Charles, E.G., Storck, D.A., and Clawges, R.M., 2001, Hydrology of the unconfined aquifer system, Maurice River area, Maurice and Cohansey River Basins, New Jersey, 1994-95

GROUND WATER

This sheet describes water levels in the unconfined aquifer system of the Maurice River study area. Hydrographs of water levels in 22 water-table observation wells are shown. A water-level map prepared from water levels measured in April and May 1995 is presented.

Water-Level Monitoring

Hydrographs of water levels in 22 water-table observation wells in the Maurice River study area are shown in figures 2-1, 2-2, and 2-3. Water levels in these wells typically are measured manually from 1 to 12 times per year. Construction data for these wells are included in table 2-1.

None of the water levels in wells in figure 2-1 or 2-2 shows an apparent upward or downward long-term trend. Water levels in wells 11-42, 11-43, 11-141, 11-162, and 11-237 (fig. 2-1) and in all the wells in figure 2-2 fluctuate from about 3.0 to 5.5 ft seasonally. These wells are in recharge areas that are far from discharge areas (streams, lakes, or wetlands) and, therefore, the water-level changes are primarily a result of seasonal changes in recharge rates. Water levels typically are highest during late winter and spring and lowest during fall. Because evapotranspiration in New Jersey is high during summer and low in the late fall through early spring, whereas precipitation is nearly constant throughout the year, the water table naturally declines from spring to fall because much of the water from precipitation is lost from the soil through evapotranspiration rather than percolating down to the water table. From fall to spring, water levels naturally rise because evapotranspiration is low, allowing the soil water derived from precipitation to percolate down to the water table. In contrast, seasonal water-level fluctuations in the other five wells shown in figure 2-1 (11-63, 11-73, 11-118, 11-119, and 11-188) typically are less than 1 to 2 ft/yr because they are near discharge areas. Water levels in these wells show little seasonal fluctuation because they are controlled largely by the relatively constant water levels in the nearby streams and lakes (discharge areas).

Figure 2-3 shows that water levels are slightly lower in the deep part of the Kirkwood-Cohansey aquifer system than in the shallow part. This indicates that, at least in the vicinity of wells 11-692 and 11-694, flow in the Kirkwood-Cohansey aquifer system has a downward component .

Water-Level Map

The water-table contour map (fig. 2-4) is based on water-level measurements made in 231 wells (table 2-1) and 304 streams (table 2-2) in April and May 1995. Construction details for all the wells shown in table 2-1 are from the Ground Water Site Inventory (GWSI) database, which is maintained by the USGS. Water levels in wells about 150 ft deep or more and in wells drilled through a large thickness of silt or clay were not used in order to avoid water levels that might represent confined or semiconfined conditions. Water levels were measured with respect to land surface at each measuring site; then the elevation of the land surface was used to determine the water-level altitude with respect to sea level. The most accurate measurements are those made in wells. Where measurements were not made, elevations of streams, lakes, and wetlands (which represent the water table at or above land surface) estimated from USGS 7-1/2-minute topographic maps provided supplementary water-table-altitude data.

Under natural conditions, water in unconfined aquifers generally flows from high land areas toward points of discharge in low-lying areas, such as wetlands, rivers, streams, and springs. The overall configuration of the water table tends to be a subdued replica of the land surface. Where a water-table contour crosses a stream channel, it is shaped like a "v." For a gaining stream (a stream with ground water flowing into it along most of its length), the "v" points upstream, indicating that nearby ground water is higher than the water in the stream channel; therefore, ground water is flowing into the stream. The streams in the study area are principally gaining streams whose flow increases with distance downstream.

The water-table map (fig. 2-4) shows the configuration of the water table based on measurements made in April and May 1995 (tables 2-1 and 2-2). Water levels measured in elevated (recharge) areas could be as much as 5 ft lower than is typical because the measurements were made following a winter and spring of below-normal precipitation. Except for local differences, however, it is unlikely that the overall shape and inferred directions of ground-water flow based on a water-level map for this dry period differ substantially from those for a wet or average period. The effect of this dry period on the water levels, particularly in recharge areas, is shown by the hydrographs for wells 15-745, 15-763, 15-764, and 15-810 (fig. 2-2). The water levels during spring 1995, shown at about the middle of the 1995 water year[2] on the hydrographs, are similar to the lowest water levels recorded since these records began in 1988. The lowering of water levels caused by this dry period is less dramatic in wells near discharge areas or at lower elevations (fig. 2-1) than in wells in recharge areas.

The altitude of the water table ranged from sea level in the southern part of the study area to about 140 ft above sea level in the northern part. The slope of the water table in the Cohansey River Basin (western part of the study area) is considerably steeper than that in the Maurice River Basin (eastern part of the study area), in part because the Cohansey River drainage system has cut more deeply into the landscape than the Maurice River drainage system. The shape of the water table that results from local ground-water withdrawals and local variations in the permeability of geologic materials cannot be shown clearly at the 1:100,000 scale of the water-table map (fig. 2-4).

[2] Water year, typically used in hydrologic analyses, is the 12-month period from October 1 through September 30. It is designated by the calendar year in which it ends. In this report, all data are reported for the calendar year indicated unless otherwise noted.

Table 2-1. Well-construction data for, and water levels measured in, wells in unconfined aquifers in the Maurice River study area, New Jersey, February through May 1995

[Well locations shown in fig. 2-4; USGS, U.S. Geological Survey; --, missing data; altitudes of water levels are rounded to the nearest whole number]

