderate amount chalky shell fragments (pelecypods, gastropods including Turitella, and scaphopods).
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- 100-110 As above.
- 110-120 Clay — brownish-gray; sandy; sand very-fine- to very-coarse-grained, poorly sorted, variably rounded; scattered chalky shell fragments (pelecypods and gastropods).

Aquia Formation (120-190')

- 120-130 Sand — gray; moderately argillaceous; coarse- to very-coarse-grained, moderately sorted, subrounded; slightly glauconitic; much of quartz is stained green; scattered grains of brown biotite, muscovite, phosphorite; scattered chalky shell fragments.
- 130-140 No sample.
- 140-150 Sand and Gravel — gray; medium- to very-coarse-grained, moderately sorted, angular to subangular sand (80%) and fine (2-10 mm with a few pebbles up to 25 mm) subangular to subrounded gravel (20%); clear quartz dominant, fresh gray to white feldspar (microcline) abundant, and small amounts of weathered green glauconite, brown epidote, muscovite, magnetite, dark-gray to red chert, and a trace of pink garnet; trace of plant material.
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Petersburg Granite (200-500')

200-210 Granite Gneiss — gray; clear to milky quartz, white microcline, black to dark-green biotite; minor colorless to pale-green muscovite, sodic plagioclase, and pale-pink to pale-orange garnet; trace of pyrite; foliation marked.

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260-270 As above.

270-280 Granite — pink; clear to milky quartz; orange K-feldspar, and black to dark brown biotite (very abundant); minor plagioclase, muscovite, and pyrite; trace of hornblende.

280-290 As above.

290-300 Granite — gray; quartz, white microcline, and biotite; traces of pyrite and pink garnet; biotite abundant but less so than in higher intervals.

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- 480-490 As above.
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- 500-508 No sample.

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GEOLOGIC SUMMARY

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^{35'}
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- ferricite
gray buff
clay*
- 30-40 Sand and Clay — buff; medium- to very-coarse-grained, poorly sorted, angular to subangular clear quartz sand with subordinate, white to gray K-feldspar; some of quartz and feldspar is stained green; a few small rounded pebbles of quartz, feldspar, phosphate; small amount "blue" quartz; locally cemented by limonite; a few grains of chert, garnet, and brown epidote; clay medium gray, slightly sandy.
- ferricite
green we get*

³⁵
Calvert Formation (40-120')

- 40-50 Sand and Clay — gray; poorly sorted and poorly rounded, slightly arkosic (white potash feldspar) quartz sand with small amounts of magnetite, fine-grained pyrite, garnet, brown epidote, muscovite, chlorite, and phosphorite; medium-gray clay, (clay: sand= 1:1); trace of plant remains.
- 50-60 Clay — greenish-gray; sandy (clay: sand= 2:1); sand poorly sorted, slightly arkosic, slightly micaceous.
- 60-70 As above — but with a small amount of chalky shell debris (pelecypods and gastropods).

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70-80 Sand - gray; argillaceous; fine-grained, moderately well- to well-sorted, subangular quartz sand; moderate amount chalky shell fragments (pelecypods, gastropods including Turitella, and scaphopods).

80-90 As above.

90-100 As above.

100-110 As above.

110-120 Clay - brownish-gray; sandy; sand very-fine- to very-coarse-grained, poorly sorted, variably rounded; scattered chalky shell fragments (pelecypods and gastropods); *moderately diatomaceous.*

tc
Mt Hope

Aquia Formation (120-190')

120-130

also an indurated glauc. ss. layer + bed (reworked) of (from the Kpts?)

Gravel slightly gray-green clay
Sand - gray; moderately argillaceous; coarse- to very-coarse-grained, moderately sorted, subrounded; *slightly* glauconitic *common*; much of quartz is stained green; scattered grains of brown biotite, muscovite, phosphorite; scattered chalky shell fragments.

abundant R to WR and Q of various sizes; F-content low; glauconite-bearing ss. in interval.

130-140

No sample.

