
Joint Danube Survey 2

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International
Commission
for the Protection
of the Danube River

Internationale
Kommission
zum Schutz
der Donau



Survey preparation and programme

Jaroslav Slobodnik

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1 Survey preparation and programme

1.1 Survey Programme

The Second Joint Danube Survey (JDS2) was organized from 13 August to 26 September 2007. During the survey 96 sites were sampled by the JDS2 Core Team along the 2600 km stretch of the Danube, from which 24 sites were in the mouths of the tributaries or side arms. Samples from the first station Upstream Iller in Germany were collected with the help of cars, the remaining 2415 km were cruised with the three ships. Additional 28 sites were sampled by the National Teams during longitudinal surveys on the selected Danube tributaries.

Sampling at the JDS2 stations included five different sample types - water, sediment, biology, suspended particulate matter (SPM) and biota (mussels and fish) each with different determinand list, which were taken at different sampling points (left, middle, right) at the station cross sections of the main river, and in the middle of the cross-section of the tributaries.

Fish survey was performed at 45 sampling sites on the Danube and 21 sites in the mouths of the tributaries using a separate sampling strategy; logistically it was kept as a parallel activity using an independent vessel (Vienna 115) with an electrofishing boat. Fish survey was managed by the Joint Research Centre of European Commission in Ispra in cooperation with an international team of fish experts. A selection of sampling sites and time schedule of fish survey were harmonized with the programme of sampling for chemical and biological analysis.

A continuous observation of hydromorphological parameters in ca. 50 km stretches had been carried out during sailing, whereas more detailed screening was carried out at each of the 96 sampling sites.

Detailed information on the actual sampling programme is shown in Table 1.

1.2 Survey Preparation/Cruise Manual

Preparations for the JDS2 as regards the definition of survey objectives, selection of parameters to be measured, identifying the sampling and analysis methods, choosing the sampling sites and selecting teams of experts was carried out by the Monitoring and Assessment Expert Group (MA EG) of the ICPDR. During the preparatory phase the JDS2 Cruise Manual had been developed containing a detailed description of the tasks to be accomplished during preparation of the survey, sampling and analyses programme and reporting. A set of Standard Operational Procedures (SOPs) was developed describing in detail sampling procedures and on-board analyses.

A series of meetings was held before the survey was launched to agree upon the logistical issues, equipment preparation and the methods to be used. Consumables, sample containers, chemicals and smaller equipment were purchased and delivered to the survey ships in July and August 2007. A significant part of the equipment was loaned by the JDS2 cooperating laboratories.

1.3 JDS2 Core Team

Members of the JDS2 Core Team and Reserve Core Team were nominated by the Danube states - Contracting Parties of the ICPDR and selected by the ICPDR Monitoring and Assessment Expert group. Core Team members, responsible for sampling and on-board analyses, were on board of the three ships Argus, Szechenyi and Vienna 115 during the survey.

JDS2 Core Team

Igor Liska, JDS2 Manager	Gabriel Chiriac, Biologist – general hydrobiology
Jaroslav Slobodnik, Technical coordinator	Mary Craciun, Chemist - suspended solids sampling
Bela Csanyi, Team leader	Carmen Hamchevici, Chemist - on-board analyses
Wolfram Graf, Biologist – macrozoobenthos expert Upper Danube	Hana Hudcova, Chemist - water sampling, sediment processing, radiology
Patrick Leitner, Biologist – macrozoobenthos expert Upper Danube	Wolfgang Kraier, Expert in hydromorphology
Momir Paunovic, Biologist – macrozoobenthos expert Lower Danube	Ulrich Schwarz, Expert in hydromorphology
Jarmila Makovinska, Biologist – phytobenthos expert	Alexander Kirschner, Microbiologist
Martin Dokulil, Biologist – phytoplankton expert	Branko Velimirov, Microbiologist
Christina Kaiblinger, Biologist – phytoplankton expert	Richard Niederreiter, Air-lift sampling expert
Brigitte Schmidt, Biologist – macrophytes expert	Stefan Steiner, Air-lift sampling expert

Fish Team

Christian Wiesner, Team leader and fish expert	Gabor Guti, Fish expert
Niels Jepsen, Team leader and fish expert – JRC Ispra	Grigore Davideanu, Fish expert – Lower Danube
Nikolaus Schotzko, Fish expert	Jaroslav Cerny, Fish expert

Reserve Core Team

Matus Haviar, Biologist – macrozoobenthos expert	Zoran Stojanovic, Chemist
Thomas Ofenbock, Biologist – macrozoobenthos expert	Violeta Astratinei, Microbiologist
Laurentia Ungureanu, Biologist – phytoplankton expert	Nemanja Milosevic, Microbiologist
Eva Lanz, Biologist – macrophytes expert	

JDS2 Managerial and Administrative Team

Jasmine Bachmann, Public awareness expert	Alexander Hoebart, Information manager
Anna Koch, Financial officer	Patricia Faltusova, Administrative support

1.4 JDS2 National Teams

National Teams joined the JDS2 ships upon entering the territory of their country. They cooperated with the JDS2 Core Team in collecting and processing the samples. Participation of National Teams was not only a great help to accomplishing the ambitious technical programme of the survey but it was a unique opportunity for exchange of experience and harmonization of the sampling and analytical methodologies throughout the Danube Basin. Such activity was essential to the implementation of WFD and represented a particular support to the intercalibration activities.

The network of the National JDS2 Coordinators helped the Core Team with all necessary logistical arrangements in their home countries.

JDS2 National Coordinators

DE	Ursula Schmedtje, National Coordinator	BG	Tzvetanka Dimitrova, National Coordinator
DE	Jürgen Seibold, Deputy	BG	Mina Asenova, Deputy
DE	Birgit Wolf, Deputy	BG	Dimitar Vergiev, National Coordinator
AT	Wolfgang Rodinger, National Coordinator	BG	Hristo Kasadzhikov, Deputy
AT	Franz Wagner, Deputy	BG	Ivan Ivanov, Deputy
CZ	Ilja Bernardova, National Coordinator	RO	Gabriel Chiriac, National Coordinator
CZ	Monika Machkova, Deputy	RO	Liviu Popescu, Deputy
SK	Jarmila Makovinska, National Coordinator	RO	Serban Iliescu, Deputy
SK	Livia Tothova, Deputy	RO	Teodor Lucian Constantinescu, Deputy
HU	Ferenc Laszlo, National Coordinator	MD	Gavril Gilca, National Coordinator
HU	Ildiko Horvathne-Kiss, Deputy	UA	Oleksander Deziron, National Coordinator
HR	Dagmar Surmanovic, National Coordinator	UA	Yuriy Nabyvanets, Deputy
HR	Marija Marijanovic-Rajcic, Deputy	UA	Valerii Kasianchuk, Deputy
RS	Marija Kostic, National Coordinator		
RS	Momir Paunovic, Deputy		

JDS2 National Key Fish Experts

DE	Andreas Kolbinger	HR	Perica Mustafic, Marko Caleta
AT	Nikolaus Schotzko	RS	Predrag Simonovic
CZ	Zdenek Adamek	RO	Grigore Davideanu
SK	Jaroslav Cerny, Vladimir Kovac	BG	Stoyan Mihov
HU	Gabor Guti	UA	Yevgen Savchenko

In total more than 110 national experts participated at the survey, the largest team of 41 experts and support staff assembled by Romania alone.

1.5 JDS2 Determinands

Altogether more than 280 individual parameters were investigated within the JDS2 (for a full list see Table 3). This number includes parameters determined on-board during the survey, and the chemical, microbiological, ecotoxicological, radiological and biological parameters analyzed after the cruise. A special care was taken to include into the survey programme analysis of all quality elements needed for the assessment of the status of the Danube river according to the WFD. The only exception were missing C10-C13 chlorinated paraffins of (WFD priority substances) due to not-yet-available harmonized methodologies for their determination at the EU level.

1.6 JDS2 Laboratories

A large part of the laboratory services for the JDS2 was secured through an in-kind contribution by the ICPDR Contracting Parties. Supplementary analyses were contracted to the JDS2 laboratories. The leading national laboratories from Germany, Austria, Czech Republic, Slovakia, Hungary and Romania performed the chemical analyses. The post-survey biological, microbiological and ecotoxicological analyses were provided as in-kind contributions by numerous institutions in Austria and a laboratory in Slovakia. Supplementary biological analyses were carried out in Hungary,

Slovakia and Serbia. Analyses of isotopes was carried out for free by the International Atomic Energy Agency (IAEA), two institutions in Austria and by Ukraine. A valuable support to the JDS2 was provided by EC JRC in Ispra, Italy through coordination of the fish survey and analyses of a wide range of priority and other substances in various matrices.