USGS well number	Latitude	Longitude	Elevation of land surface (feet above sea level)[1]	Depth of well (feet below land surface)	Screened interval (feet below land surface) Top	Screened interval (feet below land surface) Bottom	Date water level measured	Water level (feet below land surface)	Altitude of water level (feet above sea level)
1- 44	393024	0745809	100	97	--	--	4-17-95	11.92	88
1- 103	392953	0745621	100	54	44	54	4-20-95	12.49	88
1- 1225	392931	0745521	103.33	43	23	43	4-19-95	16.79	87
1- 1226	392934	0745521	111.00	43	23	43	4-19-95	24.57	86
1- 1227	392934	0745518	108.70	41	21	41	4-19-95	21.85	87
1- 1228	392938	0745521	112.95	43	23	43	4-19-95	26.05	87
1- 1229	393039	0745819	113.93	30	20	30	3-22-95	22.45	91
1- 1230	392636	0745255	96	120	110	120	4-19-95	16.42	80
1- 1231	392914	0745404	100	123	113	123	4-19-95	14.79	85
1- 1232	393038	0745815	112.29	29	19	29	3-22-95	20.83	91
1- 1233	393040	0745815	114.35	30	20	30	3-22-95	22.83	92
1- 1234	393117	0745539	113.09	30	15	30	4-11-95	19.10	94
1- 1235	393117	0745542	113.57	30	15	30	4-11-95	19.47	94
1- 1236	393120	0745539	110.27	27	--	--	4-11-95	15.70	95
1- 1237	393127	0745543	106.10	21	--	--	4-11-95	10.62	95
7- 833	394358	0750118	147	67	57	67	4-10-95	15.04	132
11- 5	392446	0751245	48	91	71	91	4-19-95	23.45	25
11- 12	392548	0751813	100	125	85	125	4-13-95	45.32	55
11- 41	392723	0751059	100	127	100	125	4-19-95	27.09	73
11- 42	392732	0750929	81.77	47	42	47	4-04-95	7.32	74
11- 46	392707	0750813	80	83	58	83	4-17-95	16.48	64
[2]11- 63	392152	0752000	8	72	67	72	--	--	--
11- 70	392346	0750810	73	135	95	135	4-20-95	17.57	55
11- 71	392552	0751120	100	75	60	75	4-19-95	41.23	59
11- 73	392508	0751846	37.35	40	35	40	4-12-95	5.09	32
11- 75	392359	0751503	32	112	--	--	4-18-95	15.57	16
11- 83	392837	0751735	95	69	37	69	4-13-95	20.08	75
11- 109	392027	0751411	15	49	29	49	4-27-95	7.75	7
[2]11- 118	391350	0750018	6.22	41	36	41	--	--	--
[2]11- 119	391350	0750018	5.98	135	125	135	--	--	--
[2]11- 141	392219	0750113	22	149	114	149	--	--	--
[2]11- 162	392526	0750643	80	82	77	82	--	--	--
11- 171	392905	0751036	110	90	60	90	4-19-95	22.37	88
11- 178	392952	0751336	95	91	61	91	4-20-95	19.36	76
[2]11- 188	393141	0751601	72.52	40	35	40	--	--	--
11- 193	393242	0751342	140	--	44	48	4-25-95	27.53	112
11- 220	392741	0745649	90	75	15	75	4-18-95	19.14	71
11- 237	392920	0745700	88	81	76	81	5-02-95	9.67	78
11- 247	392946	0750119	95.91	111	91	111	4-27-95	21.53	74
11- 260	392910	0751424	87.9	40	20	40	4-20-95	26.24	62
11- 261	392927	0751431	94.76	40	10	40	4-20-95	27.85	67
11- 266	392446	0751552	100	124	114	124	4-13-95	71.43	29
11- 272	392931	0751333	82.34	30	10	30	4-20-95	9.71	73
11- 283	393141	0751139	107	104	94	104	4-25-95	9.60	97
11- 287	392831	0751820	110	90	40	90	4-12-95	41.15	69
11- 293	392528	0751639	83	140	70	140	4-12-95	34.18	49
11- 314	392425	0751641	82	108	101	107	4-12-95	49.73	32
11- 317	392817	0751429	97	98	87	97	4-17-95	55.13	42
11- 330	392851	0750951	100	82	30	82	4-17-95	12.71	87
11- 332	392830	0751309	100	102	71	102	4-18-95	29.71	70
11- 361	392538	0751434	53	90	75	90	4-19-95	44.59	8
11- 368	392823	0751317	80	102	71	101	4-18-95	11.72	68
11- 692	393104	0751222	119.62	38	33	38	5-03-95	25.76	94
[2]11- 694	393104	0751222	119.95	115	105	110	--	--	--
11- 718	392556	0751956	91	30	--	--	4-12-95	27.00	64
11- 726	392933	0751827	130	120	60	120	4-12-95	46.57	83
11- 728	392950	0751038	109	120	50	120	4-25-95	17.45	92
11- 741	392801	0750726	89.91	35	25	35	5-24-95	23.69	66
11- 742	392802	0750721	98.19	43	33	43	5-24-95	32.74	65
11- 743	392804	0750725	93.08	39	29	39	5-24-95	26.88	66
11- 744	391850	0751031	28	60	53	60	4-27-95	10.92	17
11- 745	392249	0750311	66.79	51	36	51	5-15-95	42.41	24
11- 746	392259	0750331	65.46	44	34	44	5-15-95	38.20	27
11- 747	392302	0750313	67.93	54	39	54	5-15-95	43.63	24
11- 748	392424	0750157	43.45	25	15	25	5-02-95	14.67	29
11- 749	392446	0750145	51.98	28	18	28	5-02-95	16.46	36
11- 750	392732	0750413	52.37	28	8	28	4-10-95	10.40	42
11- 751	392743	0750336	53.32	28	8	28	4-11-95	1.84	51
11- 753	391758	0750233	26.28	42	12	42	4-27-95	10.15	16
11- 754	391802	0750231	35.44	25	5	25	4-27-95	13.75	22
11- 755	391845	0750721	72.98	36	26	36	5-10-95	28.70	44
11- 756	391849	0750722	70.08	32	22	32	5-10-95	25.17	45
11- 757	392210	0750018	20.70	30	20	30	5-09-95	12.82	8
11- 758	392211	0750013	20.80	32	22	32	5-09-95	13.85	7
11- 759	392213	0750017	25.40	30	20	30	5-09-95	17.31	8
11- 760	393226	0750126	108.31	24	14	24	4-13-95	18.19	90
11- 761	392619	0751626	75	80	70	80	4-13-95	24.40	51
