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DROBETA TURNU SEVERIN AIR QUALITY MONITORING REPORT

TO:

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Results of the Air Quality Monitoring Campaign in DROBETA TR. SEVRIN

Location: Drobeta Turnu Severin (Nicolae Iorga street no.1)

Coordinates of the AQM stations:

- UPT Mobile laboratory: 44°375607 N, 22°403509 E, altitude 65 m

Start on: 12 November 2011 and ended in 17 November 2011

Team Experts: Francisc Popescu, Nicolae Lontiș, Gavrilă Trif-Tordai, Gavril Brăteanu

1. Overview of the Drobeta Turnu Severin monitoring sites:



Spatial location of the AQM stations

Drobeta-Turnu Severin is a city in Mehedinți County, Romania, on the left bank of the Danube, below the Iron Gates. The city administers three villages: Dudașu Schelei, Gura Văii, and Schela Cladovei. The population of Severin is 104,557 (2002) up from 18,628 in 1900.



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After gaining freedom from Ottoman control as a consequence of the Treaty of Adrianople in 1829, it was decided to rebuild the present city. A rigorous program started in 1836. It was followed, in 1858, by the construction of the harbor. By 1900 the national road, rail, the Carol and Elisabeta boulevards, Navigația Fluvială Românească (River Navigation of Romania), the railway workshops, the shipyard (which in 1914 was the largest in the country), the Roman Hall, the Municipal Palace, three churches and two hospitals were built. In 1883, on May 15, Theodor Costescu established Liceul "Traian" ("Traian" Highschool), which in the next century would become a modern school of national prestige. The building of industrial factories spurred the development of the city. In 1841, Severin became the capital of the county and in 1851 became a city. As a major port on the Danube, the freedom of trade facilitated the entry of goods by boat from Vienna and the exchange of material necessary for economic development. Severin experienced a steady economic, urban and social growth until 1972, when it received the name of *Drobeta-Turnu Severin*.

In 1914, the Castelul de Apa (The Water Castle) was opened. Considered an emblematic monument to the people of Severin, it gives identity to the city by being built in one of the major traffic roundabouts of the settlement.

Source: http://en.wikipedia.org/wiki/Drobeta-Turnu_Severin

The city was one of the top industrial cities in Romania, with heavy water plant (highest purity in the world and unique in Europe), second largest shipyard in Romania, cellulose & paper plant, train wagons plant, large power plant, a.o. However, after 1989, the industry development decreased and many of its major companies are today closed or working at minimum capacity.



View of the site location in Drobeta Turnu Severin



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2. Results obtained during Drobeta Turnu Severin air quality monitoring campaigns:

The UPT Mobile Laboratory was located in the perimeter of the Romanian Authority for Nuclear Activities, on the Nicolae Iorga street no.1. Instruments characteristics, performances and principles of operations were described in previous reports. In the next figures the concentrations measured for relevant air pollutants are presented.

