



Docket No: 2

Preliminary Docket Information

WATER DOCKET INFORMATION

A R E A OZARK NATIONAL SCENIC RIVERWAYS

DOCKET NO. 2

APPLICATION NO. _____

PERMIT NO. _____

CERTIFICATE NO. _____

TITLE OF DOCKET PULLTITE SPRINGS

PRIORITY _____

REMARKS: _____

Supporting Hydro Data



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Water Resources Division
P.O. Box 340
Rolla, Missouri 65401

January 20, 1971

Mr. Don Barrett
U.S. Department of Interior
National Park Service
Western Service Center
450 Golden Gate Ave., Box 36035
San Francisco, California 94102

Dear Mr. Barrett:

Enclosed are reports of the wells drilled at Round Spring, Alley Spring and Big Spring. Each report consists of:

1. Location map of well with respect to the 50-year flood.
2. Description of the drilling and completion of the well.
3. Insoluble residue log by Missouri Geological Survey.
4. Driller's log.
5. Pump test data and drawdown curves.
6. Water analysis by Missouri Geological Survey.
7. Copy of strip chart from observation well at Round Spring only.

In addition we are furnishing a summary of the data obtained from the ~~six~~ wells drilled to date and their relationships to the knobs area in the vicinity of Eminence and Two Rivers and to the specific capacity map of the southern part of Missouri taken from Mineral and Water Resources of Missouri.

Time spent on the well drilling activities at the three sites consisting of well location, drilling, pump testing and report writing is summarized below:

Walter Oakes	34 days well location, drilling & pump testing.
Gerald Feder	2 days pump testing.
Leo Emmett	4 days pump testing & data analysis.
E. J. Harvey	6 days, drilling, pump testing & report writing.

It has been a pleasure to work with you on the drilling activities. If you have any questions regarding these reports or the data gathered please do not hesitate to write us.

Sincerely,

E. J. Harvey

E. J. Harvey
Assistant District Chief

Enclosures

Pulltight Spring Well

The well first penetrated about 18 feet of alluvium containing many coarse boulders. This zone yielded no water. From 18 to 60 feet the rock contained many crevices and presented difficulty in drilling. A little water produced at 60 feet. The section from 60 to 102 feet was smooth drilling and the section yielded about 10 gpm. The section between 102 and 200 feet was mostly slow, hard drilling with a few loose cavey zones at 120-130 feet, 140-145 feet, and 170-175 feet. Between 105 and 115 feet the production of the well increased to about 20 gpm. In the 120-130 foot interval well production increased to 30 gpm. At 180 feet the well was producing about 40 gpm. At 200 feet the well produced about 75 gpm. The water at this depth was a light tan color. Between 200 and 308 feet the drilling again varied from slow, hard, uniform drilling to very rough, bouncy drilling through crevices. The water remained light tan colored except for a few sections at 194, 208, 266, and 297 feet. At these depths the water suddenly turned darker but quickly cleared up, probably indicating small isolated mud pockets. The yield of the well increased at a fairly uniform rate from 75 gpm at 200 feet to over 200 gpm at 308 feet. The water level after drilling was completed was 28.5 feet below land surface.

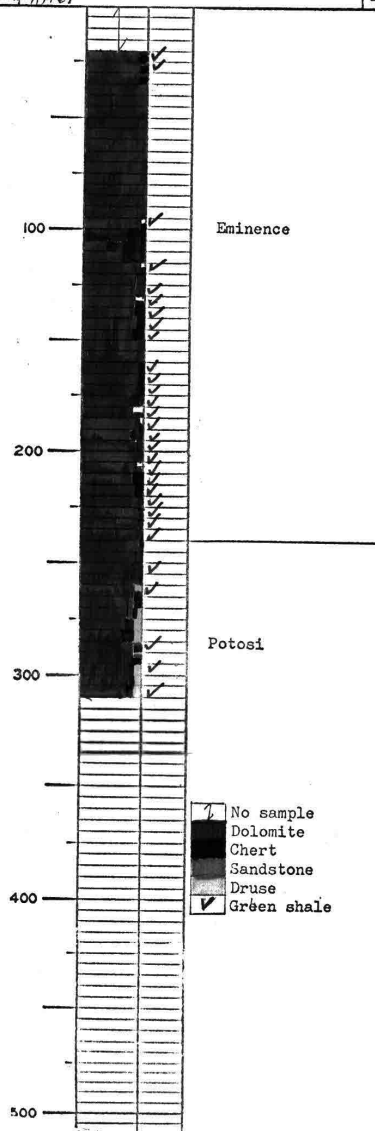
The geophysical logger (Star Jet) was able to obtain a log to the bottom of the hole. The well was then reamed out to 10 inches. The first 100 feet of reaming proceeded smoothly, but the next 107 feet were slow and difficult due to numerous small cavey zones. After completing the reaming to 207 feet, the casing was installed to 205 feet and the well was pressure grouted with 130 sacks of cement. No cement appeared at the surface, but the water level outside the casing stood at 15 feet below the surface after cementing. The driller put 7 sacks of cement outside the top of the casing to bring the cement within 5 feet of the surface. After the cement dried the plug was drilled out and the hole was cleaned out to the bottom. The hole was blown with air for 2 hours, and the water quickly cleared up. After 2 hours the well was producing about 200 gpm. On July 17 a 7½ horsepower submersible pump was set at 205 feet and an 8-hour pump test was made. Another well 80 feet deep with 30 feet of casing located 188 feet northwest of the pumped well was also measured throughout the test. The well was pumped for 8 hours at 118 gallons per minute with 26 feet of drawdown giving a specific capacity of 4.4 gallons per minute per foot of drawdown. The observation well had 0.7 foot of drawdown after 8 hours. During the last 3 hours of the pump test the drawdown in the pumped well remained almost stable with slight upward and downward fluctuations. This probably indicates that the aquifer was still receiving recharge from the rain the previous weekend.

