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International Commission for the Protection of the Danube River
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Regional Inventory of Potential Accidental Risk Spots

in the Tisa catchment area of Romania, Hungary, Ukraine & Slovakia

Prepared by the Permanent Secretariat of the ICPDR in cooperation with ZINKE ENVIRONMENT CONSULTING for Central and Eastern Europe, Vienna
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Foreword

The government representatives from Romania, Hungary, Ukraine and Slovakia agreed at a Tetralateral Commission meeting held in Cluj (RO) on 23-24 May, 2000, to prepare national inventories of potential pollution sources (including their mapping) within the Tisa catchment area.

In June, the Permanent Secretariat of the International Commission for the Protection of the Danube River (ICPDR) in Vienna received the national contributions and made an evaluation producing the 1st Regional Inventory of Potential Accidental Risk Spots in the Tisa catchment area of Romania, Hungary, Ukraine & Slovakia, which was issued in July 2000. The objective was to identify those pollution sources, which may pose the most important transboundary accidental risks.

In the 1st Regional Inventory it was indicated that there were still some information gaps existing concerning a complete picture of the risk spots in the Tisa catchment area. Upon the request from the Permanent Secretariat additional information was received from Romania concerning risk spots in the Crisuri and Mures sub-basins. No additional data were obtained from the other countries. Based on this available information, the Regional Inventory of Potential Accidental Risk Spots in the Tisa catchment area of Romania, Hungary, Ukraine & Slovakia was completed by the Permanent Secretariat of the ICPDR.

This inventory and the ranking of the risk spots is based on information supplied by the officially authorised country representatives. This, however, does not indicate that the inventory does cover all sites, which might be the source of accidental environmental pollution or, which could pose a risk to waters in the Tisa catchment area. The completeness of the inventory and the proposed priority ranking should be reviewed by the Tetralateral Commision and the BMTF to assure the implementation of effective measures for future prevention of accidental pollution in the Tisa catchment area.

1. Introduction

Base material

The inventory was prepared using national criteria for activities with hazardous and polluting substances, and by arranging them into a prescribed format table (see Annex 3 of the Cluj Minutes). Priority should have been given to the mining industry. Only Romania responded adequately to this point, while the other countries have only few mining activities in this region.

It was further stated that the AEPWS Expert Group dealing with a "*Methodology for Accidental Risk Inventory*" and the Baia Mare Task Force shall prioritise the most hazardous activities and shall work out recommendations to improve the safety of installations.

All four countries provided the requested lists. However, these lists and their details differ in their completeness of information and volume. Hungary provided over 400 risk spots where most of them do actually not indicate a significant accidental risk; therefore the Hungarian list was substantially reduced. Romania provided equally comprehensive lists of pollution sources, which were not all taken into account in this inventory but reduced to follow the methodology agreed at the Cluj meeting. Therefore unofficial information concerning Romanian tailing ponds mentioned in the 1st Regional Inventory is now left out.

This regional inventory and ranking of accidental risks is based on four national risk evaluations, which in fact give extremely brief information on the kind of risk on each site, which are difficult to judge, especially at an international scale of comparison. However, the list provides the first-ever regional overview of the most risky industrial sites for all four Tisa river basin countries.

Methodology of the Regional Inventory

Based on the national information provided, three categories were chosen for the Tisa Regional Inventory:

+ **High risk spots**: The country information indicates directly or indirectly a high accident risk (existing leakage etc.): Only these spots are indicated below and were chosen for the regional map (attached)!
+ **Lower risk spots**: The information provided to ICPDR states a *certain* risk, or it is *incomplete* (i.e. it does not exclude a potential "risk"): e.g. *medium* or *low risk*, storage of large quantities (> 1,000 t) of hazardous substances etc. These spots are given in the tables below.
+ **Other spots**: The country information provided does not indicate a major accident risk of environmental pollution. These spots are only listed in the national reports but not in this regional inventory.

Note to the numbering of ARS spots:

The numbers given in the present document refer first to the new ARS map number and then to those numbers given in the national inventories (attention: these numbers are not in one

order, there are cases where e.g. number 1 is given twice within one national inventory). This reference will facilitate a comparison of the present evaluation with the national source documents.

2. Evaluation of documents provided by the four governments

2.1. Romania

43 spots storing potentially polluting substances were indicated by the Romanian Ministry for Waters, Forests and Environmental Protection. The regional assessment led to the following classification:

24 high risk spots + 19 mining spots (16 tailing deposits/ponds, 3 mines)
+ 1 metal smelting plant
+ 1 pharmaceutical plant
+ 1 pulp & paper plant
+ 1 pig farm with risky biological ponds
+ 1 chemical industry (pond)

High Risk Spots in Romania		
ARS Map no.	**National number and sub-region**	**Industry Sector**
Somes-Tisa Sub-basin		
1	1. SC TERAPIA SA	Chemical (pharma)
2	2. SC AURUL SA (pond)	Mining
3	3. SM BORSA - Colbu Pond	Mining
4	4. SM BORSA - Novat Pond	Mining
5	5. SM BAIA MARE UP Central Flotation Unit, UP Sasar (pond)	Mining
6	6. SC ALLIED DEALS PHOENIX SA	Metallurgy
7	7. SM BAIA MARE - EM Baia Sprie (pond)	Mining
8	8. SM BAIA MARE - EM Cavnic (pond)	Mining
9	9. EM AURUM - Ilba Sector	Mining
10	10. SM BAIA MARE - EM Herja	Mining
11	11. CMNPN REMIN BAIA MARE - EM Turt (pond)	Mining
12	12. EM AURUM - Nistru Section	Mining
13	13.C.N.M.P.N. REMIN SA BAIA MARE Mining Subsidiary Rodna (pond)	Mining
14	14. SM BAIA MARE - EM Baiut (pond)	Mining
15	15. SC SOMES SA, Dej	Pulp & Paper
16	16. SC COMINEX NEMETALIFERE SA - Mining Subsidiary Aghires (ponds)	Mining
17	17. SC AGROCOMSUIN - SA BONTIDA (biological ponds)	Agric./Pig Farm
Crisuri Sub-basin		
18	2.CNCAF Minvest, SC Devamin SA, Branch Mine Brad - U P Gurabarza, Râbita Pond	Mining
19	4.CNCAF Minvest, SC Devamin SA, Branch Mine Bãita - U P Bãita, Fânate Pond	Mining
Mures Sub-basin		
20	2. SC BICAPA SA (pond)	Chemical
21	4. E.M. ABRUD (pond)	Mining
22	5. EM Roşia Montană (pond)	Mining
23	7. EM Baia de Arieş (pond)	Mining
24	10. EM Coranda Certej (pond)	Mining

19 other industries appear to have a **lower risk level**:

+ 6 mining spots (5 tailing deposits/ponds, 1 mines)
+ 2 chemical industry plants
+ 4 oil production & processing plants
+ 1 sugar factory (operations halted in 2000!)
+ 3 pig farms
+ 1 chicken farm pit
+ 1 fertiliser plant
+ 1 municipal sewage station

Lower Risk Spots in Romania	
National number and sub-region	**Industry Sector**
Somes-Tisa Sub-basin	
18. SC ZAHARUL SA	Food
19. SC NUTRISAM SA SATU MARE Hogs farm Moftin	Agric./Pig Farm
Crisuri Sub-basin	
1.CNCAF Minvest, SC Devamin SA, Branch Mine Brad -Sector Mine Barza	Mining
3.CNCAF Minvest, SC Devamin SA EM. Brusturi - U P Luncsoara (pond)	Mining
5. SC Bauxita Min SA, Dobresti Pond I	Mining
6. SC Nutrientul SA Ciumeghiu Farm	Agriculture
7. R.A. Apaterm, Cleaning station and biological ponds	Municipal Sewage
8. SC Sinteza SA, Liquid storage	Chemicals
9. SC Suinprod SA, Biological ponds	Agriculture
10. SN Petrom SA, Branch Suplacu de Barcău - Oil field	Oil
11. SN Petrom SA, Branch Suplacu de Barcău - Oil field and Gas Marghita	Oil
12. SC Petrolsub SA	Oil
13. SC Petrol Derna SA	Oil
Mures Sub-basin	
1. SC AZOMUREŞ SA - pond	Agriculture
3. SC UPSOM SA - pond	Chemicals
6. E.M. Iara - pond	Mining
8. EM Zlatna - pond	Mining
9. EM Deva - pond	Mining
11. SC SUINTEST SA Gornești - biological ponds	Agriculture

The complete information about these ARS is given in chapter 3.

2.2. Ukraine

19 spots of potentially polluting sources were indicated by the government, with the numbers 1 to 8 to still be checked again by ministry experts. In the inventory, the WGK values have still to be added. In the regional assessment, for the time being, all spots were included with the following classification:

6 high risk spots + 3 pulp & paper plants
+ 2 oil pipelines
+ 1 oil treatment plant

High Risk Spots in Ukraine		
ARS Map no.	**National number and sub-region**	**Industry Sector**
1	1. Opened joint-stock company “Perechynskyi chemical timber industrial complex”, State	Pulp & Paper
2	2. Opened joint-stock company “Svalyava chemical timber industry complex”, State	Pulp & Paper
3	3. Opened joint-stock company “Velykobychkivsky chemical timber industrial complex”, State	Pulp & Paper
4	6. “Prykarpattransoilproduct”, Russian Federation	Oil
5	7. “Druzhba“, State	Oil
6	19. Platform 2/1 village Rososh, “Prykarpattransnaftoproduct", Russian Federation	Oil

13 other industries appear to have **lower risk level**:

+ 1 ore tailings dam from the metallurgical industry
+ 2 oil stocking companies
+ 10 municipal wastewater treatment plants.

Lower Risk Spots in Ukraine	
National number and sub-region	**Industry Sector**
4. Fuel depot, “Nafroservice” company, State	Oil
5. Opened joint-stock company “Zakarpatyanaftoproduct- Chust”, State	Oil
8. Zakarpatskyi polymetallic industrial complex, State	Metallurgy
9. Industrial management of water-supply and sewerage company of Uzhgorod, State	Municipal WWTP
10. Industrial management of water-supply and sewerage company of Mukachevo , State	Municipal WWTP
11. Industrial management of water-supply and sewerage company of Chust, State	Municipal WWTP
12. Rayon Industrial management of water-supply and sewerage company of Svalyava, State	Municipal WWTP
13. Industrial management of water-supply and sewerage company of Beregovo, State	Municipal WWTP
14. Industrial management of water-supply and sewerage company of Vynogradovo, State	Municipal WWTP
15. Industrial management of water-supply and sewerage company of Chop, State	Municipal WWTP
16. Industrial management of water-supply and sewerage company of Solotvyno, State	Municipal WWTP
17. Industrial management of water-supply and sewerage company of Tyachiv, State	Municipal WWTP
18. Opened joint-stock company “Rachivska cardboard factory”, State	Municipal WWTP and pulp & paper

The complete information about these ARS is given in chapter 3.

2.3. Slovakia

16 spots of potentially polluting sources were indicated by the government. 12 were evaluated as having regional risk importance. These are:

1 high risk spot + mining industry

ARS Map no.	High Risk Spot in Slovakia	Industry Sector
1	12. Želba š.p. 02 Siderit, Rožňava	Mining

11 lower risk spots: + 4 mining and related industry
+ 1 machinery industry
+ 3 chemical industries
+ 1 metallurgy industry
+ 1 energy production
+ 1 pulp & paper industry

Lower Risk Spots in Slovakia	Industry Sector
1. FINIŠ Spišská Nová Ves	Chemicals
3. Kovohuty - úpravna Slovinky	Metallurgy
5. VSŽ Ferroenergy Košice	Mining
7. Chemko Strážske, Michalovce	Chemicals
8. SE a.s. EVO Vojany, Michalovce	Energy
9. SWS Vojany, Bardejov	Chemicals
10. Tesla Stropkov, Bardejov	Machinery
11. Bukocel Hencovce, Vranov nad Toplou	Pulp & Paper
13. Magnetech Slovakia a.s., Hnúšta, Rimavska S.	Mining
14. Slovmag a.s. Lubeník, Revuca	Mining
15. SMZ Jelšava, Revuca	Mining

The complete information about these ARS is given in chapter 3.

