



WATER-RIGHT DOCKET

Blue Ridge Parkway

Docket No: 26

GROUNDHOG MOUNTAIN.

Supporting Hydro Data

00-00-0000: water analysis: groundhog mountain

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
WATER ANALYSIS

W.R. Lab. No. _____

Location <u>Groundhog Mountain.</u>			
Source <u>Depth: 302 ft. Casing: 23 ft. (reported) Diameter: 6 inch.</u>			
<u>Pump depth: 200 ft. (recommended). Static water level: 9.3 feet (measured)</u>			
<u>Yield: 1.38 gpm for 24 hours. Yield based on 24 hours calculation with maximum 200 feet of drawdown.</u>			
Date of collection _____			
Gage height(ft.) _____ Discharge(sec.ft.) _____ Temp.(°F) _____			
(Parts per million)			
Silica (SiO ₂).....	7.0	Carbonate (CO ₃).....	0
Aluminum (Al).....	.5	Bicarbonate (HCO ₃).....	40
Iron (Fe).....	.65 <u>1/</u>	Sulfate (SO ₄).....	.2
Manganese (Mn).....	.04 <u>1/</u>	Chloride (Cl).....	2.5
Calcium (Ca).....	4.7	Fluoride (F).....	.0
Magnesium (Mg).....	4.4	Nitrate (NO ₃).....	1.7
Sodium (Na).....	3.4	Phosphate (PO ₄).....	.1
Potassium (K).....	1.2	.....	
Lithium (Li).....	.0	.....	
(Parts per million)			
Dissolved solids:		ABS.....	
Sum.....		Color.....	3
Residue upon evapo- ration @ 180°C.....		.....	
Hardness as CaCO ₃	30 <u>2/</u>	.....	
Noncarbonate.....	0	.....	
pH.....	6.8	Specific conductance (micromhos at 25°C).....	64

1/ In solution when analyzed.

2/ Includes hardness of all polyvalent cations reported.

Unpublished records subject to revision

GROUNDWATER WELL

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

DIVISION OF MINERAL RESOURCES

Box 3667, University Station, Charlottesville, Virginia

WATER WELL COMPLETION REPORT

OWNER: Blue Ridge Parkway Mailing Address: 1710 Roanoke Virginia
 TENANT: _____ Mailing Address: _____
 DRILLER: Rex Lewis + Sons Mailing Address: Hillsville, Virginia RT. #2
 WELL LOCATION: County Carroll Approx. _____ ft. _____ miles
 (direction) of _____ and _____ of _____
 (Give direction and distance in feet or tenths of mile from two reference points - roads, towns, rivers, etc. - on county highway, or other map)

WATER CONDITIONS

DEPTH

STATIC WATER LEVEL 227.4

WATER ZONES (fissures or formations supplying water)

(from)	(to)	(from)	(to)
ft.	ft.	ft.	ft.
ft.	ft.	ft.	ft.

QUANTITY OF WATER

WELL PUMPED (or bailed) at 4 Gal. per Min. with 295 feet DRAWDOWN after 15 HOURS PUMPING.FLOW (natural) 4 G.P.M. HEAD 277 ft. (above ground)

REMARKS: _____

QUALITY OF WATER

COLOR Clear TASTE GoodODOR none OTHER _____ANALYSIS: AVAILABLE - Yes ☐ No ☐ ATTACHED Yes ☐ No ☐

TEMPERATURE _____

WATER (from) _____ ft. (to) _____ ft.
(sal, brackish, iron, sulfur, acid, other)USE OF WATER: Domestic ☐ Town ☐ Industry ☐ Farm ☐ Public ☐

CONSTRUCTION

RIG TYPE (or method) ✓ (rotary, cable, bored, driven, etc.)DATE: Started May 4, 1963; Completed June 14, 1963TOTAL DEPTH 302 ft.BEDROCK at 60 ft.

GROUTING INFORMATION

METHOD USED Hand mixed grout portion of casingGROUTING MATERIAL Sand & CementDEPTH OF GROUTING 60 ft.

REMARKS: _____

HOLE SIZE

(diam.) _____ in. (from) _____ ft. (to) _____ ft.

CASING SIZE

(diam.) _____ in. (from) _____ ft. (to) _____ ft.

SCREEN (or perforations)

(diam.) _____ in. (from) _____ ft. (to) _____ ft. (opening size)

PUMP (installed)

TYPE _____ Cap. (gpm) _____

H.P. _____ Depth of intake _____ ft.

Log of well (over)

Groundhog Mountain

The topography in the Groundhog Mountain area ranges from steep slopes on the southeast of the Parkway to gentle slopes on the northeast of the Parkway. Mica gneiss and mica schist inter-mixed or interbedded with quartzite underlie the area. Foliation in the gneiss and schist strikes N 60°-70° E and dips 50°-70° SE. The major fracture sets strike about N 45° W and N 45° E. Springs and seeps in the area occur mostly along the slope east of the Parkway.

A proposed well site has been selected about 1200 feet N 21° E of the lookout tower on Groundhog Mountain, or about 100 feet S 29° W of corner 83 on the Parkway boundary (figure 1). The site is in a topographically low area which results from a permeable fracture zone in underlying bedrock. The proposed test-well site is on the left bank of the swampy draw which retains a small perennial stream tributary to Big Laurel Creek. It will be necessary to construct an access road to the site. The required yield of a well (10 gpm) should be obtainable in this area at an estimated drilling depth of 200 feet. The material penetrated will be quartzite, mica gneiss, or, possibly, an interlayered sequence of both rock types. No alternate well site was available within a reasonable distance of the area of utilization.