For a full list of involved laboratories see Table 2 below.

1.7 The Ships

The survey was carried out with three ships - Szechenyi, Argus and Vienna 115 sailing under the Hungarian, Serbian and Slovakian flag, respectively. Technical information on the ships is as follows:

	SZECHENYI	ARGUS	VIENNA 115
Type of boat	Motor boat - an icebreaker with accomodation facilities, dining and meeting room	Motor boat, mounted grab - a research vessel used for water quality surveys, equipped with sampling devices, in-built field instrumentation and laboratory desks	Motor boat with electrofishing equipment and accommodation facilities
Captain	Dezso Kovacs	Jovica Golubovic and Ilija Barut	Tibor Kiss
Cruising speed	18 km/h	25 km/h	
Dimensions	length: 40.5 m; width: 9.3 m; draught: 1.8 m; height: 8.15 m;	length: 33.0 m; width: 4.5 m; draught: 1.3 m; height: 5 m	length: 12.5 m; width: 3.5 m; draught: 1.1 m
Crew	11 persons	3 persons	2 persons

The Argus ship was used for sampling and on-board laboratory analyses, while the Szechenyi served for accommodation of the Core Team members and National Team members and for storage. Two small boats from the ships were used for parallel biological and chemical on-shore sampling. The fish team on Vienna 115 followed its separate sampling schedule using an additional electrofishing boat.

1.8 The Survey

Sampling

A smaller part of chemical, biological and microbiological determinations was carried out directly on board of the Argus, the rest of the samples was transported under controlled conditions to the JDS2 laboratories for analysis.

Ten general physico-chemical parameters (alkalinity, ammonium (NH₄-N), conductivity, dissolved oxygen, nitrates (NO₃-N), nitrites (NO₂-N), orthophosphate-phosphorus (PO₄-P), pH, water temperature, transparency), three microbiological parameters (Intestinal Enterococci (MU/SF Microtiterplates), *Escherichia coli* (Colilert), Total Coliforms (Colilert)), phytoplankton chlorophyll-a and Radon isotope (²²²Rn) were measured directly on-board during the survey.

Water samples for analyses of heavy metals were filtered through 0.45 µm pore size membrane filters using a portable filtration device.

Sediment samples were taken from the left and right banks of the river with a sampling net. This was followed by on-board grain size fractioning with wet sieving in order to get a less-than-63-µm fraction for later analyses in the JDS2 Reference Laboratories. Undisturbed sediments were collected for ecotoxicological analyses of the extracted pore water .

SPM samples were collected from the middle of the river by pumping and centrifugation of water starting at a JDS2 station and continuing when sailing until the sufficient amount of the sample material has been recovered.

Mussels and fish tissue collected from selected sites were collected and preserved (deep frozen) for analyses of trace metals and persistent organic pollutants (POPs).

Sediments, SPM and mussels samples were first freeze-dried in the laboratory of Umweltbundesamt Austria GmbH and then distributed for analysis in the individual laboratories. All remaining sediment, SPM and mussels samples were stored in the JDS2 Central Storage Facility at Water Research Institute in Bratislava, Slovakia for future analyses.

EC JRC performed an extended analysis of POPs at selected “top 23” sites for water, SPM, sediment (composite of right-hand side and left-hand side), mussels and fish tissue including QA/QC checks. In a special set up the water was pumped through XAD cartridges where the POPs were collected for later analysis. The experiment was synchronised with pumping time of water for collection of SPM.

Sampling of benthic invertebrates was conducted using two parallel techniques – air-lift sampling and combined kick&sweep/dredging sampling. Phytobenthos sampling was accompanied by the direct on-site biomass determination by fluorescence detection. Macrophytes were collected at ca. 3 km stretches on both sides of the Danube. The electric fishing CEN-standardised methodology was used for fish survey purposes.

A radiological sampling programme was carried out for analyses of a wide range of isotopes in water and sediment matrices.

The hydromorphological survey included collection of basic hydromorphological data for each station such as the main hydrological values, catchment size upstream, rkm, for the Danube basic cross-section sketches, river and valley slope, a zoom of the navigation map, satellite images, a simple historical comparison and additional overview parameters required for the fish survey.

The detailed description of the sampling procedures is in the Standard Operational Procedures (SOPs) developed for each sampled matrix and parameter prior to the survey.

1.9 Financial Arrangements

The JDS2 budget exceeded 1 million EUR and was financed by more than 90% by the ICPDR Contracting Parties through cash or in-kind contributions. An important aspect was the support by corporate entities: Alcoa Foundation and Dexia Kommunalkredit Bank provided financial support and Coca-Cola HBC helped with food products for JDS2 crew and with organization and financing of related public awareness events.

Additional in-kind contribution came from the Contracting Parties through participation of National Teams and organization of longitudinal surveys on tributaries.

1.10 Public Awareness

During the JDS, press conferences were organised along the routes of the ships: The official public launch was organised in Regensburg (Germany), with consecutive press events in Vienna (Austria), Bratislava (Slovakia), Budapest (Hungary), Osijek (Croatia), Belgrade (Serbia), Turnu Severin (Romania), Ruse (Bulgaria) and Vilkovo (Ukraine). The closing press conference was held in Tulcea (Romania).

A special website dedicated to the JDS2 (<http://www.icpdr.org/jds>) was created providing daily on-line information about the survey in a form of a „diary“, supported with relevant information about

the sampling sites, the public events, press releases and contact persons. Also results from the on-board analyses of 11 parameters were presented at the end of each day in a comprehensive chart form.

Numerous leaflets and factsheets with relevant information about the JDS2 (such as the route, the experts and institutions involved, etc.) were developed in English as well as some national languages and distributed at the respective press conferences. Additional promotional material such as T-shirts, caps, and magnifying glasses - targeting children - were distributed throughout the survey.

1.11 Reporting

The JDS2 report is available on the website of the ICPDR (www.icpdr.org). All data and relevant metadata from the JDS2 were collected in the ICPDR database system. The existing Water Quality Database was extended for the JDS2 component. A special care was taken to ensure the compatibility of the obtained results with the EC environmental databases (WISE) format .

New parts of the database for storage of hydromorphology and fish parameters were developed and all database components (chemistry, biology, hydromorphology, ecotoxicology) were integrated. Results from on-board analyses and hydromorphological observations were directly uploaded into the database during the survey (www.icpdr.org/jds).

ACKNOWLEDGEMENTS

The survey was supported by Alcoa Foundation, Dexia Kommunalkredit Bank and Coca-Cola HBC. Special thanks are owed to Via Donau providing the survey ships with the navigation and positioning system.

Table 1: List of sampling locations and samples collected during the JDS2. The „top“ 23 sampling sites analysed by JRC Ispra are highlighted in blue colour. L, Left; R, Right; M, Middle; for the list of fish sampling sites, see report on Fish.

JDS2 No.	River km	Location	Danube type	Sampling site name	Country code(s)		Sample matrices												Date of sampling
							Water	SPM	Sediments	Biota - Mussels	Biota - Fish	Macrozoobenthos	Phytobenthos	Phytoplankton	Macrophytes	Fish	XAD-cartridges	Sediment - Pore water	
1	2600	M	1	Upstream Iller	DE		Y					Y	Y	Y					13/08/07
2	2415	L	2	Kelheim	DE				Y				Y					Y	15/08/07
2	2415	R	2	Kelheim	DE								Y						15/08/07
2	2415	M	2	Kelheim	DE		Y		Y		Y	Y		Y					15/08/07
2	2415	M	2	River km 2415 - 2360	DE			Y									Y		15/08/07
3	2354	L	2	Geisling power plant	DE				Y				Y						15/08/07
3	2354	R	2	Geisling power plant	DE				Y				Y						15/08/07
3	2354	M	2	Geisling power plant	DE		Y		Y			Y		Y					15/08/07
3	2354	M	2	River km 2353.5 - 2312	DE			Y											15/08/07
4	2285 (2287)	L	2	Deggendorf	DE				Y				Y						16/08/07
4	2285 (2287)	R	2	Deggendorf	DE				Y				Y						16/08/07
4	2285 (2287)	M	2	Deggendorf	DE		Y		Y			Y		Y					16/08/07
4	2285	M	2	River km 2285 - 2284	DE			Y											16/08/07
5	2278	L	2	Niederlalteich	DE				Y				Y						16/08/07
5	2278	R	2	Niederlalteich	DE				Y				Y						16/08/07
5	2278	M	2	Niederlalteich	DE		Y		Y			Y		Y					16/08/07
5	2278	M	2	River km 2278 - 2278	DE			Y											16/08/07
6	2225	L		/Inn, rkm 4.3	DE	AT			Y			Y							16/08/07
6	2225	R		/Inn, rkm 4.3	DE	AT						Y	Y						16/08/07
6	2225	M		/Inn, rkm 4.3	DE	AT	Y							Y					16/08/07
7	2205	L	3	Jochenstein	DE	AT			Y				Y						17/08/07
7	2205	R	3	Jochenstein	DE	AT			Y				Y					Y	17/08/07
7	2205	M	3	Jochenstein	DE	AT	Y				Y	Y		Y					17/08/07
7	2163	M	3	River km 2162.5 - 2120	DE	AT		Y									Y		17/08/07
8	2120	L	3	Upstream dam Abwinden-Asten	AT				Y										18/08/07
8	2120	R	3	Upstream dam Abwinden-Asten	AT				Y										18/08/07
8	2120	M	3	Upstream dam Abwinden-Asten	AT		Y					Y		Y					18/08/07
8	2116	M	3	River km 2116 - 2062	AT			Y											18/08/07
9	2061	L	3	Upstream dam Ybbs-Persenbeug	AT				Y										18/08/07
9	2062	R	3	Upstream dam Ybbs-Persenbeug	AT				Y										18/08/07

