

Portland District, Preston County, W. Va.

By Hope Natural Gas Company, Clarksburg, W. Va.

Located 0.52 mile S. of 39° 25' and 4.11 miles W. of 79° 30'.

Kingwood Quadrangle - EC.

Elevation 2247'.

Permit, Preston - 21

Commenced April, 1951; completed August 4, 1951.

Gas well; volume, 6000,000 cu. ft.

Gas at 5146', 5342' and 5346'.

Ran casing at 4976'.

Section based on samples from 4464 to 5346 feet; examined by Russel R. Flowers.

| Top | Bottom | Thickness | |
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| 4464 | 4505 | 41 | Shale, grayish-black to black, carbonaceous, calcareous |
| 4505 | 45 ⁴ ₉₅ | 40 | Shale, grayish-black to black (carbonaceous), some dark-gray to grayish-black, small amount is is calcareous |
| 45 ⁴ ₉₅ | 4565 | 20 | <u>Tully Limestone? 20 Feet.</u> Limestone, brownish-gray to olive-gray and dark-gray; a very large amount of dark-gray to black shale, highly calcareous in part |
| <u>Hamilton and Marcellus Shales, 387 Feet.</u> | | | |
| 4565 | 4665 | 100 | Shale, dark-gray to grayish-black, a moderate to large amount of grayish-black to black, calcareous in part |
| 4665 | 4804 | 139 | Shale, grayish-black, some grayish-black to black (carbonaceous); trace of dolomite |
| 4804 | 4926 | 122 | Shale, grayish-black to black, carbonaceous; calcareous in part |
| 4926 | 4935 | 9 | Shale, dark-gray, somewhat calcareous and somewhat dolomitic; some grayish-black to black, carbonaceous shale |
| 4935 | 4952 | 17 | Shale, black (highly carbonaceous) and grayish black to black (carbonaceous), highly calcareous, pyritic in part; some brownish-gray to dark yellowish brown metabentonite at the bottom; pyritic in part |
| 4952 | <u>Huntersville Chert, 194 Feet.</u> | | |
| | 4971 | 19 | Shale (very highly calcareous to limestone (very shaly), grayish-black to black, somewhat carbonaceous |
| 4971 | 4979 | 8 | Chert, light- to medium-gray (mostly translucent), some medium- to dark-gray, highly calcareous, moderately dolomitic; spicular in part |
| 4979 | 4988 | 9 | Chert, medium- to dark-gray (somewhat argillaceous), calcareous, somewhat dolomitic |
| 4988 | 5007 | 19 | Chert, mottled very light to medium-gray (transparent to translucent) and dark-gray to grayish-black (highly argillaceous), somewhat calcareous, somewhat to moderately dolomitic; spicular in part |
| 5007 | 5042 | 35 | Chert, very light to light-gray (transparent to translucent, highly spicular), a moderate to large amount of mottled light-gray and dark-gray to grayish-black (highly argillaceous); dolomitic in part, small amount is very silty and glauconitic |

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| 5042 | 5050 | 8 | Chert, mottled medium-gray (spicular) and dark-gray to grayish-black (highly argillaceous), very silty in part, slightly dolomitic |
| 5050 | 5076 | 26 | Chert, medium dark to dark-gray to a grayish-black, - very silty, silicified shale, slightly dolomitic; some vein dolomite in the lower part |
| 5076 | 5082 | 6 | Chert, light- to dark-gray, argillaceous with some grayish-black (silicified), somewhat dolomitic |
| 5082 | 5100 | 18 | Chert, dark-gray, argillaceous to a grayish-black, silicified shale, more silicified shale and less chert in the lower part; a very small amount of white dolomite |
| 5100 | 5113 | 13 | Shale, grayish-black, highly silicified; some dark-gray chert; a very small amount of white dolomite |
| 5113 | 5130 | 17 | Shale to highly silicified shale, grayish-black |
| 5130 | 5141 | 11 | Shale, grayish-black |
| 5141 | 5146 | 5 | Siltstone, grayish-black to black, highly argillaceous, - very cherty, calcareous, slightly dolomitic, pyritic in part; some dark-gray to grayish-black shale in the upper part |
| 5146 | <u>Oriskany Sandstone, 23? Feet.</u> | | |
| 5146 | 5151 | 5 | Sandstone, light-gray, some medium-gray (somewhat argillaceous), fine-grained, some medium-grains, some - very fine sand, fine to medium at the bottom, rounded, some well rounded, highly calcareous |
| 5151 | 5154 | 3 | Limestone, medium light to dark-gray, very sandy, very fine to very coarse grained, subrounded to well rounded, somewhat argillaceous in part |
| 5154 | 5158 | 4 | Limestone (very sandy) to sandstone (highly calcareous), very fine to medium-grained, some coarse grains, - subrounded to well rounded, light- to medium-gray |
| 5158 | 5164 | 6 | Sandstone, very light to medium-gray, highly calcareous with some very sandy limestone, very fine to coarse-grained, subrounded to well rounded |
| 5164 | 5169 | 5 | Sandstone, light- to medium-gray, some dark-gray (argillaceous), very highly calcareous, very fine to fine-grained (subrounded), some medium to coarse (rounded) grains |
| 5169 | 5174 | 5 | - Sandstone (very highly calcareous) and some limestone (very sandy), light- to dark-gray (with grayish-black, very silty, highly argillaceous streaks), very fine grained with fine to medium, rounded grains; a large amount of fine to coarse sand (rounded) at the bottom |
| | <u>Helderberg Group, 172, plus, Feet.</u> | | |
| 5174 | 5177 | 3 | Sandstone, light- to medium-gray, some dark-gray to grayish-black (argillaceous), very fine to medium-grained, very silty, very highly calcareous; trace of chert |
| 5177 | 5184 | 7 | - Siltstone (sandy, very fine) to silty shale, dark-gray to grayish-black, medium- to dark-gray in the lower part, very highly calcareous, slightly dolomitic, a little fine to medium (rounded) sand at the top to a large amount at the bottom; trace of chert |

