



WATER-RIGHT DOCKET

Shenandoah National Park

Docket No: 15

UNNAMED SPRING AT RIP RAP POND BRIDGE AREA WATER SYSTEM

Preliminary Docket Information

00-00-0000: docket #15: rip rap-pond ridge area water system

SHENANDOAH NATIONAL PARK

DOCKET #15

Rip Rap-Pond Ridge Area Water System

I N D E X

PART I - INVESTIGATION

1. Geologic and Topographic Map of Rip Rap-Pond Ridge Area.
2. Preliminary Report, Rip Rap-Pond Ridge Area, prepared by Virginia Division of Mineral Resources, Charlottesville, Virginia, June, 1962.

Other Supporting Information

Shenandoah National Park
Contract No. 14-10-0137-0123

Preliminary Report
Rip Rap-Pond Ridge Area

Location

The Rip Rap-Pond Ridge area of the Shenandoah National Park is located 15 miles north of Rockfish Gap and 27 miles south of Swift Run Gap. The Skyline Drive bisects the area into Rip Rap on the west and Pond Ridge on the east. There is no development presently in the area, but a visitor center, picnic area, and a 250-site camp ground are planned.

Geology

The area is underlain by quartzites, phyllites and shales of the Chilhowee group. Rip Rap is underlain mostly by the Weverton and Harpers formations, and Pond Ridge by the Weverton and Loudoun formations. The Antietam and Catoctin formations occur to the west of Rip Rap and to the east of Pond Ridge respectively.

Nearly everywhere the formations have a westerly dip of 6 to 20 degrees except along the western foothills at Rip Rap where the Antietam quartzite is overturned and has an easterly dip of 25 to 75 degrees. Well developed cleavage in the area generally dips greater than 50 degrees to the east. The formations possess little porosity, and permeability is confined to fractures or along distinct lithologic contacts.

Hydrology

The Park Service has estimated a maximum daily water consumption of 66,000 gallons to support the planned development in the area.

The partially constructed water-collecting facilities in the Pond Ridge Branch east of the Skyline Drive could be used to supply a portion of the anticipated water need (See Table 1). With improvements the mean yield from this system may be increased by 50 percent.

An unnamed spring is present near the 2500-foot contour line, approximately 2000 feet west of the Skyline Drive in Rip Rap Hollow (see map). The spring was observed on two occasions, May 18 and June 2, 1962, and appeared to have a flow in excess of 25 gallons per minute. Evidence that

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the spring had been used in the past is present in the form of two ditches, a rusty flow pipe, and a cistern in the area. With proper care and improvement the flow of this spring could be increased substantially.

It is very likely that the use of these two springs in conjunction with a reservoir tank in the area could supply the water needs of the proposed development.

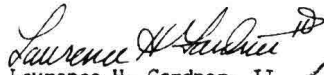
Test Drilling

Two test hole sites are indicated on the accompanying map. The first location, X_1 , is about 25 feet east of the unnamed spring in Rip Rap Hollow and about 2000 feet west of the Skyline Drive. The test hole would spud in the Harpers formation and bottom in the Weverton formation and attempt to intersect the hydrogeologic factors which control the spring. A depth of 400 feet is estimated at this location.

A second test hole site, X_2 , is located about 1000 feet east of Skyline Drive below Pond Ridge Spring. The proposed test hole would spud in the Weverton formation, penetrate the Loudoun formation, and bottom in the Catoctin formation. Water may be available from the fractured Catoctin greenstone and along the Loudoun-Weverton and Loudoun-Catoctin formation contacts. A depth of 400 feet, or 50 feet into the greenstone, whichever is less, is estimated at this location.

Recommendations:

- (1) The two proposed test holes be drilled with preference to X_1 .
- (2) A weir be installed at the unnamed spring in Rip Rap Hollow and regular weir readings taken in conjunction with the present program.
- (3) If neither of the two test holes yields the required amount of water, and the resulting data does not suggest a better location for a producing well, the two springs could be developed and used in conjunction with a reservoir tank in the area. The size of the reservoir would depend on the data from weir readings of the two springs.

