UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Table 4.—*Correlation of data from 263 dug wells in the Mississippian Plateau region, Kentucky*

Any two items of data may be correlated by locating the number in the small rectangle formed by the intersection of the column and row of the two items of data. Each such number is the percentage of wells in which the two items of data occur simultaneously. For example: Of the 49 wells that occur on hillsides, 57.1 percent are adequate and the remaining 42.8 percent are inadequate.

Each large rectangle enclosed by heavy lines includes data on all wells under consideration. If the sum of all numbers in each row enclosed by heavy lines is not equal to 100 percent, the remaining percentage is an unknown. Total number of dug wells for each column and row is at the base of each column and to the left of each row, respectively.

		Topography				Depth of hole (feet below land surface)							Water level (feet below land surface)						Quality (reported)	
		Upland	Hillside	Karst	Bottoms	Measured	Reported	Unknown	< 25	25–50	50–75	75–100	Measured	Reported	Unknown	< 25	25–50	50–100	Sulfur	Unsatisfactory
Topography	Upland	134				85.8	12.7	1.5	46.3	50.7	1.5	----	87.3	6.7	6.0	70.1	23.9	----	----	0.7
Topography	Hillside		49			93.9	6.1	----	59.2	34.7	6.1	----	93.9	6.1	----	83.7	12.2	4.1	----	2.0
Topography	Karst			26		80.8	11.5	7.7	34.6	53.8	----	3.8	80.8	15.4	3.8	73.1	19.2	3.8	----	11.5
Topography	Bottoms				54	81.5	18.5	----	66.7	31.5	1.8	----	88.9	7.4	3.7	88.9	7.4	----	1.8	1.8
Depth of hole (feet below land surface)	Measured					226														
Depth of hole (feet below land surface)	Reported						33													
Depth of hole (feet below land surface)	Unknown							4												
Depth of hole (feet below land surface)	< 25								136				91.9	4.4	3.7	96.3	----	----	----	----
Depth of hole (feet below land surface)	25–50									116			87.1	8.6	4.3	58.6	37.1	----	----	----
Depth of hole (feet below land surface)	50–75										6		66.7	33.3	----	----	66.7	33.3	----	----
Depth of hole (feet below land surface)	75–100											1	100	----	----	----	----	100	----	----
Water level (feet below land surface)	Measured												232							
Water level (feet below land surface)	Reported													20						
Water level (feet below land surface)	Unknown														11					
Water level (feet below land surface)	<25															202			.5	3.0
Water level (feet below land surface)	25–50																47		----	----
Water level (feet below land surface)	50–100																	3	----	----
Quality (reported)	Sulfur																		1	
Quality (reported)	Unsatisfactory																			6

		Pumping equipment				Adequacy			Type of material				
		None	Hand pump	Bucket or bailer	Power	Unknown	Inadequate	Adequate	Mantle	Limestone	Sandstone	Shale	Gravel
Topography	Upland	7.5	11.9	58.2	22.4	7.5	41.8	50.7	15.7	44.8	38.1	0.7	0.7
Topography	Hillside	----	12.2	65.3	22.4	----	42.8	57.1	10.2	38.8	24.5	10.2	16.3
Topography	Karst	7.7	15.4	38.5	38.5	----	30.8	69.2	57.7	42.3	----	----	----
Topography	Bottoms	1.8	20.4	53.7	24.1	1.8	31.5	66.7	7.4	29.6	7.4	3.7	51.8
Depth of hole (feet below land surface)	Measured												
Depth of hole (feet below land surface)	Reported												
Depth of hole (feet below land surface)	Unknown												
Depth of hole (feet below land surface)	< 25	8.1	16.2	52.9	22.8	7.3	45.8	47.0	12.5	37.5	30.1	5.1	14.7
Depth of hole (feet below land surface)	25–50	.9	10.3	64.6	24.1	.9	34.5	64.6	24.4	42.2	19.8	.9	14.6
Depth of hole (feet below land surface)	50–75	----	16.6	16.6	66.7	----	----	100	----	66.7	33.3	----	----
Depth of hole (feet below land surface)	75–100	----	----	100	----	----	----	100	----	100	----	----	----
Water level (feet below land surface)	Measured												
Water level (feet below land surface)	Reported												
Water level (feet below land surface)	Unknown												
Water level (feet below land surface)	<25	5.9	12.9	57.4	23.8	4.9	42.1	53.0	17.3	34.1	28.2	4.0	16.3
Water level (feet below land surface)	25–50	2.1	6.4	68.1	23.4	2.1	34.0	63.8	19.1	57.4	14.9	----	8.5
Water level (feet below land surface)	50–100	----	33.3	33.3	33.3	----	----	100	----	66.7	33.3	----	----
Quality (reported)	Sulfur	----	100	----	----	----	----	100	----	----	----	100	----
Quality (reported)	Unsatisfactory	16.7	16.7	50.0	16.7	----	33.3	66.7	33.3	50.0	16.7	----	----
Pumping equipment	None	13				69.2	15.4	15.4	15.4	23.1	53.8	----	7.7
Pumping equipment	Hand pump		37			----	29.7	70.3	10.8	51.3	16.2	5.4	16.2
Pumping equipment	Bucket or bailer			149		.7	47.6	51.7	19.5	37.6	26.2	3.3	13.4
Pumping equipment	Power				64	1.6	28.1	70.3	15.6	43.7	23.4	1.6	15.6
Adequacy	Unknown					11			9.1	9.1	72.7	----	9.1
Adequacy	Inadequate						102		16.6	46.1	25.5	2.9	8.8
Adequacy	Adequate							150	18.0	38.7	22.0	3.3	18.0
Type of material	Mantle								45				
Type of material	Limestone									106			
Type of material	Sandstone										67		
Type of material	Shale											8	
Type of material	Gravel												37

