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Pollution
Control Authority

Contractor

SFT Norway

Performing institute

NIVA

Report 488B/92

Paris Convention

Annual report on direct and riverine inputs
to Norwegian coastal waters during the year
1991

B Data report



NIVA - REPORT

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Main Office P.O. Box 69, Korsvoll N-0808 Oslo 8 Norway Phone (47 2) 23 52 80 Telefax (47 2) 95 21 89	Regional Office, Sørlandet Televeien 1 N-4890 Grimstad Norway Phone (47 41) 43 033 Telefax (47 41) 44 513	Regional Office, Østlandet Rute 866 N-2312 Ottestad Norway Phone (47 65) 76 752 Telefax (47 65) 78 402	Regional Office, Vestlandet Breiviken 5 N-5035 Bergen - Sandviken Norway Phone (47 5) 95 17 00 Telefax (47 5) 25 78 90	Akvaplan-NIVA A/S Søndre Tollbugate 3 N-9000 Tromsø Norway Phone (47 83) 85 280 Telefax (47 83) 80 509
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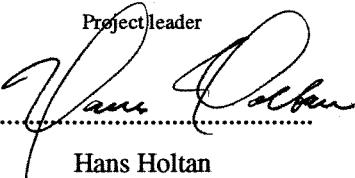
Abstract: This report contains data from the 1991 monitoring of 155 Norwegian rivers and tributaries in accordance with requirements of the Paris Commission (PARCOM): i.e. riverborne inputs of selected substances (nutrients, heavy metals, PCBs and lindane) to Norwegian coastal waters. Runoff from about 75 per cent of the main land areas, and 94 per cent of the Skagerrak region, has been monitored. Discharges from areas not covered by the river monitoring stations, are estimated by use of specific activity- and runoff coefficients.

4 keywords, Norwegian

1. Forurensningstilførsler
2. Norske kystområder
3. Elvetilførsler
4. Direkte tilførsler

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1. Pollution inputs
2. Norwegian coastal waters
3. Riverine inputs
4. Direct discharges

Project leader

Hans Holtan

For the Administration


Dag Berge

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The National Environmental
Monitoring Programme

Paris Convention

Annual report on direct and riverine inputs

to Norwegian coastal waters during the year

1991

B Data report

Oslo, June 1992

Project manager: Hans Holtan

Project coordinator: Gjertrud Holtan

Co-workers: Dag Berge

Terje Hopen



PREFACE

This report presents data from the 1991 monitoring of waterborne pollutants, both riverine and direct discharges, to the Norwegian coastal waters. The study is part of a joint monitoring programme under the "Paris Convention for the prevention of Marine Pollution from Landbased Sources". The Norwegian contribution is administered by the Norwegian State Pollution Control Authority (SFT) which has contracted the Norwegian Institute for Water Research to perform the actual investigations.

The 1991-investigation lasted from January till December. This report is the Norwegian part of the 1991-study, divided into two parts:

- A: Principles - Results and Discussion
- B: Data Report.

The Programme Committee has consisted of Jon-Lasse Bratli and Dag Rosland (SFT), Dag Berge and Hans Holtan (NIVA). The practical investigation is coordinated, and performed by Gjertrud Holtan (NIVA). The calculations of all data has been performed by Terje Hopen (NIVA). References and names of all participants are given in paragraph 5 (Report A).

We would like to express our gratitude to all participants of the investigation, especially to the local fieldworkers for the collection and transport of the samples. The contact persons at the County Environmental Agencies and at the Municipality of Oslo and Bærum are acknowledged for continuous support and goodwill. The contact persons at the Norwegian Water Resources and Energy Administration (NVE) and The Norwegian Meteorological Institute (DNMI), Per Lofberg and Stein Kristiansen, are acknowledged for their kind cooperation.

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CONVENTION FOR THE PREVENTION OF MARINE POLLUTION FROM LANDBASED SOURCES

QUESTIONNAIRE ACCORDING TO THE TENTH MEETING OF THE PARIS COMMISSION

LISBON 15 - 17 JUNE 1988

The purpose of this form is to provide the Commission, in accordance with Article 17(B) of the Paris Convention, with an assessment of the waterborne inputs to Convention waters.

The form should be completed for each calendar year in retrospect and submitted to the Secretary by June following the year to which the data relate.

The information sought relates to inputs through direct discharges (questions 7 - 13) and riverine inputs (questions 14 - 19). Some information on discharges other than those mentioned below are also attached (question 20).

Separate forms for the four single areas are filled in.

(1) THE COUNTRY IS NORWAY

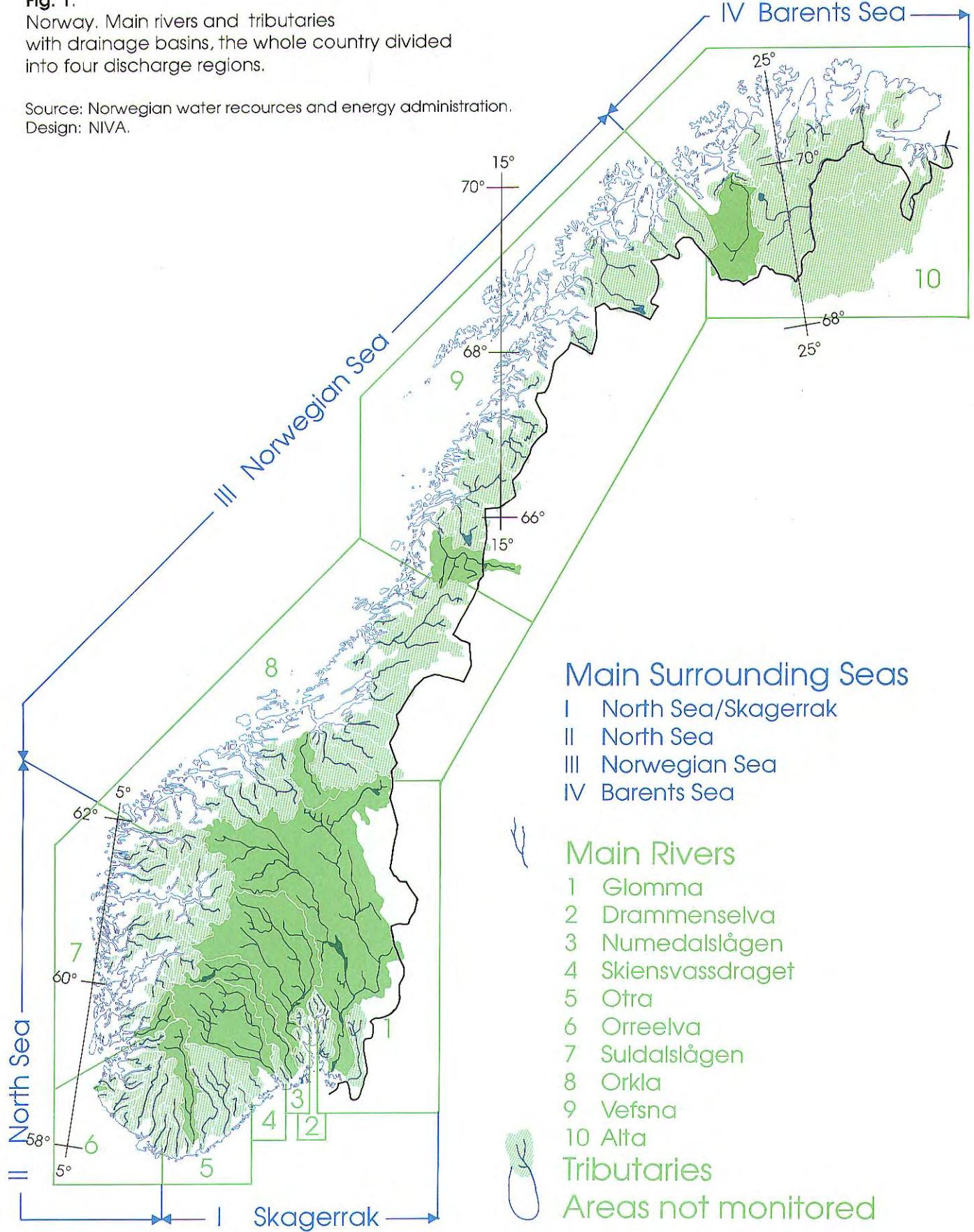
(2) LENGTH OF COASTLINE INCLUDING FJORDS AND BAYS IS 21347 KM

(3) NATURE OF THE RECEIVING WATER IS COASTAL

Fig. 1.

Norway, Main rivers and tributaries with drainage basins, the whole country divided into four discharge regions.

Source: Norwegian water resources and energy administration.
Design: NIVA.



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Paragraph 4: Direct Discharges**Paragraph 5: Riverine Discharges****Paragraph 6: Grand Total**

**Table I TOTAL DISCHARGES from MAINLAND NORWAY
to convention waters 1991 (Fig. I).**

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.4	6.3	*	1.4	*
Cadmium			6.5	**	1.6	**
Mercury		314	36	*	65	*
Mercury			307	**	127	**
Copper		51	210		95	
Zinc		78	629		332	
Lead		13.2	72.3	*	15.7	*
Lead			73.1	**	16.7	**
Arsenic		0.5			9.3	
Cr-T		112.7			0.8	*
Cr-T					18.6	**
PCBs ***			0.3	*	1.6	*
PCBs			56.3	**	18.1	**
gamma-HCH			229		32	
NO3-N	15150	11.2	16457		12258	
PO4-P	208	694.8	208		234	
Total N	24259	14447	29811		20146	
Total P	791	1387	825		590	
S.P.M.		4556472	249835		183280	
TOC		21339			149191	
DOC					77497	
COD		265939				265939
BOD		39440				39440
AOX		1077			454	
						1531
						tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 1.1 TOTAL DISCHARGES to The Skagerrak Region 1991 (Fig. I.I).

The Skagerrak Region with main rivers (1) Glomma, (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.16	1.3	*	0.8	*
Cadmium			1.3	**	0.9	**
Mercury		136.19	26	*	55	*
Mercury			38	**	100	**
Copper		26.62	16		58	
Zinc		27.39	145		245	
Lead		2.34	8.0	*	13.5	*
Lead			8.0	**	13.9	**
Arsenic		0.48			9.0	
Cr-T		8.69			0.8	*
Cr-T					17.7	**
PCBs ***			0.0	*	1.6	*
PCBs				9.8	**	13.9
gamma-HCH				48		28
gamma-HCH						75
NO3-N	1872	5	3576	11112	14693	tonnes
PO4-P	21	192	30	211	434	tonnes
Total N	2910	7124	6091	17553	33678	tonnes
Total P	83	425	129	518	1155	tonnes
S.P.M.		18883	20840	159479	199202	tonnes
TOC		9530		121075	130605	tonnes
DOC				66254		
COD		176392			242646	tonnes
BOD		13940			13940	tonnes
AOX		1077		449	1526	tonnes

Measurements below detection limits are treated in two ways :

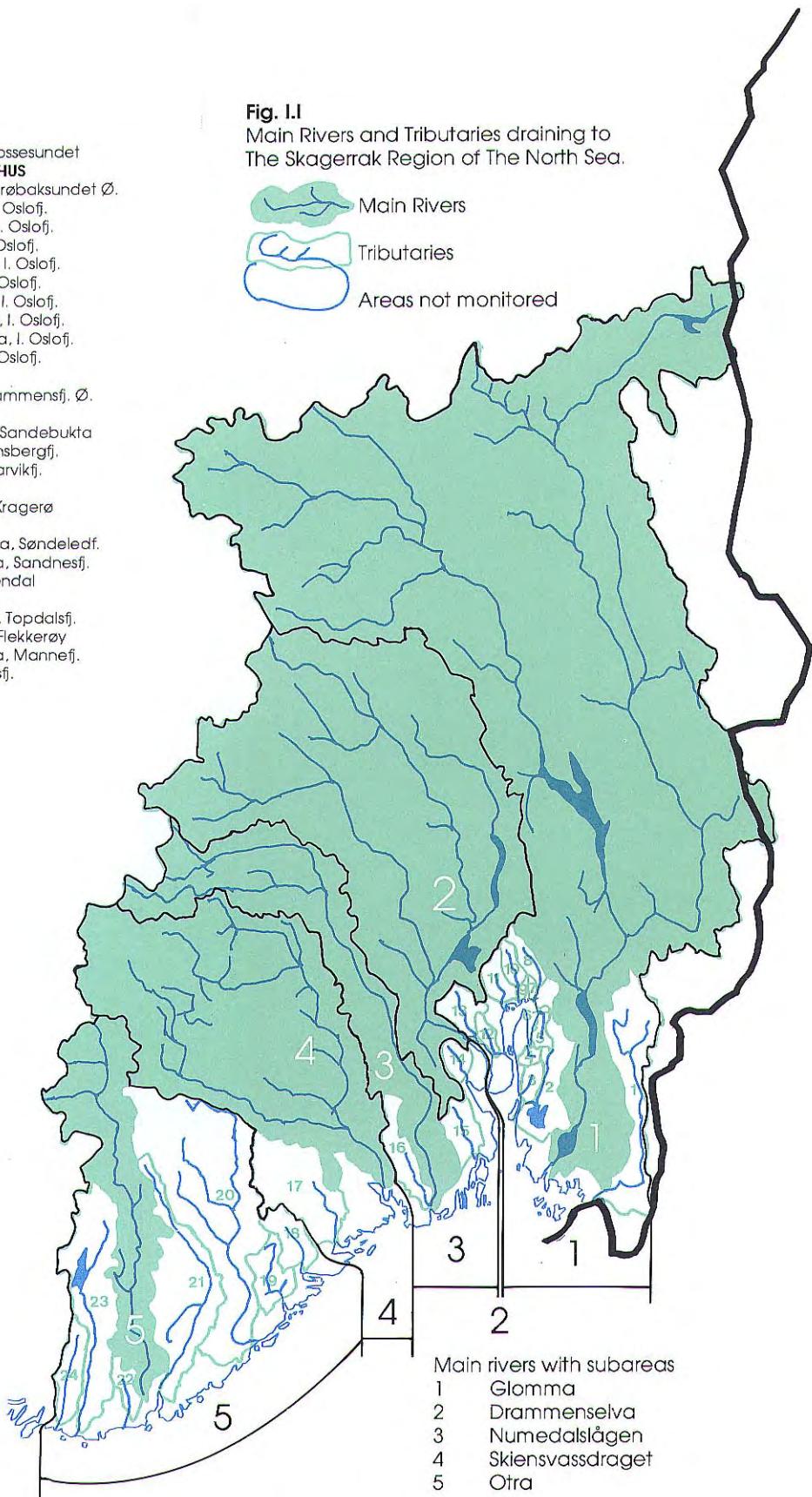
*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

- 1 ØSTFOLD**
 1 Tista, Iddefj.
 2 Mosselva, Mossesundet
OSLO & AKERSHUS
 3 Hølenelva, Drøbaksundet Ø.
 4 Årungelva, I. Oslofj.
 5 Gjersjøelva, I. Oslofj.
 6 Lånselva, I. Oslofj.
 7 Loelva/Alna, I. Oslofj.
 8 Akerselva, I. Oslofj.
 9 Frognerelva, I. Oslofj.
 10 Lysakerelva, I. Oslofj.
 11 Sandvikselva, I. Oslofj.
 12 Åroselva, I. Oslofj.
- 2 BUSKERUD**
3 VESTFOLD
 14 Sandeelva, Sandebukta
 15 Aulielva, Tønsbergfj.
 16 Farriselva, Larvikfj.
- 4 TELEMARK**
5 AUST-AGDER
 17 Tokkelv, Kragerø
 18 Gjerstadelva, Søndeledf.
 19 Vegårdselva, Sandnesfj.
 20 Nidelva, Arendal
VEST-AGDER
 21 Tovdalselva, Topdalsfj.
 22 Søgneelva, Flekkerøy
 23 Mandalselva, Mannefj.
 24 Audna, Sniksfj.

Fig. I.I
 Main Rivers and Tributaries draining to
 The Skagerrak Region of The North Sea.



I North Sea/Skagerrak

**Table 1.2 TOTAL DISCHARGES to The Remaining North Sea
1991 (Fig. I.II).**

The North Sea Region with main rivers : (6) Orreelva, (7) Suldalslågen

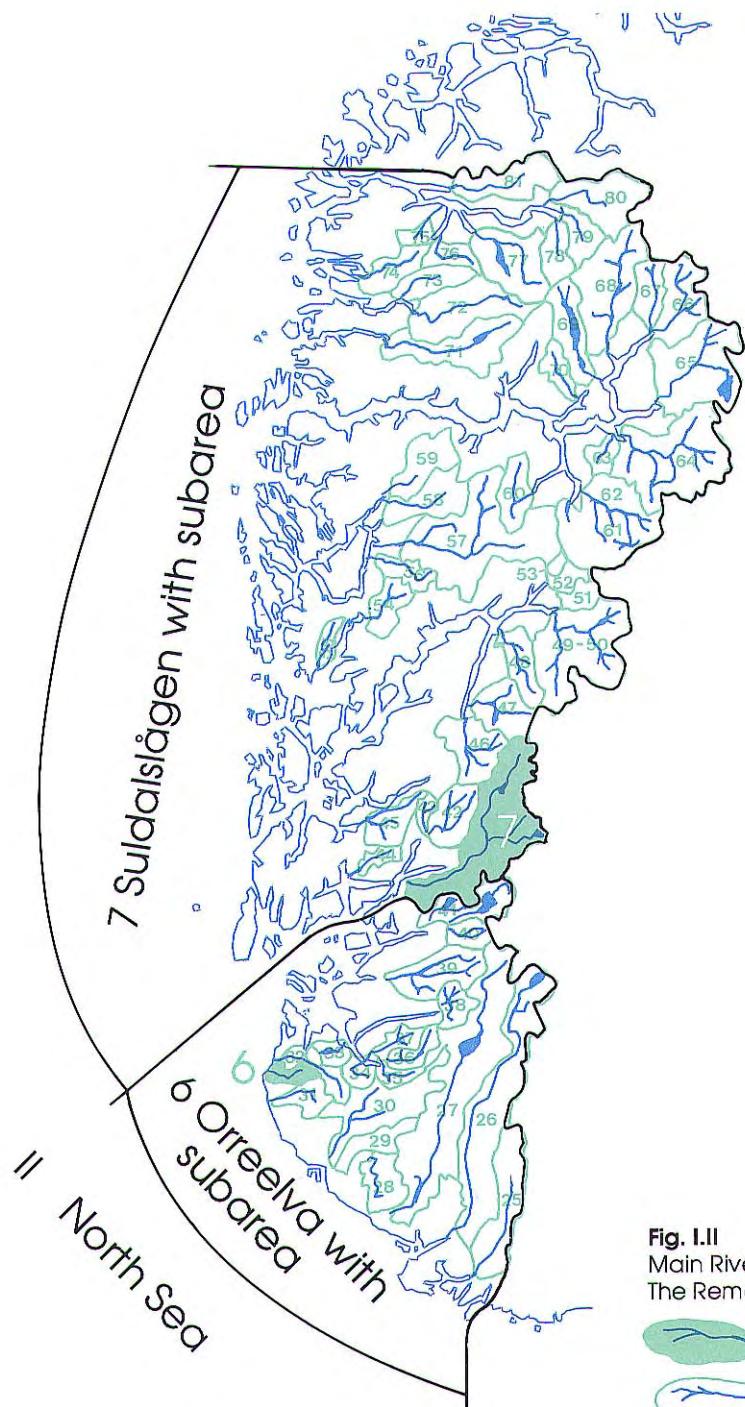
Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total
Cadmium		0.19	1.0 *	0.0 *	1.2 tonnes
Cadmium			1.2 **	0.0 **	1.5 tonnes
Mercury		103.59	0 *	0 *	104 kg
Mercury			88 **	4 **	195 kg
Copper		14.43	52	1	68 tonnes
Zinc		31.42	194	5	231 tonnes
Lead		9.36	17.8 *	0.1 *	27.3 tonnes
Lead			18.6 **	0.3 **	28.3 tonnes
Arsenic		0.04		0.3	0.3 tonnes
Cr-T		8.10		0.0 *	8.1 tonnes
Cr-T				0.9 **	9.0 tonnes
PCBs ***			0.0 *	0.0 *	0.0 kg
PCBs			15.4 **	0.7 **	16.1 kg
gamma-HCH			139	2	141 kg
NO3-N	5773	3	7746	388	8137 tonnes
PO4-P	56	236	55	5	296 tonnes
Total N	9318	3005	11159	558	24040 tonnes
Total P	199	431	233	14	877 tonnes
S.P.M.		1822362	35755	2704	1860822 tonnes
TOC		5356		637	5994 tonnes
DOC				529	tonnes
COD		35728			36257 tonnes
BOD		11429			11429 tonnes
AOX		0		5	5 tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180



6 VEST-AGDER

- 25 Lygna, Lyngdalsfj.
 - 26 Kvina, Fedafj.
 - 27 Sira, Åna-Sira
- ## ROGALAND
- 28 Sokndalselva, Sogndalsstr.
 - 29 Hellelandselva, Egersund
 - 30 Bjerkreimselva, Egersund
 - 31 Høelva, Håtangen
 - 32 Figgjo, Solavika
 - 33 Ims-Lutsi, Høgsfj./Boknafj.
 - 34 Oltedalselva, Høgsfj./Boknafj.
 - 35 Dirdalselva, Høgsfj./Boknafj.
 - 36 Frafjordelva, Frafj./Boknafj.
 - 37 Espedalselva, Høgsfj./Boknafj.
 - 38 Lyseelva, Lysefj./Boknafj.
 - 39 Årdalselva, Årdalsfj./Boknafj.
 - 40 Førrelva, Jøsenfj./Boknafj.
 - 41 Ulla, Jøsenfj./Boknafj.
 - 42 Saudaelva, Sandsfj./Boknafj.
 - 43 Åbæselva, Saudafj./Boknafj.
 - 44 Vikedalselva, Boknafj.