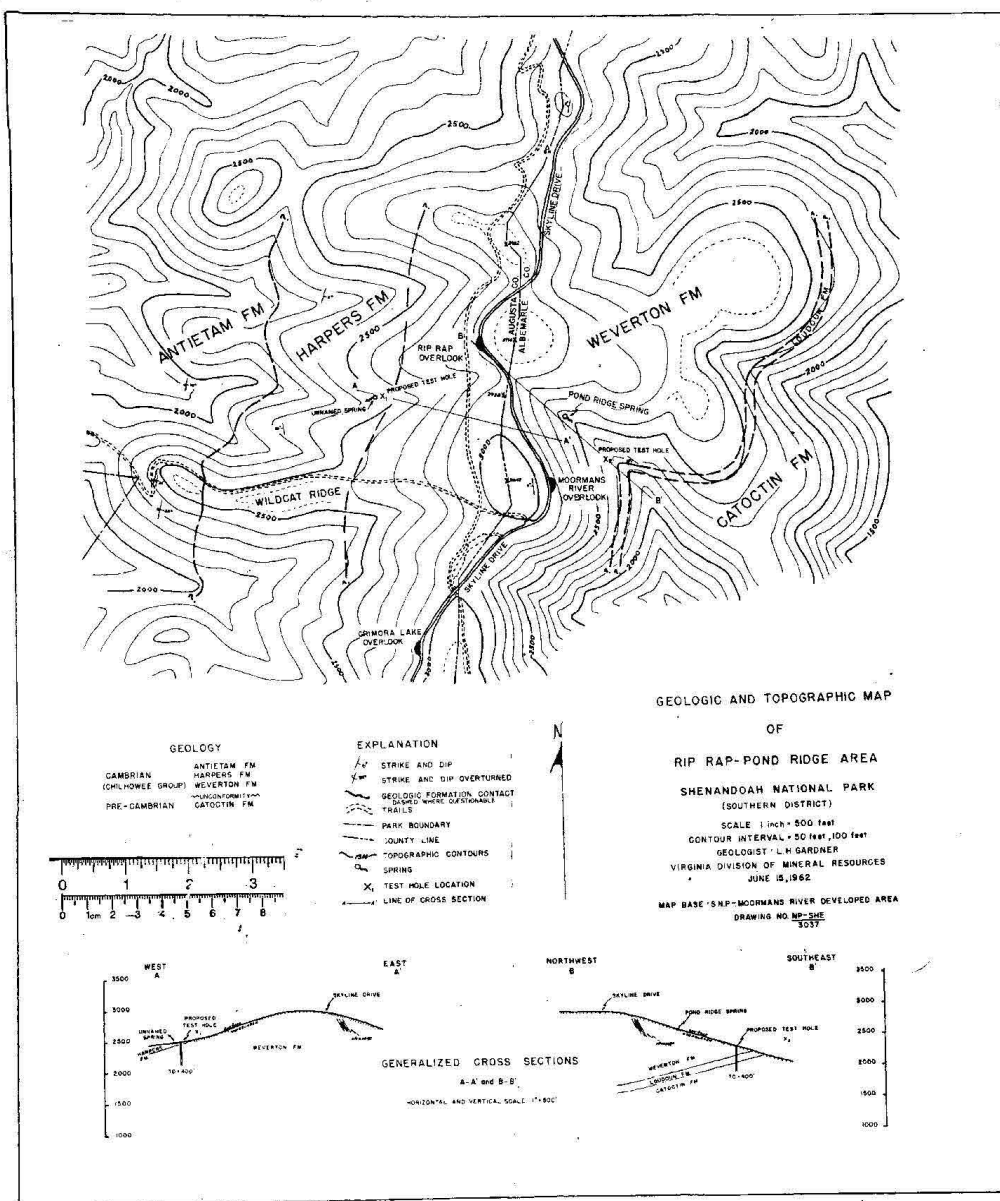

Laurence H. Gardner, II
Virginia Division of Mineral Resources
Charlottesville, Virginia
June 1962.

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1. Pond Ridge Flow Pipe

Flow in gallons per minute

August 15, 1957	3.0	November 28, 1960	8.0
February 19, 1959	25.0	May 17, 1961,	60.0
August 28, 1959	4.0	June 13, 1961	18.0
July 28, 1960	6.8	July 10, 1961	10.0
August 12, 1960	12.5	July 20, 1961	6.3
August 22, 1960	12.5	August 4, 1961	4.0
September 9, 1960	6.0	August 20, 1961	3.3
September 26, 1960	30.0	September 5, 1961	6.0



Docket Information

Number of Documents in Docket 5

Documents Dated from 6/15/1962 to 6/15/1962

Docket Compiled: 6/17/2011