File "Central Sevier Valley"

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GROUND WATER AREAS AND WELL LOGS, CENTRAL SEVIER VALLEY, UTAH

by

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U. S. Geological Survey

September 1960

Utah State Engineer's Office
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Introduction

Between September 1959 and June 1960 the United States Geological Survey and the Utah State Engineer, with financial assistance from Garfield, Millard, Piute, Sanpete, and Sevier Counties and from local water-users' associations, cooperated in an investigation to determine the structural framework of the central Sevier Valley and to evaluate the valley's ground-water potential. An important aspect of the study was the drilling of 22 test holes under private contract. These data and other data collected during the course of the larger ground-water investigation of which the test drilling was a part will be evaluated in a report on the geology and ground-water resources of the central Sevier Valley. The present report has been prepared to make available the logs of the test holes and to describe in general terms the availability of ground water in the different areas of the valley.

The test holes were located to determine the subsurface geology of the valley, but of principal interest for this report is the water-bearing materials that were penetrated by the test holes. Ten of the holes penetrated materials capable of yielding sufficient water for irrigation; 10 holes penetrated water-yielding materials that could supply water for domestic or stock use; 2 holes were unsuccessful as water prospects but supplied geologic information.

Generally, the water in the test holes was of good quality for stock, domestic, or irrigation use, except in test holes 1, 2, 4, 5, 16, 17, and 19 where water from some beds was highly mineralized. Water from the upper water-bearing bed in test holes 1, 2, 4, 5 and 16 and from the 6 upper water-bearing beds in test hole 19 was high in sodium chloride and sodium sulphate and would be unpalatable to humans and stock. The upper water in test hole 17 would be palatable to stock accustomed to brackish water, but the water from below 78 feet is too saline for any use.

The central Sevier Valley has been divided into arbitrary ground-water areas that are based in part on topographic and geologic boundaries. The test holes are described by areas downstream from south to north, and the logs of table 1 are arranged from south to north.

Circle valley area

Test holes 21 and 22 were drilled in Circle Valley: test hole 22 as near as possible to the geographic center of the valley; test hole 21 to determine the northern edge of the basin and to estimate the underflow from the valley.

The log of test hole 21 shows that a mass of welded tuff forms a sill at the outlet of the valley below which the ancestral Sevier River was unable to cut. Overlying the tuff is 283 feet of tuffaceous clay. The log of test hole 22 shows that the Pleistocene and Recent deposits are thicker than 563 feet, the bottom of the test hole. It also shows that the beds are thinner below 380 feet and that the finer materials are predominant below that depth.

The only large irrigation well at present in Circle Valley is (C-30-4)25bcc. This well is 133 feet deep, 12 inches in diameter, and is reported to yield 1,725 gpm (gallons per minute) with 15 feet of drawdown and a pumping lift of about 63 feet.

Sevier-Sigurd area

The Sevier-Sigurd area includes that part of the Sevier Valley from the mouth of Marysvale Canyon to the vicinity of Rockyford Dam. This is the largest basin in the central Sevier Valley and contains the thickest deposits of water-yielding materials. Eleven test holes were drilled in this segment. Of these 11 holes, 5 were drilled to determine as nearly as possible the thickness of the producing sand and gravel and 6 were drilled to determine the boundaries and extent of the producing area. Drilling results indicate that the principal water-bearing deposits lie east of Highway 89 between Central and Venice. Here, 6 or 8 thick sand and gravel beds and numerous thin sand and gravel beds yield water to many small stock and domestic wells and to a few irrigation wells 8 inches in diameter or larger. Small production wells may be drilled successfully in most places in the valley floor outside of the good producing zone, but some places in the western benches may be unproductive.

Poverty Flat, the area south of Monroe, in general is unproductive of water except in small quantities that might meet domestic requirements. The static water level at about 200 feet below land surface is exceptionally deep here (see log of test hole 10).

Aurora-Redmond area

Test hole 13 near Aurora indicates that a basin of exceptional depth exists in the short stretch of the valley between test hole 14 and the mouth of Lost Creek. Here 665 feet of alluvium and lake deposits were penetrated without reaching bedrock. In test holes 12 and 24 near Salina only about 200 feet of unconsolidated material overlies the Sevier River formation of late Pliocene or early Pleistocene age.