After the first 2 minutes of pumping the water became clear and remained clear throughout the test. The conductance of the water was about 430 micromhos throughout the test, and the temperature was 58.5°F. The present pump installation calls for a 30 gpm pump with a pump setting of 180 feet. If at a future date 100 gpm is required it could easily be obtained with a larger pump set at the same depth.

A sample of water was taken from the pumped well after 7 hours pumping. A complete analysis will be made and sent on as soon as possible.

After the pump test was completed a gamma-ray log of the entire hole was run.

STATE OF MISSOURI DIVISION OF GEOLOGICAL SURVEY AND WATER RESOURCES			
LOG NO.		OWNER	
25650		U. S. Park Service	
COUNTY		FARM	WELL NO.
Shannon		Pulltight Springs	
T	R	DRILLER K. D. Brashears	
31	5W	DATE June 1968	
sec. 34		ELEV.	PROD.
			118 gpm w/26" DD
		LOGGED BY	INDEX SHEET NO.
		H. Groves	
		6/21/68	
REMARKS			
205' of 6" ID csg., pressure grouted			
w/137 sacks cement.			
swl before 29.6'			
After			



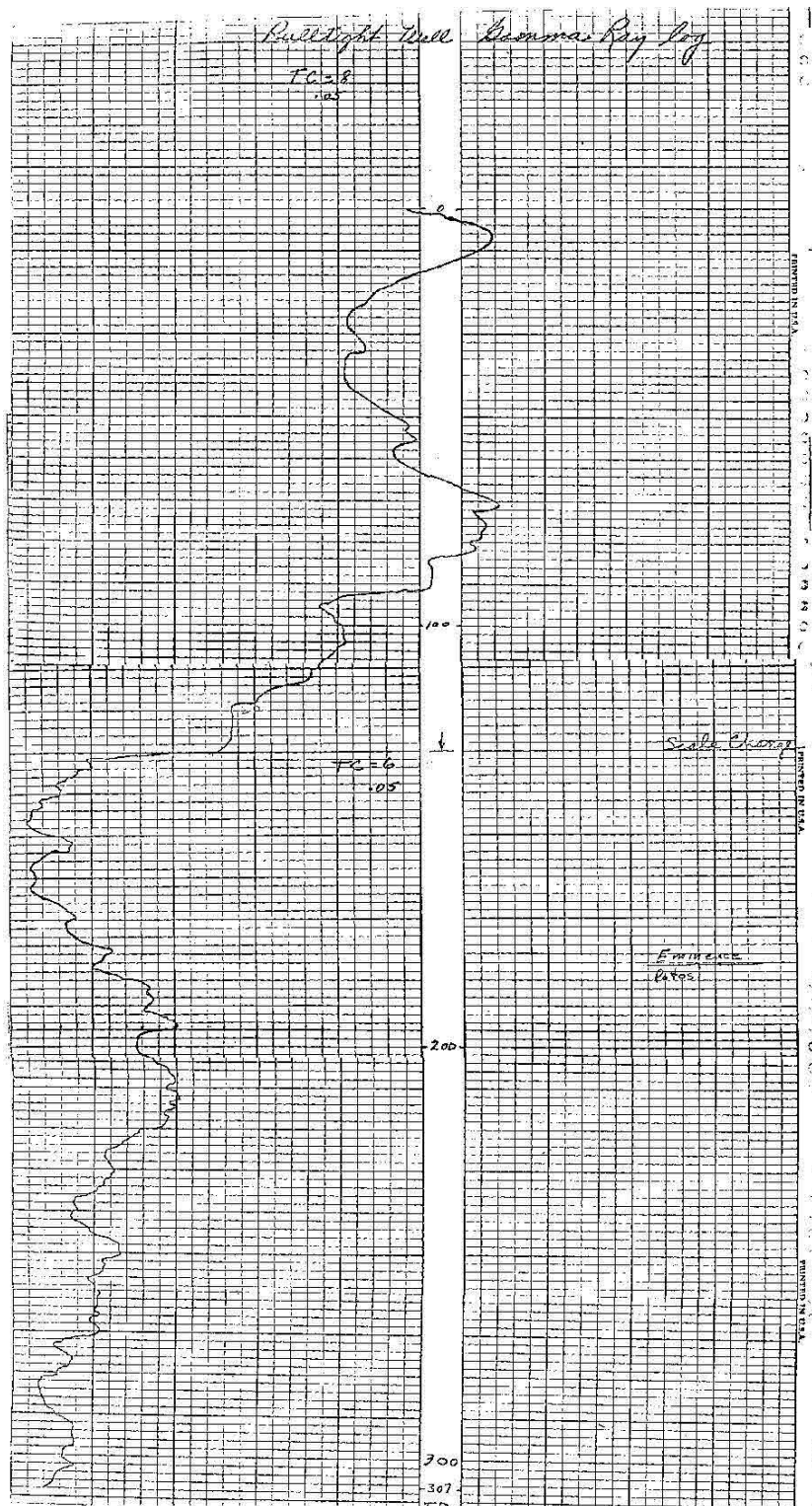
Pullitight Spring Well - Pump Test

July 17, 1968

G. L. Fearr, W. S. Oakes, and K. D. Brashears

Pumping rate throughout test 118 gallons per minute		
Time from start (minutes)	Depth to water (feet)	Remarks
-1	31.86-----	Steel tape, measuring point top of table 2.5' above ground level.
	31.90-----	Electric tape
0	31.90-----	Pump turned on 1057 hours;
1	46.90	water light brown at start,
2	48.65	clear after 2 minutes pumping.
3	50.05	
4	51.05	
5	51.75	
6	52.00	
7	52.30	
8	52.60	
9	52.85	
10	53.10	
12	53.55	
14	53.80	
16	53.95	
18	54.05	
20	54.25	
25	54.85-----	Sp. Cond. 430 mhos - Temp. 58.5°F
30	55.05	
35	55.26	
40	55.38	
45	55.59	
50	55.71	
55	55.86	
60	56.06-----	Sp. Cond. 430 mhos. - Temp. 58.5°F
70	56.22	
80	56.42	
90	56.54	
110	56.85	
123	57.02	
135	57.09	
140	57.10	
150	57.05	
160	57.26-----	Sp. Cond. 430 mhos. - Temp. 58.5°F
190	57.32	
210	57.38	
240	57.55	
270	57.58	
300	57.66	
330	57.73	
345	57.78	
360	57.73	
390	57.91-----	Sp. Cond. 430 mhos. - Temp. 58.5°F
420	57.92-----	Collected water sample.
450	57.89	
480	57.90-----	Cond. 430 mhos. - Temp. 58.5°F

Pump turned off at about 490 minutes.





UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Water Resources Division
P.O. Box 340
Rolla, Missouri 65401

August 5, 1968

Mr. Garland Moore
Washington Service Center
National Park Service
Arlington, Va. 22200

Dear Garry,

Enclosed is our final report on the Pulltight Spring well. The report includes a narrative description of the drilling, electric logging, casing, pumping test, and gamma ray operations.

It was noted in running the gamma ray log that a scale change was necessary at a depth of 130 feet. This was believed due to an accumulation of cement behind the casing because at the depth of 120 to 130 feet a very cavernous zone had been encountered at that depth.

When we have the chemical analysis of the water we will forward it to you.

It has been a pleasure working with you. If any further information is needed on the two wells for which reports have been submitted, please advise us.