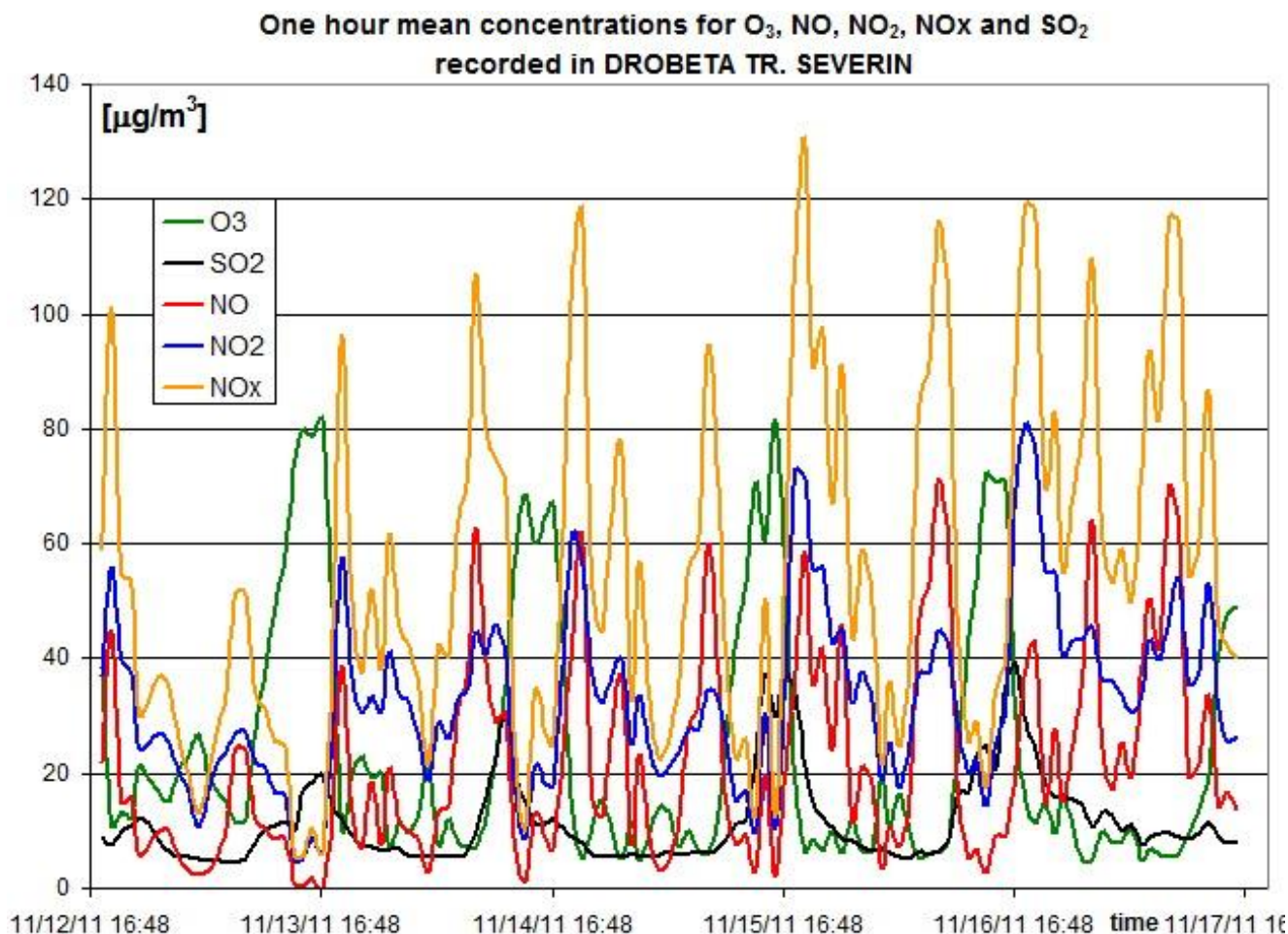


Fig 1. Hourly mean values recorded for SO₂, NO, NO₂, NO_x and O₃ in Drobeta Turnu Severin



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One hour mean concentrations for CO, CH₄, VOC (NMHC) and THC recorded in DROBETA TR. SEVERIN