Analysis of water recovered from test hole 12 and the high relative resistivity of the drilling mud from test holes 13 and 24 indicate that the water is relatively good for stock and irrigation use.

Redmond-Gunnison area

Three test holes (16, 17, and 18) were drilled in the Redmond-Gunnison area. Test hole 16, drilled on the Salina-Gunnison Airport, showed poor water-yielding potential as did test hole 18 on the west side of the Sevier River west of Centerfield. Both holes encountered the Sevier River formation at relatively shallow depth and penetrated thin layers of poorly permeable materials in the unconsolidated deposits. Test hole 17 penetrated the entire Sevier River formation and took water from an unidentified sandstone. This water contained 2,860 ppm (parts per million) of chloride.

Gunnison-Sevier Bridge Reservoir area

This area extends from Gunnison to the narrows of the Sevier Bridge Reservoir about 4 miles north of Fayette. Two test holes (19 and 20) were drilled in this area. Test hole 19, 478 feet deep, encountered the Sevier River formation at about 324 feet. Water in the deposits above 280 feet was brackish, but below this depth the water appears to be much better. The Sevier River formation is more permeable in this area than in most other places.

Test hole 20, 2½ miles down stream from test hole 19 and 2 miles southeast of Fayette, penetrated 500 feet of Pleistocene and Recent deposits without reaching any material identifiable with the Sevier River formation. The hole collapsed at 500 feet due to artesian pressure which forced the drilling mud from the hole. After collapsing, the hole flowed water at the rate of 60 gpm with

a head of 5.6 feet above land surface. The water from this hole is of acceptable quality for irrigation water, as it contains only about one-third as much mineral matter as water from shallow wells in the neighborhood.

Table 1.- Logs of test holes drilled in the central Sevier Valley, grouped in downstream sequence by ground-water area, as shown in figure 1.

* indicates stratum of water-bearing materials.
** indicates stratum from which best production may be expected.
\# indicates stratum that produces highly mineralized water (probably unsuitable for irrigation).

Circle Valley area

(C-30-3)30caa. Piute County, 1 mile east of Circleville. U. S. Geol. Survey test hole 22, drilled May 1960. Depth 563 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Sand, fine to very fine, dark-brown, silty	10	10
Gravel, fine	2	12
Silt, brown, sandy	10	22
*Gravel, fine to coarse	50	72
Silt, light-brown, clayey	26	98
*Gravel, coarse to fine	17	115
Silt, light- to dark-brown, sandy	13	128
**Gravel, coarse to fine	125	253
Silt, white, sandy	2	255
*Gravel, coarse; silt, 250-256 ft.	44	299
Clay, brown, silty	3	302
*Gravel, medium to coarse; with thin clay layers	33	335
Clay, light-brown, silty	45	380
*Gravel, fine to medium	1	381
Silt, light-brown, clayey	6	387
*Gravel, coarse to medium	11	398
Clay, dark-brown, silty, sandy	18	416
*Gravel, fine	8	424
Clay, dark-brown, silty, sandy	8	432
*Gravel, medium to coarse	14	446
Clay, dark-brown, silty, sandy	24	470
*Gravel, coarse	4	474
Clay, sandy, silty	6	480
*Gravel	8	488
Clay, sandy, silty; with gravel lenses	32	520
*Gravel	10	530
Clay, sandy, silty	8	538
*Gravel	8	546
Clay, sandy, silty	6	552
*Gravel	6	558
Clay, dark-brown, sandy, silty	5	563

339 ft water-bearing material; static water level, -23 ft. Hole cased to 400 ft with 4-in casing, perforated 200-340 ft, and 380-400 ft.

(C-30-3)16bab. Piute County, 2 miles west of Kingston. U. S. Geol. Survey test hole 21, drilled May 1960. Depth 374 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, dark-gray, sandy; carbonaceous	5	5
*Sand, coarse, to medium gravel	15	20
Clay, light-gray to light-brown; bouldery 23-27 ft	36	56
*Sand, coarse, to fine gravel	25	81
Tertiary volcanic rocks:		
Clay, green, brown, and white, tuffaceous	283	364
Tuff, welded	10	374

40 ft water-bearing material; static water level, -2 ft.