11- 762	392848	0751626	104	68	56	61	4-13-95	37.81	66
11- 763	392959	0751734	128	100	--	--	4-11-95	35.43	93
11- 764	393006	0751607	115	85	75	85	4-11-95	54.21	61
11- 765	392101	0751239	40	120	--	--	4-27-95	18.01	22
11- 766	392118	0751140	63	100	90	100	4-28-95	33.49	30
11- 767	392222	0750911	93	85	75	85	4-28-95	39.88	53
11- 768	393112	0750230	78.54	25	10	25	4-13-95	8.28	70
11- 769	391918	0750142	73	85	75	85	4-27-95	51.00	22
11- 770	392416	0745953	53	100	90	100	5-10-95	20.21	33
11- 771	392607	0750048	89	110	60	110	4-26-95	30.48	59
11- 772	392656	0745525	99	95	85	95	4-19-95	28.64	70
11- 774	392628	0751348	46.59	40	30	40	4-10-95	32.74	14
11- 775	392633	0751345	50.39	39	29	39	4-10-95	33.95	16
11- 776	392636	0751354	40.79	37	27	37	4-10-95	30.64	10
11- 777	392420	0751811	43	26	--	--	5-09-95	24.02	19
11- 778	392644	0751722	105	90	80	90	4-13-95	37.31	68
11- 779	392927	0751645	94	102	60	102	4-12-95	19.09	75
11- 780	392221	0750427	66.80	35	15	35	3-23-95	23.18	44
11- 781	392223	0750421	68.65	36	16	36	3-23-95	26.11	43
11- 782	392306	0750333	61.55	51	--	--	5-15-95	34.19	27
11- 783	392431	0750707	102	81	71	81	4-28-95	41.78	60
11- 784	393110	0751510	108	--	--	--	4-11-95	26.55	81
11- 787	392940	0745910	98.72	25	10	25	2-10-95	16.36	82
11- 788	393210	0750229	81.20	156	136	156	4-19-95	7.31	74
11- 789	393215	0750233	85.50	158	128	158	4-19-95	2.63	83
11- 877	392743	0750652	76.43	25	5	25	5-03-95	13.39	63
11- 878	392749	0750540	61	32	22	32	5-02-95	18.70	42
11- 879	393013	0750133	95.00	27	7	27	5-02-95	18.88	76
11- 880	393112	0750034	100.48	22	12	22	4-04-95	15.64	85
11- 881	393129	0750019	106.87	25	15	25	4-04-95	18.03	89
11- 882	393215	0750153	91.71	20	5	20	4-04-95	8.57	83
11- 884	393228	0750328	80	18	3	18	4-19-95	8.30	72
11- 885	393228	0750329	80	18	3	18	4-19-95	8.84	71
11- 890	392609	0750902	88	80	70	80	5-09-95	19.94	68
11- 891	392745	0750537	67	81	71	81	4-26-95	20.64	46
11- 892	391841	0750717	59.31	40	20	40	5-10-95	17.29	42
11- 893	391847	0750717	74.06	42	22	42	5-10-95	29.71	44
11- 894	392241	0751339	24	70	60	70	4-27-95	16.91	7
11- 895	392323	0751516	65	90	80	90	5-09-95	59.95	5
11- 896	392720	0751544	103	100	90	100	5-09-95	61.18	42
11- 897	392753	0751653	112	78	66	77	4-17-95	44.53	67
11- 898	391941	0750929	70	74	64	74	4-28-95	34.42	36
11- 899	391954	0751118	34.39	25	5	25	4-04-95	8.51	26
11- 900	392142	0750706	81	80	70	80	4-28-95	23.79	57
11- 901	392255	0750630	88	95	85	95	4-28-95	32.69	55
11- 902	392515	0750224	51	59	--	--	4-28-95	11.09	40
11- 903	392647	0751857	112	80	70	80	4-17-95	31.91	80
11- 904	392648	0751957	125	125	70	125	4-13-95	53.34	72
11- 905	392728	0751340	78	90	80	90	5-09-95	30.91	47
11- 906	393217	0751531	128	100	30	100	4-11-95	36.34	92
11- 907	392516	0745959	80	100	85	95	4-20-95	33.85	46
11- 909	392657	0750005	83	112	102	112	4-26-95	20.46	63
11- 910	392711	0750120	79	157	117	157	4-26-95	14.22	65
11- 911	392826	0745558	95	85	75	85	4-18-95	16.93	78
11- 912	392938	0750339	77.10	82	62	82	4-19-95	17.96	59
11- 913	392939	0750339	74.80	80	60	80	4-19-95	15.61	59
11- 914	392950	0750118	99.75	113	--	--	4-27-95	23.87	76
11-1157	392316	0750938	72	118	98	118	4-20-95	18.83	53
15- 39	393148	0745822	110	123	75	123	4-04-95	9.60	100
15- 372	393238	0750044	120	154	129	149	4-12-95	19.31	101
15- 734	393523	0745912	138	110	100	110	5-08-95	20.43	118
15- 744	393605	0750250	106.58	35	15	35	4-10-95	10.96	96
15- 745	393608	0750257	124	38	--	--	4-10-95	25.04	99
15- 746	393601	0750257	100.42	25	5	25	4-10-95	6.64	94
15- 747	393600	0750250	101.13	25	5	20	4-10-95	6.12	95
15- 754	393934	0751033	143	58	48	58	4-03-95	13.69	129
15- 763	393525	0750521	109	60	55	60	4-03-95	20.09	89
15- 764	393708	0750143	130	49	44	49	4-04-95	21.12	109
15- 782	393735	0750105	129	42	32	42	4-11-95	12.93	116
15- 792	393928	0750434	120	75	65	75	4-04-95	12.00	108
15- 794	394216	0750034	152	85	75	85	4-12-95	21.82	130
[2]15- 795	394140	0750312	150	100	90	100	--	--	--
[2]15- 796	394238	0750308	160	90	85	90	--	--	--
15- 802	394246	0750151	150	65	60	65	4-10-95	8.60	141
15- 803	393331	0750148	105	95	85	95	4-10-95	15.34	90
15- 804	393428	0750244	110	123	95	123	4-04-95	30.84	79
15- 810	394021	0750827	144	63	53	63	4-03-95	15.85	128
15- 842	393234	0750113	105.78	111	91	111	4-04-95	15.06	91
[2]15-1016	393633	0750630	129	60	50	60	--	--	--
15-1027	393737	0750600	115	24	19	24	4-11-95	14.52	100
15-1032	393214	0745854	125	110	100	110	4-18-95	20.81	104
15-1033	394354	0750259	150	54	44	54	4-12-95	16.75	133