9	2061	M	3	Upstream dam Ybbs-Persenbeug	AT		Y		Y		Y		Y				18/08/07
10	2008	L	3	Oberloiben	AT				Y								18/08/07
10	2008	R	3	Oberloiben	AT				Y								18/08/07
10	2008	M	3	Oberloiben	AT		Y		Y		Y		Y				18/08/07
10	2013	M	3	River km 2013 - 2000	AT			Y									18/08/07
11	1950	L	4	Upstream dam Greifenstein	AT				Y								19/08/07
11	1950	R	4	Upstream dam Greifenstein	AT				Y								19/08/07
11	1950	M	4	Upstream dam Greifenstein	AT		Y		Y		Y		Y				19/08/07
11	1991	M	4	River km 1991 - 1950	AT			Y									19/08/07
12	1942	L	4	Klosterneuburg	AT				Y							Y	19/08/07
12	1942	R	4	Klosterneuburg	AT				Y							Y	19/08/07
12	1942	M	4	Klosterneuburg	AT		Y				Y		Y				19/08/07
12	1942	M	4	River km 1942 - 1933	AT			Y								Y	19/08/07
13	1895	L	4	Wildungsmauer	AT				Y				Y				21/08/07
13	1895	R	4	Wildungsmauer	AT								Y				21/08/07
13	1895	M	4	Wildungsmauer	AT		Y				Y	Y		Y			21/08/07
13	1921	M	4	River km 1921 - 1884	AT			Y									21/08/07
14	1881	L	4	Upstream Morava (Hainburg)	AT				Y				Y				21/08/07
14	1881	R	4	Upstream Morava (Hainburg)	AT				Y				Y				21/08/07
14	1881	M	4	Upstream Morava (Hainburg)	AT		Y		Y		Y		Y				21/08/07
14	1888	M	4	River km 1888 - 1880	AT			Y									21/08/07
15	1880	L		/Morava (rkm 0.08)	AT	SK											21/08/07
15	1880	R		/Morava (rkm 0.08)	AT	SK			Y								21/08/07
15	1880	M		/Morava (rkm 0.08) / (rkm 0.5)	AT	SK	Y				Y		Y				21/08/07
16	1869	L	4	Bratislava	SK				Y				Y			Y	22/08/07
16	1865	R	4	Bratislava	SK				Y				Y			Y	22/08/07
16	1869	M	4	Bratislava	SK		Y				Y	Y		Y			22/08/07
16	1870	M	4	River km 1870 - 1864	SK			Y								Y	22/08/07
17	1852	L	4	Gabcikovo reservoir	SK	HU					Y						23/08/07
17	1852	R	4	Gabcikovo reservoir	SK	HU				Y	Y						23/08/07
17	1852	M	4	Gabcikovo reservoir	SK	HU	Y		Y	Y			Y	Y		Y	23/08/07
17	1862	M	4	River km 1862 - 1819	SK	HU		Y									23/08/07
18	1806	L	4	Medvedov/Medve	SK	HU			Y	Y			Y				Y 23/08/07
18	1806	R	4	Medvedov/Medve	SK	HU			Y				Y				Y 23/08/07
18	1806	M	4	Medvedov/Medve	SK	HU	Y		Y	Y		Y		Y			23/08/07
19	1794	L	4	/Moson Danube Arm – end (rkm 0.1)	HU				Y			Y					23/08/07
19	1794	R	4	/Moson Danube Arm – end (rkm 0.1)	HU												23/08/07
19	1794	M	4	/Moson Danube Arm – end (rkm 0.1)	HU		Y							Y			23/08/07
19	1777	M	4	River km 1777 - 1770	HU			Y									23/08/07
20	1768	L	5	Komarno/Komarom	SK	HU			Y	Y			Y				24/08/07
20	1768	R	5	Komarno/Komarom	SK	HU			Y				Y				24/08/07
20	1768	M	5	Komarno/Komarom	SK	HU	Y		Y	Y		Y		Y			24/08/07
21	1766	L		/Vah (rkm 0.8)	SK				Y								24/08/07
21	1766	R		/Vah (rkm 0.8)	SK					Y			Y				24/08/07
21	1766	M		/Vah (rkm 0.8)	SK		Y			Y		Y		Y			24/08/07
21	1766	M		River km 1766 - 1767	SK			Y									24/08/07
22	1761	L	5	Iza/Szony	SK	HU			Y	Y			Y			Y	24/08/07

22	1761	R	5	Iza/Szony	SK	HU			Y	Y			Y				Y	24/08/07
22	1761	M	5	Iza/Szony	SK	HU	Y					Y		Y				24/08/07
22	1768	M	5	River km 1768 - 1752	SK	HU		Y									Y	24/08/07
22	1725	M	5	River km 1724.5 - 1724.5	SK	HU		Y									Y	24/08/07
23	1719	L	5	Sturovo/Esztergom	SK	HU			Y				Y					25/08/07
23	1719	R	5	Sturovo/Esztergom	SK	HU			Y				Y					25/08/07
23	1719	M	5	Sturovo/Esztergom	SK	HU	Y		Y			Y		Y				25/08/07
23	1716	M	5	River km 1716 - 1708	SK	HU		Y										25/08/07
24	1716	M		/Hron (rkm 0.5)	SK		Y		Y			Y	Y	Y				25/08/07
25	1708	M		/Ipoly (rkm 0.7)	SK	HU	Y		Y			Y	Y	Y				25/08/07
26	1707	L	5	Szob	HU				Y	Y			Y					25/08/07
26	1707	R	5	Szob	HU				Y				Y				Y	25/08/07
26	1707	M	5	Szob	HU		Y			Y	Y	Y		Y				25/08/07
26	1707	M	5	River km 1707 - 1693	HU			Y									Y	25/08/07
27	1692	L	5	Upstream end of Szentendre Island	HU				Y				Y					26/08/07
27	1692	R	5	Upstream end of Szentendre Island	HU													26/08/07
27	1692	M	5	Upstream end of Szentendre Island	HU		Y					Y		Y				26/08/07
27	1693	M	5	River km 1693 - 1669	HU			Y										26/08/07
28	1692	L	5	/Upstream end of Szentendre Island (arm)	HU													26/08/07
28	1692	R	5	/Upstream end of Szentendre Island (arm)	HU				Y				Y					26/08/07
28	1692	M	5	/Upstream end of Szentendre Island (arm)	HU		Y					Y		Y				26/08/07
29	1659	L	5	Budapest upstream	HU				Y				Y				Y	27/08/07
29	1659	R	5	Budapest upstream	HU				Y	Y			Y				Y	27/08/07
29	1659	M	5	Budapest upstream	HU		Y			Y		Y		Y				27/08/07
29	1655	M	5	River km 1655 - 1659	HU			Y										27/08/07
30	1658	L	5	/Budapest (old Danube) end of S.arm	HU				Y				Y					27/08/07
30	1658	R	5	/Budapest (old Danube) end of S.arm	HU				Y				Y					27/08/07
30	1658	M	5	/Budapest (old Danube) end of S.arm	HU		Y		Y			Y		Y				27/08/07
31	1642	L	5	/Rackeve-Soroksar Danube Arm - start	HU													29/08/07
31	1642	R	5	/Rackeve-Soroksar Danube Arm - start	HU				Y				Y				Y	29/08/07
31	1642	M	5	/Rackeve-Soroksar Danube Arm - start	HU		Y					Y		Y				29/08/07
32	1632	L	5	Budapest downstream	HU				Y				Y				Y	29/08/07
32	1632	R	5	Budapest downstream	HU				Y	Y		Y	Y				Y	29/08/07
32	1632	M	5	Budapest downstream	HU		Y			Y	Y			Y				29/08/07
32	1640	M	5	River km 1640 - 1598	HU			Y										29/08/07
33	1605	L	5	Adony/Lórév	HU				Y				Y					29/08/07
33	1605	R	5	Adony/Lórév	HU				Y	Y			Y					29/08/07
33	1605	M	5	Adony/Lórév	HU		Y		Y	Y		Y		Y				29/08/07
34	1586	L		/Rackeve-Soroksar Danube Arm - end	HU							Y						30/08/07
34	1586	R		/Rackeve-Soroksar Danube Arm - end	HU				Y				Y				Y	30/08/07