Very truly yours,

E. J. Harvey
Assistant District Chief

Enclosures

Form Approved
OMB No. 158-R0116

U.S. ENVIRONMENTAL PROTECTION AGENCY WATER PROGRAM OPERATIONS (WH-450) WASHINGTON, D.C. 20460	INVENTORY OF PUBLIC WATER SUPPLIES (See instructions on the reverse)	KEY IDENTIFICATION NUMBER <table border="1" style="width: 100%;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14																								
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NAME OF WATER UTILITY 15 46 ADDRESS 47 76 CITY 77 101 COUNTY 102 126 STATE 127 128 ZIP 129 133 PHONE AREA CODE 134 136 TELEPHONE NUMBER 137 143																																								
UTILITY OWNER (Check one) (144) ☐ MUNICIPALITY, DISTRICT, ETC. ☐ INVESTOR ☒ FEDERAL ☐ STATE ☐ OTHER (Specify in remarks) RETAIL POPULATION SERVED 145 153 NUMBER SERVICES 154 160 NUMBER METERS 161 167 NUMBER OF WHOLESALE CUSTOMERS 168 170																																								
PREDOMINANT CHARACTERISTIC(S) OF YOUR SERVICE AREA <table border="1" style="width: 100%;"><tr><td>COMMUNITY</td><td>COMPANY TOWN</td><td>RECREATION AREA</td><td>MOBILE HOME PARK</td><td>INSTITUTION</td><td>SCHOOL OR COLLEGE</td><td>MOTEL</td><td>RESTAURANT</td><td>SERVICE STATION</td><td>CAMPGROUND</td><td>PUBLIC AREA</td><td>LODGE</td><td>WIRING</td><td>SKI RESORT</td><td>BATHING AREA</td><td>VISITOR CENTER</td><td>HIGHWAY SAFETY REST AREA</td><td>AIRPORT</td><td>OTHER (Specify in remarks)</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>			COMMUNITY	COMPANY TOWN	RECREATION AREA	MOBILE HOME PARK	INSTITUTION	SCHOOL OR COLLEGE	MOTEL	RESTAURANT	SERVICE STATION	CAMPGROUND	PUBLIC AREA	LODGE	WIRING	SKI RESORT	BATHING AREA	VISITOR CENTER	HIGHWAY SAFETY REST AREA	AIRPORT	OTHER (Specify in remarks)																			
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CAPACITIES PRODUCTION, NORMAL OPERATION (Gal/Day) 190 199 EMERGENCY POWER ONLY (Gal/Day) 200 209 DISTRIBUTION STORAGE, GRAVITY FLOW (Gallons) 210 219 PRODUCTION AVERAGE DAY (Gal/Day) 220 229 MAXIMUM DAY (Gal/Day) 230 239 DATE FORM COMPLETED 240 243																																								
<table border="1" style="width: 100%;"><tr><td rowspan="2" style="width: 30%; vertical-align: top;">SOURCE</td><td style="width: 20%;">INTAKE LOCATION</td><td style="width: 10%;">MARK (One only)</td><td style="width: 40%;">TREATMENT</td><td style="width: 10%;">LAB CONTROL</td></tr><tr><td>LATITUDE LONGITUDE</td><td>SURFACE GROUND PURCHASED AERATION PRECIPITATION COAGULATION SEDIMENTATION FILTRATION CORROSION CONTROL SOFTENING TASTE AND ODOR CONTROL IRON REMOVAL AMMONIATION FLUORIDE ADJUSTMENT DISINFECTION CHEMICAL BACTERIAL PHYSICAL</td><td></td><td></td></tr></table>			SOURCE	INTAKE LOCATION	MARK (One only)	TREATMENT	LAB CONTROL	LATITUDE LONGITUDE	SURFACE GROUND PURCHASED AERATION PRECIPITATION COAGULATION SEDIMENTATION FILTRATION CORROSION CONTROL SOFTENING TASTE AND ODOR CONTROL IRON REMOVAL AMMONIATION FLUORIDE ADJUSTMENT DISINFECTION CHEMICAL BACTERIAL PHYSICAL																															
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REMARKS (Up to 50 characters) (783 - 832) * INCLUDES AVERAGE DAILY SUMMER VISITATION PULLTITE SPRING																																								

EPA Form 7500-11 (9-74) REPLACES EPA-18 (CIN) WHICH IS OBSOLETE.

INSTRUCTIONS

1. **IDENTIFICATION NUMBER** – This is a 14 digit code number that geographically identifies the location of the utility. It will be filled in by EPA personnel.
2. **NAME OF WATER UTILITY** – This is the complete, official name of the utility.
3. **ADDRESS** – This is the mailing address of the utility (*this may be but does not necessarily have to be the physical location of the treatment plant*).
4. **CITY, COUNTY, STATE** – This is the city, county and state of the mailing address of the utility.
5. **ZIP CODE** – This is the zip code of the mailing address of the utility.
6. **IS THE UTILITY OWNED BY A MUNICIPALITY, DISTRICT, INVESTOR OWNER, STATE OR OTHER** (*specify in remarks*) – Place an **X** in the box that describes the type of ownership of the utility.
7. **RETAIL POPULATION SERVED - NUMBER SERVICES, METERS** – Fill in these boxes with the most current information available. Do Not include the population served by water utilities that purchase water from you wholesale.
8. **NUMBER OF WHOLESALE CUSTOMERS** – In cases where water is sold to wholesale customers (*customers who buy water from you for resale*) fill in the boxes with the number of this type of customer.
9. **WHAT IS THE CHARACTERISTIC(S) OF YOUR SERVICE AREA?** – Place an **X** in the boxes necessary to describe the predominant characteristic(s) of your service area.
10. **CAPACITIES** – Fill in these boxes with the most current information available. Report all storage that does not have to be pumped into the system, whether it is elevated or ground storage.
11. **PRODUCTION** – Fill in these boxes with the most current information available.
12. **DATE FORM COMPLETED** – Fill in the numeric designation of the month (01 - 12) and the last two digits of the year when the form was completed.
13. **REMARKS** – Additional information can be provided (*maximum of 50 Alpha and/or Numeric characters*).
14. **SOURCE AND TREATMENT** – Write in the spaces below Name the name of the river, lake, other utility, well field, or other source from which the supply of water is taken. Circle "R" for regular source or "A" for auxiliary source. If more than one source is used, use separate lines for each source. If more than four sources are used, then list on a second form starting with 05. Place an **X** in the block(s) for the types of treatment rendered the raw water. Mark each source separately.
15. **INTAKE LOCATION** – Latitude and Longitude of intake.
16. **LABORATORY CONTROL** – Place an **X** in the box for the type of types of laboratory analyses made at the treatment facility. Leave these blocks blank if no laboratory analyses are performed.

SUMMARY

We are including a summary of the drilling to date in the tabulation below. The wells are listed in the order of decreasing specific capacities.