Sevier-Sigurd area

(C-25-3)29ddb. Sevier County, 2½ miles south of Monroe. U. S. Geol. Survey test hole 10, drilled May 1960. Depth 430 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, tan	1	1
Caliche	1	2
Gravel, coarse, silty	14	16
Silt, brown, sandy	2	18
Gravel, fine to medium, and sand	20	38
Silt, brown, sand; some gravel in thin lenses	18	56
Sand, coarse, and gravel, silty	15	71
Silt, brown, sandy; contains layers of caliche	20	91
Gravel	3	94
Silt, sand, and gravel in lenses	56	150
Gravel, fine to coarse	6	156
Silt, dark-brown, gravelly	2	158
Gravel, fine, silty	17	175
Silt, dark-brown, gravelly	9	184
Gravel, fine to medium; may be water-bearing	26	210
Silt, brown, sandy	19	229
*Gravel, fine to coarse; with many silt layers	167	396
Silt, brown, sandy	6	402
Boulders, volcanic	10	412
Silt, brown, sandy, turned white at 414 ft	18	430

167 ft water-bearing material; static water level below 200 ft.

(C-24-3)23bad. Sevier County, Central. U. S. Geol. Survey test hole 7, drilled May 1960. Depth 430 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, tan, sandy	52	52
*Gravel, fine to medium; this layer took about 80 cu. ft of drilling mud	84	136
Silt, red, sandy	12	148
*Gravel, coarse to medium; with a few layers of red silt	24	172
Silt, pink, sandy; becoming clayey 176 ft	59	231
**Gravel, medium to coarse	80	311
Clay, pink, sandy	22	333
*Gravel, fine to medium, and sand	15	348
Clay, pink, sandy	8	356
*Gravel, fine to medium, and sand	20	376
Clay, or silt	20	396
**Gravel, fine to coarse; lost circulation and had to abandon hole to avoid losing tools.	34	430

257 ft water-bearing material; static water level, -25.5 ft.

(C-24-2)5cad. Sevier County, 3 miles southeast of Richfield. U. S. Geol. Survey test hole 2, drilled Sept. 1959. Depth 585 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, light-gray	13	13
Clay, tan to dark-gray	11	24
#Sand and gravel	9	33
Clay, black to gray	20	53
*Gravel	19	72
Clay, gray	2	74
**Gravel, fine to coarse, and sand	44	118
Clay, gray, sandy	8	126
*Gravel, fine	18	144
Clay, tan, clean, sticky	68	212
**Gravel, fine to coarse; contains a few clay lenses	78	290
Clay, light-brown, sandy, silty; becoming light-gray downward	12	302
*Gravel, fine to coarse	12	314
Clay, light-brown	10	324
**Gravel, fine to coarse	34	358
Clay, tan	16	374
**Gravel, coarse; with sand 422-430 ft	96	470
Clay, tan	16	486
**Gravel, coarse	48	534
Clay, tan, clean; hard drilling	26	560
Sevier River formation:		
Conglomerate; gravel and boulders	25	585

358 ft water-bearing material. Static water level, -2 ft.

(C-23-3)25cac. Sevier County, Richfield. U. S. Geol. Survey test hole 3, drilled April 1960. Depth 724 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, red, silty; becoming plastic at 26 ft	74	74
*Gravel, fine to medium	29	103
Silt, red, sandy	23	126
*Gravel, medium to coarse	6	132
Sand; containing white clay and some gravel	16	148
Clay, red-brown, silty	82	230
Silt, tan, sandy; gravelly at 556-580 ft	402	632
Boulders, lava; in gray silt	92	724

35 ft water-bearing material.

