

INTERVAL SHEET

Page 1

VDMR Well No.: 888

Date _____

Sample Interval: from 0 to 373.8

PROP:

Total depth 496.0

COMP: Bear Creek Ming. Co.
Leesburg #3

Oil _____ Gas _____ Water _____ Exploratory X

COUNTY:
Loudoun

Cuttings _____ Core X Other _____

From-To	From-To	From-To	From-To	From-To
0_40.0	103.2_103.8	171.0_171.6	254.1_254.5	314.4_315.0
42.6_43.1	104.8_105.2	171.9_172.8	255.1_255.3	317.8_318.1
44.2_44.6	106.0_106.4	173.1_173.7	258.7_259.2	319.5_320.0
45.5_45.9	108.8_109.2	179.8_181.6	259.9_260.2	324.0_324.3
47.0_47.2	109.6_110.2	182.0_182.6	261.0_261.6	325.4_325.6
49.8_50.3	112.2_112.7	184.8_185.3	263.2_263.5	327.1_327.6
52.8_53.2	115.4_115.8	189.8_190.3	264.4_264.9	328.5_328.7
54.5_55.1	117.5_118.0	190.4_190.6	265.3_265.8	331.1_331.5
58.2_58.7	118.5_119.0	192.5_192.9	267.3_267.6	331.7_332.2
60.0_60.5	121.7_122.1	194.0_194.4	270.6_271.0	334.1_334.3
62.0_62.2	125.0_125.5	198.0_198.4	271.6_272.0	336.4_337.1
64.0_64.3	126.9_127.4	203.8_204.0	272.5_272.8	338.2_338.7
67.6_68.1	128.0_128.4	204.2_204.7	274.5_274.9	339.8_340.1
69.6_70.0	129.0_129.5	206.3_206.8	277.2_277.5	342.3_342.7
71.7_72.2	131.2_131.7	209.0_209.5	279.1_279.3	344.3_344.7
74.8_75.2	133.8_134.3	211.0_211.5	281.7_282.1	347.1_347.7
76.3_76.9	136.3_136.7	215.9_216.4	283.6_283.8	351.0_351.5
79.2_79.6	138.1_138.6	216.6_216.9	286.5_286.7	353.0_353.4
80.7_81.1	141.0_141.4	217.4_217.9	288.5_289.0	354.2_355.0
84.0_84.5	146.7_147.2	221.0_221.4	291.5_292.0	357.0_357.4
86.3_86.7	149.3_149.5	223.7_224.2	293.0_293.4	358.1_358.6
91.8_92.2	153.5_154.0	225.3_225.8	295.0_295.3	359.2_359.4
94.5_95.0	154.9_155.4	227.4_228.0	297.5_298.0	360.6_360.9
99.4_99.8	157.9_158.5	231.0_231.5	299.2_299.8	361.0_361.2
101.0_101.5	159.1_159.6	233.9_234.2	300.5_300.8	361.3_361.5
-	163.9_164.5	235.0_235.6	303.2_303.5	364.0_364.4
-	164.6_165.0	241.1_241.4	305.5_305.8	366.0_366.4
-	168.0_168.3	241.6_242.2	307.5_308.0	368.0_368.5
-	168.4_168.7	249.9_250.4	309.1_309.5	372.2_372.9
-	169.8_170.4	251.1_251.6	312.0_312.4	373.2_373.8

INTERVAL SHEET

Page 2

VDMR Well No.: 888

Date _____

Sample Interval: from 374.1 to 495.9

PROP:

Total depth 496.0

COMP: Bear Creek Ming. Co.
Leesburg #3

Oil _____ Gas _____ Water _____ Exploratory X

COUNTY:
Loudoun

Cuttings _____ Core X Other _____

From-To	From-To	From-To	From-To	From-To
-	374.1_374.4	438.6_439.0	-	-
-	375.5_376.2	440.5_440.9	-	-
-	376.2_376.5	442.0_442.5	-	-
-	379.3_379.8	445.4_445.7	-	-
-	381.8_383.1	447.6_448.1	-	-
-	384.2_384.6	450.0_450.5	-	-
-	386.6_387.1	451.2_451.6	-	-
-	389.1_389.7	452.4_452.7	-	-
-	391.6_392.1	454.2_454.7	-	-
-	394.4_394.9	456.4_456.7	-	-
-	396.0_396.5	458.0_458.4	-	-
-	398.0_398.8	459.6_460.1	-	-
-	400.9_401.3	462.1_462.6	-	-
-	402.8_403.2	464.5_465.0	-	-
-	406.3_406.7	465.9_466.6	-	-
-	408.4_408.8	467.0_467.4	-	-
-	412.0_412.4	469.3_469.7	-	-
-	413.2_413.7	473.2_473.6	-	-
-	415.3_415.6	475.1_475.6	-	-
-	417.3_417.7	475.7_475.9	-	-
-	419.0_419.6	478.8_479.2	-	-
-	420.8_421.3	481.9_482.4	-	-
-	423.4_423.8	484.2_484.8	-	-
-	425.2_425.8	486.7_487.0	-	-
-	427.0_427.5	489.0_489.6	-	-
-	427.9_428.4	491.5_492.0	-	-
-	431.1_431.5	495.5_495.9	-	-
-	433.0_433.4	-	-	-
-	435.0_435.3	-	-	-
-	435.7_436.7	-	-	-

County: Loudoun

VDMR Well No: W-888

Well No: Leesburg #3

Farm:

Driller: Bear Creek Mining Co.

Location: 8 miles south of Leesburg, Loudoun County, 900 feet north of
Goose Creek.

Elevation: 380'

Total Depth: 496'

Drilling Commenced:

Well Completed:

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

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-40.4	40.0	Weathered diabase; mostly no core recovery.
40.0-496.0	456.0	Diabase, light gray to dark gray, medium-grained. Plagioclase 40-75%, pyroxene 30-60%, magnetite 1-8%, biotite 1-2%, pyrite 1-5%, quartz 1%. Amphibole is present in varying amounts, but since pyroxene and amphibole cannot be differentiated megascopically in this core, amphibole is included in the percentage of pyroxene cited in the log. Chalcopyrite is present throughout the core in very minor amounts. Shear planes are common, and occur at the following intervals: 48.2'-49.9', 53.6'-54.2', 72.0'-73.2', 78.8'-80.4', 82.6'-84.3', 89.0'-92.4', 97.6'-98.8', 99.0'-103.2', 110.8'-112.2', 123.6'-124.0', 147.2'-150.0', 159.6'-166.5', 198.2'-199.4', 200.0'-217.4', 219.2'-219.6', 228.0'-228.7', 269.6'-273.3', 304.0'-305.5', 307.4'-307.6', 316.7'-316.9', 323.5'-328.3', 349.0'-353.2', 353.2'-355.0', 390.1'-391.4', 399.1'-401.2', 417.0'-418.2', 428.1'-428.4', 435.7'-444.9', 452.0'-454.6', and 487.9'-490.2'. (cont.)

GEOLOGIC SUMMARY

<u>Depth</u>	<u>Thickness</u>	<u>Description (cont.)</u>
40.0-496.0	456.0	<p>The black slickensides lining these shear planes are forms of chlorite. Barite veins cut the core at 178.5'-178.9' and 355.0'-361.2'. White or light green veins of prehnite/datolite cut the core at 168.1'-168.9', 181.6'-184.8', 198.2'-199.4', 212.4'-213.0', and 382.4'-383.1'. Unidentifiable zeolites are present at 181.6'-184.8' and 349.0'-353.2'. 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: 99.0'-103.2', 171.9'-172.8', 349.0'-361.2', 371.9'-376.8', and 435.3'-435.7'. The diabase from this core is dated as Triassic.</p>