15-1051	394314	0750145	152.17	27	22	27	4-03-95	14.88	137
15-1056	394221	0750722	153.90	84	79	84	4-19-95	22.36	132
15-1057	394242	0750330	155.89	27	22	27	4-03-95	17.71	138
15-1127	393836	0750532	124.23	30	10	30	4-11-95	14.97	109
15-1128	393837	0750534	127.23	28	8	28	4-11-95	18.42	109
15-1129	393839	0750530	129.54	32	12	32	4-11-95	20.13	109
15-1130	393941	0750302	118	7	2	7	4-11-95	1.71	116
15-1131	393601	0750430	99.29	22	12	22	4-19-95	13.15	86
15-1132	393632	0750342	104.15	28	8	28	4-10-95	10.78	93
15-1133	393635	0750346	104.82	27	7	27	4-10-95	11.23	94
15-1134	393703	0750124	125.66	28	8	28	4-11-95	13.44	112
15-1135	393709	0750122	131.12	30	10	30	4-11-95	17.72	113
15-1136	394150	0750716	146.73	12	2	12	4-19-95	4.73	142
15-1137	393825	0750656	129	85	75	85	5-08-95	15.99	113
15-1138	393854	0750831	143	76	68	73	5-08-95	14.33	129
15-1139	393859	0750738	130	65	55	65	4-13-95	7.88	122
15-1140	393426	0750223	112	25	10	25	4-19-95	18.71	93
15-1141	393458	0750027	125	110	100	110	5-08-95	10.69	114
15-1142	393831	0750127	132	65	53	60	5-08-95	15.49	117
15-1144	393154	0745925	105	100	90	100	4-18-95	7.67	97
15-1145	393953	0750552	132.84	19	4	19	5-16-95	9.93	123
15-1146	393959	0750552	136.43	19	4	19	5-16-95	12.21	124
15-1147	394036	0750626	142	80	70	80	5-08-95	13.5	129
15-1148	393215	0745744	119	28	--	--	4-17-95	18.18	101
15-1149	393217	0745754	120	25	--	--	4-17-95	18.13	102
15-1150	393221	0745744	120	27	--	--	4-17-95	20.55	99
15-1151	393249	0745932	115	120	60	120	4-18-95	10.13	105
15-1152	393412	0750023	112	100	95	100	4-12-95	9.74	102
15-1154	393449	0750307	95.20	25	5	25	4-12-95	7.89	87
15-1155	393635	0750416	112	100	90	100	4-12-95	21.05	91
15-1156	394148	0750725	143.82	13	3	13	4-19-95	4.72	139
15-1157	394154	0750721	146.08	13	3	13	4-19-95	6.26	140
15-1158	394232	0750450	145.00	82	72	82	4-12-95	23.37	122
15-1175	393233	0750106	105.93	27	12	27	4-04-95	14.73	91
15-1225	393215	0750018	135	55	35	55	4-13-95	41.29	94
15-1226	393448	0750304	93	25	5	20	4-12-95	5.51	87
15-1227	393805	0750343	117	100	90	100	4-13-95	15.19	102
15-1228	394124	0750310	147	62	52	57	4-11-95	15.66	131
15-1229	394321	0750206	152	86	71	86	4-12-95	14.07	138
15-1366	394233	0750500	145	92	52	92	4-12-95	25.55	119
33- 7	393325	0751447	120	80	20	80	4-24-95	10.63	109
33- 223	393236	0751230	120	94	54	94	4-24-95	17.70	102
33- 262	393420	0751345	132	93	63	93	4-24-95	14.45	118
33- 278	393604	0751324	143	72	36	72	4-24-95	13.92	129
33- 293	393829	0751227	161	80	19	80	4-12-95	26.14	135
33- 673	393408	0751423	144	52	42	52	4-24-95	24.10	120
33- 674	393514	0751253	145	80	70	80	4-24-95	19.35	126
33- 677	393840	0751212	163.80	40	20	40	4-04-95	27.81	136
33- 680	393850	0751328	144.35	32	27	32	4-03-95	16.51	128
33- 704	393207	0751844	96.90	22	--	--	4-10-95	14.16	83
33- 705	393213	0751848	118.40	52	42	52	4-10-95	34.85	84
33- 738	393841	0751220	139.90	16	1	16	4-12-95	6.73	133
33- 768	393206	0751848	93.34	22	12	22	4-10-95	11.35	82
33- 769	393206	0751851	92.60	20	10	20	4-10-95	11.63	81
33- 770	393222	0750917	100.59	30	15	30	4-18-95	14.02	87
33- 771	393222	0750913	89.92	13	3	13	4-18-95	2.02	88
33- 772	392925	0750522	80	115	105	115	4-26-95	22.87	57
33- 773	392948	0750829	105	150	140	150	5-09-95	20.94	84
33- 774	393206	0750549	97	60	50	60	4-18-95	9.51	87
33- 775	393207	0750733	115	75	65	75	4-26-95	28.39	87
33- 776	393318	0751043	108	88	78	88	4-25-95	12.42	96
33- 778	393654	0751351	137	55	44	49	5-09-95	11.69	125
33- 779	393708	0750809	138	55	45	55	4-26-95	20.70	117
33- 800	393156	0751735	123	29	--	--	4-10-95	27.35	96
33- 801	393317	0751551	120	--	--	--	4-11-95	34.60	85
33- 802	393337	0751646	115	25	--	--	4-10-95	23.57	91
33- 803	393409	0751632	132	42	--	--	4-10-95	40.77	91
33- 804	393625	0751034	115	--	--	--	4-17-95	8.00	107
33- 805	393718	0751054	130	42	37	42	4-27-95	11.46	119
33- 808	393526	0751048	124.23	23	8	23	4-03-95	11.27	113
33- 809	393152	0750934	88.10	25	5	25	5-03-95	8.28	80
33- 810	393152	0750949	105.95	39	19	39	5-03-95	25.87	80
33- 811	393153	0750948	104.81	39	19	39	5-03-95	24.47	80
33- 812	393519	0750723	118.02	24	14	24	4-18-95	8.98	109
33- 813	393524	0751113	142.18	35	20	35	4-03-95	25.97	116
33- 823	393843	0751211	160	39	19	39	4-04-95	24.05	136
33- 824	393131	0751713	119	98	--	--	4-11-95	26.20	93
33- 825	393112	0750550	100	95	85	95	4-19-95	32.03	68
33- 826	393318	0750457	108	118	105	115	4-13-95	28.13	80
33- 827	393423	0751022	122	80	70	80	4-26-95	21.88	100
33- 828	393546	0750812	126	97	87	97	4-27-95	11.34	115
33- 829	393803	0751125	145	65	55	65	5-08-95	14.49	131

