Norwegian State Pollution Monitoring Programme
Long-term monitoring of environmental quality in Norwegian coastal waters

Report: 864/02
TA-number: 1921/2002
ISBN-number: 82-577-4262-7

Client: Norwegian Pollution Control Authority (SFT)
Executor: Norwegian Institute for Water Research (NIVA)

Summary statistics for contaminants in shellfish and fish 1981-2001

Report 864/02

NIVA report no. 4602-2002

Norwegian Institute for Water Research

REPORT

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Title	Serial No.	Date
Joint Assessment and Monitoring Programme (JAMP). Summary statistics for contaminants in shellfish and fish 1981-2001. (Norwegian State Pollution Monitoring Programme Report no. 864/02. TA-no. 1921/2002)	4602-2002	25.12.2002
	Report No. Sub-No. O-80106	Pages Price 422
Author(s) Norman W. Green Gunnar Severinsen Åse Kristine Rogne	Topic group Marine ecology	Distribution
	Geographical area Oslofjord to Varangerfjord	Printed NIVA

Client(s)	Client ref.
Norwegian Pollution Control Authority (SFT)	

Abstract

This report is a compilation of aggregated data on contaminant concentrations in marine organisms used in the Norwegian contribution to the Joint Assessment and Monitoring Programme (JAMP) and concerns mainly selected metals organochlorines, polycyclic aromatic hydrocarbons that were collected during the period 1981-2001

4 keywords, Norwegian	4 keywords, English
1. Miljøgifter	1. Contaminants
2. Organismer	2. Organisms
3. Marin	3. Marine
4. Norge	4. Norway

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ISBN 82-577-4262-7

CONTAMINANTS

Norwegian Institute for Water Research

O-80106

JOINT ASSESSMENT AND MONITORING PROGRAMME (JAMP),

SUMMARY STATISTICS FOR CONTAMINANTS IN SHELLFISH AND FISH 1981-2001

Oslo, 25 December 2002

Project co-ordinater: Norman W. Green

Foreword

This report presents the Norwegian aggregated data for contaminants in marine shellfish and fish species 1981-2001 compiled for the Joint Assessment and Monitoring Programme (JAMP). JAMP is administered by the Oslo and Paris Commissions (OSPAR) and their Environmental Assessment and Monitoring Committee (ASMO). JAMP receives guidance from the International Council for the Exploration of the Sea (ICES).

The Norwegian JMP was carried out by the Norwegian Institute for Water Research (NIVA) by contract from the Norwegian State Pollution Control Authority (SFT, NIVA contract 80106). Norwegian Institute for Air Research (NILU) has also contributed.

The Norwegian contribution to the JAMP was initiated by SFT in 1981 as part of the national monitoring programme. Three main areas have been investigated: the Oslofjord and adjacent areas (Hvaler-Singlefjord area and Langesundsfjord, 1981-), Sørfjord/Hardangerfjord (1983-1984, 1987-) and Orkdalsfjord area (1984-1989, 1991-1993, 1995-96).

Initiated by the North Sea Task Force Monitoring Master Plan in 1990, Arendal, Lista and Bømlo-Sotra areas have also been monitored. On the initiative of SFT and NIVA "reference" or merely diffusely contaminated areas from Bergen to Lofoten have been monitored since 1992 and from Lofoten to Norwegian-Russian border from 1994.

The report is one of four in a series of data reports:

1. *Contaminant data for sediments 1986-1997*
   SFT report no.861/02, NIVA report no. 4599-2002
2. *Contaminant data for shellfish 1998-2001,*
   SFT report no.862/02, NIVA report no. 4600-2002
3. *Contaminant data for fish 1998-2001*
   SFT report no. 863/02, NIVA report no. 4601-2002
4. *Summary statistics for contaminants in shellfish and fish 1981-2001*
   SFT report no. 864/02, NIVA report no. 4602-2002

Because of their similarity, appendices A, B, C (biota only), D (biota only) and E concerning abbreviations, analyses, station positions and maps are the same for all four reports.

Thanks are due to my colleagues at NIVA and Institute for Energy Technology, Institute for Nutrition, Fisheries Directorate, Norwegian Institute for Air Research (NILU), Nordic Analytical Center (NAC), Norwegian Veterinary Institute and Fondation for Scientific and Industrial Research (SINTEF) for helping to compile this data. These have been credited earlier in JAMP data reports and annual JAMP National Comments.

Oslo, 25 December 2002

Project co-ordinator *Norman W. Green*

Contents

1. Background and aims

The Oslo and Paris commissions were established in the seventies with the aim to protect the marine environment against anthropogenic contamination. The Oslo commission focuses on problems relating to dumping at sea in the Northeast Atlantic and Baltic areas. The Paris commission focuses on discharges from land based sources. Together, the commission (Oslo and Paris Commission - OSPAR), govern the "Joint Assessment and Monitoring Programme" (JAMP). JAMP commenced in 1995 as a continuation of the "Joint Monitoring Programme" (JMP). It receives guidance from the "International Council for the Exploration of the Sea" (ICES). Norway and other European countries, which are members of OSPAR have committed themselves to protection of the marine environment of the North East Atlantic for preventing and elimination pollution, protecting human health and ensuring sound and healthy marine ecosystems (OSPAR 1998).

The Norwegian contribution to JAMP focuses on two JAMP areas: Oslofjord-area (including the Hvaler area, Singlefjord and Langesundsfjord) and the Sørfjord/Hardangerfjord area. Orkdalsfjord, a third JAMP area, was discontinuted after 1996. During 1990-1995 Norway has also included other areas, mostly remote from point sources of pollution, along the coast from the Swedish border in the South to the Russion aborder in the North. This was in connection with the Norwegian contribution to the investigation of the North Sea (*North Sea Task Force* (NSTF) *Monitoring Master Plan* (MMP)) in 1990 when the programme expanded to include areas from Oslofjorden to Bergen. The programme has since included areas farther north; Bergen to Lofoten in 1991-1992 and Lofoten to Varangerfjorden in 1993-1994.