7 HORDALAND

- 45 Etneelva, Etnefj./Bømlafj.
 - 46 Opo, Sørfj./Hardangerfj.
 - 47 Tyssø, Sørfj./Hardangerfj.
 - 48 Kinsø, Sørfj./Hardangerfj.
 - 49 Veig, Eidfj. v./Hardangerfj.
 - 50 Bjoreia, Eidfj. v./Hardangerfj.
 - 51 Sima, Eidfj./Hardangerfj.
 - 52 Austdøla, Osafj./Eidflj.
 - 53 Norddøla, Osafj./Eidflj.
 - 54 Tysseelva, Fusafj.
 - 55 Oselva, Fusafj.
 - 56 Bergsdalselva, Veafj./Herdlaflj.
 - 57 Vosso, Veafj./Sørfj.
 - 58 Ekso, Osterfj.
 - 59 Modalselva, Osterfj.
- ## SOGN OG FJORDANE
- 60 Nærøyelva, Aurl.fj./Sognefj.
 - 61 Flåmselva, Aurl.fj./Sognefj.
 - 62 Aurlandselva, Aurl.fj./Sognefj.
 - 63 Erdalselva, Lærdalsfj./Sognefj.
 - 64 Lærdalselva, Lærdalsfj./Sognefj.
 - 65 Årdalselva, Årdalsfj./Sognefj.
 - 66 Fortunelva, Lusterfj./Sognefj.
 - 67 Mørkriselva, Lusterfj./Sognefj.
 - 68 Jostedøla, Lusterfj./Sognefj.
 - 69 Årøyelva, Sognd.fj./Sognefj.
 - 70 Sogndalselva, Sognd.fj./Sognefj.
 - 71 Gaula, Dalsfj./Buflj.
 - 72 Jølstra, Førdefj.
 - 73 Nausta, Førdefj.
 - 74 Oselva, Høydalsfj.
 - 75 Hopselva, Hyefj./Nordfj.S.
 - 76 Gjengedalselva, Hyefj./Nordfj.S.
 - 77 Breimselva, Gløppenfj./Nordfj.S.
 - 78 Oldenelva, Indre Nordfj.
 - 79 Loenelva, Indre Nordfj.
 - 80 Stryneelva, Indre Nordfj.
 - 81 Hornindalselva, Nordfj.N.

Fig. I.II

Main Rivers and Tributaries draining to The Remaining North Sea.

Main Rivers

Tributaries

Areas not monitored

Table 1.3 TOTAL DISCHARGES to The Norwegian Sea 1991 (Fig. I.III).**The Norwegian Sea Region with main rivers (8) Orkla, (9) Vefsna**

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.09	3.5 *	0.5 *	4.1	tonnes
Cadmium			3.5 **	0.5 **	4.1	tonnes
Mercury		69.61	10 *	5 *	84	kg
Mercury			140 **	17 **	226	kg
Copper		9.78	105	32	147	tonnes
Zinc		17.92	188	76	282	tonnes
Lead		1.47	32.8 *	2.1 *	36.4	tonnes
Lead			32.8 **	2.3 **	36.5	tonnes
Arsenic		0.00			0.0	tonnes
Cr-T		95.57			95.6	tonnes
Cr-T					95.6	tonnes
PCBs ***			0.2 *	0.0 *	0.2	kg
PCBs			23.9 **	2.5 **	26.4	kg
gamma-HCH			35	2	36	kg
NO3-N	6491	3	4734	626	5364	tonnes
PO4-P	113	253	102	12	366	tonnes
Total N	10347	4123	9778	1420	25668	tonnes
Total P	421	507	347	33	1308	tonnes
S.P.M.		1114630	170240	16292	1301162	tonnes
TOC		6107		16437	22544	tonnes
DOC						tonnes
COD		52280			52280	tonnes
BOD		13359			13359	tonnes
AOX		0			0	tonnes

Measurements below detection limits are treated in two ways :***) Detection limit = Zero******) Detection limit = Limit******* the following congeners: IUPAC Nos. 28,52,101,118,153,138,180**

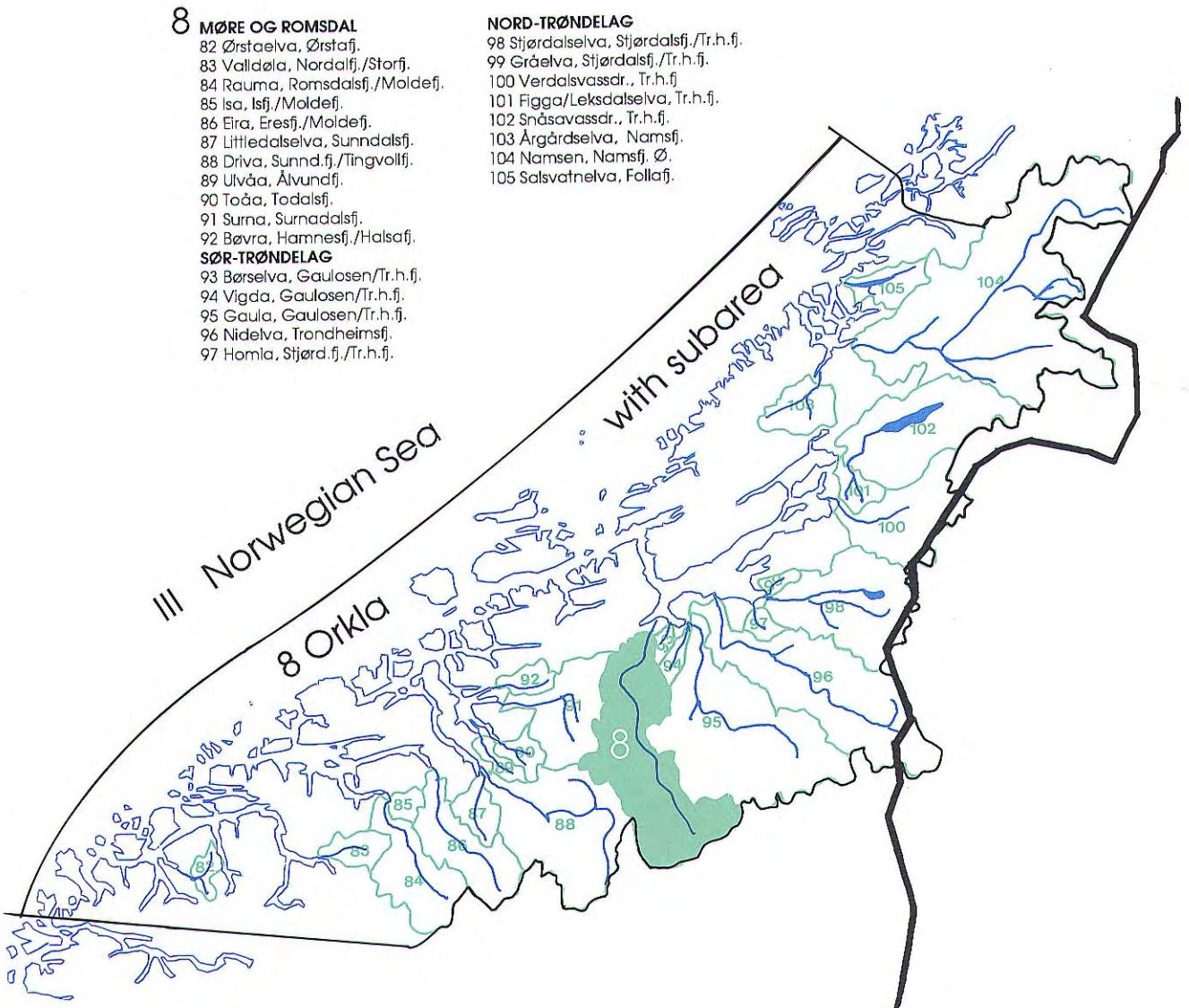


Fig. I.III A
Main Rivers and Tributaries draining to
The Norwegian Sea (Southern Part).



III Norwegian Sea

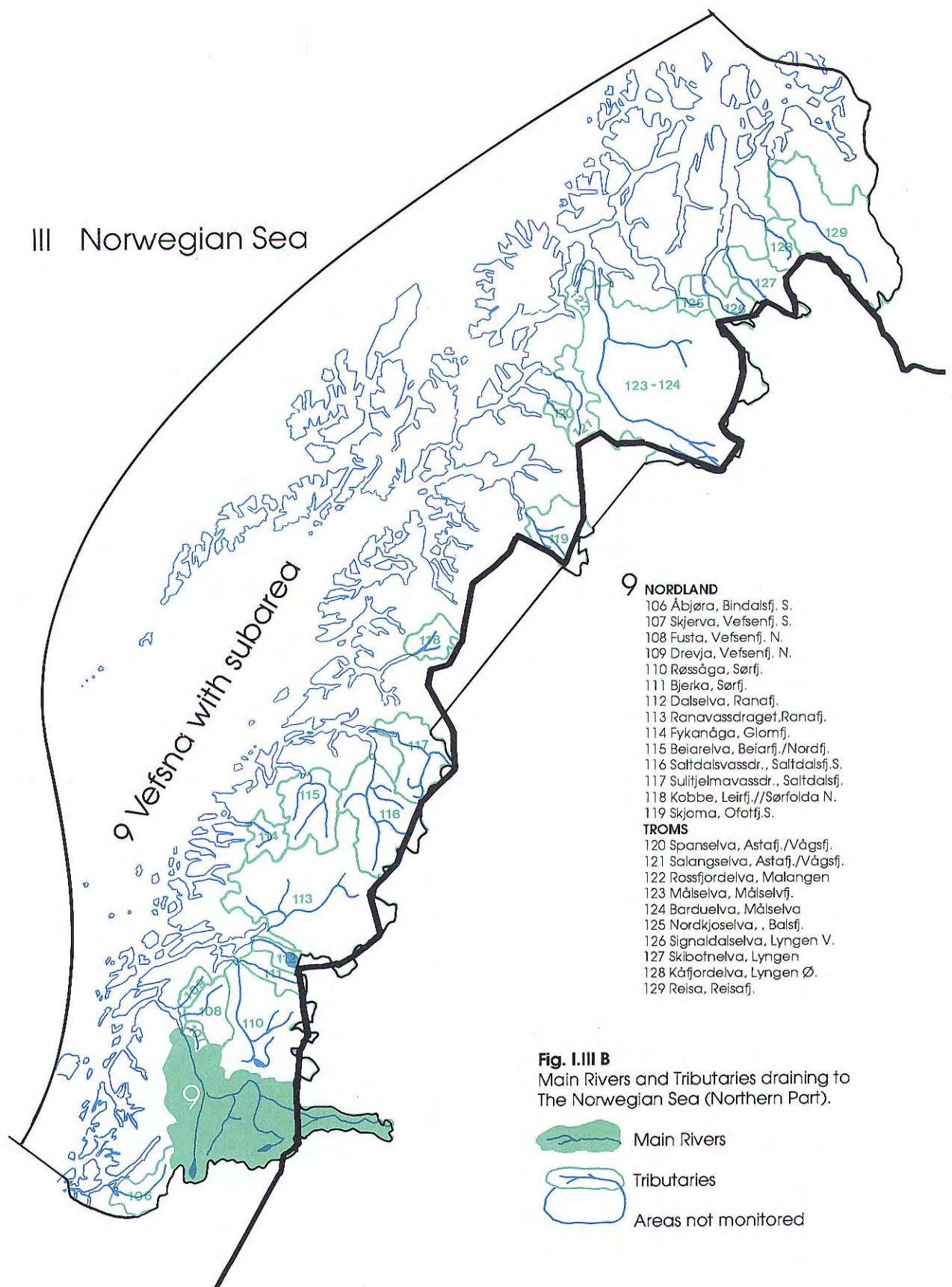


Fig. I.III B
Main Rivers and Tributaries draining to
The Norwegian Sea (Northern Part).

- Main Rivers
- Tributaries
- Areas not monitored

Table 1.4 TOTAL DISCHARGES to The Barents Sea 1991 (Fig. I.IV).**The Barents Sea Region with main river (10) Alta**

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.01	0.5	*	0.06	*
Cadmium			0.5	**	0.08	**
Mercury		4.38	0	*	5.49	*
Mercury			41	**	6.58	**
Copper		0.61	37		3.80	
Zinc		0.88	102		5.82	
Lead		0.07	13.7	*	0.00	*
Lead			13.7	**	0.27	**
Arsenic		0.00				0.0
Cr-T		0.35				0.4
Cr-T						0.4
PCBs ***			0.1	*	0.00	*
PCBs			7.2	**	0.96	**
gamma-HCH			8		0.32	
NO3-N	1013	0.19	401		131.02	
PO4-P	18	14.27	21		5.15	
Total N	1685	194.68	2784		614.50	
Total P	88	24.30	117		24.84	
S.P.M.		1600597	23000		4804.45	
TOC		345.89			11042	
DOC					10713	
COD		1539.43				12253
BOD		711.77				712
AOX		0.00				0

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

IV Barents Sea

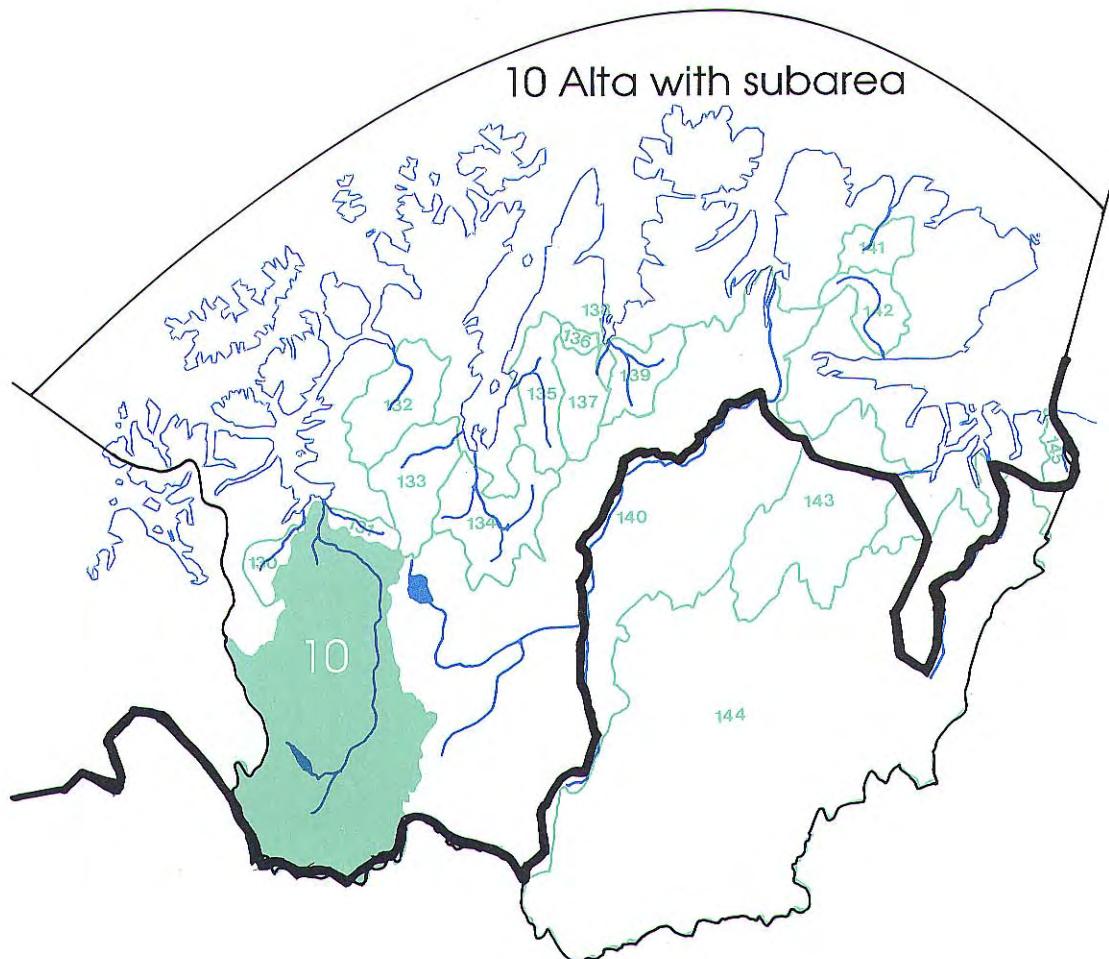
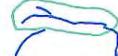


Fig. I.IV

Main Rivers and Tributaries draining to
The Barents Sea.



Main Rivers



Tributaries



Areas not monitored

10

FINNMARK

- 130 Mattiselva, Kåfj./Altafj.
- 131 Tverrelva, Altafj.
- 132 Repparfjordelva, Repparfj.
- 133 Stabburselva, I. Porsangen V.
- 134 Lakselva, I. Porsangen S.
- 135 Børselva, I. Porsangen Ø.
- 136 Mattusjakkø, I. Laksefj. V.
- 137 Storelva, I. Laksefj. V.
- 138 Søussjakkø, I. Laksefj. V.
- 139 Adamselva, I. Laksefj. Ø.
- 140 Tanavassø, Tanafj. S.
- 141 Vesterelva, Syltefj.
- 142 V. Jakobselv, Y. Varangerfj.
- 143 Neiden Munkfj./Varangerfj.
- 144 Passvikelva, Bøkfj./Varangerfj.
- 145 Grense Jakobselv, Varangerfj.

**APPENDIX II : SEWAGE EFFLUENTS FROM DOWN STREAM AREAS OF MAIN
AND TRIBUTARY RIVERS AND RIVERS NOT MONITORED**

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Paragraph 7: Sewage effluents ./.

Paragraph 8: Measurements of calculation used – including information on the concentration upon which the measurement is based:

Paragraph 3.3 (Report A, 1991 and 1992)

Municipal sewage includes a portion of industrial effluents

Table II Sewage Effluents from down stream areas of mainland Norway to convention waters (1991).

Total quantity of substance discharged per year:

Regions:	I	II	III	IV	Sum
	The Skagerrak Region	The North Sea	The Norwegian Sea	The Barents Sea	
Substance:					
Cd	159	82	84	5	330 kg
Hg	131	68	70	4	273 kg
Cu	15.6	9.6	9.7	0.6	35.5 tonnes
Zn	24.9	13.7	13.9	0.9	53.3 tonnes
Pb	1946	1094	1114	70	4224 kg
Cr-T	7.1	5.5	5.6	0.4	18.5 tonnes
PCBs					kg
gamma-HCH					kg
NO3-N	5.1	2.7	3.2	0.2	11.2 tonnes
PO4-P	192	236	253	14	695 tonnes
Tot-N	5108	2729	3201	194	11232 tonnes
Tot-P	320	393	421	24	1158 tonnes
S.P.M.	8468	8298	9908	597	27272 tonnes
TOC	9453	5191	5967	346	20957 tonnes
COD	29199	22367	26001	1539	79106 tonnes
BOD	13876	10381	11934	692	36883 tonnes

Table 2.1 Sewage Effluents to The Skagerrak Region (1991).

The Skagerrak region with sub-areas: (1) Glomma, (2) Drammenselva,
 (3) Numedalslågen, (4) Skienselva, (5) Otra

Sub-areas :	Total quantity of substance discharged per year:					Precision of the estimate of the load	
	1	2	3	4	5		
Substance:							
Cd	111.8	3.6	21.5	5.3	17.0	kg	%
Hg	91.0	3.0	17.9	4.5	14.2	kg	%
Cu	10.0	0.4	2.5	0.6	2.0	tonnes	%
Zn	17.0	0.6	3.6	0.9	2.8	tonnes	%
Pb	1313	48	287	71	227	kg	%
Cr-T	3.9	0.2	1.4	0.4	1.1	tonnes	
PCBs						kg	%
gamma-HCH						kg	%
NO3-N	3.1	0.3	0.9	0.2	0.7	tonnes	%
PO4-P	38	35	54	14	51	tonnes	%
Tot-N	3063	295	854	197	699	tonnes	%
Tot-P	63	58	90	23	85	tonnes	%
S.P.M.	3593	410	2146	361	1958	tonnes	%
TOC	6311	285	1413	248	1196	tonnes	%
COD	15763	1209	5978	1104	5144	tonnes	%
BOD	7592	570	2827	495	2392	tonnes	%

Table 2.2 Sewage Effluents to The Remaining North Sea Region (1991).

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

Sub-areas :	Total quantity of substance discharged per year:		Precision of the estimate of the load
	6	7	
Substance:			
Cd	23.9	58.2	kg
Hg	19.9	48.5	kg
Cu	2.8	6.8	tonnes
Zn	4.0	9.7	tonnes
Pb	318.4	775.8	kg
Cr-T	1.6	3.9	tonnes
PCBs			kg
gamma-HCH			kg
NO3-N	0.9	1.8	tonnes
PO4-P	75	161	tonnes
Tot-N	933	1796	tonnes
Tot-P	125	268	tonnes
S.P.M.	2892	5407	tonnes
TOC	1688	3503	tonnes
COD	7121	15246	tonnes
BOD	3375	7006	tonnes

Table 2.3 Sewage Effluents to The Norwegian Sea Region (1991).

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

Sub-areas :	Total quantity of substance discharged per year:		Precision of the estimate of the load
	8	9	
Substance:			
Cd	44.4	39.1	kg
Hg	37.0	32.6	kg
Cu	5.2	4.6	tonnes
Zn	7.4	6.5	tonnes
Pb	591.9	521.8	kg
Cr-T	3.0	2.6	tonnes
PCBs			kg
gamma-HCH			kg
NO3-N	1.8	1.4	tonnes
PO4-P	143	109	tonnes
Tot-N	1813	1388	tonnes
Tot-P	239	182	tonnes
S.P.M.	5138	4770	tonnes
TOC	3197	2770	tonnes
COD	13837	12164	tonnes
BOD	6393	5541	tonnes

Table 2.4 Sewage Effluents to The Barents Sea Region (1991).**The Barents Sea Region with sub-area: (10) Alta**

Sub-area :	10	Total quantity of substance discharged per year:	Precision
Substance:			of the estimate of the load
Cd	5.3	kg	%
Hg	4.4	kg	%
Cu	0.6	tonnes	%
Zn	0.9	tonnes	%
Pb	70.0	kg	%
Cr-T	0.4	tonnes	%
PCBs		kg	%
gamma-HCH		kg	%
NO3-N	0.2	tonnes	%
PO4-P	14	tonnes	%
Tot-N	194	tonnes	%
Tot-P	24	tonnes	%
S.P.M.	597	tonnes	%
TOC	346	tonnes	%
COD	1539	tonnes	%
BOD	692	tonnes	%

**APPENDIX III : INDUSTRIAL EFFLUENTS FROM DOWN STREAM AREAS OF MAIN
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Paragraph 11: Industrial effluents ./.

Paragraph 12: Measurements of calculation used – including information on the concentration upon which the measurement is based:

Paragraph 3.3 (Report A, 1991 and 1992)

Paragraph 13: Any other relevant information (e.g. proportion of substance discharged as insoluble material):

A portion of industrial effluents is included in municipal sewage

Table III Industrial Effluents from down stream areas of mainland Norway to convention waters (1991).