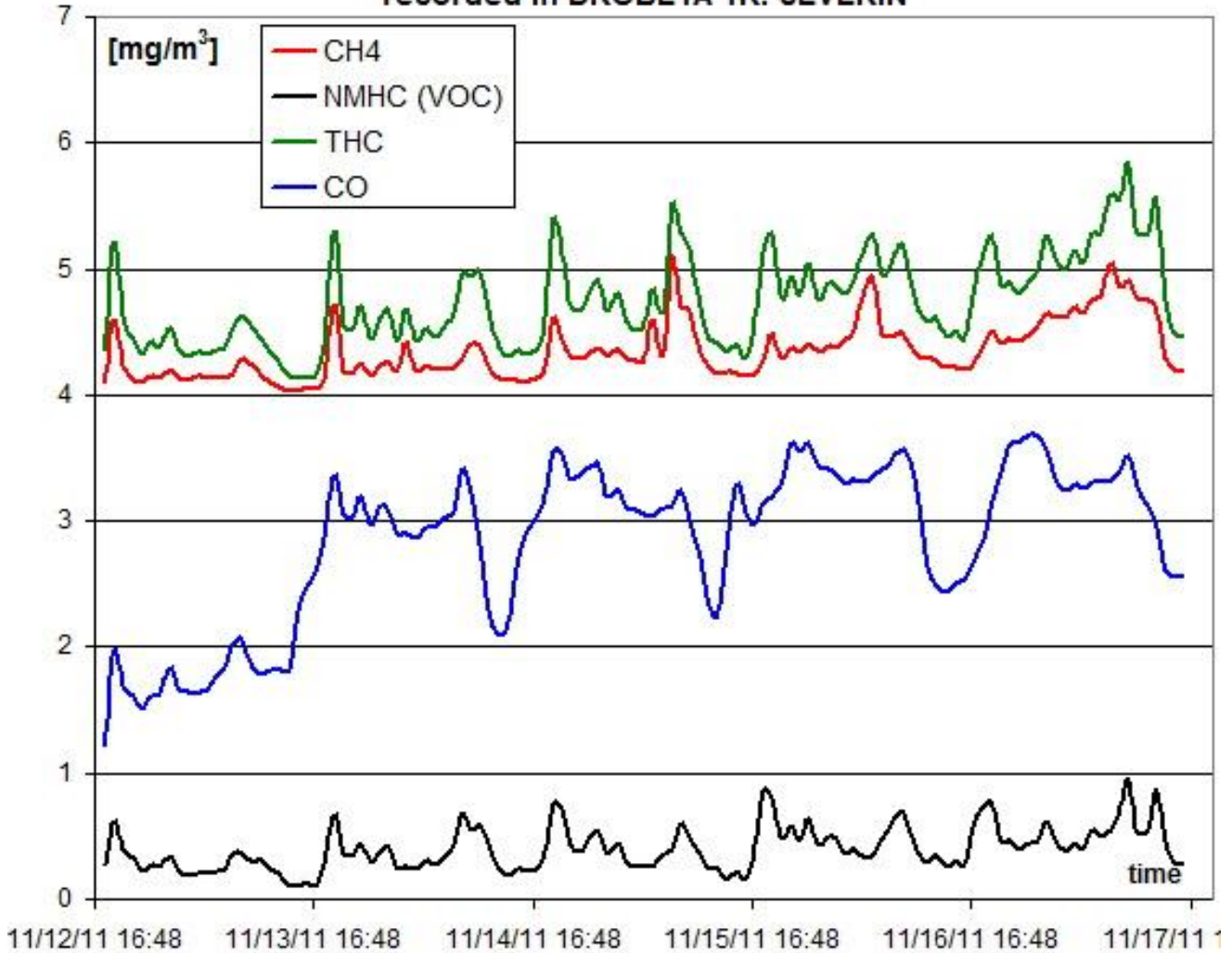


Fig 2. Hourly mean values recorded for CH₄, NMHC, THC and CO in Drobeta Turnu Severin



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Daily mean concentrations for O₃, NO, NO₂, NO_x, SO₂ and PM₁₀ recorded in DROBETA TR. SEVERIN