2.4. Hungary

The government has provided a package of 447 spots of potentially polluting sources, compiled by the 7 environment inspectorates (EI) in the Tisza catchment. The Environment Management Institute from Budapest then evaluated the survey and reduced the site number to 261, many of which were attributed to the hazard category III. Only 10 of all evaluated polluting sources belong to the mining sector: The report states that, except for three less relevant sites, there is no metal mine or processing of dead rocks, neither sludge deposit from metal processing nor mine water treatment in the Hungarian Tisza catchment. However, there are some deposits from “drilling-lubricating sludge” (exploration of hydrocarbons).
The comments given in column 10 of the Szolnok Inspectorate are partly abbreviations which were not explained; they still have to be checked!

In the inventory, the most risky spots seem to be:

11 high risk spots + 1 landfill with radioactive waste (**Budapest** Inspectorate)
+ 1 deposit with several mio. tons of slag and flying ash (")
+ 1 pond (flood hazard) of a sugar factory (**Szolnok** Inspector.)
+ 1 gasoline tank deposit (")
+ 1 complex of reservoirs with mine and industrial metal sludge (**Miskolc** Inspectorate)
+ 1 big reservoir of power plant slag and slurry (")
+ 4 oil storage installations (")
+ 1 power plant complex with big slurry and slag deposits (")

ARS Map no.	High Risk Spot in Hungary	Industry Sector
Budapest region		
1	4. Landfill for radioactive wastes Püspökszilágy	Waste
2	6. HUNVIRON Kft. Pile from flying ashes, Lõrinci	Energy
Szolnok region		
3	1. Sugar factory Rt. Begin-Say (French)	Food
4	3. MOL Rt., Szajol Bázistelep	Oil
Miskolc region		
5	22. HIDROTECH Bányászati- és Környezetvédelmi Kft., ÁPV Rt, Gyöngyösoroszi	Mining
6	30. AES Borsodi Energetikai Kft. Power Plant, AES Summit Generation Ltd., Kazincbarcika	Energy
7	78. Kőolajtároló Rt., Tiszaújváros MOL Rt. Tiszai Finomító	Oil
8	79. Terméktároló Rt., Tiszaújváros MOL Rt. Tiszai Finomító	Oil
9	81. Columbian Tiszai Koromgyártó KFT, Columbian Chemical Company USA , Tiszaújváros	Oil
10	82. AES Tisza erőmű KFT, AES SUMMIT Generation Ltd., Tiszaújváros	Oil
11	83. AES Borsodi Energetikai KFT Tiszapalkonyai Hőerőmű, AES Áramtermelő Holding, Tiszaújváros	Energy

54 other industries appear to have a **lower risk level**:

+ 1 landfill with hazardous waste (categ. I-II) (**Budap**. Inspect.)
+ 1 oily waste deposit (")

+ 1 mining tank car (**Szeged** Inspectorate)
+ 5 sludge piles from drilling with sodium-dichromate (")

+ 1 pig farm manure reservoir (**Szolnok** Inspectorate)
+ 7 storages of various chemicals for manufacturing (")
+ 1 fertiliser plant (")
+ 3 machinery industries (")
+ 3 gasoline tank deposits (")

+ 2 chemical deposit from pharmaceutics (**Debrecen** Inspect.)

+ 5 large reservoirs from food industry (“)
+ 1 big mining deposit from drilling with potassium-humate (“)
+ 2 reservoirs of pig farms (“)
+ 9 deposits from pharma, machinery & energy/oil industries (“)
+ 1 hazardous waste deposit (“)
+ 1 fertiliser plant (“)

+ 1 oil disposal site (**Gyula** Inspectorate)

+ 1 reservoir of oily sludge (**Miskolc** Inspectorate)
+ 2 municipal waste deposits (“)
+ 1 sludge pond of an abandoned mine (“)
+ 1 disposal site for hazardous waste (“)
+ 1 sugar wastewater basin (“)
+ 1 olefin production (several tanks with chemicals, wastewater basin) (“)
+ 1 chemical plant with various storing tanks (“)
+ 1 oil refinery (storage tanks) (“)
+ 1 hazardous waste combustion site (“)

+ 1 complex of 4 railway re-loading stations for chemicals (**Nyiregyhaza** Inspectorate)
+ 1 hazardous waste storage facility (“)

Lower Risk Spots in Hungary	**Industry Sector**
Budapest region	
5. Pyrus-Rumpold Rt. Landfill for hazardous wastes, Aszód-Galgamácsa	Hazardous waste
11.TERRAVITA Kft., Hatvan	Oil
Szeged region	
42. MOL Rt. Kut. Term. Ág. Kutatás-1 Iroda, Algyö	Mining
57. ROTARY Fúrási Kft., Zsana	Mining
58. Kőolajkutató Rt., Algyö	Mining
59. Kőolajkutató Rt., Cserebökeny	Mining
60. Kőolajkutató Rt., Kiszombor	Mining
61. Kőolajkutató Rt., Ruzsa	Mining
Szolnok region	
2. META Kft. Abádszalók	Agric. /Pigs
1. Elektrolux Lehel Kft. Svéd property Jászberény	Chemical
2. TVM Rt. Szolnok	Agric./fertiliser
3. Gyógyászati Segédeszközök Gyára Kisújszállás	Machinery
6. PANNÓNIA Rt. Kunszent-márton	Agric./fur
8. Holland Colors Kft. Dutch property Szolnok	Chemicals
9. Mol Rt. Szajoli basic site Szajol	Oil
10. Saltis Kft. Italian property Martfű	Chemicals
11. Metallo-globus Rt. Tarnaszentmiklós	Chemicals
12. CLAAS Hungária Kft. German property Törökszentmiklós	Machinery
14. Fémfel-dolgozó Rt. Mezőtúr	Machinery
25. Terszol Szövetkezet Szolnok	Chemicals

31. Jász-Plasztik Kft. Jászberény	Chemicals
1. KUN-REHAB Kft. Kenderes	Oil
2. Magyar Honvédség Szolnok Repülőtér	Oil
Debrecen region	
2. ICN Magyarország Kft. Tiszavasvári	Chem./Pharmac.
3. Hortobágyi Vágóhíd Kft. Hortobágy	Food
4. BIG-COMPANY Kft. Balmazújváros-Telekföld	Food
5. MB Kőolajkutató Rt. Suburb of Berettyóújfalu site N: 0772	Mining
9. Sugar Factory Co. in Kaba	Food
11. NAGISZ Rt. Hegedűslóré site of pig husbandry Nádudvar	Agriculture
12. Hajdúsági Agráripari Rt. site of pig husbandry Hajdúszoboszló	Agriculture
15. Nagisz Rt. Factory of Milk and Ice-cream Nádudvar	Food
16. NAGISZ Rt. Slaughterhouse and Meat factory Nádudvar	Food
17. BIOGAL Pharmaceutical Factory Co. Debrecen	Chem./Pharmac.
18. DAEWOO MGM Rt. Debrecen	Oil
19. TITÁSZ Rt. Debreceni Power Plant Ltd. Debrecen	Oil
20. Dispomedicor Rt. Debrecen	Machinery
22. GE HUNGARY Rt. Hajdúböszörmény Kinizsi tér 1.	Machinery
24. HAJDUKOMM Kft. Balmazújváros-László-háza	Chemicals
25. Hajdúsági Agráripari Rt. (Agrochemical Factory) Nádudvar	Agric./fertiliser
26. HTTV Ltd. Berettyóujfalu	Oil
29. Hajdú-Berstal Kft. Berettyóújfalu	Machinery
31. MOL Rt. BFL Logisztika Ebes	Oil
32. MOL Rt. Nagyhegyes	Oil
33. MÁVFAVÉD Ltd. Püspökladány	Agric./wood
Gyula region	
5. Körös-Kör Kft. Ecsegfalva	Oil
Miskolc region	
11. TERRA-VITA Kft., Eger	Oil
27. Kazincbarcika Múcsonyi út municipal solid waste landfill ÉHG. Rt. Kazincbarcika	Waste
34. Miskolc-Nádasrét municipal landfill for solid wastes REM Kft., Miskolc	Waste
57. Recski Ércbányák Rt., Recsk	Mining
62. Sajókaza-Határvölgy landfill for hazardous waste of category III	Hazardous waste
72. Szerencsi Cukorgyár Rt Szerencs	Food
75. Tiszai Vegyi Kombinát Rt., Tiszaújváros	Oil
76. Akzo Nobel Festékgyártó és Kereskedelmi Rt. Tiszaújváros	Chemicals
77. MOL Rt. Tiszai Finomító, Tiszaújváros	Oil
80. Ecomissio KFT. Tiszaújváros	Chemicals

Nyíregyháza region	
2. MÁV ZÁHONY PORT Division Drawing-off Chemicals	Chemicals
3. MÁV ZÁHONY PORT Shaft readjusting Division for 500	Chemicals
4. MÁV ZÁHONY PORT Division Fényeslitke NS Marshalling yard	Chemicals
5. MÁV ZÁHONY PORT Division Eperjeske marshalling yard	Chemicals
10. VÁROSÜZEMEL-TETÉSI KHT. Nyíregyháza	Hazardous Waste

The complete information about these ARS is given in chapter 3.

3. High and Lower Risk Spots for Pollution Accidents in the Tisa Catchment of Romania, Ukraine and Slovakia

Detailed description of the high and lower risks spots, extracted from the national inventories:

ROMANIA - High Risk Spots in the Somes-Tisa Sub-basin

Company / Owner	*Location / district*	*Receiver watercourse; length (km)*	*Company's object / type of technology used*	*Dangerous substances*	*Toxic properties WGK*	*Total quantity handled / stored (metric tones)*	*Storage facilities*	*Free operating volume (%)*	*Comments*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. SC TERAPIA SA	Cluj-Napoca/ Cluj	Somesul Mic (82) Somes (244)	Drugs production	cyanides	R50	cyanide waters storage in 3 local stations - 20 cm/day	3 decianuration	3 reserve tanks - 20 cm/day	-accidental leaches of cyanide waters over the platform
2. SC AURUL SA	Baia Mare/ Maramures	Lapus (5,2) Somes (95)	Precious metal mining and processing / cianuration	cyanide, heavy metals (Pb, Zn, Cu, Mn)	R50-53	2.400.000	flatland pond; slag made dam	84%-precipitation take-over volume 85.000 m^3	-increased risk for cyanides and heavy metal ions - spills, dam's cracks, transport pipes breakdown
3. SM BORSA Colbu Pond	Baia Borsa / Maramures	Cisla (9,8) Viseu (63) Tisa (59)	Nonferrous ores mining and processing / flotation procedures	heavy metals	R50-53	2.880.000	flatland pond; slag made dam	15%takeover volume for the precip. @ 9.000 m^3	- high risk for heavy metals -spills, dam's cracks and transport pipes breakdown
4. SM BORSA Novat Pond	Baia Borsa/ Maramures	Novat (10) Vaser (12) Viseu (41) Tisa (59)	Nonferrous ores mining and processing / flotation procedures	heavy metals	R50-53	1.810.000	flatland pond; slag made dam	92,5% take-over volume for precip. @ to be established after activity resuming	- high risk for heavy metals - spills, dam's cracks
5. SM BAIA MARE UP Central Flotation Unit, UP Sasar	Baia Mare/ Maramures	Lapus (5,6) Somes (95)	Nonferrous ores processing / flotation procedures	cyanide, heavy metals (Pb, Zn, Cu, Mn)	R50-53	41.000.000	flatland pond; slag made dam	22% takeover volume for the precip. @ 120.000 m^3	- medium risk for cyanide and heavy metals -spills, dam's cracks, transport pipes breakdown
6. SC ALLIED DEALS PHOENIX SA	Baia Mare / Maramures	Sasar (13,5) Lapus (6) Somes (95)	Nonferrous smelting, reactives producetion	heavy metals, sulphuric acid	R14 R21	H_2SO_4 tank - 10.000 t silt pond - 2.600 m^3		20% 20%	- medium risk for H_2SO_4

