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ABSTRACTS

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POLLUTION OF HEAVY METALS IN PART OF THE TERRITORY OF THE REPUBLIC OF MACEDONIA *DATA ON POLLUTION OF WATERS, SOILS, FLORA AND FAUNA

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Examinations presented in this paper were carried out for the Kratovo-Zletovo volcanic area which is one of the largest Tertiary volcanic areas in the Balkan peninsula. The area is situated in the south-eastern part of the Republic of Macedonia. It is characterized by the presence of significant Pb-Zn occurrences as well as occurrences of other mineralization styles. Examinations were carried out in order to determine the amount of presence of heavy metals in water, soil, flora and fauna.

Another reason for these examinations is that the Dobrevo mine which is in operation and plants for mineral processing are situated in the vicinity of the town of Probistip. The waste waters from the mine and mineral processing plant pollute the water and the soil. These secondary geochemical environments pollute other environments in biosphere or flora and fauna. In this regard preliminary examinations were conducted on samples taken from larger river flows (the Rivers Bregalnica and Zletovska (as well as on samples from soil and plant and animal organs.

The contents of Ca, Mg, Na and K as major, and Fe, Al, Mn as secondary and As, Ag, Ni, Cr, Co, Cu, Pb, Zn and Id as microelements were determined by AEC-ICP method.

Table 1 : Distribution of elements in the soil samples in the locality Globica

	Pb	Zn	Cu	Cd	As	Na	K	Fe	Al	Mn	S
1	322	269	25	5	21	0.08	0.28	3.47	2.16	0.19	0.08
2	174	245	61	8	<1	0.06	0.43	5.13	3.01	0.20	0.21
3	529	693	44	9	18	0.08	0.21	3.53	1.11	0.61	0.11
4	193	347	72	9	9	0.06	0.37	5.18	2.84	0.21	0.22
5	944	706	55	9	18	0.06	0.34	3.58	1.70	0.28	0.11
6	177	532	31	4	9	0.06	0.21	2.74	1.10	0.13	0.13
7	429	306	38	5	6	0.09	0.41	3.44	2.19	0.19	0.07
8	502	402	34	7	5	0.07	0.40	3.61	1.79	0.21	0.11
9	164	201	24	4	16	0.1	0.34	2.90	2.05	0.12	0.08
10	244	353	44	6	10	0.08	0.29	3.43	1.41	0.17	0.09
11	445	398	34	7	11	0.07	0.35	3.78	1.31	0.22	0.16
12	1007	770	90	9	4	0.08	0.47	3.62	2.49	0.17	0.26

The AEC-ICP method was chosen because it performs routine simultaneous, multielement determination of both major and trace elements disolved in surface water, drinking water, soil as well as some animal organs and plants. The examinations were focused on determination of the degree of Pb, Zn, fe, Mn, As, Cd, and Cu presence as the most toxic heavy metals.