GEOLOGIC LOG

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0-40.0	40.0	Diabase, weathered to a medium brown, medium-grained. Yellow to brown iron-stained plagioclase 60-65%, black to dark green pyroxene 35-40%, magnetite 2-5%, biotite 1-2%, pyrite more than 1%, chlorite more than 1%, 1.7 feet of this core interval was recovered.
40.0-78.8	38.8	Diabase, dark gray to black, medium-grained. Plagioclase 50-60%, pyroxene 35-45%, magnetite 2-5%, pyrite 1-2%, biotite (?) more than 1%. Shear planes lined with black slickensides cut the core at 48.2'-49.9', 53.6'-54.2', 72.0'-73.2'. Sample R-2379, 69.0 feet; thin section contains: plagioclase (An 50-70) 60%, augite 33%, magnetite 5%, biotite 1-2%, quartz more than 1%.
78.8-99.0	20.2	Diabase, same as above, but the shear planes are more abundant. Poor core recovery from 90.1'-90.8', 92.0'-92.3', and 98.0'-99.0'. Sample R-2380, 92.0'; thin section contains: plagioclase (An 50-70) much of which has been altered to sericite 55%, augite, some of which has been altered to uralite-hornblende 35%, pyrite 4%, biotite slightly altered to chlorite 3%, magnetite 2%, and quartz 1%.
99.0-103.2	4.2	Diabase, altered, pinkish green to gray, medium-grained. Altered feldspar 60-65%, pyroxene/amphibole 20-25%, magnetite 5%, quartz feldspar intergrowths 2-5%. Shear planes lined with black and dark greenish black slickensides cut this entire section of core. Sample R-2381, 102.0 feet; thin section contains; plagioclase (An 30-70) nearly completely altered to sericite 70%, hornblende (uralite) 20%, magnetite 5%, quartz-feldspar 5%.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
103.2-159.6	56.4	Diabase, gray to black, medium-grained. Plagioclase 55-60%, amphibole/pyroxene 35-45%, magnetite 1-2%. Shear planes lined with black slickensides cut the core at 110.8'-112.2', 123.6'-124.0', and 147.2'-150.0'. Sample R-2382, 103.8 feet; thin section contains: plagioclase (An 50-70), partially altered to sericite along margin of grains 55%, amphibole (uralite-hornblende) 30%, augite, partially altered, 10%, magnetite 3%, quartz 2%. Sample R-2383, 111.0 feet: thin section contains: plagioclase (An 50-70), slightly altered to sericite 60%, augite 35%, magnetite 4%, quartz 1%.
159.6-166.5	6.9	Diabase, same as above, but lighter in color. Shear planes are present throughout this entire interval, and contain pyrite, magnetite, and chlorite. Core recovery in this interval is in the form of small rounded fragments.
166.5-171.9	5.4	Diabase, medium to dark gray, medium-grained. Plagioclase 55-65%, pyroxene 30-35%, pink altered feldspar 1-5%, magnetite 2-4%. A thin white vein of prehnite/datolite cuts the core from 168.1'-168.9'. Slight alteration is visible along margins of the vein.
171.9-172.8	0.9	Diabase, same as above, save the ratio of pink to white feldspar is increased.
172.8-181.6	8.8	Diabase, gray, medium-grained, plagioclase 35-40%, pink altered feldspar 30-35%, pyroxene 30-35%, magnetite 2-5%. A white vein of barite cuts the core from 178.5'-178.9'.
181.6-184.8	3.2	Diabase, same as above, but mineralization has occurred along open fractures. Pyrite, magnetite, prehnite, and some colorless zeolites (?) are present.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
184.8-192.6	7.8	Diabase, gray, medium-grained. White plagioclase 50-60%, pink altered feldspar 10-15%, pyroxene 30-35%, pyrite 1-2%, magnetite 1-2%.
192.6-200.0	7.4	Diabase, gray, somewhat coarser than above. Prehnite present in fracture fillings. Shear planes lined with black slickensides cut the core from 198.2'-199.4'. Sample R-2384, 189.0 feet: thin section contains: plagioclase, so highly altered to sericite that no determination of composition could be made 55%, hornblende-uralite 40%, magnetite 2%, quartz 2%, biotite 1%.
