

Sample collection campaign from 09.12.2023 in Moldova Nouă area for sustainability of the RoS-NET2 project: physicochemical parameters

The WUT team continued to collect the samples for the sustainability of the RORS 337 project, and the collection campaign took place on December 9, 2023, in the Moldova Nouă area.

Again, the same samples were collected by the research team, the physico-chemical parameters were measured in situ, and the microbiological and ecotoxicological analyses were made in the laboratory (Advanced Environmental Research Laboratory, AERL, Timișoara, Romania). For the determination of metals, the samples collected from the Moldova Noua area were sent to the Institute of Mining and Metallurgy in Bor, Serbia.

For the sustainability of the RORS 337 project, our team from Timisoara has collected the samples from the Moldova Noua area and analyzed the samples for physicochemical analyses in situ. The analyses that have been realized are pH, conductivity, turbidity, and temperature measurements. All the results are illustrated in the following table.



Cooperation beyond borders.

Interreg-IPA Cross-border Cooperation Romania-Serbia Programme is financed by the European Union under the Instrument for Pre-accession Assistance (IPA II) and co-financed by the partner states in the Programme.

Project RoRS 337- ROmania Serbia NETwork for assessing and disseminating the impact of copper mining activities on water quality in the cross-border area (RoS-NET2)

TABLE 1. Physicochemical parameters of the sample collected from Moldova Noua area in summer campaign – 09.12.2023

Sample ID	Location name of the sample	Physicochemical parameters of the sample						
		pH	Redox potential (mV)	Conductivity (µS/cm)	Turbidity (FNU)	Temperature of sample (°C)	Temperature of air (°C)	Obs
W18	Boşneag River (Moldova Veche)	6.79	1	1003	2.77	6.9	5	after rain, unclean water
W19	Boşneag River (upstream Moldova Veche)	7.08	-13	710	2.29	6.8	5	after rain, unclean water
W20	Radimna River (Pojejena)	6.9	1	403	7.75	5.5	3	after rain, unclean water
W21	Radimna River (upstream Pojejena)	7.07	-18	399	1.03	4.8	4	after rain, unclean water
W22	Nera River (Socol)	6.88	-2	334	6.8	5.6	5	after rain, unclean water
W23	Nera River (upstream Socol)	9.2	-133	322	4.97	6.4	5	after rain, unclean water
WU11	Well from village of Coronini, near the pond Boşneag	6.77	11	655	0.47	12.3	4	Public well, spring
WU12	Well from village of Moldova Veche, near the pond Boşneag	6.72	7	1005	0.86	14	4	Public well, drilled
WU13	Well from village of Macesti	6.18	34	869	1.08	9	4	Public well, drilled
WU14	Well from village of Divici	8.1	-334	1220	2.56	12.5	4	Public well, spring



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The results obtained for surface water samples showed that almost all values are within normal limits, except sample W23, which registered a higher value for pH measurements with a value of 9.02. For turbidity determination, samples W20 and W22 measured values over the normal range.

TABLE 2. Interpretation of results obtain for surface waters and MAC values according to Romanian legislation

No.	Parameters	MAC	Unit	W18	W19	W20	W21	W22	W23
1	pH	6.5 - 8.5		6.79 ↔	7.08 ↔	6.9 ↔	7.07 ↔	6.88 ↔	9.2 ↑
2	Conductivity	2500	μS cm ⁻¹	1003 ↔	710 ↔	403 ↔	399 ↔	334 ↔	322 ↔
4	Turbidity	5	FNU	2.77 ↔	2.29 ↔	7.75 ↑	1.03 ↔	6.8 ↑	4.97 ↔

↔ - between normal limits; ↑ - above normal limits;

According to Romanian legislation, all groundwater samples from the Moldova Noua Area had values within the normal range.

TABLE 3. Interpretation of results obtain for groundwaters and MAC values according to Romanian legislation

No.	Parameters	MAC	Unit	WU11	WU12	WU13	WU14
1	pH	6.5 - 9.5		6.77	6.72	6.18	8.1
2	Conductivity	2500	μS cm ⁻¹	655	1005	869	1220
4	Turbidity	5	FNU	0.47	0.86	1.08	2.56