[1]Values of elevation of land surface listed as whole numbers were determined by visual inspection of a 1:24,000 topographic map or by altimeter. Values listed to the tenth or hundredth place were determined from level measurements.
[2]This well used only for the water-level hydrograph shown in figure 2-1, 2-2, or 2-3.

Table 2-2. Altitudes of water levels measured at stream sites in the Maurice River study area, New Jersey, May 1995

[Altitudes of water levels are rounded to the nearest whole number. Site locations are shown in fig. 2-4]

Site number	Latitude	Longitude	Date measured	Altitude of water level (feet above sea level)	Site number	Latitude	Longitude	Date measured	Altitude of water level (feet above sea level)	Site number	Latitude	Longitude	Date measured	Altitude of water level (feet above sea level)
STM1	394146	0750756	5-08-95	135	STM131	393642	0750757	5-15-95	dry	STM308	392621	0751044	5-22-95	64
STM2	394131	0750855	5-08-95	137	STM132	393607	0750810	5-15-95	123	STM317	392354	0750930	5-22-95	dry
STM3	394039	0750827	5-08-95	129	STM133	393508	0750833	5-15-95	116	STM318	392410	0751004	5-22-95	55
STM4	394112	0750734	5-08-95	129	STM134	393437	0750843	5-15-95	110	STM320	392553	0750746	5-22-95	62
STM5	393953	0750802	5-08-95	124	STM135	393425	0750851	5-15-95	dry	STM323	392738	0750951	5-22-95	77
STM6	393918	0750743	5-08-95	124	STM136	393315	0750912	5-15-95	dry	STM324	392725	0751018	5-22-95	78
STM7	393934	0750844	5-08-95	135	STM137	393300	0750729	5-15-95	dry	STM326	392919	0750809	5-22-95	75
STM8	393954	0750836	5-08-95	128	STM138	393302	0750646	5-15-95	dry	STM327	392916	0750641	5-22-95	53
STM9	393928	0751002	5-08-95	131	STM139	393251	0750639	5-15-95	96	STM328	392946	0750628	5-22-95	dry
STM10	393935	0751104	5-08-95	dry	STM140	393236	0750636	5-15-95	91	STM329	392941	0750615	5-22-95	dry
STM11	393906	0751132	5-08-95	dry	STM141	393130	0750712	5-15-95	87	STM330	392921	0750548	5-22-95	dry
STM12	393914	0751030	5-08-95	130	STM144	393201	0750530	5-15-95	80	STM331	392944	0750436	5-22-95	44
STM13	393839	0751033	5-08-95	130	STM147	393328	0750528	5-15-95	89	STM332	392919	0750310	5-22-95	65
STM14	393758	0751047	5-08-95	dry	STM148	393359	0750620	5-15-95	dry	STM335	392825	0750021	5-22-95	dry
STM15	393812	0751121	5-08-95	136	STM149	393454	0750526	5-15-95	90	STM336	392814	0750018	5-22-95	dry
STM16	393756	0751210	5-08-95	134	STM151	393557	0750705	5-15-95	109	STM337	392755	0750107	5-22-95	68
STM17	393731	0751148	5-08-95	122	STM155	393700	0750447	5-15-95	95	STM338	392833	0750151	5-22-95	dry
STM18	393746	0751051	5-08-95	120	STM156	393632	0750525	5-15-95	92	STM339	392826	0750210	5-22-95	dry
STM19	393738	0750739	5-08-95	110	STM158	393541	0750455	5-15-95	81	STM340	392809	0750242	5-22-95	61
STM20	393732	0750646	5-08-95	102	STM161	393701	0750104	5-15-95	116	STM345	392839	0750531	5-22-95	dry
STM22	393943	0750717	5-08-95	113	STM162	393626	0750058	5-15-95	105	STM346	392812	0750535	5-22-95	42
STM23	394008	0750657	5-08-95	123	STM163	393540	0750056	5-15-95	110	STM347	392617	0750629	5-22-95	53
STM24	394117	0750656	5-08-95	dry	STM164	393537	0750045	5-15-95	dry	STM350	392333	0750607	5-22-95	54
STM25	394121	0750635	5-08-95	140	STM165	393620	0750016	5-15-95	dry	STM356	392414	0750114	5-23-95	dry
STM26	394110	0750600	5-08-95	132	STM166	393535	0750033	5-15-95	dry	STM357	392426	0750135	5-23-95	40
STM27	394043	0750552	5-08-95	dry	STM167	393442	0750145	5-16-95	99	STM360	392458	0745838	5-23-95	41
STM29	394048	0750524	5-08-95	119	STM170	393422	0750331	5-16-95	77	STM362	392508	0745758	5-23-95	40
STM30	394043	0750411	5-08-95	120	STM171	393401	0750321	5-16-95	82	STM363	392613	0745652	5-23-95	66
STM31	393933	0750404	5-08-95	108	STM172	393411	0750254	5-16-95	89	STM365	392652	0745821	5-23-95	dry
STM32	393916	0750426	5-08-95	109	STM173	393401	0750047	5-16-95	100	STM366	392636	0745800	5-23-95	60
STM33	393904	0750407	5-08-95	101	STM175	393323	0750057	5-16-95	95	STM367	392624	0745840	5-23-95	dry
STM34	393825	0750429	5-08-95	105	STM180	393222	0750123	5-16-95	92	STM368	392621	0745822	5-23-95	64
STM35	393913	0750610	5-08-95	115	STM183	393154	0750242	5-16-95	74	STM369	392747	0745823	5-23-95	72
STM36	393909	0750635	5-08-95	106	STM187	393117	0750125	5-16-95	80	STM371	392727	0745646	5-23-95	dry
STM37	393858	0750631	5-08-95	117	STM188	393112	0750054	5-16-95	84	STM372	392713	0745710	5-23-95	59
STM39	393805	0750421	5-08-95	98	STM189	393053	0750053	5-16-95	82	STM374	392813	0745538	5-23-95	81
STM40	393804	0750322	5-08-95	101	STM190	393034	0750115	5-16-95	80	STM376	392754	0745605	5-23-95	76
STM41	393804	0750225	5-08-95	dry	STM191	393024	0750056	5-16-95	dry	STM378	392913	0745535	5-23-95	86
STM42	393836	0750224	5-08-95	123	STM192	393020	0750021	5-16-95	dry	STM379	392912	0745556	5-23-95	86
STM43	393842	0750310	5-08-95	103	STM193	393527	0750337	5-16-95	86	STM382	392908	0745845	5-23-95	81
STM44	393921	0750304	5-09-95	110	STM195	393108	0745924	5-16-95	88	STM386	392927	0745822	5-23-95	81
STM46	394146	0750334	5-09-95	138	STM196	393119	0745953	5-16-95	90	STM388	392925	0745735	5-23-95	81
STM47	394201	0750506	5-09-95	134	STM197	393144	0745936	5-16-95	dry	STM389	392923	0745701	5-23-95	84
STM48	394139	0750452	5-09-95	dry	STM198	393155	0745934	5-16-95	dry	STM390	392909	0745719	5-23-95	78
STM50	394227	0750400	5-09-95	dry	STM199	393143	0745732	5-16-95	103	STM392	392950	0745530	5-23-95	87
STM51	394235	0750401	5-09-95	dry	STM200	393122	0745752	5-16-95	dry	STM397	392741	0745301	5-23-95	86