An overview of the analytical methods (1981-2001) has been presented (Green *et al.* 2001a). The raw data has been presented for 1981-1983 (only Oslofjord; Enger *et al.* 1984, 1985), 1984-1985 (Green 1988), 1986 (Green 1987; SFT 1987), 1987 (SFT 1988), 1988 (Green 1989; SFT 1989), 1989 (Green 1991, SFT 1990), 1990 (Green 1992, JMG 1994), 1991 (Green 1993), 1992 (Green 1994, Green & Knutzen 1994), 1993 (Green 1995a), 1994 (Green 1995b), 1995 (Green 1997a), 1996 (Green 1997b), 1997 (Green *et al.* 1999), 1998 (Green *et al.* 2000), 1999 (Green *et al.*, 2001c), 2000 (Green *et al.*, 2002), 2001 (Green, *et al.*, in prep.). The results have been incorporated in European JMG regional assessments of biota (ICES 1988, JMG 1992b) and temporal trends in biota (ICES 1989; 1991; ASMO 1994). The raw data has been presented for biota 1981-1992 (Green & Rønningen 1994a, b) and 1993-1997 (Green & Severinsen 1999a, b, c). The results for 1981-1992 have been assessed by Green *et al.* (1995). The results for 1981-1999 have been assessed by Green *et al.* (2001c).An evaluation of "background" levels of contaminants in biota based on JMP data has been done by Knutzen & Green (1995, 2001). Application of pollution and reference indices using the blue mussel and coordinated with JAMP has also been assessed (Green & Knutzen 2001).

2. Sampling

The JAMP stations monitored 1981-2001 by Norway are spread from the Swedish border to Varangerfjorden (Appendix D. Appendix E.).

The sampling of biota follows the OSPAR guidelines (1997) as closely as possible. These have replaced relevant portions of earlier guidelines (ICES 1986, 1992 including revisions up to 1994). A summary of sampling methods can be found in Green (2002).

For historical reasons three sizes of **mussels** (*Mytilus edulis*) have been sampled from most of the stations. The size classes were: 2-3, 3-4 and 4-5cm. In 1992 a stricter ICES approach was applied for new stations (north of the Bømlo area). For these stations 3 pooled samples of 20 individuals each are collected (ICES 1992) in the size range of 3-4 or 4-5 cm. These samples were depurated. Samples collected for SFT pollution index (station codes prefixed with "I") were not.

Cod (*Gadus morhua)* and one flatfish species are sampled; 25 individuals of each species. If possible, the same species collected in previous years at the selected stations are to be collected in 1999. The order of preference for flatfish species is: **dab** (*Limanda limanda*), **flounder** (*Platichthys flesus*), **plaice** (*Pleuronectes platessa*) and **lemon sole** (*Microstomus kitt*). If possible, the fish samples are sampled with five individuals within each of the five length classes roughly geometrically distributed, viz.:

size-class	cod	flatfish
1	370-420mm	300-320mm
2	420-475mm	320-340mm
3	475-540mm	340-365mm
4	540-615mm	365-390mm
5	615-700mm	390-420mm

3. Analyses

JAMP (OSPAR 1990) agreed that the concentration of at least cadmium, copper, mercury, lead, zinc and polychlorinated hydrocarbons should be monitored in biota. In these investigations many other contaminants have also been quantified. A complete list of variables used is given in Appendix B.

An overview of the contaminants and associated analytical methods is shown in Appendix B. A brief description of the analytical methods is given by Green *et al.* (2001a). Nearly all the metal analyses and most of the organic analyses were performed at the Norwegian Institute for Water Research (NIVA) (cf. Appendix B. . Analyses of biota were also made by: Institute for Energy Technology, Institute for Nutrition, Fisheries Directorate, Norwegian Institute for Air Research (NILU), Nordic Analytical Center (NAC), Norwegian Veterinary Institute and Fondation for Scientific and Industrial Research (SINTEF).

For **fish** two types of tissue are analysed. The fish fillet is analysed for the mercury and PCB content and the liver for all mentioned contaminants except mercury. In addition, the age, sex, and pathological state for each individual is determined. Other measurements include: fish weight and length, weight of liver, liver dry weight and fat content (% total extractable fat), the fillet dry weight and its % fat content.

The **mussels** are analysed for all contaminants. The shell length of each mussel is measured. On a bulk basis the total shell weight, total soft tissue weight, dry weight and % fat content is measured.

4. Comment on QA and detection limit

Analytical labs have been routinely involved in international and national intercalibration exercises for quality assurance (QA), including QUASIMEME since 1994. In addition the laboratories have (more regularly in recent years) analysed standard reference material in connection with analyses of the samples used in monitoring. The results of intercalibration exercises and analyses of the standard reference material are discussed in part in the annual National Comments (cf. Green *et al.*2002).

The detection limits are approximations based on 3 times the standard deviation of the 'blank' or near zero concentration of a solution. Day-to-day variations in the analytical instrument may lead to minor variation in detection limits.

5. Comment on raw data

The summary statistics for contaminants in biota 1981-2001 consist of the mean yearly values for each station/species/tissue/contaminant. The results for shellfish and fish are shown in Appendix F. Appendix G. , respectively. Special attention should be made to notes and comments preceding each Appendix.

The data is stored in MS ACCESS 1997. The tables are generated using MS ACCESS 97 and MS EXCEL 97.

