

**Table B.16 Classification of Irrigation Water Based on Sar and Conductivity
(Groundwater Quality Survey(2)) (1/2)**

No	River basin / Valley	Sampling well	Geologic time	Geology of aquifer	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	SAR = Na/SQRT((Ca+Mg)/2)	(Ca+Mg) (epm)	(pK _s +pK _c)	p(Ca+Mg)	Bicarbonate(HCO ₃)	Carbonate (CO ₃)	Bicarbonate(HCO ₃)	Carbonate (CO ₃)	(CO ₃ +HCO ₃)	p(Alk)	Adjusted SAR	Electrical Conductivity	Classification of irrigation water
					(mg/l)	(mg/l)	(mg/l)	(epm)	(epm)	(epm)	(epm)				(mg/l)	(mg/l)	(epm)	(epm)	(epm)			(μS/cm)	
A1	Polog	Well Gas station - Tetovo	Alluvial	Gravels & sands	8.90	48.80	17.80	0.387	2.435	1.463	0.277	3.898	2.20	2.80	213.50	9.00	3.501	0.300	3.801	2.42	0.55	374.10	C1-S1
A2		Well Milefino	Alluvial	Gravels & sands	34.10	11.50	14.30	1.483	0.574	1.175	1.586	1.749	2.20	3.00	390.40	0.00	6.403	0.000	6.403	2.18	3.20	781.20	C3-S1
A3		Well Fershpod - Tetovo	Alluvial	Gravels & sands	11.80	69.90	16.30	0.513	3.488	1.340	0.330	4.828	2.20	2.60	115.90	43.00	1.901	1.432	3.333	2.47	0.70	457.90	C2-S1
A4		Drillhole Raotince	Neogene	Gravels & sands	18.00	155.00	23.00	0.783	7.735	1.891	0.357	9.625	2.30	2.30	585.60	0.00	9.604	0.000	9.604	2.02	0.99	965.80	C3-S1
A5		Drillhole Jegunovce	Alluvial	Gravels & sands	26.60	32.20	12.10	1.157	1.607	0.995	1.015	2.601	2.10	3.30	176.90	0.00	2.901	0.000	2.901	2.51	1.51	320.20	C2-S1
A6		Drillhole OHIS - Gostivar	Alluvial	Gravels & sands	20.30	52.90	9.70	0.883	2.640	0.797	0.674	3.437	2.20	2.75	79.30	24.00	1.301	0.799	2.100	2.69	1.19	357.60	C2-S1
A7	Debar	Well Piskupshina	Alluvial	Gravels & sands	11.80	65.10	13.20	0.513	3.248	1.085	0.349	4.334	2.20	2.65	146.40	36.00	2.401	1.199	3.600	2.44	0.74	437.00	C2-S1
A8	Treska	Well Kichevo - Ohrid	Pliocene	Gravels & sands	29.10	17.02	4.84	1.266	0.849	0.398	1.603	1.247	2.10	3.20	73.20	0.00	1.200	0.000	1.200	2.90	1.92	189.40	C1-S1
A9	Ohrid - Struga	Well Sveti Naum	Triassic	Limestone	9.80	42.60	13.10	0.426	2.126	1.077	0.337	3.203	2.20	2.78	48.80	42.00	0.800	1.399	2.199	2.68	0.59	311.10	C2-S1
A10		Well Bratstvo - Ohrid	Quaternary	Sand	18.00	96.20	7.92	0.783	4.800	0.651	0.474	5.451	2.20	2.55	146.40	48.00	2.401	1.598	3.999	2.40	1.07	573.40	C2-S1
A11		Artesian drillhole Struga	Quaternary	Sand	24.90	45.90	16.70	1.083	2.290	1.373	0.800	3.663	2.20	2.85	67.10	48.00	1.100	1.598	2.699	2.56	1.43	324.90	C2-S1
A12	Prespa	Well Asamati	Pliocene	Sands & gravels	31.00	32.60	9.90	1.349	1.627	0.814	1.221	2.441	2.20	2.90	103.70	0.00	1.701	0.000	1.701	2.76	1.88	301.20	C2-S1
A13		Well Carev Dvor	Alluvial	Sands & gravels	26.80	38.90	13.60	1.166	1.941	1.118	0.943	3.059	2.20	2.80	158.60	0.00	2.601	0.000	2.601	2.58	1.72	329.40	C2-S1
A14		Well Krushje	Triassic	Limestone	26.70	35.20	6.60	1.161	1.756	0.543	1.083	2.299	2.20	2.97	140.30	0.00	2.301	0.000	2.301	2.64	1.72	286.70	C2-S1
A15	Pelagonija	Well Sopotnica	Alluvial	Gravels & sands	24.90	43.70	26.80	1.083	2.181	2.203	0.732	4.384	2.20	2.66	152.50	36.00	2.501	1.199	3.700	2.43	1.54	469.30	C2-S1
A16		Well Buchin	Pliocene	Gravels & sands	25.80	17.80	2.64	1.122	0.888	0.217	1.510	1.105	2.10	3.30	48.80	0.00	0.800	0.000	0.800	3.08	1.39	476.60	C2-S1
A17		Drillhole Krusheani	Pliocene	Gravels & sands	64.60	38.50	41.58	2.810	1.921	3.418	1.720	5.339	2.20	2.57	329.40	102.00	5.402	3.397	8.799	2.06	4.42	620.00	C2-S1
A18		Well Pivara Prilep	Pliocene	Gravels & sands	58.20	77.10	33.90	2.532	3.847	2.787	1.390	6.634	2.20	2.47	341.60	0.00	5.602	0.000	5.602	2.24	3.46	907.10	C3-S1
A19		Well Aglarci	Alluvial	Gravels & sands	52.90	42.60	41.80	2.301	2.126	3.436	1.380	5.562	2.20	2.55	305.00	0.00	5.002	0.000	5.002	2.30	3.24	627.70	C2-S1
A20		Well Kvasara Bitola	Alluvial	Gravels & sands	37.70	45.90	21.30	1.640	2.290	1.751	1.154	4.041	2.20	2.70	231.80	0.00	3.802	0.000	3.802	2.42	2.40	476.60	C2-S1
A21		Artesian drillhole Egri	Pliocene	Sands & gravels	73.30	370.00	4.40	3.189	18.463	0.362	1.039	18.825	2.40	2.00	1342.00	0.00	22.009	0.000	22.009	1.66	3.47	2229.00	C3-S1
A22	Skopje	Drillhole Bardovci	Alluvial	Gravels & sands	64.00	88.16	15.18	2.784	4.399	1.248	1.657	5.647	2.20	2.54	244.00	36.00	4.002	1.199	5.200	2.28	3.94	656.80	C2-S1
A23		Drillhole Volkovo	Pleistocene	Sands & gravels	12.60	59.66	13.34	0.548	2.977	1.097	0.384	4.074	2.20	2.70	152.50	42.00	2.501	1.399	3.900	2.41	0.80	520.30	C2-S1
A24		Drillhole Saraj	Alluvial	Gravels & sands	55.20	79.20	62.92	2.401	3.952	5.172	1.124	9.124	2.30	2.30	329.40	84.00	5.402	2.797	8.199	2.09	3.05	1381.00	C3-S1
A25		Well Pobožje	Proluvial	Gravels & sands	43.10	68.40	17.25	1.875	3.413	1.418	1.206	4.831	2.20	2.60	451.40	18.00	7.403	0.599	8.002	2.10	3.02	810.10	C3-S1
A26		Well Kozara	Alluvial	Gravels & sands	84.30	44.84	33.30	3.667	2.238	2.737	2.325	4.975	2.20	2.60	317.20	12.00	5.202	0.400	5.602	2.24	5.49	702.20	C3-S1
B1G		Well Zelenikovo	Alluvial	Gravels & sands	77.70	45.60	49.50	3.380	2.275	4.069	1.898	6.344	2.20	2.49	231.80	48.00	3.802	1.598	5.400	2.26	4.65	679.40	C2-S1
B2G		Well Makedonija Pat Petrovo	Neogene	Sands & gravels	45.00	164.65	43.56	1.958	8.216	3.581	0.806	11.797	2.30	2.20	420.90	36.00	6.903	1.199	8.102	2.10	2.26	1714.00	C3-S1

Table B.16 Classification of Irrigation Water Based on Sar and Conductivity (Groundwater Quality Survey(2)) (2/2)

No	River basin / Valley	Sampling well	Geologic time	Geology of aquifer	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	SAR = Na/SQRT((Ca+Mg)/2)	(Ca+Mg)	(pK ₁ -pK ₂)	p(Ca+Mg)	Bicarbonate(HCO ₃)	Carbonate (CO ₃)	Bicarbonate(HCO ₃)	Carbonate (CO ₃)	(CO ₃ +HCO ₃)	p(Alk)	Adjusted SAR	Electrical Conductivity (μ S/cm)	Classification of irrigation water
					(mg/l)	(mg/l)	(mg/l)	(epm)	(epm)	(epm)					(mg/l)	(mg/l)	(epm)	(epm)	(epm)				
A27	Veles	Radial wells Veles	Alluvial	Sands & gravels	52.40	69.56	9.24	2.279	3.471	0.760	1.567	4.231	2.20	2.70	164.70	54.00	2.701	1.798	4.499	2.35	3.37	762.70	C3-S1
A28		Well Porcelanka - Veles	Alluvial	Sands & gravels	56.00	38.11	7.26	2.436	1.902	0.597	2.179	2.498	2.20	2.90	79.30	18.00	1.301	0.599	1.900	2.70	3.49	243.90	C1-S1
B3G		Well HIV Veles	Alluvial	Sands & gravels	44.50	55.50	21.34	1.936	2.769	1.754	1.287	4.524	2.20	2.65	237.90	18.00	3.902	0.599	4.501	2.35	2.83	533.20	C2-S1
B4G		Well Gradsko	Alluvial	Gravels & sands	36.90	207.94	7.92	1.605	10.376	0.651	0.684	11.027	2.30	2.25	567.30	18.00	9.304	0.599	9.903	2.00	1.95	1273.40	C3-S1
A29	Gevgelija	Well Negorci	Proluvial	Gravels & sands	35.90	27.75	1.54	1.562	1.385	0.127	1.796	1.511	2.10	3.10	0.00	0.00	0.000	0.000	0.000	4.30	0.00	783.60	C3-S1
A30		Well Moin - Gevgelija	Alluvial	Gravels & sands	81.80	65.86	26.84	3.558	3.286	2.206	2.147	5.493	2.20	2.55	140.30	48.00	2.301	1.598	3.899	2.40	4.83	507.60	C2-S1
A31		Well Toplec - Dojran	Neogene	Sands & gravels	67.30	94.35	12.32	2.928	4.708	1.013	1.731	5.721	2.20	2.50	274.50	6.00	4.502	0.200	4.702	2.33	4.10	640.00	C2-S1
A32	Pcinja	Well Chelopek	Alluvial	Sands & gravels	32.10	79.55	28.82	1.396	3.970	2.369	0.784	6.339	2.20	2.49	219.60	36.00	3.601	1.199	4.800	2.32	1.87	631.00	C2-S1
A33		Well Ginovei	Alluvial	Sands & gravels	40.60	58.46	16.94	1.766	2.917	1.392	1.203	4.310	2.20	2.67	91.50	36.00	1.501	1.199	2.699	2.56	2.37	437.60	C2-S1
A34		Well Dragomanci	Alluvial	Sands & gravels	52.80	91.02	22.88	2.297	4.542	1.881	1.282	6.423	2.22	2.48	152.50	42.00	2.501	1.399	3.900	2.40	2.95	759.40	C3-S1
A35		Well Pcinja	Diluvial	Sands & gravels	57.60	101.38	31.90	2.506	5.059	2.622	1.279	7.681	2.30	2.40	237.90	42.00	3.902	1.399	5.300	2.27	3.11	939.60	C3-S1
A36		Well Sredno Konjare	Alluvial	Sands & gravels	34.00	243.20	28.29	1.479	12.136	2.325	0.550	14.461	2.30	2.10	707.60	30.00	11.605	0.999	12.604	1.90	1.71	1529.00	C3-S1
A37		Well Katlanovo	Alluvial	Gravels & sands	61.80	42.55	97.90	2.688	2.123	8.047	1.192	10.171	2.30	2.30	536.80	24.00	8.804	0.799	9.603	2.00	3.34	1065.30	C3-S1
A38		Bregalnica	Well Trbotevishte	Alluvial	Gravels & sands	38.80	74.74	27.94	1.688	3.730	2.297	0.972	6.026	2.20	2.50	244.00	24.00	4.002	0.799	4.801	2.32	2.31	602.70
A39	Well Delchevo		Alluvial	Gravels & sands	32.90	26.64	42.02	1.431	1.329	3.454	0.925	4.783	2.20	2.60	201.30	24.00	3.301	0.799	4.101	2.39	2.05	495.60	C2-S1
A40	Well Alkaloid - Berovo		Pliocene	Sands & gravels	45.90	43.66	13.20	1.997	2.179	1.085	1.563	3.264	2.20	2.77	85.40	24.00	1.401	0.799	2.200	2.66	2.77	436.30	C2-S1
A41	Well Star Bunar - Berovo		Alluvial	Sands & gravels	71.40	52.54	34.76	3.106	2.622	2.857	1.877	5.479	2.20	2.55	256.20	42.00	4.202	1.399	5.600	2.24	4.52	809.20	C3-S1
A42	Well Osojnica		Alluvial	Sands & gravels	32.20	29.60	11.22	1.401	1.477	0.922	1.279	2.399	2.20	2.90	128.10	0.00	2.101	0.000	2.101	2.68	2.07	259.70	C2-S1
A43	Well Butilchevo		Proluvial	Sands & gravels	31.90	64.01	69.30	1.388	3.194	5.696	0.658	8.891	2.30	2.35	305.00	72.00	5.002	2.398	7.400	2.13	1.72	1201.40	C3-S1
A44	Well Ratavica		Alluvial	Sands & gravels	34.20	43.66	14.30	1.488	2.179	1.175	1.149	3.354	2.20	2.77	122.00	0.00	2.001	0.000	2.001	2.70	1.99	367.10	C2-S1
A45	Well Amzebegovo		Alluvial	Gravels & sands	68.60	54.39	56.10	2.984	2.714	4.611	1.559	7.325	2.26	2.44	372.10	48.00	6.102	1.598	7.701	2.13	4.01	1203.00	C3-S1
A46	Well Lakavica		Alluvial	Gravels & sands	65.60	19.80	34.98	2.854	0.988	2.875	2.053	3.863	2.20	2.71	140.30	54.00	2.301	1.798	4.099	2.39	4.31	1334.00	C3-S1
B5G	Well Grdovski Orman		Alluvial	Gravels & sands	34.10	64.52	24.20	1.483	3.220	1.989	0.919	5.209	2.20	2.58	183.00	30.00	3.001	0.999	4.000	2.40	2.04	561.10	C2-S1
B6G	Well Shtip	Alluvial	Gravels & sands	38.40	36.26	35.86	1.670	1.809	2.948	1.083	4.757	2.20	2.62	134.20	30.00	2.201	0.999	3.200	2.48	2.27	533.90	C2-S1	
A47	Strumica	Well Radovish	Neogene	Gravels & sands	51.50	101.75	2.20	2.240	5.077	0.181	1.382	5.258	2.20	2.58	262.30	36.00	4.302	1.199	5.501	2.25	3.27	725.60	C2-S1
A48		Well Edrenikovo	Neogene	Gravels & sands	81.80	178.60	13.00	3.558	8.912	1.069	1.593	9.981	2.30	2.30	427.00	0.00	7.003	0.000	7.003	2.15	4.22	1924.00	C3-S1
A49		Well Sushica	Neogene	Gravels & sands	2.64	22.94	7.26	0.115	1.145	0.597	0.123	1.741	2.15	3.05	109.80	0.00	1.801	0.000	1.801	2.74	0.18	302.90	C2-S1
A50		Drillhole Monospitovo	Neogene	Gravels & sands	70.40	29.60	20.24	3.062	1.477	1.664	2.444	3.141	2.20	2.78	152.50	0.00	2.501	0.000	2.501	2.60	4.45	258.60	C2-S1

Table B.17 Geo-Chemical Characteristics (Groundwater Quality Survey) (1/2)