Total quantity of substance discharged per year:

Regions:	I The Skagerrak	II The North Sea	III The Norwegian Sea	IV The Barents Sea	Sum
Substance:					
Cd	1	106	7	0	114 kg
Hg	6	35	0	0	41 kg
Cu	11.1	4.9	0.0	0.0	16.0 tonnes
Zn	2.5	17.7	4.0	0.0	24.3 tonnes
Pb	392	8263	360	0	9015 kg
Arsenic	0.5	0.0	0.0	0.0	0.5 tonnes
Cr-T	1.6	2.6	90.0	0.0	94.2 tonnes
PCBs	0.0	0.0	0.0	0.0	0.0 kg
gamma-HCH	0.0	0.0	0.0	0.0	0.0 kg
NO3-N					tonnes
PO4-P					tonnes
Tot-N	2016	276	922	1	3215 tonnes
Tot-P	105	38	86	1	229 tonnes
S.P.M.	10415	1814064	1104722	1600000	4529201 tonnes
TOC	77	166	140	0	383 tonnes
COD	147193	13361	26279	0	186833 tonnes
BOD	64	1048	1425	20	2557 tonnes
AOX	1077	0	0	0	1077 tonnes

Table 3.1 Industrial Effluents to The Skagerrak Region (1991).

The Skagerrak Region with sub-areas: (1) Glomma, (2) Drammenselva,
 (3) Numedalslågen, (4) Skienselva, (5) Otra

Sub-areas :	1	2	3	4	5	Total quantity of substance discharged per year:	Precision of the estimate of the load
Substance:							
Cd	1	0	0	0	0	kg	%
Hg	5	0	0	0	0	kg	%
Cu	8.5	0.0	0.0	0.2	2.4	tonnes	%
Zn	2.1	0.0	0.0	0.1	0.3	tonnes	%
Pb	227	0	1	0	164	kg	%
Arsenic	0.0	0.0	0.0	0.0	0.5	tonnes	
Cr-T	1.6	0.0	0.0	0.0	0.0	tonnes	
PCBs	0.0	0.0	0.0	0.0	0.0	kg	%
gamma-HCH	0.0	0.0	0.0	0.0	0.0	kg	%
NO3-N						tonnes	%
PO4-P						tonnes	%
Tot-N	307	217	41	1451	0	tonnes	%
Tot-P	44	40	5	14	2	tonnes	%
S.P.M.	5148	976	1783	1448	1060	tonnes	%
TOC	0	0	67	10	0	tonnes	%
COD	83333	21080	28017	14546	218	tonnes	%
BOD	0	0	0	0	64	tonnes	%
AOX	239.0	838.0	0.0	0.2	0.0	tonnes	

Table 3.2 Industrial Effluents to The Remaining North Sea Region (1991).

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

Sub-areas :	Total quantity of substance discharged per year:		Precision of the estimate of the load
	6	7	
Substance:			
Cd	0	106	kg
Hg	0	35	kg
Cu	0.0	4.8	tonnes
Zn	0.0	17.7	tonnes
Pb	0	8263	kg
Arsenic	0	0	tonnes
Cr-T	0.4	2.2	tonnes
PCBs	0	0	kg
gamma-HCH	0	0	kg
NO3-N			tonnes
PO4-P			tonnes
Tot-N	22	254	tonnes
Tot-P	3	36	tonnes
S.P.M.	1800033	14031	tonnes
TOC	0	166	tonnes
COD	324	13037	tonnes
BOD	191	857	tonnes
AOX	0	0	tonnes

Table 3.3 Industrial Effluents to The Norwegian Sea Region (1991).**The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna**

Sub-areas :	Total quantity of substance discharged per year:		Precision of the estimate of the load
	8	9	
Substance:			
Cd	0	7	kg
Hg	0	0	kg
Cu	0.0	0.0	tonnes
Zn	0.0	4.0	tonnes
Pb	0	360	kg
Arsenic	0	0	tonnes
Cr-T	0.0	90.0	tonnes
PCBs	0	0	kg
gamma-HCH	0	0	kg
NO3-N			tonnes
PO4-P			tonnes
Tot-N	96	826	tonnes
Tot-P	23	63	tonnes
S.P.M.	4066	1100656	tonnes
TOC	20	120	tonnes
COD	26279	0	tonnes
BOD	919	506	tonnes
AOX	0	0	tonnes

Table 3.4 Industrial Effluents toThe Barents Sea Region (1991).**The Barents Sea Region with sub-area: (10) Alta**

Total quantity of substance discharged per year:		Precision
Sub-area :	10	of the estimate of the load
Substance:		
Cd	0	kg
Hg	0	kg
Cu	0.0	tonnes
Zn	0.0	tonnes
Pb	0	kg
Arsenic	0	tonnes
Cr-T	0.0	tonnes
PCBs	0.0	kg
gamma-HCH	0.0	kg
NO3-N		tonnes
PO4-P		tonnes
Tot-N	1	tonnes
Tot-P	1	tonnes
S.P.M.	1600000	tonnes
TOC	0	tonnes
COD	0	tonnes
BOD	20	tonnes
AOX	0.0	tonnes

APPENDIX IV : MAIN RIVERINE INPUTS 1991 (Paragraph 14 – 16)		Page:
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Paragraph 14: Main Rivers ./.

Paragraph 15: Measurements of calculation used – including information on the concentration upon which the measurement is based:

Appendix VII (1-10) and Paragraph 3.2 (Report A, 1991 and 1992)

Paragraph 16: Any other relevant information (e.g. proportion of substance discharged as insoluble material):

Table 4.1 MAIN RIVERINE INPUTS 1991 (1) Glomma

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	48595	1000 m ³ /day	Cadmium *	0.3 tonnes	YES	_____ %
Minimum flow	24365	1000 m ³ /day	Cadmium **	0.4 tonnes	_____	%
Maximum flow	119578	1000 m ³ /day	Mercury *	23.6 kg	NO	_____ %
			Mercury **	41.8 kg	_____	%
			Copper	31.4 tonnes	YES	_____ %
			Zinc	103.6 tonnes	YES	_____ %
			Lead *	6.4 tonnes	YES	_____ %
			Lead **	6.5 tonnes	_____	%
			Arsenic	5.1 tonnes	YES	_____ %
			Total Cr-T *	0.0 tonnes	NO	_____ %
			Total Cr-T **	8.9 tonnes	_____	%
			PCBs *	0.6 kg	NO	_____ %
			PCBs **	6.4 kg	_____	%
			gamma-HCH (lindane)	16.0 kg	YES	_____ %
			Nitrates (NO ₃ -N)	6701 tonnes	YES	_____ %
			Orthophosphates (PO ₄ -P)	166 tonnes	YES	_____ %
			Total N	10398 tonnes	YES	_____ %
			Total P	401 tonnes	YES	_____ %
			Suspended Particulate Matter	120159 tonnes	YES	_____ %
	Others :		TOC	67439 tonnes	YES	_____ %
			DOC	66254 tonnes	YES	_____ %
			AOX	70.9 tonnes	YES	_____ %

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.2 MAIN RIVERINE INPUTS 1991 (2) Drammenselva

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	19268	1000 m ³ /day	Cadmium *	0.1 tonnes	NO	_____ %
Minimum flow	5530	1000 m ³ /day	Cadmium **	0.1 tonnes	_____	%
Maximum flow	28512	1000 m ³ /day	Mercury *	5.7 kg	NO	_____ %
			Mercury **	14.9 kg	_____	%
			Copper	8.2 tonnes	YES	_____ %
			Zinc	35.6 tonnes	YES	_____ %
			Lead *	2.0 tonnes	YES	_____ %
			Lead **	2.0 tonnes	_____	%
			Arsenic	1.9 tonnes	YES	_____ %
			Total Cr-T *	0.0 tonnes	NO	_____ %
			Total Cr-T **	3.5 tonnes	_____	%
			PCBs *	0.0 kg	NO	_____ %
			PCBs **	2.5 kg	_____	%
			gamma-HCH (lindane)	4.8 kg	YES	_____ %
			Nitrates (NO ₃ -N)	1727 tonnes	YES	_____ %
			Orthophosphates (PO ₄ -P)	12 tonnes	YES	_____ %
			Total N	2667 tonnes	YES	_____ %
			Total P	38 tonnes	YES	_____ %
			Suspended Particulate Matter	11425 tonnes	YES	_____ %
Others :	TOC		16106 tonnes	YES	_____ %	
	DOC			tonnes		%
	AOX		36.3 tonnes	YES		%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.3 MAIN RIVERINE INPUTS 1991 (3) Numedalslågen.

	Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	7715	1000 m ³ /day	Cadmium * 0.1 tonnes	NO _____ %
Minimum flow	1296	1000 m ³ /day	Cadmium ** 0.1 tonnes	_____ %
Maximum flow	22637	1000 m ³ /day	Mercury * 2.8 kg	NO _____ %
			Mercury ** 6.1 kg	_____ %
			Copper 5.1 tonnes	YES _____ %
			Zinc 28.6 tonnes	YES _____ %
			Lead * 2.2 tonnes	YES _____ %
			Lead ** 2.3 tonnes	_____ %
			Arsenic tonnes	_____ %
			Total Cr-T * tonnes	_____ %
			Total Cr-T ** tonnes	_____ %
			PCBs * 0.1 kg	NO _____ %
			PCBs ** 1.0 kg	_____ %
			gamma-HCH (lindane) 1.1 kg	YES _____ %
			Nitrates (NO ₃ -N) 608 tonnes	YES _____ %
			Orthophosphates (PO ₄ -P) 16 tonnes	YES _____ %
			Total N 1075 tonnes	YES _____ %
			Total P 32 tonnes	YES _____ %
			Suspended Particulate Matter 15404 tonnes	YES _____ %
Others :	TOC 9876 tonnes		YES _____ %	
	DOC tonnes		_____ %	
	AOX tonnes		_____ %	

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.4 MAIN RIVERINE INPUTS 1991 (4) Skienselva.

	Total quantity of substance discharged per year	Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	16397 1000 m ³ /day	Cadmium * 0.1 tonnes	NO _____ %
Minimum flow	2160 1000 m ³ /day	Cadmium ** 0.1 tonnes	_____ %
Maximum flow	41213 1000 m ³ /day	Mercury * 22.9 kg	NO _____ %
		Mercury ** 28.3 kg	_____ %
		Copper 8.4 tonnes	YES _____ %
		Zinc 43.9 tonnes	YES _____ %
		Lead * 1.5 tonnes	YES _____ %
		Lead ** 1.5 tonnes	_____ %
		Arsenic 0.9 tonnes	YES _____ %
		Total Cr-T * 0.0 tonnes	NO _____ %
		Total Cr-T ** 3.0 tonnes	_____ %
		PCBs * 0.0 kg	NO _____ %
		PCBs ** 2.1 kg	_____ %
		gamma-HCH (lindane) 4.1 kg	YES _____ %
		Nitrates (NO ₃ -N) 1546 tonnes	YES _____ %
		Orthophosphates (PO ₄ -P) 9 tonnes	YES _____ %
		Total N 2353 tonnes	YES _____ %
		Total P 25 tonnes	YES _____ %
		Suspended Particulate Matter 5442 tonnes	YES _____ %
Others :	TOC 9935 tonnes	YES _____ %	
	DOC tonnes	_____ %	
	AOX 29.9 tonnes	YES _____ %	

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.5 MAIN RIVERINE INPUTS 1991 (5) Otra.

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	11586	1000 m ³ /day	Cadmium *	0.2 tonnes	NO _____	%
Minimum flow	4406	1000 m ³ /day	Cadmium **	0.2 tonnes	_____	%
Maximum flow	24365	1000 m ³ /day	Mercury *	0.0 kg	NO _____	%
			Mercury **	8.5 kg	_____	%
			Copper	4.5 tonnes	YES _____	%
			Zinc	33.2 tonnes	YES _____	%
			Lead *	1.5 tonnes	YES _____	%
			Lead **	1.6 tonnes	_____	%
			Arsenic	1.0 tonnes	YES _____	%
			Total Cr-T *	0.8 tonnes	NO _____	%
			Total Cr-T **	2.3 tonnes	_____	%
			PCBs *	0.8 kg	NO _____	%
			PCBs **	2.0 kg	_____	%
			gamma-HCH (lindane)	1.6 kg	YES _____	%
			Nitrates (NO ₃ -N)	530 tonnes	YES _____	%
			Orthophosphates (PO ₄ -P)	7 tonnes	YES _____	%
			Total N	1060 tonnes	YES _____	%
			Total P	22 tonnes	YES _____	%
			Suspended Particulate Matter	7049 tonnes	YES _____	%
	Others :	TOC	17720 tonnes	YES _____	%	
		DOC	tonnes	_____	%	
		AOX	311.8 tonnes	YES _____	%	

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.6 MAIN RIVERINE INPUTS 1991 (6) Orreelva.

	Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	301	1000 m ³ /day	Cadmium * 0.01	tonnes YES _____ %
Minimum flow	16	1000 m ³ /day	Cadmium ** 0.01	tonnes _____ %
Maximum flow	981	1000 m ³ /day	Mercury * 0.10	kg NO _____ %
			Mercury ** 0.25	kg _____ %
			Copper 0.19	tonnes YES _____ %
			Zinc 0.53	tonnes YES _____ %
			Lead * 0.06	tonnes YES _____ %
			Lead ** 0.06	tonnes _____ %
			Arsenic	tonnes _____ %
			Total Cr-T *	tonnes _____ %
			Total Cr-T **	tonnes _____ %
			PCBs * 0.00	kg NO _____ %
			PCBs ** 0.04	kg _____ %
			gamma-HCH (lindane)	kg YES _____ %
			Nitrates (NO ₃ -N)	tonnes YES _____ %
			Orthophosphates (PO ₄ -P)	tonnes YES _____ %
			Total N	tonnes YES _____ %
			Total P	tonnes YES _____ %
			Suspended Particulate Matter	tonnes YES _____ %
Others :	TOC		637	tonnes YES _____ %
	DOC		529	tonnes YES _____ %
	AOX			tonnes _____ %

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.7 MAIN RIVERINE INPUTS 1991 (7) Suldalslågen.

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	4847	1000 m3/day	Cadmium *	0.02 tonnes	YES	_____ %
Minimum flow	1296	1000 m3/day	Cadmium **	0.02 tonnes	_____	%
Maximum flow	18317	1000 m3/day	Mercury *	0.00 kg	NO	_____ %
			Mercury **	3.54 kg	_____	%
			Copper	0.92 tonnes	YES	_____ %
			Zinc	4.88 tonnes	YES	_____ %
			Lead *	0.07 tonnes	NO	_____ %
			Lead **	0.21 tonnes	_____	%
			Arsenic	0.27 tonnes	YES	_____ %
			Total Cr-T *	0.00 tonnes	NO	_____ %
			Total Cr-T **	0.88 tonnes	_____	%
			PCBs *	0.00 kg	NO	_____ %
			PCBs **	0.62 kg	_____	%
			gamma-HCH (lindane)	1.97 kg	YES	_____ %
			Nitrates (NO3-N)	296 tonnes	YES	_____ %
			Orthophosphates (PO4-P)	1.53 tonnes	YES	_____ %
			Total N	379 tonnes	YES	_____ %
			Total P	4.20 tonnes	YES	_____ %
			Suspended Particulate Matter	1338 tonnes	YES	_____ %
		Others :	TOC	tonnes	_____	%
			DOC	tonnes	_____	%
			AOX	4.62 tonnes	YES	_____ %

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.8 MAIN RIVERINE INPUTS 1991 (8) Orkla.

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	5312	1000 m ³ /day	Cadmium *	0.1 tonnes	YES	%
Minimum flow	1555	1000 m ³ /day	Cadmium **	0.1 tonnes		%
Maximum flow	50976	1000 m ³ /day	Mercury *	2.0 kg	NO	%
			Mercury **	5.1 kg		%
			Copper	23.7 tonnes	YES	%
			Zinc	49.6 tonnes	YES	%
			Lead *	0.4 tonnes	YES	%
			Lead **	0.4 tonnes		%
			Arsenic	tonnes		%
			Total Cr-T *	tonnes		%
			Total Cr-T **	tonnes		%
			PCBs *	0.0 kg	NO	%
			PCBs **	0.7 kg		%
			gamma-HCH (lindane)	0.3 kg	YES	%
			Nitrates (NO ₃ -N)	299 tonnes	YES	%
			Orthophosphates (PO ₄ -P)	4 tonnes	YES	%
			Total N	634 tonnes	YES	%
			Total P	12 tonnes	YES	%
			Suspended Particulate Matter	3533 tonnes	YES	%
Others :			TOC	7025 tonnes	YES	%
			DOC	tonnes		%
			AOX	tonnes		%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.9 MAIN RIVERINE INPUTS 1991 (9) Vefsna.

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	14625	1000 m3/day	Cadmium *	0.4 tonnes	NO _____	%
Minimum flow	3231	1000 m3/day	Cadmium **	0.4 tonnes	_____	%
Maximum flow	67031	1000 m3/day	Mercury *	2.5 kg	NO _____	%
			Mercury **	12.2 kg	_____	%
			Copper	8.8 tonnes	YES _____	%
			Zinc	26.1 tonnes	YES _____	%
			Lead *	1.7 tonnes	YES _____	%
			Lead **	1.8 tonnes	_____	%
			Arsenic	tonnes	_____	%
			Total Cr-T *	tonnes	_____	%
			Total Cr-T **	tonnes	_____	%
			PCBs *	0.0 kg	NO _____	%
			PCBs **	1.9 kg	_____	%
			gamma-HCH (lindane)	1.3 kg	YES _____	%
			Nitrates (NO3-N)	327 tonnes	YES _____	%
			Orthophosphates (PO4-P)	8 tonnes	YES _____	%
			Total N	786 tonnes	YES _____	%
			Total P	21 tonnes	YES _____	%
		Suspended Particulate Matter		12759 tonnes	YES _____	%
	Others :	TOC		9412 tonnes	YES _____	%
		DOC		tonnes	_____	%
		AOX		tonnes	_____	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 4.10 MAIN RIVERINE INPUTS 1991 (10) Altaelva.

			Total quantity of substance discharged per year		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total volume:	7507	1000 m3/day	Cadmium *	0.06 tonnes	NO	_____ %
Minimum flow	2581	1000 m3/day	Cadmium **	0.08 tonnes	_____	%
Maximum flow	24650	1000 m3/day	Mercury *	5.49 kg	NO	_____ %
			Mercury **	6.58 kg	_____	%
			Copper	3.80 tonnes	YES	_____ %
			Zinc	5.82 tonnes	YES	_____ %
			Lead *	0.00 tonnes	NO	_____ %
			Lead **	0.27 tonnes	_____	%
			Arsenic	tonnes	_____	%
			Total Cr-T *	tonnes	_____	%
			Total Cr-T **	tonnes	_____	%
			PCBs *	0.00 kg	NO	_____ %
			PCBs **	0.96 kg	_____	%
			gamma-HCH (lindane)	0.32 kg	YES	_____ %
			Nitrates (NO3-N)	131 tonnes	YES	_____ %
			Orthophosphates (PO4-P)	5.2 tonnes	YES	_____ %
			Total N	614 tonnes	YES	_____ %
			Total P	25 tonnes	YES	_____ %
			Suspended Particulate Matter	4804 tonnes	YES	_____ %
		Others :	TOC	11042 tonnes	YES	_____ %
			DOC	10713 tonnes	YES	_____ %
			AOX	tonnes	_____	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

APPENDIX V : INPUTS FROM TRIBUTARY RIVERS 1991 (Paragraph 17-19)	Page:
Table 5.1 Tributary rivers in the sub-areas (1-5). The Skagerrak area	43
Table 5.2 Tributary rivers in the sub-areas (6-7). Remain. North Sea	44
Table 5.3 Tributary rivers in the sub-areas (8-9). The Norwegian Sea	45
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Paragraph 17: Tributary rivers ./.

Paragraph 18: Measurements of calculation used - including information on the concentration upon which the measurement is based:

Appendix VIII and IX (1-10) and Paragraph 3.2 (Report A, 1991 and 1992)

Paragraph 19: Any other relevant information (e.g. proportion of substance discharged as insoluble material):

Table 5.1 The Skagerrak Region. Inputs from tributary rivers 1991 in The Subareas (1-5).

The Skagerrak Region with sub-areas: (1A) Glomma, (1B) Inner Oslofj., (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

Sub-areas :	1A	1B	2	3	4	5	Were 70 % of measurements above the detection limit ?	Precisio
								of the estimate
Total quantity of substance discharged per year:								
Cd *	0.10	0.06	0.00	0.02	0.07	1.03	tonnes	YES _____ %
Cd **	0.10	0.06	0.00	0.02	0.07	1.03	tonnes	_____ %
Hg *	0.12	0.00	0.00	0.00	0.00	26.31	kg	NO _____ %
Hg **	1.98	0.82	0.35	1.19	1.47	32.50	kg	_____ %
Cu	1.5	4.3	0.3	0.9	1.2	7.6	tonnes	YES _____ %
Zn	4.9	8.5	2.1	3.6	12.6	113.1	tonnes	YES _____ %
Pb *	0.36	1.33	0.04	0.34	0.18	5.76	tonnes	YES _____ %
Pb **	0.36	1.33	0.04	0.34	0.18	5.76	tonnes	_____ %
PCBs *	0.00	0.00	0.00	0.00	0.00	0.00	kg	NO _____ %
PCBs **	0.34	6.06	0.13	0.01	0.26	3.01	kg	_____ %
gamma-HCH	3.83	0.97	0.43	0.41	3.88	38.07	kg	YES _____ %
NO ₃ -N	684	234	156	555	198	1748	tonnes	YES _____ %
PO ₄ -P	5.3	5.4	8.7	4.6	0.7	5.8	tonnes	YES _____ %
Total N	1130	511	219	736	314	3180	tonnes	YES _____ %
Total P	22	19	13	13	3	59	tonnes	YES _____ %
S.P.M.	2534	3727	615	1458	947	11559	tonnes	YES _____ %

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 5.2 The remaining North Sea Region. Inputs from tributary rivers 1991 in The Subareas (6-7).

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

Sub-areas :	6	7	Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
			tonnes	YES	
Substance:					
Cd *	0.27	0.76	tonnes	YES	%
Cd **	0.34	0.90	tonnes		%
Hg *	0.00	0.00	kg	NO	%
Hg **	29.68	58.36	kg		%
Cu	25.7	26.3	tonnes	YES	%
Zn	98.9	95.4	tonnes	YES	%
Pb *	8.71	9.13	tonnes	YES	%
Pb **	8.71	9.93	tonnes		%
PCBs *	0.00	0.00	kg	NO	%
PCBs **	5.19	10.21	kg		%
gamma-HCH	79.37	60.02	kg	YES	%
NO3-N	3998	3749	tonnes	YES	%
PO4-P	29.9	24.8	tonnes	YES	%
Total N	5508	5651	tonnes	YES	%
Total P	104	129	tonnes	YES	%
S.P.M.	14233	21522	tonnes	YES	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 5.3 The Norwegian Sea Region. Inputs from tributary rivers 1991 in the Subareas (8-9).