34	1586	M		/Rackeve-Soroksar Danube Arm - end	HU		Y						Y					30/08/07
35	1560	L	5	Dunafoldvar	HU				Y				Y				Y	30/08/07
35	1560	R	5	Dunafoldvar	HU				Y	Y			Y				Y	30/08/07
35	1560	M	5	Dunafoldvar	HU		Y			Y		Y		Y				30/08/07
35	1577	M	5	River km 1577 - 1552	HU			Y									Y	30/08/07
36	1533	L	5	Paks	HU				Y				Y					30/08/07
36	1533	R	5	Paks	HU				Y				Y					30/08/07
36	1533	M	5	Paks	HU		Y		Y			Y		Y				30/08/07
37	1497	M		/Sio (rkm 1.0)	HU		Y		Y			Y	Y	Y				31/08/07
38	1481	L	6	Baja	HU				Y				Y					31/08/07
38	1481	R	6	Baja	HU				Y				Y					31/08/07
38	1481	M	6	Baja	HU		Y		Y			Y		Y				31/08/07
38	1517	M	6	River km 1517 - 1481	HU			Y										31/08/07
39	1434	L	6	Hercegszanto	HU				Y				Y				Y	01/09/07
39	1434	R	6	Hercegszanto	HU				Y	Y			Y				Y	01/09/07
39	1434	M	6	Hercegszanto	HU		Y			Y	Y	Y		Y				01/09/07
39	1477	M	6	River km 1477 - 1443	HU			Y									Y	01/09/07
40	1424	L	6	Batina	HR	RS			Y				Y					01/09/07
40	1424	R	6	Batina	HR	RS			Y				Y					01/09/07
40	1424	M	6	Batina	HR	RS	Y		Y			Y		Y				01/09/07
40	1425	M	6	River km 1425 - 1380	HR	RS		Y										01/09/07
41	1384	L	6	Upstream Drava	HR	RS			Y	Y			Y					02/09/07
41	1384	R	6	Upstream Drava	HR	RS			Y				Y					02/09/07
41	1384	M	6	Upstream Drava	HR	RS	Y		Y	Y		Y		Y				02/09/07
42	1379	L		/Drava (rkm 1.4)	HR	RS				Y								02/09/07
42	1382	R		/Drava (rkm 1.4)	HR	RS			Y				Y				Y	02/09/07
42	1379	M		/Drava (rkm 1.4)	HR	RS	Y			Y		Y		Y				02/09/07
42	1379	M		/Drava - SPM River km 1 - 1	HR	RS		Y									Y	02/09/07
43	1367	L	6	Downstream Drava (Erdut/Bogojevo)	HR	RS			Y				Y					03/09/07
43	1367	R	6	Downstream Drava (Erdut/Bogojevo)	HR	RS			Y				Y					03/09/07
43	1367	M	6	Downstream Drava (Erdut/Bogojevo)	HR	RS	Y		Y			Y		Y				03/09/07
43	1367	M	6	River km 1367 - 1355	HR	RS		Y										03/09/07
44	1355	L	6	Dalj	HR	RS			Y				Y					03/09/07
44	1355	R	6	Dalj	HR	RS			Y				Y					03/09/07
44	1355	M	6	Dalj	HR	RS	Y		Y			Y		Y				03/09/07
45	1300	L	6	Ilok/Backa Palanka	HR	RS			Y				Y				Y	03/09/07
45	1300	R	6	Ilok/Backa Palanka	HR	RS			Y	Y			Y				Y	03/09/07
45	1300	M	6	Ilok/Backa Palanka	HR	RS	Y			Y		Y		Y				03/09/07
45	1326	M	6	River km 1326 - 1299	HR	RS		Y									Y	03/09/07
46	1262	L	6	Upstream Novi-Sad	RS				Y				Y				Y	04/09/07
46	1262	R	6	Upstream Novi-Sad	RS				Y				Y				Y	04/09/07
46	1262	M	6	Upstream Novi-Sad	RS		Y		Y			Y		Y				04/09/07
47	1252	L	6	Downstream Novi-Sad	RS				Y				Y				Y	04/09/07
47	1252	R	6	Downstream Novi-Sad	RS				Y	Y			Y				Y	04/09/07
47	1252	M	6	Downstream Novi-Sad	RS		Y			Y		Y		Y				04/09/07
47	1252	M	6	River km 1252 - 1252	RS			Y									Y	04/09/07
48	1216	L	6	Upstream Tisa (Stari Slankamen)	RS				Y				Y				Y	05/09/07

48	1216	R	6	Upstream Tisa (Stari Slankamen)	RS				Y			Y				Y	05/09/07
48	1216	M	6	Upstream Tisa (Stari Slankamen)	RS		Y		Y			Y		Y			05/09/07
49	1216	L		/Tisa (rkm 1.0)	RS							Y					05/09/07
49	1216	R		/Tisa (rkm 1.0)	RS				Y								05/09/07
49	1215	M		/Tisa (rkm 1.0)	RS		Y					Y		Y			05/09/07
49	1215	M		/Tisa - SPM River km 1 - 1	RS			Y									05/09/07
50	1200	L	6	Downstream Tisa/Upstream Sava (Belegis)	RS				Y			Y				Y	05/09/07
50	1200	R	6	Downstream Tisa/Upstream Sava (Belegis)	RS				Y			Y				Y	05/09/07
50	1200	M	6	Downstream Tisa/Upstream Sava (Belegis)	RS		Y			Y		Y		Y			05/09/07
50	1200	M	6	River km 1200 - 1174	RS			Y									05/09/07
51	1170	L		/Sava (rkm 7.0)	RS				Y	Y			Y			Y	07/09/07
51	1170	R		/Sava (rkm 7.0)	RS												07/09/07
51	1170	M		/Sava (rkm 7.0)	RS		Y					Y		Y			07/09/07
51	1170	M		/Sava - SPM River km 7 - 7	RS			Y								Y	07/09/07
52	1159	L	6	Upstream Pancevo/Downstream Sava	RS				Y			Y				Y	07/09/07
52	1159	R	6	Upstream Pancevo/Downstream Sava	RS				Y	Y		Y				Y	07/09/07
52	1159	M	6	Upstream Pancevo/Downstream Sava	RS		Y			Y		Y		Y			07/09/07
52	1164	M	6	River km 1164 - 1156	RS			Y									07/09/07
53	1151	L	6	Downstream Pancevo	RS				Y							Y	07/09/07
53	1151	R	6	Downstream Pancevo	RS				Y	Y						Y	07/09/07
53	1151	M	6	Downstream Pancevo	RS		Y			Y		Y		Y			07/09/07
53	1151	M	6	River km 1151 - 1115	RS			Y								Y	07/09/07
54	1132	L	6	Grocka	RS				Y								08/09/07
54	1132	R	6	Grocka	RS				Y			Y					08/09/07
54	1132	M	6	Grocka	RS		Y		Y			Y		Y			08/09/07
55	1107	L	6	Upstream Velika Morava	RS				Y			Y				Y	08/09/07
55	1107	R	6	Upstream Velika Morava	RS				Y			Y				Y	08/09/07
55	1107	M	6	Upstream Velika Morava	RS		Y		Y					Y			08/09/07
56	1103	L		/Velika Morava	RS				Y							Y	08/09/07
56	1103	R		/Velika Morava	RS							Y					08/09/07
56	1103	M		/Velika Morava	RS		Y			Y		Y		Y			08/09/07
56	1103	M		/Velika Morava - SPM River km 1 - 1	RS			Y								Y	08/09/07
57	1097	L	6	Downstream Velika Morava	RS				Y			Y				Y	09/09/07
57	1097	R	6	Downstream Velika Morava	RS				Y							Y	09/09/07
57	1097	M	6	Downstream Velika Morava	RS		Y					Y		Y			09/09/07
57	1097	M	6	River km 1097 - 1077	RS			Y									09/09/07
58	1077	L	6	Starapalanka – Ram	RS				Y			Y	Y			Y	09/09/07
58	1077	R	6	Starapalanka – Ram	RS				Y	Y		Y	Y			Y	09/09/07
58	1077	M	6	Starapalanka – Ram	RS		Y			Y				Y			09/09/07
58	1077	M	6	River km 1077 - 1060	RS			Y								Y	09/09/07
59	1071	L	7	Banatska Palanka/Bazias	RS	RO			Y			Y					09/09/07
59	1071	R	7	Banatska Palanka/Bazias	RS	RO			Y			Y					09/09/07
59	1071	M	7	Banatska Palanka/Bazias	RS	RO	Y		Y			Y		Y			09/09/07
60	1040	L	7	Irongate reservoir (Golubac/Koronin)	RS	RO			Y			Y				Y	10/09/07