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Appendix A.
Abbreviations

Abbreviation[1]	English	*Norwegian*
ELEMENTS		
Al	aluminium	*aluminium*
As	arsenic	*arsen*
Cd	cadmium	*kadmium*
Co	cobalt	*kobolt*
Cr	chromium	*krom*
Cu	copper	*kobber*
Fe	iron	*jern*
Hg	mercury	*kvikksølv*
Li	lithium	*litium*
Mn	manganese	*mangan*
Ni	nickel	*nikkel*
Pb	lead	*bly*
Pb210	lead-210	*bly-210*
Se	selenium	*selen*
Ti	titanium	*titan*
Zn	zinc	*sink*
PAHs		
PAH	polycyclic aromatic hydrocarbons	*polysykliske aromatiske hydrokarboner*
ACNE	acenaphthene	*acenaften*
ACNLE	acenaphthylene	*acenaftylen*
ANT	anthracene	*antracen*
BAA [3]	benzo[*a*]anthracene	*benzo[a]antracen*
BAP [3]	benzo[*a*]pyrene	*benzo[a]pyren*
BBF [3]	benzo[*b*]fluoranthene	*benzo[b]fluoranten*
BBJKF [3]	benzo[*b,j,k*]fluoranthene	*benzo[b,j,k]fluoranten*
BBJKF [3]	benzo[b+j,k]fluoranthene	*benzo[b+j,k]fluoranten*
BBKF [3]	benzo[*b+k*]fluoranthene	*benzo[b+k]fluoranten*
BEP	benzo[*e*]pyrene	*benzo[e]pyren*
BGHIP	benzo[*ghi*]perylene	*benzo[ghi]perylen*
BIPN [2]	biphenyl	*bifenyl*
BJKF [3]	benzo[*j,k*]fluoranthene	*benzo[j,k]fluorantren*
BKF [3]	benzo[*k*]fluoranthene	*benzo[k]fluorantren*
CHR	chrysene	*chrysen*
CHRTR	chrysene+triphenylene	*chrysen+trifenylen*
COR	coronene	*coronen*
DBAHA [3]	dibenz[*a,h*]anthracene	*dibenz[a,h]anthracen*
DBA3A [3]	dibenz[*a,c/a,h*]anthracene	*dibenz[a,c/a,h]antracen*
DBP [3]	dibenzopyrenes	*dibenzopyren*
DBT	dibenzothiophene	*dibenzothiofen*
DBTC1	C_1-dibenzothiophenes	*C_1-dibenzotiofen*
DBTC2	C_2-dibenzothiophenes	*C_2-dibenzotiofen*
DBTC3	C_3-dibenzothiophenes	*C_3-dibenzotiofen*
FLE	fluorene	*fluoren*
FLU	fluoranthene	*fluoranten*

Abbreviation[1]	English	*Norwegian*
PAHs (cont.)		
ICDP [3]	indeno[*1,2,3-cd*]pyrene	*indeno[1,2,3-cd]pyren*
NAP [2]	naphthalene	*naftalen*
NAPC1 [2]	C_1-naphthalenes	*C_1-naftalen*
NAPC2 [2]	C_2-naphthalenes	*C_2-naftalen*
NAPC3 [2]	C_3-naphthalenes	*C_3-naftalen*
NAP1M [2]	1-methylnaphthalene	*1-metylnaftalen*
NAP2M [2]	2-methylnaphthalene	*2-metylnaftalen*
NAPD2 [2]	1,6-dimethylnaphthalene	*1,6-dimetylnaftalen*
NAPD3 [2]	1,5-dimethylnaphthalene	*1,5-dimetylnaftalen*
NAPDI [2]	2,6-dimethylnaphthalene	*2,6-dimetylnaftalen*
NAPT2 [2]	2,3,6-trimethylnaphthalene	*2,3,6-trimetylnaftalen*
NAPT3 [2]	1,2,4-trimethylnaphthalene	*1,2,4-trimetylnaftalen*
NAPT4 [2]	1,2,3-trimethylnaphthalene	*1,2,3-trimetylnaftalen*
NAPTM [2]	2,3,5-trimethylnaphthalene	*2,3,5-trimetylnaftalen*
NPD	Collective term for naphthalenes, phenanthrenes and dibenzothiophenes	*Samlebetegnelse for naftalen, fenantren og dibenzotiofens*
PA	phenanthrene	*fenantren*
PAC1	C_1-phenanthrenes	*C_1-fenantren*
PAC2	C_2-phenanthrenes	*C_2-fenantren*
PAM1	1-methylphenanthrene	*1-metylfenantren*
PAM2	2-methylphenanthrene	*2-metylfenantren*
PADM1	3,6-dimethylphenanthrene	*3,6-dimetylfenantren*
PADM2	9,10-dimethylphenanthrene	*9,10-dimetylfenantren*
PER	perylene	*perylen*
PYR	pyrene	*pyren*
DI-Σn	sum of "n" dicyclic "PAH"s (footnote 2)	*sum "n" disykliske "PAH" (fotnote 2)*
P-Σn	sum "n" PAH	*sum "n" PAH*
PK-Σn	sum carcinogen PAH's (footnote 3)	*sum kreftfremkallende PAH (fotnote 3)*
PAHΣΣ	DI-Σn + P-Σn etc.	*DI-Σn + P-Σn mm..*
SPAH	"total" PAH, specific compounds not quantified (outdated analytical method)	*"total" PAH, spesifikk forbindelser ikke kvantifisert (foreldet metode)*
BAP_P	% BAP av PAHΣΣ	*% BAP av PAHΣΣ*
BAPPP	% BAP of P-Σn	*% BAP av P-Σn*
BPK_P	% BAP of PK-Σn	*% BAP av PK-Σn*
PKn_P	% PK-Σn av PAHΣΣ	*% PK-Σn av PAHΣΣ*
PKnPP	% PK-Σn av P-Σn	*% PK-Σn av P-Σn*

Abbreviations (cont'd.)

Abbreviation[1]	English	*Norwegian*
PCBs		
PCB	polychlorinated biphenyls	*polyklorerte bifenyler*
CB	individual chlorobiphenyls (CB)	*enkelte klorobifenyl*
CB28	CB28 (IUPAC)	*CB28 (IUPAC)*
CB31	CB31 (IUPAC)	*CB31 (IUPAC)*
CB44	CB44 (IUPAC)	*CB44 (IUPAC)*
CB52	CB52 (IUPAC)	*CB52 (IUPAC)*
CB77 [4]	CB77 (IUPAC)	*CB77 (IUPAC)*
CB81 [4]	CB81 (IUPAC)	*CB81 (IUPAC)*
CB95	CB95 (IUPAC)	*CB95 (IUPAC)*
CB101	CB101 (IUPAC)	*CB101 (IUPAC)*
CB105	CB105 (IUPAC)	*CB105 (IUPAC)*
CB110	CB110 (IUPAC)	*CB110 (IUPAC)*
CB118	CB118 (IUPAC)	*CB118 (IUPAC)*
CB126 [4]	CB126 (IUPAC)	*CB126 (IUPAC)*
CB128	CB128 (IUPAC)	*CB128 (IUPAC)*
CB138	CB138 (IUPAC)	*CB138 (IUPAC)*
CB149	CB149 (IUPAC)	*CB149 (IUPAC)*
CB153	CB153 (IUPAC)	*CB153 (IUPAC)*
CB156	CB156 (IUPAC)	*CB156 (IUPAC)*
CB169 [4]	CB169 (IUPAC)	*CB169 (IUPAC)*
CB170	CB170 (IUPAC)	*CB170 (IUPAC)*
CB180	CB180 (IUPAC)	*CB180 (IUPAC)*
CB194	CB194 (IUPAC)	*CB194 (IUPAC)*
CB209	CB209 (IUPAC)	*CB209 (IUPAC)*
CB-Σ7	CB: 28+52+101+118+138+153+180	*CB: 28+52+101+118+138+153+180*
CB-ΣΣ	sum of CBs, includes CB-Σ7	*sum CBer, inkluderer CB-Σ7*
TECBW	Sum of CB-toxicity equivalents after WHO model, see **TEQ**	*Sum CB- toksitets ekvivalenter etter WHO modell, se **TEQ***
TECBS	Sum of CB-toxicity equivalents after SAFE model, see **TEQ**	*Sum CB-toksitets ekvivalenter etter SAFE modell, se **TEQ***