No	Sampling well	River basin	Geologic time	Geology of aquifer	Geo-chemical type
A1	Well Gas station - Tetovo	Polog	Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A2	Well Miletino		Alluvial	Gravels & sands	Sodium-Bicarbonate (Na-HCO ₃)
A3	Well Peshpë - Tetovo		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A4	Drillhole Raafince		Neogene	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A5	Drillhole Jegunovce		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A6	Drillhole OHIS - Gostivar		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A7	Well Piskupshina	Debar	Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A8	Well Kichevo - Ohrid	Treska	Pliocene	Gravels & sands	Sodium-Bicarbonate (Na-HCO ₃)
A9	Well Svet Naum	Ohrid	Triassic	Limestone	Calcium-Bicarbonate (Ca-HCO ₃)
A10	Well Brastrvo - Ohrid	Struga	Quaternary	Sand	Calcium-Bicarbonate (Ca-HCO ₃)
A11	Artesian drillhole Struga		Quaternary	Sand	Calcium-Bicarbonate (Ca-HCO ₃)
A12	Well Asanati	Prespa	Pliocene	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A13	Well Carev Dvor		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A14	Well Krushje		Triassic	Limestone	Calcium-Bicarbonate (Ca-HCO ₃)
A15	Well Soponica	Pelagonija	Alluvial	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
A16	Well Buchin		Pliocene	Gravels & sands	Sodium-Bicarbonate (Na-HCO ₃)
A17	Drillhole Krushëani		Pliocene	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
A18	Well Pivara Prlëp		Pliocene	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A19	Well Agarci		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A20	Well Kvasara Bitola		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A21	Artesian drillhole Egn		Pliocene	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A22	Drillhole Bardovci	Skopje	Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A23	Drillhole Volkovo		Pleistocene	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A24	Drillhole Saraj		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A25	Well Pobožje		Proluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A26	Well Kozara		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
B1G	Well Zelenikovo		Alluvial	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
B2G	Well Makedonija Pat Petrovec		Neogene	Sands & gravels	Sodium-Bicarbonate (Na-HCO ₃)
A57	Rashe spring		Paleozoic	Limestone/marble	Calcium-Bicarbonate (Ca-HCO ₃)
A27	Radial wells Vales	Vales	Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A28	Well Porcianska - Vales		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
B3G	Well HTV Vales		Alluvial	Sands & gravels	Magnesium-Bicarbonate (Mg-HCO ₃)
B4G	Well Gradsko		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A29	Well Negorci	Gevelija	Proluvial	Gravels & sands	Sodium-Sulphate (NaSO ₄)
A30	Well Mein - Gevelija		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A31	Well Toplec - Dojran		Neogene	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A32	Well Chelopek	Peinija	Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A33	Well Gimovci		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A34	Well Dragomanci		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A35	Well Peinja		Diluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A36	Well Stredno Konjare		Alluvial	Sands & gravels	Sodium-Bicarbonate (Na-HCO ₃)
A37	Well Katanovo		Alluvial	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
A38	Well Tborevishte	Bregalnica	Alluvial	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
A39	Well Delchevo		Alluvial	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
A40	Well Alkaloid - Berovo		Pliocene	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A41	Well Star Bunar - Berovo		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A42	Well Osotnica		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A43	Well Burlichevo		Proluvial	Sands & gravels	Magnesium-Bicarbonate (Mg-HCO ₃)
A44	Well Ranavica		Alluvial	Sands & gravels	Potassium-Bicarbonate (K-HCO ₃)
A45	Well Amzebegovo		Alluvial	Sands & gravels	Calcium-Bicarbonate (Ca-HCO ₃)
A46	Well Lakavica		Alluvial	Gravels & sands	Magnesium-Bicarbonate (Mg-HCO ₃)
B5G	Well Ordovski Orman		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
B6G	Well Shrip		Alluvial	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A47	Well Radovish	Strumica	Neogene	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A48	Well Edrenikovo		Neogene	Gravels & sands	Calcium-Bicarbonate (Ca-HCO ₃)
A49	Well Sushica		Neogene	Gravels & sands	Sodium-Bicarbonate (Na-HCO ₃)
A50	Drillhole Monospitovo		Neogene	Gravels & sands	Sodium-Bicarbonate (Na-HCO ₃)
A57	Rashe spring				Calcium-Bicarbonate (Ca-HCO ₃)

**Table B.19 Classification of Irrigation Water Based on Sar and Conductivity
(Groundwater Quality Survey) (1/2)**

No	River basin / Valley	Sampling well	Geologic time	Geology of aquifer	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	SAR = Na/SORT((Ca+Mg)/2)	(Ca+Mg)	($\mu\text{K}_2\text{-}\mu\text{Kc}$)	p(Ca+Mg)	Bicarbonate(HCO_3)	Carbonate (CO_3)	Bicarbonate(HCO_3)	Carbonate (CO_3)	($\text{CO}_3\text{+HCO}_3$)	p(AIK)	Adjusted SAR	Electrical Conductivity	Classification of irrigation water
					(mg/l)	(mg/l)	(mg/l)	(epm)	(epm)	(epm)		(epm)		(mg/l)	(mg/l)	(epm)	(epm)	(epm)			($\mu\text{S/cm}$)		
A1	Polog	Well Gas station - Tetovo	Alluvial	Gravels & sands	10.80	56.50	31.60	0.470	2.819	2.598	0.285	5.417	2.20	2.80	140.30	18.00	2.301	0.599	2.900	2.42	0.57	365.00	C2-S1
A2		Well Milefino	Alluvial	Gravels & sands	37.80	14.60	14.30	1.644	0.729	1.175	1.685	1.904	2.20	3.00	347.70	0.00	5.702	0.000	5.702	2.18	3.40	691.40	C2-S1
A3		Well Fershped - Tetovo	Alluvial	Gravels & sands	7.80	68.40	15.80	0.339	3.413	1.299	0.221	4.712	2.20	2.60	183.00	24.00	3.001	0.799	3.800	2.47	0.47	440.00	C2-S1
A4		Drillhole Raotince	Neogene	Gravels & sands	50.70	157.90	75.70	2.205	7.879	6.223	0.831	14.102	2.30	2.30	549.00	0.00	9.004	0.000	9.004	2.02	2.31	832.10	C3-S1
A5		Drillhole Jegunovce	Alluvial	Gravels & sands	29.80	32.70	13.10	1.296	1.632	1.077	1.114	2.709	2.10	3.30	128.10	12.00	2.101	0.400	2.500	2.51	1.66	325.00	C2-S1
A6		Drillhole OHIS - Gostivar	Alluvial	Gravels & sands	23.80	60.80	28.80	1.035	3.034	2.367	0.630	5.401	2.20	2.75	116.90	12.00	1.917	0.400	2.317	2.69	1.11	341.60	C2-S1
A7	Debar	Well Piskupshina	Alluvial	Gravels & sands	15.00	63.80	11.80	0.653	3.184	0.970	0.453	4.154	2.20	2.65	156.80	36.00	2.572	1.199	3.770	2.44	0.96	451.50	C2-S1
A8	Treska	Well Kichevo - Ohrid	Pliocene	Gravels & sands	30.20	17.10	5.60	1.314	0.853	0.460	1.621	1.314	2.10	3.20	67.10	0.00	1.100	0.000	1.100	2.90	1.95	199.20	C1-S1
A9	Ohrid	Well Sveti Naum	Triassic	Limestone	11.80	40.20	12.80	0.513	2.006	1.052	0.415	3.058	2.20	2.78	134.20	18.00	2.201	0.599	2.800	2.68	0.72	307.20	C2-S1
A10	- Struga	Well Bratstvo - Ohrid	Quaternary	Sand	2.06	106.40	14.10	0.090	5.309	1.159	0.050	6.468	2.20	2.55	305.00	0.00	5.002	0.000	5.002	2.40	0.11	580.00	C2-S1
A11		Artesian drillhole Struga	Quaternary	Sand	24.40	48.30	13.10	1.061	2.410	1.077	0.804	3.487	2.20	2.85	115.90	30.00	1.901	0.999	2.900	2.56	1.44	430.60	C2-S1
A12	Prespa	Well Asamati	Pliocene	Sands & gravels	15.60	32.30	13.80	0.679	1.612	1.134	0.579	2.746	2.20	2.90	140.30	0.00	2.301	0.000	2.301	2.76	0.89	332.50	C2-S1
A13		Well Carev Dvor	Alluvial	Sands & gravels	14.52	45.60	15.20	0.632	2.275	1.249	0.476	3.525	2.20	2.80	134.20	0.00	2.201	0.000	2.201	2.58	0.87	251.50	C2-S1
A14		Well Krushje	Triassic	Limestone	26.90	49.30	13.10	1.170	2.460	1.077	0.880	3.537	2.20	2.97	176.90	0.00	2.901	0.000	2.901	2.64	1.40	430.60	C2-S1
A15	Peiagonija	Well Soponica	Alluvial	Gravels & sands	21.60	44.10	28.47	0.940	2.201	2.340	0.624	4.541	2.20	2.66	213.50	18.00	3.501	0.599	4.101	2.43	1.32	452.00	C2-S1
A16		Well Buchin	Pliocene	Gravels & sands	22.70	15.90	8.40	0.987	0.793	0.690	1.146	1.484	2.10	3.30	54.90	0.00	0.900	0.000	0.900	3.08	1.05	469.00	C2-S1
A17		Drillhole Krusheani	Pliocene	Gravels & sands	36.80	51.30	39.40	1.601	2.560	3.239	0.940	5.799	2.20	2.57	329.40	0.00	5.402	0.000	5.402	2.06	2.42	532.00	C2-S1
A18		Well Pivara Prilep	Pliocene	Gravels & sands	47.50	85.50	37.26	2.066	4.266	3.063	1.079	7.329	2.20	2.47	292.80	0.00	4.802	0.000	4.802	2.24	2.69	841.80	C3-S1
A19		Well Aglarci	Alluvial	Gravels & sands	42.60	68.40	39.82	1.853	3.413	3.273	1.013	6.686	2.20	2.55	244.00	12.00	4.002	0.400	4.401	2.30	2.38	594.40	C2-S1
A20		Well Kvasara Bitola	Alluvial	Gravels & sands	30.70	44.80	22.90	1.335	2.236	1.882	0.931	4.118	2.20	2.70	225.70	0.00	3.701	0.000	3.701	2.42	1.94	472.80	C2-S1
A21		Artesian drillhole Egri	Pliocene	Sands & gravels	5.66	114.00	4.70	0.246	5.689	0.386	0.141	6.075	2.40	2.00	372.50	0.00	22.509	0.000	22.509	1.65	0.47	1854.00	C3-S1
A22	Skopje	Drillhole Bardovci	Alluvial	Gravels & sands	53.30	108.60	20.50	2.319	5.419	1.685	1.230	7.104	2.20	2.54	280.60	6.00	4.602	0.200	4.802	2.28	2.93	657.90	C2-S1
A23		Drillhole Volkovo	Pleistocene	Sands & gravels	11.81	38.20	17.70	0.514	1.906	1.455	0.396	3.361	2.20	2.70	219.60	24.00	3.601	0.799	4.401	2.41	0.83	632.00	C2-S1
A24		Drillhole Saraj	Alluvial	Gravels & sands	61.20	126.20	19.40	2.662	6.297	1.595	1.340	7.892	2.30	2.30	408.70	36.00	6.703	1.199	7.901	2.09	3.63	1283.00	C3-S1
A25		Well Pobozje	Proluvial	Gravels & sands	14.86	92.60	22.30	0.646	4.621	1.833	0.360	6.454	2.20	2.60	414.80	24.00	6.803	0.799	7.602	2.10	0.90	1032.90	C3-S1
A26		Well Kozara	Alluvial	Gravels & sands	36.70	52.10	45.60	1.596	2.600	3.748	0.896	6.348	2.20	2.60	530.70	12.00	8.703	0.400	9.103	2.24	2.11	748.60	C2-S1
B1G		Well Zelenikovo	Alluvial	Gravels & sands	59.60	56.40	31.50	2.593	2.814	2.589	1.577	5.404	2.20	2.49	201.80	54.00	3.310	1.798	5.108	2.26	3.86	656.40	C2-S1
B2G		Well Makedonija Pat Petrovo	Neogene	Sands & gravels	7.66	204.10	20.20	0.333	10.185	1.660	0.137	11.845	2.30	2.20	494.10	12.00	8.103	0.400	8.503	2.10	0.38	653.30	C2-S1
A57		Rashche spring	Paleozoic	Limestone/marble	24.80	114.90	9.30	1.079	5.734	0.764	0.599	6.498	2.20	2.60	366.00	0.00	6.002	0.000	6.002	2.26	1.40	581.30	C2-S1

**Table B.19 Classification of Irrigation Water Based on Sar and Conductivity
(Groundwater Quality Survey) (2/2)**

No	River basin / Valley	Sampling well	Geologic time	Geology of aquifer	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Calcium (Ca)	Magnesium (Mg)	SAR = Na/SQRT((Ca+Mg)/2)	(Ca+Mg)	(pK _s -pK _e)	P(Ca+Mg)	Bicarbonate(HCO ₃)	Carbonate (CO ₃)	Bicarbonate(HCO ₃)	Carbonate (CO ₃)	(CO ₃ +HCO ₃)	P(Alk)	Adjusted SAR	Electrical Conductivity	Classification of irrigation water
					(mg/l)	(mg/l)	(mg/l)	(epm)	(epm)	(epm)					(mg/l)	(mg/l)	(epm)	(epm)	(epm)			(μS/cm)	
A27	Veles	Radial wells Veles	Alluvial	Sands & gravels	6.71	96.10	14.70	0.292	4.795	1.208	0.168	6.004	2.20	2.70	305.00	24.00	5.002	0.799	5.801	2.35	0.36	579.30	C2-S1
A28		Well Porcelanka - Veles	Alluvial	Sands & gravels	46.90	68.40	5.60	2.040	3.413	0.460	1.466	3.873	2.20	2.90	183.00	12.00	3.001	0.400	3.401	2.70	2.35	468.00	C2-S1
B3G		Well HIV Veles	Alluvial	Sands & gravels	30.42	58.90	40.00	1.323	2.939	3.288	0.750	6.227	2.20	2.65	213.80	24.00	3.506	0.799	4.306	2.35	1.65	547.10	C2-S1
B4G		Well Gradsko	Alluvial	Gravels & sands	7.35	204.50	13.80	0.320	10.205	1.134	0.134	11.339	2.30	2.25	598.70	6.00	9.819	0.200	10.018	2.00	0.38	1195.00	C3-S1
A29	Gevgelija	Well Negorci	Proluvial	Gravels & sands	80.10	34.20	1.50	3.484	1.707	0.123	3.643	1.830	2.10	3.10	54.90	0.00	0.900	0.000	0.900	4.30	0.00	775.20	C3-S1
A30		Well Moin - Gevgelija	Alluvial	Gravels & sands	2.72	62.70	23.70	0.118	3.129	1.948	0.074	5.077	2.20	2.55	250.10	24.00	4.102	0.799	4.901	2.40	0.17	487.50	C2-S1
A31		Well Toplec - Dojran	Neogene	Sands & gravels	22.10	87.60	18.20	0.961	4.371	1.496	0.561	5.867	2.20	2.50	256.20	9.00	4.202	0.300	4.501	2.33	1.33	590.10	C2-S1
A32	Pcinja	Well Chelopek	Alluvial	Sands & gravels	31.50	97.50	30.90	1.370	4.865	2.540	0.712	7.405	2.20	2.49	213.50	30.00	3.501	0.999	4.500	2.32	1.70	608.20	C2-S1
A33		Well Ginovci	Alluvial	Sands & gravels	38.20	57.50	18.20	1.662	2.869	1.496	1.125	4.365	2.20	2.67	58.60	18.00	0.961	0.599	1.560	2.56	2.22	458.70	C2-S1
A34		Well Dragomanci	Alluvial	Sands & gravels	51.00	103.30	26.50	2.219	5.155	2.178	1.159	7.333	2.22	2.48	176.90	42.00	2.901	1.399	4.300	2.40	2.66	781.20	C3-S1
A35		Well Pcinja	Diluvial	Sands & gravels	60.10	109.30	40.20	2.614	5.454	3.304	1.249	8.759	2.30	2.40	311.20	30.00	5.104	0.999	6.103	2.27	3.04	1273.00	C3-S1
A36		Well Sredno Konjare	Alluvial	Sands & gravels	79.20	51.10	32.30	3.445	2.550	2.655	2.136	5.205	2.30	2.10	305.00	90.00	5.002	2.997	7.999	1.90	6.62	1621.00	C3-S1
A37		Well Katlanovo	Alluvial	Gravels & sands	63.50	50.16	85.70	2.762	2.503	7.045	1.264	9.548	2.30	2.30	596.80	24.00	9.788	0.799	10.587	2.00	3.54	1086.00	C3-S1
A38	Bregalnica	Well Tribotevishte	Alluvial	Gravels & sands	33.40	37.50	31.70	1.453	1.871	2.606	0.971	4.477	2.20	2.50	292.80	16.00	4.802	0.533	5.335	2.32	2.31	596.70	C2-S1
A39		Well Delchevo	Alluvial	Gravels & sands	30.90	26.70	32.05	1.344	1.332	2.635	0.954	3.967	2.20	2.60	280.60	12.00	4.602	0.400	5.001	2.39	2.11	547.70	C2-S1
A40		Well Alkaloid - Berovo	Pliocene	Sands & gravels	41.90	47.00	19.90	1.823	2.345	1.636	1.292	3.981	2.20	2.77	256.20	18.00	4.202	0.599	4.801	2.66	2.29	683.00	C2-S1
A41		Well Star Bunar - Berovo	Alluvial	Sands & gravels	26.70	46.70	12.20	1.161	2.330	1.003	0.900	3.333	2.20	2.55	79.30	0.00	1.301	0.000	1.301	2.24	2.17	457.70	C2-S1
A42		Well Osojnica	Alluvial	Sands & gravels	25.20	31.90	19.70	1.096	1.592	1.619	0.865	3.211	2.20	2.90	134.20	0.00	2.201	0.000	2.201	2.68	1.40	238.90	C1-S1
A43		Well Butilchevo	Proluvial	Sands & gravels	26.89	73.10	54.30	1.170	3.648	4.463	0.581	8.111	2.30	2.35	475.80	120.00	7.803	3.996	11.799	2.13	1.52	1042.50	C3-S1
A44		Well Ratavica	Alluvial	Sands & gravels	30.90	39.20	14.30	1.344	1.956	1.175	1.074	3.132	2.20	2.77	134.20	0.00	2.201	0.000	2.201	2.70	1.86	298.50	C2-S1
A45		Well Amzebegovo	Alluvial	Gravels & sands	6.48	51.00	92.00	0.282	2.545	7.562	0.125	10.107	2.26	2.44	433.10	12.00	7.103	0.400	7.502	2.13	0.32	961.60	C3-S1
A46		Well Lakavica	Alluvial	Gravels & sands	56.50	199.40	34.30	2.458	9.950	2.819	0.973	12.770	2.20	2.71	256.20	24.00	4.202	0.799	5.001	2.39	2.04	1232.00	C3-S1
B5G		Well Grdovski Orman	Alluvial	Gravels & sands	36.90	69.90	21.20	1.605	3.488	1.743	0.993	5.231	2.20	2.58	274.50	15.00	4.502	0.500	5.001	2.40	2.20	496.10	C2-S1
B6G	Well Shtip	Alluvial	Gravels & sands	32.80	51.40	25.70	1.427	2.565	2.113	0.933	4.677	2.20	2.62	195.20	30.00	3.201	0.999	4.200	2.48	1.96	569.80	C2-S1	
A47	Strumica	Well Radovish	Neogene	Gravels & sands	48.20	105.10	8.50	2.097	5.244	0.699	1.216	5.943	2.20	2.58	280.60	18.00	4.602	0.599	5.201	2.25	2.88	681.70	C2-S1
A48		Well Edrenikovo	Neogene	Gravels & sands	58.10	197.20	68.30	2.527	9.840	5.614	0.909	15.455	2.30	2.30	414.80	0.00	6.803	0.000	6.803	2.15	2.41	1894.00	C3-S1
A49		Well Sushica	Neogene	Gravels & sands	50.10	30.00	7.80	2.179	1.497	0.641	2.108	2.138	2.15	3.05	109.80	0.00	1.801	0.000	1.801	2.74	3.08	296.80	C2-S1
A50		Drillhole Monospitovo	Neogene	Gravels & sands	63.50	29.90	18.40	2.762	1.492	1.512	2.254	3.004	2.20	2.78	158.60	0.00	2.601	0.000	2.601	2.60	4.10	245.60	C1-S1