(C-23-2)31dcb. Sevier County, 2 miles southeast of Richfield. U. S. Geol. Survey test hole 1, drilled Sept. 1959. Depth 764 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, yellow; fill dirt	12	12
Clay, dark-gray	8	20
Clay, blue-gray, sandy	2	22
Clay, black; carbonaceous	10	32
#Sand, very coarse, and gravel; contains alkaline water	60	92
Cobbles	13	105
Clay, red-orange, sticky	36	141
Clay, gray	21	162
*Gravel, coarse	4	166
Clay, tan	10	176
*Gravel, fine to medium, and sand	14	190
Clay, tan to gray	24	214
**Gravel, fine to coarse, and sand	66	280
Clay, tan to copper-red	36	316
*Gravel, fine	9	325
Clay, red	11	336
*Sand, coarse, and fine gravel	8	344
Clay, tan to red	24	368
**Gravel, fine to coarse, and sand	44	412
Clay, tan and orange-red	4	416
*Gravel, fine, and coarse sand	24	440
Clay, tan to red-brown	34	474
*Sand, and fine gravel	12	486
Clay, tan, contains cobbles	4	490
**Gravel, and sand; with clay layers	82	572
Clay, tan; contains sand and gravel lenses	38	610
*Gravel, fine to coarse	10	620
Clay, tan	16	636
**Gravel, fine to coarse	92	728

(C-23-2)31dcb - continued

	Thickness (feet)	Depth (feet)
Sevier River(?) formation:		
Conglomerate, volcanic rocks	32	760
Silt, white, limy	4	764

365 ft water-bearing material; static water level, +5.5 ft; flow measured 110 gpm. Hole cased to 583 ft with 4-in casing; perforated 208-270 ft, 376-420 ft, and 504-583 ft.

(C-23-2)14cbc. Sevier County, ½ mile east of Venice. U. S. Geol. Survey test hole 4, drilled April 1960. Depth, 511 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, dark-gray; carbonaceous	50	50
#Sand, coarse, to medium gravel; few thin layers of tan and gray clay	68	118
Clay, blue-gray, silty	8	126
*Sand, coarse, and fine gravel	5	131
Silt, brown to dark-gray, clayey	25	156
*Sand, coarse, and fine to medium gravel	86	242
Clay, brown	4	246
*Sand, fine, to fine gravel; becoming coarse gravel at 266 ft	73	319
Silt, brown	13	332
*Sand; becoming coarse gravel at 334 ft	63	395
Clay, brown, tan, gray, silty	19	414
Silt, gray, brown, sandy	14	428
Silt, tan, clayey	10	438
*Gravel, fine to medium; becoming coarse	26	464
Silt, brown, sandy	11	475
Sevier River(?) formation:		
Gravel, coarse to fine; in layers with tan clayey silt	38	513

321 ft water-bearing material; static water level, 0 ft.

(C-23-2)10dcc. Sevier County, 1 mile north of Venice. U. S. Geol. Survey test hole 5, drilled April 1960. Depth, 807 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, red	8	8
Clay, dark-brown to red; dark-gray at 40 ft	54	62
#Gravel, fine to medium, and coarse sand	44	106
Clay, gray, silty	4	110
*Gravel, fine to medium, and coarse sand; becoming coarser at 145 ft	63	173
Clay, gray-brown, silty; some gravel	15	188
*Gravel, fine to medium; contains some silt and cobbles	25	213
Clay, red, gray, tan; black and silty, 221-223 ft	18	231
*Gravel, medium to coarse	31	262
Clay, red	10	272
*Gravel	5	277
Clay, alternating blue-gray, tan and red	21	298
*Gravel, fine to coarse	34	332
Clay, tan, brick-red, gray; silty and sandy	55	387
*Gravel, fine to coarse	45	432
Clay, red; fast drilling	30	462
*Gravel, fine to coarse, and sand	38	500
Clay, red	14	514
*Gravel, fine to coarse	14	528
Clay, red to tan, silty	78	606
*Gravel, fine to medium	28	634
Clay, brown	22	656
*Sand and fine gravel	20	676
Clay	16	692
*Sand and fine gravel; becoming coarse	38	730
Clay, brick-red	4	734
*Gravel, fine to medium	18	752
Clay, tan, sandy	5	757
*Gravel; with thin layers of varicolored clay	41	798
Clay	9	807

444 ft water-bearing material; static water level, about +1 ft; flow estimated 1 gpm.