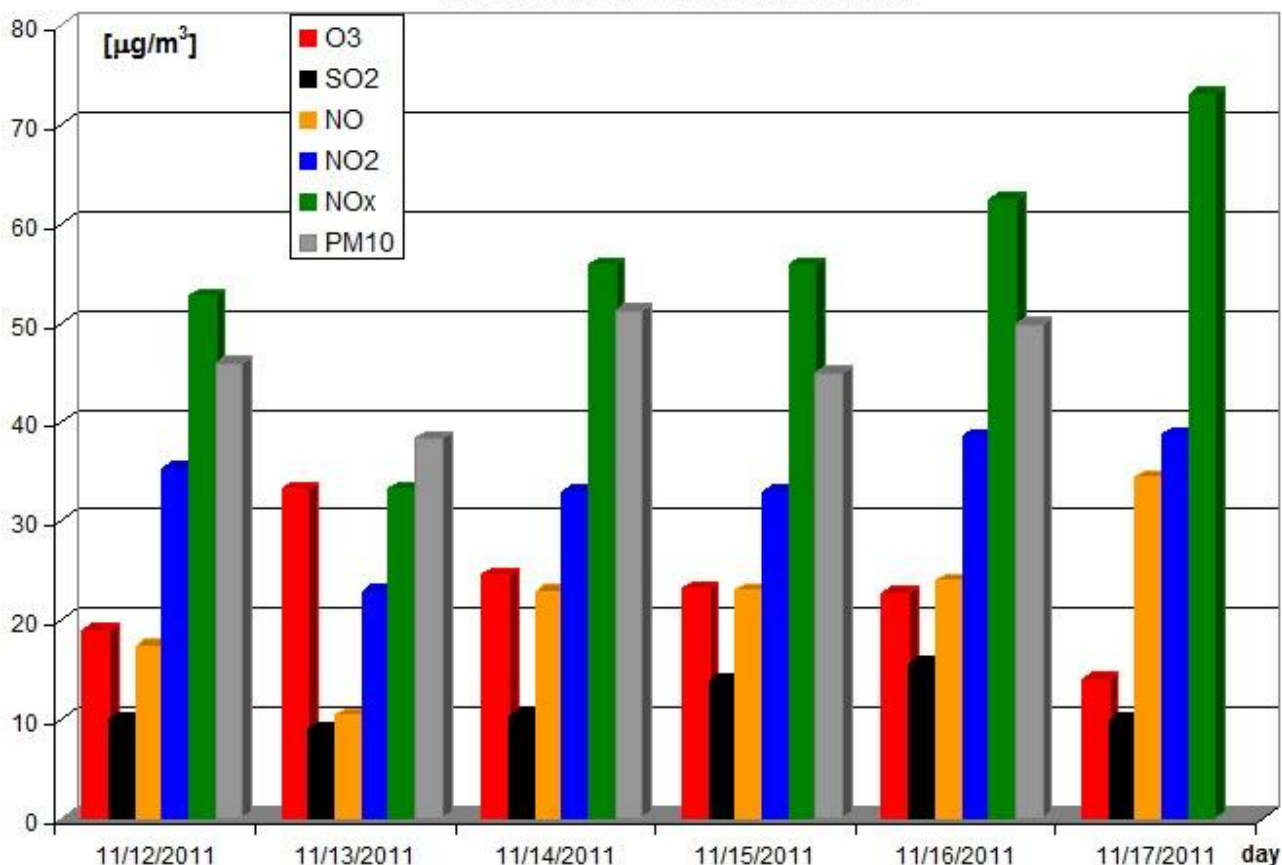


Fig 3. Daily mean values recorded for SO₂, NO, NO₂, NO_x, PM₁₀ and O₃ in Drobeta Turnu Severin

Table1. Daily mean values recorded for Drobeta Turnu Severin site

Day	O ₃	SO ₂	NO	NO ₂	NO _x	CH ₄	NMHC	THC	CO	PM10 DRX	PM10 LSV3
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³	µg/m ³	µg/m ³
11/04/11	18.93	9.92	17.37	35.31	52.68	4.20	0.34	4.53	1.60	46.62	45.88
11/05/11	33.23	9.00	10.33	22.92	33.25	4.17	0.28	4.44	2.26	37.37	38.32
11/06/11	24.53	10.21	22.91	32.95	55.86	4.27	0.40	4.66	3.00	52.16	51.24
11/07/11	23.15	13.81	22.94	32.96	55.89	4.37	0.41	4.77	3.10	45.10	44.94
11/08/11	22.70	15.57	23.96	38.49	62.45	4.43	0.45	4.87	3.18	50.61	49.85
11/09/11	14.03	9.89	34.36	38.69	73.06	4.68	0.55	5.22	3.20		