<u>Site</u>	<u>Formation penetrated</u>	<u>T.D.</u>	<u>Casing depth</u>	<u>Open Hole Dia.</u>	<u>Length</u>	<u>Yield</u>	<u>DD</u>	<u>Sp. Cap.</u>
Big Spring	Potosi	520	370	8	150	230	20	11
Pulltite Spring	190-520 Potosi 240-310	308	205	6	103	118	26	4.5
Round Spring	Potosi 180-400	400	200	8	200	120	43	2.8
Austin House	Potosi 225-250	250	200	8	50	6	11	.55 *
Owls Bend	Potosi 75±303	303	202	6	101	50	112	.45
Alley Spring	Eminence 475-650	650	300	8	350	55	214	.26
Two Rivers	Potosi 160-350	350	100	8	250	11	110	.10

Some significance may become apparent from a comparison of the results in the tabulation, the graphs of the wells drilled, and the map showing their locations with respect to the igneous knobs in the area around Eminence. The wells at Big Spring, Pulltite Spring, Round Spring, Owls Bend and Two Rivers penetrated a substantial part of the Potosi section. The Austin House well penetrated a small part of the section. Big Spring well is located farthest from the center of the igneous knobs and had the highest specific capacity (11 gpm per foot of drawdown). Pulltite Spring well is a little closer in and has a good specific capacity (4.5 gpm per foot of drawdown). Austin House well, although it penetrated only a few feet of the Potosi, had a specific capacity that was much lower than those at Pulltite and Round Springs, but was higher than those obtained at Owls Bend and Two Rivers. Owls Bend well near the eastern flank of the knobs area had a rather low specific capacity for the thickness of Potosi penetrated but not as low as that of the Two Rivers well which probably penetrated most of the Potosi section. The Two Rivers well is essentially surrounded by igneous knobs. The well at Alley Spring did not penetrate the Potosi and for this reason is not included in the comparison.

* Rounding of numbers I had done in the past accounts for some small differences in the two tables and the figures shown on the map.

The comparison suggests that circulation of water in the Potosi is slower and retarded in the knobs area perhaps because of lack of fracture and bedding plane openings through which water might travel. Mineralization along fractures may have sealed openings to retard flow. Whatever the cause, lower yields might be expected in the knobs area and higher yields outside the knobs. Of course exceptions to this probably will be found as additional sites are developed.

Projected yields for various pumping levels					
SWL (feet)	PWL (feet)	DD (feet)	Yield (gpm)	Sp. Cap. (gpm/ft)	
BIG SPRING					
53	78	25	280	11	
	100	47	515		
	150	97	1,007		
	370	317	3,500		Bottom of casing
PULLTITE SPRING					
32	58	26	118	4.5	
	100	68	306	4.5	
	150	118	530	4.5	
	200	168	760	4.5	Bottom of casing
ROUND SPRING					
80	123	43	120	2.8	
	150	70	196	2.8	
	175	95	266	2.8	
	200	120	336		Bottom of casing
AUSTIN HOUSE					
57	102	45	23	.51	
	150	93	47		
	200	143	73		Bottom of casing
OWLS BEND					
45	155	110	50	.45	
	200	155	70		Bottom of casing
ALLEY SPRING					
55	270	215	58	.27	
	300	245	66		Bottom of casing
TWO RIVERS					
92	210	118	11	.09	This pumping level is 110 ft. below bottom of casing.

conado Dolomite at an average depth of 500 to 600 feet. The wells that produce from this section are ideal for clubs, schools, small towns, and industries.