Abbreviations (cont'd.)

Abbreviation[1]	English	*Norwegian*
DIOXINs		
TCDD	2, 3, 7, 8-tetrachloro-dibenzo dioxin	*2, 3, 7, 8-tetrakloro-dibenzo dioksin*
CDDST	Sum of tetrachloro-dibenzo dioxins	*Sum tetrakloro-dibenzo dioksiner*
CDD1N	1, 2, 3, 7, 8-pentachloro-dibenzo dioxin	*1, 2, 3, 7, 8-pentakloro-dibenzo dioksin*
CDDSN	Sum of pentachloro-dibenzo dioxins	*Sum pentakloro-dibenzo dioksiner*
CDD4X	1, 2, 3, 4, 7, 8-hexachloro-dibenzo dioxin	*1, 2, 3, 4, 7, 8-heksakloro-dibenzo dioksin*
CDD6X	1, 2, 3, 6, 7, 8-hexachloro-dibenzo dioxin	*1, 2, 3, 6, 7, 8-heksakloro-dibenzo dioksin*
CDD9X	1, 2, 3, 7, 8, 9-hexachloro-dibenzo dioxin	*1, 2, 3, 7, 8, 9-heksakloro-dibenzo dioksin*
CDDSX	Sum of hexachloro-dibenzo dioxins	*Sum heksakloro-dibenzo dioksiner*
CDD6P	1, 2, 3, 4, 6, 7, 8-heptachloro-dibenzo dioxin	*1, 2, 3, 4, 6, 7, 8-heptakloro-dibenzo dioksin*
CDDSH	Sum of heptachloro-dibenzo dioxins	*Sum heptakloro-dibenzo dioksiner*
CDDO	Octachloro-dibenzo dioxin	*Oktakloro-dibenzo dioksin*
PCDD	Sum of polychlorinated dibenzo-p-dioxins	*Sum polyklorinaterte-dibenzo-p-dioksiner*
CDF2T	2, 3, 7, 8-tetrachloro-dibenzofuran	*2, 3, 7, 8-tetrakloro-dibenzofuran*
CDFST	Sum of tetrachloro-dibenzofurans	*Sum tetrakloro-dibenzofuraner*
CDFDN	1, 2, 3, 7, 8/1, 2, 3, 4, 8-pentachloro-dibenzofuran	*1, 2, 3, 7, 8/1, 2, 3, 4, 8-pentakloro-dibenzofuran*
CDF2N	2, 3, 4, 7, 8-pentachloro-dibenzofurans	*2, 3, 4, 7, 8-pentakloro-dibenzofuran*
CDFSN	Sum of pentachloro-dibenzofurans	*Sum pentakloro-dibenzofuraner*
CDFDX	1, 2, 3, 4, 7, 8/1, 2, 3, 4, 7, 9-hexachloro-dibenzofuran	*1, 2, 3, 4, 7, 8/1, 2, 3, 4, 7, 9-heksakloro-dibenzofuran*
CDF6X	1, 2, 3, 6, 7, 8-hexachloro-dibenzofuran	*1, 2, 3, 6, 7, 8-heksakloro-dibenzofuran*
CDF9X	1, 2, 3, 7, 8, 9-hexachloro-dibenzofuran	*1, 2, 3, 7, 8, 9-heksakloro-dibenzofuran*
CDF4X	2, 3, 4, 6, 7, 8-hexachloro-dibenzofuran	*2, 3, 4, 6, 7, 8-heksakloro-dibenzofuran*
CDFSX	Sum of hexachloro-dibenzofurans	*Sum heksakloro-dibenzofuraner*
CDF6P	1, 2, 3, 4, 6, 7, 8-heptachloro-dibenzofuran	*1, 2, 3, 4, 6, 7, 8-heptakloro-dibenzofuran*
CDF9P	1, 2, 3, 4, 7, 8, 9-heptachloro-dibenzofuran	*1, 2, 3, 4, 7, 8, 9-heptakloro-dibenzofuran*
CDFSP	Sum of heptachloro-dibenzofurans	*Sum heptakloro-dibenzofuraner*
CDFO	Octachloro-dibenzofurans	*Octakloro-dibenzofuran*
PCDF	Sum of polychlorinated dibenzo-furans	*Sum polyklorinated dibenzo-furaner*
CDDFS	Sum of PCDD and PCDF	*Sum PCDD og PCDF*
TCDDN	Sum of TCDD-toxicity equivalents after Nordic model, see **TEQ**	*Sum TCDD- toksitets ekvivalenter etter Nordisk modell, se **TEQ***
TCDDI	Sum of TCDD-toxicity equivalents after international model, see **TEQ**	*Sum TCDD-toksitets ekvivalenter etter internasjonale modell, se **TEQ***

Abbreviations (cont'd.)