(C-23-2)9daa. Sevier County, 1½ miles north of Venice. U. S. Geol. Survey test hole 8, drilled June 1960. Depth 737 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, red, silty	74	74
*Gravel, coarse	3	77
Clay, red, silty	15	92
*Sand, fine to coarse, volcanic	8	100
Clay, red silty	22	122
*Gravel, fine, limestone	12	134
Clay, red, silty	29	163
*Gravel, fine to medium	10	173
Clay, brown to terracotta, silty	47	220
*Gravel, fine to medium	10	230
Clay, red, slightly silty	44	274
*Gravel, fine to medium	16	290
Clay, red, silty	81	371
*Gravel, coarse to fine, volcanic	11	382
Clay, red to dark-brown	185	567
*Gravel, fine to medium	21	588
Clay, red, silty; with thin lenses of sand	48	636
*Gravel, fine, to coarse sand	10	646
Clay, bright-red to drab-brown, silty	20	666
*Gravel, fine	12	678
Clay, red to tan, silty, sandy	32	710
*Gravel, fine	8	718
Clay, tan, sandy	19	737

121 ft water-bearing material.

(C-23-2)9abb. Sevier County, 2 miles north of Venice. U. S. Geol. Survey test hole 6, drilled April 1960. Depth 592 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, red, sandy; with some coarse sand and fine gravel in thin layers	43	43
Gravel, medium	8	51
Silt, red, sandy; light-brown at 90 ft; becoming clayey, 175 ft	370	421
Boulders, or coarse gravel; limestone and sandstone	10	431
Clay, light red-brown, sandy	27	458
Boulders	6	464
Clay, brown, silty, sandy	24	488
Boulders	4	492
Silt, brown, sandy	32	524
Cobbles	6	530
Clay, brown, silty, pebbly	62	592

(C-22-2)35dcd. Sevier County, 1 mile west of Sigurd. U. S. Geol. Survey test hole 15, drilled April 1960. Depth 289 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, red, clayey	16	16
Gravel, fine to medium; with silt layers	54	70
Silt, red, clayey	32	102
*Gravel, fine to medium	88	190
Silt, red, clayey, pebbly	11	201
*Gravel, fine to medium	9	210
Silt, red, clayey, pebbly	14	224
Gravel; contains olive-drab clay	6	230
Clay, light-gray to olive-drab	7	237
*Sand, coarse, to fine gravel	11	248
Clay, gray, sandy	3	251
*Sand, coarse, and gravel	4	255
Silt, red, clayey	7	262
*Sand, coarse, to coarse gravel	8	270
Silt, red, clayey	7	277
Sevier River(?) formation:		
Gravel, fine to coarse; in clay	10	287

120 ft water-bearing material; static water level, -32 ft.

(C-22-1)19bad. Sevier County, 3 miles south of Aurora. U. S. Geol. Survey test hole 14, drilled March 1960. Depth 363 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, red-tan	17	17
**Gravel, fine to medium; coarse below 22 ft	95	112
Clay, orange and tan in layers	27	139
**Gravel, fine to coarse, and sand	81	220
Clay, orange to light-tan	24	244
**Gravel, coarse, and coarse sand	43	287
Clay, light-brown to gray	9	296
**Gravel, fine to medium	66	362
Sevier River(?) formation:		
Conglomerate	3	365

285 ft water-bearing material; static water level, -18 ft.