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| 5184 | 5192 | 8 | Siltstone to very fine sandstone, light- to medium-gray, some dark-gray to grayish-black (argillaceous), very highly calcareous, slightly dolomitic, some fine to medium and a little coarse (rounded) sand grains |
| 5192 | 5195 | 3 | Sandstone, medium-gray with dark-gray to grayish-black (shaly) streaks, very fine grained, very silty, a large amount of fine- to medium (well rounded) sand, very highly calcareous, slightly dolomitic |
| 5195 | 5206 | 11 | Siltstone to sandstone (very fine), medium- to dark-gray, a large amount of dark-gray to grayish-black (argillaceous) in the middle part, very highly calcareous; trace of chert |
| 5206 | 5213 | 7 | Sandstone, light-gray, very fine grained, calcareous, highly calcareous at the bottom |
| 5213 | 5217 | 4 | Limestone (silty) and some siltstone (highly calcareous) medium- to dark-gray, some grayish-black (very shaly), very sandy (very fine to fine); small amount of chert |
| 5217 | 5220 | 3 | Sandstone, light- to medium-gray, some dark-gray (argillaceous), very fine grained, very highly calcareous with some sandy limestone; trace of chert |
| 5220 | 5230 | 10 | Sandstone, very light to medium light gray with some grayish-black (argillaceous) streaks, fine- to medium-grained, subrounded, calcareous at the top to highly calcareous at the bottom |
| 5230 | 5234 | 4 | Sandstone, medium light gray, very fine to fine-grained, highly to very highly calcereous |
| 5234 | 5236 | 2 | Limestone, (very sandy) to sandstone (highly calcareous), medium- to dark-gray, some grayish-black (very shaly), very fine grained; trace of chert |
| 5236 | 5245 | 9 | Siltstone to sandstone (very fine), light- to medium-gray, a little grayish-black (shaly), very highly calcareous |
| 5245 | 5248 | 3 | Limestone (silty) to siltstone and very fine sandstone (highly calcareous), medium- to dark-gray, some grayish-black (shaly), cherty |
| 5248 | 5253 | 5 | Siltstone (highly calcareous) to limestone (very silty), dark-gray to grayish-black, highly argillaceous, slightly cherty |
| 5253 | 5281 | 28 | Siltstone (highly calcareous) to limestone (very silty), medium- to dark-gray, some grayish-black (shaly), somewhat cherty at 5265 to 5269', a large amount of grayish-black at the bottom |
| 5281 | 5286 | 5 | Siltstone (highly calcareous) to limestone (very silty), medium-gray, some dark-gray to grayish-black, cherty |
| 5286 | 5292 | 6 | Sandstone (highly calcareous) with some very sandy limestone, medium-gray, very fine grained, silty |
| 5292 | 5302 | 10 | Limestone, dark-gray, medium- to dark-gray in the lower part, very sandy (fine- to medium-grained rounded); small amount of argillaceous material |
| 5302 | 5308 | 6 | Limestone, medium- to dark-gray, very sandy (very fine to fine); a large amount of grayish-black shale (cavings?) |

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| 5308 | 5315 | 7 | Limestone, light- to dark-gray, very sandy (very fine to medium-grained, rounded), mostly very fine to fine at the bottom |
| 5315 | 5320 | 5 | Limestone, light- to medium-gray, very sandy (medium-grained, some very fine to fine grains, subrounded to rounded) |
| 5320 | 5328 | 8 | Limestone, mottled white to light-gray and medium- to dark-gray, very sandy with some highly calcareous sandstone, fine- to medium-grained, rounded to well rounded, fine- to coarse-grained at the top, much dark-gray to grayish-black (shaly) in the middle part |
| 5328 | 5332 | 4 | Limestone (very sandy) to sandstone (highly calcareous, very fine), light- to medium-gray |
| 5332 | 5335 | 3 | Sandstone, medium light gray, very silty at the top, very fine grained, some fine to medium grains at the bottom, very highly calcareous |
| 5335 | 5339 | 4 | Limestone (very sandy) to sandstone (highly calcareous), light- to medium-gray with very light gray spots, very silty, very fine grained, some fine to medium grains at the top |
| 5339 | 5343 | 4 | Limestone, (very sandy) to sandstone (highly calcareous, very fine), very light to medium-gray, somewhat cherty |
| 5343 | 5346 | 3 | Limestone, light- to dark-gray, very silty to a silty highly calcareous, very fine sandstone, very cherty |
| 5346 | | | TOTAL DEPTH |