Table B.20 Monthly Rainfall at Tetovo

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1961	28.5	20.7	58.1	58.1	129.3	24.1	26.4	0.6	9.0	39.3	140.5	75.3	609.9
1962	42.1	59.9	202.6	64.8	21.6	55.2	20.3	32.7	27.6	71.7	258.5	150.7	1007.7
1963	102.0	212.1	76.8	45.7	75.5	41.9	19.8	45.4	44.5	107.4	43.9	140.0	955.0
1964	5.0	26.1	102.0	38.8	62.2	44.8	44.8	18.8	73.6	94.7	149.9	127.3	788.0
1965	50.7	86.9	52.9	104.7	50.9	27.3	2.8	34.7	4.9	-	74.1	128.8	-
1966	152.3	46.2	40.3	42.1	35.8	27.2	31.2	6.5	39.0	34.8	191.4	130.2	777.0
1967	93.5	4.5	39.0	109.9	49.4	18.9	103.1	45.0	13.3	22.9	35.4	105.1	640.0
1968	126.4	37.4	29.4	42.8	164.4	112.0	3.1	82.4	39.3	34.4	98.6	97.9	868.1
1969	64.6	96.9	125.0	116.8	2.2	39.9	93.2	16.8	41.7	-	35.0	205.4	-
1970	113.7	104.7	139.2	58.9	62.6	16.0	135.4	4.8	29.2	78.2	37.5	88.9	869.1
1971	146.7	48.7	115.3	34.3	44.2	30.8	74.1	29.0	80.2	30.5	31.0	54.1	718.9
1972	115.8	73.1	41.9	53.5	71.2	26.6	28.2	61.5	154.4	106.9	51.5	2.2	786.8
1973	68.7	83.1	78.1	47.9	38.0	19.3	83.7	162.4	-	-	-	-	-
1974	60.7	69.5	72.0	62.6	80.6	46.3	1.5	39.3	28.4	108.7	87.1	29.1	685.8
1975	11.9	17.6	53.4	74.5	79.0	79.0	23.6	59.9	23.6	149.2	81.2	50.0	702.9
1976	74.7	57.1	71.6	42.4	90.9	119.3	58.1	32.7	27.6	87.4	-	-	-
1977	61.1	80.0	24.0	41.2	39.0	55.0	27.4	36.6	50.1	17.8	98.9	45.8	576.9
1978	87.1	87.3	79.1	105.6	124.7	8.0	15.6	16.0	100.0	37.2	-	-	-
1979	82.7	45.4	19.5	51.2	108.2	18.2	25.8	70.0	26.5	76.0	205.5	58.8	787.8
1980	68.4	31.0	59.1	20.4	141.5	26.5	4.0	11.0	17.6	146.2	83.7	81.5	690.9
1981	37.5	51.1	54.3	71.5	57.4	38.6	30.5	70.2	73.2	126.1	90.3	130.7	831.4
1982	23.0	36.7	72.6	43.2	66.8	21.1	33.6	29.5	27.4	60.2	85.1	126.0	625.2
1983	13.6	52.5	34.2	7.0	56.7	72.7	52.6	28.5	39.4	24.4	73.0	38.5	493.1
1984	63.2	137.7	92.2	68.2	47.0	32.0	13.0	70.1	51.3	14.4	69.6	25.8	684.5
1985	137.2	86.9	49.2	33.7	49.8	19.8	7.6	3.0	8.8	25.2	264.6	27.3	713.1
1986	155.9	-	28.6	14.4	60.8	79.5	68.9	23.7	26.2	48.7	19.4	42.1	-
1987	123.5	31.7	85.4	43.6	83.5	50.3	0.5	48.2	27.0	43.3	41.5	30.6	609.1
1988	5.4	24.9	44.1	23.3	10.4	30.5	4.2	6.6	21.9	23.0	68.3	122.5	385.1
1989	3.6	50.3	40.2	4.8	56.1	75.7	113.3	32.0	21.9	74.6	18.9	32.4	523.8
1990	-	15.2	8.4	95.1	37.6	3.6	30.0	16.1	17.3	4.3	43.8	162.3	-
1991	-	15.2	8.4	95.1	37.3	3.6	30.0	16.1	17.3	4.3	43.8	162.3	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	52.0	54.0	62.0	75.0	52.0	34.5	5.5	48.0	125.0	38.0	47.0	110.1	703.1
verage	72.4	59.5	64.3	56.0	65.2	40.6	37.9	37.4	41.5	59.6	88.6	89.0	709.7

Table B.21 Monthly Rainfall at Skopje

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1961	23.2	3.2	63.8	63.8	87.3	43.7	52.7	3.8	11.8	9.2	83.5	32.1	478.1
1962	20.5	40.4	119.2	60.8	15.6	73.8	13.2	19.6	15.0	68.1	189.3	105.3	740.8
1963	92.3	75.8	56.7	43.1	59.8	23.6	11.3	23.0	9.2	135.4	46.5	42.2	618.9
1964	7.3	4.8	56.5	30.5	95.7	31.5	57.8	23.9	105.0	49.9	47.4	30.9	541.2
1965	31.2	44.3	16.3	18.5	54.3	34.2	19.1	36.8	5.3	-	40.2	70.6	-
1966	38.7	25.4	30.4	37.2	20.8	20.7	22.7	9.2	14.6	24.1	63.8	86.3	393.9
1967	51.2	4.0	36.2	74.6	90.6	69.1	72.4	4.9	31.5	27.0	15.4	65.3	542.2
1968	52.4	29.2	28.6	25.0	56.7	125.3	0.3	38.4	9.4	18.7	63.3	38.2	485.5
1969	46.6	50.0	70.6	46.5	6.2	46.3	7.2	25.3	20.6	-	2.7	145.4	-
1970	34.6	41.0	26.5	16.2	57.9	6.8	92.2	3.4	18.0	61.0	8.9	25.4	391.9
1971	71.9	27.9	73.0	14.3	55.1	35.7	50.0	2.9	87.0	13.5	10.4	32.7	474.4
1972	41.8	41.7	29.7	47.3	58.0	44.9	44.0	36.2	87.2	90.7	28.3	2.4	552.2
1973	37.6	35.8	76.2	51.0	57.0	22.7	71.8	67.1	-	-	-	-	-
1974	35.9	79.9	29.9	55.4	91.5	44.6	5.7	29.8	70.6	32.1	43.2	36.3	554.9
1975	17.4	9.3	51.1	22.5	73.8	98.8	8.3	33.1	18.0	78.6	28.4	11.1	450.4
1976	56.1	28.7	4.2	44.3	124.8	79.4	64.3	64.2	22.2	110.7	-	-	598.9
1977	24.9	42.4	13.1	20.5	24.4	29.3	10.4	42.4	11.9	13.7	49.4	18.2	300.6
1978	19.7	26.2	57.6	52.1	62.3	3.8	5.8	18.4	76.5	20.5	21.2	72.7	436.8
1979	31.2	32.2	9.8	59.2	107.5	12.7	14.0	56.1	29.6	29.0	164.5	26.2	572.0
1980	57.6	20.7	22.3	18.9	106.6	25.3	12.7	12.2	30.2	93.6	31.3	62.7	494.1
1981	24.0	18.5	17.4	65.4	11.8	51.4	76.4	52.5	91.3	95.3	108.3	58.3	670.6
1982	4.7	37.5	44.3	51.3	35.5	4.9	48.4	41.4	17.3	48.8	55.4	35.8	425.3
1983	1.4	17.6	22.5	43.2	47.8	124.1	57.7	28.4	38.9	24.3	69.5	102.3	577.7
1984	31.4	89.9	46.8	37.0	39.1	29.1	24.2	44.7	28.8	7.4	37.6	36.7	452.7
1985	78.7	31.1	28.4	22.7	46.4	45.6	13.4	11.0	12.2	16.0	143.8	10.9	460.2
1986	82.4		34.6	20.8	42.1	60.4	51.2	6.4	12.1	35.0	21.7	23.2	-
1987	47.8	32.6	85.9	43.7	47.2	33.3	0.5	26.5	19.7	41.1	63.4	39.1	480.8
1988	10.8	34.3	37.0	20.4	32.1	49.3	14.0	-	11.7	29.8	86.5	46.4	-
1989	2.7	5.7	21.3	48.6	177.8	74.1	30.2	39.4	11.7	42.0	31.7	39.2	524.4
1990	2.2	15.9	12.0	69.3	24.1	18.7	23.5	17.1	11.9	9.6	12.8	158.2	375.3
1991	26.3	85.6	31.7	75.6	46.8	9.7	150.0	3.2	40.5	48.0	43.9	5.9	567.2
1992	13.5	6.7	18.4	161.9	35.2	110.3	42.4	2.4	15.7	35.4	62.9	74.3	579.1
1993	55.8	26.8	63.8	13.6	22.8	12.7	19.7	21.9	18.8	37.6	63.2	31.3	388.0
1994	57.3	32.6	1.4	42.7	40.6	24.3	50.2	17.3	11.7	31.6	8.4	69.8	387.9
1995	70.8	20.1	60.4	44.7	70.4	48.7	74.4	49.8	85.0	0.3	42.9	137.6	705.1
1996	63.0	61.0	36.4	38.2	51.4	21.4	7.7	18.6	134.5	12.9	34.2	56.9	536.2
Average	37.9	33.7	39.8	44.5	57.7	44.2	36.7	26.6	35.3	42.1	53.6	53.8	508.3

Table B.22 Monthly Rainfall at Kochani

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	Total
1961	14.8	14.7	25.8	25.8	79.1	53.5	25.6	-	5.1	10.9	85.6	43.5	-
1962	17.4	35.0	125.7	30.3	37.3	67.2	22.7	23.2	5.0	71.4	139.3	118.3	692.8
1963	99.7	81.5	54.4	50.7	37.2	41.9	25.8	17.0	17.9	54.5	22.7	50.2	553.5
1964	9.8	24.6	63.1	52.7	82.3	15.1	12.4	37.0	104.0	49.6	73.0	37.1	560.7
1965	43.4	44.9	34.7	48.3	84.9	60.4	43.2	47.4	4.3	-	30.1	87.6	-
1966	86.1	39.0	48.1	35.5	44.1	64.4	31.2	13.1	18.1	35.6	77.1	68.3	560.6
1967	36.0	8.3	23.4	50.0	50.2	64.7	110.1	26.3	34.4	34.1	16.1	52.6	506.2
1968	34.3	45.7	14.3	5.6	85.6	95.0	1.2	24.8	30.0	12.3	50.8	48.5	448.1
1969	59.2	58.4	70.2	41.0	15.8	50.7	43.3	28.9	23.9	0.1	11.0	73.5	476.0
1970	36.9	61.8	39.4	38.6	75.0	38.2	90.4	38.5	5.7	83.7	15.8	21.3	545.3
1971	36.0	22.6	77.8	8.2	43.5	19.1	24.5	23.9	57.2	12.9	15.5	19.2	360.4
1972	16.3	41.1	8.9	65.2	85.2	57.8	48.1	57.3	114.6	130.2	26.5	-	-
1973	32.6	46.0	51.9	67.6	38.9	14.4	77.0	91.5	-	-	-	-	-
1974	42.5	51.0	31.8	30.5	96.4	57.5	13.4	13.8	24.5	51.9	36.5	42.8	492.6
1975	18.5	10.0	50.8	20.8	76.8	71.1	66.8	51.3	9.8	75.3	92.5	17.1	560.8
1976	23.6	6.9	18.3	37.0	99.1	89.3	137.0	88.6	15.1	74.5			
1977	35.7	33.0	14.0	21.7	50.5	115.6	24.2	22.4	20.1	16.0	66.2	10.5	429.9
1978	29.0	34.7	42.2	49.3	93.9	29.4	14.5	14.0	90.4	33.3	15.2	63.4	509.3
1979	44.2	32.6	18.2	88.8	58.8	31.6	22.0	114.0	23.2	70.5	127.3	15.3	646.5
1980	56.0	11.0	50.9	22.0	130.7	16.2	28.3	15.0	27.2	107.5	35.2	46.9	546.9
1981	36.8	53.2	24.0	44.0	57.4	45.8	56.0	53.0	33.1	72.4	100.1	64.4	640.2
1982	7.6	31.8	35.8	96.4	28.6	15.4	66.2	47.4	9.8	18.2	103.0	57.6	517.8
1983	14.2	45.6	8.2	17.4	68.7	84.4	71.4	45.8	50.3	21.8	95.8	48.3	571.9
1984	36.0	64.4	59.0	29.8	34.0	29.5	22.6	21.3	46.0	12.4	61.6	20.2	436.8
1985	58.2	47.4	48.6	41.6	74.2	35.9	6.2	44.6	-	2.6	141.8	9.6	-
1986	52.5	-	23.7	8.8	44.1	30.3	57.2	10.3	15.8	20.4	9.1	13.6	-
1987	45.6	19.1	53.4	59.1	35.6	11.8	0.2	31.9	14.8	56.0	74.0	46.0	447.5
1988	6.6	32.0	39.3	44.0	29.4	80.2	17.0	4.0	12.9	10.2	104.0	30.4	410.0
1989	0.6	12.4	13.9	75.3	20.3	94.6	55.5	38.5	12.9	50.8	35.2	39.4	449.4
1990	-	15.6	5.6	80.6	22.7	31.4	25.6	48.6	7.0	36.1	11.6	141.8	-
1991	14.4	76.6	14.8	76.5	58.4	36.4	66.0	11.6	25.8	65.0	76.5	13.0	535.0
1992	-	-	7.4	64.3	19.2	48.5	39.4	-	7.4	38.4	62.8	43.4	-
1993	24.2	20.9	36.2	16.0	45.5	15.4	3.6	-	20.0	31.9	57.2	47.5	-
1994		17.4	16.8	62.2	30.7	21.4	89.6	4.2	18.4	39.5	13.6	42.7	-
1995	58.3	11.4	51.3	40.8	72.2	42.8	120.1	54.3	89.0	2.4	57.5	107.8	707.9
1996	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	35.2	34.9	37.2	44.2	57.3	47.9	44.5	36.4	30.1	42.5	58.8	48.2	525.3