1	2	3	4	5	6	7	8	9	10
7. SM BAIA MARE EM Baia Sprie	Baia Sprie/ Maramures	Sasar (19) Lapus (6) Somes (95)	Nonferrous ores mining and processing / flotation procedures	heavy metals	R50-53	13.221.000	flatland pond; slag made dam	7% takeover volume for the precip. @ 30.000 m^3	- medium risk for heavy metals ion pollution - spills, dam's cracks, transport pipes breakdown
8. SM BAIA MARE EM Cavnic	Cavnic / Maramures	Cavnic (24,5) Lapus (37,7) Somes (95)	Nonferrous ores mining and processing / flotation procedures	heavy metals	R50-53	850.000	flatland pond; slag made dam	69%takeover volume for the precip. @ 12.000 m^3	- medium risk for heavy metals ion pollution - spills, dam's cracks, transport pipes breakdown
9. EM AURUM, Ilba Sector	Baia Mare (Ilba) / Maramures	Ilba (7) Somes (84,5)	Nonferrous ores processing	heavy metals from mine waters	R50-53		-intermediary storage for packed silt -mine waters -unproper purification		- medium risk for heavy metals ions pollution
10. SM BAIA MARE EM Herja	Baia Mare/ Maramures	Firiza (5) Sasar (14) Lapus (6) Somes (95)	Nonferrous ores mining	heavy metals	R50-53		-mine waters -reduced and unproper purification		- medium risk for heavy metals ions pollution
11. CMNPN REMIN BAIA MARE EM Turt	Turt / Satu Mare	Turt (18) Tur (68) Tisa (820)	Complex nonferrous ores mining without processing	heavy metals (Cu, Pb, Zn)	R43,47,50 R54-58		2,2 milions m^3	100%	- stalling pond not operating - processing plant in construction
12. EM AURUM Nistru Section	Baia Mare (Nistru) / Maramures	V.Rosie (3,5) Baita (12) Lapus (2) Somes (95)	Nonferrous ores processing	heavy metals from mine waters	R50-53		-mine waters -reduced and unproper purification		- medium risk for heavy metals ions pollution - breakdown of the silt # water transport pipes at Bozanta pond
13.C.N.M.P.N. REMIN SA BAIA MARE Mining Subsidiary Rodna	Rodna / Bistrita Nasaud	Somesul Mare (560)	Nonferrous ore mining and processing (Pb, Zn) Storage of the slag	heavy metals (Pb, Zn)	R50-53	6.300.000 slag (at final quota #740) 2.737.930 stored quantity, until #720 m quota	Stalling pond: valley - type pond, with main dam built on slag and aditional toe dam	56%	- medium risk level - stability coefficient 1,4 - wide general angle of the slope @ 34 - leaches over the main dam, in case of malfunc-tion of the water evacua-tion system

1	2	3	4	5	6	7	8	9	10
14. SM BAIA MARE EM Baiut	Baiut / Maramures	Lapus (110) Somes (95)	Nonferrous ores mining and processing / flotation procedures	heavy metals	R50-53	3.650.000	flatland pond; slag made dam	8,7% takeover volume for the precip. @ 25.000 m^3	- medium risk for heavy metals ions pollution - spills, dam's cracks, transport pipes breakdown
15. SC SOMES SA	Dej / Cluj	Somes (233)	Pulp and paper prcessing	organic substances, lignine, tanine	R52	110 t/year	silt storage	70%	-floods and high waters
16. SC COMINEX NEMETALIFERE SA Mining Subsidiary Aghires	Aghires / Cluj	Nadas (20) Somesul Mic (82) Somes (244)	Caolin sands and metalurgic sands mining	suspensions	R52	100.000 t/year	3 stalling ponds	41%	- floods, landslides, dam's cracks - instant power breakdown - breaking of the effluent pipe, which evacuates the residual waters from the pond
17. SC AGROCOMSUIN SA BONTIDA	Bontida / Cluj	Somesul Mic (42) Somes (244)	Hogs farm	organic substances, amonium, suspensions	R52	36.000 t/year	4 biologic ponds	semi-siltated ponds	- exfiltrations or cracks at the biologic ponds

ROMANIA - Lower Risk Spots in the Somes-Tisa Sub-basin

18. SC ZAHARUL SA	Carei / Satu Mare	Postei (2) Crasna (53) Tisa (820)	Sugar processing from sugar beetle by diffusion technology	oxygen consummer substances, suspensions (CCOCr)	R52	76.500 m^3	120.000 m^3	64%	- operations halted (since 2000) for a undetermined period
19. SC NUTRISAM SA SATU MARE Hogs farm Moftin	Moftin / Satu Mare	Crasna (66) Tisa (820)	Intensive livestock rising - hogs	oxygen consummer substances, suspensions (CCOCr) fenols	R52	2.800 m^3	6.000 m^3	60%	- biologic pond used only in case of maintenance or revision procedures at the epuration installation

ROMANIA - High Risk Spots in the Crisuri and Mures Sub-basins

CRISURI HYDROGRAPHIC SUB-BASIN

Company / Owner	*Location/ district*	*Receiver Water-course length (km)*	*Company's object/type of technology used*	*Dangerous substances*	*Toxic properties WGK*	*Total quantity handled/ stored (t, m³)*	*Storage facilities*	*Free operating volume (%)*	*Comments*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2.CNCAF Minvest SC Devamin SA Branch Mine Brad - U P Gurabarza Pond Râbita	Brad Hunedoara	Crisul Alb (41,5)	Copper and gold ore processing / flotation procedures	cyanide, heavy metals (Pb, Zn, Cu,Mn)	R 50-53	8 700 000 m³	Slope pond, sterile dike 10 000 000 m³	13 %	- medium risk for cyanides and heavy metal ion pollution - spills, dam cracks, trans-port pipes break-down
4.CNCAF Minvest SC Devamin SA Branch Mine Bãita - U P Bãita Fânate Pond	Stei Bihor	Crisul Bãita (13), Crisului Negru (27)	Non-ferrous ore mining and processing/ Flotat. procedures	cyanide, heavy metals (Cu, Zn,Pb)	R 50-53	2 553 000 m³	slope pond, sterile dike 3 010 000 m³	15 %	- medium risk for cyanides and heavy metal ion pollution - spills, dam cracks, transport pipes break-down

MURES HYDROGRAPHIC SUB-BASIN

2. SC BICAPA SA	Târnăveni Mureş	Târnava Mică (136)	Production of anorganics	- cyanide - Cr^{6+}	R50 - 53	Storage 1.000.000 t	Silt storage; flatland pond		- high risk of contamination with cyanide and Cr^{6+}
4. E.M. ABRUD	Abrud Alba	V. Sesei (2) Aries (66)	Nonferrous (Cu) ore mining and processing	- heavy metals - suspensions - acid solutions	R50- 53	27.568.410 tons	Flatland pond; Rock made dam;	74 %	- high risk for heavy metal; - low effic. of flatland
5. EM Roşia Montană	Roşia Montană Alba	V. Săliştei (22) Abrud (17) Arieş (49)	Nonferrous (Au) ore mining and processing	- heavy metals - acid solutions - suspensions	R50 - 53	407.000 t/year Storage 6.666.700 m^3	Flatland pond ; Slag and rock made dam; mine waters	35 %	- high risk for heavy metal pollution; - acid mine waters
7. EM Baia de Arieş	Baia de Arieş Alba	V. Cuții (1) V.Sartăş (5) Arieş (74)	Complex non-ferrous ore mining processing; flotation procedures	- heavy metals - cyanides - suspensions	R50 - 53	436.000 t/year Storage 1.400.000 t	Flatland pond slag made dam; mine waters	66 %	- high risk for heavy metal and cyanide pollution
10. EM Coranda Certej	Certej Hunedoara	Certej (16) Mureş (484)	Nonferrous ore mining	- heavy metals - suspensions	R50 - 53	Storage 8.000.000 t	Flatland pond; Slag made dam	4.800.000 t	- high risk for heavy metal pollution ;

ROMANIA - Lower Risk Spots in the Crisuri Sub-basin

INVENTORY OF THE USERS WITH STORAGE CAPACITY OF POTENTIALLY POLLUTING SUBSTANCES

Company / Owner	*Location/ district*	*Receiver watercourse length (km)*	*Company´s object/ type of technology used*	*Dangerous substances*	*Toxic properties WGK*	*Total quantity handled/ stored (t, m³)*	*Storage facilities*	*Free operating volume (%)*	*Comments*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1.CNCAF Minvest SC Devamin SA Branch Mine Brad -Sector Mine Barza	Brad Hune-doara	Crisul Alb (31,5)	Extraction of copper and gold diggings	heavy metals (Pb, Zn, Cu, Mn)	R 51-53		mine water; capacity unsatisfact. purification		- medium risk for heavy metal ion pollution
3.CNCAF Minvest SC Devamin SA EM. Brusturi **- U P Luncsoara**	Hãlmagiu Arad	Bãnesti Valley (0,6) Crisului Alb (70)	Non-ferrous ore mining and processing / flotation procedures	heavy metals (Pb, Zn, Cu)	R 51-53	495 000 m³	slope pond, sterile dike 745 000 m³	33 %	- medium risk for heavy metal pollution - spills, dam cracks, transport pipes break-down - stability co-efficient-1,45; - gradient 28
5. SC Bauxita Min SA **Dobresti Pond I**	Dobresti Bihor	Vasile Valley (10) Topa (25) Holod (37) Cr. Negru (80)	Bauxite ore mining and processing/ flotation procedures	suspensions containing iron	R 52	1 800 000 t	slope pond, earthen dike 3 800 000 t	53 %	- medium risk for suspensions containing iron pollution - pond in preservation XII. 1998
6. SC Nutrientul SA **Ciumeghiu Farm**	Palota Bihor	Barmod Canal (0,6) CPE2 Cohana; Pump station Ant in Cr.Negru	Intensive livestock: chicken	Oxygen-consuming substances	R 52	5760 m³	earthen pit 7 200 m³	20 %	- medium risk from uncontrollable manoeuvre
7. R.A. Apaterm Cleaning station and biological ponds	Oradea Bihor	Cr. Repede (121)	Cleaning station waste water	Suspensions, oxygen-consu-ming sub-stances, heavy metals (Cu,Zn, Cr), cyanides, phenols	R 50-53	Total area 40 ha	4 biological ponds	semi-siltated ponds	- reduced risk for pollution