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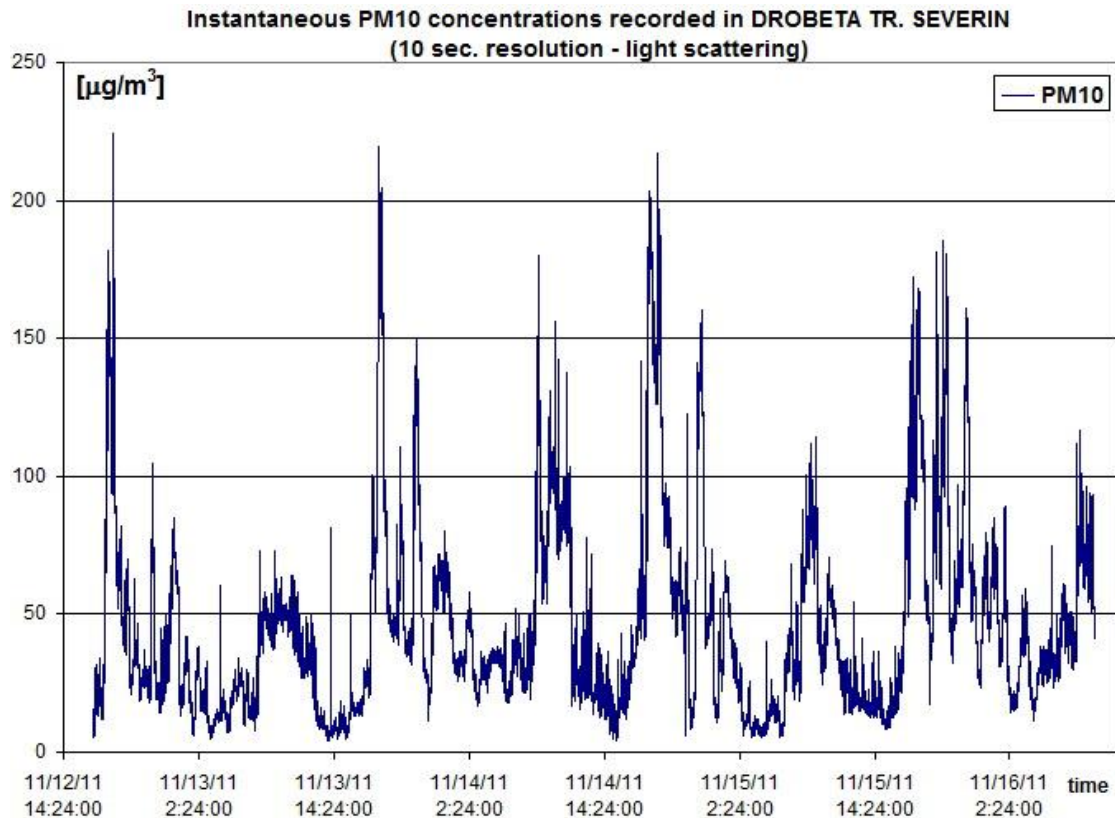


Fig 4. Instantaneous values recorded for PM10 with TSI DRX (light scattering) in Drobeta Turnu Severin

3. Conclusions for Drobeta Turnu Severin AQM campaigns:

For the values recorded at Resita site we can draw the conclusion that all relevant air quality pollutants concentrations are under the national and European admissible limits. Due to a limited time of the monitoring period and the choice of location by availability criteria the result obtained are to be considered to have educational and informal value only.

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