Table B.23 Monthly Rainfall at Strumica

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1961	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	89.7	62.9	31.6	32.9	76.8	60.8	12.6	27.8	38.6	56.9	100.8	93.0	684.4
1967	54.4	2.0	-	41.7	57.5	45.0	-	26.0	26.1	55.3	51.9	33.7	-
1968	43.1	48.0	16.8	3.3	124.2	70.7	1.0	10.6	20.8	22.6	109.1	67.2	537.4
1969	58.0	68.6	68.6	36.4	4.4	39.6	29.3	11.9	23.4	-	8.3	150.1	-
1970	38.9	36.1	55.6	42.6	88.2	30.8	117.2	1.1	1.6	60.6	13.6	16.1	502.4
1971	32.9	55.0	126.0	15.5	60.0	3.2	54.1	59.1	40.1	40.0	18.1	59.3	563.3
1972	22.8	41.9	21.0	82.1	321.8	8.4	45.7	59.2	136.9	122.5	25.5	-	-
1973	37.0	54.0	81.5	71.9	17.0	24.3	71.3	54.0	-	-	-	-	-
1974	49.0	81.1	48.4	48.1	83.9	39.2	6.3	3.8	37.3	58.7	61.3	58.6	575.7
1975	30.7	18.6	96.4	19.7	79.8	60.5	36.2	28.4	16.5	63.3	47.4	18.4	515.9
1976	22.4	22.6	28.1	47.2	93.7	56.8	88.9	58.3	10.6	87.3	-	-	-
1977	24.3	35.3	24.0	22.8	55.8	59.1	31.0	52.7	24.0	1.0	41.0	14.6	385.6
1978	27.7	47.8	40.3	81.5	111.0	19.8	-	27.9	116.2	88.7	21.7	50.5	-
1979	31.8	36.3	9.7	96.4	45.9	45.4	22.9	75.5	31.3	77.4	136.5	30.0	639.1
1980	60.0	6.4	50.7	33.0	132.5	30.1	52.1	17.4	60.1	155.5	38.5	125.6	761.9
1981	28.1	44.7	24.8	31.8	40.1	33.5	23.9	37.8	52.2	69.0	124.1	91.3	601.3
1982	14.7	34.0	51.6	72.0	19.0	42.6	14.7	62.8	20.0	42.7	146.0	81.4	601.5
1983	7.3	18.5	18.8	31.8	70.8	156.5	74.4	35.8	42.1	21.6	61.9	159.8	699.3
1984	40.4	55.4	51.9	30.1	19.0	22.6	7.4	54.4	33.4	1.6	26.2	46.0	388.4
1985	60.3	27.3	56.7	24.9	99.4	20.5	1.5	17.0	10.3	7.8	150.6	6.4	482.7
1986	61.7	-	23.4	6.8	79.7	27.5	10.3	7.1	13.3	21.3	19.3	15.1	285.5
1987	58.3	90.6	66.4	87.0	36.7	45.5	5.8	18.8	4.7	52.2	90.1	27.4	583.3
1988	10.4	40.5	45.5	19.7	37.5	20.7	18.0	22.8	2.6	13.1	112.5	45.5	388.8
1989	-	18.9	23.1	68.7	35.5	64.0	96.1	9.4	-	48.3	30.9	56.6	-
1990	0.7	9.7	4.6	100.1	36.1	32.7	17.6	36.0	5.5	21.2	25.0	228.3	517.5
1991	17.9	68.9	19.9	68.8	62.8	26.4	85.8	27.2	29.6	32.4	-	5.2	-
1992	0.3	0.3	7.7	99.2	-	11.1	18.6	4.6	7.7	47.1	33.0	45.7	-
1993	23.1	20.4	26.3	25.8	45.7	27.2	4.5	4.8	6.9	47.2	65.7	25.2	322.8
1994	73.7	50.8	16.1	103.3	31.0	22.1	43.5	11.3	3.5	69.2	20.7	70.7	515.9
1995	58.9	6.4	48.4	21.1	69.9	33.6	178.3	51.1	72.2	2.4	82.2	133.4	757.9
1996	73.0	76.5	31.8	51.5	51.7	31.5	38.6	62.3	126.0	15.6	61.0	59.6	679.1
Average	38.4	39.3	40.5	49.0	69.6	39.1	41.6	31.5	34.9	48.4	61.5	64.8	545.0

Table B.24 Monthly Rainfall at Bitola

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1961	37.6	24.6	29.3	29.3	63.6	34.3	18.1	3.2	9.4	28.8	95.6	40.4	414.2
1962	37.2	75.7	85.7	48.3	9.5	49.6	12.5	7.5	20.9	92.6	198.9	111.5	749.9
1963	85.9	83.4	77.4	45.1	108.9	33.8	33.8	12.9	38.1	73.6	55.2	72.3	720.4
1964	17.8	13.8	56.8	22.1	121.0	24.3	39.8	39.5	62.1	47.6	129.1	52.6	626.5
1965	29.3	80.0	27.7	30.5	39.8	14.6	0.2	19.7	0.8	-	59.1	84.2	-
1966	93.4	28.6	60.1	26.2	37.1	76.7	29.0	17.0	27.9	32.6	72.0	95.3	595.9
1967	51.0	7.9	48.8	37.7	102.1	40.3	108.0	13.6	37.1	37.2	33.7	84.3	601.7
1968	63.6	55.7	24.7	15.7	74.8	96.3	-	43.8	29.1	12.0	41.8	62.0	-
1969	76.3	56.3	72.9	54.8	12.4	9.4	23.2	27.4	27.3	-	8.7	177.7	-
1970	56.0	64.2	64.9	26.4	76.2	39.5	90.7	5.2	8.3	68.9	22.8	38.1	561.2
1971	68.3	54.9	89.5	27.9	33.0	24.0	35.6	33.1	154.7	18.1	24.1	45.1	608.3
1972	64.6	60.8	31.2	90.4	64.5	15.6	89.1	84.7	43.4	163.5	27.0	7.3	742.1
1973	41.9	61.3	96.1	24.8	26.3	11.4	50.8	55.2	-	-	-	-	-
1974	49.0	118.6	44.8	46.2	65.7	48.2	0.7	23.7	14.8	55.1	69.5	59.3	595.6
1975	36.0	41.9	46.9	40.9	62.7	47.2	52.8	25.8	16.5	85.7	49.5	26.7	532.6
1976	16.8	27.7	22.5	46.2	84.6	115.2	119.4	52.7	11.1	57.5	-	-	-
1977	22.4	39.8	24.9	23.6	48.2	25.8	12.4	31.5	54.4	6.0	52.1	23.9	365.0
1978	42.3	35.9	51.2	86.9	64.7	6.4	1.9	13.7	95.2	97.0	23.0	84.2	602.4
1979	75.8	22.9	23.3	80.8	116.5	23.0	5.6	96.8	32.8	86.4	221.5	50.8	836.2
1980	90.6	32.5	53.9	35.5	92.7	21.3	1.9	12.5	14.5	140.0	50.8	74.4	620.6
1981	61.6	51.2	89.3	66.8	32.9	47.8	42.8	66.1	44.0	161.3	75.2	103.2	842.2
1982	16.7	34.4	46.2	128.8	74.8	29.6	11.1	71.2	47.3	49.6	98.7	81.2	689.6
1983	24.9	45.5	24.8	22.4	67.3	99.5	126.8	23.5	72.2	25.1	68.7	133.7	734.4
1984	58.0	83.4	47.7	52.0	7.1	41.9	19.3	80.8	30.4	5.5	45.2	39.0	510.3
1985	89.4	42.3	36.6	58.7	86.3	15.4	8.5	3.9	15.5	34.1	194.8	22.9	608.4
1986	68.5	-	49.7	9.4	110.8	62.6	64.8	3.2	3.7	41.0	40.8	28.9	-
1987	74.2	58.3	97.7	46.6	25.8	26.4	16.5	11.0	16.0	84.8	76.8	27.8	561.9
1988	19.3	41.8	56.8	22.1	12.6	44.5	5.0	2.5	34.3	36.1	115.0	64.6	454.6
1989	1.4	43.5	39.3	25.1	90.2	44.4	121.7	13.6	34.3	71.4	28.2	57.2	570.3
1990	2.3	24.5	14.6	42.8	37.4	9.0	38.9	46.2	37.6	13.7	52.3	196.8	516.1
1991	37.9	93.0	22.9	97.3	59.6	8.3	53.5	97.8	68.8	18.5	110.3	25.1	693.0
1992	13.3	9.6	37.1	113.8	46.8	85.8	22.1	14.5	23.3	70.9	52.1	70.5	559.8
1993	40.3	24.2	44.2	10.0	54.1	39.1	6.3	16.0	10.3	54.9	77.3	49.7	426.4
1994	87.7	64.5	15.7	96.3	13.8	23.3	41.2	48.7	5.9	37.0	32.7	74.3	541.1
1995	89.1	17.6	34.0	39.1	79.6	19.3	79.5	40.8	72.1	-	55.2	139.3	-
1996	50.7	65.6	49.9	32.3	71.6	15.1	30.0	48.5	111.8	46.4	62.0	91.0	674.9
Average	49.8	48.2	48.3	47.3	60.4	38.0	40.4	33.6	37.9	57.9	71.2	70.5	605.4

Table B.25 Groundwater Monitoring Stations by HMI (1/2)

No.	Reg.No.	Ground surface (m)	Name of the monit. station (village)	Geographic coordinats		Operating/ Not operating
				Latitude	Longitude	
1	525	506.15	Novo Choje	41 48'42"	20 56'58"	Not operating
2	521	517.49	Gostivar-rasadnik	41 48'22"	20 55'14"	Not operating
3	571	518.12	Dobrishte- G. Giri	41 49'00"	20 54'37"	Not operating
4	532	491.74	Tumchevishte	41 51'13"	20 57'13"	Not operating
5	581	471.84	Stenche	41 52'15"	20 58'22"	Operating
6	583	439.49	Strimnica	41 58'05"	21 02'35"	Not operating
7	515	416.21	Zhelino	41 58'53"	21 04'10"	Operating
8	517	414.44	Sarakinci	41 58'53"	21 02'39"	Operating
9	519	429.98	Falishte	41 58'37"	21 00'48"	Operating
10	514	408.88	Palatica	42 00'30"	21 06'15"	Not operating
11	518	420.67	Trebosh	42 00'53"	21 02'24"	Operating
12	579	431.92	Rateje	42 02'10"	21 02'30"	Operating
13	520	401.83	Shemshevo	42 01'23"	21 05'05"	Operating
14	570	390.62	Tudence	42 01'36"	21 07'08"	Operating
15	569	396.00	Janchishte	42 02'58"	21 07'18"	Operating
16	584	528.42	Tearce	42 04'52"	21 03'29"	Not operating
17	513	388.35	Jegunovce	42 04'15"	21 07'54"	Operating
18	576	526.20	Nerashte	40 06'20"	21 07'00"	Not operating
19	61	271.12	Novo Selo	42 01'53"	21 21'40"	Not operating
20	44	264.86	Bardovci	42 01'32"	21 23'02"	Not operating
21	844	228.24	Kadino	41 57'52"	21 36'37"	Operating
22	112	226.61	Ognjance	41 55'18"	21 35'45"	Operating
23	30	224.78	Taor	41 54'06"	21 37'04"	Operating
24	116	270.00	Miladinovci	41 59'11"	21 39'29"	Not operating
25	615	235.00	Madjari	41 59'50"	21 30'26"	Not operating
26	118	230.20	Jurumleri	41 58'45"	21 31'49"	Operating
27	120	230.00	Trubarevo	41 58'45"	21 31'49"	Not operating
28	212	237.00	Novo Lisiche	41 59'55"	21 29'39"	Not operating
29	113	227.30	Petrovec	41 56'03"	21 37'12"	Operating
30	114	233.82	Drachevo	41 56'57"	21 32'17"	Not operating
31	117	228.00	Belimbegovo	41 59'40"	21 35'15"	Not operating
32	134	350.58	Orizari	41 54'36"	22 26'42"	Operating
33	357	337.96	Kochani	41 54'22"	22 25'07"	Operating
34	352	333.41	Pribachevo	41 53'15"	22v26'55"	Operating
35	136	359.86	Vinica	41 53'17"	22 30'16"	Not operating
36	360	324.81	Grdovci	41 52'55"	22 25'30"	Not operating
37	354	325.03	Zmrovci	41 52'20"	22 26'25"	Not operating
38	350	312.32	Dolni Podlog	41 53'10"	22 22'30"	Operating
39	351	313.99	Mojanci	41 52'25"	22 23'30"	Not operating
40	358	312.13	Vidovishte	41 51'26"	22 23'49"	Not operating
41	356	305.44	Obleshevo	41 53'04"	22 20'16"	Operating
42	353	300.05	Chiflik	41 52'06"	22 19'37"	Operating
43	355	297.93	sokolarci	41 52'36"	21 18'40"	Operating
44	369	298.72	Ularci village	41 51'40"	22 16'30"	Operating
45	370	292.35	Ularci-Djade	41 51'04"	22 17'03"	Operating
46	359	298.74	Krupishte	41 50'25"	22 15'50"	Not operating
47	858	275.20	Chardaklija	41 46'52"	22 11'48"	Not operating
48	860	298.70	Shtip	41 45'45"	22 11'30"	Not operating
49	852	282.22	Mustafino	41 50'23"	22 04'52"	Operating
50	850	257.79	Kadrifakovo	41 48'50"	22 01'03"	Not operating
51	853	238.08	Zheleznichka stanica	41 49'13"	21 59'45"	Operating
52	851	248.05	Peshirevo	41 49'13"	21 59'45"	Not operating
53	854	280.00	Saramzalino	41 47'23"	21 57'07"	Operating
54	859	289.98	Djumajlija	41 47'08"	21 54'53"	Operating
55	857	245.96	Koselari	41 45'37"	21 57'15"	Not operating
56	434	590.50	Klepach	41 12'26"	21 27'53"	Operating
57	428	586.02	Vasharejce	41 10'30"	21 24'55"	Not operating
58	429	584.84	Gorno Chajlija	41 09'10"	21 26'27"	Not operating
59	433	592.00	Dobrushevo	41 10'06"	21 28'46"	Not operating

Table B.25 Groundwater Monitoring Stations by HMI (2/2)