STM52	394245	0750225	5-09-95	136	STM201	393006	0745831	5-16-95	90	STM398	392720	0745253	5-23-95	83
STM53	394305	0750220	5-09-95	dry	STM202	393018	0745737	5-16-95	89	STM399	392702	0745327	5-23-95	70
STM54	394125	0750121	5-09-95	dry	STM203	393017	0745725	5-16-95	89	STM404	392545	0745501	5-23-95	58
STM55	394135	0750228	5-09-95	125	STM204	393011	0745548	5-16-95	90	STM405	392541	0745530	5-23-95	69
STM56	393332	0751523	5-09-95	102	STM205	393028	0745606	5-16-95	dry	STM406	392519	0745509	5-23-95	68
STM57	393248	0751549	5-09-95	84	STM206	393043	0745611	5-16-95	dry	STM408	392547	0745309	5-23-95	73
STM59	393155	0751535	5-09-95	81	STM207	392913	0751501	5-16-95	dry	STM410	392729	0745225	5-23-95	dry
STM63	393050	0751508	5-09-95	dry	STM208	392914	0751515	5-16-95	43	STM411	392459	0745254	5-23-95	dry
STM66	393021	0751615	5-09-95	67	STM212	392950	0751615	5-16-95	dry	STM415	392420	0745610	5-23-95	54
STM67	393042	0751735	5-09-95	dry	STM213	392959	0751722	5-16-95	dry	STM417	392404	0745616	5-23-95	51
STM68	393054	0751719	5-09-95	93	STM214	392926	0751755	5-16-95	dry	STM418	392300	0745640	5-23-95	33
STM70	393136	0751737	5-09-95	dry	STM215	392916	0751730	5-16-95	89	STM421	392146	0751151	5-24-95	dry
STM72	393232	0751728	5-09-95	93	STM218	392922	0751639	5-16-95	70	STM422	392227	0751202	5-24-95	dry
STM74	393347	0751447	5-09-95	119	STM221	392841	0751700	5-16-95	dry	STM423	392107	0751305	5-24-95	21
STM75	393348	0751424	5-09-95	dry	STM222	392836	0751719	5-16-95	dry	STM425	392050	0751118	5-24-95	dry
STM76	393237	0751451	5-09-95	102	STM223	392833	0751734	5-16-95	dry	STM426	392031	0751057	5-24-95	27
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STM78	393056	0751350	5-09-95	96	STM227	392821	0751626	5-16-95	60	STM428	391948	0751013	5-24-95	32
STM83	393024	0751325	5-09-95	82	STM229	392846	0751520	5-16-95	dry	STM429	391935	0750916	5-24-95	dry
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STM86	393108	0751001	5-09-95	dry	STM231	392821	0751530	5-16-95	30	STM432	392100	0750859	5-24-95	dry
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STM88	393005	0750850	5-09-95	76	STM242	392621	0751749	5-16-95	76	STM435	392139	0750928	5-24-95	dry
STM89	393022	0750826	5-09-95	dry	STM243	392659	0751757	5-16-95	80	STM436	392152	0750909	5-24-95	dry
STM91	393103	0750844	5-09-95	dry	STM244	392717	0751733	5-16-95	dry	STM437	392152	0750617	5-24-95	dry
STM92	393030	0750738	5-09-95	68	STM248	392622	0751636	5-16-95	dry	STM438	392145	0750451	5-24-95	dry
STM93	393125	0750930	5-09-95	72	STM250	392658	0751658	5-16-95	dry	STM439	392051	0750347	5-24-95	31
STM94	393127	0751015	5-09-95	83	STM251	392734	0751617	5-16-95	dry	STM440	392015	0750306	5-24-95	22
STM96	393200	0751118	5-15-95	85	STM252	392730	0751510	5-16-95	37	STM442	391951	0750431	5-24-95	42
STM97	393208	0751104	5-15-95	78	STM253	392719	0751524	5-16-95	dry	STM446	391854	0750656	5-24-95	dry
STM98	393149	0751225	5-15-95	dry	STM258	392553	0751538	5-16-95	dry	STM447	391819	0750642	5-24-95	36
STM99	393257	0751159	5-15-95	95	STM259	392531	0751636	5-16-95	dry	STM448	391824	0750547	5-24-95	34
STM100	393259	0751235	5-15-95	104	STM268	392448	0751746	5-17-95	dry	STM451	391820	0750214	5-24-95	25
STM101	393313	0751227	5-15-95	99	STM270	392459	0751834	5-17-95	32	STM452	392122	0750221	5-24-95	dry
STM102	393346	0751227	5-15-95	104	STM271	392452	0752008	5-17-95	29	STM453	392205	0750228	5-24-95	dry
STM103	393443	0751212	5-15-95	107	STM272	392516	0752034	5-17-95	dry	STM454	392227	0750231	5-24-95	dry
STM104	393428	0751312	5-15-95	119	STM273	392444	0752114	5-17-95	20	STM455	392218	0750243	5-24-95	dry
STM105	393446	0751320	5-15-95	124	STM274	392438	0752125	5-17-95	14	STM460	391704	0745709	5-23-95	dry
STM106	393518	0751235	5-15-95	116	STM275	392421	0752142	5-17-95	14	STM461	391641	9745650	5-23-95	dry
STM107	393646	0751309	5-15-95	130	STM277	392426	0751815	5-17-95	dry	STM467	391845	0745644	5-23-95	23
STM108	393716	0751246	5-15-95	121	STM279	392400	0751716	5-17-95	dry	STM469	392045	0745455	5-23-95	dry
STM110	393645	0751209	5-15-95	118	STM280	392358	0751700	5-17-95	dry	STM470	392020	0745324	5-23-95	47
STM112	393552	0751048	5-15-95	111	STM281	392344	0751636	5-17-95	14	STM471	392201	0745509	5-23-95	51
STM114	393519	0750954	5-15-95	97	STM283	392408	0751525	5-17-95	dry	STM472	392224	0745435	5-23-95	dry
STM116	393444	0751003	5-15-95	dry	STM287	392450	0751442	5-17-95		STM473	392111	0745706	5-23-95	23
STM117	393421	0751109	5-15-95	101	STM288	392350	0751452	5-17-95		STM474	392145	0745647	5-23-95	25
STM119	393316	0750737	5-15-95	dry	STM289	392600	0751449	5-17-95	dry	STM475	392224	0745645	5-23-95	25
STM120	393229	0751008	5-15-95	83	STM290	392645	0751447	5-17-95	17	STM476	393407	0751611	5-09-95	93
STM121	393221	0750908	5-15-95	87	STM291	392647	0751341	5-17-95	dry	STM477	392830	0751709	5-16-95	76
STM122	393256	0750827	5-15-95	105	STM292	392731	0751346	5-17-95	20	STM478	392703	0751844	5-16-95	dry
STM123	393309	0750922	5-15-95	99	STM295	392817	0751456	5-17-95	33	STM479	392818	0751456	5-17-95	52
STM125	393512	0750937	5-15-95	103	STM296	392836	0751343	5-17-95	dry	STM480	392411	0750125	5-23-95	34
STM127	393725	0751013	5-15-95	119	STM297	392854	0751395	5-17-95	dry	STM481	392109	0751355	5-24-95	10
STM128	393718	0750918	5-15-95	126	STM298	392929	0751308	5-22-95	dry	STM482	392100	0751037	5-24-95	34
STM129	393700	0750849	5-15-95	120	STM299	392934	0751331	5-22-95	78					
STM130	393636	0750832	5-15-95	125	STM304	392644	0751244	5-22-95	dry					