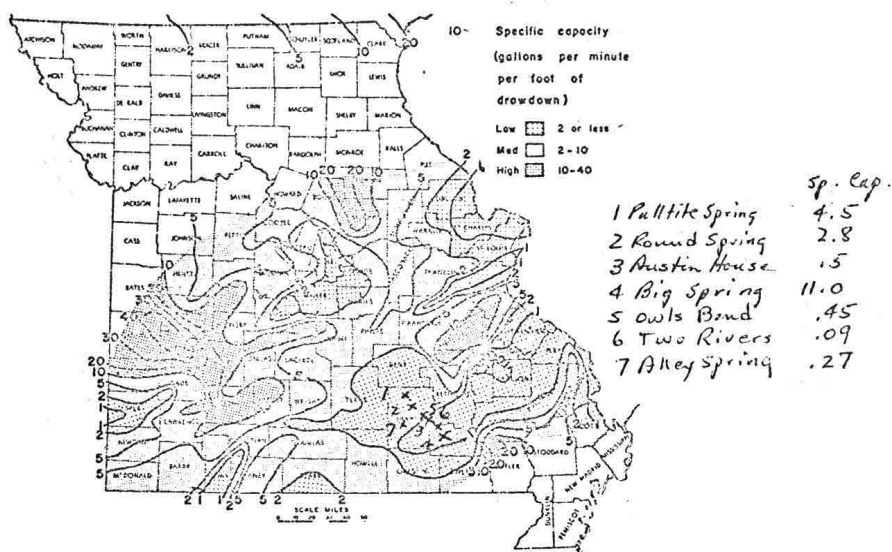


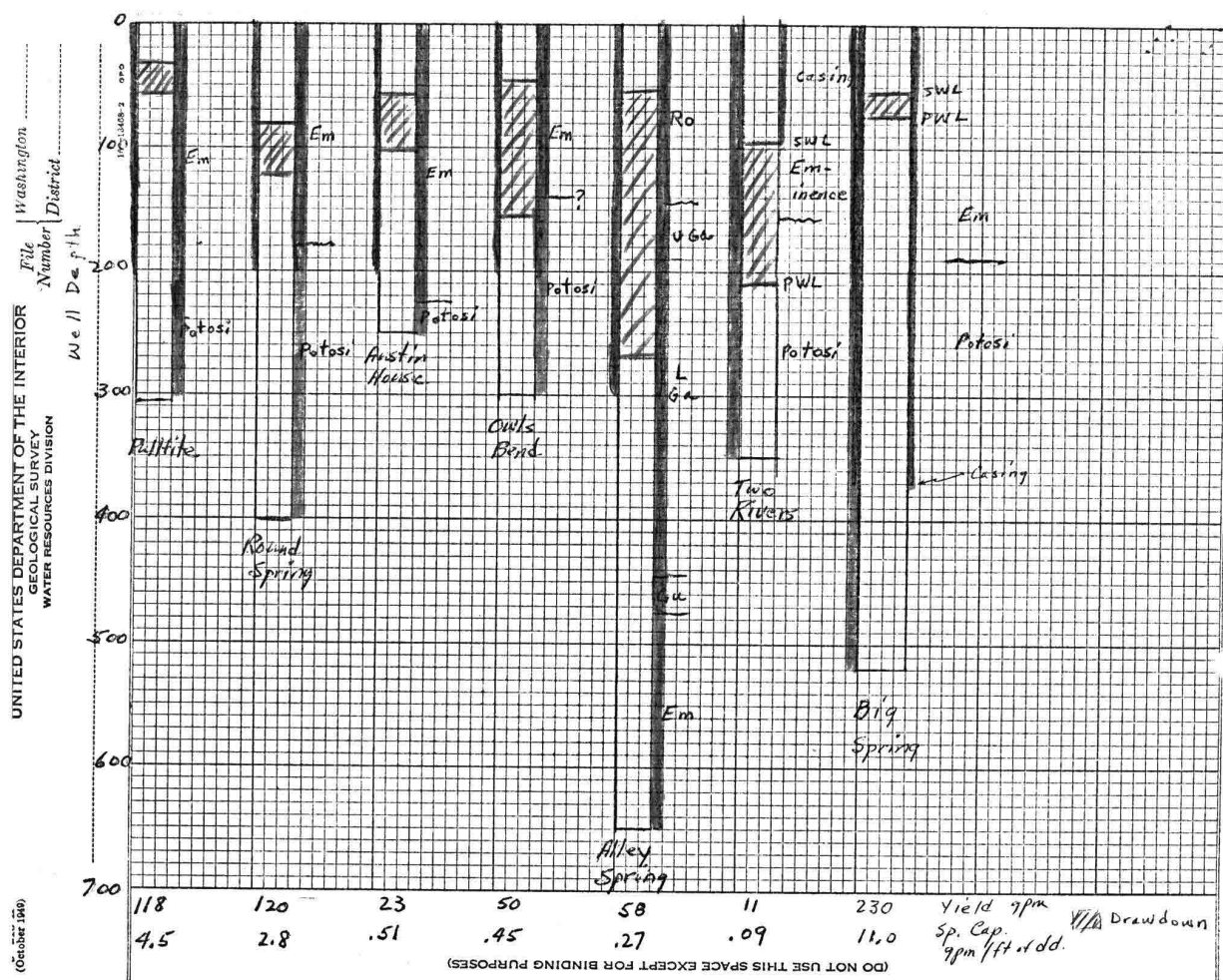
FIGURE 66.—Specific capacities of typical wells in the Ozarks.

Throughout the area numerous municipal and industrial wells yield 500 to 1,000 gallons per minute. These wells vary in depth. Wells that produce 200 to 500 gallons per minute average 1,000 to 1,500 feet in depth. Wells at Springfield in Greene County, for example, average 1,400 to 1,700 feet in depth and produce 500 to 1,000 gallons per minute. Wells at Rolla in Phelps County and Sullivan in Franklin County are 1,000 to 1,200 feet in depth and produce 400 to 600 gallons per minute.

Throughout the area requirements of 15 to 25 gallons per minute can normally be met by drilling to a depth of 300 to 350 feet through the Roubidoux Formation. This is usually an ideal depth for farm wells. Private wells for farms and dwellings in the central Ozarks average 300 feet in depth, whereas in the southwest part of the State the average depth to the Roubidoux is 800 feet.

Descriptions of aquifers

Lamotte Sandstone.—The Lamotte Sandstone is geologically the oldest aquifer in the State and is the basal unit of the Cambrian Sys-



Sheet No. _____ of _____ sheets. Prepared by _____ Date _____ Checked by _____ Date _____

Philadelphia Planning and Service Center
Design and Construction
Philadelphia, Pa. 19106

154-2D

January 10, 1968

Memorandum

To: Chief, Office of Land and Water Rights, WSC
From: Chief, Design and Construction
Subject: Test Well Drilling Site, Pulltite Springs, Ozark National
Scenic Riverways

In answer to Acting Chief Swenson's December 27 memorandum, we wish to advise that we also believe that the first test well should be drilled in the general vicinity of the existing well. Since the existing well is drilled near the previous flood elevation, we do suggest moving uphill, along the river side of the road, about 150 feet. We are enclosing an overlay of Drawing No. NSR-OZA 3025, Pulltite Spring Developed Area, with our preferred well location marked in red. We suggest that the well be set back far enough from the road so that a well house could be properly screened.