No.	Reg.No.	Ground surface (m)	Name of the monit. station (village)	Geographic coordinats		Operating/ Not operating
				Latitude	Longitude	
60	432	583.40	Trap	41 08'00"	21 28'32"	Operating
61	430	581.24	Radobor-stopanstvo	41 26'49"	21 07'21"	Not operating
62	431	581.14	Radobor- selo	41 07'16"	21 26'31"	Operating
63	127	576.00	Dobromiri	41 04'26"	21 27'27"	Not operating
64	129	575.79	Mogila	41 06'35"	21 23'15"	Not operating
65	130	579.14	Trn	41 04'20"	21 24'35"	Not operating
66	128	576.92	Karamani	41 03'56"	21 23'45"	Not operating
67	131	579.79	Logovardi	41 01'47"	21 25'20"	Not operating
68	132	591.35	Bitola city	41 02'13"	21 21'15"	Operating
69	123	586.78	Kravari	40 59'45"	21 23'00"	Not operating
70	124	578.68	Optichari	40 59'28"	21 25'27"	Operating
71	133	585.24	Porodin	40 56'12"	21 22'55"	Operating
72	427	577.69	Sredno Egri	40 57'37"	21 27'52"	Not operating
73	605	724.71	Mesheishta	41 14'25"	20 46'13"	Operating
74	606	702.00	Propas	41 12'20"	20 43'58"	Operating
75	607	711.73	Trebenishta	41 12'20"	20 45'20"	Operating
76	603	695.25	Podmolje- Ribnica	41 09'58"	20 44'40"	Operating
77	602	696.15	Podmolje- Stanica	41 09'39"	20 45'17"	Not operating
78	599	697.67	Novo Selo	41 14'27"	20 42'00"	Operating
79	598	695.68	Draslaica	41 12'44"	20 41'55"	Operating
80	601	701.53	Dolna Belica	41 12'40"	20 39'35"	Not operating
81	609	695.40	Shum	41 10'59"	20 38'35"	Operating
82	608	695.24	Struga I	41 10'40"	20 40'40"	Operating
83	596	371.023	Radovish city	41 38'06"	22 28'03"	Not operating
84	590	347.41	Inovo	41 36'35"	22 27'55"	Not operating
85	594	326.102	Radovish-Stopanstvo	41 35'24"	22 30'39"	Not operating
86	589	346.05	Raklish	41 37'18"	22 29'15"	Not operating
87	363	260.58	Gradoshorci village	41 28'50"	22 37'45"	Not operating
88	364	241.36	Angelci	41 28'30"	22 37'20"	Not operating
89	106	231.88	Piperovo	41 28'18"	22 40'30"	Not operating
90	365	231.53	Saraj	41 28'30"	22 42'35"	Not operating
91	362	226.12	Strumica city	41 26'10"	22 38'35"	Operating
92	447	226.96	Gradsko Baldovci	41 25'15"	22 40'14"	Not operating
93	444	221.12	Dabilje	41 26'40"	22 40'45"	Not operating
94	361	227.60	Staro Baldovci	41 28'00"	22 45'20"	Not operating
95	110	215.22	Bosilevo	41 26'22"	22 44'20"	Operating
96	443	213.86	Ednokukevo	41 25'58"	22 44'30"	Not operating
97	108	213.01	Murtino	41 24'45"	22 43'35"	Not operating
98	109	209.36	Monospitovo	41 24'33"	22 46'20"	Operating
99	436	206.10	Tumovo- Vresh	41 25'30"	22 47'30"	Not operating
100	440	230.01	Radovo	41 27'15"	22 46'20"	Not operating
101	445	218.30	Sekirnik	41 26'40"	22 48'14"	Operating
102	104	210.68	Zubovo	41 24'37"	22 50'15"	Not operating
103	103	252.69	Koleshino	41 23'10"	22 49'15"	Not operating
104	441	230.35	Kol.Kadrevica	41 23'38"	22 48'45"	Not operating
105	367	205.61	Novo Selo	41 24'40"	22 52'30"	Operating
106	438	200.36	Demirica- Smolari	41 23'50"	22 53'55"	Not operating
107	448	195.43	Drazhevo	41 23'31"	22 55'55"	Not operating
108	87	252.85	Skopje city	42 00'11"	21 24'32"	Not operating
109			Ropotovo			
110			Dolneni			
111			Krivogashtani			
112			Borotino			
113			Carev Dvor			
114			Jezerani			
115			Titivo Selo			

Table B.26 First and Second Class Landmarks for Surveying of IG (1/3)

Second class					
Serial No.	No.	Location	Serial No.	No.	Location
1	52	CRNI VRV	52	234	KARADJICA
2	237	TEARCE	53	766	PRAZNA TORBA
3	236	HANGARIJA	54	647	OSTROVICA
4	264	GRUPCHIN	55	191	MURATICA
5	230	NESHINCE	56	194	KAMENIK
6	50	TABAHON	57	193	DRACHEVO
7	223	RUDOKA	58	186	KITKA
8	51	KODRA TAURLI	59	730	LISEC
9	229	GOLEMA OSTRIKA	60	197	BREZA
10	823	SHIPKOVEC	61	189	KURILOVO
11	231	VLAJNICA	62	196	LOZJA
12	824	TEPE	63	188	PAVLOV KRST
13	822	LIMUNCE	64	213	KITKA (CRNI VRH)
14	227	CRKOVICA	65	187	GROHOT
15	228	SANDAKTASH	66	680	TUKASHEV RID
16	643	MEDENICA	67	586	PANISHTE
17	642	KRCHIN	68	60	ZEBRENJAK
18	225	BISTRA	69	588	KRASTE
19	459	VARDINA	70	649	PEROS
20	688	VRABIK	71	470	KULA
21	687	STOGOVO	72	473	GRADISHTE
22	460	GOLJAK	73	59	GOLEMI BARBESH
23	457	GOLEMA KURIJA	74	192	SR. GRADISHTE
24	456	CACAN	75	212	JENI KURI BAIR
25	454	PESJAK	76	211	ILANCI
26	455	BABA BACH	77	226	DAUTICA
27	164	RADIK	78	232	VIDUM
28	461	ARBINSKO BRDO	79	220	IVANOV VRH
29	163	PISKA	80	184	BISA
30	153	PAUMSKA PLANINA	81	218	GOCHU
31	157	VISHESLOJEC	82	216	SV. ILIJA
32	154	DONJI PUT	83	214	MAVROVICA
33	690	BELICHKO BRDO	84	217	CUCULA
34	155	KRASTA	85	183	KLEPA
35	156	VISHEVSKO BRDO	86	221	MILJACHICA
36	689	KJafa SAN	87	276	LJUTA
37	158	VISHESLA	88	273	KOZJAK
38	159	ISTOK	89	404	JASENOVA GLAVA
39	113	GOLEM KAMEN	90	272	RUJEN
40	160	PRUGLAJASH	91	57	LJUBASH
41	161	STIPONKA	92	405	MRAMOR
42	162	VRTESHKA	93	270	KOBILJARNIK
43	241	VELIKI VRH	94	271	GRBAVEC
44	185	ZHEDEN	95	269	KOPACH
45	235	CRVEN KAMEN	96	584	PEVALEC
46	190	JELENINA GLAVA	97	453	CRNI VRH
47	587	TRNJE	98	134	NEGOTIN
48	195	KRST	99	135	DISAN
49	3	BELUSHKA	100	242	GOLEMA RUDINA
50	62	KRSTOVAR	101	445	GORNIKOVO
51	723	CRNA LAMA	102	439	KUMANICHEVO

Table B.26 First and Second Class Landmarks for Surveying of IG (2/3)

Serial No.	No.	Location	Serial No.	No.	Location
103	448	RAKOVEC	155	147	BELA GLAVA
104	437	BUDKOVEC	156	180	PETLEC
105	112	KALE	157	181	GRAMADIK
106	96	MOS	158	277	GRABOVA CHUKA
107	114	OBLAKOVO	159	278	KLEPALO
108	111	SAMAR	160	274	PETROVO BRDO
109	97	JANINA KOLIBA	161	809	GOVEDARSKI RID
110	99	SREDNO EGRI	162	179	ASANLIJA
111	95	DJAULA	163	149	IZVEDEN
112	98	GOLJANI	164	148	JAILA
113	446	GRUNISHKI VIS	165	67	KURIJA
114	447	PANTELEMON	166	215	RAJCHINSKI RID
115	94	VISOKA	167	219	KURJACHKI RID
116	440	MESHNIK KUPA	168	80	BOLTEPE
117	243	PERUN	169	131	ORLO BAIR
118	438	DOBRO POLE	170	152	GOLOSHEC
119	449	LISAC	171	151	RAJCHEVO BRDO
120	770	STUDENA VODA	172	93	ZOBNIK
121	137	DEMIR KAPIJA	173	58	GORNO VARDISHTE
122	136	CHUKA	174	77	JEZHOVO
123	130	KRASTAVAC	175	78	SELCE
124	166	KARADAK	176	68	POGLED
125	165	STEFAN	177	66	KOSTOLAR
126	444	RAKOVEC	178	64	RAJCHANSKI RID
127	771	CHARDAK	179	807	GRDOVCI
128	768	DUDICA	180	65	KOZENIK
129	769	MALA RUPA	181	810	VINICHKA CHUKA
130	132	FLORA	182	177	CHAVKA
131	239	BRSTI VRH	183	808	OBOZNA
132	282	M. KRSH	184	178	BEJAZ TEPE
133	240	GEVGELIJA	185	801	GRASHKA MOGILA
134	85	GOLI RID	186	802	SARAJEVO
135	81	MUHADJET TEPE	187	800	VRTESHKA
136	146	VISOKI CHUKAR	188	63	VISOKA
137	140	IRAKLI	189	798	GORICA
138	143	KASHTITE	190	61	SINKOVICA
139	144	POD	191	797	POBIJEN KAMEN
140	142	SECHENA SKALA	192	799	SIVA KOBILA
141	141	TROMEGJA	193	683	PONIKVE
142	91	MEMESHLISKI VRH	194	684	LISAC
143	133	JUSE KORIIJA	195	471	ASANICA
144	89	BOSKIJA	196	685	VIDIN
145	90	DUB	197	472	VELJA STRAZHA
146	125	LIPA	198	681	GOGLIN
147	87	GRADISHTE	199	813	CHATAL CHESHMA
148	145	BATKOV KAMEN	200	761	S. TEPE
149	83	DRAGOMIRSKA	201	682	STRAZHA
150	82	KRASTA	202	712	PEREN
151	84	TUZLA TASILOVO			
152	86	BRCHINA			
153	79	ADJI CHUKA			
154	150	TUMBA			

Table B.26 First and Second Class Landmarks for Surveying of IG (3/3)

First class		
Serial No.	No.	Location
213	136	STRUMICA
214	137	ZAPADNA BAZISNA
215	138	ISTOCHNA BAZISNA
216	130	VISOKA CHUKA
217	112	GOLIK
218	105	RAMNO
219	106	LJUBOTEN
220	110	DOBRA VODA
221	123	BABIN SRT
222	124	KRSTAC
223	125	PLAKENSKA PLANINA
224	126	GALICHICA
225	108	TURCHIN
226	127	PELISTER
227	128	KAJMAKCHALAN
228	121	LIVADE
229	139	TOPLICHKI VIS
230	152	KONJARE
203	104	KOZJAK
204	113	CRNI VRV
205	114	RUEN
206	115	BORCHUKA
207	116	KADICA
208	117	LISEC
209	118	BOGOSLOVEC
210	120	BEL KAMEN
211	119	OGRAZH DEN
212	135	KUKAVICA
231	151	VRBJANE
232	150	NOVO SELANE
233	122	BUSHOVA CHESHMA
234	129	KECHI KAJA
235	111	S. GLAVA
236	109	KORAB

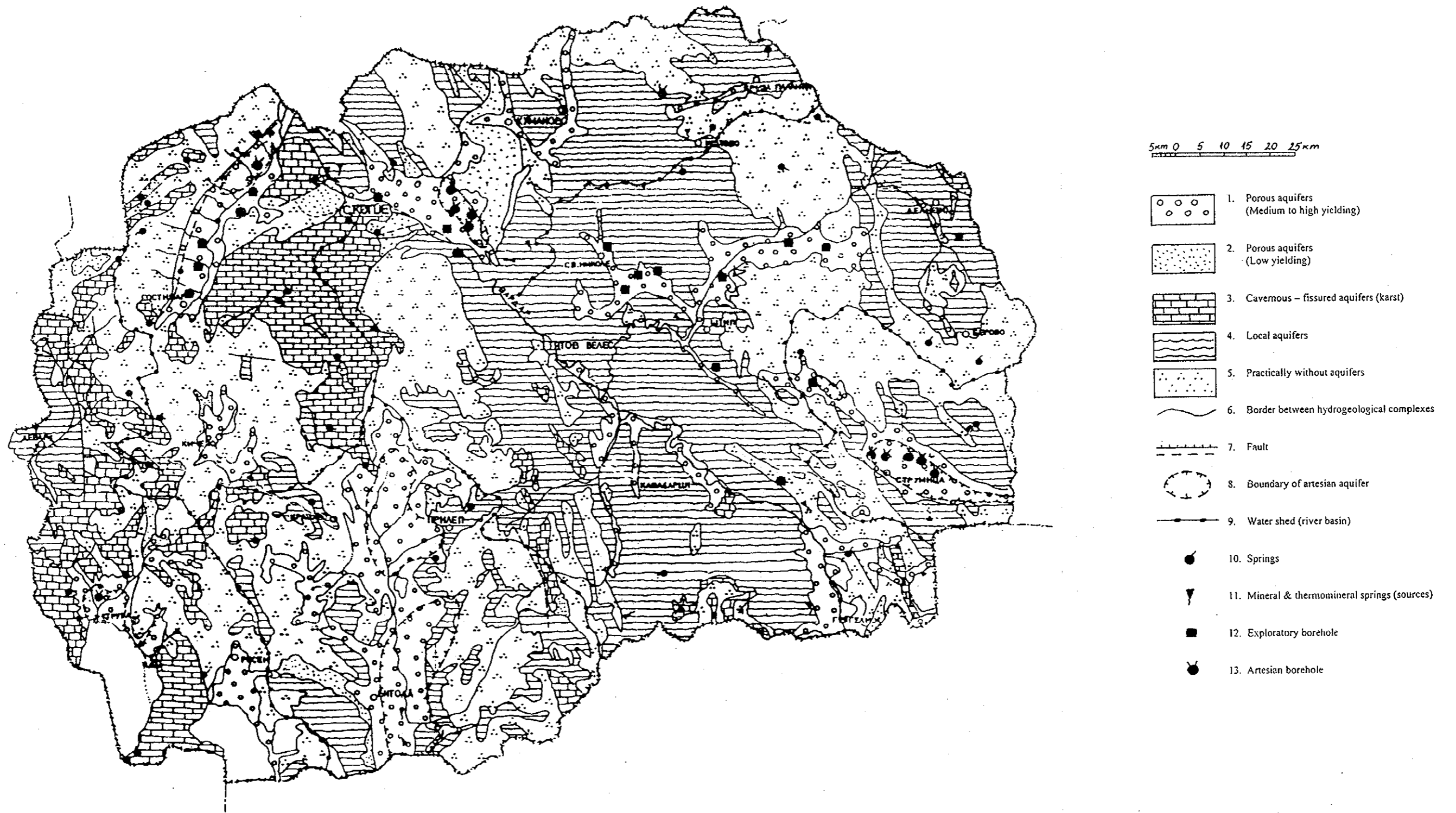


Figure B.1 Hydrogeological Map of Macedonia (Simplified)