Abbreviation[1]	English	*Norwegian*
PESTICIDES		
ALD	aldrin	*aldrin*
DIELD	dieldrin	*dieldrin*
ENDA	endrin	*endrin*
CCDAN	cis-chlordane (=α-chlordane)	*cis-klordan (=α-klordan)*
TCDAN	trans-chlordane (=γ-chlordane)	*trans-klordan (=γ-klordan)*
OCDAN	oxy-chlordane	*oksy-klordan*
TNONC	trans-nonachlor	*trans-nonaklor*
TCDAN	trans-chlordane	*trans-klordan*
OCS	octachlorostyrene	*oktaklorstyren*
QCB	pentachlorobenzene	*pentaklorbenzen*
DDD	dichlorodiphenyldichloroethane	*diklordifenyldikloretan*
	1,1-dichloro-2,2-bis-(4-chlorophenyl)ethane	*1,1-dikloro-2,2-bis-(4-klorofenyl)etan*
DDE	dichlorodiphenyldichloroethylene (principle metabolite of DDT)	*diklordifenyldikloretylen (hovedmetabolitt av DDT)*
	1,1-dichloro-2,2-bis-(4-chlorophenyl)ethylene*	*1,1-dikloro-2,2-bis-(4-klorofenyl)etylen*
DDT	dichlorodiphenyltrichloroethane	*diklordifenyltrikloretan*
	1,1,1-trichloro-2,2-bis-(4-chlorophenyl)ethane	*1,1,1-trikloro-2,2-bis-(4-klorofenyl)etan*
DDEOP	o,p'-DDE	*o,p'-DDE*
DDEPP	p,p'-DDE	*p,p'-DDE*
DDTOP	o,p'-DDT	*o,p'-DDT*
DDTPP	p,p'-DDT	*p,p'-DDT*
TDEPP	p,p'-DDD	*p,p'-DDD*
DDTEP	p,p'-DDE + p,p'-DDT	*p,p'-DDE + p,p'-DDT*
DD-nΣ	sum of DDT and metabolites, n = number of compounds	*sum DDT og metabolitter, n = antall forbindelser*
HCB	hexachlorobenzene	*heksaklorbenzen*
HCHG	Lindane	*Lindan*
	γ HCH = gamma hexachlorocyclohexane	*γ HCH = gamma heksaklorsykloheksan*
	(γ BHC = gamma benzenehexachloride, outdated synonym)	*(γ BHC = gamma benzenheksaklorid, foreldret betegnelse)*
HCHA	α HCH = alpha HCH	*α HCH = alpha HCH*
HCHB	β HCH = beta HCH	*β HCH = beta HCH*
HC-nΣ	sum of HCHs, n = count	*sum av HCHs, n = antall*
EOCl	extractable organically bound chlorine	*ekstraherbart organisk bundet klor*
EPOCl	extractable persistent organically bound chlorine	*ekstraherbart persistent organisk bundet klor*
NTOT	total organic nitrogen	*total organisk nitrogen*
CTOT	total organic carbon	*total organisk karbon*
CORG	organic carbon	*organisk karbon*
GSAMT	grain size	*kornfordeling*
MOCON	moisture content	*vanninnhold*

Abbreviations (cont'd.)

Abbreviation[1]	English	*Norwegian*
INSTITUTES		
IFEN	Institute for Energy Technology	*Institutt for energiteknikk*
FIER	Institute for Nutrition, Fisheries Directorate	*Fiskeridirektoratets Ernæringsinstitutt*
FORC	FORCE Institutes, Div. for Isotope Technique and Analysis [DK]	*FORCE Institutterne, Div. for Isotopteknik og Analyse [DK]*
IMRN	Institute of Marine Research (IMR)	*Havforskningsinstituttet*
NACE	Nordic Analytical Center	*Nordisk Analyse Center*
NILU	Norwegian Institute for Air Research	*Norsk institutt forluftforskning*
NIVA	Norwegian Institute for Water Research	*Norsk institutt for vannforskning*
SERI	Swedish Environmental Research Institute	*Institutionen för vatten- och luftvårdsforskning*
VETN	Norwegian Veterinary Institute	*Veterinærinstituttet*
SIIF	Fondation for Scientific and Industrial Research at the Norwegian Institute of Technology - SINTEF (a division, previously: Center for Industrial Research SI)	*Stiftelsen for industriell og teknisk forskning ved Norges tekniske høgskole- SINTEF (en avdeling, tidligere: Senter for industriforskning SI)*

[1]) After: ICES Environmental Data Reporting Formats. International Council for the Exploration of the Sea. July 1996 and supplementary codes related to non-ortho and mono-ortho PCB's and "dioxins" (ICES pers. comm.)

[2]) Indicates "PAH" compounds that are dicyclic and not truly PAH's typically identified during the analyses of PAH, include naphthalenes and "biphenyls".

[3]) Indicates PAH compounds potentially cancerogenic for humans according to IARC (1987), i.e., categories 2A+2B (possibly and probably carcinogenic).

[4]) Indicates non ortho- co-planer PCB compounds ie., those that lack Cl in positions 1, 1', 5, and 5'

*) The Pesticide Index, second edition. The Royal Society of Chemistry, 1991.

Other abbreviations *andre forkortelser*

	English	*Norwegian*
TEQ	"Toxicity equivalency factors" for the most toxic compounds within the following groups:	*"Toxisitetsekvivalentfaktorer" for de giftigste forbindelsene innen følgende grupper.*
	• polychlorinated dibenzo-p-dioxins and dibenzofurans (**PCDD/PCDFs**). Equivalents calculated after Nordic model (Ahlborg 1989) [1] or international model (Int./EPA, cf. Van den Berg *et al.*, 1998) [2]	• *polyklorerte dibenzo-p-dioksiner og dibenzofuraner (**PCDD/PCDF**). Ekvivalentberegning etter nordisk modell (Ahlborg 1989) [1] eller etter internasjonal modell (Int./EPA, cf. Van den Berg et al. 1998) [2]*
	• non-ortho and mono-ortho substituted chlorobiphenyls after WHO model (Ahlborg *et al.*, 1994) [3] or Safe (1994, cf. NILU pers. comm.)	• *non-orto og mono-orto substituerte klorobifenyler etter WHO modell (Ahlborg et al., 1994) [3] eller Safe (1994, cf. NILU pers. medd.)*
ppm	parts per million, mg/kg	*deler pr. milliondeler, mg/kg*
ppb	parts per billion, μg/kg	*deler pr. milliarddeler, μg/kg*
ppp	parts per trillion, ng/kg	*deler pr. tusen-milliarddeler, ng/kg*
d.w.	dry weight basis	*tørrvekt basis*
w.w.	wet weight or fresh weight basis	*våtvekt eller friskvekt basis*

[1]) Ahlborg, U.G., 1989. Nordic risk assessment of PCDDs and PCDFs. Chemosphere 19:603-608.

