



County: Loudoun

VDMR Well No: W-890

Well No: Leesburg #5

Farm:

Driller: Bear Creek Mining Co.

Location:

Elevation:

Total Depth: 200.0'

Drilling Commenced:

Well Completed:

Sample Description by: E. C. Toewe, November 1963

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-24.2	24.2	Weathered diabase
24.2-200.0	175.8	Diabase, light gray to medium gray, medium-grained. Plagioclase 40-70%, pyroxene 30-50%, magnetite 2-8%, biotite 2-5%, pyrite 2-5%, quartz 1%. Amphibole is present in varying amounts, but since pyroxene and amphibole cannot be differentiated magascopically, amphibole is included in the percentage of pyroxene noted in the log. Chalcopyrite is present throughout the core in very minor amounts. Shear planes are common, and are randomly located throughout the core, and occur with shiny black slickensides. Samples of these slickensides from the following intervals: (49.6'-50.9', 52.6'-52.8', 64.0'-65.0', 71.2'-73.0', 73.0'-76.8', 87.0'-87.3', 89.0'-90.3', 96.9'-98.0', 99.4'-130.0', 130.0'-130.4', 134.8'-137.2', 140.0'-142.0', 152.4'-153.6', 181.4'-185.3', 190.0'-191.2', and 198.0'-199.1'.) were examined, and various forms of chlorite were the only identifiable minerals. A barite vein cuts the core from 184.5'-184.7'.

(cont.)

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description</u> (cont.)
24.2-200.0	175.8	In several areas in the core the diabase has been altered to such an extent that the alteration is observable megascopically. In thin sections of this altered diabase most or all of the plagioclase has been altered to sericite, most of the pyroxene has been altered to amphibole, and magnetite is generally present as skeletal crystals. This diabase is present at the following intervals: 98.0'-99.4', 181.4'-185.3', and 194.6'-195.1'. The diabase from this core is dated as Triassic.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-24.2	24.2	Diabase, weathered, light brown, medium-grained.
24.2-47.5	23.3	Diabase, medium to dark gray, medium-grained, plagioclase feldspar 55-65%, pyroxene 30-35%, magnetite 2-5%, biotite 2-5%, pyrite 2-4%.
47.5-48.9	1.4	Diabase, light gray, medium-grained. Plagioclase 60-70%, pyroxene 30-35%, magnetite 3-8%, pyrite 2-5%, biotite 1-2%, quartz (?) more than 1%.
48.9-73.0	24.1	Diabase, medium gray, medium-grained. Shear planes with black slickensides cut the core at 49.6'-50.9', 52.6'-56.8', 64.0'-65.0', 71.2'-73.0'. Plagioclase 55-65%, pyroxene 35-40%, biotite 5-10%, magnetite 2-4%, pyrite more than 1%. Sample R-2417, 68.2 feet: thin section contains: sericite 30%, pyroxene 30%, plagioclase (An 30-70) 25%, hornblende 10%, magnetite 5%.
73.0-76.8	3.8	Diabase, same as above, but in a shear zone. Poor core recovery.
76.8-98.0	21.2	Diabase, dark gray, medium-grained. Plagioclase 50-55%, pyroxene 40-50%, magnetite 2-5%. Shear planes with shiny black slickensides and poor recovery cut the core from 87.0'-87.3', 89.0'-90.3', and 96.9'-98.0'.
98.0-99.4	1.4	Diabase, same as above, but 25-30% of plagioclase has been altered to pink sericite.
99.4-130.0	30.6	Diabase, medium to dark gray, medium-grained. Plagioclase 50-60%, pyroxene 45-55%. This entire section of core cut by shear planes with black slickensides. Sample R-2418, 118.0 feet: thin section contains: plagioclase (An 30-50), 45%, hornblende 30%, sericite 20%, magnetite 4%, quartz (?) 1%, pyroxene (??) more than 1%.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
130.0-154.3	24.3	Diabase, as above, but dark gray to black in color. Shear planes, with black slickensides cut the core at 120.0'-130.4', 134.8'-137.2', 140.0'-142.0', and 152.4'-153.6'.
154.3-181.4	27.1	Diabase, light gray, medium-grained. Plagioclase 60-70%, pyroxene 35-40%, magnetite 2-5%, pyrite 1-2%. Shear planes with black slickensides, cut the core at 162.8'-168.3', and 168.2'-171.4'.
181.4-185.3	3.9	Diabase, altered, pink-green to gray-green, medium grained. Plagioclase 45-55%, pyroxene 40-50%, feldspar 5-10%, chalcopyrite 3-10%. A white vein (barite) cuts the core from 184.5'-184.7'. Shear planes with black slickensides cut the core. Both the feldspar and pyroxene are highly altered in this interval. Sample R-2419, 184.3 feet: thin section contains: plagioclase (An 40-70) 50%, pyroxene 40%, sericite 5%, magnetite 3%, hornblende (?) 2%, quartz (?) more than 1%.
185.3-200.0	14.7	Diabase, medium gray, medium-grained. Plagioclase 35-65%, pyroxene 35-45%. Shear planes with slickensides cut the core at 190.0'-191.2', 198.0'-199.1'. Green-gray altered diabase from 194.6'-195.1'.

Virginia Division of Mineral Resources  
E. Clayton Toewe, Geologist  
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