Number of wells/boreholes by well type

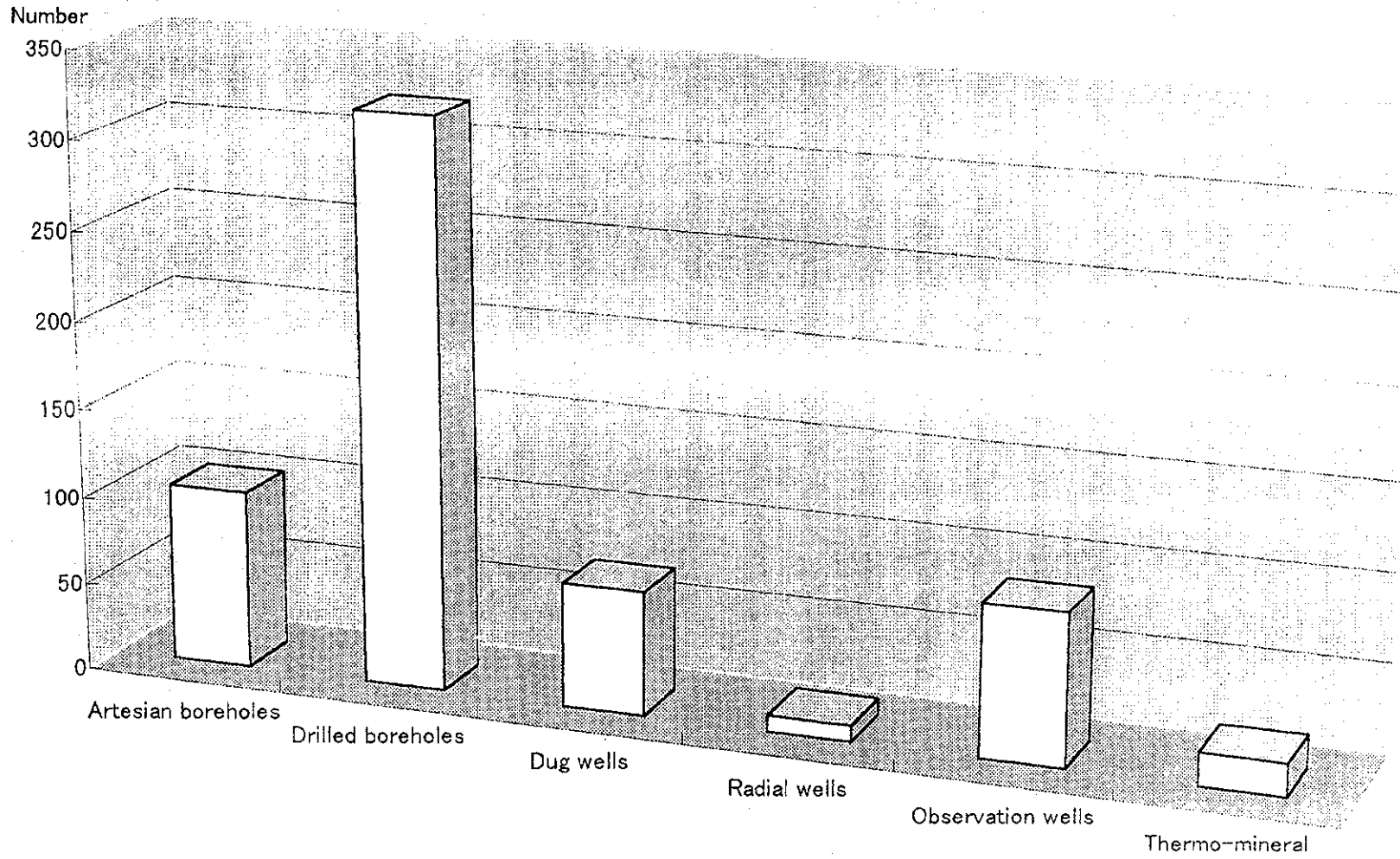
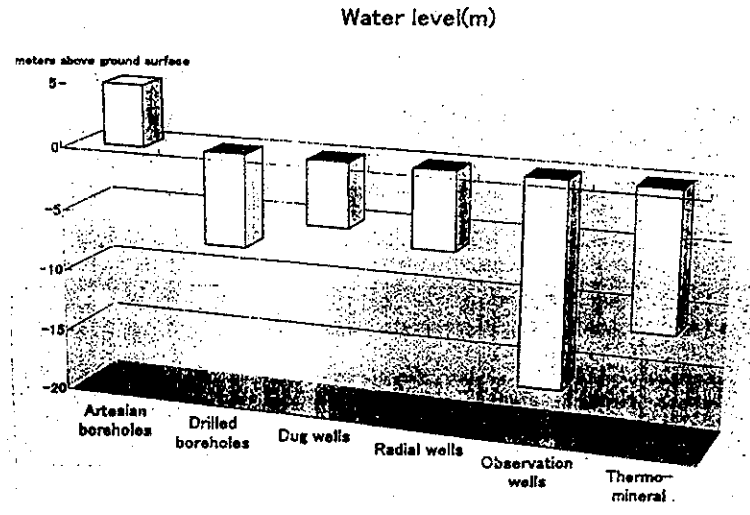
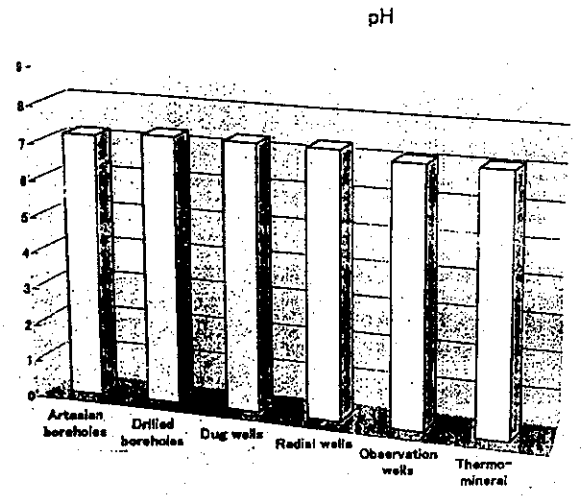
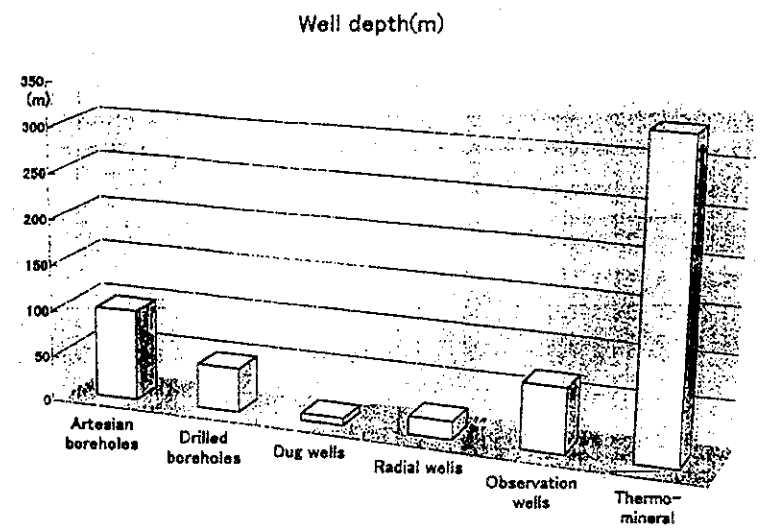
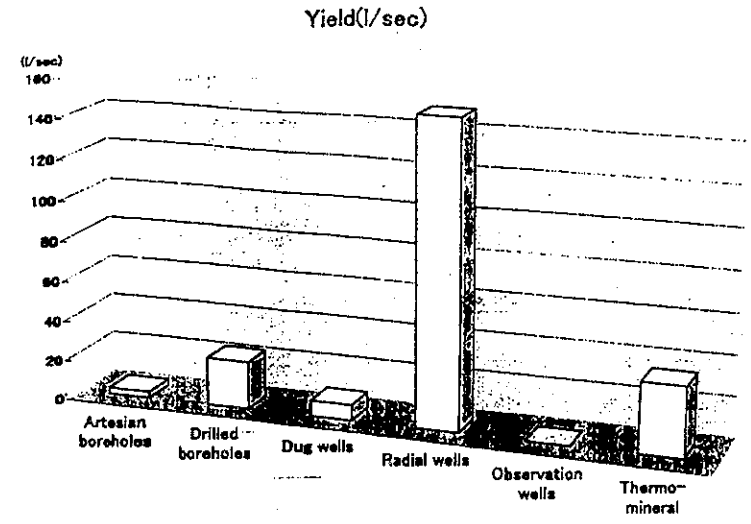