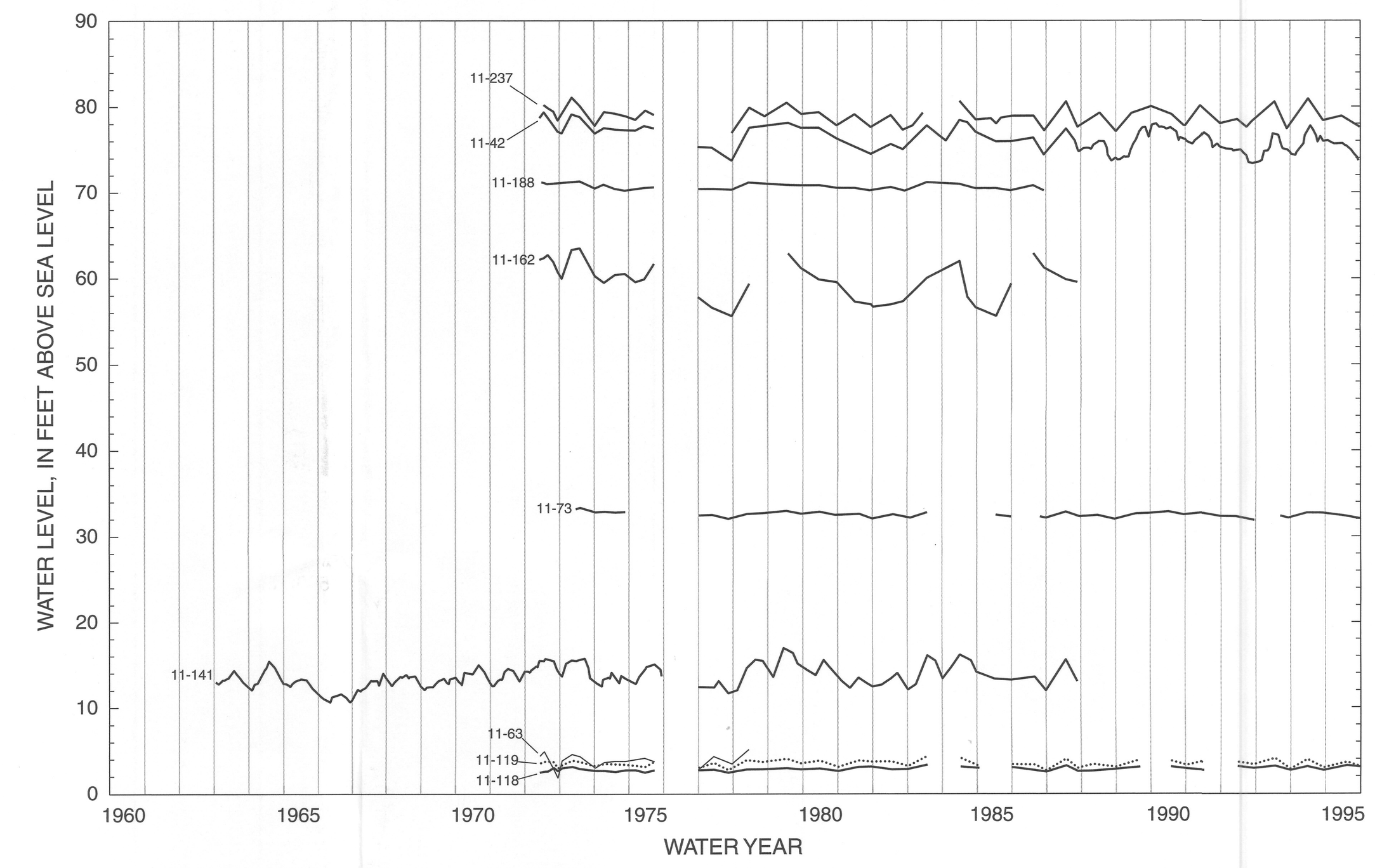


Figure 2-1. Water levels in selected wells, Maurice River study area, New Jersey, October 1962 through September 1995. (Well locations are shown in fig. 2-4 and well-construction data in table 2-1. Water levels are periodic manual measurements. Breaks in lines indicate a data gap of more than 10 months.)

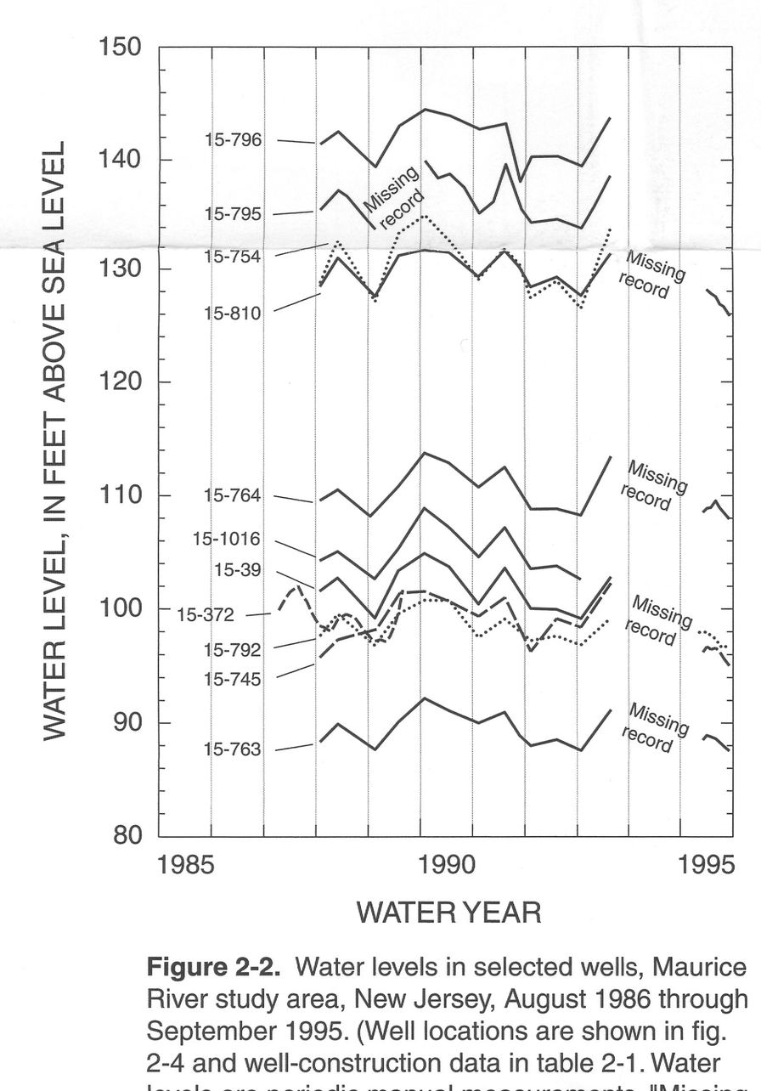


Figure 2-2. Water levels in selected wells, Maurice River study area, August 1986 through September 1995. (Well locations are shown in fig. 2-4 and well-construction data in table 2-1. Water levels are periodic manual measurements. "Missing record" indicates a data gap of more than 10 months.)