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

Sub-areas :	Total quantity of substance discharged per year:		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
	8	9		
	Substance:			
Cd *	2.56	0.91	tonnes YES	%
Cd **	2.58	0.91	tonnes	%
Hg *	9.53	0.00	kg NO	%
Hg **	74.15	65.40	kg	%
Cu	52.1	53.0	tonnes YES	%
Zn	101.8	86.3	tonnes YES	%
Pb *	18.55	14.26	tonnes YES	%
Pb **	18.55	14.26	tonnes	%
PCBs *	0.00	0.17	kg NO	%
PCBs **	12.42	11.45	kg	%
gamma-HCH	17.92	16.65	kg YES	%
NO3-N	3572	1162	tonnes YES	%
PO4-P	54.9	46.7	tonnes YES	%
Total N	7193	2585	tonnes YES	%
Total P	205	141	tonnes YES	%
S.P.M.	72369	97871	tonnes YES	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 5.4 The Barents Region. Inputs from tributary rivers 1991 in the Subarea (10).

The Barents Sea Region with sub-area: (10) Alta

		Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Total quantity of substance discharged per year:				
Sub-area :	10	tonnes	YES	%
Cd *	0.48	tonnes	NO	%
Cd **	0.50	kg	NO	%
Hg *	0.00	kg	NO	%
Hg **	41.34	tonnes	YES	%
Cu	36.8	tonnes	YES	%
Zn	102.0	tonnes	YES	%
Pb *	13.65	tonnes	YES	%
Pb **	13.65	tonnes	NO	%
PCBs *	0.12	kg	NO	%
PCBs **	7.24	kg	NO	%
gamma-HCH	7.52	kg	YES	%
NO3-N	401	tonnes	YES	%
PO4-P	21.0	tonnes	YES	%
Total N	2784	tonnes	YES	%
Total P	117	tonnes	YES	%
S.P.M.	23000	tonnes	YES	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

APPENDIX VI : OTHER INPUTS 1991	(Paragraph 20)	Page:
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Paragraph 20: Any available information on discharge through urban run-off - storm water overflow - polder effluents etc.:

"Background" is runoff from forested areas and highlands, including effect of acid precipitation

Agriculture runoff:

- "Area" is runoff from arable land
- "Point"-sources are drainage from silos, manures etc.

Paragraph 3.3 (Report A, 1991 and 1992)

Table 6.1 Nutrients from "Down Stream Areas" of main and tributary rivers and rivers not monitored 1991.

Direct runoff of P and N :

Sub-areas :		Back-ground tons	Agriculture		Sum tons
			Area tons	Point tons	
1 Glomma	Tot-P	18.3	12.5	0.7	31
	Tot-N	464.7	552.7	9.3	1027
	PO4-P	3.7	3.8	0.5	8
	NO3-N	278.8	386.9	1.1	667
1 Inner Oslofjord	Tot-P	3.3	1.8	0.5	6
	Tot-N	71.4	84.5	5.1	161
	PO4-P	0.7	0.5	0.4	2
	NO3-N	42.8	59.2	0.6	103
2 Drammenselva	Tot-P	1.5	2.0	0.0	4
	Tot-N	63.9	71.1	0.3	135
	PO4-P	0.3	0.6	0.0	1
	NO3-N	38.3	49.8	0.0	88
3 Numedalslågen	Tot-P	4.9	10.8	0.2	16
	Tot-N	186.4	474.9	1.0	662
	PO4-P	1.0	3.2	0.1	4
	NO3-N	111.9	332.5	0.1	444
4 Skienselva	Tot-P	7.5	2.2	0.2	10
	Tot-N	334.9	92.7	3.8	431
	PO4-P	1.5	0.7	0.1	2
	NO3-N	200.9	64.9	0.5	266
5 Otra	Tot-P	11.1	4.4	0.9	16
	Tot-N	348.8	133.5	10.6	493
	PO4-P	2.2	1.3	0.6	4
	NO3-N	209.3	93.4	1.3	304
6 Orreelva	Tot-P	22.9	43.4	4.8	71
	Tot-N	1467.2	1277.1	53.7	2798
	PO4-P	4.6	13.0	3.3	21
	NO3-N	880.3	894.0	6.4	1781
7 Suldalslågen	Tot-P	58.0	62.3	7.5	128
	Tot-N	5157.3	1266.5	96.3	6520
	PO4-P	11.6	18.7	5.2	35
	NO3-N	3094.4	886.5	11.6	3992
8 Orkla	Tot-P	142.2	139.8	14.9	297
	Tot-N	3852.7	3445.1	196.2	7494
	PO4-P	28.4	41.9	10.3	81
	NO3-N	2311.6	2411.6	23.5	4747
9 Vefsna	Tot-P	83.8	32.4	7.7	124
	Tot-N	1921.4	827.8	103.6	2853
	PO4-P	16.8	9.7	5.3	32
	NO3-N	1152.8	579.5	12.4	1745
10 Alta	Tot-P	85.9	1.5	0.6	88
	Tot-N	1617.8	59.6	7.5	1685
	PO4-P	17.2	0.5	0.4	18
	NO3-N	970.7	41.7	0.9	1013
				Sum P	791
				Sum N	24259
				Sum PO4-P	208
				Sum NO3-N	15150

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Table 7A.1 Measured concentrations - 1991
 Watercourse : Glomma
 Annual flow :
 Drainage area. :
 Min : 17737 mill. cbm
 Max: 41218 kv.km
 Min : 282 cbm/s
 Max: 1384 cbm/s

Date	Q m3/s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	Gamm HCH ng/l	PCB (The following Congeners) IUPAC NOS 28 ng/l	52 ng/l	101 ng/l	118 ng/l	138 ng/l	153 ng/l	180 ng/l
910107	538.0	6.34	42.0	25.0	1200	930	2.4	10.0	0.02	0.60	24.80	3.80	3.74	2.0								
910123	486.8	5.72	16.0	14.0	782	575	1.7	7.7	0.02	0.30	5.84	2.82	2.80	<2.0								
910207	375.1	5.19	7.0	3.0	539	365	1.0	3.5	0.02	0.30	1.50	2.65	2.59	<2.0								
910219	333.1	4.92	5.0	2.0	495	345	1.3	4.4	0.02	0.30	0.91	2.63	2.61	<2.0								
910304	358.7	4.98	8.0	2.0	497	325	1.6	4.4	0.02	0.30	2.10	2.89	2.88	2.0	0.05	<0.05	0.06	0.07	<0.05	0.09	<0.05	
910320	461.2	5.84	171.0	61.0	1095	650	3.1	12.8	0.02	0.30	23.30	4.19	3.94	7.0								
910409	819.8	5.91	38.0	20.0	896	585	1.4	6.6	0.02	0.60	8.34	3.52	3.49	2.0								
910423	697.9	4.33	17.0	8.0	563	340	1.6	6.8	0.02	0.30	7.22	6.08	5.99	<2.0								
910514	563.6	4.34	12.0	3.0	528	320	1.9	5.8	0.02	0.30	4.06	5.02	5.02	<2.0	0.42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910605	474.5	4.10	9.0	2.0	336	186	2.0	5.0	0.02	0.25	3.28	3.35	3.27	<2.0								
910619	871.1	4.21	9.0	2.0	330	186	1.3	1.7	0.02	0.25	2.98	2.36	2.36	2.5								
910702	1127.3	4.08	13.0	4.0	459	250	2.1	5.1	0.01	0.25	6.07	5.25	5.19	2.5								
910717	988.9	4.28	11.0	3.0	396	240	1.3	3.0	<0.01	0.25	5.78	3.32	3.12	2.5	0.96	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910814	666.1	4.36	10.0	2.0	381	235	0.9	3.3	0.06	<0.10	3.48	2.71	2.71	<2.0								
910912	337.2	4.44	7.0	2.0	378	165	1.9	11.0	0.07	0.30	2.36	2.51	2.30	<2.0								
911016	435.5	4.93	9.0	3.0	522	380	1.8	4.5	0.03	0.90	3.42	2.97	2.84	<2.0	2.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
911111	533.9	5.56	30.0	15.0	768	540	3.5	7.2	<0.01	0.67	10.90	4.99	4.99	<2.0								
911212	538.0	5.14	13.0	6.0	635	420	1.7	9.0	<0.01	0.53	3.73	4.94	4.94	<2.0								
Min:	333.1	4.08	5	2	330	165	0.9	1.7	0.01	0.1	0.91	2.36	2.3	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Max:	1127.3	6.34	171	61	1200	930	3.5	12.8	0.07	0.9	24.8	6.08	5.99	7	2.44	0.05	0.05	0.05	0.05	0.05	0.05	
Aver.:	589.26	4.93	23.72	9.83	600	391	1.80	6.21	0.02	0.38	6.67	3.67	3.60	2.36	0.97	0.05	0.05	0.05	0.05	0.05	0.05	
St.dev.:	230.13	0.71	38.27	14.56	254	198	0.67	2.98	0.02	0.20	6.81	1.14	1.17	1.05	1.05	0.00	0.00	0.01	0.00	0.02	0.00	
Numb.:	18	18	18	18	18	18	18	18	18	18	18	18	18	18	4	4	4	4	4	4	4	

Table 7A.2 Measured concentrations - 1991
 Watercourse : Dammenselva
 Annual flow : 7033 mill. cbm
 Drainage area. : 17028 kv.km

Date	Q m ³ /s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	PCB (The following Congeners) IUPAC NOS					
															28	52	101	118	138	153
910121	290.2	3.49	4.0	2.0	395	285	0.9	4.3	0.01	0.20	1.01			<2.0	2.0					
910210	290.2	3.23	5.0	2.0	371	250	1.1	4.5	0.02	0.20	1.17			2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
910308	300.8	3.51	4.0	0.5	381	265	1.0	4.4	0.05	0.20	1.12			2.5	0.05	<0.05	<0.05	<0.05	0.05	0.05
910419	326.3	3.82	7.0	2.0	443	315	2.1	7.1	0.02	0.90	2.49			2.5	0.90	<0.05	<0.05	<0.05	<0.05	<0.05
910513	290.2	3.27	5.0	1.0	374	230	1.0	9.4	0.02	0.20	1.37			<2.0	0.90	<0.05	<0.05	<0.05	<0.05	<0.05
910605	186.0	3.06	6.0	2.0	318	166	1.0	3.4	0.02	0.20	1.40			<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
910712	152.0	3.63	7.0	2.0	326	148	1.0	3.6	<0.01	0.20	1.32			<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
910812	112.7	3.51	8.0	1.0	312	240	0.8	2.5	0.01	0.10	3.18			<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
910909	75.5	3.99	6.0	1.0	356	149	1.1	3.0	<0.01	0.10	1.33			<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
911017	162.6	3.08	4.0	2.0	296	150	0.8	3.2	0.05	<0.10	1.93	2.29		<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
911112	239.2	3.82	6.0	2.0	428	290	1.5	5.4	<0.01	0.27	1.85			<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
911209	238.1	3.68	5.0	3.0	416	270	1.1	4.4	<0.01	0.31	1.98			<2.0	0.80	<0.05	<0.05	<0.05	<0.05	<0.05
Min:	75.5	3.06	4	0.5	296	148	0.8	2.5	0.01	0.1	1.01	2.29		2	0.05	0.05	0.05	0.05	0.05	0.05
Max:	326.3	3.99	8	3	443	315	2.1	9.4	0.05	0.9	3.18	2.29		2.5	2.13	0.05	0.05	0.05	0.05	0.05
Aver.:	221.98	3.51	5.58	1.71	368	230	1.12	4.60	0.02	0.25	1.68	2.29		2.08	0.97	0.05	0.05	0.05	0.05	0.05
St.dev.:	82.42	0.30	1.31	0.69	48	61	0.36	1.94	0.01	0.22	0.64	1		0.19	0.86	0.00	0.00	0.00	0.00	0.00
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12		4	4	4	4	4	4	4

Table 7A.3 Measured concentrations - 1991
 Watercourse : Numedalslågen
 Annual flow : 2816 mill. cbm
 Drainage area : 5513 kv.km

Date	Q m3/s	O Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	Gamma HCH ng/l	PCB (The following Congeners) IUPAC NOS 28 ng/l	PCB (The following Congeners) IUPAC NOS 52 ng/l	PCB (The following Congeners) IUPAC NOS 101 ng/l	PCB (The following Congeners) IUPAC NOS 118 ng/l	PCB (The following Congeners) IUPAC NOS 138 ng/l	PCB (The following Congeners) IUPAC NOS 153 ng/l	PCB (The following Congeners) IUPAC NOS 180 ng/l	
																Min :				Max :			
910122	79,0	3.16	8,0	3,0	389	240	1,2	7,3	<0,01	0,40	2,45				<2,0								
910212	104,6	2,27	3,0	2,0	218	105	0,7	17,0	0,04	<0,10	1,43				<2,0								
910314	90,4	3,46	9,0	4,0	462	285	1,1	6,8	<0,01	1,10	3,10				3,0	0,05	<0,05	0,05	0,05	<0,05			
910416	245,0	2,50	14,0	9,0	350	173	1,8	11,8	0,04	1,60	8,24				2,0		<0,05	<0,05	<0,05	<0,05			
910514	157,0	2,14	7,0	2,0	234	86	2,2	7,1	0,04	<0,10	2,69				<2,0	0,37	<0,05	<0,05	<0,05	<0,05			
910617	123,1	2,22	6,0	1,0	192	71	1,5	6,5	0,04	1,00	2,28				<2,0								
910710	77,5	2,49	4,0	2,0	186	65	0,7	2,7	0,01	<0,10	1,31				2,0	0,54	<0,05	<0,05	<0,05	<0,05			
910814	23,3	4,17	5,0	2,0	416	240	1,4	4,0	0,18	0,18	2,13				<2,0								
910918	24,0	3,85	4,0	2,0	297	115	1,2	11,0	0,10	0,32	0,31	2,00			<2,0	1,40	<0,05	<0,05	<0,05	<0,05			
911017	46,2	5,59	20,0	10,0	855	600	6,5	7,0	<0,01	0,22	8,74	4,29			4,0								
911114	105,5	5,03	39,0	21,0	884	640	2,1	17,2	0,04	1,29	20,60				<2,0								
911217	43,7	4,00	6,0	3,0	497	295	3,5	20,6	<0,01	0,91	0,96				<2,0								
Min:	23,3	2,14	3	1	186	65	0,7	2,7	0,01	0,1	0,31				2	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05
Max:	245	5,59	39	21	884	640	6,5	20,6	0,18	1,6	20,6	4,29			4	1,40	0,05	0,05	0,05	0,05	0,05	0,05	0,05
Aver.:	93,28	3,41	10,42	5,08	415	243	1,99	9,92	0,04	0,73	4,52	3,15			2,25	0,59	0,05	0,05	0,05	0,05	0,05	0,05	0,05
St.dev.:	62,58	1,15	10,21	5,78	236	194	1,61	5,67	0,05	0,59	5,73	12	12	12	0,62	0,58	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Numb.:	12	12	12	12								4	4	4	12	2	4	4	4	4	4	4	4

Table 7A.4 Measured concentrations - 1991
Watercourse : Skjenselva

Date	Q m3/s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	Gamma HCH ng/l	Min : 25 cbm/s				Max: 477 cbm/s			
																28	52	101	118	138	153	180	
910121	230.0	2.12	3.0	2.0	377	270	1.0	9.5	<0.01	0.60	0.65				<2.0	2.5							
910214	234.0	2.13	5.0	2.0	395	265	1.6	12.4	0.04	<0.10	0.93				2.5	2.5							
910318	259.0	2.22	5.0	2.0	368	270	0.7	4.4	0.05	0.20	0.98				0.05 <0.05	0.05 <0.05							
910418	420.0	2.22	4.0	1.0	374	265	3.4	8.1	0.01	0.20	0.95				10.5	10.5							
910514	259.0	2.37	5.0	2.0	582	260	0.9	8.7	0.01	0.20	1.31				5.0	5.0							
910604	207.0	2.11	6.0	0.5	342	260	0.8	4.2	0.01	0.20	0.64				<2.0	<2.0							
910715	40.0	2.13	3.0	1.0	326	195	0.6	3.8	0.02	0.20	1.22				<2.0	<2.0							
910812	82.0	2.06	4.0	0.5	306	170	0.5	<0.01	0.20	0.20	1.41				<2.0	<2.0							
910918	82.0	2.18	3.0	1.0	395	195	1.0	8.0	<0.01	0.20	0.72				<2.0	<2.0							
911015	127.0	1.98	2.0	0.5	324	220	0.5	3.8	0.02	0.20	0.55				1.60	1.60							
911114	232.0	2.56	4.0	2.0	393	295	1.4	8.8	<0.01	0.44	0.84				<2.0	<2.0							
911212	168.0	2.30	3.0	3.0	381	260	0.7	4.0	<0.01	0.23	0.88				<2.0	<2.0							
Min:	40	1.98	2	0.5	306	170	0.5	3.8	0.01	0.1	0.55	1.66			2	0.05	0.05	0.05	0.05	0.05	0.05		
Max:	420	2.56	6	3	582	295	3.4	12.4	0.05	0.6	1.41	1.66			16	1.55	0.05	0.05	0.05	0.05	0.05		
Aver.:	195.00	2.20	3.92	1.46	380	244	1.09	6.73	0.02	0.25	0.92	1.66			4.21	0.93	0.05	0.05	0.05	0.05	0.05		
St.dev.:	103.57	0.15	1.16	0.81	70	39	0.80	2.88	0.01	0.14	0.27	12	12	1	4.46	0.63	0.00	0.00	0.00	0.00	0.00		
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	1		12	4	4	4	4	4	4		

Table 7A.5 Measured concentrations - 1991

Watercourse :	Otra	Annual flow : 4229 mill. cbm										Min : 51 cbm/s											
		3730 kv.km					Max: 282 cbm/s					Pb S.P.M.					PCB (The following Congeners) IUPAC NOS						
Date	Q m3/s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC	DOC	Hg mg/l	Gamma HCH ng/l	PCB 28 ng/l	PCB 52 ng/l	PCB 101 ng/l	PCB 118 ng/l	PCB 138 ng/l	PCB 153 ng/l	PCB 180 ng/l	
910123	154.8	2.48	5.0	2.0	263	138	0.7	7.8	<0.01	0.20	0.86			<2.0									
910213	145.9	2.33	4.0	2.0	224	134	0.5	5.7	<0.01	0.20	1.11			<2.0									
910313	208.5	2.33	4.0	1.0	258	161	0.5	6.2	0.01	0.20	0.98			<2.0	0.05	0.09	<0.05	0.06	0.15	<0.05	0.18	<0.05	
910417	234.1	2.16	5.0	0.5	245	136	1.1	6.3	0.01	0.20	2.55			<2.0	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910522	121.0	2.10	5.0	2.0	240	122	0.9	6.3	0.01	0.20	2.15			<2.0	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910604	92.1	2.58	6.0	1.0	210	158	1.1	6.6	0.04	0.10	1.68			<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910715	53.7	3.86	8.0	1.0	251	67	0.5	8.2	<0.01	<0.10	3.30			<2.0	1.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910812	51.5	1.30	7.4	1.0	235	42	0.5	5.5	<0.01	<0.10	3.36			<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910915	122.0	2.10	5.0	4.0	237	35	0.8	9.0	0.19	0.10	2.22			<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
911015	124.9	2.50	5.0	2.0	233	116	0.6	7.3	<0.01	<0.10	1.75			<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
911112	151.0	3.54	7.0	2.0	314	136	3.9	16.2	0.20	1.70	1.00			<2.0	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
911210	121.8	2.55	5.0	2.0	267	144	1.1	8.6	<0.01	0.90	1.10			<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Min:		51.5	1.3	4	0.5	210	35	0.5	5.5	0.01	0.1	0.86			2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Max:		234.1	3.86	8	4	314	161	3.9	16.2	0.20	1.7	3.36			2	1.06	0.09	0.05	0.06	0.15	0.05	0.18	0.05
Aver.:		131.78	2.49	5.53	1.71	248	116	1.02	7.81	0.04	0.34	1.84			2.00	0.52	0.06	0.05	0.05	0.08	0.05	0.08	0.05
St.dev.:		53.88	0.67	1.29	0.92	26	43	0.94	2.88	0.07	0.48	0.89			0.00	0.42	0.02	0.00	0.05	0.00	0.07	0.00	0.00
Numb.:		12	12	12	12	12	12	12	12	12	12	12			1	12	4	4	4	4	4	4	4

Table 7A.6 Measured concentrations - 1991
Watercourse: Oreejya

Table 7A.7 Measured concentrations - 1991
Watercourse : Suldalslågen

Table 7A.8 Measured concentrations - 1991

Watercourse :	Orkla										IUPAC NOS									
	Annual flow : 1939 mill. cbm					Min : 18 cbm/s					The following Congeners)									
Drainage area : 2680 kv.km	Max: 590 cbm/s					PCB (Gamma		Hg			HCH		28		
	O m3/s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	Gamma HCH ng/l	PCB ng/l	101 ng/l	118 ng/l	138 ng/l	153 ng/l
910123	51.0	5.80	8.0	3.0	299	157	8.9	16.5	0.04	0.15	1.68	4.00	4.0							
910218	35.0	6.15	5.0	2.0	365	250	8.1	21.5	0.04	0.15	0.47	1.60	<2.0							
910228	18.0	8.20	5.0	0.5	405	300	14.4	40.0	0.04	0.15	1.00	1.50	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910311	26.0	7.56	12.0	5.0	656	490	10.7	13.1	0.04	0.15	1.69	1.50	<2.0							
910409	57.0	7.60	8.0	3.0	326	116	22.9	50.0	0.11	0.15	2.81	3.40	7.5							
910522	104.0	5.00	9.0	4.0	327	113	5.4	10.0	0.02	0.15	3.60	4.80	<2.0							
910606	84.0	5.20	7.0	2.0	300	77	13.5	20.0	0.02	0.15	1.62	4.00	<2.0	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	
910704	72.0	5.30	5.0	2.0	282	156	15.6	30.0	0.03	0.15	1.55	3.40	<2.0							
910814	66.0	6.30	5.0	1.0	300	117	6.4	30.0	0.05	0.15	1.70	4.40	<2.0	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	
910910	76.0	5.60	4.9	1.0	254	96	14.8	30.0	0.20	0.90	1.47	4.70	<2.0							
911015	29.0	6.40	4.0	1.0	425	300	13.1	20.0	<0.01	<0.10	1.53	3.30	<2.0	0.37	<0.05	<0.05	<0.05	<0.05	<0.05	
911105	46.0	6.80	4.0	0.5	323	150	13.4	27.5	0.04	0.10	0.90	3.00	2.5							
911210	57.0	6.10	2.6	0.5	335	170	15.4	34.0	0.02	0.13	1.01	2.30	<2.0							
Min:	18	5	2.6	0.5	254	77	5.4	10	0.01	0.1	0.47	1.5		2	0.05	0.05	0.05	0.05	0.05	
Max:	104	8.2	12	5	656	490	22.9	50	0.20	0.9	3.6	4.8	7.5	0.37	0.05	0.05	0.05	0.05	0.05	
Aver.:	55.46	6.31	6.12	1.96	354	192	12.51	26.35	0.05	0.20	1.62	3.22	2.62	0.19	0.05	0.05	0.05	0.05	0.05	
St.dev.:	24.97	0.99	2.56	1.44	102	116	4.66	11.14	0.05	0.21	0.82	1.18	1.57	0.13	0.00	0.00	0.00	0.00	0.00	
Numb.:	13	13	13	13	13	13	13	13	13	13	13	13	13	4	4	4	4	4	4	