60	1040	R	7	Irongate reservoir (Golubac/Koronin)	RS	RO			Y								Y	10/09/07
60	1040	M	7	Irongate reservoir (Golubac/Koronin)	RS	RO	Y					Y		Y				10/09/07
60	1067	M	7	River km 1067 - 991	RS	RO		Y										10/09/07
61	991	L	7	Donji Milanovac	RS	RO			Y			Y	Y					10/09/07
61	991	R	7	Donji Milanovac	RS	RO			Y			Y	Y					10/09/07
61	991	M	7	Donji Milanovac	RS	RO	Y		Y					Y				10/09/07
61	989	M	7	River km 989 - 989	RS	RO		Y										10/09/07
62	954	L	7	Irongate reservoir (Tekija/Orsova)	RS	RO			Y			Y	Y					11/09/07
62	954	R	7	Irongate reservoir (Tekija/Orsova)	RS	RO			Y			Y	Y					11/09/07
62	954	M	7	Irongate reservoir (Tekija/Orsova)	RS	RO	Y		Y					Y				11/09/07
62	956.2	M	7	River km 956.2 - 943	RS	RO		Y										11/09/07
63	926	L	8	Vrbica/Simijan	RS	RO			Y			Y	Y					11/09/07
63	926	R	8	Vrbica/Simijan	RS	RO			Y			Y	Y					11/09/07
63	926	M	8	Vrbica/Simijan	RS	RO	Y		Y					Y				11/09/07
64	865	L	8	Iron Gate II	RS	RO			Y			Y					Y	13/09/07
64	865	R	8	Iron Gate II	RS	RO			Y			Y	Y				Y	13/09/07
64	865	M	8	Iron Gate II	RS	RO	Y							Y				13/09/07
64	926	M	8	River km 926 - 849	RS	RO		Y										13/09/07
65	849	L	8	Upstream Timok (Rudujevac/Gruia)	RS	RO			Y				Y					13/09/07
65	849	R	8	Upstream Timok (Rudujevac/Gruia)	RS	RO							Y					13/09/07
65	849	M	8	Upstream Timok (Rudujevac/Gruia)	RS	RO	Y					Y		Y				13/09/07
66	845	M		/Timok (rkm 0.2)	RS	BG	Y		Y			Y		Y				13/09/07
66	845	M		River km 845 - 842	RS	BG		Y										13/09/07
67	834	L	8	Pristol/Novo Selo Harbour	RO	BG			Y				Y					14/09/07
67	834	R	8	Pristol/Novo Selo Harbour	RO	BG							Y					14/09/07
67	834	M	8	Pristol/Novo Selo Harbour	RO	BG	Y					Y		Y				14/09/07
67	840	M	8	River km 840 - 795	RO	BG		Y										14/09/07
68	795	L	8	Calafat	RO	BG						Y	Y					14/09/07
68	795	R	8	Calafat	RO	BG			Y			Y					Y	14/09/07
68	795	M	8	Calafat	RO	BG	Y							Y				14/09/07
68	790	M	8	River km 790 - 743	RO	BG		Y										14/09/07
69	685	L	8	Downstream Kozloduy	BG	RO			Y			Y						15/09/07
69	685	R	8	Downstream Kozloduy	BG	RO			Y			Y						15/09/07
69	685	M	8	Downstream Kozloduy	BG	RO	Y		Y					Y				15/09/07
69	736	M	8	River km 736 - 670	BG	RO		Y										15/09/07
70	640	L	8	Upstream Iskar (Bajkal)	BG	RO			Y									15/09/07
70	640	R	8	Upstream Iskar (Bajkal)	BG	RO			Y									15/09/07
70	640	M	8	Upstream Iskar (Bajkal)	BG	RO	Y					Y		Y				15/09/07
70	666	M	8	River km 666 - 630	BG	RO		Y										15/09/07
71	637	M		/Iskar (rkm 0.3)	BG		Y		Y			Y		Y			Y	15/09/07
72	629	L	8	Downstream Iskar	BG	RO			Y			Y						16/09/07
72	629	R	8	Downstream Iskar	BG	RO			Y			Y						16/09/07
72	629	M	8	Downstream Iskar	BG	RO	Y							Y				16/09/07
72	627	M	8	River km 627 - 624	BG	RO		Y										16/09/07
73	606	L	8	Upstream Olt	RO	BG			Y			Y						16/09/07

73	606	R	8	Upstream Olt	RO	BG						Y	Y					16/09/07
73	606	M	8	Upstream Olt	RO	BG	Y						Y					16/09/07
74	605	L		/Olt (rkm 0.4)	RO				Y								Y	16/09/07
74	605	R		/Olt (rkm 0.4)	RO													16/09/07
74	605	M		/Olt (rkm 0.4)	RO		Y					Y		Y				16/09/07
75	602	L	8	Downstream Olt	RO	BG			Y									16/09/07
75	602	R	8	Downstream Olt	RO	BG			Y				Y					16/09/07
75	602	M	8	Downstream Olt	RO	BG	Y		Y			Y		Y				16/09/07
76	579	L	8	Downstream Turnu-Magurele/Nikopol	RO	BG			Y			Y					Y	17/09/07
76	579	R	8	Downstream Turnu-Magurele/Nikopol	RO	BG						Y	Y					17/09/07
76	579	M	8	Downstream Turnu-Magurele/Nikopol	RO	BG	Y							Y				17/09/07
76	579	M	8	River km 579 - 550	RO	BG		Y									Y	17/09/07
77	550	L	8	Downstream Zimnicea/Svishtov	RO	BG			Y			Y						17/09/07
77	550	R	8	Downstream Zimnicea/Svishtov	RO	BG						Y	Y					17/09/07
77	550	M	8	Downstream Zimnicea/Svishtov	RO	BG	Y		Y		Y			Y				17/09/07
78	537	M		/Jantra (rkm 1.0)	BG		Y		Y			Y		Y				18/09/07
78	554	M		River km 554 - 542	BG			Y										18/09/07
79	532	L	8	Downstream Jantra	RO	BG			Y			Y						18/09/07
79	532	R	8	Downstream Jantra	RO	BG			Y			Y	Y					18/09/07
79	532	M	8	Downstream Jantra	RO	BG	Y							Y				18/09/07
79	539	M	8	River km 539 - 532	RO	BG		Y										18/09/07
80	500	L	8	Upstream Ruse	BG	RO			Y								Y	18/09/07
80	500	R	8	Upstream Ruse	BG	RO			Y				Y					18/09/07
80	500	M	8	Upstream Ruse	BG	RO	Y					Y		Y				18/09/07
80	500	M	8	River km 500 - 500	BG	RO		Y									Y	18/09/07
81	498	M		/Russenski Lom	BG		Y					Y		Y				20/09/07
82	488	L	8	Downstream Ruse/Giurgiu	BG	RO			Y									20/09/07
82	488	R	8	Downstream Ruse/Giurgiu	BG	RO												20/09/07
82	488	M	8	Downstream Ruse/Giurgiu	BG	RO	Y					Y		Y				20/09/07
82	488	M	8	River km 488 - 488	BG	RO		Y										20/09/07
83	434	L	8	Upstream Arges	RO	BG			Y								Y	21/09/07
83	434	R	8	Upstream Arges	RO	BG			Y								Y	21/09/07
83	434	M	8	Upstream Arges	RO	BG	Y		Y			Y		Y				21/09/07
83	458	M	8	River km 458 - 435	RO	BG		Y									Y	21/09/07
84	432	M		/Arges	RO		Y					Y		Y				21/09/07
85	429	L	8	Downstream Arges, Oltenita	RO	BG			Y								Y	21/09/07
85	429	R	8	Downstream Arges, Oltenita	RO	BG			Y				Y				Y	21/09/07
85	429	M	8	Downstream Arges, Oltenita	RO	BG	Y					Y		Y				21/09/07
85	427	M	8	River km 427 - 378	RO	BG		Y									Y	21/09/07
86	378	L	8	Chiciu/Silistra	RO	BG			Y			Y					Y	21/09/07
86	378	R	8	Chiciu/Silistra	RO	BG						Y	Y					21/09/07
86	378	M	8	Chiciu/Silistra	RO	BG	Y							Y				21/09/07
86	375	M	8	River km 375 - 322	RO	BG		Y									Y	21/09/07
87	295	L	9	Upstream Cernavoda	RO				Y									22/09/07