Figure B.2 Number of Wells/Boreholes by Well Type

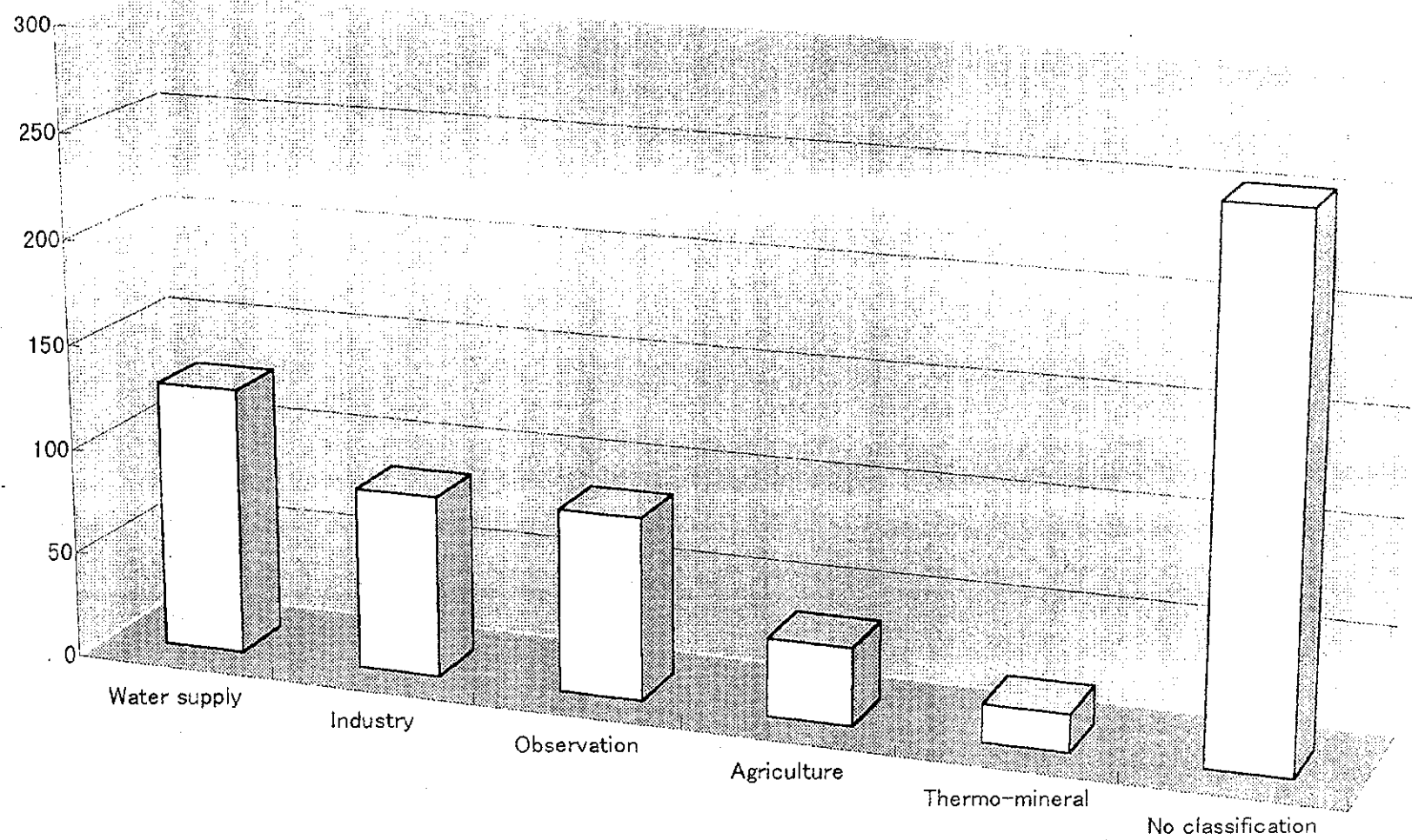
Figure B.3

Characteristics of Wells/Boreholes



Number of wells/boreholes

Figure B.4 Number of Wells/Boreholes by Well Use



Number of wells/boreholes by geology

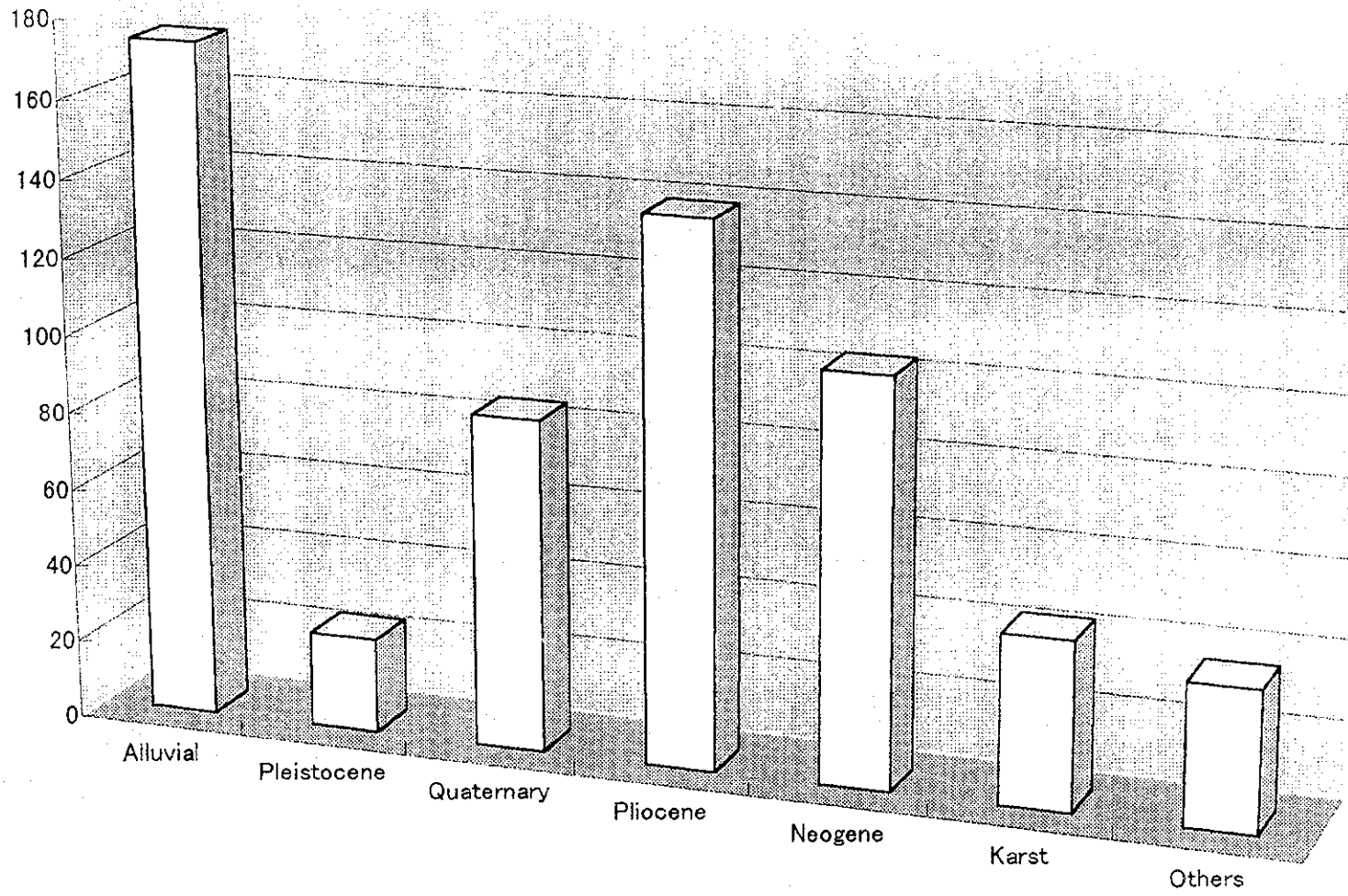


Figure B.5 Number of Wells/Boreholes by Geology

Number of wells/boreholes by municipality

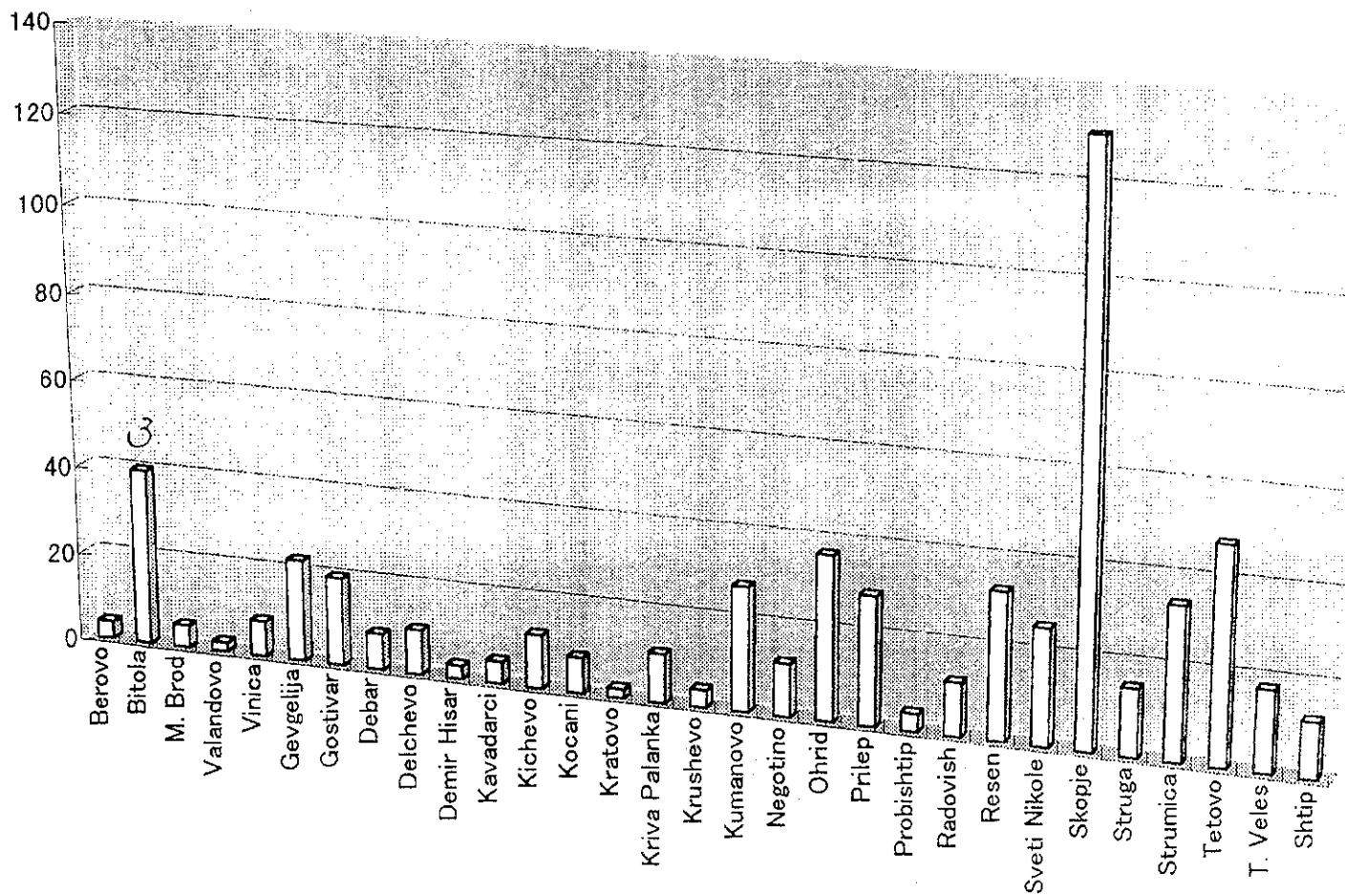
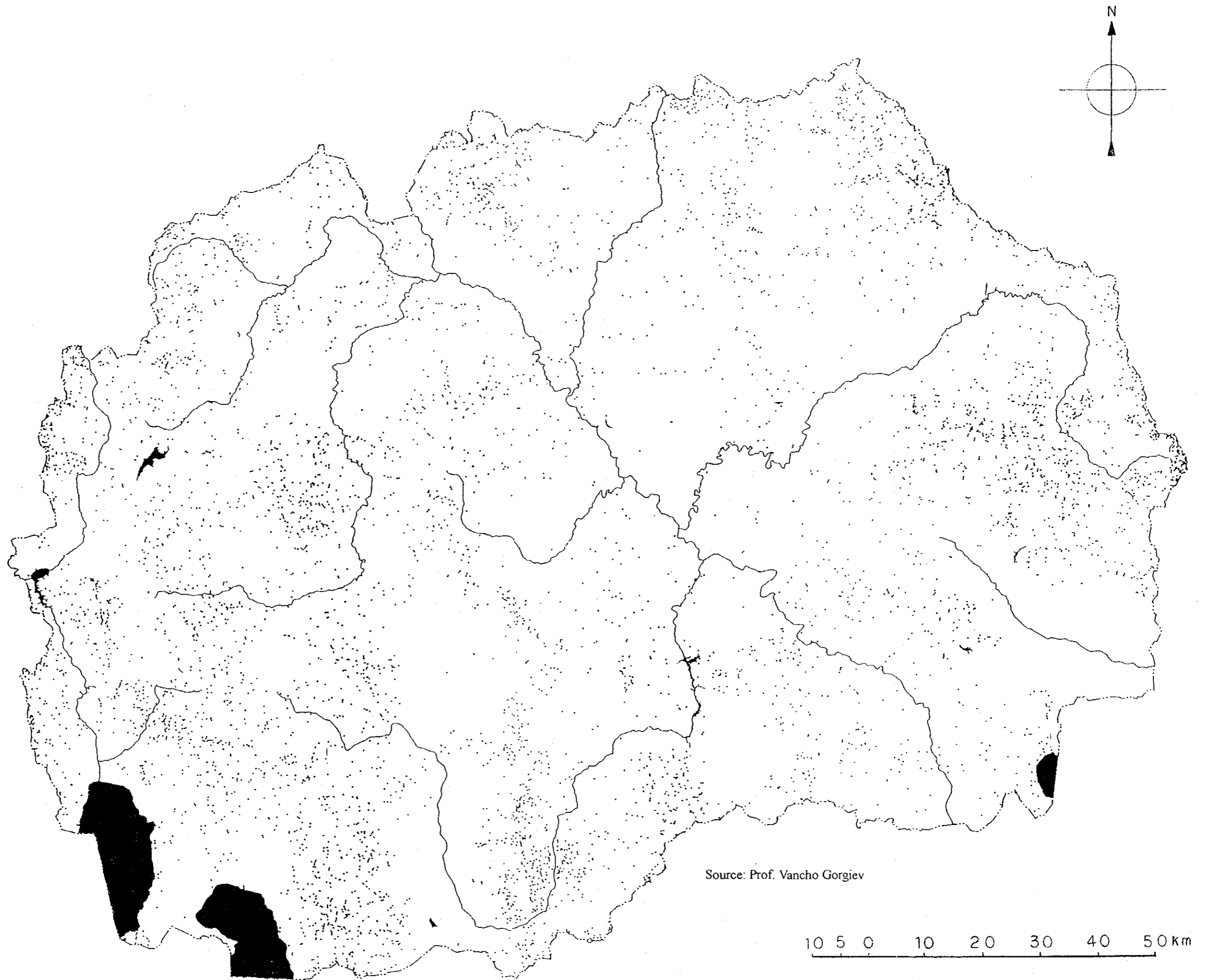


Figure B.6 Number of Wells/Boreholes by Former Municipality

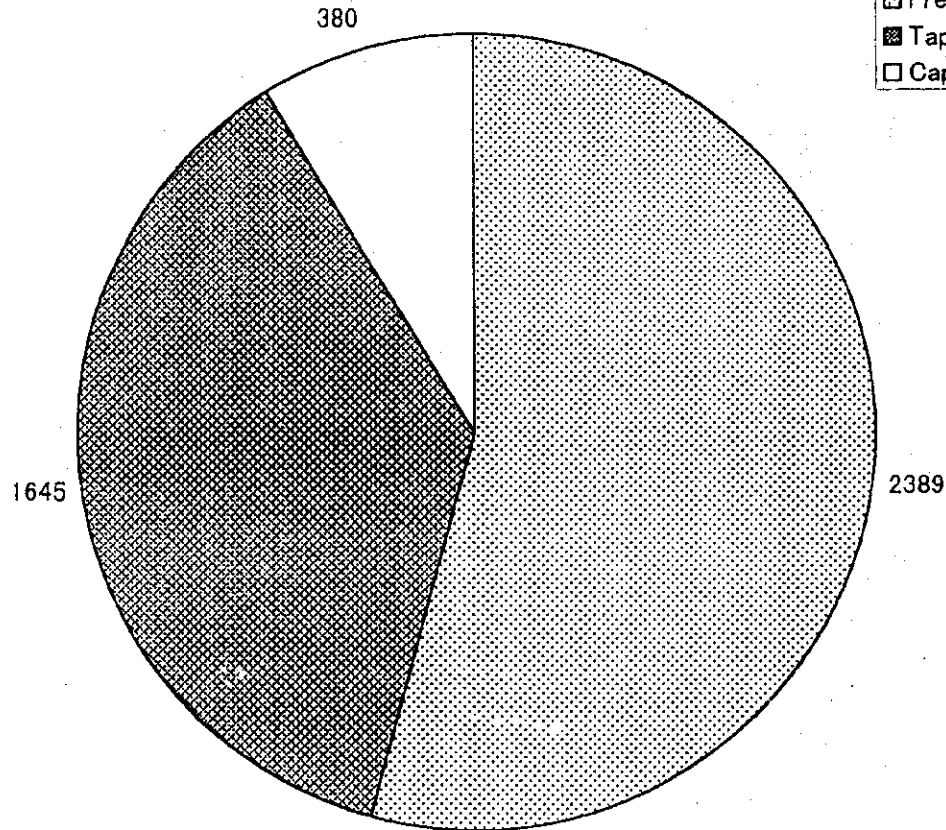


Source: Prof. Vancho Gorgiev

10 5 0 10 20 30 40 50 km

Figure B.7 Location of Springs in Macedonia

number of springs



Total yield ($\times 10^6 \text{ m}^3/\text{year}$)