Table 7A.9 Measured concentrations - 1991
Watercourse : Vefsna

Annual flow										5338 mill. cbm									
Drainage area										4113 kv.km									
Date	Q m ³ /s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	HCH ng/l	Gamma PCB ng/l	PCB (The following Congeners)	IUPAC NOS	180 ng/l
910128	230.4	5.90	5.0	2.0	146	75	1.0	2.7	<0.01	<0.10	2.52	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910311	42.4	9.25	2.0	0.5	212	147	2.6	4.4	<0.01	<0.01	0.20	0.26	4.5	<2.0	0.05	<0.05	<0.05	<0.05	
910423	70.4	7.25	2.0	1.0	167	91	2.5	2.8	0.01	0.20	0.87	<2.0	6.0	<2.0	0.05	<0.05	<0.05	<0.05	
910429	73.0	8.43	2.0	1.0	452	340	9.4	13.9	0.01	0.20	0.98	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910506	88.0	7.22	3.0	0.5	455	176	2.6	7.7	0.02	0.20	0.87	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910515	214.0	5.88	4.0	0.5	140	36	1.3	5.0	0.02	0.20	3.44	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910521	263.5	5.10	5.0	0.5	110	28	0.8	2.7	0.28	0.20	2.97	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910529	228.5	5.70	2.0	0.5	122	42	6.3	2.5	<0.01	0.20	0.64	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910603	182.0	5.36	2.0	0.5	114	50	0.5	1.0	0.03	0.20	0.82	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910610	412.8	4.20	7.0	3.0	186	57	2.8	2.6	0.37	0.20	5.97	<2.0	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	
910617	611.7	3.45	5.0	2.0	120	53	0.6	4.1	<0.01	<0.10	2.91	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
910701	432.0	3.15	4.0	3.0	89	44	0.8	8.7	<0.01	0.20	2.17	<2.0	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	
910805	109.5	3.18	3.0	0.5	92	31	0.7	2.4	<0.01	<0.10	1.38	<2.0	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	
910912	163.5	4.21	3.0	2.0	138	30	1.1	10.0	0.03	1.10	2.55	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
911001	162.0	5.81	4.0	1.0	135	41	0.6	4.5	0.12	0.50	1.30	<2.0	0.64	<0.05	<0.05	<0.05	<0.05	<0.05	
911008	168.0	5.05	2.0	1.0	117	37	0.7	5.5	0.06	0.60	0.95	6.0	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	
911014	121.4	5.44	2.0	0.5	135	61	0.6	9.0	<0.01	1.80	0.40	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
191021	106.1	6.43	2.0	0.5	207	86	1.1	7.3	0.08	0.90	0.66	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
911105	68.7	6.87	3.0	0.5	197	138	3.0	6.0	0.11	1.42	0.31	2.5	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	
911111	55.2	8.69	4.0	3.0	189	124	0.9	3.8	0.01	0.68	3.90	<2.0	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Min:	42.4	3.15	2	0.5	89	28	0.5	1	0.01	0.1	0.26	1.08	2	0.05	0.05	0.05	0.05	0.05	
Max:	611.7	9.25	7	3	455	340	9.4	13.9	0.37	1.8	5.97	2.13	6	0.64	0.05	0.05	0.05	0.05	
Aver.:	190.16	5.83	3.30	1.20	176	84	1.99	5.33	0.06	0.47	1.79	1.70	2.55	0.25	0.05	0.05	0.05	0.05	
St.dev.:	146.62	1.76	0.94	0.92	74	2.23	3.23	0.10	0.48	1.49	0.55	1.31	0.27	0.00	0.00	0.00	0.00	0.00	
Numb.:	20	20	20	20	20	20	20	20	20	20	20	20	20	4	4	4	4	4	

Table 7A.10 Measured concentrations - 1991

Annual flow		2740 mill. cbm				7367 kv.km				Max: 285.3 cbm/s				Min : 29.87 cbm/s			
Drainage area.		Q m ³ /s	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	TOC mg/l	DOC mg/l	Hg ng/l	Gamma PCB (The following Congeners) IUPAC NOS	
Date																	
910325	33.4	19.70	14.0	12.0	129	105	1.7	1.0	<0.01	<0.10	0.38						
910607	257.1	6.23	9.0	0.5	222	33	1.4	2.0	<0.01	<0.10	2.07						
910808	51.9	10.30	8.0	2.0	182	29	1.1	2.5	0.10	<0.10	1.81						
911013	86.7	8.84	8.0	2.0	293	81	1.4	2.7	0.05	<0.10	1.31						
Min:	33.4	6.23	8	0.5	129	29	1.1	1	0.01	0.1	0.38	4.03	3.91	2	0.05	0.05	
Max:	257.1	19.7	14	12	293	105	1.7	2.7	0.10	0.1	2.07	4.03	3.91	2.5	0.13	0.05	
Aver.:	107.28	11.27	9.75	4.13	207	62	1.40	2.05	0.04	0.10	1.39	4.03	3.91	2.25	0.09	0.05	
St.dev.:	102.30	5.87	2.87	5.30	69	37	0.24	0.76	0.04	0.00	0.75	1	4	0.29	0.05	0.05	
Numb.:	4	4	4	4	4	4	4	4	4	4	4	1	4	2	2	2	

Table 7B Metals, chlorinated organic compounds, organotin compounds.

Watercourse	Date	Metals		Chlorinated organic compounds						Organotin compounds		
		Arsenic µg/l	Total Chromium µg/l	AOX µg/l	Pentachloro- phenol ng/l	Tetrachloro- ethene ng/l	Trichloro- benzene ng/l	Trichloro- ethane ng/l	Trichloro- ethylene ng/l	Monobutyltin ng/l	Diethyltin ng/l	Tributyltin ng/l
1. Glomma	910605	0,24	<0,5	4,0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
	910717	0,30	<0,5	4,0	"	"	"	"	"	"	"	n.d.
	910814	0,31	<0,5	4,0	"	"	"	"	"	n.d.	n.d.	n.d.
2. Drammenselva	910605	0,24	<0,5	5,0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
	910712	0,35	<0,5	4,0	"	"	"	"	"	"	"	n.d.
	910812	0,22	<0,5	7,0	"	"	"	"	"	n.d.	n.d.	n.d.
4. Skjenselva	910604	0,14	<0,5	5,0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
	910715	0,20	<0,5	5,0	"	"	"	"	"	n.d.	n.d.	n.d.
	910812	0,18	<0,5	5,0	"	"	"	"	"	n.d.	n.d.	n.d.
5. Otra	910604	0,19	<0,5	17,0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
	910715	0,35	<0,5	166,0	"	"	"	"	"	n.d.	n.d.	n.d.
	910812	0,22	0,7	79,0	"	"	"	"	"	n.d.	n.d.	n.d.
7. Suldalslågen	910603	0,14	<0,5	2,0	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
	910716	0,15	<0,5	3,0	"	"	"	"	"	n.d.	n.d.	n.d.
	910813	0,18	<0,5	3,0	"	"	"	"	"	n.d.	n.d.	n.d.
Detection limit	<0,1	0,5	10	2	2	4	2	2	2	110	20	15

AOX = adsorbable organic halogens

n.d. = not detected

APPENDIX VIII : TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991

Table 8.1 Cond., Nutrients, Heavy metals, Suspended part.matter 62-68

Table 8.2 Mercury, Lindane, PCBs 70-76

- (1) Glomma "tributaries" : Tista - Hølenelva
- (1) Inner Oslo-fjord : Årungelva - Åroselva
- (2) Drammenselva "tributary" : Lierelva
- (3) Numedalslågen "tributaries" : Sandeelva - Farriselva
- (4) Skienselva "tributary" : Tokkeelva
- (5) Otra "tributaries" : Gjerstade. - Audna
- (6) Orreelva "tributaries" : Lygna - Ulla
- (7) Suldalslågen "tributaries": Saudaelva - Hornindalselva
- (8) Orkla "tributaries" : Ørstaelva - Salsvatnelva
- (9) Vefsna "tributaries" : Åbjøra - Reisa
- (10) Alta "tributaries" : Mattiselva - Grense Jacobse.

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data						Parameters (mean values)										
		Drainage area			Discharge gauging station			1991 Normal 1/s kv.km	Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l
		Outlet kv.km	Samp1. Disch. kv.km	Gauging station	Sampling station	Normal 1/s kv.km	1/s kv.km											
Østfold (1.)	Tista. Iddefj. Mosselva. Mossesundet	1588 690	1582 689	14.4 14.5	12.4 14.3	14.4 14.5	12.4 14.3	6.01 9.56	16.0 25.0	2.0 4.0	825 1057	600 200	1.5 1.3	5.1 4.8	0.14 0.05	0.40 0.30	1.08 3.74	
Oslo & Akershus (1.)	Hølenelva. Drøbak sundet Ø Årunnelva. I. Oslofj. Gjerspølva. I. Oslofj. Ljanselva. I. Oslofj. Loelva/Alna. I. Oslofj. Akerselva. I. Oslofj. Frognerelva. I. Oslofj. Lysakerelva. I. Oslofj. Sandvikselva.I. Oslofj. Åroselva. I. Oslofj.	137 52 86 42 75 227 23 178 223 113	121 50 85 41 69 225 20 173 187 109	14.0 13.0 14.0 13.0 13.0 17.5 15.0 16.8 18.4 17.0	12.9 12.8 7.4 10.1 17.5 9.2 29.6 18.0 13.4 16.3	14.4 13.0 7.4 10.1 13.0 17.5 22.5 15.0 16.8 18.4 10.0	14.4 14.3 7.4 10.1 17.5 9.2 29.6 18.0 13.4 17.0	14.5 14.3 8.0 20.80 17.5 9.2 29.6 16.8 18.4 17.0	6.01 9.56 15.90 10.1 17.5 8.00 17.80 9.80 14.26 5.55	28.50 21.30 44.0 52.0 185.0 28.0 17.80 20.0 19.0 15.0	57.0 5920 10.0 20.0 185.0 28.0 72.0 20.0 10.0 15.0	5.4 5100 4.3 700 1.3 3.0 1.8 6.69 10.0 15.0	1.5 200 1.3 700 20.0 30.0 10.0 270 10.0 15.0	5.1 4.8 1.3 1.3 20.0 30.0 50.0 690 30.0 50.0	0.14 0.05 0.05 0.05 0.30 0.30 0.20 0.30 0.20 0.20	0.40 0.30 0.30 0.30 0.30 0.30 0.20 0.30 0.20 0.20	1.08 3.74 14.30 4.96 3.03 12.90 47.00 3.80 3.80	
Buskerud (2.)	Lierelva. Drammensfj. Ø	309	266	222	18.6	20.7	18.6	20.7	13.80	74.0	50.0	1263	900	2.0	<0.01	0.25	3.54	
Vestfold (3.)	Sandeelva. Sandebukta Aulielva. Tønsbergfj. Farriselva. Larvikfj.	193 363 491	190 362 491	17.0 14.9 21.6	15.3 12.7 23.0	17.0 14.9 21.6	14.9 24.10 3.96	50.00 24.10 8.7	19.0 57.6 2.6	8.0 20.0 2.6	2030 2307 606	1700 1672 439	1.8 1.4 1.5	9.0 7.0 5.0	0.16 0.04 0.01	1.00 0.50 0.50	3.24 6.78 0.50	
Telemark (4.)	Tokkeelva. Kragerø Gjerstadelva. Søndeledfj. Veggårdselva. Sandnesfj.	1238 419 457	1200 291 291	26.7 21.9 23.4	19.4 27.0 29.3	26.7 21.9 29.3	19.4 27.0 25.7	3.21 3.16 3.93	4.0 5.0 2.0	1.0 404 482	428 200 240	1.7 1.6 0.6	17.2 7.0 30.0	0.10 0.04 <0.01	0.25 0.50 0.30	1.29 0.78 1.04		
Aust-Agder (5.)	Nidelva. Arendal	4025	3956	29.8	25.7	29.8	25.7	2.85	5.0	0.5	393	255	0.6	12.5	0.12	0.80	0.92	

Table 8.1 TRIBUTARY RIVERS: MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data						Parameters (mean values)									
		Drainage area			Discharge gauging station			Sampling station			1991 Cond mS/m						
		Outlet	Samp1.	Disch. station gaug. station	Normal	1991 Normal	1/s kv.km	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l	
(5.)	Tovdalselva. Topdalsfj.	1856	1854	1794	33.9	28.4	28.4	6.0	0.5	335	143	0.5	16.2	0.02	0.60		
	Søgneelva. Flekkeryg	204	192	192	38.0	34.4	34.4	9.0	3.0	596	430	1.3	20.0	0.07	0.70		
	Mandalselva. Mannefj.	1809	1800	1740	46.0	39.7	47.6	43.1	2.88	10.0	0.5	329	150	1.6	10.4		
	Audna. Sniksfj.	450	400	59	45.0	49.5	51.8	4.64	7.0	1.0	335	190	0.5	8.9	0.12	1.41	
	Lynna. Lyngdalsfj.	664	660	266	48.0	50.4	57.9	64.3	3.75	7.0	0.5	335	190	0.5	8.9	< 0.01	2.20
	Kvina. Fedafj.	1445	1140	1140	57.6	16.0	57.6	16.0	3.53	8.0	2.0	300	125	1.8	8.9	0.03	1.07
	Sira. Åna-Sira	1916	1872	1872	59.4	92.1	59.4	92.1	2.39	4.0	0.5	288	205	2.6	6.5	< 0.01	1.84
	Sokndalselva. Sogndalstr.	294	293	107	51.1	53.0	51.1	4.54	6.0	0.5	381	285	1.8	7.6	0.10	0.62	
	Hellelandselva. Egersund	241	240	194	57.5	61.3	71.1	80.4	3.56	9.0	2.0	434	335	0.5	7.7	< 0.01	0.62
	Bjerkreimselva. Egersund	705	704	633	77.7	68.8	86.4	78.9	3.27	5.0	1.0	399	335	1.3	7.6	0.02	0.64
(6.)	Håtangen	165	160	135	46.9	52.1	46.9	52.1	7.73	43.0	31.0	1260	980	1.7	13.9	0.27	4.60
	Figgjo. Solavika	229	218	135	50.0	58.3	50.0	58.3	7.66	33.0	23.0	1290	1020	1.4	16.4	0.02	1.20
	Ims-Lutsi. Høgsfj.Boknafj.	127	127	127	34.9	38.7	34.9	7.00	10.0	2.6	750	580	1.8	2.0	0.02	1.20	
	Oltedalse..Høgsfj.Boknafj.	102	101	129	70.0	76.3	70.0	5.00	54.0	8.0	560	260	1.8	4.0	0.02	1.00	
	Dirdalse..Høgsfj.Boknafj.	158	158	95	83.0	89.6	83.0	2.40	3.0	1.0	310	180	3.7	8.1	0.02	1.50	
	Frafjorde..Frafj.Boknafj.	178	178	124	94.4	101.9	94.4	2.50	4.0	1.0	310	200	1.0	4.0	0.02	1.30	
	Espedalselva..Høgsfj.Boknafj.	138	138	124	90.0	98.1	90.0	2.50	4.0	1.0	310	200	1.0	4.0	0.02	1.30	
	Lyseelva.. Lysefj.Boknafj.	182	182	46	74.0	85.1	74.0	2.50	4.0	1.0	310	200	1.0	4.0	0.02	1.30	
	Årdalselva..Årdalsfj.Boknafj.	519	516	501	81.4	32.8	81.4	2.56	4.0	0.5	356	310	0.6	3.9	0.02	1.30	
	Førree.. Jøsenfj.Boknafj.	163	163	163	85.8	103.0	85.8	2.50	4.0	0.5	300	250	1.0	4.0	0.02	1.30	
(7.)	Ulla. Jøsenfj.Boknafj.	393	393	385	83.4	100.0	83.4	4.0	0.5	300	250	1.0	4.0	0.02	1.30		
	Saudafj.. Saudafj.Boknafj.	353	353	82	85.0	98.6	85.0	2.10	3.0	1.0	280	220	1.0	3.0	0.02	1.30	
	Åbøelva. Saudafj.Boknafj.	82	82	82	85.0	98.6	85.0	2.10	3.0	1.0	280	220	1.0	3.0	0.02	1.30	
	Vikedalselva.. Boknafj.	118	117	80.0	91.2	80.0	2.97	8.0	0.5	320	245	0.7	4.4	0.02	1.10		

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data				Parameters (mean values)												
		Outlet	Sampl. station	Disch. gaug. station	Sampling station	Discharge	gauging station	Cond mS/m	1991 Normal	1991 I/s kv.km	Tot-P ug/l	PO4-P ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l
(7.)	Hordaland Etneelva. Etnefj. Bømlafj.	252	250	127	48.8	56.6	96.0	108.7	2.90	5.6	0.5	412	230	0.8	4.9	0.02	0.50	1.00
	Opo. Sørkj. Hardangerfj.	482	480	464	79.3	81.9	79.3	81.9	1.50	5.0	0.5	207	133	0.9	6.9	0.02	0.40	1.06
	Tysso. Sørkj. Hardangerfj.	388	385	407	79.3	80.9	79.3	79.3	1.50	3.0	1.0	150	113	0.8	3.6	0.11	0.60	0.39
	Kinsø. Sørkj. Hardangerfj.	281	281	232	46.0	48.3	46.0	48.3	2.16	3.0	0.5	116	79	2.7	1.0	0.12	0.40	0.54
	Veig. Eidsfj. Hardangerfj.	496	496	386	41.8	29.2	41.8	29.2	2.30	3.0	0.5	150	80	0.6	3.0	<0.01	<0.10	0.50
	Bjoreia. " Hardangerfj.	592	592	592	26.0	9.7	26.0	9.7	2.27	3.0	0.5	150	84	0.6	3.0	0.63	0.30	0.48
	Sima. Eidsfj. Hardangerfj.	145	145	128	69.2	83.0	69.2	83.0	2.56	3.0	0.5	150	134	0.5	1.0	0.20	0.30	0.46
	Austdøla. Osafj. Eidsfj.	131	130	89	74.6	89.5	74.6	89.5	2.00	8.0	3.0	180	150	1.0	5.0	<0.01	0.30	0.50
	Norddøla. Osafj. Eidsfj.	40	39	89	74.6	89.5	74.6	89.5	3.90	8.0	3.0	230	210	1.0	5.0	<0.01	0.30	0.50
	Tysseelva. Fusafj.	240	240	85.0	98.6	85.0	98.6	85.0	1.44	4.0	0.5	144	79	0.8	2.5	<0.01	0.40	0.56
	Oseleva. Fusafj.	109	108	50	91.7	111.4	91.7	111.4	3.80	10.0	7.0	340	150	1.0	10.0	<0.01	0.30	1.00
	Bergsdalselv. Veafj. Herdrafj	198	198	80.0	86.4	80.0	86.4	80.0	1.52	4.0	0.5	138	78	1.0	3.2	0.06	0.30	0.62
	Vosso. Veafj. Sørkj.	1492	1465	1102	58.2	64.0	58.2	64.0	1.48	5.0	0.5	248	143	0.8	4.0	0.03	0.30	0.78
	Eksø. Osterkj.	414	400	342	86.2	86.2	86.2	86.2	0.99	2.0	1.0	131	35	1.0	8.0	<0.01	<0.10	0.70
	Modalselva. Osterkj.	385	384	248	95.5	95.5	95.5	95.5	0.80	3.0	1.0	105	70	1.0	5.0	<0.01	<0.10	0.50

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data						Parameters (mean values)										
		Drainage area			Discharge			1991 Normal 1/s kv.km	1991 Cond mS/m	Tot-P ug/l	PO4-P ug/l	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l
		Outlet kv.km	Sampl. kv.km	Disch. station gaug. station	Sampling station Normal 1/s kv.km	Sampling station Normal 1/s kv.km	gauging station											
Møre og Romsdal (8.)	Ørstaæ.. Ørstafj.	160	155	70.0	84.0	70.0	3.31	8.0	1.0	282	195	0.5	2.0	0.04	0.60	0.75		
	Valldøla. Norddalfj. Storfj.	359	357	60.0	60.6	60.0	2.40	4.0	0.5	254	195	1.0	1.6	<0.01	0.40	0.50		
	Rauma. Romsdalsfj. Moldefj.	1202	1190	1142	32.8	23.9	23.9	2.06	3.0	0.5	122	82	5.1	2.6	0.04	0.40	0.71	
	Isa. Isfj. Moldefj.	175	175	89	57.0	55.3	57.0	2.82	5.0	2.0	242	160	1.6	3.2	0.06	0.40	1.65	
	Eira. Eresfj. Moldefj.	1119	1119	1085	34.8	39.0	34.8	2.65	3.0	0.5	236	185	0.6	1.9	0.11	2.40	0.87	
	Littledalse.. Sunndalsfj.	330	330	41.0	45.1	41.0	1.08	4.0	1.0	81	15	5.2	1.6	0.03	1.50	0.47		
	Driva. Sunnd.fj. Tingvollfj.	2435	2435	27.9	30.4	27.9	3.12	5.0	1.0	197	133	1.1	2.0	0.62	0.30	1.18		
	Ulvåa. Ålvundsfj.	199	199	207	57.0	62.1	60.7	2.41	7.0	2.0	225	127	3.4	3.6	0.05	0.40	1.21	
	Toåa. Todalsfj.	251	251	207	58.5	41.9	41.9	2.07	4.0	0.5	110	34	1.5	1.6	0.04	0.60	0.65	
	Surna. Surnadalsfj.	1200	1200	1125	48.0	55.2	49.3	2.87	5.0	0.5	242	149	1.0	5.3	0.06	0.20	1.63	
	Bøvra. Hamnesfj. Halsafj.	243	243	196	55.0	63.3	55.0	5.77	5.0	1.0	179	67	1.4	1.6	<0.01	0.30	0.91	
	Børse.. Gaulosen Tr.h.fj.	110	100	30.0	32.4	30.0	10.75	14.0	3.0	918	630	2.8	2.6	0.05	0.20	3.01		
	Vigda. Gaulosen Tr.h.fj.	150	150	30.0	32.4	30.0	12.48	10.0	3.0	453	260	1.6	3.8	0.05	0.60	9.89		
	Gaula. Gaulosen Tr.h.fj.	3659	3650	3062	26.4	29.0	26.4	3.95	5.0	1.0	218	75	2.3	4.3	0.05	0.80	3.39	
	Niddefj. Trondheimsfj.	3110	3100	3049	35.5	32.5	35.5	3.67	7.0	2.0	200	81	1.4	2.1	0.05	0.20	2.03	
	Homla. Stjørd.fj. Tr.h.fj.	157	157	30.0	30.0	30.0	6.08	27.0	3.0	318	53	1.7	2.9	0.05	0.20	2.34		
Nord-Trøndelag (8.)	Stjørdalsv." Tr.h.fj.	2117	2117	1863	38.5	28.4	28.4	3.71	10.0	5.0	300	188	1.9	3.7	0.02	1.20	12.70	
	Gråe.. " Tr.h.fj.	93	93	25.0	25.0	25.0	4.00	10.0	3.0	300	150	1.0	5.0	0.02	0.40	2.00		
	Verdalsvassdr.. Tr.h.fj.	1472	1472	898	31.6	44.5	35.2	4.35	6.0	2.0	258	143	1.1	1.0	0.02	0.30	1.54	
	Figgja/Leksdalsdr.. Tr.h.fj.	282	282	178	30.0	28.8	33.6	5.55	13.0	4.0	531	200	1.5	2.5	0.02	0.70	5.93	
	Snåsavassdr.. Trondh.fj.	2153	2125	35.1	26.5	35.1	26.5	4.81	10.0	2.0	300	124	1.0	1.3	0.02	0.20	1.31	
	Årgårdselva. Namsfj.	543	510	238	43.0	39.3	50.9	46.2	4.47	14.9	1.0	361	10	0.9	3.8	0.02	0.30	0.44
	Namsen. Namsfj. Ø	6277	6276	5718	44.0	46.2	43.4	2.01	4.0	1.0	117	33	1.2	3.5	0.02	0.40	0.99	
	Salsvatnetv. Folla f.	432	432	422	59.7	65.7	59.7	4.95	3.0	1.0	129	66	1.1	2.0	0.02	0.80	0.26	