Figure 1.
Groundhog Mountain Area

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
WATER ANALYSIS

W.R. Lab. No. _____

Location <u>Groundhog Mountain.</u>			
Source <u>Depth: 302 ft. Casing: 23 ft. (reported) Diameter: 6 inch.</u>			
<u>Pump depth: 200 ft. (recommended). Static water level: 2.5 feet (measured)</u>			
<u>Yield: 1.38 gpm for 24 hours. Yield based on 24 hours calculation with maximum 200 feet of drawdown.</u>			
Date of collection _____			
Gage height(ft.) _____		Discharge(sec.ft.) _____ Temp.(°F) _____	
(Parts per million)			
Silica (SiO ₂).....	7.0	Carbonate (CO ₃).....	0
Aluminum (Al).....	.5	Bicarbonate (HCO ₃).....	40
Iron (Fe).....	.65 y	Sulfate (SO ₄).....	.2
Manganese (Mn).....	.04 y	Chloride (Cl).....	2.5
Calcium (Ca).....	4.7	Fluoride (F).....	.0
Magnesium (Mg).....	4.4	Nitrate (NO ₃).....	1.7
Sodium (Na).....	3.4	Phosphate (PO ₄).....	.1
Potassium (K).....	1.2	.....	
Lithium (Li).....	.0	.....	
(Parts per million)			
Dissolved solids:		ARL.....	
Sum.....		Color.....	3
Residue upon evaporation @ 180°C.....		.....	
Hardness as CaCO ₃	30 y	.....	
Noncarbonate.....	0	.....	
.....			
pH.....	6.8	Specific conductance (microhm/cm at 25°C).....	64

y In solution when analyzed.

z Includes hardness of all polyvalent cations reported.

Approved for release by the Director

Benge Gap

Depth: 200 feet
Casing: 38 feet
Pump depth: 193 feet
Static water level: 46.0 feet (measured)
Yield: 4.0 gpm at 57°F

Pancy Gap

Depth: 126.5 feet
Casing: 38 feet
Pump depth: 118 feet
Static water level: about 5 feet (reported)
Yield: 8.0 gpm at 54°F

Groundhog Mountain

Depth: 302 feet
Casing: 23 feet (reported)
Diameter: 6 inch
Pump depth: 200 feet (recommended)
Static water level: 9.3 feet (measured)
Yield: 1.38 gpm for 24 hours
Remarks: Yield based on 24 hours calculation with maximum
200 feet of drawdown.

Other Supporting Information

BLUE RIDGE PARKWAY

WATER SYSTEM DATA

- AREA Blue Ridge Parkway DATE COLLECTED _____ COLLECTED BY _____)
- Name of System: Groundhog Mountain
 - Location: State Virginia County Carroll General Area MP 122.8
Reference to permanent landmark _____
 - Source of Supply: Well Capacity 1.4 gpm
(Well, spring, stream, impoundment, etc.)
 - Type of System: Pumped to storage; pneumatic distribution
(Pumped, gravity, etc.)
 - Treatment: None
(Filtration, Chlorination, Aeration, etc.)
 - Distribution Mains: Size 1" Length 567'; Size _____ Length _____
Size 1 1/4" Length 1100'; Size _____ Length _____
Size 2" Length 540'; Size _____ Length _____
 - Pump Unit: Make Jacuzzi; Type Submersible; Model No. 550A
Serial No. _____; Outlet 1 1/4" in.; Inlet 1 3/4" in.
(Size) (Size)
(Pneumatic Jacuzzi Shallow Well 2JY5)
 - Power Source: Electric Motor: Make Smith; HP 1/2
(Elec., gas, generator)
Serial No. BRI42NV; Voltage 220; Amps 4.7
RPM 3450; Type _____; Phase Single
Cycles 60; Others _____; Stages _____
 - Control: Automatic Pressure in Pneumatic Tank
Float in Storage Tank; Manual _____
(Float, Electrode, Pressure, Time)
Other _____
(Explain)

10. Pump Design: Capacity 7 (Actual) 7 (Design) gpm;
Head 380 (Actual) 380 (Design) ft.
11. Pump Housing: Type Const. Monitor Pitless (See 17); Size _____
(Walls) (Roof)
12. Storage: Underground; Type Const. Concrete
(Pneumatic, elevated, underground, etc.) (concrete, wood, steel)
Size _____; Capacity 10,000 gal.; Inlet 3016.5ft. 1-1/4 in.
(Elev.) (Size)
Outlet 3010.0 ft. 2 in.; Pressure Setting _____
(Elev.) (Size) (if pneumatic)
13. Distribution: Water Closets 4; Lavatory 4; Urinal 2;
Drinking Fountain 2; Hose Bibs 2; Residences _____;
Other _____
14. Metered or nonmetered: Nonmetered; No. _____; Size _____
No. _____; Size _____
No. _____; Size _____
15. Fire Protection: Fire Hydrants _____; Yard Hydrants _____
16. Water Analysis: SiO₂ 7.0; Al .5; Fe .65; Mn .04; Ca 4.7; Mg 4.4;
Na 3.4; K 1.3; CO₂ 40; SO₄ .2; Cl 2.5; NO₃ 1.7; NO₂ .1; Hardness 30;
Color 3; pH 6.3; Specific conductance 64.
17. Condition of System: Good
(Repairs needed itemize)

Item 11 continued: Pneumatic system; Underground concrete 6' x 6' x 8';
315 gallon steel tank set to 40 lb.

Docket Information

Number of Documents in Docket 8

Documents Dated from to

Docket Compiled: 2/8/2011