87	295	R	9	Upstream Cernavoda	RO													22/09/07
87	295	M	9	Upstream Cernavoda	RO		Y				Y		Y					22/09/07
87	302	M	9	River km 302 - 280	RO			Y										22/09/07
88	235	L	9	Giurgeni	RO				Y									23/09/07
88	235	R	9	Giurgeni	RO				Y								Y	23/09/07
88	235	M	9	Giurgeni	RO		Y		Y		Y		Y					23/09/07
88	255	M	9	River km 255 - 251	RO			Y										23/09/07
89	167	L	9	Braila	RO				Y		Y						Y	23/09/07
89	167	R	9	Braila	RO				Y									23/09/07
89	167	M	9	Braila	RO		Y						Y					23/09/07
89	231	M	9	River km 231 - 170	RO			Y									Y	23/09/07
90	154	L		/Siret (rkm 1.0)	RO						Y							23/09/07
90	154	R		/Siret (rkm 1.0)	RO						Y							23/09/07
90	154 / 157	M		/Siret (rkm 1.0)	RO		Y		Y		Y			Y				23/09/07
90	154	M		/Siret - SPM River km 1 - 1	RO			Y										23/09/07
91	135	M		/Prut (rkm 1.0)	RO	MD	Y		Y	Y	Y	Y		Y				23/09/07
91	135	M		/Prut - SPM River km 1 - 1	RO	MD		Y										23/09/07
92	130	L	9	Reni	RO	UA			Y		Y						Y	24/09/07
92	130	R	9	Reni	RO	UA			Y		Y							24/09/07
92	130	M	9	Reni	RO	UA	Y							Y				24/09/07
92	61	M	9	River km 61 - 51	RO	UA		Y									Y	24/09/07
93	18	L	10	Vilkova - Chilia arm/Kilia arm	RO	UA			Y									25/09/07
93	18	R	10	Vilkova - Chilia arm/Kilia arm	RO	UA			Y	Y								25/09/07
93	18	M	10	Vilkova - Chilia arm/Kilia arm	RO	UA	Y		Y	Y		Y		Y				25/09/07
94	8	L	10	/Bystroe canal	UA				Y			Y						25/09/07
94	8	R	10	/Bystroe canal	UA				Y			Y						25/09/07
94	8	M	10	/Bystroe canal	UA		Y		Y		Y			Y				25/09/07
94	8	M	10	/Chilia arm rkm 12 - Bystroe canal rkm 7	UA			Y										25/09/07
95	0	L	10	Sulina - Sulina arm	RO				Y								Y	26/09/07
95	0	R	10	Sulina - Sulina arm	RO								Y					26/09/07
95	0	M	10	Sulina - Sulina arm	RO		Y				Y	Y		Y				26/09/07
95	0	M	10	Sulina arm River km 38 - 26	RO			Y									Y	26/09/07
96	0	L	10	Sf.Gheorghe - Sf.Gheorghe arm	RO				Y									26/09/07
96	0	R	10	Sf.Gheorghe - Sf.Gheorghe arm	RO				Y									26/09/07
96	0	M	10	Sf.Gheorghe - Sf.Gheorghe arm	RO		Y		Y		Y	Y		Y				26/09/07
96	0	M	10	Sf.Gheorghe arm River km 107 - 107	RO			Y										26/09/07
AR1	234	M		Upstream Pitesti	RO		Y							Y				20/09/07
AR2	121	M		Upstream Bucharest	RO		Y							Y				20/09/07
DR1	77	M		Drava D.Miholjac	HR		Y							Y				02/09/07
IS1	17.7	M		Orechovitz	BG		Y							Y				15/09/07
IS2	320	M		Before Reservoir Iskar	BG		Y		Y					Y				15/09/07
JA1	51.2	M		Karantzi	BG		Y							Y				18/09/07
JA2	131.7	M		Yabalka-Gabrovo	BG		Y		Y					Y				18/09/07
MO1	79	M		Morava, Lanzhot (River km. 79-76).	CZ		Y		Y									21/08/07

MO2	17	M	Dyje, Pohansko (River km 17-14)	CZ		Y		Y										21/08/07
OL1	163	M	Upstream Rm. Valcea	RO		Y							Y					16/09/07
OL2	61	M	Downstream Slatina	RO		Y							Y					16/09/07
PR1	404	M	Ungheni	RO	MD	Y		Y					Y					23/09/07
PR2	220	M	Bumbata-Leova	RO	MD	Y							Y					23/09/07
RL1	10	M	Basarbovo	BG		Y							Y					20/09/07
RL2	37	M	Beli Lom, Pisanetz	BG		Y		Y					Y					20/09/07
SA1	254	M	Sava downstream Zupanja	RS		Y												20/09/07
SA2	195	M	Jamena	RS		Y		Y										07/09/07
SA3	136.4	M	Sremska Mitrovica	RS		Y		Y										07/09/07
SA4	62	M	Ušće	RS		Y		Y										07/09/07
TI1	744	M	Tiszabecs	HU		Y		Y										27/08/07
TI2	334	M	Szolnok	HU		Y		Y					Y					31/08/07
TI3	160	M	Szeged (HU border)	HU	RS	Y		Y					Y					31/08/07
TI4	152	M	Martonoš	RS		Y		Y										04/09/07
TI5	66	M	Novi Bečej	RS		Y		Y										04/09/07
TI6	9	M	Titel	RS		Y		Y										04/09/07
VM1	237.2	M	Bagrdan	RS		Y		Y					Y					08/09/07
VM2	154.1	M	Varvarin	RS		Y		Y					Y					08/09/07
VM3	34.8	M	Ljubičevski Most	RS		Y		Y					Y					08/09/07

Table 2: List of JDS2 cooperating laboratories.

No.	List of laboratories	Country	Abbr.
1	Austrian Academy of Sciences, Institute of Limnology, Mondsee	AT	IFL
2	Austrian Research Centers GmbH – ARC, Environmental Sciences, Seibersdorf	AT	ARC
3	Bavarian Environment Agency, Munich	DE	LFUDE
4	DVGW-Technologiezentrum Wasser (TZW), Karlsruhe	DE	TZW
5	European Commission - Joint Research Centre, Institute for Environment and Sustainability, Rural, Water and Ecosystem Resources Unit, Ispra	IT	JRC
6	ICIM National Research and Development Institute for Environmental Protection, Bucharest	RO	ICIM
7	Institute for Biological Research, Belgrade	RS	IBISS
8	International Atomic Energy Agency, Isotope Hydrology Section, Vienna	AT	IAEA
9	Medical University Vienna, Clinical Institute of Hygiene and Medical Microbiology, Water Hygiene and Zentrum für Anatomie und Zellbiologie, Arbeitsgruppe Mikrobiologie and Vienna University of Technology, Institut of Chemical Engineering	AT	MUVIE
10	RECETOX, Masaryk University, Brno	CZ	RECETOX
11	Ukraine Research Hydrometeorology Institute, Kiev	UA	UHMI
12	Umwelbundesamt GmbH, Vienna	AT	UBAAT
13	University of Natural Resources and Applied Life Science, Low-Level Counting-Laboratory Arsenal, Vienna	AT	BOKU-RAD
14	University of Natural Resources and Applied Life Sciences, Institute for Hydrobiology and Aquatic Ecology Management, Department Water – Atmosphere – Environment, Vienna	AT	BOKU-MZB
15	University of Vienna, Faculty of Life Sciences, Department of Limnology and Hydrobotany, Vienna	AT	UNIVIE-MPH
16	Vienna University, Department of Environmental Geosciences	AT	UNIVIE-APE
17	VITUKI - Environmental Protection and Water Management Research Institute, Budapest	HU	VITUKI
18	Water Research Institute, Bratislava	SK	WRISK
19	Water Research Institute, Brno and Prague	CZ	WRICZ

Table 3: List of parameters included in the programme of the JDS2. W = "Water", WX = "Water collected on XAD cartridges", S = "Sediments", B = "Biota fish and mussels", BF = "Biota - Fish" BM = "Biota - Mussels", M = "SPM", All = if W, S, B and M samples analysed, P = "Sediments - Pore Water", O = "Other". For abbreviations of the laboratories, see Table 2.