Company / Owner	*Location/ district*	*Receiver watercourse length (km)*	*Company's object/ type of technology used*	*Dangerous substances*	*Toxic Proper-ties WGK*	*Total quantity handled/ stored(t,m³)*	*Storage facilities*	*Free operating volume (%)*	*Comments*
1	2	3	4	5	6	7	8	9	10
8. SC Sinteza SA Liquid storage	Oradea Bihor	Cr. Repede (121,9)	Production of inorganic pigments and filling materials	heavy metals (Cr, Pb, Zn), cyanides	R 50-53	350 000 m³	Waterproof digging storage 590 000 m³	40 % remai-ning capacity	- medium risk for pollution
9. SC Suinprod SA Biological ponds	Palota Bihor	Cr. Repede (125)	Hogs farm	Oxygen-consuming substances ammonium suspensions	R 52	Total area 8 ha	2 biologic ponds		- medium risk for oil pollution in flood period - stopped activities from 2000 to non-establishing period
10. SN Petrom SA Branch Suplacu de Barcău -Oil-field Suplacu de Barcău	Suplacu de Barcău Bihor	Barcău (50,5)	Oil production	oil products (crude oil), chlorides, phenols, ammonium	R 50-53	35 000 m³	Pit from offals 40 000 m³	12,5 % remai-ning capacity	- medium risk for oil pollution in flood period - transport pipes breakdown
11. SN Petrom SA Branch Suplacu de Barcău - Oil-field and Gas Marghita	Marghita Bihor	Barcău (77)	Oil and gas production	oil products (crude oil), chlorides, phenols	R 50-53	112 000 m³	Pit from offals 131 000 m³	14,5 % remai-ning capacity	- medium risk for oil pollution in flood period - transport pipes breakdown
12. SC Petrolsub SA	Suplacu de Barcău Bihor	Barcău (51,6)	Oil processing	oil products phenols, oxygen-cons. substances, ammonium	R 50-53	32 000 m³ 10 000 m³	Residual oil pit 40 000 m³ Reserve pit 13 200m³	20 % remai-ning capacity 24 %	- medium risk for oil pollution - tricklings from pond
13. SC Petrol Derna SA	Derna Bihor	Valley Derna (1,9) V.Fânatelor (19) Barcău (88)	Mineral oil and bitumen production	oil products (emulsive resi-dues); phenols, oxygen-cons. substances	R 50-53	4 700 m³	Residual oil pit 5 200 m³	10 % remai-ning capacity	- medium risk for oil pollution - tricklings from pond

ROMANIA - Lower Risk Spots in the Mures Sub-basin

INVENTORY OF THE USERS WITH STORAGE CAPACITY OF POTENTIALLY POLLUTING SUBSTANCES

Company/ Owner	*Location/ District*	*Receiver Watercours , length (km)*	*Company object/ type of technology used*	*Dangerous substances*	*Toxic Proper-ties WGK*	*Total amount handled/ stored (tons, m³)*	*Storage facilities*	*Free operation al volume (%)*	*Remarks*
1	2	3	4	5	6	7	8	9	10
1. SC AZOMUREŞ SA	Tg. Mureş Mureş	Mureş (201)	Mineral fertilizer production	Compositors with phosphorus and nitrogen	R52	NPK 400 m³ / h Return water settling from flatland 430 m³/h	Flatland pond	200.000 m^3	- medium risk for eutro-phication - transport pipes breakdown - a reserve flatland be made (2,5 ha)
3. SC UPSOM SA	Ocna Mures Alba	Mureş (306)	Sodiu-Chloride production	- chloride - NH^{3+} - NH_4^+	R52	-	Flatland pond	575.000 m^3	- execution of flatland V. Socşoarei (80%) - medium risk for chloride pollution
6. E.M. Iara	Băişoara (6 km NV de com Iara) Cluj	Iara (35) Aries (113)	Ferrous ore mining,quartzi -ferrous sand exploitation and processing	- suspensions - Fe^{2+}	R50	Storage 4.546.000 tons	Coast pond; Slag and clay made dam	25 %	- medium risk ; - transport pipe breakdown - dam cracks
8. EM Zlatna	Zlatna Alba	Ampoi (24)	Complex nonferrous ores mining and processing	- heavy metals - suspensions	R50 - 53	Storage 200.000 m^3	Coast pond ; Rock made dam	2.800.000 m^3	- low risk for heavy metal pollution; - flatland pond V. Bacului will be made
9. EM Deva	Deva Hunedoara	V. Devei(1) Mureş (490)	Complex non-ferrous mining processing	- heavy metals - suspensions	R50 - 53	Storage 9.500.000 m^3	Flatland pond Slag made dam	6.000.000 m^3	- medium risk for heavy metal pollution; - transport pipes breakdown
11. SC SUINTEST SA Gornești	Gornești Mureş	Mureş (176)	Hogs farm	- organic substances - ammonium - suspensions	R52	315.000 m^3 /year	4 biologic ponds	Semi-siltated 60 %	- medium risk for pollution with ammonium and organic substances - exfiltration at biological ponds

UKRAINE: High Risk Spots

Inventory of the potential pollution sources (Ukraine)

No.	*Name of the company, owner*	*Location/ district*	*Recipient river (length of stream in km)*	*Company activities/ type of production processes*	*Dangerous substances*	*Toxic properties (WGK values)*	*Total amount dangerous substances handled/stored (tons)*	*Storage facilities*	*Free operational volume (%)*	*Remarks*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1.	Opened joint-stock company "Perechynskyi chemical timber industrial complex", State	town Perechyn	stream Dmorach, Uzh (0,3)	Chemical timber processing, charcoal production	phenols		1200	metal tanks	75	Medium (spillage from the tanks)
2.	Opened joint-stock company "Svalyava chemical timber industry complex" State	city Svalyava	r.Latorutsya 115	Chemical timber processing, charcoal production	phenols		1500	metal tanks	5	High (spillage from the tanks)
3.	Opened joint-stock company "Velykobychkivsky chemical timber industrial complex", State	town Vel.Bychkiv, Rachivskyi rayon	r. Shopurka Tisza (0,5)	Chemical timber processing, charcoal production	phenols		1800	metal tanks	0	High (spillage from the tanks due to corrosion)
6.	"Prykarpattransoilproduct", Russian Federation	vill. Dubrynychi, Perechynskyi rayon	r. Uzh	Oil pipe-lines	Oil products					High. Pipe-lines burst, oil spillage
7.	"Druzhba" State	city L'viv	r. Pynya, Latorytsya	Oil pipe-lines	Oil products					High. Pipe-lines burst, oil spillage

No.	*Name of the company, owner*	*Location/ district*	*Recipient river (length of stream in km)*	*Company activities/ type of production processes*	*Dangerous substances*	*Toxic properties (WGK values)*	*Total amount dangerous substances handled/stored (tons)*	*Storage facilities*	*Free operational volume (%)*	*Remarks*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
19.	Platform 2/1 village Rososh, "Prykarpattransnafto-product", Russian Federation	village Rososh	r. Rososh	Treatment facilities physical-chemical treatment	Oil products					Medium, Accidental discharge of non treated wastes

UKRAINE - Lower Risk Spots

4.	Fuel depot, "Nafroservice" company, State	village Novoselytsya, Perechynskyi rayon	stream Bezimennyi. Uzh (5)	Fuel storage	Oil products		24000	metal tanks	90	Low
5.	Opened joint-stock company "Zakarpatyanaftoproduct-Chust", State	city Chust	r. Tizsa 0,3	Fuel storage	Oil products			metal tanks		Low
8.	Zakarpatskyi polymetallic industrial complex, State	vill. Muzhievo	r. Borzhava 10	Polymetallic ore processing				Tailing dam 96,000 m^3	95	Low Dam break or over-spillage of non-treated wastes

No.	*Name of the company, owner*	*Location/ district*	*Recipient river (length of stream in km)*	*Company activities/ type of production processes*	*Dangerous substances*	*Toxic properties (WGK values)*	*Total amount dangerous substances handled/stored (tons)*	*Storage facilities*	*Free operational volume (%)*	*Remarks*
9.	Industrial management of water-supply and sewerage company of Uzhgorod, State	city Uzhgorod	r. Uzh 30	Municipal waste water treatment plant	BOD, Ammonium nitrogen		436,8 t/year 231 t/year	Emergency discharge 50 thousands per day		Medium. Emergency discharge of non-treated waste waters
10.	Industrial management of water-supply and sewerage company of Mukachevo , State	city Mukachevo	r. Latorytsya 110	Municipal waste water treatment plant	BOD, Ammonium nitrogen		382,3 t/year 89 t/year	Emergency discharge 16 thousands per day		Medium. Emergency discharge of not treated waste waters
11.	Industrial management of water-supply and sewerage company of Chust, State	city Chust	r. Tisza 850	Municipal waste water treatment plant	BOD, Ammonium nitrogen		29 t/year 12 t/year	Emergency discharge 13,5 thousands per day		Medium. Emergency discharge of not treated waste waters
12.	Rayon Industrial management of water-supply and sewerage company of Svalyava, State	city Svalyava	r. Latorytsya 137	Municipal waste water treatment plant	BOD, Ammonium nitrogen		8 t/year 1 t/year	Emergency discharge 4,4 thousands per day		Medium. Emergency discharge of not treated waste waters
13.	Industrial management of water-supply and sewerage company of Beregovo, State	city Beregovo	r.Verke Tisza (41)	Municipal waste water treatment plant	BOD, Ammonium nitrogen		16 t/year 22 t/year	Emergency discharge 3,2 thousands per day		Medium. Emergency discharge of not treated wastewaters.

No.	*Name of the company, owner*	*Location/ district*	*Recipient river (length of stream in km)*	*Company activities/ type of production processes*	*Dangerous substances*	*Toxic properties (WGK values)*	*Total amount dangerous substances handled/stored (tons)*	*Storage facilities*	*Free operational volume (%)*	*Remarks*
14.	Industrial management of water-supply and sewerage company of Vynogradovo, State	city Vynogradovo	r.Tisza 831	Municipal waste water treatment plant	BOD, Ammonium nitrogen		16 t/year 16 t/year	Emergency discharge 5,5 thousands per day		Medium. Emergency discharge of not treated waste waters
15.	Industrial management of water-supply and sewerage company of Chop, State	city Chop	r.Tisza 763	Municipal waste water treatment plant	BOD, Ammonium nitrogen		25 t/year 21 t/year	Emergency discharge 2,25 thousands per day		Medium. Emergency discharge of not treated waste waters
16.	Industrial management of water-supply and sewerage company of Solotvyno, State	town Solotvyno	r.Tisza 913	Municipal waste water treatment plant	BOD, Ammonium nitrogen		9 t/year 2 t/year	Emergency discharge 2,5 thousands per day		Medium. Emergency discharge of not treated waste waters
17.	Industrial management of water-supply and sewerage company of Tyachiv, State	city Tyachiv	r.Tisza 885	Municipal waste water treatment plant	BOD, Ammonium nitrogen		27 t/year 11 t/year	Emergency discharge 1,8 thousands per day		Medium. Emergency discharge of not treated waste waters
18.	Opened joint-stock company “Rachivska cardboard factory”, State	city Archive	r. Tisza 931	cellulose processing, municipal waste water treatment plant	BOD, Ammonium nitrogen		16 t/year 5 t/year	Emergency discharge 8,7 thousands per day		Medium. Emergency discharge of not treated waste waters

Slovakia: High Risk Spot

Inventory of potential pollution sources in the Slovak part of the Tisa river basin

No.	*Name of company*	*Locality (region)*	*Recipient River (length of stream in km)*	*Activities of company (type of production, used technology)*	*Dangerous chemical substances*	*Amount of chem. Substances/year*	*WRC*	*Storing*	*Comment*
	1	2	3	4	5	6	7	8	
12	Želba š.p. 02 Siderit Nižná Slaná	Rožnava	Slaná (66,4) *	Siderite mining and processing	As 0,144% Pb 0,009% Zn 0,004% in sludge	3 984 911 m^3 silted sludge	3 2 1	sludge-drying bed	heavy metals are bound to the sludge

Slovakia: Lower Risk Spots

Name of company		*Locality (region)*	*Recipient River (length of stream in km)*	*Activities of company (type of production, used technology)*	*Dangerous chemical substances*	*WRC*	*Amount of chem. Sub-stances /year*	*Storing*
1	*2*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	FINIŠ Spišská Nová Ves	Spišská Nová Ves	Hornád (130) *	Synthetic and cotton material production	no actual information			
2	Želba Rudnany	Košice - surroundings	Rudniansky creek (0,6) Hornád (121,5) *	Mining and processing of baryte ore	oils and fats H_2SO_4 oleic acid polyethylene glycol NaOH praestol hexametaphosphate Sludge with heavy metals	1 1 1 1 1 2	21,62 t 41,77 t 50,24 t 4,75 t 4,15 t 0,55 t 4,1 t	reservoir reservoir reservoir reservoir reservoir reservoir reservoir reservoir
3	Kovohuty - úpravna Slovinky	Spišská Nová Ves	Slovinský p. (5,5) Hornád (98,8) *	raw ore processing	no registrated resource			