Patuxent (Formation) (140-200')

140-150

Sand and Gravel - gray; medium- to very-coarse-grained, moderately sorted, angular to subangular sand (80%) and fine (2-10 mm with a few pebbles up to 25 mm) subangular to subrounded gravel (20%); clear quartz dominant, fresh gray to white feldspar (microcline) abundant, and small amounts of weathered green glauconite, brown epidote, muscovite, magnetite, dark-gray to red chert, and a trace of pink garnet; trace of plant material.

150-160 As above.

160-170 As above - but with about 10% well-sorted granules (2-4 mm) and no coarser gravel.

170-180 Sand - gray; a few subrounded quartz pebbles (up to 15 mm); medium- to very-coarse-grained moderately sorted, angular to subrounded; slightly glauconitic and arkosic; much of quartz is stained green; some lumps of dark-gray clay with included glauconite grains; traces of muscovite, biotite, chert, brown epidote and garnet; trace of plant material.

180-190 As above - but without pebbles.

OWNER: Sydnor Pump & Well Co., Inc. (Chamberlayne Hills Subdivision)

Patuxent Formation (190-200')

190-200 Sand -- gray, with violet cast, coarse- to very-coarse-grained, well-sorted, angular to subangular; slightly arkosic (white potash feldspar), clear quartz; small amounts muscovite, biotite, and glauconite; some of quartz has biotite inclusions; trace of garnet.

Petersburg Granite (200-500')

200-210 Granite Gneiss -- gray; clear to milky quartz; white microcline, black to dark-green biotite; minor colorless to pale-green muscovite, sodic plagioclase, and pale-pink to pale-orange garnet; trace of pyrite; foliation marked.

210-220 As above.

220-230 As above.

230-240 As above.

240-250 As above -- but foliation much less pronounced.

250-260 Granite -- gray; clear to milky quartz, white microcline, and black to brown biotite; minor muscovite, plagioclase, magnetite, and pink garnet; traces of pyrite and green epidote.

260-270 As above.

270-280 Granite -- pink; clear to milky quartz; orange K-feldspar, and black to dark brown biotite (very abundant); minor plagioclase, muscovite, and pyrite; trace of hornblende.

280-290 As above.

290-300 Granite -- gray; quartz, white microcline, and biotite; traces of pyrite and pink garnet; biotite abundant but less so than in higher intervals.

300-310 As above.

310-320 As above.

320-330 Granite -- gray; clear quartz, white potash-feldspar (mostly untwinned), and dark-brown to black biotite; minor green hornblende, muscovite, pink garnet, pyrite, and pale-green epidote; pyrite and epidote are associated in most occurrences.

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- 330-340 Granite — gray; clear quartz, white, untwinned potash-feldspar, and brown biotite; accessory apatite, blue-green hornblende, sphene, magnetite, and pyrite.
- 340-350 As above.
- 350-360 As above.
- 360-370 As above — but with abundant coarse-grained muscovite, and a trace of pale-green epidote.
- 370-380 Granite — dark-gray, locally pink; clear quartz, white to orange-pink untwinned potash-feldspar, and purplish-brown biotite; subordinate amount of muscovite; accessory pink garnet, pyrite, blue-green hornblende, zircon, and acicular apatite; lineation of micas pronounced, but segregation of minerals absent.
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- 490-500 As above.
- 500-508 No sample.

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GEOLOGIC SUMMARY

ROCK UNIT

TIME ROCK UNIT

35		<u>Columbia Group</u>	
0-40		<u>Terrace deposits</u>	
35	40-120	Calvert Formation	
	120-190	<u>Aquia Formation</u>	Mataponi
140	190-200	Patuxent Formation	
	200-500	Petersburg Granite	
	500-508	No sample	

	Pleistocene	
	Miocene	
	Eocene - Paleocene -	Late Cretaceous
Early	Lower Cretaceous	
	Paleozoic (?)	

130-140 No sample.

Virginia Division of Mineral Resources

Robert H Teifke, Geologist

June 9, 1965

Robert H. Teifke

January 10, 1973