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data				Parameters (mean values)											
		Outlet	Sampl. station	Disch. gaug. station	Sampling station	Discharge	1991	Normal	gauging station	Cond mS/m	Tot-N ug/l	NO3-N ug/l	Cu ug/l	Zn ug/l	Cd ug/l	Pb ug/l	S.P.M. mg/l
		kv.km	kv.km	kv.km	kv.km	1/s	kv.km	1/s	kv.km	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Nordland (9.)	Åbjøra. Bindalsfj. S Skjerva. Vefsensfj. S Fusta. Vefsensfj. N Drevja. Vefsensfj. N Røssåga. Sørkj. F. Bjerka. Sørkj. F. Dalselva. Ranafj. N Ranavassdraget. Ranafj. N Fykanaåga. Glomfjord Beiare..Beiarfj. Nordfj. Saltdalsvassdr..Saltd.fj.S Sulitjelma vassdr..Saltd.fj Kobbe. Leirfj. Sørfolda N Skjona. Oftofj. S	526 104 544 177 2092 385 211 3846 3847 297 1064 1544 1028 405 845	520 104 543 176 1880 273 129 1892 51.3 243 875 1543 800 386 840	384 98 520 98 1880 273 129 1892 61.6 103.7 797 1168 791 66.9 797	80.2 41.3 63.4 65.0 45.4 55.4 39.5 51.3 61.6 119.3 45.1 32.1 44.0 78.3 41.7	52.9 49.6 76.1 78.0 45.4 60.9 43.5 51.3 44.9 103.7 51.4 38.5 46.2 66.9 36.3	80.2 41.3 63.4 65.0 45.4 55.4 39.5 51.3 61.6 103.7 45.1 32.1 44.0 78.3 41.7	52.9 41.3 63.4 65.0 45.4 55.4 39.5 51.3 61.6 103.7 51.4 32.1 44.0 66.9 36.3	2.03 5.00 2.43 4.49 3.91 3.03 2.23 2.21 2.21 2.99 2.13 1.62 39.86 1.92 1.41	4.0 10.0 5.0 5.0 4.0 4.0 4.0 4.0 4.0 2.0 10.0 4.0 4.0 4.0 4.0	59 350 77 101 95 47 53 65 65 84 59 59 101 65 53	1.0 3.0 1.0 3.0 1.0 1.0 1.0 1.0 1.0 2.0 10 1.0 1.0 1.0 1.0	12 100 20 43 47 1.1 17 37 37 42 31 36 53 38 16	1.0 1.0 0.7 0.3 2.1 1.0 0.8 0.5 1.1 1.0 1.5 0.8 18.9 0.8 0.7	0.02 5.0 1.0 1.2 2.1 1.0 1.0 0.5 1.1 1.0 4.8 1.3 30.0 2.3 1.1	0.30 0.02 0.02 0.02 0.04 0.02 0.02 0.04 0.04 0.02 0.02 0.02 0.02 0.05 0.02 0.02	0.43 2.00 1.03 2.21 0.55 1.45 0.82 2.41 1.70 11.00 5.19 1.02 0.72 0.20 0.20

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

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Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

Table 8.2 TIBIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data						Parameters (mean values)					
		Drainage area			Discharge			Sampling station			gauging station		
		Outlet	Sampl. station	Disch. gaug. station	Normal	1991	Normal	1991	Hg	HCH	Gamma	PCB (The following Congeners)	IUPAC NOS
Møre og Romsdal (8.)	Ørstae.. Ørstafj. Valldøla. Nordafj. Storfj. Rauma. Romsdalsfj. Moldefj. Isa. Isfj. Moldefj. Eira. Eresfj. Moldefj. Littledalse.. Sunndalsfj. Driva. Sunnd. fj. Tingvollfj. Ulvåa. Ålvundsfj. Toåa. Todalsfj. Surna. Surnadalsfj. Bøvra. Hammesfj. Halsafj. Børse.. Gaulosen Tr.h.fj. Vigda. Gaulosen Tr.h.fj. Gaula. Gaulosen Tr.h.fj. Niddeva. Trondheimsfj. Homla. Stjørdalfj. Tr.h.fj.	160	155	70.0	84.0	70.0	<2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
		359	357	60.0	60.6	60.0	<2.0	0.50	<0.05	<0.05	<0.05	<0.05	<0.05
		1202	1190	1142	32.8	32.8	23.9	<2.0	1.30	<0.05	<0.05	<0.05	<0.05
		175	175	89	57.0	55.3	57.0	<2.0	1.30	<0.05	<0.05	<0.05	<0.05
		1119	1119	1085	34.8	39.0	34.8	<2.0	1.20	<0.05	<0.05	<0.05	<0.05
		359	330	41.0	45.1	41.0	<2.0	1.00	<0.05	<0.05	<0.05	<0.05	<0.05
		2487	2435	2435	27.9	30.4	27.9	<2.0	0.20	<0.05	<0.05	<0.05	<0.05
		199	199	207	57.0	62.1	60.7	<2.0	0.20	<0.05	<0.05	<0.05	<0.05
		251	251	207	58.5	41.9	58.5	<2.0	0.20	<0.05	<0.05	<0.05	<0.05
		1200	1200	1125	48.0	55.2	49.3	<2.0	0.24	<0.05	<0.05	<0.05	<0.05
		243	243	196	55.0	63.3	55.0	<2.0	0.70	<0.05	<0.05	<0.05	<0.05
		110	100	30.0	32.4	30.0	<2.0	0.50	<0.05	<0.05	<0.05	<0.05	<0.05
		150	150	30.0	32.4	30.0	<2.0	0.50	<0.05	<0.05	<0.05	<0.05	<0.05
		3659	3650	3062	26.4	29.0	26.4	<2.0	0.37	<0.05	<0.05	<0.05	<0.05
		3110	3100	3049	35.5	32.5	35.5	32.5	0.40	<0.05	<0.05	<0.05	<0.05
Nord- Trøndelag (8.)	Stjørdalsv. " Tr.h.fj. Gråe.. " Tr.h.fj. Verdalvassdr.. Tr.h.fj. Figga/Leksdalselv.. Tr.h.fj. Snåsavassdr.. Trondh.fj. Årgårdselva. Namsfj. Namsen. Namsfj. Ø Salsvatnøya. Follafl.	2117	2117	1863	28.4	38.5	28.4	<2.0	0.10	<0.05	<0.05	<0.05	<0.05
		93	93	25.0	25.0	25.0	<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05
		1472	1472	898	40.0	31.6	44.5	35.2	0.10	<0.05	<0.05	<0.05	<0.05
		282	282	178	30.0	28.8	33.6	32.6	0.10	<0.05	<0.05	<0.05	<0.05
		2153	2125	2125	35.1	26.5	35.1	26.5	0.10	<0.05	<0.05	<0.05	<0.05
		543	510	238	43.0	39.3	50.9	46.2	0.25	<0.05	<0.05	<0.05	<0.05
		6277	6276	5718	44.0	46.2	43.4	<2.0	0.28	<0.05	<0.05	<0.05	<0.05
		432	432	422	59.7	65.7	59.7	<2.0	0.25	<0.05	<0.05	<0.05	<0.05

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

County	Watercourse	Runoff data										Parameters (mean values)					
		Drainage area			Sampling station			Discharge gauging station			PCB (The following Congeners)			IUPAC NOS			
		Outlet	Sampl.	Disch. gaug. station	Normal	1991	Normal	1/s kv.km	Hg	HCH	Gamma	28	52	101	118	138	153
(9.)	Åbjøra. Bindalsfj. S	526	520	384	80.2	52.9	80.2	52.9	<2.0	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Skjerva. Vefsenvf. S	104	104	98	41.3	49.6	41.3		<2.0	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Fusta. Vefsenvf. N	544	543	520	63.4	76.1	63.4		<2.0	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Drevja. Vefsenvf. N	177	176	98	65.0	78.0	65.0		<2.0	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Røssæga. Sørhf.	2092	2087	1880	45.4	54.9	45.4		<2.0	0.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Bjerka. Sørhf.	385	385	273	55.4	60.9	55.4		<2.0	0.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Dalselva. Ranafj. N	211	211	129	39.5	43.5	39.5		<2.0	0.40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Ranavassdraget. Ranafj. N	3847	3846	1892	51.3	61.6	44.9		<2.0	0.40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Fykänåga. Glomfjord	297	297	243	103.7	119.3	103.7		<2.0	0.40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Beiare..Beiarfj. Nordfj.	1064	875	797	45.1	51.4	45.1		<2.0	0.40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Saltdalsvassdr..Saltd.fj.S	1544	1543	1168	32.1	38.5	32.1		<2.0	3.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Sulitjelmavassdr..Saltd.fj	1028	800	791	44.0	46.2	44.0		<2.0	3.60	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Kobbe. Leirfj. Sørfolda N	405	405	386	66.9	78.3	66.9		<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Skjomna. Ofotfj. S	845	840	797	36.3	41.7	36.3		<2.0	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1991.

APPENDIX IX : TRIBUTARY RIVERS. ANNUAL LOAD 1991			Page:
Table 9.1	Cond., Nutrients, Heavy metals, Suspended part.matter		78-84
Table 9.2	Mercury, Lindane, PCBs *(Detection limit = limit)		86-92
(1)	Glomma "tributaries"	: Tista	- Hølenelva
(1)	Inner Oslo-fjord	: Årungelva	- Åroselva
(2)	Drammenselva "tributary"	: Lierelva	
(3)	Numedalslågen "tributaries"	: Sandeelva	- Farriselva
(4)	Skienselva "tributary"	: Tokkeelva	
(5)	Otra "tributaries"	: Gjerstade.	- Audna
(6)	Orreelva "tributaries"	: Lygna	- Ulla
(7)	Suldalslågen "tributaries"	: Saudaelva	- Hornindalselva
(8)	Orkla "tributaries"	: Ørstaelva	- Salsvatnelva
(9)	Vefsna "tributaries"	: Åbjøra	- Reisa
(10)	Alta "tributaries"	: Mattiselva	- Grense Jacobse.

* Measurements below detection limits are treated in two ways:
 "Detection limit = Zero", and "Detection limit = limit". This
 concerns the substances Cd, Pb, Hg and PCBs. In Tables 9.1-9.2
 as well as in Tables 5.1-5.4 both "zero- and limit-values" are
 shown.

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Runoff data						Parameters (mean values)									
		Drainage area			Discharge			Cond mS/m	Tot-P tons	PO4-P tons	Tot-N tons	NO3-N tons	Cu tons	Zn tons	Cd zero tons	Pb limit tons	
		Outlet kv.km	Sampl. station kv.km	Disch. gaug. station kv.km	Sampling station Normal 1/s kv.km	1991 Normal 1/s kv.km	gauging station 1991 1/s kv.km										
Østfold (1.)	Tista. Iddefj.	1588	1582	14.4	12.4	6.01	11.5	1.4	593	431	1.08	3.66	0.10	0.10	0.29	0.29	
	Mosselva. Mossesundet	690	689	14.5	14.3	9.56	7.9	1.3	333	63	0.41	1.51	0.02	0.02	0.09	0.09	
	Hølenelva. Drøbak sundet	137	121	14.0	12.9	28.50	4.5	3.0	316	272	0.23	0.29	0.00	0.00	0.02	0.02	
	Årungelva. I. Oslofj.	52	50	13.0	12.8	21.30	0.9	0.2	53	14	0.03	0.03	0.00	0.00	0.01	0.01	
	Gjersjøelva. I. Oslofj.	86	85	14.0	7.4	7.4	15.90	0.6	0.1	59	37	0.07	0.17	0.01	0.01	0.01	0.01
	Ijanselva. I. Oslofj.	42	41	13.0	10.1	10.1	20.80	0.9	0.3	25	11	0.17	0.42	0.00	0.00	0.03	0.03
	Loelva/Alna. I. Oslofj.	75	69	13.0	17.5	28.20	5.2	1.5	63	20	0.57	0.85	0.01	0.01	0.51	0.51	
	Akersselva. I. Oslofj.	227	225	17.5	9.2	9.2	8.00	3.5	0.4	85	41	2.48	6.21	0.02	0.02	0.47	0.47
	Frognerelva. I. Oslofj.	23	20	20	15.0	29.6	17.80	0.7	0.4	13	4	0.19	0.57	0.00	0.00	0.02	0.02
	Lysakerelva. I. Oslofj.	178	173	16.8	18.0	16.8	9.80	1.8	0.3	61	25	0.92	0.92	0.00	0.00	0.05	0.05
Akershus (1.)	Sandvikselva. I. Oslofj.	223	187	18.4	13.4	14.26	2.1	1.1	126	105	0.49	1.41	0.02	0.02	0.33	0.33	
	Åroselva. I. Oslofj.	113	109	109	17.0	16.3	17.0	5.55	3.3	0.9	99	34	0.29	0.58	0.01	0.03	0.03
	Lierelva. Drammensfj. Ø	309	266	222	18.6	20.7	13.80	11.5	7.8	197	140	0.31	1.89	0.00	0.00	0.04	0.04
	Sandeelva. Sandebukta	193	190	17.0	15.3	50.00	1.9	0.8	207	173	0.18	0.92	0.02	0.02	0.10	0.10	
	Aulielva. Tønsbergfj.	363	362	14.9	12.7	24.10	9.8	3.4	392	284	0.24	1.19	0.01	0.01	0.09	0.09	
	Farriselva. Larvikfj.	491	491	21.6	23.0	3.96	2.9	0.9	203	147	0.50	1.67	0.00	0.00	0.17	0.17	
	Tokkeelva. Kragerø	1238	1200	26.7	19.4	26.7	3.21	4.0	1.0	432	273	1.72	17.38	0.10	0.10	0.25	0.25
	Gjerstadelva. Søndeledsf.	419	414	291	27.0	21.9	3.16	1.8	0.4	142	71	0.56	3.45	0.05	0.05	0.11	0.11
	Vegårdselva. Sandnesfj.	457	429	291	23.4	29.3	3.93	3.6	0.8	191	95	0.24	11.89	0.00	0.00	0.12	0.12
	Nidelva. Arendal	4025	3956	29.8	25.7	25.7	2.85	18.9	1.9	1485	963	2.27	47.22	0.45	0.45	3.02	3.02

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Runoff data										Parameters (mean values)									
		Drainage area					Sampling station					Discharge gauging station					Cond 1991				
		Outlet	Sampl.	Disch.	station	gaug.	station	Normal	1991	Normal	1/s	kv.km	mS/m	Tot-P	PO4-P	Tot-N	NO3-N	Cu	Zn	C d zero tons	P b zero tons
(5.)	Tovdalselva, Topdalsfj.	1856	1854	1794	33.9	28.4	28.4	33.9	28.4	2.64	11.9	1.0	664	283	0.99	32.11	0.04	0.04	1.19	1.19	1.19
	Søgneelva, Flekkeføy	204	192	192	38.0	34.4	38.0	34.4	38.0	5.41	2.1	0.7	137	99	0.30	4.60	0.02	0.02	0.16	0.16	0.16
	Mandalselva, Mannefj.	1809	1800	1740	46.0	39.7	47.6	43.1	2.88	26.1	1.3	859	392	4.18	27.16	0.55	0.55	1.83	1.83	1.83	
	Audna, Sniksfj.	450	400	59	45.0	49.5	51.8	46.4	4.64	4.0	0.6	190	108	0.28	5.05	0.07	0.07	0.23	0.23	0.23	
	Lygna, Lyngdalsfj.	664	660	266	48.0	50.4	57.9	64.3	3.75	7.0	0.5	335	190	0.50	8.89	0.00	0.01	0.60	0.60	0.60	
	Kvina, Fedafj.	1445	1140	1140	57.6	16.0	57.6	16.0	3.53	16.6	4.1	621	259	3.73	18.43	0.06	0.06	1.66	1.66	1.66	
	Sira, Ana-Sira	1916	1872	1872	59.4	92.1	59.4	92.1	2.39	14.0	1.8	1010	719	9.12	22.79	0.00	0.04	2.45	2.45	2.45	
	Sokndalselva, Sogndalsstr.	294	293	107	51.1	53.0	51.1	53.0	4.54	2.8	0.2	180	135	0.85	3.59	0.05	0.05	0.19	0.19	0.19	
	Helllandselva, Egersund	241	240	194	57.5	61.3	71.1	80.4	3.56	3.9	0.9	189	146	0.22	3.35	0.00	0.00	0.17	0.17	0.17	
	Bjerkreimselva, Egersund	705	704	633	77.7	68.8	86.4	78.9	3.27	8.6	1.7	688	578	2.24	13.11	0.03	0.03	0.69	0.69	0.69	
(6.)	Håelva, Håtangen	165	160	135	46.9	52.1	46.9	52.1	7.73	10.2	7.3	298	232	0.40	3.29	0.06	0.06	0.19	0.19	0.19	
	Figgjo, Solavika	229	218	135	50.0	58.3	50.0	58.3	7.66	11.3	7.9	443	351	0.48	5.64	0.01	0.01	0.41	0.41	0.41	
	Ims-Lutis, Høgsfj.Boknafj.	127	127	127	34.9	38.7	34.9	7.00	1.4	0.4	105	81	0.25	0.28	0.00	0.00	0.07	0.07	0.07		
	Oltedals..Høgsfj.Boknafj.	101	129	70.0	76.3	70.0	76.3	5.00	12.0	1.8	125	58	0.40	0.89	0.00	0.00	0.22	0.22	0.22		
	Dirdal..Høgsfj.Boknafj.	158	95	83.0	89.6	83.0	89.6	2.40	1.2	0.4	128	74	1.53	3.35	0.01	0.01	0.62	0.62	0.62		
	Frafjorde..Frafj..Boknafj.	178	124	94.4	101.9	94.4	101.9	2.50	2.1	0.5	164	106	0.53	2.12	0.01	0.01	0.16	0.16	0.16		
	Espedals..Høgsfj.Boknafj.	138	138	124	90.0	98.1	90.0	98.1	2.50	1.6	0.4	121	78	0.39	1.57	0.01	0.01	0.12	0.12	0.12	
	Lyseee..Lysefj.Boknafj.	182	46	74.0	85.1	74.0	85.1	2.50	1.7	0.4	132	85	0.42	1.70	0.01	0.01	0.13	0.13	0.13		
	Årdalsel..Årdalsfj.Boknafj.	516	501	81.4	32.8	81.4	32.8	2.56	5.3	0.7	472	411	0.79	5.17	0.03	0.03	0.40	0.40	0.40		
	Førree..Jøsenfj.Boknafj.	163	163	163	85.8	103.0	85.8	103.0	2.50	1.8	0.2	132	110	0.44	1.76	0.01	0.01	0.13	0.13	0.13	
	Ulla..Jøsenfj.Boknafj.	393	393	83.4	100.0	83.4	100.0	2.50	4.1	0.5	310	258	1.03	4.13	0.02	0.02	0.31	0.31	0.31		
(7.)	Saudae..Saudafj.Boknafj.	353	353	85.0	98.6	85.0	98.6	2.10	2.8	0.9	265	208	0.95	2.84	0.02	0.02	0.28	0.28	0.28		
	Åboelvla..Saudafj.Boknafj.	82	82	85.0	98.6	85.0	98.6	2.10	0.7	0.2	62	48	0.22	0.66	0.00	0.00	0.07	0.07	0.07		
	Vikedals..Boknafj.	118	117	80.0	91.2	80.0	91.2	2.97	2.4	0.1	94	72	0.21	1.30	0.01	0.01	0.09	0.09	0.09		

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

Table 9.1 TRIBUTARY RIVERS: ANNUAL LOAD 1991.