1	2	2	3	4	5	6	7	8
4	Vitrum Krompachy	Spišská Nová Ves	Hornád (97,8) * Hornád (97,5) *	Since 1. 3. 1999 in failure	ORO oils H_2SO_4 lime	1 1 1	1,1 t 1 t 5 t	in barrels, stock reservoir bags, stock
5	VSŽ Ferroenergy Košice	Košice - surroundings	Sokoliansky c. (8,5) *	WWTP of the factory VSŽ	oil substances	0,5	no actual infomation	
6	Chirana - Prema Humenné	Humenné	Laborec (66) Latorica (9,2) Bodrog (15) *	Health equipments	without actual information			
7	Chemko Strážske	Michalovce	Laborec (53,9) Latorica (9,2) Bodrog (15) *	Products of inorganic, organic, small-assembly chemistry, technical gases	nitric acid formaldehyde cyclohexanone nitre methanol	1 2 1 1 1	24 350 t 146 802 t 75 656 t 20 250 t 69 469 t	reservoir reservoir reservoir in barrels, stock reservoir
8	SE a.s. EVO Vojany	Michalovce	Laborec (10,5) Latorica (9,2), Bodrog(15)*	Heat and electricity energy production	residual oil	1	150 000 t	reservoir
9	SWS Vojany	Michalovce	Laborec (10,5) Latorica (9,2) Bodrog (15) *	Chemical industry oil products, chemical and other substrates, stocking and distribution	liquid gases gasoline heating oil mineral oil	2 3 1 1	53 331 t 12 300 t 38 423 t 38 751 t	reservoir reservoir reservoir reservoir
10	Tesla Stropkov	Bardejov	Ondava (101) Bodrog (15) *	Electro -technical industry	NaOH $Na_2S_2O_3$ Syngal Zn trichloroethylene	1 1 3	25 t 7 t 2 t 7,2 t	in barrels, stock in barrels, stock in barrels, stock in barrels, stock

***** at boundary between Slovak Republic and Hungary

No.	*Name of company*	*Location/ district*	*Recipient River (length of stream in km)*	*Activities of company (type of production, used technology)*	*Dangerous chemical substances*	*WRC*	*Amount of chemical substances/y*	*Storing*	*Comment*
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*10*
11	Bukocel Hencovce	Vranov nad Toplou	Ondava (50,10) Bodrog (15) *	Fibre and cellulose production, derivatives products on base of cellulose and hydrolysate	HCl NaOH $Ca(OH)_2$ $FeCl_3$ NaCl heating oil	1 1 1 1 1 1	290 t 518 t 1 040 t 178 t 132 t 8 851 t	one - coated reservoir located above the ground	
			Ondava (48,7) Bodrog (15) * Ondava (48,65) Bodrog (15) *						
13	Magnetech Slovakia a.s. Hnúšta	Rimavská Sobota	Rimava (64, 3 r.km) Slaná (1,4) *	Production of non - ferrous clinkers	HCl Cl_2 NaOH	1 2 1	756 m^3 80 m^3 20 m^3	3 x 252 m^3 2 x 40 m^3 1 x 20 m^3 reservoir	sludge-drying bed only insoluble substances downtime 2 years
14	Slovmag a.s. Lubeník	Revúca	Murán (26,5) Slaná (25,8) *	Mining and processing of magnesite on dead - burned magnezia	sulphite light heat. oil mineral oil H_2SO_4	2 2 1 1	3 300 t 120 t 317 t 225,5 t	1 260 m^3 2 x 25 m^3 252,5 m^3 2 x 25 m^3	sludge-drying bed - only insol. subst.
15	SMZ Jelšava	Revúca	Murán (23,3) Slaná (25,8) *	Mining and processing of magnesite on dead - burned magnezia	heavy heat. oil light heat. oil	1 2	6 000 m^3 100 m^3	3 x 2 000 m^3 2 x 50 m^3 reservoir	sludge-drying bed - only insol. subst
16	SLZ Chémia a.s. Hnúšta	Rimavská Sobota	Rimava (59,0) Slaná (1,4) *	Production of coal, acetone, acetate, acetic acid	acetone acetic acid methylacetate butylacetate tar wood vinegar	1 1 1 1 3 1	204 m^3 273 m^3 108 m^3 234 m^3 204 m^3 865 m^3	max. 50 m^3 max. 100 m^4 max.50 m^5 max. 30 m^6 max. 200 m^7 max. 200 m^8	sludge-drying bed - only insol. subst. reservoir

***** at boundary between Slovak Republic and Hungary

Hungary: High Risk Spots

Name and proprietor of the company	*Settlement and EOV co-ordinates*	*Endangered watercourses – RECEIVER OF THE DISCHARGES (km)*	*ACTIVITY, technology*	*List of HAZARDOUS SUBSTANCES*	*TOXIC PORPERTIES – R VALUES, WGK hazard categories*		*QUANTITIY OF MATERIALS (tons)*	*STORING FACILITIES*	*FREE OPERATING VOLUME (%)*	*COMMENTS*
1.	*2.*	*3.*	*4.*	*5.*	*6.a*	*6.b.*	*7.*	*8.*	*9.*	*10.*
Regional Environmental Inspectorate, Budapest										
4. Landfill for radioactive wastes	Püspökszi-lágy	SZILÁGY BROOK– (GALGA 29,8) – ((ZAGYVA 91,3)) – (((TISZA 335,5)))	Disposal of radioactive wastes	no storage of chemicals			in a scale of 1000 tons	SPECIAL DEPOSITS AND TANKS		Licensed landfill posing hazard in case of emergency
6. HUNVIRON Kft. pile from flying ashes	Lõrinci	ZAGYVA 110,0 – (TISZA 335,5)	In the area of the flying ash pile of the Lőrinci Power Plant besides the waste from the Plant there are different waste of III hazard category	no storage of chemicals			Several million tons of slag and flying ash	DEPOSIT		It may pose risk in case of disaster
Közép-Tisza vidéki Regional Environmental Inspectorate, Szolnok										
1.	Sugar factory Rt. Begin-Say French proprietor	Szolnok X: 200 Y: 735	Tisza (332)	production, of sugar storage of industrial waste water	Waste water from sugar production with organic nitrogen content			700 000	Depositor of reinforced concrete inside the factory, reservoirs made of earth in flood zone	20 %	**P1** High risk due to conditions of the dams of the reservoirs located in flood zone of the Tisza
3.	MOL Rt.	Szajol Bázistelep X: 201 000 Y:744 500	Alcsi Holt-Tisza (10 km) Tisza (337+200 km)	Storage and trade of crude oil products	gasoline, petrol, motor oils	10, 11, 12, 45	2	550E m^3 storing capacity	Tanks above and below the surface		**P1** Risk due to receiver in vicinity & to capacity

Regional Environmental Inspectorate Miskolc

	1.	*2.*	*3.*	*4.*	*5.*	*6.a*	*6.b.*	*7.*	*8.*	*9.*	*10.*
22.	HIDROTECH Bányászati- és Környezetvédelmi Kft. Proprietor: ÁPV Rt	Gyöngyösoroszi	Toka 5 Gyöngyös 23,1 Tarna 12,8 Zagyva 59,2 Tisza 395,6	Treatment of water from the mine, activity from liquidation	metal sludge (Fe, Mn, Zn, Cd, As, Pb)	22, 23, 51	2	167.884 m^3	Reservoir for slurry in Bence-völgyi (300.000 m^3) X: 280.800 Y: 711.800	kb. 50	No direct risk to the river Tisza. Valley is closed with dead rock from the mine. No proper technical protection, improvement under preparation
					Water from the with high metal content (3500m^3/day)		1	10.510 m^3	9400 m^3 and 6110 m^3 capacity depositing basins made of dead rock X: 280.600 Y: 711.500	10	No direct risk to the river Tisza. Reservoir made of dead rock from mine. No proper technical protection, improvement un-der preparation against leakage
					Reservoir for industrial water and sludge with heavy metal content: Fe, Mn, Zn, Cd, As, Pb)		1	200-280.000 m^3 water and 100-120.000 m^3 sludge with heavy metals	300.000 m^3 reservoir in closed valley X: 278.000 Y: 712.000	10	No direct risk to the river Tisza. 1/3 part of the reservoir is mud High metal content.
30.	AES Borsodi Energetikai Kft. Borsodi Power Plant Proprietor: AES SUMMIT GENERATION Ltd.	Kazincbarcika	Sajó 85 Tisza 492	Power Plant electric energy and heat operated with coal	Reservoir for slag and slurry with metal content /Cu, Cd, Cr, Pb, V/ and As		1	17 400 000 t	Slurry cassettes without technical protection	0	No direct risk to the river Tisza. Average metal content of the slurry: 100-150 mg/kg, average arsenic content 176 mg/kg
					Light heating oil	10, 40	2	175 t	Tank of steel above surface	5	
					Transformer oil /no PCB content/	10, 40, 45	2	212 t	Open air transformers	100	All transformer provided with concrete base

			Ős-Szuha 4,8 Sajó 76,1 Tisza 492	Water discharge from the Power Plant	Rainfall from the slurry site and the boilers	0	0	1900 m^3/day	Drained in a circling ditch made of earth		The amount of hazardous sub-stances relates to the average quantity of discharged water
	1.	*2.*	*3.*	*4.*	*5.*	*6.a*	*6.b.*	*7.*	*8.*	*9.*	*10.*
78.	Kőolajtároló Rt.	Tiszaújváros MOL Rt. Tiszai Finomító	Tisza 483+600	Storage	Crude oil	11, 45	2	136.000	Metal tank above the surface	0	Risk to Tisza, classification is necessary. Basin with metal circle
79.	Terméktároló Rt.	Tiszaújváros MOL Rt. Tiszai Finomító	Tisza 483+600	Storage	Petrol	11	2	92.000	Metal tank above the surface	4	Risk to Tisza, classification is necessary. Basin with metal circle.
					Gasoline	10, 20 - 21, 40	2	100.000	Metal tank above the surface	0	Basin with metal circle.
81.	Columbian Tiszai Korom-gyártó KFT Proprietor: Columbian Chemikal Company USA	Tiszaújváros	Tisza 484	Production industrial soot of oil	oil	10, 40, 45	2	5200	Tank above the surface	50	Risk to Tisza, classification is necessary Placed in basin
82.	AES Tisza erőmű KFT Proprietor: AES SUMMIT Generation Ltd.	Tiszaújváros	Tisza 490	Production of electric energy, gas fuelled power plant	Turbine oil	10, 45	2	141	Tank above surface and in oil-cooling system in the technology	10	Risk to Tisza, classification is necessary Reinforced basin
					Transformer oil	10, 45	2	274	In transfor-mers & barrel	0	
					heating oil	10, 45	2	105,3	In the system	0	
				Treatment of waste water (municipal & industrial)	Organic material, oil		1	474 m^3	Reinforced basin	10	
					Heavy metals		1	400 m^3			
		Tiszaújváros			heating oil	10, 45	2	260,000	Tank above the surface	50	Basin

	1.	*2.*	*3.*	*4.*	*5.*	*6.a*	*6.b.*	*7.*	*8.*	*9.*	*10.*
83.	AES Borsodi Energetikai KFT Tiszapalkonyai Hőerőmű Proprietor: AES Áram-termelő Holdg.	Tiszaújváros	Tisza 483	Production of electric energy and heat						50	Potential risk to the Tisza, classification is necessary. Reinforced basin
					Transformer oil	10, 45	2	242			
				waste water treatment	Organic material		1	170 m^3	Reinforced concrete basin	15	
					Slurry water		1	800,000 m^3	Slurry site	5	Without techni-cal protection, made of clay produced at site
					Slag, flying ash		1	14,000,000			