We note that the bid schedule, item No. 1, estimates 50 linear feet of 6-inch casing. The existing well has a record of producing cloudy water whenever the river is riled up by rains, indicating that there is a possible connection between the river and well aquifer. We suggest that, when the well is drilled, a complete investigation be made of the strata encountered prior to setting the casing. The casing should then be set deep enough to eliminate any possibility of the same type of contamination which is now present in the existing well. It is possible, therefore, that casing may be required to a depth of 200-300 feet.

We will check into the problem of funding the connections between the new well and the existing system, including all requirements for pump house or water treatment facilities.

/s/ H. Reese Smith

H. Reese Smith

Enclosure

cc:
Assistant Director, DEC
Chief, Branch of Water Resources, WASO —
Regional Director, Midwest
Superintendent, Ozarks



521-7-27-67

*Correspondence
file*

*amf
wrt*

LS4 WSC-OLW

July 26, 1967

Memorandum

To: Chief, Division of Development Planning and Project Control, WSC

From: Chief, Office of Land and Water Rights, WSC

Subject: Plan Review Comments NSR-OZA-3025, Ozark National Scenic Riverways

Enclosed is a memorandum report on the Pulltite Spring Development Area Plan Drawing No. NSP-OZA-3025 by Mr. Garland Moore of our Water Rights Section. Mr. Moore had just returned from this area when your request for review was received. He has talked over most of his comment with the Superintendent.

We think it is most important that consideration be given to the installation of a collecting sewer for all facilities so as to isolate the sewage treatment and disposal. This will permit the type of treatment that will protect the river and future possible sources of ground water supply. Plans should also be made to protect the facilities in the picnic area from flood waters as shown on the "Flood Plains" map that accompanies the report.

Richard L. Stanton

Enclosure

cc:
WASO Mr. Reed w/c of enc.



UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
WASHINGTON PLANNING AND SERVICE CENTER
1730 NORTH LYNN STREET
ARLINGTON, VIRGINIA 22209

IN REPLY REFER TO:

L54 WSC-OLW

July 24, 1967

*See Revised
10/1/67*

Memorandum

To: Supervisory Hydraulic Engineer, Richard W. Ketcham, Office
of Land and Water Rights, WSC

From: Hydraulic Engineer, Garland Moore

Subject: Pulltite Springs, Ozark National Scenic Riverways

In response to Mr. Ben Howland, Landscape Architect's request for this
office comments on the Pulltite Spring Development Area Plan Drawing
No. NSR-OZA 3025, the following is submitted:

PROPOSED WATER SYSTEM

The proposed locations of the well and reservoir (3,000 feet apart as
the crow flies) suggests that a single water distribution system will
serve both as the supply and demand flow. The inherent disadvantage
of this type of system is that water being chlorinated may not have
sufficient detention time to effectively reduce the bacteriological
count before being consumed by the public during peak demands. It
appears that the only times when the full chlorination detention time
will be realized is during "no" or "low" water demand.

good point

The undersigned recommends that the proposed water system should call
for the proposed well and reservoir to be located as close together
as field conditions will permit and where exploratory well drilling
proves conclusively that ground water is available in quantities needed
(75-100 gpm). The distribution system should call for a single supply
line leading from the well to the reservoir and a separate water line
leading from the reservoir to the developed area. Flow from the reser-
voir to be by gravity. In this manner the reservoir can serve a dual
purpose:

10 gpm?

OK

1. Storage of water for fire protection and peak use demands,
2. as a detention chamber to allow the chlorination of water
its full measure of time to be effective in reducing the
bacteriological count.

The peak demand is estimated to be about 71,000 gpd. The capacity of the storage reservoir should be 500,000 gallons.

Table I
ESTIMATED WATER DEMAND
Pulltite Springs

	<u>Sites</u>	<u>Persons</u>	<u>Gal/Per</u>	<u>Total</u>
Campground	92	3220	20	64,400
Concession Boat Rental	45 cars	158	3	574
Picnic Area	100	350	10	3,500
Residences	2	8	150	1,200
Concession Residence	2	8	150	1,200
		Total		70,874

71,000 gpd

PROPOSED SEWER SYSTEM

In reviewing the layout of the proposed sewer systems, it is noted that the sewage disposal plant is so situated that it can be expected to handle only 10% of the total sewage load whereas the campground and residence which totally will account for approximately 90% of the total sewage load is to be handled by septic tanks and leach fields.

It is preferred that the two sewer systems be intergrated into a single system with the effluent being disposed somewhere along the telephone and electric lines lying to the west of Tract 310. The maintenance road for the power and telephone lines can also serve as service road for maintenance of a non-overflowing, non-leaking oxidation pond or aerobic digestion plants.

During the undersigned last visit to the area in June, Mr. Reary, operator of the Pulltite resort area informed me that the present sewage load is handled by pit privies and septic tank and that the effluent from septic tanks has been known to surface during heavy visitor use.