	Parameters / Laboratories	ICIM	JRC	LFUDE	MUVIE	RECETOX	TZW	UBAAT	UNIVIE-AP	VITUKI	WRICZ	WRISK	BOKU-MZB	IBISS	IFL	JRC-F	UNIVIE-MPH	ARC	BOKU-RAD	IAEA	UHMI
Chemical parameters - laboratory analyses	1 1,1,2-Trichloroethylene											W									
	2 1,2,4-Trichlorobenzene			B								W									
	3 1,2-Dichloroethane											W									
	4 1234678-HpCDD (1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin)		WX/B/S/M																		
	5 1234678-HpCDF (1,2,3,4,6,7,8-Heptachlorodibenzofuran)		WX/B/S/M																		
	6 1234789-HpCDF (1,2,3,4,7,8,9-Heptachlorodibenzofuran)		WX/B/S/M																		
	7 123478-HxCDD (1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin)		WX/B/S/M																		
	8 123478-HxCDF (1,2,3,4,7,8-Hexachlorodibenzofuran)		WX/B/S/M																		
	9 123678-HxCDD (1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin)		WX/B/S/M																		
	10 123678-HxCDF (1,2,3,6,7,8-Hexachlorodibenzofuran)		WX/B/S/M																		
	11 123789-HxCDD (1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin)		WX/B/S/M																		
	12 123789-HxCDF (1,2,3,7,8,9-Hexachlorodibenzofuran)		WX/B/S/M																		
	13 12378-PeCDD (1,2,3,7,8-Pentachlorodibenzo-p-dioxin)		WX/B/S/M																		
	14 12378-PeCDF (1,2,3,7,8-Pentachlorodibenzofuran)		WX/B/S/M																		
	15 1998 WHO-TEQ for PCBs (1998 WorldHealthOrganisation-ToxicEquivalentQuantities)		WX/B/S/M																		
	16 1998 WHO-TEQ for PCDD/Fs (1998 WorldHealthOrganisation-ToxicEquivalentQuantities)		WX/B/S/M																		
	17 2,3,7,8-TCDD		WX/B/S/M																		

18	2,4-D		W																
19	2005 WHO-TEQ for PCBs (2005 WorldHealthOrganisation-ToxicEquivalentQuantities)		WX/B/S/M																
20	2005 WHO-TEQ for PCDD/Fs (2005 WorldHealthOrganisation-ToxicEquivalentQuantities)		WX/B/S/M																
21	234678-HxCDF (2,3,4,6,7,8-Hexachlorodibenzofuran)		WX/B/S/M																
22	23478-PeCDF (2,3,4,7,8-Pentachlorodibenzofuran)		WX/B/S/M																
23	2378-TCDF (2,3,7,8-Tetrachlorodibenzofuran)		WX/B/S/M																
24	5-Methyl-chrysene		WX/B/S/M																
25	7-H-Benzo(c)fluorene		WX/B/S/M																
26	Acenaphthene		WX/B/S/M																
27	Acenaphthylene		WX/B/S/M																
28	Alachlor							B/S/M		W/S/M									
29	Aldrin		WX/B/S/M					B/S/M				W							
30	alpha-Hexachlorocyclohexane (alpha-HCH)		WX/B/S/M																
31	Aluminium (Al) - total	S	S							M									
32	Anthanthrene		WX/B/S/M																
33	Anthracene		WX/B/S/M								S/M	W							
34	Arsenic (As) - dissolved											W							
35	Arsenic (As) - total	S	S	M								B							
36	Atrazine		W							W/S/M									
37	BC (Black Carbon)							S											
38	BDE-100 (2,2',4,4',6-Pentabromodiphenylether)		WX/B/S/M			S					W								
39	BDE-138 (2,2',3,4,4',5'-Hexabromodiphenylether)				S														
40	BDE-153 (2,2',4,4',5,5'-Hexabromodiphenylether)		WX/B/S/M		S						W								

41	BDE-154 (2,2',4,4',5,6'-Hexabromodiphenylether)	WX/B/S/M			S					W									
42	BDE-17	WX/B/S/M																	
43	BDE-183 (2,2',3,4,4',5',6'-Heptabromodiphenylether)	WX/B/S/M			S					W									
44	BDE-196 (2,2',3,3',4,4',5,6'-Octabromodiphenylether)	WX/B/S/M																	
45	BDE-197 (2,2',3,3',4,4',6,6'-Octabromodiphenylether)	WX/B/S/M																	
46	BDE-203 (2,2',3,4,4',5,5',6'-Octabromodiphenylether)	WX/B/S/M								W									
47	BDE-205 (2,3,3',4,4',5,5',6'-Octabromodiphenylether)									W									
48	BDE-206 (2,2',3,3',4,4',5,5',6'-Nonabromodiphenylether)	WX/B/S/M																	
49	BDE-207 (2,2',3,3',4,4',5,6,6'-Nonabromodiphenylether)	WX/B/S/M																	
50	BDE-208 (2,2',3,3',4,5,5',6,6'-Nonabromodiphenylether)	WX/B/S/M																	
51	BDE-209 (Decabromodiphenylether)	WX/B/S/M			S														
52	BDE-28 (2,4,4'-Tribromodiphenylether)	WX/B/S/M			S														
53	BDE-47 (2,2',4,4'-Tetrabromodiphenylether)	WX/B/S/M			S					W									
54	BDE-49 (2,2',4,5'-Tetrabromodiphenylether)	WX/B/S/M																	
55	BDE-66 (2,3',4,4'-Tetrabromodiphenylether)	WX/B/S/M			S														
56	BDE-85 (2,2',3,4,4'-Pentabromodiphenylether)	WX/B/S/M			S														
57	BDE-99 (2,2',4,4',5-Pentabromodiphenylether)	WX/B/S/M			S					W									
58	Bentazon	W																	
59	Benzene										W								
60	Benzo(a)anthracene	WX/B/S/M								S/M									
61	Benzo(a)pyrene	WX/B/S/M								S/M	W								
62	Benzo(b)fluoranthene	WX/B/S/M								S/M	W								
63	Benzo(e)pyrene	WX/B/S/M																	

64	Benzo(g,h,i)perylene		WX/B/S/ M								S/M	W							
65	Benzo(j)fluoranthene		WX/B/S/ M																
66	Benzo(k)fluoranthene		WX/B/S/ M								S/M	W							
67	beta-Hexachlorocyclohexane (beta-HCH)		WX/B/S/ M																
68	Bezafibrate		W																
69	Bismuth (Bi)			M															
70	Bisphenol A		W																
71	Cadmium (Cd) - dissolved										W								
72	Cadmium (Cd) - total	S	S	M							B								
73	Caffeine		W																
74	Calcium (Ca) – total		S																
75	Carbamazepine		W																
76	Carbon (C) - total		S																
77	Chlordan							B/S/ M											
78	Chlorfenvinphos							B/S/ M				W							
79	Chlorine (Cl) – total		S																
80	Chlorpyrifos							B/S/ M				W							
81	Chromium (Cr) - dissolved										W								
82	Chromium (Cr) - total	S	S	M							B								
83	Chrysene		WX/B/S/ M								S/M								
84	Cis-chlordane (alpha)		WX/B/S/ M																
85	Cis-nonachlor		WX/B/S/ M																
86	Cobalt (Co) - total		S	M															
87	Copper (Cu) - dissolved										W								
88	Copper (Cu) - total	S	S	M							B								
89	Cyclopenta(c,d)pyrene (CPP)		WX/B/S/ M																
90	Desethylatrazine		W																
91	Desethylterbutylazine		W																