200.0-217.4	17.4	Diabase, same as above, cut by several "gouge areas" .01-.05' thick. This "gouge" is gray-green, fine-grained to very fine-grained, and contains fragments of pyroxene, altered plagioclase, prehnite and chlorite.
217.4-230.0	12.6	Diabase, gray, medium-grained. White plagioclase 40-45%, pyroxene 30-35%, pink altered feldspar 5-10%, magnetite 2-5%, pyrite 1-3%. Shear planes lined with black slickensides cut the core from 219.2'-219.6', and 228.0'-228.7'.
230.0-269.6	39.6	Diabase, same as above, but pink altered feldspar are absent.
269.6-273.3	3.7	Diabase, same as above, but entire section is cut by shear planes lined with black slickensides.
273.3-323.5	50.2	Diabase, gray to dark gray, medium-grained. Plagioclase 60-65%, pyroxene 40-45%, magnetite 2-5%. No core recovery 304.0'-305.5', and poor recovery at 307.4', and 316.9'.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
323.5-328.3	5.8	Diabase, same as above, but 5-10% pink altered feldspar is present. Pyrite and chlorite are present (more than 1%), and shear planes lined with black and dark greenish black slickensides cut this entire interval.
328.3-349.0	20.7	Diabase, dark gray, medium-grained. Plagioclase 60-65%, pyroxene 40-45%, magnetite 2-5%, pyrite 1%, chlorite more than 1%.
349.0-353.2	4.2	Diabase, altered, green-gray, medium-grained. Pink altered feldspar 45-50%, pyroxene (amphibole ?) 40-45%, white feldspar 10-15%, magnetite 2-5%, pyrite 1%, chlorite more than 1%, olivine (?) more than 1%, quartz more than 1%. Some mineralization (unidentifiable zirconites ?) evident along shear planes, which cut the core throughout this interval.
353.2-355.0	1.8	Diabase, same as above, but no mineralization associated with shear planes.
355.0-361.2	6.2	Diabase, same as above, but cut by light gray to white veins of barite. Possible contact alteration along margin of vein.
361.2-371.9	10.7	Diabase, dark gray to dark gray-green, medium-grained. Plagioclase feldspar 55-65%, pyroxene 40-45%, magnetite 5-7%.
371.9-376.8	4.9	Diabase, pinkish green, medium-grained. Pink altered feldspar 50-60%, pyroxene 35-40%, plagioclase 10-15%, chalcopyrite 2-5%, magnetite 2-5%, and chlorite more than 1%.
376.8-383.1	6.3	Diabase, gray, medium-grained. White plagioclase 45-50%, pyroxene 40-45%, pink altered feldspar 5-10%, magnetite 2-5%, prehnite more than 1%, quartz more than 1%, pyrite more than 1%. A vein of prehnite cuts the core from 382.4'-383.1'.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
383.1-429.2	46.1	Diabase, dark gray, medium-grained. Plagioclase 55-65%, pyroxene 35-40%, magnetite 2-5%. Some large (.1-.4 inch) pyroxene crystals present. Shear planes lined with black slickensides cut the core at 390.1'-391.4', 399.1'-401.2', 417.0'-418.2', and 428.1'-428.4'.
429.2-435.3	5.1	Diabase, same as above, but lighter gray, and shear planes absent.
435.3-435.7	0.4	Diabase, pinkish green to gray-green, medium-grained. Pink altered feldspar 50-55%, pyroxene (amphibole ?) 45-50%, white plagioclase 15-20%.
435.7-444.9	9.2	Diabase, light to medium gray, medium-grained. Plagioclase 60-65%, pyroxene 35-40%, magnetite 5%. Shear planes lined with black slickensides cut the core throughout this entire interval.
444.9-490.6	45.7	Diabase, same as above, but shear planes only present at 452.0'-454.6', and 487.9'-490.2'. A black vein of chlorite, present at 488.3'-489.9', is offset slightly by a shear plane at 489.0'.
490.6-496.0	5.4	Diabase, dark gray, medium-grained. Plagioclase 60-65%, pyroxene 35-40%, magnetite 5-10%.

Virginia Division of Mineral Resources
September 27, 1963
E. C. Toewe - Geologist