At the campground where septic tanks are proposed, we may reasonably expect that during a maximum use day, 64,400 gallons of sewage will be introduced into the system, much of which will eventually find its way to Current River via surface flows or by solution channels. The introduction of chemical pollutants will undoubtedly reflect itself in Algae growth along the Current River. It may also be a violation of the

Missouri Water Quality Standards for the Current River Basin and the Water Pollution Control Act, both of which the Government has successfully introduced to the State of Missouri.

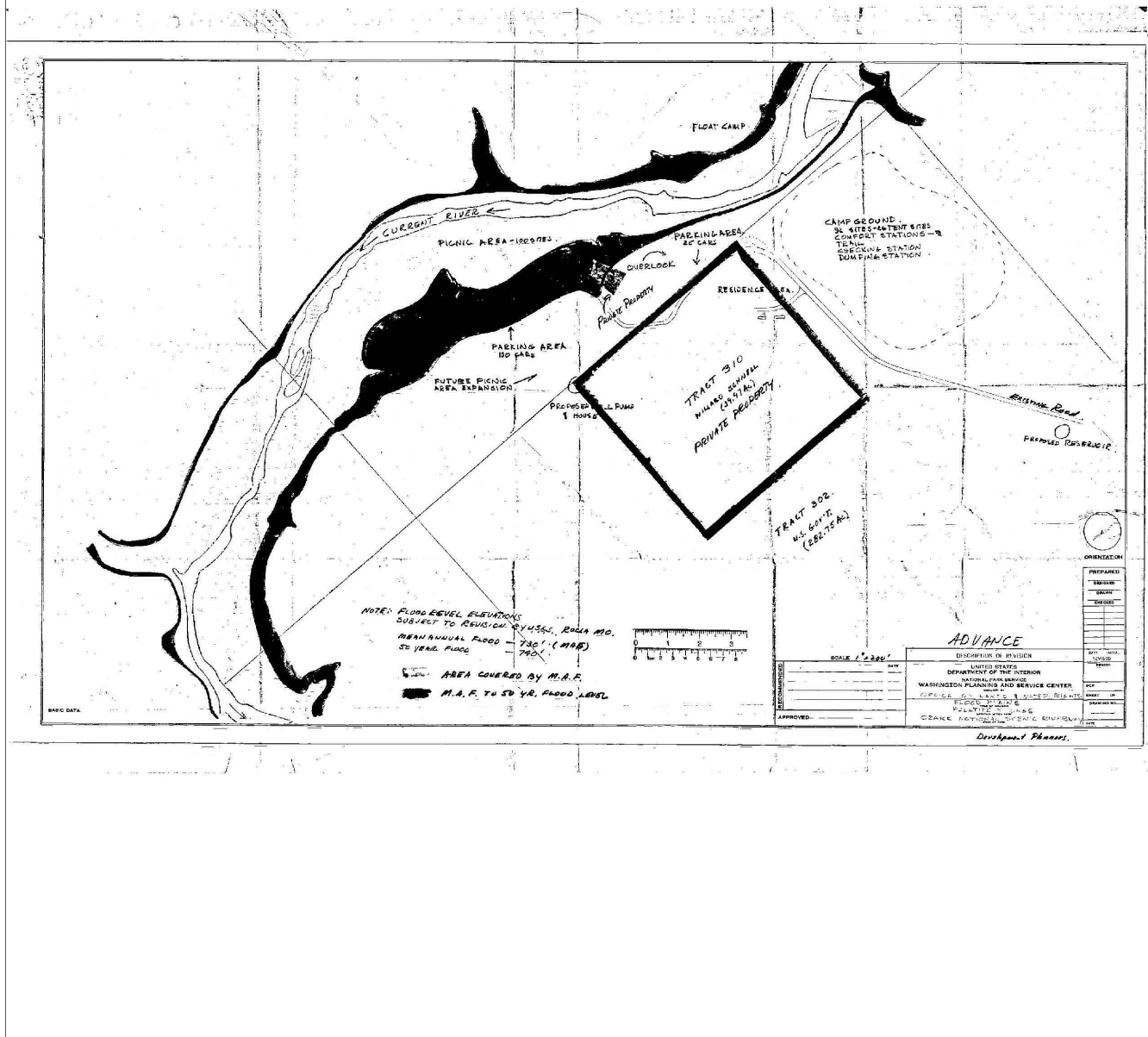
FLOOD PLAINS

The elevation of flood plains in the Pulltite Area are preliminary estimates which are subject to revision by the U. S. Geological Survey. It is estimated that flood damage could be as high as \$10,000 per flood if we assume total loss of all picnic tables, garbage cans with lids, repair of trail to Pulltite Springs. Possible bridge repair at Pulltite Springs. Pulltite Springs, itself will not be inundated by 50 years floods. We have no information on chemical analysis of river water in the area.

LANDS

Private tracts have been appraised. It is expected that the Government will acquire them in the future.

Land Mone



Docket Information

Number of Documents in Docket 25

Documents Dated from 8/5/1958 to 1/20/1971

Docket Compiled: 6/7/2011