Hungary: Lower Risk Spots

Regional Environmental Inspectorate, Budapest

Name and proprietor of the company	*Settlement and EOV co-ordinates*	*Endangered watercourses – RECEIVER OF THE DISCHARGES (km)*	*ACTIVITY, technology*	*List of HAZARDOUS SUBSTANCES*	*TOXIC PROPERTIES – R VALUES, WGK hazard categories*		*QUANTITIY OF MATERIALS (tons)*	*STORING FACILITIES*	*FREE OPERA-TING VOLUME (%)*	*COMMENTS*
1.	2.	3.	4.	5.	6.a	6.b.	7.	8.	9.	10.
5. Pyrus-Rumpold Rt. Landfill for hazardous wastes	Aszód-Gal-gamácsa	GALGA 29,8 – (ZAGYVA 91,3) – ((TISZA 335,5))	Disposal of hazardous wastes of category I-II.	No storage of chemicals			in a scale of 100000 tons	SPECIAL DEPOSTIS		Licensed landfill posing hazard in case of emergency
11. TERRAVI TA Kft.	Hatvan X: 258,000 Y: 697,000	ZAGYVA 100,0 – (TISZA 335,5)	Composting oily hazardous wastes	Sometimes leakage						

Regional Environmental Inspectorate, Szeged

No.	*Name of the company, proprietor*	*Name of the settlement EOV co-ordinates of the discharge X, Y*	*Receiving watercourse direct and indirect discharge (km)*	*Activity of the firm technologi es*	*List of hazardous substances*	*Toxic properties*		*Total amount of handled/stor ed hazardos substances (t)*	*Storing facilities*	*Free operating capacity (%)*	*Comments*
						R values	*WGK category*				
	1.	2.	3	4.	5.	6./a.	6./b	7.	8.	9..	10.
42.	MOL Rt. Kut. Term. Ág. Kutatás-1 Iroda	Algyő 738:111	Tisza 187,85	Mining mining	etil-akrilát n-pentán izohexán	11, 20-22, 11 11, 20-22, 40	2 1 1	648 585 660	tank car 3 tanks above the surface		

57.	ROTARY Fúrási Kft.	Zsana 694:144		storage	sludge from drilling with sodium-dichromate content	22, 51	3	100000	waste pile		
58.	Kőolajkutató Rt.	Algyő 741:100		storage	sludge from drilling with sodium-dichromate content	22, 51	3	70000	waste pile		
59.	Kőolajkutató Rt.	Cserebökény 762:160		storage	sludge from drilling with sodium-dichromate content	22, 51	3	50000	waste pile		
60.	Kőolajkutató Rt.	Kiszombor 754:93		storage	sludge from drilling with sodium-dichromate content	22, 51	3	40000	waste pile		
61.	Kőolajkutató Rt.	Ruzsa 705:104		storage	sludge from drilling with sodium-dichromate content	22, 51	3	17000	waste pile		

Közép-Tisza vidéki Regional Environmental Inspectorate, Szolnok

	Name and proprietor of the company	*Settlement EOV co-ordinates of the discharge X, Y*	*Receiving watercourse (km)*	*Activity of the firm, technologies*	*List of hazardous substances*	*Toxic properties*		*Total quantity of handled / stored hazardous substances (tons)*	*Storing facilities*	*Free operating capacity (%)*	*Comment*
						R values	*WGK hazard category*				
	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
2.	META Kft.	Abádszalók X: 233 000 Y: 767 000	Mirhó-Gyócsi canal. 8,51 km Tisza 402 fkm	Liquid manure from pig-farm	nitrogen components		0	500	Reservoir of earth with circle dam	10%	P2 Risk: medium (overflow)
1.	Elektro-lux Lehel Kft. Svéd property	Jászberény X: 239 Y: 713	Zagyva 68 km Tisza (335)	Production of refrigerator and vacuum-cleaner; phosphate treat-ment, degreasing, painting	Trichloro ethylene	26/27, 51-53	3	14		0	

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
2.	TVM Rt.	Szolnok X: 199 Y: 733	Tisza (330)	Production of fertilisers, phosphor, paint	Phosphor (white, yellow) Sulphur acid (100%) lead chloro sulpha-nic acid	34 35-38 35-38 52	1 1 1 2	10500 22300 1625 400	All in tanks above the surface	0	P1
3.	Gyógyá-szati Segédesz-közök Gyára	Kisújszállás X:210 Y:779	Kakat- main canal(15) Hortobány-Berettyó (33)	Production of machinery	Tetrachloro ethylene	26/27, 51-53	3	17	Barrel	90 %	P27
6.	PANNÓNIA Rt.	Kunszent-márton X: 167; Y:743	Hármas-Kőrös (20);Tisza(244)	Production of fur	Tetrachloro ethylene	26/27; 51-53	3	10	Barrel	0	P26
8.	Holland Colors Kft. Dutch property	Szolnok X: 199 Y: 733	Tisza (330)	Production of paint	Nitric acid	8; 35	2	214	Tank above the surface	-	P2
9.	Mol Rt. Szajoli basic site	Szajol X: 201 Y:744	Holt-Tisza (10) Tisza (337)	Storage of fuel, receipt of use-up oil	Petrol, gasoline	10,11,12,45 10, 45	2 3	400000 290	Tank above the surface	-	P7
10.	Saltis Kft. Italian property	Martfű X: 187 Y: 744	Tisza (305)	Production of shoe	Leather tanned with chromium	25	3	69	Collecting place complying with the regulation		P5
11	Metallo-globus Rt.	Tarnaszent-miklós X: 243 Y: 750	Hanyi-water course (10) Tisza (387)	Dismantling accumulators Trade of wastes	Heavy metals (Pb; Zn)	22, 25	2	212	Collecting place complying with the regulations		P12

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
12	CLAAS Hungária Kft. German property	Törökszent-miklós X: 203 Y: 755	Public sewerage Szajol-1 (10) Tisza (343)	Production of agricultural machinery	Used-oil Paint sludge Paints	10,45 10,35 10,35	3 3 3	12 100 28	Collecting place complying with the regulation		P15
14	Fémfel-dolgozó Rt.	Mezőtúr X: 188 Y: 770	Public sewerage Hortobágy-Berettyó (4,5) Hármas-Kőrös (62);Tisza(244)	Production of metal goods	Paint sludge Galvanic sludge with Cr(III) content	25 25	3 3	10 10	Collecting place complying with the regulation		P22
25	Terszol Szövet-kezet	Szolnok X: 201 Y: 733	Görbe-watercourse (1) Tisza (331)	Galvanic and paint sludge Drying	Cu, Zn, Ni, Cd, Cr (III; VI) Cyanide	25 25	3 3	2500 27	Collecting place complying with the regulation		P16
31	Jász-Plasztik Kft.	Jászberény X: 241 Y: 717	-	Receipt of hazardous waste Production of accumulators and plastic goods	Lead sludge	25	3	2212	Collecting place complying with the regulation		P19
1.	KUN-REHAB Kft.	Kenderes X: 214 000 Y: 773 800	Kakat water course Villogó main canal(18km) Hortobágy-Berettyóba (39 km)	Rehabilitation activities	gasoline petrol	11, 12, 45	2 2	1100 m^3. storage capacity	11 pieces 100 m^3 under-ground steel tank		**P3** Risk from the previous storage of fuel
2.	Magyar Honvédség	Szolnok Repülőtér X: 199 000 Y: 740 000	Alcsi Holt-Tisza (5 km) Tisza (337+200 km)	Operation of military vehicles in air and on the land	Kerosene, gasoline, petrol	10, 40	2	1000	Under-ground steel tanks		**P2** Risk due to receiver in thevicinity

Regional Environmental Inspectorate, Debrecen

No.	Name and proprietor of the company	Name of settlement EOV co-ordinates of place of discharge	Name of receiving watercourse The direct and indirect length (in km) of the discharge	Activity of the company Types of the technologies	List of hazardous substances	Toxic properties		Total quantity of the handled and stored hazardous substances (tons)	Storage facilities	Free operating volume (%)	Comments
						R value	WGK hazard category				
	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
2.	ICN Magyarország Kft.	Tiszavasvári	Hortobágy (91) Hortobágy-berettyó (67) Körös (61) Tisza (243)	Production of drugs and pharmaceutical basic materials	dichloro-ethane	11,22,36, 37,52,53	3	30 t	Tanks above the ground of 930 m^3 total volume. Oxidizing reser-voirs for biolo-gically cleaned industrial waste water210000m^3		Turnover of the oxidizing reservoirs can be regulated with sluices Risk: medium
3.	Hortobágyi Vágóhíd Kft.	Hortobágy	Hortobágy (33) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Activity in slaughter-house	Waste water from food industry		0	about 11660 t	Oxidizing reser-voir for waste water from food industry 11.660m^3		Reservoir made of earth Risk: low
4.	BIG-COMPANY Kft.	Balmazújvá-ros-Telek-föld	Magdolna ér(10), Kadarcs-karácso-nyfoki cs. (8); Hortobágy (41) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Production of tinned food, raw material: vegetables	Waste water from food industry		0	Kb. 41380 t	Oxidizing reservoir for waste water from food industry 41.380m^3		Reservoir made of earth Risk: low
5.	MB Kőolajkutató Rt.	Suburb of Berettyóújfalu site N: 0772	Bócs-csikoséri canal (1) Ölyvös(21,7) Kutas (18,1) Berettyó (5,9) Sebes-Körös (14,4) Körös (90,27) Tisza (243)	Landfill for disposing drilling sludge from activity discovering hydrocarbons	Heavy drilling sludge with potassium-humate. Drilling fluids with potassium-humate. Drilling fluid with potassium salt and starch,of crude oil origin	10,11,12, 45	2	67483 m^3	Basins N I, II. with dams, encircling ditch and borders, outside the reservoir two pitches for materials to the South		Reservoir made of earth, protected with a dam of earth Risk: medium

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
9.	Sugar Factory Co. in Kaba	Kaba site N: 05/13	Gorzás canal (1,1) Hamvas-main canal (25) Hortobágy-Berettyó (50) Körös (61) Tisza (243)	Sugar production,treatment of industrial and municipal waste water Energy supply	Waste water from the technology Used up oil, oily wastes, oily sludge, heating oil	 10,40,45 10,40,45	0 3 2	About 680000 t 52 t 50.000 t	Oxidizing reservoirs with 680000 m^3 total capacity		Waste water of about 500000 m^3/year is discharged into surface water under control Risk: low
11.	NAGISZ Rt. Hegedűslóré site of pig husbandry	Nádudvar	Kösely (5) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Husbandry for pigs Liquid manure	Liquide manure (ammonia-nitrite/nitrate)		2	About 96000 t	Reservoir in Holt-Kösely without mechanical protection: 96000 m^3		Used for irrigation onto agricultural land Reservoir made of earth Risk: low
12.	Hajdúsági Agráripari Rt. site of pig husbandry	Hajdú-szoboszló	Kösely (20) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Husbandry for pigs Liquide manure	Liquide manure (ammonia-nitrite/nitrate)		2	About 184000 t	Reservoir in Holt-Kösely without mechanical protection 184000 m^3		Used for irrigation onto agricultural land Reservoir made of earth Risk: low
15.	Nagisz Rt. Factory of Milk and Icecream	Nádudvar Site N: 6136	Holt-Kösely (4) Kösely (2) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Factory of Milk and Ice-cream Collection and treatment of municipal and industrial waste water	Waste water from food industry		0	About 525000 t	Reservoir with 525000 m^3 capacity for waste water from food industry		Reservoir made of earth Risk: low
16.	NAGISZ Rt. Slaughtr-house and Meat factory	Nádudvar Site N: 0689/6	Holt-Kösely (0,3) Kösely (3,2) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Activity in slaughter house, meat processing, washing vehicles, collection and treatment of sewage	Waste water from food industry		0	About 273000 t	Reservoir with 273000 m^3 capacity for waste water from food industry		Reservoir made of earth Risk: low