Aurora-Redmond area

(C-22-1)8aab. Sevier County, ½ mile south of Aurora. U. S. Geol. Survey test hole 13, drilled March 1960. Depth 665 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, tan, silty	12	12
Sand, coarse, to medium gravel	4	16
Clay, gray, sandy	6	22
Gravel, fine to coarse; contains some clay	21	43
Clay, yellow-tan, silty	10	53
*Gravel, fine to coarse, and sand	10	63
Clay, tan, silty	8	71
**Gravel, fine to medium, and coarse sand	49	120
Clay, tan-brown	9	129
*Gravel, fine to coarse	14	143
Clay, tan, silty and sandy, to gray; plastic	29	172
**Gravel, fine, and sand	81	253
Clay, light-brown to copper-red	12	265
*Gravel, fine to medium	10	275
Clay, light-gray and dark-gray; with layers of pebbles	48	323
*Gravel, fine to medium	30	353
Clay, tan to red-brown	27	380
*Sand, coarse to fine gravel	7	387
Clay, tan, plastic and clean	15	402
*Gravel, fine to medium	25	427
Clay	6	433
*Gravel, fine to medium	12	445
Clay, brown	7	452
**Gravel, fine to medium	42	494
Clay, brown	9	503
*Gravel, fine to medium	5	508
Clay, tan, silty	17	525
**Gravel, fine, and coarse sand	63	588
Clay, tan to copper-red to brown	27	615
**Gravel, fine to medium contains some clay layers	50	665

398 ft water-bearing material.

(C-21-1)18daa. Sevier County, 5 miles west of Salina. U. S. Geol. Survey test hole 11, drilled June 1960. Depth 959 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, sand, and gravel	12	12
Clay, light-gray, sandy, silty	25	37
Gravel, medium	1	38
Bald Knoll(?) formation of upper Eocene or lower Oligocene age (Gilliland, 1951, p. 43-47)1/		
Shale, ranging in colors from brown to white, blue, green; layer of peat, 148-149 ft; contains 6-in layers of limestone and sandstone	921	959

No water-bearing beds.

1/ Gilliland, W. N., 1951, Geology of the Gunnison Quadrangle, Utah: University of Nebraska Studies, new series, no. 18, 100 p., 11 pl.

(C-21-1)23abd. Sevier County, Salina. U. S. Geol. Survey test hole 24, drilled Nov. 1959. Depth 200 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt and sand	6	6
*Gravel, fine to coarse, and sand	6	12
Clay, black, sandy; carbonaceous; with lenses of sand and gravel	14	26
*Sand, coarse, to fine to coarse gravel	26	52
Clay, white, gravelly	3	55
*Sand, fine to coarse, and gravel; with lenses of white and tan clay	144	199
Sevier River(?) formation:		
Conglomerate	1	200

176 ft water-bearing material; static water level about -6 ft.

(C-21-1)25bbb. Sevier County, Salina. U. S. Geol. Survey test hole 12, drilled Nov. 1959. Depth 702 ft, diam. 6 in. Drilled by E. N Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Clay, and silt, brown, sandy	30	30
*Gravel, fine to coarse, and coarse sand; contains lenses of tan and red clay	154	184
Sevier River formation:		
Gravel in clay	3	187
Clay, brown	26	213
Gravel, coarse	18	231
Clay, tan	3	234
Gravel, coarse	8	242
Clay, red, white, and yellow; in thin layers	4	246
Gravel, coarse	13	259
Clay, white, becoming tan and pinkish	50	309
Bald Knoll formation of Gilliland (1951, p. 43-47)		
Shale, white, limy, sandy	31	340
Shale, pinkish-tan to gray; contains thin limestone layers at 404, 407, 435 ft	95	435
Limestone, olive-gray; in thin layers	8	443
Shale, dark-gray to white	155	598
Shale, pink and white; with layers of green bentonitic clay	84	682
*Sandstone, yellow	20	702

174 ft water-bearing material; static water level, -28 ft.

(D-20-1)31aaa. Sevier County, Salina-Gunnison Airport. U. S. Geol. Survey test hole 16, drilled Sept. 1959. Depth 414 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Sand, brown, silty; with small lenses of fine gravel	9	9
Sand, light-tan, silty	3	12
Gravel, fine to coarse	36	48
Clay, light-brown, sandy and silty	3	51
Gravel, coarse	7	58
Clay, light-brown, sandy; with thin gravel lenses	12	70
#Gravel, coarse	4	74
Clay, light-brown	6	80
*Gravel, medium to coarse	12	92
Clay, light-brown	4	96
*Gravel, medium to coarse	8	104
Clay, light-brown	38	142
Sand	12	154
Clay, tan	10	164
Gravel, fine to medium, and sand; with thin clay layers	36	200
Clay, red-brown, sandy	6	206
Gravel, coarse; with thin clay layers	44	250
Sevier River(?) formation:		
Clay, red-brown, with included boulders and layers of boulders	114	364
Sandstone, red, very fine-grained	13	377
Boulders (conglomerate?)	7	384
Clay and boulders	30	414

24 ft water-bearing material.