County	Watercourse	Runoff data				Discharge gauging station				Parameters (mean values)				Cd zero tons	Pb zero limit tons		
		Drainage area	Samp. station	Disch. gaug. station	Sampling station	Normal 1991	Normal 1991	Cond 1991	Tot-P tons	PO4-P tons	Tot-N tons	NO3-N tons	Cu tons	Zn tons			
Nærøye.. Aurlfj. Sognefj.	290	290	267	59.5	65.5	59.5	1.71	1.6	0.3	94	78	0.33	4.90	0.03	0.22		
Flåmse.. Aurlfj. Sognefj.	280	275	275	52.4	47.2	52.4	4.24	0.9	0.2	107	93	0.23	0.45	0.02	0.00		
Aurlandy.Aurlfj. Sognefj.	800	799	762	48.6	54.9	48.6	1.59	3.7	0.6	253	208	0.61	1.22	0.01	0.00		
Erdalse. Lærdfj. Sognefj.	138	138	30.0	29.1	30.0	18.2	1.48	0.4	0.1	22	16	0.09	0.26	0.01	0.05		
Lærdalsv.Lærdfj. Sognefj.	1184	1172	30.0	18.2	30.0	18.2	2.57	6.7	0.6	218	172	1.00	1.55	0.04	0.04		
Årdalsv. Årdalsfj. Sognefj.	989	989	44.9	38.0	44.9	38.0	1.18	6.0	1.8	248	99	6.02	7.00	0.01	0.70		
Fortun. Lustefj. Sognefj.	508	508	367	51.0	58.6	51.0	1.25	3.3	0.8	118	93	1.14	0.82	0.00	0.01		
Mørkrivs.Lustefj. Sognefj.	282	282	203	54.7	47.6	54.7	47.6	1.43	1.0	0.2	93	73	0.24	0.49	0.01	0.00	
Jostedøla.. " Sognefj.	865	864	573	68.0	60.9	68.0	60.9	2.18	5.6	0.9	384	324	0.93	1.85	0.00	0.02	
Årøye.. Sogndfj. Sognefj.	449	446	384	77.2	82.6	77.2	1.57	4.3	0.5	156	92	0.54	1.09	0.02	0.00		
Sognedalse.. " Sognefj.	175	172	111	66.1	71.4	66.1	1.49	2.2	0.2	66	37	0.18	1.43	0.00	0.14		
Gaular. Dalsfj. Bufj.	627	625	505	79.3	84.4	79.3	84.4	1.27	9.4	0.8	289	180	0.78	2.19	0.05	0.63	
Jølstra. Førdefj.	714	709	384	74.3	81.1	74.3	81.1	1.57	8.3	0.8	307	198	0.83	4.82	0.00	0.66	
Nausta. Førdefj.	277	273	232	81.7	81.5	81.7	81.5	1.68	4.2	0.7	130	80	0.35	1.41	0.00	0.21	
Oselva. Høydalsfj.	287	285	225	78.7	90.5	78.7	90.5	1.94	4.2	0.7	98	36	0.35	3.75	0.03	0.28	
Hopse.. Hyejf. Nordfj.S	73	73	161	75.0	86.3	75.0	75.0	2.41	0.5	0.2	23	17	0.09	0.26	0.01	0.00	
Gjengedalse.. " Nordfj.S	170	168	161	75.0	75.7	75.0	75.7	1.33	1.6	0.4	52	28	0.20	1.03	0.01	0.12	
Brimsc.. Gløppenfj.	636	634	585	68.0	74.8	68.8	74.8	1.77	6.8	1.4	329	265	1.09	1.90	0.00	0.50	
Oldene.. Indre Nordfj.	226	225	214	70.1	63.9	70.1	63.9	1.62	2.0	0.5	103	87	0.45	0.80	0.01	0.20	
Loenelva. Indre Nordfj.	261	260	234	65.0	62.9	65.0	62.9	1.89	8.0	6.4	86	67	0.80	1.17	0.02	0.21	
Stryne.. Indre Nordfj.	532	530	493	60.2	54.7	60.2	54.7	1.85	4.0	1.0	186	134	1.31	1.01	0.00	0.10	
Hornindalsc.. Nordfj. N	428	424	378	58.1	57.8	58.1	57.8	2.13	3.1	0.8	211	159	0.47	1.71	0.02	0.16	

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Runoff data						Parameters (mean values)											
		Drainage area			Discharge			Cond mS/m	Tot-P tons	PO4-P tons	Tot-N tons	NO3-N tons	Cu tons	Zn tons	Cd zero tons	P b limit tons			
		Outlet kv.km	Samp. station kv.km	Disch. gaug. station kv.km	Sampling station Normal 1/s kv.km	1991 Normal 1/s kv.km	gauging station 1991 1/s kv.km												
Møre og Romsdal (8.)	Ørsta.. Ørstafl.	160	155	70.0	84.0	70.0	3.31	2.7	0.3	96	67	0.68	0.01	0.01	0.21	0.21			
	Valldøla. Nordalfj. Storfj.	359	357	60.0	60.6	60.0	2.40	2.7	0.3	172	132	0.68	1.08	0.00	0.01	0.27	0.27		
	Rauma. Romsdalsfj. Molde Isa. Isfj. Moldefj.	1202	1190	1142	32.8	32.8	23.9	2.06	3.7	0.6	150	101	6.28	3.20	0.05	0.05	0.49	0.49	
	Eira. Eresfj. Moldefj.	175	175	89	57.0	55.3	57.0	2.82	1.6	0.6	76	50	0.50	1.01	0.02	0.02	0.13	0.13	
	Litledalse.. Sunndalsfj.	1119	1119	1085	34.8	39.0	34.8	2.65	3.7	0.6	290	227	0.74	2.33	0.14	0.14	2.95	2.95	
	Driva. Sunnd.fj. Tingvollfj.	359	330	330	41.0	45.1	41.0	1.08	1.7	0.4	35	6	2.22	0.68	0.01	0.01	0.64	0.64	
	Ulvåa. Ålvundsfj.	2487	2435	2435	27.9	30.4	27.9	3.12	10.7	2.1	422	285	2.36	4.28	1.33	1.33	0.64	0.64	
	Toåa. Todalsfj.	199	199	207	57.0	62.1	60.7	2.41	2.5	0.7	80	45	1.22	1.29	0.02	0.02	0.14	0.14	
	Surna. Surnadalsfj.	251	251	207	58.5	41.9	58.5	41.9	2.07	1.9	0.2	51	16	0.69	0.74	0.02	0.02	0.28	0.28
	Bøvra. Hammesfj. Halsafj.	1200	1200	1125	48.0	55.2	49.3	2.87	9.1	0.9	440	271	1.82	9.63	0.11	0.11	0.36	0.36	
	Børsc.. Gaulosen Tr.h.fj.	243	243	196	55.0	63.3	55.0	5.77	2.1	0.4	75	28	0.59	0.67	0.00	0.00	0.13	0.13	
	Vigda. Gaulosen Tr.h.fj.	110	100	30.0	32.4	30.0	10.75	1.3	0.3	87	60	0.26	0.25	0.00	0.00	0.02	0.02		
Sør-Trøndelag (8.)	Gaula. Gaulosen Tr.h.fj.	150	150	30.0	32.4	30.0	12.48	1.4	0.4	64	37	0.23	0.54	0.01	0.01	0.09	0.09		
	Nidelva. Trondheimsfj.	3659	3650	3062	26.4	29.0	26.4	3.95	15.2	3.0	662	228	6.99	13.07	0.15	0.15	2.43	2.43	
	Homla. Stjørd.fj.Tr.h.fj.	3110	3100	3049	35.5	32.5	35.5	3.67	24.3	6.9	694	281	4.86	7.29	0.17	0.17	0.69	0.69	
	Stjørdalsv. " Tr.h.fj.	2117	2117	1863	38.5	28.4	38.5	2.71	25.7	12.9	771	483	4.88	9.51	0.05	0.05	3.08	3.08	
	Gråe. " Tr.h.fj.	93	93	25.0	25.0	25.0	4.00	0.7	0.2	22	11	0.07	0.37	0.00	0.00	0.03	0.03		
	Verdalsvassdr. Tr.h.fj.	1472	1472	898	40.0	31.6	44.5	4.35	11.1	3.7	479	266	2.04	1.86	0.04	0.04	0.56	0.56	
	Figga/Leksdalse..Tr.h.fj.	282	282	178	30.0	28.8	33.6	5.55	3.5	1.1	142	53	0.40	0.67	0.01	0.01	0.19	0.19	
	Snåsavassdr.. Trondh.fj.	2153	2125	2125	35.1	26.5	26.5	4.81	23.5	4.7	706	292	2.35	3.06	0.05	0.05	0.47	0.47	
	Ålgårdselv. Namsfj. Ø	543	510	238	43.0	39.3	50.9	46.2	4.47	10.3	0.7	250	7	0.62	2.63	0.01	0.01	0.21	0.21
	Namsen. Namsfj. Ø	6277	5718	44.0	46.2	43.4	2.01	34.8	8.7	1019	287	10.45	30.48	0.17	0.17	3.48	3.48		
	Salsvatnetv. Follafl.	432	422	59.7	65.7	59.7	4.95	2.4	0.8	105	54	0.89	1.63	0.02	0.02	0.65	0.65		

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Runoff data										Parameters (mean values)											
		Drainage area		Discharge		gauging station		Cond		Tot-P		PO4-P		Tot-N		NO3-N		Cu		Zn		Cd	
		Outlet	Samp. station	Disch. gaug. station	Normal	1991	Normal	1/s	kv.km	1/s	kv.km	tons	tons	tons	tons	tons	tons	tons	tons	zero tons	limit tons	zero tons	limit tons
Nordland (9.)	Åbjøra, Bindalsfj. S	526	520	384	80.2	52.9	80.2	2.03	5.3	1.3	78	16	1.32	1.32	0.03	0.03	0.39	0.39	0.03	0.03	0.05	0.05	
	Skjervra, Vefsensfj. S	104	104	98	41.3	49.6	41.3	5.00	1.4	0.4	47	14	0.14	0.68	0.00	0.00	0.05	0.05	0.00	0.00	0.02	0.02	
	Fusta, Vefsensfj. N	544	543	520	63.4	76.1	63.4	2.43	5.4	1.1	84	22	0.76	1.09	0.02	0.02	0.33	0.33	0.02	0.02	0.33	0.33	
	Drevja, Vefsensfj. N	177	176	98	65.0	78.0	65.0	4.49	1.8	1.1	36	16	0.11	0.43	0.01	0.01	0.11	0.11	0.01	0.01	0.11	0.11	
	Røssåga, Sørkj.	2092	2087	1880	45.4	54.9	45.4	3.91	12.0	3.0	284	140	3.29	6.27	0.12	0.12	1.20	1.20	0.27	0.27	0.27	0.27	
	Bjerka, Sørkj.	385	385	273	55.4	60.9	55.4	3.03	2.7	0.7	32	7	0.67	0.67	0.01	0.01	0.27	0.27	0.01	0.01	0.21	0.21	
	Dalselva, Ranafj. N	211	211	129	39.5	43.5	39.5	2.23	1.1	0.3	14	4	0.21	0.26	0.01	0.01	0.21	0.21	0.01	0.01	0.21	0.21	
	Ranavassdraget, Ranafj. N	3847	3846	1892	51.3	61.6	44.9	2.21	24.9	6.2	404	230	3.11	6.84	0.25	0.25	2.49	2.49	0.25	0.25	2.49	2.49	
	Fykanåga, Glomfjord	297	297	243	103.7	119.3	103.7	2.99	2.9	1.9	82	41	0.97	0.97	0.02	0.02	0.39	0.39	0.02	0.02	0.39	0.39	
	Beijare, Beiarfj. Nordfj.	1064	875	797	45.1	51.4	45.1	2.13	12.4	5.0	73	39	1.87	5.97	0.02	0.02	1.12	1.12	0.02	0.02	1.12	1.12	
	Saltdalsvassdr. Saltd.fj.S	1544	1543	1168	32.1	38.5	32.1	1.62	6.2	3.1	92	56	1.25	2.03	0.03	0.03	0.94	0.94	0.03	0.03	0.94	0.94	
	Sulitjelma vassdr. Sulitd.fj.	1028	800	791	44.0	46.2	44.0	39.86	4.4	1.1	112	59	20.98	33.30	0.06	0.06	0.78	0.78	0.02	0.02	0.78	0.78	
	Kobbe, Leirfj. Sørfolda N	405	405	386	66.9	78.3	66.9	1.92	3.4	0.9	56	32	0.68	1.97	0.02	0.02	0.17	0.17	0.02	0.02	0.17	0.17	
	Skjoma, Ofotfj. S	845	840	797	36.3	41.7	36.3	1.41	3.8	1.0	51	15	0.67	1.06	0.02	0.02	0.19	0.19	0.02	0.02	0.19	0.19	

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Runoff data				Discharge gauging station				Parameters (mean values)												
		Outlet	SampI.	Disch.	Sampling station	Normal	1991	Normal	1/s kv.km	Cond	Tot-P	PO4-P	Tot-N	NO3-N	Cu	Zn	Cd	Pb	zero tons	limit tons	zero tons	limit tons
		kv.km	kv.km	kv.km	kv.km	kv.km	kv.km	1/s kv.km	1/s kv.km	mS/m	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
Trøms (9.)	Spanselva. Astafj. Vågsfj. Salangse.. Astafj. Vågsfj. Rossjorde.. Malangen Måse.. Måselvfj. "	142	142	533	50.0	55.0	50.0	5.93	0.9	0.2	19	5	0.20	0.18	0.00	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Bardue.. Måselværa Nordkjøsela. Balsfj. Signaldaelseva. Lyngen V Skibotnefya. Lyngen V Kåfjordelva. Lyngen Ø Reisa. Reisafj.	539	539	40.9	47.0	40.9	39.5	7.15	2.8	0.7	48	24	0.42	0.42	0.01	0.01	0.35	0.35	0.35	0.35	0.35	0.35
	3239	196	190	39.5	41.1	39.5	37.9	7.72	1.4	0.2	27	4	0.28	0.47	0.00	0.00	0.12	0.12	0.12	0.12	0.12	0.12
	3239	3239	3200	3118	28.7	27.9	28.7	5.40	11.6	5.8	290	116	4.34	4.63	0.06	0.06	1.16	1.16	1.16	1.16	1.16	1.16
	2906	2906	2049	28.3	27.9	28.3	5.52	10.4	5.2	257	93	3.89	4.15	0.05	0.05	1.04	1.04	1.04	1.04	1.04	1.04	
	191	191	415	27.7	30.5	27.7	3.28	0.7	0.3	8	3	0.18	0.13	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	
	467	467	415	27.7	34.6	27.7	2.81	1.6	0.4	26	12	0.65	2.28	0.01	0.01	0.29	0.29	0.29	0.29	0.29	0.29	
	770	770	724	18.0	28.2	18.0	28.2	2.75	1.7	0.4	35	14	0.44	0.79	0.01	0.01	0.17	0.17	0.17	0.17	0.17	0.17
	358	358	348	20.0	35.1	20.0	35.1	2.94	0.9	0.2	23	13	0.43	0.34	0.00	0.00	0.09	0.09	0.09	0.09	0.09	0.09
	2702	2702	2702	16.0	20.0	16.0	3.01	5.5	1.4	119	42	1.91	2.05	0.03	0.03	0.55	0.55	0.55	0.55	0.55	0.55	
	325	325	319	26.5	33.1	26.5	2.44	1.4	0.3	22	5	0.16	0.81	0.01	0.01	0.24	0.24	0.24	0.24	0.24	0.24	
	234	233	233	15.1	20.6	15.1	20.6	3.89	0.7	0.1	18	4	0.09	0.32	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03
	1090	1089	1089	25.0	35.0	25.0	35.0	3.24	3.4	0.9	75	16	0.43	0.86	0.01	0.01	0.09	0.09	0.09	0.09	0.09	0.09
	1108	1102	870	18.3	22.0	18.3	22.0	2.56	2.5	0.6	55	10	3.18	0.70	0.01	0.01	0.89	0.89	0.89	0.89	0.89	0.89
	1533	1532	941	15.9	19.4	15.9	19.4	4.05	3.8	0.8	89	11	1.00	1.54	0.01	0.01	0.31	0.31	0.31	0.31	0.31	0.31
	883	883	863	29.8	35.2	29.8	35.2	3.32	2.5	0.8	37	9	0.41	5.64	0.00	0.01	0.66	0.66	0.66	0.66	0.66	0.66
	101	101	101	22.8	27.4	22.8	27.4	4.00	0.4	0.1	7	1	0.04	0.15	0.00	0.01	0.03	0.03	0.03	0.03	0.03	0.03
	690	690	760	21.9	27.4	19.9	19.9	1.85	1.4	0.2	44	35	0.24	1.91	0.01	0.01	0.19	0.19	0.19	0.19	0.19	0.19
	92	92	102	25.3	31.6	22.8	4.22	0.2	0.1	5	2	0.04	0.23	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03	
	705	705	760	19.9	24.9	19.9	5.84	1.8	0.4	36	7	0.31	2.21	0.01	0.01	0.18	0.18	0.18	0.18	0.18	0.18	
	14169	14169	14169	11.5	13.8	11.5	13.8	3.76	34.2	5.7	923	57	5.70	9.12	0.23	0.23	5.98	5.98	5.98	5.98	5.98	5.98
	469	469	79	34.6	34.6	34.6	8.76	2.0	0.5	26	5	0.26	0.26	0.00	0.01	0.20	0.20	0.20	0.20	0.20	0.20	
	627	627	239	18.1	18.3	18.1	4.84	1.8	0.4	29	4	0.29	1.43	0.00	0.00	0.14	0.14	0.14	0.14	0.14	0.14	
	18404	18400	18175	9.3	10.2	9.3	4.49	37.8	5.9	820	146	18.89	36.70	0.11	0.11	2.16	2.16	2.16	2.16	2.16	2.16	
	2960	2960	2911	9.8	12.9	9.8	12.9	5.5	0.9	165	27	0.91	23.78	0.02	0.02	0.37	0.37	0.37	0.37	0.37	0.37	
	234	234	234	18.0	18.2	18.0	18.0	5.04	0.7	0.1	13	2	0.29	0.17	0.00	0.00	0.04	0.04	0.04	0.04	0.04	0.04

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Table 9.2

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Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Parameters (mean values)													
		S.P.M.		H _g	Gamma	PCB (The following Congeners) IUPAC NOS			180			SUM : PCB			
		t.tons	kg	kg	kg	zero	limit	zero	limit	kg	kg	zero	limit	kg	kg
Vest-Agder (5.)	Tovdalselva. Topdalsfj.	3.27	0.000	3.964	6.739	0.000	0.099	0.000	0.099	0.000	0.099	0.000	0.099	0.000	0.694
	Søgneelva. Flekkerøy	0.41	0.000	0.460	0.920	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.081
	Mandalselva. Mannefj.	3.68	7.834	7.834	10.732	0.000	0.131	0.000	0.131	0.000	0.131	0.000	0.131	0.000	0.914
	Audna. Sniksfi.	1.25	0.000	1.135	2.271	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.199
	Lygna. Lyngdalsfj.	1.07	0.000	1.998	5.795	0.000	0.050	0.000	0.050	0.000	0.050	0.000	0.050	0.000	0.350
	Kvina. Fedafj.	3.81	0.000	4.142	13.460	0.000	0.104	0.000	0.104	0.000	0.104	0.000	0.104	0.000	0.725
	Sira. Åna-Sira	2.17	0.000	7.013	23.705	0.000	0.175	0.000	0.175	0.000	0.175	0.000	0.175	0.000	1.227
	Sokndalselva. Sokndalstr.	0.36	0.000	0.944	3.164	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.165
	Hellelandselva. Egersund	0.38	0.000	0.870	2.872	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.152
Rogaland (6.)	Bjerkeimselva. Egersund	1.10	0.000	3.450	11.247	0.000	0.086	0.000	0.086	0.000	0.086	0.000	0.086	0.000	0.604
	Håelva. Håttangen	1.09	0.000	0.473	0.757	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.083
	Figgjo. Solavika	1.58	0.000	0.687	1.100	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.120
	Ims-Lutsi. Høgsfj.Boknafj.	0.42	0.000	0.280	0.433	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.049
	Oltedalse..Høgsfj.Boknafj.	0.67	0.000	0.446	0.691	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.078
	Dirdalse..Høgsfj.Boknafj.	0.83	0.000	0.827	1.282	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.145
	Frafjorde..Frafj. Boknafj.	0.26	0.000	1.060	1.643	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.185
	Espedals..Høgsfj.Boknafj.	0.20	0.000	0.783	1.214	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.137
	Lysee.. Lysefj.Boknafj.	0.21	0.000	0.849	1.317	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.149
(7.)	Ardals..Årdalsfj.Boknafj.	0.40	0.000	2.649	4.106	0.000	0.066	0.000	0.066	0.000	0.066	0.000	0.066	0.000	0.464
	Førree.. Jøsenfj.Boknafj.	0.22	0.000	0.882	1.367	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.154
	Ulla. Jøsenfj.Boknafj.	0.52	0.000	2.067	3.204	0.000	0.052	0.000	0.052	0.000	0.052	0.000	0.052	0.000	0.362
	Saudafj..Boknafj.	0.47	0.000	1.892	2.933	0.000	0.047	0.000	0.047	0.000	0.047	0.000	0.047	0.000	0.331
	Åbøelva. Saudafj.Boknafj.	0.11	0.000	0.440	0.681	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.077
	Vikedalselva.. Boknafj.	0.32	0.000	0.590	0.915	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.103

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Parameters (mean values)														
		S.P.M.		H g		Gamma		PCB (The following Congeners) IUPAC NOS		101		52		28		
		t.tons	zero	limit	kg	HCH	zero	limit	kg	kg	zero	limit	kg	kg	zero	limit
Nordland (9.)	Åbjøra. Bindalsfj. S	0.57	0.000	2.630	0.329	0.000	0.066	0.000	0.066	0.000	0.066	0.000	0.066	0.000	0.066	0.000
	Skjerva. Vefsensfj. S	0.27	0.000	0.271	0.034	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000
	Fusta. Vefsensfj. N	1.12	0.000	2.171	0.271	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.054	0.000
	Drevja. Vefsensfj. N	0.80	0.000	0.722	0.090	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000
	Røssåga. Sørkj.	1.64	0.000	5.976	0.896	0.000	0.149	0.000	0.149	0.000	0.149	0.000	0.149	0.000	0.149	0.000
	Bjerka. Sørkj.	0.98	0.000	1.345	0.202	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.034	0.000
	Dalseiva. Ranafj. N	0.22	0.000	0.526	0.105	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000
	Ranavassdraget. Ranafj. N	15.00	0.000	12.444	2.489	0.000	0.311	0.000	0.311	0.000	0.311	0.000	0.311	0.000	0.311	0.000
	Fykanåga. Glomfjord	1.65	0.000	1.943	0.389	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000
	Beiare. Beiarfj. Nordfj.	13.69	0.000	2.489	0.498	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.062	0.000
	Saltdalsvassdr..Saltd.fj.S	8.11	0.000	3.124	4.686	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.078	0.000
	Sulitjelmavassdr..Saltd.fj.Kobbe. Leirfj. Sørfolda N	1.13	0.000	2.220	3.996	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000
	Skjoma. Ofotfj. S	1.02	0.000	1.923	0.096	0.000	0.048	0.000	0.048	0.000	0.048	0.000	0.048	0.000	0.048	0.000

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1991.