		Age of aquifer									Yield (gpm)		
		Quaternary (alluvium)	Cretaceous	Pennsylvanian	Mississippian (Chester)	Mississippian (Meramec)	Mississippian (Osage)	Devonian	Silurian	Ordovician	< 5	5–50	> 50
Topography	Upland	0.7	----	12.7	39.5	34.3	12.7	----	----	----	98.5	1.5	----
Topography	Hillside	2.0	14.3	12.2	30.6	16.3	22.4	----	2.0	----	98.0	2.0	----
Topography	Karst	----	----	----	7.7	88.5	3.8	----	----	----	88.5	7.7	3.8
Topography	Bottoms	42.6	13.0	3.7	11.1	7.4	14.8	----	1.8	5.5	96.3	3.7	----
Depth of hole (feet below land surface)	Measured												
Depth of hole (feet below land surface)	Reported												
Depth of hole (feet below land surface)	Unknown												
Depth of hole (feet below land surface)	< 25	12.5	3.7	12.5	33.1	19.1	16.2	----	.7	2.2	98.5	1.5	----
Depth of hole (feet below land surface)	25–50	6.9	7.7	6.0	25.0	42.2	12.1	----	----	----	95.7	4.3	----
Depth of hole (feet below land surface)	50–75	----	----	16.6	16.6	33.3	16.6	----	16.6	----	100	----	----
Depth of hole (feet below land surface)	75–100	----	----	----	----	100	----	----	----	----	100	----	----
Water level (feet below land surface)	Measured												
Water level (feet below land surface)	Reported												
Water level (feet below land surface)	Unknown												
Water level (feet below land surface)	<25	10.9	6.4	11.4	30.2	25.2	14.3	----	.5	1.0	97.5	2.0	.5
Water level (feet below land surface)	25–50	6.4	2.1	4.2	23.4	51.1	12.8	----	----	----	97.8	2.2	----
Water level (feet below land surface)	50–100	----	----	----	33.3	33.3	----	----	33.3	----	100	----	----
Quality (reported)	Sulfur	----	----	----	----	----	100	----	----	----	100	----	----
Quality (reported)	Unsatisfactory	----	16.7	----	16.7	50.0	16.7	----	----	----	83.3	----	16.7
Pumping equipment	None	7.7	----	7.7	69.2	15.4	----	----	----	----	92.3	----	7.7
Pumping equipment	Hand pump	10.8	2.7	5.4	35.1	29.7	10.8	----	----	5.4	100	----	----
Pumping equipment	Bucket or bailer	9.4	6.0	10.7	24.1	30.9	18.1	----	----	.7	100	----	----
Pumping equipment	Power	9.4	6.2	9.4	28.1	34.4	9.4	----	3.1	----	89.1	10.9	----
Adequacy	Unknown	9.1	----	9.1	72.7	9.1	----	----	----	----	100	----	----
Adequacy	Inadequate	5.9	2.9	9.8	32.3	30.4	17.6	----	----	1.0	100	----	----
Adequacy	Adequate	12.0	7.3	9.3	23.3	32.7	12.7	----	1.3	1.3	94.6	4.7	.7
Type of material	Mantle										98.0	----	2.0
Type of material	Limestone										95.4	4.7	----
Type of material	Sandstone										100	----	----
Type of material	Shale										100	----	----
Type of material	Gravel										93.5	6.5	----
Age of aquifer	Quaternary (alluvium)	25									100	----	----
Age of aquifer	Cretaceous		14								85.7	14.3	----
Age of aquifer	Pennsylvanian			25							100	----	----
Age of aquifer	Mississippian (Chester)				76						98.7	1.3	----
Age of aquifer	Mississippian (Meramec)					81					96.3	2.5	1.2
Age of aquifer	Mississippian (Osage)						37				94.6	5.4	----
Age of aquifer	Devonian							----			----	----	----
Age of aquifer	Silurian								2		100	----	----
Age of aquifer	Ordovician									3	100	----	----
Yield (gpm)	<5										225		
Yield (gpm)	5–50											7	
Yield (gpm)	>50												1