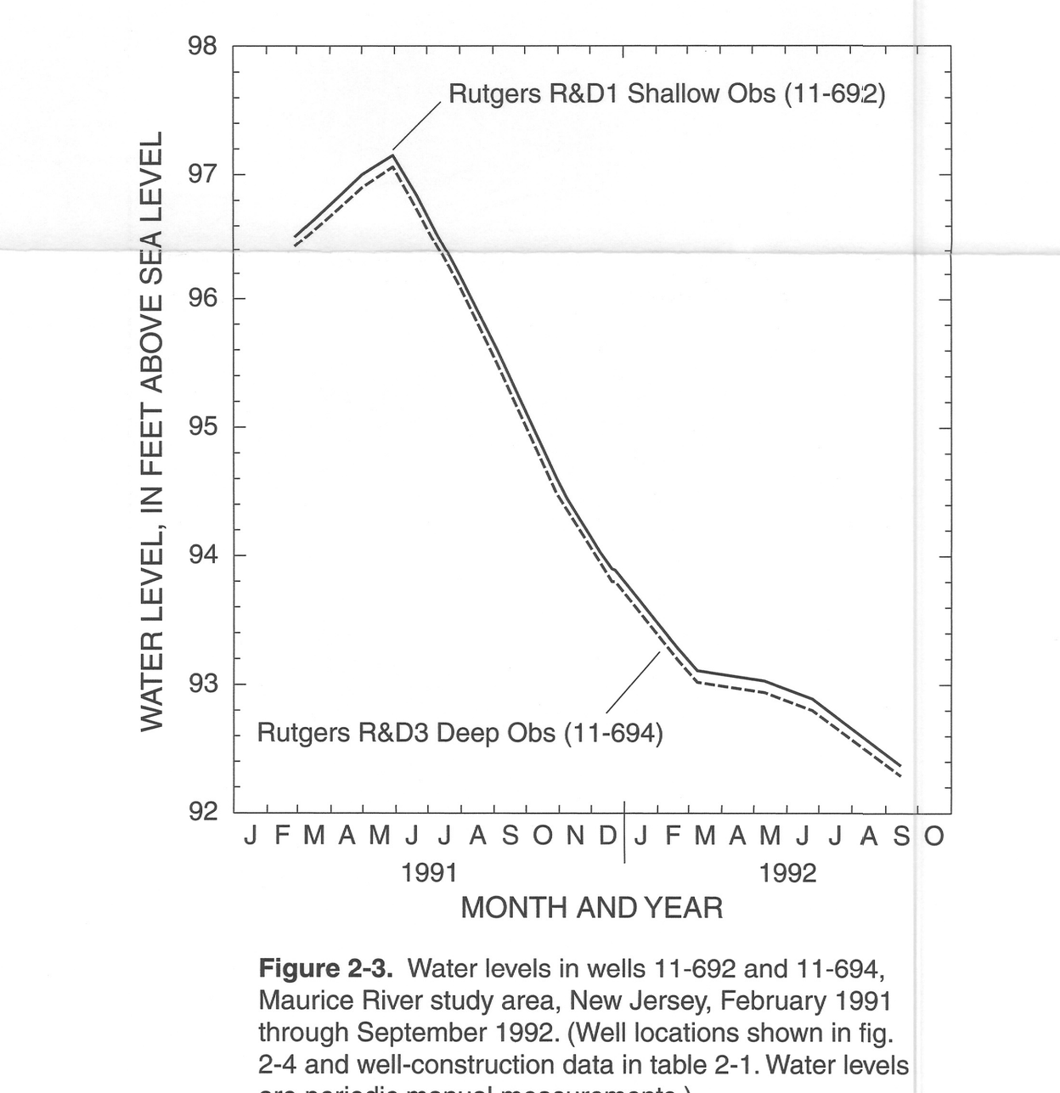
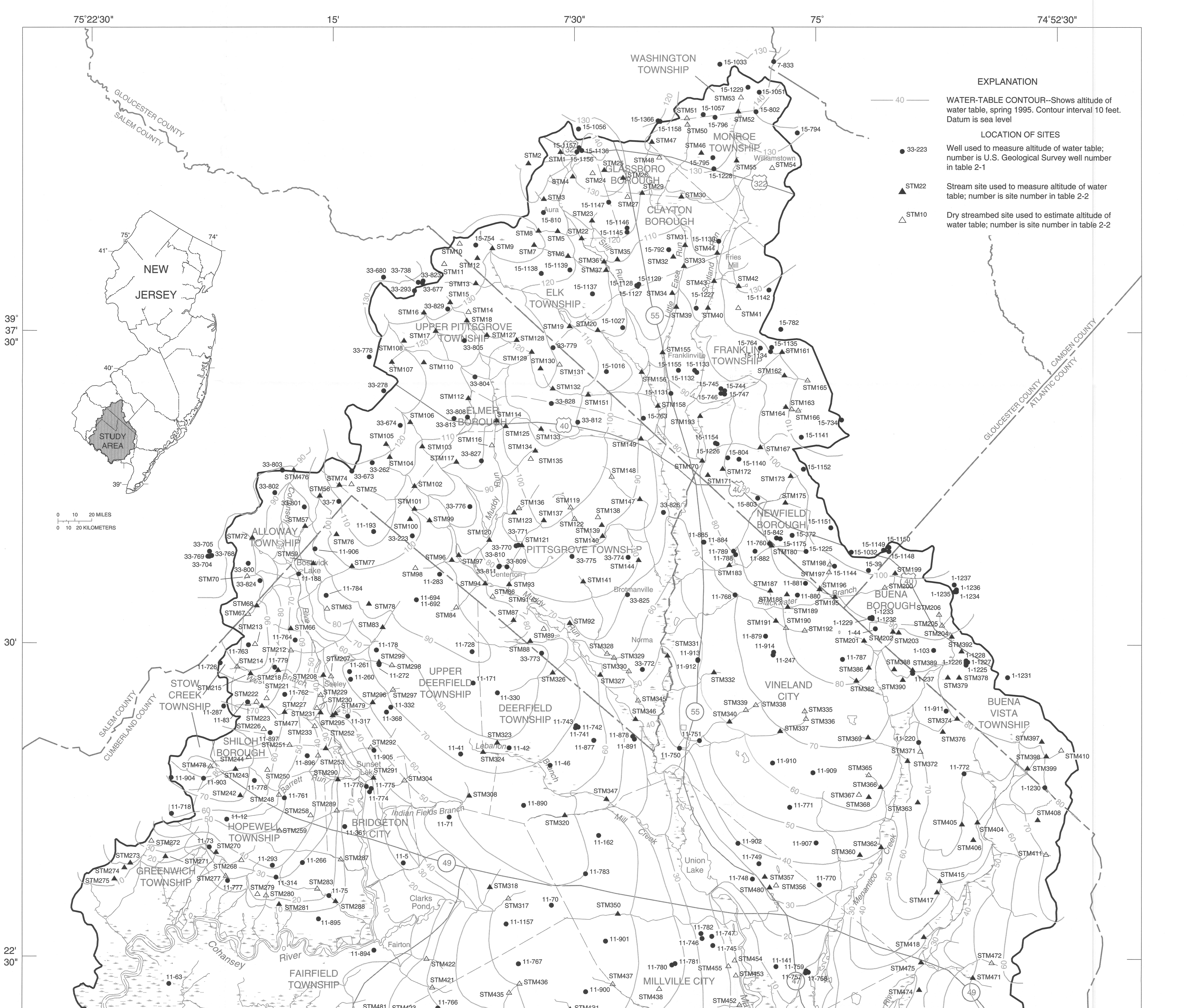


Figure 2-3. Water levels in wells 11-692 and 11-694, Maurice River study area, New Jersey, February 1991 through September 1992. (Well locations are shown in fig. 2-4 and well-construction data in table 2-1. Water levels are periodic manual measurements.)



Base from U.S. Geological Survey, 1:24,000, quadrangles, Penns Grove, 1967; Woodstown, 1967; Pitman West, 1967; Pitman East, 1966; Williamstown, 1966; Hammonton, 1966; Salem, 1948(PR1970); Alloway, 1955(PR1970); Elmer, 1953(PR1972); Newfield, 1953(PR1972); Buena, 1953(PR1970); Newtonville, 1953(PR1972); Canton, 1948(PR1972); Shiloh, 1947(PR1972); Bridgeton, 1953(PR1972); Millville, 1953(PR1972); Five Points, 1956(PR1972); Dorothy, 1956(PR1972); Bombay Hook, 1956(PR1972); Ben Davis Point, 1956(PR1972); Cedarville, 1956(PR1972); Dividing Creek, 1956(PR1972); Port Elizabeth, 1956(PR1972); Tuckahoe, 1956(PR1972); Fortescue, 1956(PR1972); Port Norris, 1956(PR1972); Heislerville, 1957(PR1972); Woodbine, 1956(PR1972). PR - Photo Revision

Figure 2-4. Map of the Maurice River study area, New Jersey, showing well and stream-site locations and the altitude of the water table in the unconfined aquifer system, spring 1995.

HYDROLOGY OF THE UNCONFINED AQUIFER SYSTEM, MAURICE RIVER AREA: MAURICE AND COHANSEY RIVER BASINS, NEW JERSEY, 1994-95

by
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