[2]) Van den Berg, Birnbaum, L, Bosveld, A. T. C. and co-workers, 1998. Toxic equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environ Hlth. Perspect. 106:775-792.

[3]) Ahlborg, U.G., Becking G.B., Birnbaum, L.S., Brouwer, A, Derks, H.J.G.M., Feely, M., Golor, G., Hanberg, A., Larsen, J.C., J.C., Liem, A.K.G., Safe, S.H., Schlatter, C., Wärn, F., Younes, M., Yrjänheikki, E., 1994. Toxic equivalency factors for dioxin-like PCBs. Report on a WHO-ECEH and IPSC consultation , December 1993. Chemosphere 28:1049-1067.

Appendix B.
Analytical overview

Sorted by:
- Contaminant, year, laboratory, intercalibration

Abbreviations are defined in Appendix A. and Appendix C.

Contamin.	**Contaminant defined in Appendix A.**
Mon. Year	**Monitoring year**
Lab.	**Analytical laboratory (cf. Appendix A.)**
Intercalibr. +basis	**Intercalibration exercise (cf. Appendix C.) and basis where W = wet weight and D = dry weight .**
Detect limit	**"Normal" detection limit**
Count below d.lim	**Number of analyses below normal detection limit**
N (<) above d.lim	**Number of analyses where detection limit was higher than normal.**

Tissue					Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Year	Lab.	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
ACNE	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	72		20
	1996-NIVA			W						309	0.2	65		19
	1997-NIVA			W						309	0.5	34		
	1998-NIVA		CI	W						309	0.5	39		
	1999-NIVA			W						309	0.5	34		
	2000-NIVA			W						309	0.5	38		
	2001-NIVA			W						309	0.5	42		
ACNLE	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	72		49
	1996-NIVA			W						309	0.2	65		42
	1997-NIVA			W						309	0.5	34		
	1998-NIVA			W						309	0.5	39		
	1999-NIVA			W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	41		
AG	1996-NIVA			W						999	miss	3		
ANT	1992-NIVA			W	309	0.2	8			309	0.2	45		
	1995-NIVA			W						309	0.2	72		28
	1996-NIVA			W						309	0.2	65		30
	1997-NIVA			W						309	0.5	35		
	1998-NIVA		CI	W						309	0.5	39		
	1999-NIVA		EK	W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	42		
AS	1996-NIVA			W						999	miss	3		
BAP	1992-NIVA			W	309	0.2	8			309	0.2	45		
	1995-NIVA			W						309	0.2	72		21
	1996-NIVA			W						309	0.2	65		26
	1997-NIVA		AL	W						309	0.5	36		
	1998-NIVA		CI	W						309	0.5	39		
	1999-NIVA		EK	W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	42		
BBF	1992-NIVA			W	309	0.2	8			309	0.2	45		
	1995-NIVA			W						309	0.2	59		9
	1996-NIVA			W						309	0.2	57		6
BBJKF	1995-NIVA			W						309	0.2	12		
	1996-NIVA			W						309	0.2	8		
	1997-NIVA			W						309	0.2	36		1
	1998-NIVA			W						309	0.2	39		
	1999-NIVA			W						309	0.2	34		
	2000-NIVA			W						309	0.2	39		10
	2001-NIVA			W						309	0.2	42		
BEP	1992-NIVA			W	309	0.2	8			309	0.2	45		
	1995-NIVA			W						309	0.2	72		5
	1996-NIVA			W						309	0.2	65		6
	1997-NIVA			W						309	0.2	36		
	1998-NIVA		CI	W						309	0.2	38		
	1999-NIVA		EK	W						309	0.2	34		
	2000-NIVA			W						309	0.2	39		10
	2001-NIVA			W						309	0.2	42		
BGHIP	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	72		20
	1996-NIVA			W						309	0.2	65		10
	1997-NIVA			W						309	0.5	36		
	1998-NIVA		CI	W						309	0.5	35		
	1999-NIVA		EK	W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	42		
BIPN	1992-NIVA			W	309	0.2	8			309	0.2	46		

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1995-NIVA		W						309	0.2	72		52
	1996-NIVA		W						309	0.2	62		39
	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39	1	
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	38		1
	2001-NIVA		W						309	0.5	41		
BJKF	1992-NIVA		W	309	0.2	8			309	0.2	45		
	1995-NIVA		W						309	0.2	24		21
	1996-NIVA		W						309	0.2	57		16
BAA	1992-NIVA		W	309	0.2	8			309	0.2	44		
	1995-NIVA		W						309	0.2	72		9
	1996-NIVA		W						309	0.2	65		8
	1997-NIVA		W						309	0.5	36		
	1998-NIVA	CI	W						309	0.5	39		
	1999-NIVA	EK	W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
CB101	1987-SIIF		W						111	0.2	21	1	
	1988-SIIF		D						111	0.1	6		
	1988-SIIF		W						111	0.1	22		
	1989-NACE		W	510	20	93							
	1989-SIIF		W						111	0.1	36		
	1990-NIVA	2G	W	340	1	169	1		341	0.05	58		
	1990-SIIF	2G	W						111	0.4	41	6	
	1991-NIVA	2H	W	340	1	179		8	341	0.05	62		
	1991-SIIF	2H	W						111	0.2	35		1
	1992-NIVA	2J	W	340	5	192	3		341	0.1	140		
	1993-NIVA	2K	W	340	4	212	12		341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	3		341	0.05	165	39	
	1995-NIVA		W	340	3	318	10		341	0.05	225	10	
	1996-NIVA		W	340	3	332	14		341	0.05	237	9	
	1997-NIVA		W	340	3	260	24						
	1997-NIVA	AJ	W						341	0.05	221	4	
	1998-NIVA		W	340	3	284	19	1					
	1998-NIVA	CH	W						341	0.05	197	1	3
	1999-NIVA		W	340	3	249	6						
	1999-NIVA	EG	W						341	0.05	226		13
	2000-NIVA		W	340	3	230	24						
	2000-NIVA	GU	W						341	0.05	180	11	7
	2001-NIVA		W	340	3	250	19	4					
	2001-NIVA	IO	W						341	0.05	205		16
CB105	1991-NIVA	2H	W	340	1	87		1	341	0.05	47		
	1992-NIVA		W	340	5	192	3		341	0.1	140		
	1993-NIVA	QM	W	340	4	212	21		341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	8		341	0.05	165	53	
	1995-NIVA		W	340	3	318	13		341	0.05	224	34	
	1996-NIVA		W	340	3	332	22		341	0.05	231	23	
	1997-NIVA		W	340	3	260	24		341	0.05	221	3	1
	1998-NIVA		W	340	3	284	31	19					
	1998-NIVA	CH	W						341	0.05	201	11	16
	1999-NIVA		W	340	3	249	17						
	1999-NIVA	EG	W						341	0.05	226	4	61
	2000-NIVA		W	340	3	230	32						
	2000-NIVA	GU	W						341	0.05	180	21	37
	2001-NIVA		W	340	3	250	29	2					
	2001-NIVA	IO	W						341	0.05	205		76
CB118	1989-NACE		W	510	20	93							
	1989-SIIF		W						111	0.1	36		
	1990-NIVA	2G	W	340	1	169			341	0.05	58		
	1990-SIIF	2G	W						111	0.2	41	1	