		Distance from sink (feet)						Distance from stream (feet)					
		< 500	500–1,000	1,000–2,000	2,000–4,000	> 4,000	None	Bottoms	< 1,000	1,000–2,500	2,500–5,000	5,000–10,000	> 10,000
Topography	Upland	11.9	9.7	14.2	11.9	3.7	48.5	----	6.0	11.2	30.6	37.3	14.9
Topography	Hillside	2.0	4.1	6.1	10.2	2.0	75.5	----	36.7	12.2	20.4	16.3	14.3
Topography	Karst	34.6	11.5	23.1	15.4	7.7	7.7	----	7.7	11.5	19.2	34.6	26.9
Topography	Bottoms	3.7	3.7	1.8	1.8	----	88.9	25.9	27.8	11.1	11.1	16.7	7.4
Depth of hole (feet below land surface)	Measured												
Depth of hole (feet below land surface)	Reported												
Depth of hole (feet below land surface)	Unknown												
Depth of hole (feet below land surface)	< 25	5.9	3.7	8.1	11.0	1.5	69.8	6.6	19.1	12.5	18.4	29.4	14.0
Depth of hole (feet below land surface)	25–50	15.5	12.1	12.1	9.5	5.2	45.7	4.3	12.9	9.5	29.3	29.3	14.6
Depth of hole (feet below land surface)	50–75	16.6	16.6	16.6	----	----	50.0	----	16.6	----	33.3	33.3	16.6
Depth of hole (feet below land surface)	75–100	100	----	----	----	----	----	----	----	----	100	----	----
Water level (feet below land surface)	Measured												
Water level (feet below land surface)	Reported												
Water level (feet below land surface)	Unknown												
Water level (feet below land surface)	<25	8.4	4.9	10.4	9.9	2.0	64.3	6.4	17.8	11.9	22.3	28.2	13.4
Water level (feet below land surface)	25–50	17.0	19.1	14.9	6.4	8.5	34.0	2.1	12.8	10.6	23.4	31.9	19.1
Water level (feet below land surface)	50–100	66.7	33.3	----	----	----	----	----	----	----	66.7	33.3	----
Quality (reported)	Sulfur	----	----	----	----	----	100	100	----	----	----	----	----
Quality (reported)	Unsatisfactory	16.7	16.7	----	----	----	66.7	----	33.3	----	16.7	16.7	33.3
Pumping equipment	None	23.1	7.7	23.1	15.4	7.7	23.1	----	23.1	15.4	7.4	38.5	15.4
Pumping equipment	Hand pump	8.1	2.7	10.8	8.1	2.7	67.6	8.1	16.2	8.1	24.3	27.0	16.2
Pumping equipment	Bucket or bailer	10.1	8.0	8.0	11.4	2.7	59.7	6.0	15.4	11.4	25.5	25.5	16.1
Pumping equipment	Power	10.9	9.4	15.6	6.2	3.1	54.7	3.1	17.1	12.5	21.9	35.9	9.4
Adequacy	Unknown	18.2	9.1	18.2	18.2	9.1	27.3	----	18.2	18.2	9.1	54.5	----
Adequacy	Inadequate	11.8	7.8	4.9	8.8	3.9	62.7	5.8	17.5	10.7	21.6	31.4	12.7
Adequacy	Adequate	9.3	7.3	14.7	10.0	2.0	56.7	5.3	15.3	11.3	26.0	25.3	16.7
Type of material	Mantle												
Type of material	Limestone												
Type of material	Sandstone												
Type of material	Shale												
Type of material	Gravel												
Age of aquifer	Quaternary (alluvium)	4.0	8.0	----	4.0	----	84.0	40.0	20.0	20.0	12.0	8.0	----
Age of aquifer	Cretaceous	----	----	7.1	----	----	92.8	----	64.3	----	28.5	7.1	----
Age of aquifer	Pennsylvanian	----	----	----	8.0	----	92.0	----	8.0	16.0	48.0	20.0	8.0
Age of aquifer	Mississippian (Chester)	5.3	10.5	15.8	15.8	1.3	51.3	----	5.3	11.8	27.6	35.5	19.7
Age of aquifer	Mississippian (Meramec)	25.9	12.3	17.3	13.6	7.4	23.4	----	13.6	9.9	21.0	34.6	21.0
Age of aquifer	Mississippian (Osage)	2.7	----	5.4	----	2.7	89.2	10.8	21.6	10.8	13.5	32.4	10.8
Age of aquifer	Devonian	----	----	----	----	----	----	----	----	----	----	----	----
Age of aquifer	Silurian	50.0	----	----	----	----	50.0	----	50.0	----	----	50.0	----
Age of aquifer	Ordovician	----	----	----	----	----	100	----	100	----	----	----	----
Yield (gpm)	<5	11.0	7.4	11.0	9.0	3.1	58.4	5.5	16.5	11.8	22.0	29.4	14.9
Yield (gpm)	5–50	----	14.3	----	42.8	----	42.8	----	----	----	85.7	14.3	----
Yield (gpm)	>50	----	----	100	----	----	----	----	100	----	----	----	----