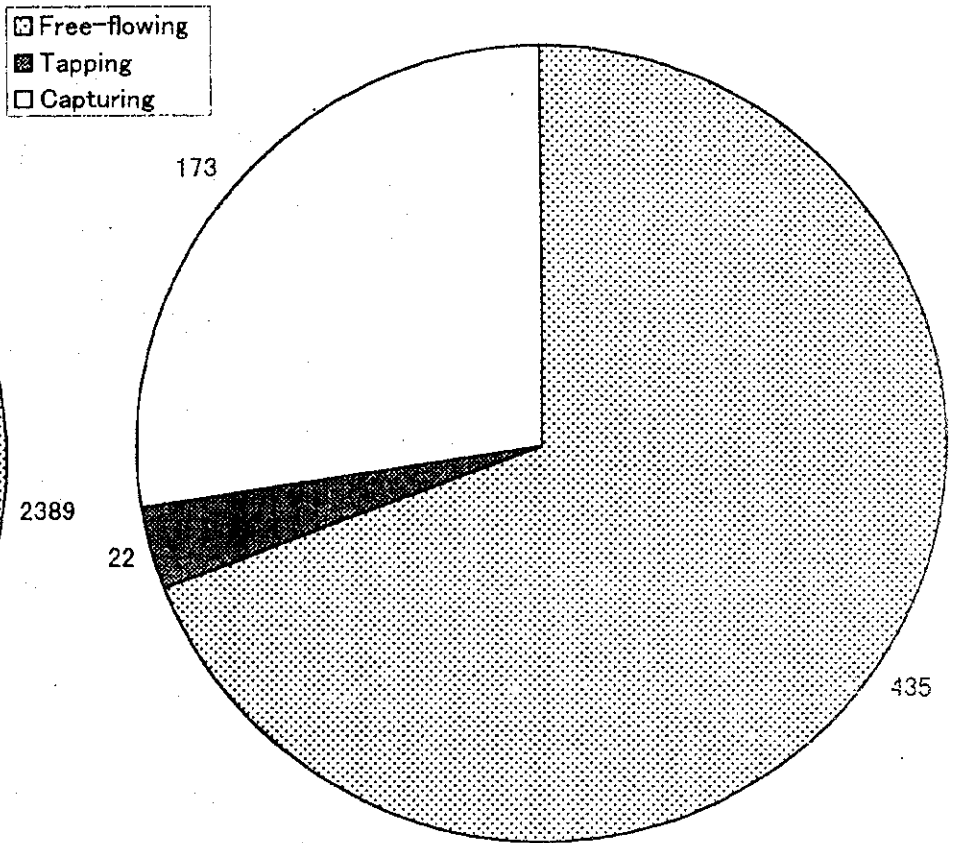


Figure B.8 Nationwide Number of Springs and Spring Yield

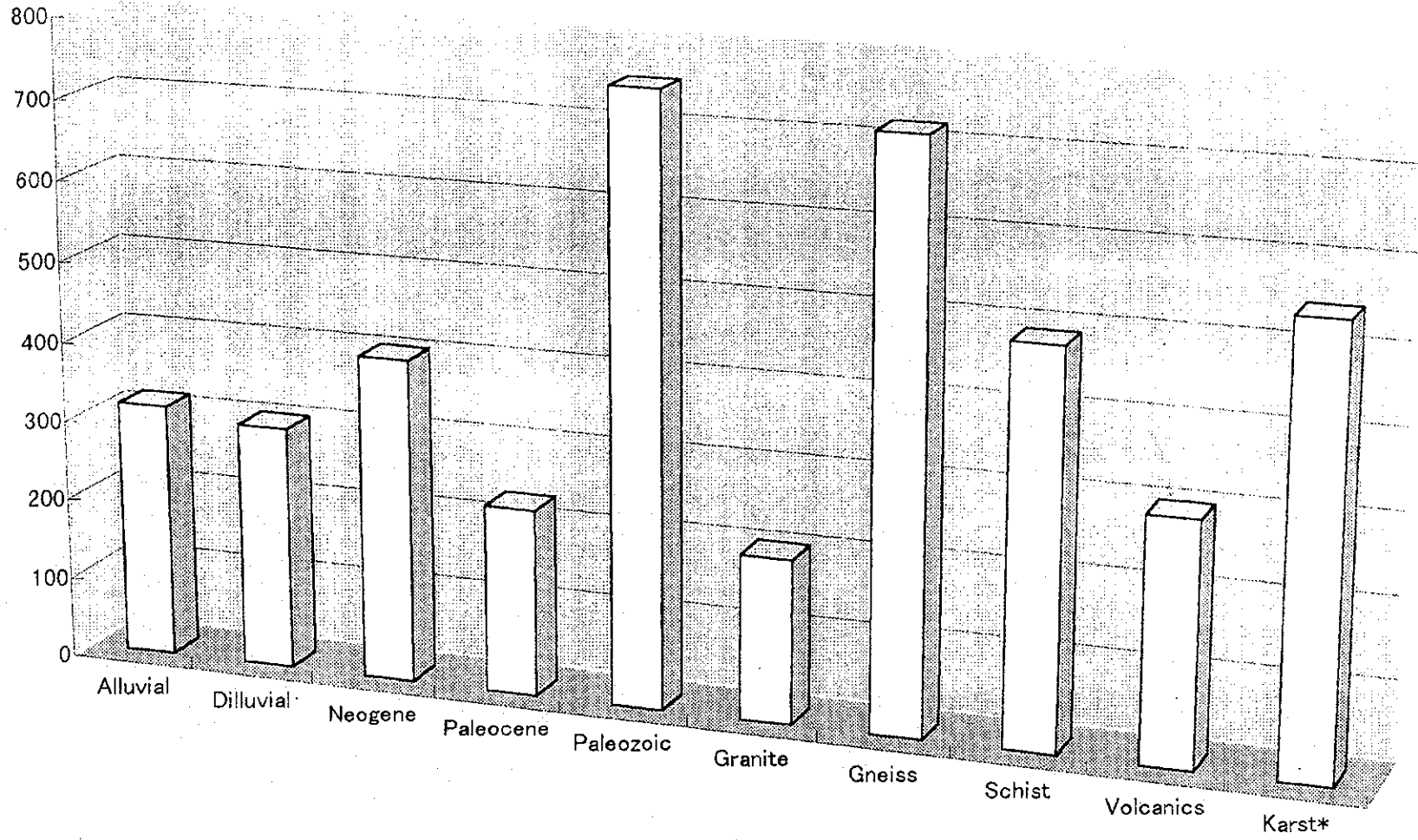


Figure B.9 Number of Springs by Geology

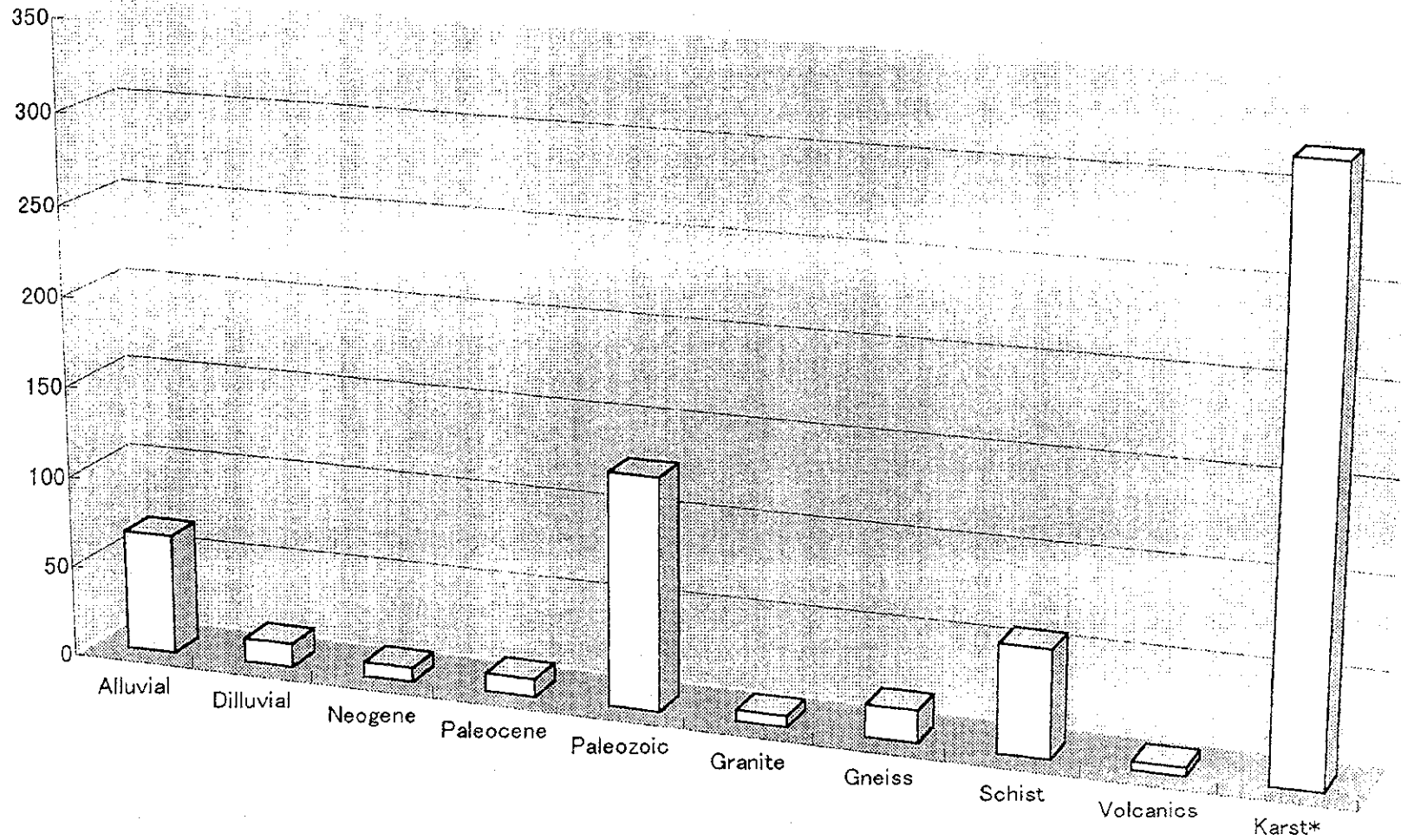


Figure B.10 Total Yield of Springs by Geology

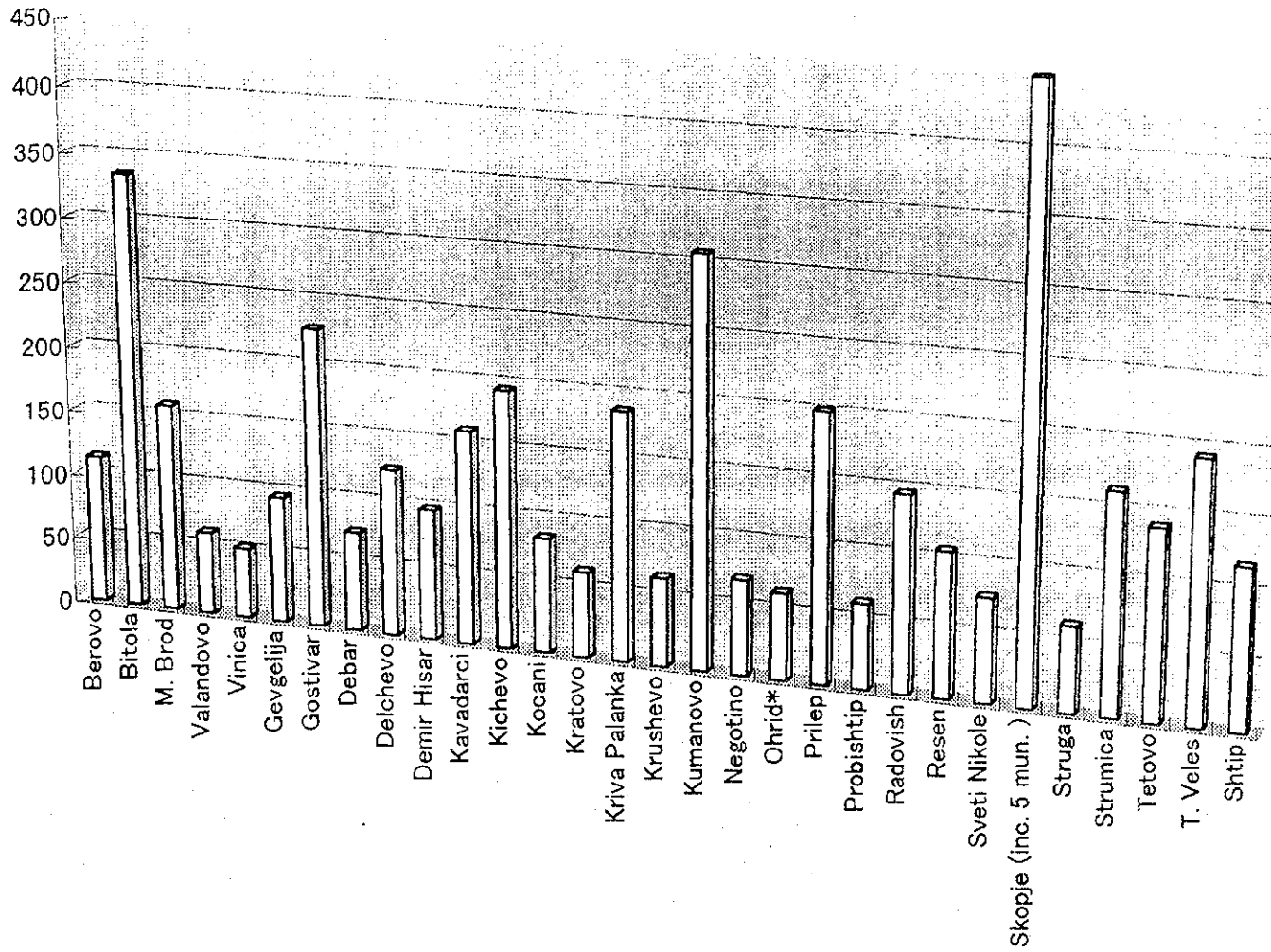


Figure B.11 Number of Springs by Former Municipality

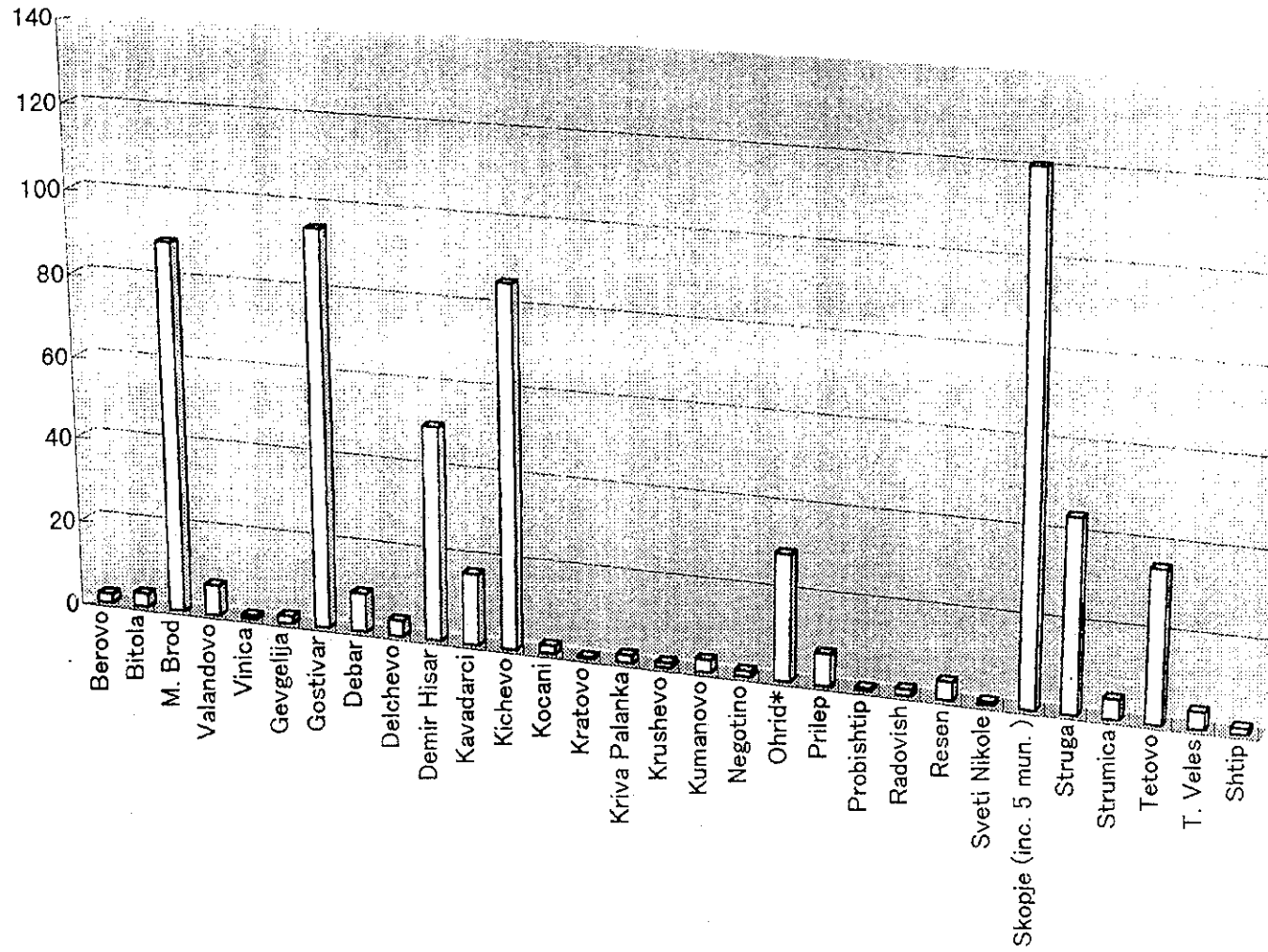


Figure B.12 Total Yield of Springs by Former Municipality

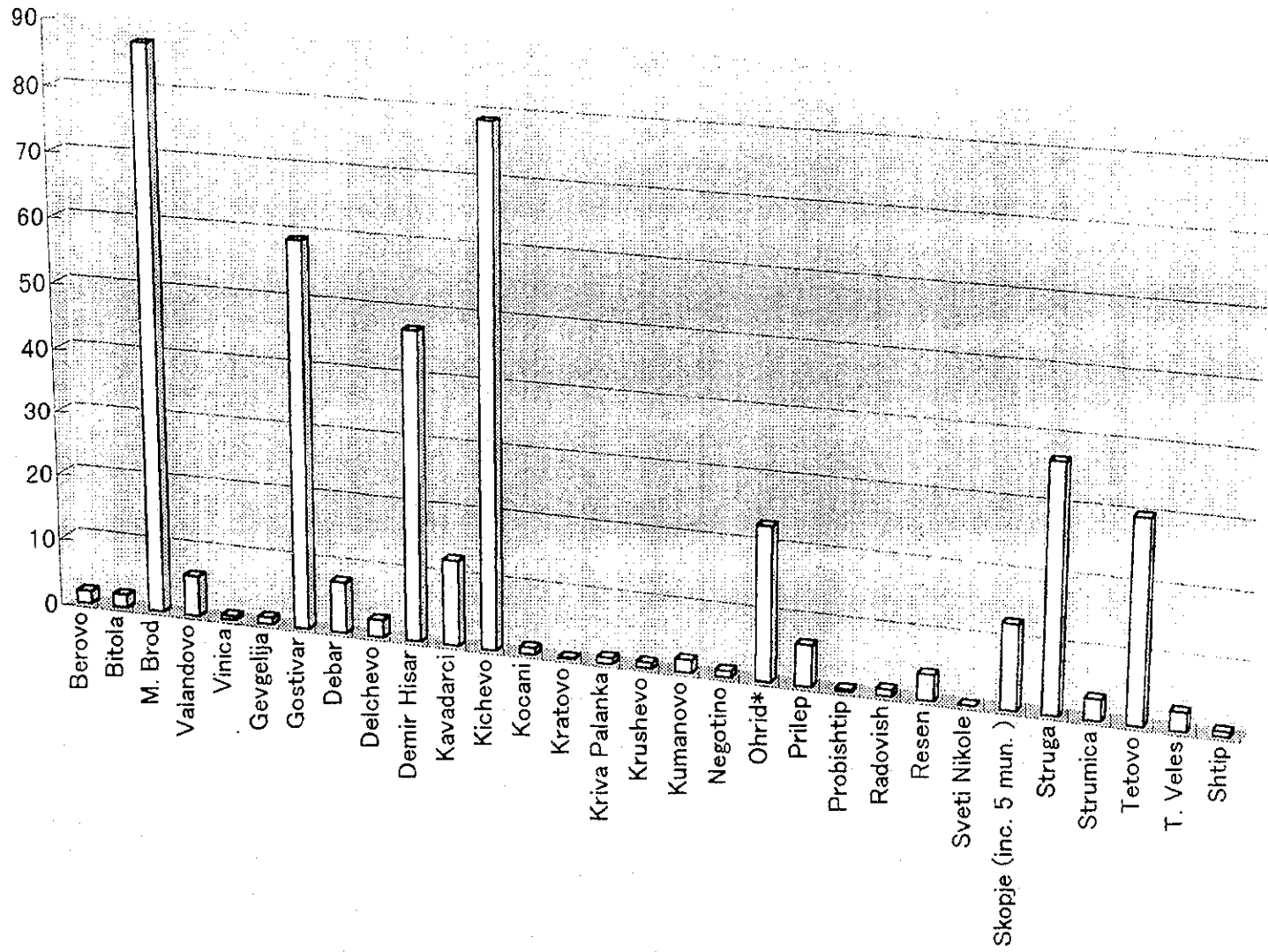


Figure B.13 Free-Flowing Spring Water by Former Municipality

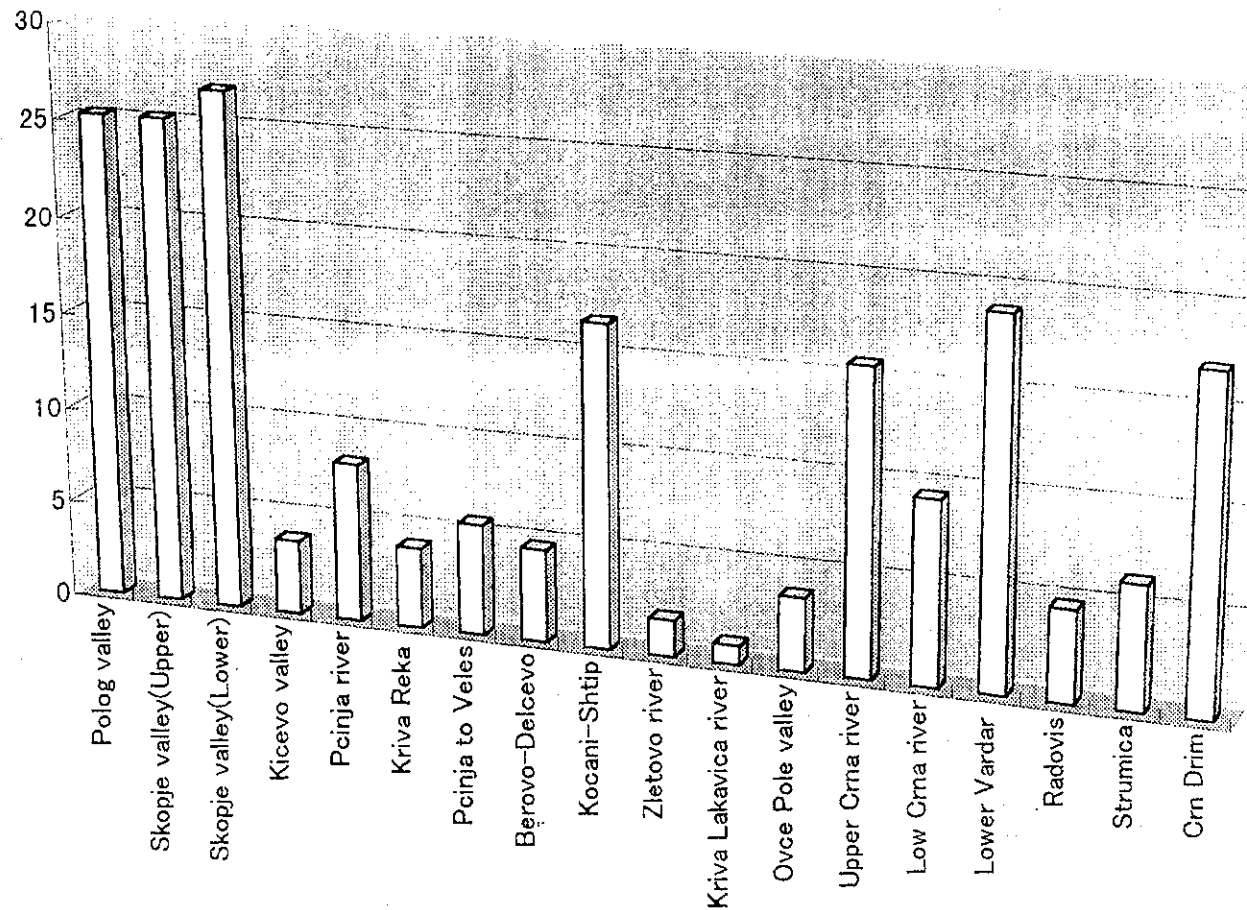


Figure B.14 Potential Amount of Groundwater by River Basin