Tissue					Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis			Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1991-NIVA	2H	W		340	1	179			341	0.05	62		
	1991-SIIF	2H	W							111	0.2	35		1
	1992-NIVA	2J	W		340	5	192	2		341	0.1	140		
	1993-NIVA	2K	W		340	4	212	10		341	0.1	133		
	1994-NIVA	2Z	W		340	3	300	2		341	0.05	165	25	
	1995-NIVA		W		340	3	318	2		341	0.05	225	2	
	1996-NIVA		W		340	3	332	6		341	0.05	237	4	
	1997-NIVA		W		340	3	260	5						
	1997-NIVA	AJ	W							341	0.05	221		
	1998-NIVA		W		340	3	284	6	1					
	1998-NIVA	CH	W							341	0.05	203	3	1
	1999-NIVA		W		340	3	249	2						
	1999-NIVA	EG	W							341	0.05	226		7
	2000-NIVA		W		340	3	230	5						
	2000-NIVA	GU	W							341	0.05	180	6	7
	2001-NIVA		W		340	3	250	1	1					
	2001-NIVA	IO	W							341	0.05	205		21
CB126	1995-NILU		W							841	0.00002	6		
	1996-NILU		W							841	0.0001	18		
CB138	1988-SIIF		D							111	0.1	6		
	1988-SIIF		W							111	0.1	21		
	1989-NACE		W		510	20	93							
	1989-SIIF		W							111	0.1	36		
	1990-NIVA	2G	W		340	1	169			341	0.05	58		
	1990-SIIF	2G	W							111	0.3	41		
	1991-NIVA	2H	W		340	1	179			341	0.05	62		
	1991-SIIF	2H	W							111	0.3	35		1
	1992-NIVA	2J	W		340	5	192			341	0.1	137		
	1993-NIVA	QM	W		340	4	212	3		341	0.1	133		
	1994-NIVA	2Z	W		340	3	300			341	0.05	165	12	
	1995-NIVA		W		340	3	318	2		341	0.05	225		
	1996-NIVA		W		340	3	331	1		341	0.05	235		
	1997-NIVA		W		340	3	260	1						
	1997-NIVA	AJ	W							341	0.05	221		1
	1998-NIVA		W		340	3	284	3						
	1998-NIVA	CH	W							341	0.05	203		
	1999-NIVA		W		340	3	249							
	1999-NIVA	EG	W							341	0.05	226		1
	2000-NIVA		W		340	3	230	3						
	2000-NIVA	GU	W							341	0.05	180	3	
	2001-NIVA		W		340	3	250	1	1					
	2001-NIVA	IO	W							341	0.05	205		7
CB153	1988-SIIF		D							111	0.1	6		
	1988-SIIF		W							111	0.1	22		
	1989-NACE		W		510	20	93							
	1989-SIIF		W							111	0.1	36		
	1990-NIVA	2G	W		340	1	169			341	0.05	58		
	1990-SIIF	2G	W							111	0.3	41		
	1991-NIVA	2H	W		340	1	179			341	0.05	62		
	1991-SIIF	2H	W							111	0.5	35		1
	1992-NIVA	2J	W		340	5	192			341	0.1	140		
	1993-NIVA	2K	W		340	4	212	3		341	0.1	133		
	1994-NIVA	2Z	W		340	3	300			341	0.05	165	9	
	1995-NIVA		W		340	3	318	1		341	0.05	225		
	1996-NIVA		W		340	3	332	1		341	0.05	237		
	1997-NIVA		W		340	3	260							
	1997-NIVA	AJ	W							341	0.05	221		
	1998-NIVA		W		340	3	284	1						
	1998-NIVA	CH	W							341	0.05	203	1	1
	1999-NIVA		W		340	3	249							
	1999-NIVA	EG	W							341	0.05	226		1
	2000-NIVA		W		340	3	230	3						