92	Di(2-ethylhexyl)phthalate (DEHP)			M			S					W							
	Dibenzo(a,e)pyrene		WX/B/S/ M																
93	Dibenzo(a,h)anthracene		WX/B/S/ M									S/M							
94	Dibenzo(a,h)pyrene		WX/B/S/ M																
95	Dibenzo(a,i)pyrene		WX/B/S/ M																
96	Dibenzo(a,l)pyrene		WX/B/S/ M																
97	Dibutyltin																		
98	Dichloromethane												W						
99	Diclofenac		W																
100	Dieldrin		WX/B/S/ M						B/S/ M				W						
101	Diphenyltin								All										
102	Diuron		W																
103	DOC (Dissolved Organic Carbon)					W													
104	Endosulfan (alpha, beta)								B/S/ M				W						
105	Endosulfan (alpha-Endosulfan)		WX/B/S/ M						B/S/ M				W						
106	Endosulfan (beta-Endosulfan)		WX/B/S/ M										W						
107	Endosulfan sulfate		WX/B/S/ M																
108	Endrin		WX/B/S/ M						B/S/ M				W						
109	Estrone		W																
110	Fluoranthene		WX/B/S/ M									S/M	W						
111	Fluorene		WX/B/S/ M									S/M							
112	GC-MS												W/ S						
113	Galaxolide (1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta(g)-2-benzopyrane)					M													
114	gamma-Hexachlorocyclohexane (gamma-HCH, Lindane)		WX/B/S/ M						B/S/ M				W						
115	Gemfibrozil		W																
116																			

117	Grain size distribution								S										
118	Heptachlor		WX/B/S/ M					B/S/ M											
119	Heptachlor-endo-epoxide (cis, isomer B)		WX/B/S/ M																
120	Heptachlor-exo-epoxide (trans, isomer B)		WX/B/S/ M																
121	Hexachlorobenzene		WX/B/S/ M	B				B/S/ M				W							
122	Hexachlorobutadiene			B				B/S/ M				W							
123	Hexachlorocyclohexane							B/S/ M				W							
124	HpCDD (Heptachlorodibenzo-p-dioxins)		WX/B/S/ M																
125	HpCDF (Heptachlorodibenzofurans)		WX/B/S/ M																
126	HxCDD (Hexachlorodibenzo-p-dioxins)		WX/B/S/ M																
127	HxCDF (Hexachlorodibenzofurans)		WX/B/S/ M																
128	Hydrogen (H) – total		S																
129	Ibuprofen		W																
130	Indeno(1,2,3-c,d)pyrene		WX/B/S/ M								S/M	W							
131	Indicator (EC-6)		WX/B/S/ M																
132	Iron (Fe) - total	S	S							M									
133	Isodrin							B/S/ M				W							
134	Isoproturon		W																
135	I-TEQ (International-ToxicEquivalentQuantities)		WX/B/S/ M																
136	Ketoprofen		W																
137	Lead (Pb) - dissolved											W							
138	Lead (Pb) - total	S	S	M								B							
139	Magnesium (Mg) - total		S																
140	Manganese (Mn) - total	S	S	M						M									
141	MCP (Mecoprop)		W																
142	Mercury (Hg) - dissolved											W							

168	para-tert-Octylphenol		W	M		S		B/S/ M		W									
169	PCB 101 (2,2',4,5,5'-pentachlorobiphenyl)		WX/B/S/ M	B							W								
170	PCB 105 (2,3,3',4,4'-Pentachlorobiphenyl)		WX/B/S/ M																
171	PCB 114 (1,1'-Biphenyl, 2,3,4,4',5-pentachloro-)		WX/B/S/ M																
172	PCB 118 (2,3',4,4',5-Pentachlorobiphenyl)		WX/B/S/ M								W								
173	PCB 123 (1,1'-Biphenyl, 2',3,4,4',5-pentachloro-)		WX/B/S/ M																
174	PCB 126 (3,3',4,4',5-Pentachlorobiphenyl)		WX/B/S/ M																
175	PCB 138 (2,2',3,4,4',5-hexachlorobiphenyl)		WX/B/S/ M	B							W								
176	PCB 153 (2,2',4,4',5,5'-hexachlorobiphenyl)		WX/B/S/ M	B							W								
177	PCB 156 (2,3,3',4,4',5-Hexachlorobiphenyl)		WX/B/S/ M																
178	PCB 157 (1,1'-Biphenyl, 2,3,3',4,4',5'-hexachloro-)		WX/B/S/ M																
179	PCB 167 (1,1'-Biphenyl, 2,3',4,4',5,5'-hexachloro-)		WX/B/S/ M																
180	PCB 169 (3,3',4,4',5,5'-Hexachlorobiphenyl)		WX/B/S/ M																
181	PCB 180 (2,2',3,4,4',5,5'-heptachlorobiphenyl)		WX/B/S/ M	B							W								
182	PCB 189 (1,1'-Biphenyl, 2,3,3',4,4',5,5'-heptachloro-)		WX/B/S/ M																
183	PCB 203 (1,1'-Biphenyl, 2,2',3,4,4',5,5',6-octachloro-)										W								
184	PCB 28 (2,4,4'-trichlorobiphenyl)		WX/B/S/ M	B							W								
185	PCB 52 (2,2',5,5'-tetrachlorobiphenyl)		WX/B/S/ M	B							W								
186	PCB 77 (3,3',4,4'-Tetrachlorobiphenyl)		WX/B/S/ M																
187	PCB 8 (1,1'-Biphenyl, 2,4-dichloro-)										W								
188	PCB 81 (1,1'-Biphenyl, 3,4,4',5-tetrachloro-)		WX/B/S/ M																
189	PeCDD (Pentachlorodibenzo-p-dioxins)		WX/B/S/ M																
190	PeCDF (Pentachlorodibenzofurans)		WX/B/S/ M																

191	Pentachlorobenzene			B			B/S/ M				W							
192	Pentachloronitrobenzene						B/S/ M											
193	Pentachlorophenol					S					W							
194	Perylene		WX/B/S/ M															
195	Petroleum hydrocarbons									W/S/ M								
196	PFDA (Perfluorodecanoate)		W															
197	PFHpA (Perfluoroheptanoate)		W															
198	PFNA (Perfluorononanoate)		W															
199	PFOA (Perfluorooctanoate)		W															
200	PFOS (Perfluorooctansulfonate)		W															
201	PFUnA (Perfluoroundecanoate)		W															
202	Phenanthrene		WX/B/S/ M								S/M							
203	Phosphorus (P) – total		S															
204	Potassium (K) – total		S															
205	Pyrene		WX/B/S/ M								S/M							
206	Silicates (SiO ₂) dissolved	W																
207	Silicium (Si) – total		S															
208	Simazine		W							W/S/ M								
209	Sodium (Na) – total		S															
210	Sulfamethoxazole		W															
211	Sulfur (S) – total		S															
212	Suspended solids														W			
213	Suspended solids - organic fraction														W			
214	Suspended solids - inorganic fraction														W			
215	TCDD (Tetrachlorodibenzo-p-dioxins)		WX/B/S/ M															
216	TCDF (Tetrachlorodibenzofurans)		WX/B/S/ M															
217	Terbutylazine		W															
218	Tetrabutyltin						All											
219	Tetrachloroethylene										W							

[illegible]

	249	pH																		
	250	Water temperature																		
Microbiological parameters	251	Bacteria morphotype - Cocci			W															
	252	Bacteria morphotype - Filamentous			W															
	253	Bacteria morphotype - Rods			W															
	254	Bacteria morphotype - Vibrio			W															
	255	Intestinal Enterococci (MU/SF Microtiterplates)			W															
	256	Escherichia coli (Colilert)			W															
	257	Total Coliforms (Colilert)			W															
Biological parameters	258	Macrozoobenthos							O			O	O							
	259	Phytobenthos								O										
	260	Phytoplankton											O							
	261	Chlorophyll-a (phytobenthos - fluorescence)							W											
	262	Chlorophyll-a (phytoplankton - fluorescence)											W							
	263	Chlorophyll-a (phytoplankton - ISO)											W							
	264	Macrophytes													O					
	265	Fish												O						
Ecotoxicology	266	Desmodesmus subspicatus (Growth inhibition test)								P										
	267	Lemna minor (Growth inhibition test)								P										
	268	Vibrio fisheri - Flash contact assay			S															
	269	Vibrio fisheri (Inhibitory effect on light emission)			S					P										
Radiology	270	Caesium (137Cs)														S			S	
	271	Deuterium (2H)													W			W		
	272	Lead (210Pb)														S				
	273	Nitrogen (15N)																W		
	274	Oxygen (18O, isotope in H2O)													W			W		
	275	Oxygen (18O, isotope in NO3)																W		
	276	Potassium (40K)														S				
	277	Radium (226Ra)														S				
	278	Radium (228Ra)														S				
	279	Radon (222Rn)														S		W		

280	Strontium (90Sr)																		S		S
281	Thorium (228Th)																		S		
282	Tritium (3H)																	W		W	
283	Uranium (228U)																		S		