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
17.	BIOGAL Pharmaceutical Factory Co.	Debrecen, Pallagi street 13.	Tócó (11) Kösely (61) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Production of drugs	Mixt. of waste solvents i-butil-acetate toluene heating oil Sludge from treating waste water	 40,51-53 11,22,36-38,45 10,11,20 11,12,45 10,11,12, 45	 2 2 1-2 2 1	 850 t 300 t 50 t 950 t 540 t	Tanks above and below the surface 100 m^3 in barrels500m^3 1400 m^3		Treated waste water is discharged into public sewerage Risk: medium
18.	DAEWOO MGM Rt.	Debrecen, Kassai street 129.	Tócó (11) Kösely (61) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Production of bearings	Oily waste, emulsions, used-up oil, oily sludge, sludge from clean. tanks Trichloro-ethane	10,45 26/27,51-53 10,11,12,	3 3	8900 t 37 t	Underground tank Storage in barrels		Treated waste water is discharged into public sewerage Risk: medium
19.	TITÁSZ Rt. Debreceni Power Plant Ltd.	Debrecen, Mikepércsi street 1.	Tócó (11) Kösely (61) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Combustion of heating oil	Heating oil	10,40,45	2	2775 t	Tanks above the surface: 9400 m^3		Risk: medium
20.	Dispomedicor Rt.	Debrecen, Füredi street 98.	Tócó (11) Kösely (61) Hortobágy (14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Production of medical instruments	Galvanic sludge with Cr (III). Synthetic cooling and lubricating materials	20/22 10,11,12,	3 2	13,5 t 538 t	Storage: in barrels		Treated waste water is discharged into public sewerage Risk: medium
22.	GE HUNGARY Rt.	Hajdú-böszörmény Kinizsi tér 1.	Brassó water-course (10) Kadarcs-Karácsony-foki canal (22) Hortobágy (41) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Production of machinery, wires and electrodes, etc.	Nitric acid	8,35	2	270 t/year	Tanks above the surface		Treated waste water is discharged into public sewerage Risk: medium

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
24.	HAJDUKOMM Kft.	Balmazúj-város-Lászlóháza	Szeghíres-háti canal (2) Hortobágy(50 Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Storing site for hazardous wastes	Hazardous wastes		3	2000 t	Storage in barrels, insulated basin, tanks above the surface		Risk: medium
25.	Hajdúsági Agráripari Rt. (Agrochemical Factory)	Nádudvar	Rendekéri canal (7) Makkodi canal (17,6) Hortobágy-Berettyó (59) Körös (61) Tisza (243)	Production of fertilisers	Carbamide, ammonium-nitrate Potassium salt Salmiac	8-22 10,23,34, 50	1 1 0 2	3040 t 5450 t 1575 t 908 t			Risk: medium
26.	HTTV Ltd.	Berettyó-ujfalu	Berettyó (43) Sebes-Körös (14) Tisza (243)	Cleaning of tanks; Utilising and refining used-up oil	Oily wastes and used-up oils	10,11,12, 45	3	180 t	Tanks above the surface: 300 m^3		Treated waste wateris dischar-ged into public sewerage Risk: medium
29.	Hajdú-Berstal Kft.	Berettyóújfalu	Berettyó (43) Sebes-Körös (14) Tisza (243)	Processing metals, surface treatment, production of metal goods, treatment of ind waste water	Galvanic sludge with cyanide Oily sludge Wastes of paints	26/27/28-32,50 10,45 11,53	3 2 3	14 t 70 t			Treated waste water is discharged into the river of Berettyó Risk. medium
31.	MOL Rt. BFL Logisztika	Ebes	Köselymain canal. (42) Hortobágy (14) Hortobágy-Berettyó (67) Körös (67) Tisza (243)	Processing and storing products of mineral oil	Petrol Diesel oil	11,12,20, 23,36-38,45 34,45,50	2 2	6000 t 5000 t	Tanks above the surface provided with inner floating cover, level-signalling and monitoring leakage: 11.000 m^3		Risk: medium

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
32.	MOL Rt.	Nagyhegyes	Pece water-course (10) Vajdalapos canal (9) Alsó-Kadarcs (9), Kösely (12) Hortobágy(14) Hortobágy-Berettyó (67) Körös (61) Tisza (243)	Processing crude oil and natural gas	Gasoline methanol	10,45 11,23/25	2 1	2160 t 1500 t	3200 m^3 8 m^3 closed tanks		Risk: medium
33.	MÁVFAVÉD Ltd	Püspök-ladány	Makkodi canal (6) Hortobágy-Berettyó (59) Körös (61) Tisza (243)	Wood conservation with tar and salt	Oily sludge Contaminated impregnating salts	10,45	3 0	490 t 36 t	Surface tanks 580 m^3 Deposing facili-ty with 72 m^3 capacity; 3 reservoirs of 50x15 m	40%	Risk: medium

Körös-vidéki Regional Environmental Inspectorate, Gyula

No..	*Name and proprietor of the company*	*Name of the settlement*	*EOV -X co-ordinates*	*EOV-Y co-ordinates*	*Receiving watercourse*	*Activity of the company, technologies*	*List of hazardous substance*	*Toxic properties*		*Quantity of handled/stored hazardous material (tons)*	*Storing facilities*	*Free operating capacity (%)*	*comments*
								R values	*WGK hazard category*				
	1.	*2.*	*2/a.*	*2/b.*	*3.*	*4.*	*5.*	*6/a.*	*6/b.*	*7.*	*8.*	*9.*	*10.*
5.	Körös-Kör Kft.	Ecsegfalva	795460	203234	rainfall canal Hortobágy-Berettyó	disposal of used-up oils	used-up oil, oil derivatives, oily wastes, sludge with mineral oil	10,45	3	3289 t/year			

Regional Environmental Inspectorate Miskolc

	Name and proprietor of the company	Name of the settlement	Receiving watercourse, direct and indirect discharge (km)	Activity of the firm, technologies	List of hazardous substance	Toxic properties		Quantity of handled and stored hazardous substances (tons)	Storing facilities	Free operating capacity (%)	Comments
						R values	WGK				
	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
11.	TERRA-VITA Kft. Proprietor: Joint venture	Eger	Eger 38 Tisza 410,4	Production of humus manure, oily sludge, disposed sludge, re-ceiving and treating fluid waste water	oily sludge	10, 45	2	100	reservoir of concrete	10	No proper technical protection, measure taken for liquidation of sludge. No risk to Tisza but Eger brook.
					sludge		1	22.000	clay (total 4 ha)		
27.	Kazincbarcika Múcsonyi út municipal solid waste landfill ÉHG. Rt. Kazincbarcika	Kazincbarcika	Sajó 86+000 Tisza 492+200	Collection, transport and deposit of solid municipal waste	Heavy metals in solid waste (Pb, Hg, Cd, Zn, Cu,). Pharmaceutical wastes and package	11, 52, 53,	0	250.000	circled with dam, without technical protection	0	No direct risk to the river Tisza. The landfill is full. Refurbishing is under preparation
34.	Miskolc-Nádasrét municipal landfill for soild wastes REM Kft.	Miskolc	Hejő brook 30+100 Tisza 477+200	Collection, transport and deposit of solid municipal waste	Heavy metals in solid waste (Pb, Hg, Cd, Zn, Cu,) Pharmaceutical wastes and package	11, 52, 53,	0	600.000	Circling dam deposits without insulation	0	No direct risk to the river Tisza. Filled-in but operates due to the lack of other one
57.	Firm:Recski Ércbányák Rt. Proprietor: ÁPV RT	Recsk	Bikk brook 1,8 Parádi Tarna 6,4 Tarna 65,4 Zagyva 59,2 Tisza 335,6	Abandoned mine	State pond and deposit trap, sludge with Cu and As content		2	100 000 t	Sludge on the bottom of the water collecting reservoir	0	No data on the Cu and As content
	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.

62.	Sajókaza-Határvölgy landfill for hazardous waste of category III	Sajókaza-Határvölgy	Sajó 91+000 Tisza 492+200	Disposal of hazardous waste of category II.	Hazardous waste of category III. with high organic content (except waste with high water content)	14, 22, 33, 43, 48, 52, 53,	3		3 pieces of landfills, valley closed by dam with technical protection and monitoring	5	No direct risk to the river Tisza.
72.	Szerencsi Cukorgyár Rt Proprietor: Beghin Say	Szerencs	Szerencs-brook 25,5 Sajó 9,3 Tisza 491,9	Sugar beet processing, sugar production	Heating oil	10, 45	2	5500	Tank above the surface	50	No direct risk to the river Tisza. Reinforced concrete basin
					Industrial waste water		1	350400 m^3	Basin of earth		Without technical protection, made of clay produced at site
75.	Tiszai Vegyi Kombinát Rt. Proprietor: Befektetői csoport	Tiszaújváros	Tisza 484	Production of olefin							Potential risk to Tisza, classification is necessary. Basin of earth
					Propylene	36-38	2	4000	Tank above the surface	50	
					C4 fraction	13, 45	2	3000	Tank ab. surface	50	
					C5 fraction	45, 65	2,1	1000	Tank ab. surface	50	
					Aromatic compounds	10, 36, 37	3	2000	Tank above the surface	50	
					Nafta	45, 65	2	15000	Tank ab. surface	50	
					Petrol	11, 12, 45	2	2500	Tank above the surface	50	
					Tar	45		1000	Tank ab. surface	50	
					diesel fuel	10, 34, 40, 50	2	50	Tank above the surface	50	
				Production of polythene	akrilátok						Basin of earth

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
					combustible substance						
					Products of crude oil	10, 11, 12, 45	1-2	114	Tank above the surface	50	Basin of earth
				Energy supply							
					Industrial waste water		1	6500 m^3/d	Reinforced concrete basin	0	
								211000 m^3	Basin of earth		Without technical protection made of clay produced at site
76.	Akzo Nobel Festékgyártó és Kereskedelmi Rt. Akzo Nobel bv. 100 % foreign	Tiszaújváros	Tisza 484	Storage of materials, production and trade of resins, paints, lacquers, solvents	ABS. ethanol/spirit without water	11	2	20000	basin of metal	100 %	Potential risk to the Tisza, classification is necessary
					Alapalkyd LF-6 XB-50	11, 12, 45	2	12000	metal tank in building		Tank for lacquer-petrol
					Alkyd T-61 BX-57	11, 12, 45	2	55000	metal tank in building		Tank for lacquer-petrol
					Desmodur L-67	10, 38	2	23000	Metal tanks in basin	100 %	
					Etilacetát 0,1 % water contant	10, 38	2	12300	metal tank, monitoring		
					Industrial waste water	52	1	100000	Underground basin of concret		
					Paint product storage		2	700000	In building shelf and bulk storage		
					White spirit	11, 12, 45	2	130000	Metal tanks in basin	100 %	
					linseed oil	52	1	22000	metal tank, monitoring		vegetable oil

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
					40 % solution of Laroflex MP-25	10, 20, 21, 38	2	22000	metal tank in building		High xylene content
					Metoxi-propanol	10, 20, 21, 38	2	12000	metal tank, monitoring		
					8 % washing solution of Nátriumhidroxid	31, 34-35	1	11500	metal tank in building		
					Radiacid 0121	52	1	13000	metal tank, monitoring		Vegetable fatty acid
					System washing liquid. 3A I.	10, 20, 21, 38	2	15500	metal tank in building		High xylene content.
					Castor oil	52	1	25000	metal tank, monitoring		
					Gemini parquetry thinner "A"	10, 20, 21, 38	2	35300	Metal tank with base	100 %	High xylene content.
					Setalux C-1152 SS51	10, 20, 21, 38	2	19000	metal barrels in building		
					Stand oil solution	11, 12, 45	2	10000	metal tank in building		Lacquer-petrol content
					Soybean oil	52	1	18000	metal tank, monitoring		Vegetable oil
					Tall oil fatty acids	52	1	40000	metal tank, monitoring		Vegetable fatty acid
					Toluene	10, 2	2	22000	Metal tank in basin	100 %	
					Hazardous wastes		3*	12000	proper collection place		90 % of category II.
					Xylene	10, 20, 21, 38	2	80000	Metal tank in basin	100 %	