		Height of water level in well above stream (feet)								
		< 25	25–50	50–75	75–100	100–150	150–200	200–300	> 300	Unknown
Topography	Upland	3.7	3.7	3.0	8.2	21.6	14.2	29.1	14.9	1.5
Topography	Hillside	40.8	10.2	10.2	6.1	12.2	16.3	2.0	2.0	----
Topography	Karst	30.8	3.8	19.2	7.7	15.4	3.8	11.5	3.8	3.8
Topography	Bottoms	72.2	7.4	7.4	1.8	1.8	1.8	1.8	3.7	1.8
Depth of hole (feet below land surface)	Measured									
Depth of hole (feet below land surface)	Reported									
Depth of hole (feet below land surface)	Unknown									
Depth of hole (feet below land surface)	< 25	30.1	8.1	6.6	3.7	15.4	12.5	12.5	9.5	1.5
Depth of hole (feet below land surface)	25–50	24.1	2.6	6.0	9.5	14.6	8.6	23.3	9.5	1.7
Depth of hole (feet below land surface)	50–75	33.3	16.6	16.6	----	16.6	16.6	----	----	----
Depth of hole (feet below land surface)	75–100	----	----	----	100	----	----	----	----	----
Water level (feet below land surface)	Measured									
Water level (feet below land surface)	Reported									
Water level (feet below land surface)	Unknown									
Water level (feet below land surface)	<25	29.2	6.9	6.4	5.9	14.3	11.9	14.8	10.4	----
Water level (feet below land surface)	25–50	23.4	----	10.6	8.5	21.3	4.2	25.5	6.4	----
Water level (feet below land surface)	50–100	33.3	33.3	----	33.3	----	----	----	----	----
Quality (reported)	Sulfur	100	----	----	----	----	----	----	----	----
Quality (reported)	Unsatisfactory	50.0	----	----	----	33.3	16.7	----	----	----
Pumping equipment	None	15.4	7.7	7.7	----	7.7	7.7	23.1	30.8	----
Pumping equipment	Hand pump	32.4	10.8	8.1	5.4	16.2	8.1	8.1	5.4	5.4
Pumping equipment	Bucket or bailer	26.2	4.7	4.7	8.0	16.8	12.1	18.1	8.7	----
Pumping equipment	Power	29.7	4.7	10.9	4.7	12.5	10.9	15.6	7.8	3.1
Adequacy	Unknown	9.1	----	9.1	----	9.1	9.1	36.4	27.3	----
Adequacy	Inadequate	26.5	6.9	5.9	4.9	22.5	7.8	14.7	10.8	----
Adequacy	Adequate	29.3	5.3	7.3	8.0	10.7	13.3	16.7	6.7	2.7
Type of material	Mantle									
Type of material	Limestone									
Type of material	Sandstone									
Type of material	Shale									
Type of material	Gravel									
Age of aquifer	Quaternary (alluvium)	84.0	8.0	----	----	----	4.0	4.0	----	----
Age of aquifer	Cretaceous	71.4	7.1	21.4	----	----	----	----	----	----
Age of aquifer	Pennsylvanian	16.0	----	----	4.0	----	32.0	28.0	20.0	----
Age of aquifer	Mississippian (Chester)	5.3	9.2	6.6	9.2	23.7	14.5	19.7	10.5	1.3
Age of aquifer	Mississippian (Meramec)	19.7	2.5	12.3	7.4	18.5	6.2	19.7	11.1	2.5
Age of aquifer	Mississippian (Osage)	32.4	8.1	----	8.1	18.9	10.8	13.5	5.4	2.7
Age of aquifer	Devonian	----	----	----	----	----	----	----	----	----
Age of aquifer	Silurian	100	----	----	----	----	----	----	----	----
Age of aquifer	Ordovician	100	----	----	----	----	----	----	----	----
Yield (gpm)	<5	27.4	5.5	6.7	6.3	15.7	11.0	16.9	9.4	1.2
Yield (gpm)	5–50	14.3	14.3	14.3	14.3	----	14.3	14.3	----	14.3
Yield (gpm)	>50	100	----	----	----	----	----	----	----	----

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