County	Watercourse	Parameters (mean values)													
		S.P.M. t.tons	H zero kg	H limit kg	Gamma HCH kg	PCB (The following Congeners) 28	52	101	118	138	153	180	SUM : PCB zero kg	SUM : PCB limit kg	
Trøms (9.)	Spanselva. Astafj. Vågsfj. Salangs.. Astafj. Vågsfj.	0.58	0.000	0.448	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	
	Rossfjorde.. Malangen	2.67	0.000	1.390	0.035	0.000	0.035	0.000	0.035	0.000	0.035	0.000	0.035	0.000	
	Målselvfj. "	0.26	0.000	0.473	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	
	Bardue.. Målselv	16.22	0.000	5.793	0.145	0.000	0.145	0.000	0.145	0.000	0.145	0.000	0.145	0.000	
	Nordkjoselva. Balsfj.	14.50	0.000	5.187	0.130	0.000	0.130	0.000	0.130	0.000	0.130	0.000	0.130	0.000	
	Signaldalselva. Lyngen V	0.88	0.000	0.334	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	
	Skibotnelvna. Lyngen	3.43	0.000	0.816	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	
	Kåfjordelva. Lyngen Ø	0.72	0.000	0.874	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	
	Reisa. Reisafj.	0.18	0.000	0.452	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	
		2.02	0.000	2.727	0.068	0.000	0.068	0.000	0.068	0.000	0.068	0.000	0.068	0.000	
Finnmark (10.)	Mattiselva. Kåfj. Altafj.	0.20	0.000	0.543	0.027	0.000	0.014	0.014	0.000	0.014	0.000	0.014	0.000	0.014	
	Tverrelva. Altafj.	0.17	0.000	0.222	0.011	0.000	0.006	0.006	0.000	0.006	0.000	0.006	0.000	0.006	
	Repparfjordv.. Repparfj.	0.50	0.000	1.717	0.086	0.000	0.043	0.043	0.000	0.043	0.000	0.043	0.000	0.043	
	Stabbhuse.. I. Porsangen V	0.42	0.000	1.272	0.064	0.000	0.032	0.032	0.000	0.032	0.000	0.032	0.000	0.032	
	Lakse.. Indre Porsangen S	2.36	0.000	1.536	0.077	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	
	Børselfva Indre Porsangen	0.58	0.000	1.660	0.083	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	
	Mattusjäkka. I. Laksefj. V	0.07	0.000	0.145	0.015	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	
	Storelva Indre Laksefj. V	0.21	0.000	0.953	0.095	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	
	Soussjäkka. I. Laksefj. V	0.03	0.000	0.147	0.022	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	
	Adamselva. I. Laksefj. Ø	0.19	0.000	0.885	0.133	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	
Vest-Agder	Tanavassdraget. Tanafj. S	6.78	0.000	11.397	2.279	0.000	0.285	0.000	0.285	0.000	0.285	0.000	0.285	0.000	
	Vesterelva. Syltefj.	0.29	0.000	1.023	0.205	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	
	V. Jakobse.. Y.Varangerfj.	0.40	0.000	0.716	0.179	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	
	Passvike..Bøkfj.Varangfj.	5.99	0.000	10.793	2.698	0.000	0.270	0.000	0.270	0.000	0.270	0.000	0.270	0.000	
	Neiden. Munkfj. Varangfj.	1.22	0.000	1.830	0.457	0.000	0.046	0.000	0.046	0.000	0.046	0.000	0.046	0.000	
	Grense Jakobse..Varangfj.	0.266	0.000	0.666	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	
		0.12	0.000	1.023	0.205	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	

**APPENDIX X : "MEAN" TOTAL DISCHARGES (Mean concentrations of main
and tributary rivers multiplied with mean runoff
1930-60)**

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* Measurements below detection limits are treated in two ways: "Detection limit = Zero", and "Detection limit = limit". This concerns the substances Cd, Pb, Hg and PCBs. In Table 10.5A the "limit-values" are shown, in Table 10.5B the "zero-values" are presented.

**Table X "MEAN" TOTAL DISCHARGES from MAINLAND NORWAY
to convention waters (Mean runoff 1930 - 60 (Fig. I)).**

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.4	6.4	* 1.5	8.3	tonnes
Cadmium			6.6	** 1.5	8.5	tonnes
Mercury		314	41	* 26	381	kg
Mercury			301	** 139	754	kg
Copper		51	204	135	391	tonnes
Zinc		78	630	469	1177	tonnes
Lead		13.2	69.4	* 19.9	102.6	tonnes
Lead			70.3	** 20.5	104.0	tonnes
Arsenic		0.5			0.5	tonnes
Cr-T		112.7			112.7	tonnes
Cr-T					112.7	tonnes
PCBs ***			0.2	* 0.1	0.4	kg
PCBs			56.3	** 22.9	79.2	kg
gamma-HCH			231	50	281	kg
NO3-N	15150	11.2	16703	16557	33271	tonnes
PO4-P	208	694.8	205	318	1218	tonnes
Total N	24259	14447	30064	27896	96667	tonnes
Total P	791	1387	815	787	3781	tonnes
S.P.M.		4556472	248399	220553	5025424	tonnes
TOC		21339			21339	tonnes
DOC						tonnes
COD		265939			265939	tonnes
BOD		39440			39440	tonnes
AOX		1077			1077	tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

**Table 10.1 "MEAN" TOTAL DISCHARGES to The Skagerrak Region
(Mean runoff 1930 - 60 (Fig. I.I)).**

The Skagerrak Region with main rivers (1) Glomma, (2) Drammenselva, (3) Numedalslågen,
(4) Skienselva, (5) Otra

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.16	1.5 *	1.1 *	2.7	tonnes
Cadmium			1.5 **	1.1 **	2.7	tonnes
Mercury		136.19	31 *	26 *	193	kg
Mercury			44 **	106 **	286	kg
Copper		26.62	19	92	137	tonnes
Zinc		27.39	171	361	560	tonnes
Lead		2.34	9.2 *	16.0 *	27.5	tonnes
Lead			9.2 **	16.0 **	27.5	tonnes
Arsenic		0.48			0.5	tonnes
Cr-T		8.69			8.7	tonnes
Cr-T					8.7	tonnes
PCBs ***			0.0 *	0.0 *	0.0	kg
PCBs			12.1 **	17.0 **	29.1	kg
gamma-HCH			55	43	99	kg
NO3-N	1872	5	4086	14795	18886	tonnes
PO4-P	21	192	31	285	509	tonnes
Total N	2910	7124	6927	24482	41443	tonnes
Total P	83	425	141	693	1342	tonnes
S.P.M.		18883	23121	200637	242641	tonnes
TOC		9530			9530	tonnes
DOC						
COD		176392			176392	tonnes
BOD		13940			13940	tonnes
AOX		1077			1077	tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

**Table 10.2 "MEAN" TOTAL DISCHARGES to The Remaining North Sea
(Mean runoff 1930 - 60 (Fig. I.II)).**

The North Sea Region with main rivers : (6) Orreelva, (7) Suldalslågen

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.19	1.2 *	0.0 *	1.5	tonnes
Cadmium			1.4 **	0.0 **	1.6	tonnes
Mercury		103.59	0 *	0 *	104	kg
Mercury			87 **	7 **	197	kg
Copper		14.43	50	3	68	tonnes
Zinc		31.42	193	17	241	tonnes
Lead		9.36	17.3 *	0.0 *	26.7	tonnes
Lead			18.1 **	0.4 **	27.9	tonnes
Arsenic		0.04			0.0	tonnes
Cr-T		8.10			8.1	tonnes
Cr-T					8.1	tonnes
PCBs ***			0.0 *	0.0 *	0.0	kg
PCBs			15.2 **	1.2 **	16.4	kg
gamma-HCH			136	4	140	kg
NO3-N	5773	3	7519	921	8442	tonnes
PO4-P	56	236	54	9	299	tonnes
Total N	9318	3005	10955	1124	24402	tonnes
Total P	199	431	231	22	883	tonnes
S.P.M.		1822362	36616	4318	1863295	tonnes
TOC		5356			5356	tonnes
DOC						tonnes
COD		35728			35728	tonnes
BOD		11429			11429	tonnes
AOX		0			0	tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

**Table 10.3 "MEAN" TOTAL DISCHARGES to The Norwegian Sea
(Mean runoff 1930 - 60 (Fig. I.III)).**

The Norwegian Sea Region with main rivers (8) Orkla, (9) Vefsna

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total
Cadmium		0.09	3.2 *	0.3 *	3.6 tonnes
Cadmium			3.3 **	0.3 **	3.6 tonnes
Mercury		69.61	10 *	0 *	80 kg
Mercury			134 **	22 **	226 kg
Copper		9.78	103	36	149 tonnes
Zinc		17.92	180	85	283 tonnes
Lead		1.47	31.4 *	3.9 *	36.8 tonnes
Lead			31.4 **	3.9 **	36.8 tonnes
Arsenic		0.00			0.0 tonnes
Cr-T		95.57			95.6 tonnes
Cr-T					95.6 tonnes
PCBs ***			0.1 *	0.0 *	0.1 kg
PCBs			22.9 **	3.8 **	26.7 kg
gamma-HCH			33	3	36 kg
NO3-N	6491	3	4758	678	5439 tonnes
PO4-P	113	253	102	13	367 tonnes
Total N	10347	4123	9818	1746	26033 tonnes
Total P	421	507	343	47	1318 tonnes
S.P.M.		1114630	169132	11948	1295711 tonnes
TOC		6107			6107 tonnes
DOC					tonnes
COD		52280			52280 tonnes
BOD		13359			13359 tonnes
AOX		0			0 tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 10.4 "MEAN" TOTAL DISCHARGES to The Barents Sea
(Mean runoff 1930 - 60 (Fig. I.IV)).
The Barents Sea Region with main river (10) Alta

Substance:	Area runoff	Direct Discharges	Tributary Inputs	Main Riverine Inputs	Grand Total	
Cadmium		0.01	0.4	*	0.11	*
Cadmium			0.4	**	0.11	**
Mercury		4.38	0	*	0.00	*
Mercury			35	**	5.25	**
Copper		0.61	32		3.68	
Zinc		0.88	86		6.30	
Lead		0.07		11.5	*	0.00
Lead				**	0.26	**
Arsenic		0.00				0.0
Cr-T		0.35				0.4
Cr-T						0.4
PCBs ***			0.1	*	0.13	*
PCBs			6.1	**	0.92	**
gamma-HCH			6		0.24	
NO3-N	1013	0.19	340		162.77	
PO4-P	18	14.27	18		10.76	
Total N	1685	194.68	2365		543.43	
Total P	88	24.30	100		25.73	
S.P.M.		1600597	19530		3649.14	
TOC		345.89				346
DOC						tonnes
COD		1539.43				1539
BOD		711.77				712
AOX		0.00				0
						tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 10.5 A Main rivers. "Mean" load (Mean concentrations multiplied with mean runoff 1930-60) (Limit-values = limit).

Watercourse	Runoff data				Parameters (mean values)												
	Drainage area		Sampling station		Discharge gauging station				Parameters (mean values)								
	Outlet	Sampl. station	Disch. gaug. station	Sampling station	Normal 1/s kv.km	1991 Normal 1/s kv.km	Cond mS/m	Tot-P tons	PO4-P tons	Tot-N tons	NO3-N tons	Cu tons	Zn tons	Cd tons	Pb tons	S.P.M. t.tons	
Glomma. Hvaler-Singlefj.	41918	41218	40221	17.0	13.3	17.4	13.6	4.93	523.71	216.56	8618	39.78	137.00	0.44	7.73	147.39	
Drammensvassdr. Dr.fj. V	17034	17028	16020	17.6	12.3	18.7	13.1	3.50	52.93	16.07	3478	2174	10.59	43.48	0.19	2.17	15.88
Numedalslågen. Larvikfj.	5577	5513	5197	21.1	16.2	21.1	16.2	3.41	38.15	18.71	1522	899	7.30	36.39	0.15	2.57	16.58
Skiensvassdr. Grenlandsfj.	10772	10348	10348	26.7	18.3	26.7	18.3	2.20	52.28	26.14	5071	2570	29.62	108.04	0.09	2.09	12.29
Otra. Kr.Sandsfj.	3738	3730	3668	39.5	36.0	39.5	36.0	2.49	25.55	7.90	1152	534	4.74	36.29	0.19	1.39	8.50
Orreclva. Orrcsanden	105	105	54	35.0	32.7	39.0	36.3	18.30	8.74	2.65	173	80	0.17	0.41	0.00	0.04	1.18
Suldalsl..Sandsfj.Boknafj.	1457	1457	70.4	38.5	70.4	38.5	2.06	12.94	6.47	951	841	3.23	16.50	0.03	0.32	3.14	
Örka. Orkdalsfj.Tr.h.fj.	3053	2680	24.3	22.9	24.3	22.9	6.31	12.53	4.11	727	390	25.67	54.22	0.10	0.41	3.33	
Namsen. Namsfj. Ø	6277	6276	5718	44.0	46.2	43.4	0.0	2.01	34.83	8.71	1019	287	10.45	30.48	0.17	3.48	8.62
Altaciva. Altafj.	7373	6257	11.3	11.8	11.3	11.8	11.8	11.27	25.73	10.76	543	163	3.68	6.30	0.11	0.26	3.65

Table 10.5B Main rivers. "Mean" load (Mean concentrations multiplied with mean runoff 1930-60) (Limit-values = zero).

Watercourse	Runoff data						Parameters (mean values)											
	Drainage area	Disch.	Samp. station	Sampling station	gauging station	Discharge	Cond	Tot-P tons	PO4-P tons	Tot-N tons	NO3-N tons	Cu tons	Zn tons	Cd tons	Pb tons	S.P.M. t.tons		
Outlet	kv.km	kv.km	Disch. gaug. station	Normal 1/s kv.km	Normal 1/s kv.km	Normal 1/s kv.km	1991 Normal 1/s kv.km	1991 Normal 1/s kv.km	1991 Cond mS/m	1991 Tot-P tons	1991 PO4-P tons	1991 Tot-N tons	1991 NO3-N tons	1991 Cu tons	1991 Zn tons	1991 Cd tons	1991 Pb tons	1991 S.P.M. t.tons
Glomma. Hvaler-Singlefj.	41918	41218	40221	17.0	13.3	17.4	13.6	4.93	523.71	216.56	13258	8618	39.78	137.00	0.44	7.73	147.39	
Drammensvassdr. Dr.fj. V	17034	17028	16020	17.6	12.3	18.7	13.1	3.50	52.93	16.07	3478	2174	10.59	43.48	0.19	2.17	15.88	
Numedalslågen. Larvikfj.	5577	5513	5197	21.1	16.2	21.1	16.2	3.41	38.15	18.71	1522	899	7.30	36.39	0.15	2.57	16.58	
Skiensvassdr. Grenlandsfj.	10772	10348	10348	26.7	18.3	26.7	18.3	2.20	52.28	26.14	5071	2570	29.62	108.04	0.09	2.09	12.29	
Otra. Kr.Sandsfj.	3738	3730	3668	39.5	36.0	39.5	36.0	2.49	25.55	7.90	1152	534	4.74	36.29	0.19	1.39	8.50	
Orreelva. Orresanden	105	105	54	35.0	32.7	39.0	36.3	18.30	8.74	2.65	173	80	0.17	0.41	0.00	0.04	1.18	
Suldalsl..Sandsfj.Boknafj.	1457	1457	1457	70.4	38.5	70.4	38.5	2.06	12.94	6.47	951	841	3.23	16.50	0.03	0.00	3.14	
Orkla. Orkdalsf.Tr.h.fj.	3053	2680	2680	24.3	22.9	24.3	22.9	6.31	12.53	4.11	727	390	25.67	54.22	0.10	0.41	3.33	
Namsen. Namsfj. Ø	6277	6276	5718	44.0	46.2	43.4	40.0	2.01	34.83	8.71	1019	287	10.45	30.48	0.17	3.48	8.62	
Altaelva. Altafj.	7373	7367	6257	11.3	11.8	11.3	11.8	11.27	25.73	10.76	543	163	3.68	6.30	0.11	0.00	3.65	

Watercourse	Runoff data						Parameters (load)											
	Drainage area	Disch.	Samp. station	Sampling station	gauging station	Discharge	Gamm	HCH	PCB (The following Congeners) IUPAC NOS	28 kg	52 kg	101 kg	118 kg	138 kg	153 kg	180 kg	SUM PCB kg	
Outlet	kv.km	kv.km	Disch. gaug. station	Normal 1/s kv.km	Normal 1/s kv.km	Normal 1/s kv.km	1991 Normal 1/s kv.km	Hg kg	Gamm HCH kg	PCB (The following Congeners) IUPAC NOS	28 kg	52 kg	101 kg	118 kg	138 kg	153 kg	180 kg	SUM PCB kg
Glomma. Hvaler-Singlefj.	41918	41218	40221	17.0	13.3	17.4	13.6	0.00	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Drammensvassdr. Dr.fj. V	17034	17028	16020	17.6	12.3	18.7	13.1	0.00	9.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Numedalslågen. Larvikfj.	5577	5513	5197	21.1	16.2	21.1	16.2	0.00	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Skiensvassdr. Grenlandsfj.	10772	10348	10348	26.7	18.3	26.7	18.3	0.00	26.14	8.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Otra. Kr.Sandsfj.	3738	3730	3668	39.5	36.0	39.5	36.0	0.00	2.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Orreelva. Orresanden	105	105	54	35.0	32.7	39.0	36.3	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Suldalsl..Sandsfj.Boknafj.	1457	1457	1457	70.4	38.5	70.4	38.5	0.00	3.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Orkla. Orkdalsf.Tr.h.fj.	3053	2680	2680	24.3	22.9	24.3	22.9	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Namsen. Namsfj. Ø	6277	6276	5718	44.0	46.2	43.4	40.0	0.00	2.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Altaelva. Altafj.	7373	7367	6257	11.3	11.8	11.3	11.8	0.00	0.24	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.13	

**Table 10.6 The Skagerrak Region. "Mean" inputs from tributary rivers in The Sub-areas (1-5)
(Mean concentrations 1991 multiplied with mean runoff, 1930-60)**

The Skagerrak Region with sub-areas: (1A) Glomma, (1B) Inner Oslofj., (2) Drammenselva,
(3) Numedalslågen, (4) Skienselva, (5) Otra

Sub-areas :	Total quantity of substance discharged per year:						Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
	1A	1B	2	3	4	5		
Substance:								
Cd *	0.12	0.08	0.00	0.03	0.10	1.17	tonnes	YES _____ %
Cd **	0.12	0.08	0.00	0.03	0.10	1.18	tonnes	_____ %
Hg *	0.13	0.00	0.00	0.00	0.00	30.50	kg	NO _____ %
Hg **	2.20	0.99	0.31	1.21	2.02	37.56	kg	_____ %
Cu	1.7	5.2	0.3	0.9	1.7	8.8	tonnes	YES _____ %
Zn	5.5	11.2	1.9	3.8	17.4	131.5	tonnes	YES _____ %
Pb *	0.40	1.46	0.04	0.35	0.25	6.65	tonnes	YES _____ %
Pb **	0.40	1.46	0.04	0.35	0.25	6.65	tonnes	_____ %
PCBs *	0.00	0.00	0.00	0.00	0.00	0.00	kg	NO _____ %
PCBs **	0.38	7.74	0.14	0.01	0.35	3.47	kg	_____ %
gamma-HCH	4.34	1.15	0.39	0.43	5.33	43.78	kg	YES _____ %
NO3-N	767	291	140	604	273	2011	tonnes	YES _____ %
PO4-P	5.7	5.1	7.8	5.1	1.0	6.6	tonnes	YES _____ %
Total N	1242	585	197	802	432	3669	tonnes	YES _____ %
Total P	24	19	12	15	4	68	tonnes	YES _____ %
S.P.M.	2718	3689	552	1651	1303	13208	tonnes	YES _____ %

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 10.7 The remaining North Sea. "Mean" inputs from tributary rivers in The Sub-areas (6-7). (Mean concentrations 1991 multiplied with mean runoff, 1930-60)

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

			Were 70 % of measurements above the detection limit ?		Precision
			of the estimate	of the load	
Total quantity of substance discharged per year:					
Sub-areas :	6	7			
Cd *	0.31	0.92	tonnes	YES	_____ %
Cd **	0.36	1.06	tonnes	_____	%
Hg *	0.00	0.00	kg	NO	_____ %
Hg **	29.42	57.37	kg	_____	%
Cu	23.3	26.6	tonnes	YES	_____ %
Zn	100.1	92.6	tonnes	YES	_____ %
Pb *	8.52	8.80	tonnes	YES	_____ %
Pb **	8.52	9.62	tonnes	_____	%
PCBs *	0.00	0.00	kg	NO	_____ %
PCBs **	5.15	10.04	kg	_____	%
gamma-HCH	77.36	58.70	kg	YES	_____ %
NO3-N	3870	3648	tonnes	YES	_____ %
PO4-P	29.8	23.8	tonnes	YES	_____ %
Total N	5454	5501	tonnes	YES	_____ %
Total P	106	125	tonnes	YES	_____ %
S.P.M.	15288	21328	tonnes	YES	_____ %

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 10.8 The Norwegian Sea. "Mean" inputs from tributary rivers in The Sub-areas (8-9).
(Mean concentrations 1991 multiplied with mean runoff, 1930-60)

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

Sub-area :	Total quantity of substance discharged per year:		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
	8	9		
	Substance:			
Cd *	2.45	0.80	tonnes YES	%
Cd **	2.47	0.80	tonnes	%
Hg *	10.41	0.00	kg NO	%
Hg **	76.39	57.99	kg	%
Cu	54.6	48.8	tonnes YES	%
Zn	102.1	78.3	tonnes YES	%
Pb *	18.83	12.59	tonnes YES	%
Pb **	18.83	12.59	tonnes	%
PCBs *	0.00	0.13	kg NO	%
PCBs **	12.76	10.15	kg	%
gamma-HCH	18.54	14.63	kg YES	%
NO ₃ -N	3742	1016	tonnes YES	%
PO ₄ -P	60.0	41.9	tonnes YES	%
Total N	7522	2296	tonnes YES	%
Total P	218	125	tonnes YES	%
S.P.M.	80871	88261	tonnes YES	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

**Table 10.9 The Barents Sea. "Mean" inputs from tributary rivers in The Sub-area (10).
(Mean concentrations 1991 multiplied with mean runoff, 1930-60)**

The Barents Sea Region with sub-area: (10) Alta

		Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Total quantity of substance discharged per year:			
Sub-area :	10		
Substance:			
Cd *	0.41	tonnes YES _____	%
Cd **	0.43	tonnes _____	%
Hg *	0.00	kg NO _____	%
Hg **	35.10	kg _____	%
Cu	32.2	tonnes YES _____	%
Zn	85.8	tonnes YES _____	%
Pb *	11.55	tonnes YES _____	%
Pb **	11.55	tonnes YES _____	%
PCBs *	0.09	kg NO _____	%
PCBs **	6.14	kg _____	%
gamma-HCH	6.50	kg YES _____	%
NO3-N	340	tonnes YES _____	%
PO4-P	17.9	tonnes YES _____	%
Total N	2365	tonnes YES _____	%
Total P	100	tonnes YES _____	%
S.P.M.	19530	tonnes YES _____	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

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