	1.	2.	3.	4.	5.	6/a.	6/b.	7.	8.	9.	10.
77.	MOL Rt. Tiszai Finomító	Tiszaújváros	Tisza 483+600	Refining crude oil Storage	Crude oil	11, 45	2	51.000	Tank above the surface	75	Potential risk to river Tisza, classification is Dam and basin of earth
					Petrol	11	2	46.000	Tank above the surface	66	Dam and basin of earth
					Gasoline	11, 20-21,40	2	150.000	Tank above the surface	66	Dam and basin of earth.
					Heating oil	20, 21, 22,	2	56.000	Tank above the surface	66	Dam and basin of earth
					Methanol	11, 23 - 25	1	1.850	Tank above the surface		Dam and basin of earth and inner cover with concrete
					C-4 fraction	13, 45	2	600	Tank above the surface	72	Storage under pressure
					MTBE	11	2	370	Tank above the surface	75	Storage under pressure.
				Treatment of industrial waste water	Waste water with HC content		1	30.000	Facilities for waste water treatment	40	After cleaning into the receiver through a post.-treating pond
				Waste manage-ment	Waste with HC contamina-tion for combustion. Slag from the combustion	10, 20, 21, 22 48	2 1	100 3.000	Metal tank, and concrete basin	70	established to comply with the regulation 102/1996. (VII.12.) government decree
80.	Ecomissio KFT. Proprietor: TVK Rt	Tiszaújváros	Tisza 484	Combustion of hazardous wastes	Waste of paint and lacquers		2	150	Barrel	0	Risk to Tisza, classification is necessary In collection place at the site

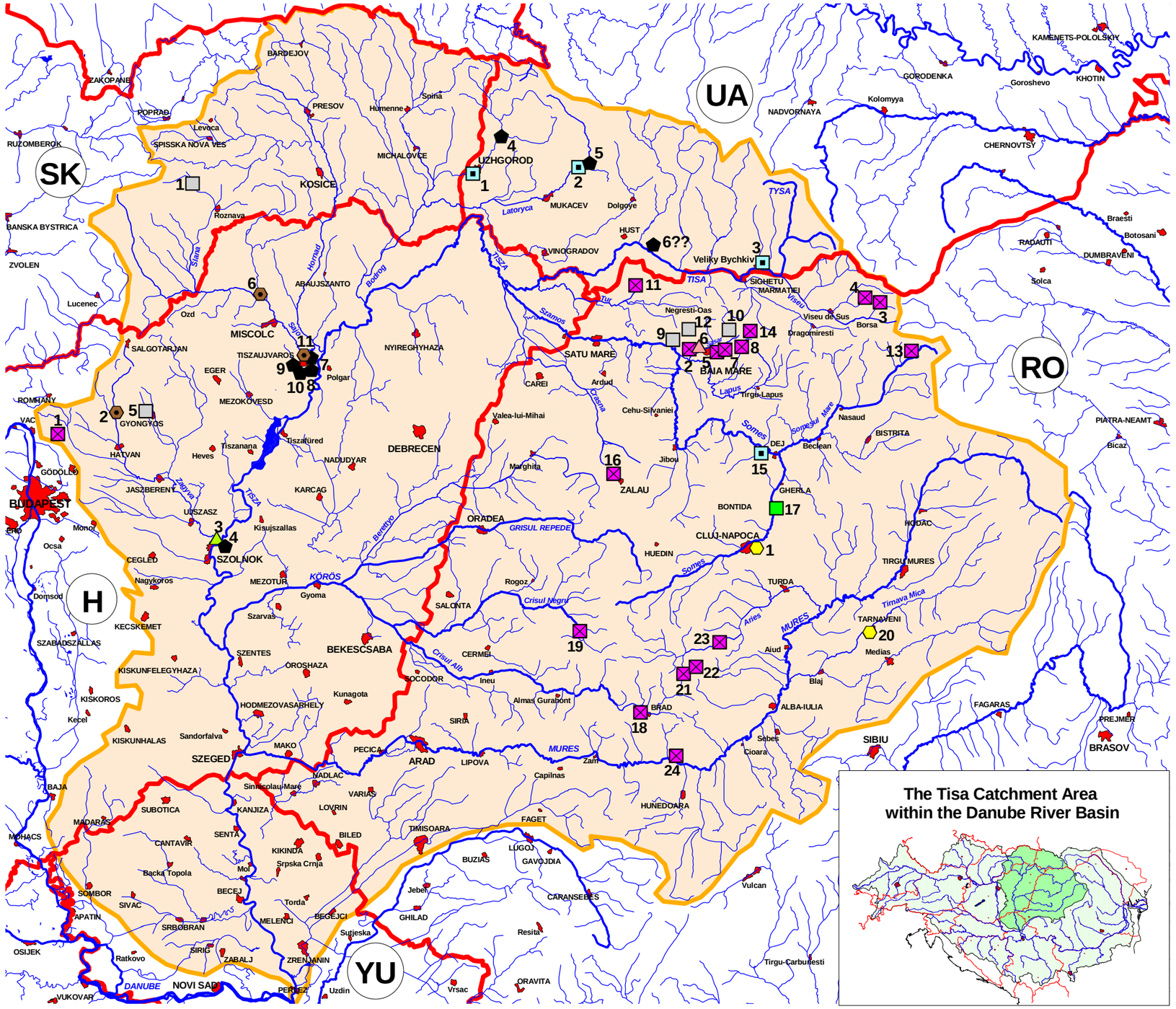
Regional Environmental Inspectorate Nyíregyháza

No.	*Name and proprietor of the company*	*Place, settlement*	*EOV coordinates*		*Receiving watercourses (km)*	*Activity of the company (type of technology)*	*Hazardous substances*	*Toxic properties*		*Total amount of handled (stored) hazardous wastes (tons)*	*Storing facilites*	*Free operating volume %*	*Comments*
			X	*Y*				*R values*	*WGK*				
	1.	*2.*	*2/a.*	*2/b.*	*3.*	*4.*	*5.*	*6/a.*	*6/b.*	*7.*	*8.*	*9.*	*10.*
2.	MÁV ZÁHONY PORT Division Drawing-off Chemicals, Hung. proprietor	Záhony 048/1site number	884,127	344,953	Belfő csat. (57), Tiszariver (569)	drawing-off chemicals from tans of wide-track into tanks of normal gauge							
							Mixture of solvents without halogen stored in special place for hazardous wastes		3*	220	Railway tank, underground tank		
3.	MÁV ZÁHONY PORT Shaft readjusting Division for 500		884	344,953	Belfő canal (57), Tisza river (569)	Shaft reajusting of tanks (from wide-track into normal gauge)	organic solvents	10,20,21, 36,37,38	3	75	railway tanks	no	
4.	MÁV ZÁHONY PORT Division	Fényeslitke NS Marshalling yard	878,822	329,465	Belfő canal (41), Tisza river (569)	Arranging trains coming form Ukraine accor-ding to destina-tions	organic solvents	10,20,21,36, 37,38	3	75	railway tanks	no	
5.	MÁV ZÁHONY PORT Division	Eperjeske marshalling yard	886,748	338,509	Belfő canal (51), Tisza river (569)	Arranging trains coming form Ukraine according to destinations	organic solvents	10,20,21,36, 37,38	3	75	railway tanks	no	

	1.	*2.*	*2/a.*	*2/b.*	*3.*	*4.*	*5.*	*6/a.*	*6/b.*	*7.*	*8.*	*9.*	*10.*
10.	VÁROSÜZEMEL-TETÉSI KHT.	Nyíregyháza, Szállási u. 72.	850,813	296,037	VIII/1.Tributary (11), VIII. sz. main river (5), Lónyay canal (22), Tisza river (559)	Closed building with proper protection for collecting and storing hazardous wastes	Galvanic sludge containing Zn compound		3*	1030	Closed building with no safety measures for collecting hazardous wastes	nincs	
							Nitrate and nitrite tempering		3	86	Closed building with no proper protection for collecting hazardous wastes	no	MOL RT. Kenőanyag division
							used up oil			424	1 db 25 m3-es 2 db 11 m3-es 1 db 7 m3-es 1 db 2 m3-es tartály	no	
							emulsions used for drilling		3	170		no	
							condensed waste from compressors		3	91		no	
							asphalt waste			3500	on concrete surface	no	
							paint and lacquer sludge			31	closed collecting place	no	

Regional Inventory of Potential Accidental Risk Spots in the Tisa Catchment Area (Romania, Hungary, Ukraine, Slovakia)

Industrial Hot Spots and Tailing Ponds; Summary Assessment of the ICPDR based on national inventories



LEGEND

- Tailing ponds & deposits
- Mining industry
- Metallurgical industry
- Chemical industry
- Oil industry, pipeline
- Enery production
- Food, sugar factory
- Cellulose & paper industry
- Pig farm
- Tisza basin
- Country border
- Settlements
- Main rivers
- Tributaries

0 25 50 75 100 125 km

Scale: 1: 2 500 000

Potentially High Risk Spots (Industrial Hot Spots and Tailing Ponds): Summary Assessment of the ICPDR based on national inventories, August 2000

Romania

1. SC Terapia SA Cluj-Napoca
2. SC Aurul SA Baia Mare
3. SM Borsa (Colbu)
4. SM Borsa (Novat)
5. SM Baia Mare UP Sasar
6. SC Allied Deals Phoenix SA
7. SM Baia Mare - EM Baia Sprie
8. SM Baia Mare - EM Cavnic
9. EM Aurum - Ilba
10. SM Baia Mare - EM Herja
11. CMNPN Remin B. Mare - EM Turt
12. EM Aurum - Nistru
13. Remin SA Baia Mare-Rodna
14. SM Baia Mare - EM Baiut
15. SC Somes SA Dej
16. SC Cominex Nemetalifere SA
17. SC Agrocomsuin-SA Bontida
18. SC Devamin SA Mine Brad (Rabita)
19. SC Devamin SA Mine Baita (Fanate)
20. SC Bicapa SA Tarnaveni
21. E.M. Abrud
22. E.M. Rosia Montana
23. E.M. Baia de Aries
24. E.M. Coranda Certej

Ukraine

1. Perechynski industrial complex
2. Svalyava industrial complex
3. Velykobychkivsky industrial complex
4. Prykarpattrans oil product
5. Druzhba
6. Prykarpattrans naftoproduct

Slovakia

1. ZELBA Siderit Roznava

Hungary

1. Püspökszilagy (radioactive wastes)
2. Hunviron Kft. Lorinci
3. Begin-Say Szolnok
4. MOL Rt. Szajol Bazistelep
5. Hidrotech Banyaszati-es
   + APV Rt Gyöngyösoroszi
6. AES Borsodi Energetikai Kft.
   + AES Summit Generation
7. Koolajtarolo Rt. Tiszaujvaros MOL Rt.
8. Termektarolo Rt.
   + Tiszaujvaros MOL Rt.
9. Columbian Tiszai Koromgyarto KFT
   + Columbian Chemikal Company
10. AES Tisza eromu KFT
    + AES Summit Generation
11. AES Borsodi Energetikai Kft.
    + AES Aramtermelo Holding

The Tisa Catchment Area within the Danube River Basin

ICPDR
International Commission for the Protection of the Danube River

ICPDR - Permanent Secretariat
1400 Vienna, P.O. Box 500, Austria

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