Redmond-Gunnison area

(C-19-1)25dcc. Sanpete County, 2 miles west of Centerfield. U. S. Geol. Survey test hole 17, drilled Nov. 1959. Depth 434 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Soil	2	2
Clay, black and gray	13	15
#Sand, coarse, and fine gravel	63	78
Sevier River formation:		
Clay, white and tan, sandy	12	90
Clay, dark-brown, sandy	16	106
Unidentified formation:		
Sandstone, fine; yellow-green limy cement	16	122
Sandstone, red, silty	8	130
#Sandstone, salt and pepper	69	199
Conglomerate, pebbly	5	204
#Sandstone, black, coarse; green shale, 294-296 ft	230	434

362 ft water-bearing material, brackish water; static water level, lower sand, +4 ft; upper sand, -3 ft.

(C-19-1)26ddc. Sanpete County, 3 miles west of Centerfield. U. S. Geol. Survey test hole 18, drilled Oct. 1959. Depth 156 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt, red-brown, clayey	48	48
Gravel, fine, and sand; becoming coarser with depth	16	64
Clay, tan, silty	2	66
Boulders and silt, tan; calcareous	32	98
Silt, brown, sandy; calcareous; becoming clay	6	104
*Gravel and sand	17	121
Sevier River(?) formation:		
Silt, red-brown, sandy; calcareous	17	138
Conglomerate	18	156

17 ft water-bearing material; no depth to water.

(C-19-1)11bcc. Sanpete 4 miles west of Gunnison. U. S. Geol. Survey test hole 19, drilled Oct. 1959. Depth 478 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Soil, black, sandy	2	2
Clay, brick-red to gray and black clay; gastropods	28	30
Gravel, fine	3	33
Clay, gray	4	37
#Gravel, fine to coarse	23	60
Clay, gray	3	63
#Gravel, coarse	13	76
Clay, tan, gray, black, sandy	9	85
#Sand and gravel	29	114
Clay, tan	6	120
#Sand and gravel	48	168
Clay, tan to gray	30	198
#Gravel, fine to coarse	7	205
Clay, tan to gray	20	225
#Gravel, fine to coarse, and sand	37	262
Clay, tan to gray	20	282
*Gravel, fine to coarse	18	300
Clay, tan	24	324
Sevier River(?) formation:		
*Gravel, fine to coarse, and sand; with thin layers clay and limestone	154	478

172 ft fresh water-bearing material; static water level, -4 ft.

(C-18-1)36dcd. Sanpete County, 2 miles south of Fayette. U. S. Geol. Survey test hole 20, drilled Oct. 1959. Depth 500 ft, diam. 6 in. Drilled by E. N. Ramey.

	Thickness (feet)	Depth (feet)
Pleistocene and Recent deposits (undifferentiated):		
Silt and sand, brown	7	7
Clay, red and black, very plastic	15	22
Clay, gray-green, silty	1	23
Clay, dark-brown, silty	4	27
Clay, gray, plastic	7	34
*Gravel, coarse	26	60
Clay, gray	9	69
Sand, fine, and gravel	8	77
Clay, tan to gray; very hard drilling	13	90
**Gravel, fine to coarse	75	165
Clay, blue-gray to dark-brown	50	215
**Gravel, coarse	33	248
Clay, tan, clean	24	272
*Sand, coarse, and fine gravel	4	276
Clay, gray	40	316
*Gravel, fine to coarse	28	344
Clay, light-tan to dark-brown, clean	28	372
**Gravel, coarse	40	412
Clay, red-brown to gray	13	425
*Gravel	40	465
Clay, white and blue, hard; gravel lens at 469	35	500

246 ft water-bearing material; static water level, +5.5 ft; flow measured 60 gpm.