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	2000-NIVA	GU	W						341	0.05	180	1	
	2001-NIVA		W	340	3	250		1					
	2001-NIVA	IO	W						341	0.05	205		5
CB156	1991-NIVA	2H	W	340	1	87		15	341	0.05	47		5
	1992-NIVA		W	340	5	192	3		341	0.1	140		
	1993-NIVA	QM	W	340	4	212	31		341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	24	1	341	0.05	162	70	
	1995-NIVA		W	340	3	317	27		341	0.05	225	67	
	1996-NIVA		W	340	3	332	48		341	0.05	237	62	
	1997-NIVA		W	340	3	260	46						
	1997-NIVA	AJ	W						341	0.05	221	9	10
	1998-NIVA		W	340	3	284	52	70					
	1998-NIVA	CH	W						341	0.05	203	37	47
	1999-NIVA		W	340	3	249	39	2					
	1999-NIVA	EG	W						341	0.05	225	12	134
	2000-NIVA		W	340	3	230	71	5					
	2000-NIVA	GU	W						341	0.05	180	28	90
	2001-NIVA		W	340	3	250	82	3					
	2001-NIVA	IO	W						341	0.05	205	9	134
CB169	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.0001	18	2	
CB180	1987-SIIF		W						111	0.2	21	6	
	1988-SIIF		D						111	0.1	6		
	1988-SIIF		W						111	0.1	22		
	1989-NACE		W	510	20	93	1						
	1989-SIIF		W						111	0.1	36		
	1990-NIVA	2G	W	340	1	169			341	0.05	58		
	1990-SIIF	2G	W						111	0.2	41	8	
	1991-NIVA	2H	W	340	1	179			341	0.05	62		
	1991-SIIF	2H	W						111	0.2	35		
	1992-NIVA	2J	W	340	5	192	3		341	0.1	140		
	1993-NIVA	2K	W	340	4	212	15		341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	3		341	0.05	162	49	
	1995-NIVA		W	340	3	318	5		341	0.05	225	22	
	1996-NIVA		W	340	3	332	14		341	0.05	237	25	
	1997-NIVA		W	340	3	260	18						
	1997-NIVA	AJ	W						341	0.05	221	1	1
	1998-NIVA		W	340	3	284	20	14					
	1998-NIVA	CH	W						341	0.05	203	18	44
	1999-NIVA		W	340	3	249	7	1					
	1999-NIVA	EG	W						341	0.05	226	2	77
	2000-NIVA		W	340	3	230	15						
	2000-NIVA	GU	W						341	0.05	180	15	80
	2001-NIVA		W	340	3	250	17	1					
	2001-NIVA	IO	W						341	0.05	205		99
CB209	1990-NIVA		W	340	2	169	24	11	341	0.05	58		
	1991-NIVA		W	340	2	179	11	88	341	0.05	62	5	7
	1992-NIVA		W	340	5	192	3		341	0.1	140		1
	1993-NIVA		W	340	4	212	46	14	341	0.1	133		
	1994-NIVA		W	340	3	300	29	24	341	0.05	165	91	
	1995-NIVA		W	340	3	318	36		341	0.05	225	92	5
	1996-NIVA		W	340	3	332	255		341	0.05	237	107	9
	1997-NIVA		W	340	3	260	196		341	0.05	221	30	14
	1998-NIVA		W	340	3	283	120	121	341	0.05	203	50	69
	1999-NIVA		W	340	3	243	163	17	341	0.05	224	19	172
	2000-NIVA		W	340	3	228	151	18	341	0.05	172	33	105
	2001-NIVA		W	340	3	250	184	10	341	0.05	205	21	179
CB28	1988-SIIF		D						111	0.1	6		
	1988-SIIF		W						111	0.1	22		
	1989-NACE		W	510	20	93							
	1989-SIIF		W						111	0.1	36		1

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1990-NIVA	2G	W	340	1	169	2	2	341	0.05	58		
	1990-SIIF	2G	W						111	0.2	41	7	
	1991-NIVA	2H	W	340	1	179	2	52	341	0.05	62	5	1
	1991-SIIF	2H	W						111	0.3	35		
	1992-NIVA	2J	W	340	5	192	3		341	0.1	137		
	1993-NIVA	2K	W	340	4	212	44	5	341	0.1	133		
	1994-NIVA	2Z	W	340	3	282	18	4	341	0.05	163	73	
	1995-NIVA		W	340	3	313	27		341	0.05	225	75	
	1996-NIVA		W	340	3	332	107		341	0.05	236	70	
	1997-NIVA		W	340	3	260	81						
	1997-NIVA	AJ	W						341	0.05	221	22	14
	1998-NIVA		W	340	3	284	96	99					
	1998-NIVA	CH	W						341	0.05	201	33	46
	1999-NIVA		W	340	3	249	96	18					
	1999-NIVA	EG	W						341	0.05	226	14	143
	2000-NIVA		W	340	3	230	110	7					
	2000-NIVA	GU	W						341	0.05	180	26	60
	2001-NIVA		W	340	3	250	146	10					
	2001-NIVA	IO	W						341	0.05	205	17	145
CB52	1987-SIIF		W						111	0.2	20	1	
	1988-SIIF		D						111	0.1	6		
	1988-SIIF		W						111	0.1	22		
	1989-NACE		W	510	20	93							
	1989-SIIF		W						111	0.1	36		
	1990-NIVA	2G	W	340	1	169	2	6	341	0.05	58		
	1990-SIIF	2G	W						111	0.4	41	7	
	1991-NIVA	2H	W	340	1	179	1	37	341	0.05	62	5	1
	1991-SIIF	2H	W						111	0.3	35		
	1992-NIVA	2J	W	340	5	192	3		341	0.1	137		
	1993-NIVA	2K	W	340	4	212	40		341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	9		341	0.05	165	64	
	1995-NIVA		W	340	3	312	19		341	0.05	214	28	
	1996-NIVA		W	340	3	332	49		341	0.05	235	31	
	1997-NIVA		W	340	3	260	116						
	1997-NIVA	AJ	W						341	0.05	221	25	10
	1998-NIVA		W	340	3	281	47	44	341	0.05	168	12	17
	1999-NIVA		W	340	3	249	52	11					
	1999-NIVA	EG	W						341	0.05	216	7	71
	2000-NIVA		W	340	3	230	65	4					
	2000-NIVA	GU	W						341	0.05	177	22	20
	2001-NIVA		W	340	3	250	66	4					
	2001-NIVA	IO	W						341	0.05	180	7	58
CB77	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.0001	18		
CB81	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.0001	18		
CD	1981-SIIF	1E	W	130	10	28			130	5	27		
	1981-SIIF	1F	W						130	10	7		
	1982-SIIF	1F	W						130	10	18		
	1982-VETN		W	230	10	54							
	1983-SIIF	1F	W						130	10	17		
	1983-VETN	1Z	W	230	10	46							
	1984-FIER	1H	W	402	1	23							
	1984-SIIF	1G	W						130	10	27		
	1984-VETN	1Z	W	230	10	66							
	1985-SIIF	1G	D						130	10	35		
	1985-VETN	1Z	W	230	10	45		3					
	1986-NIVA	1H	D	312	30	56	1		312	30	20		
	1987-FIER	1G	W	402	1	37							
	1987-NIVA	1H	D	312	30	57		4	312	30	37		
	1988-NIVA	1H	D	312	30	61	11	1	312	30	55		
	1989-NIVA	1H	D	312	30	135	11	8					

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1989-NIVA	1H	W						312	30	36		
	1990-NIVA	1H	W	312	10	189	9	2	312	30	77	5	
	1991-NIVA	1H	W	312	10	190	29	2	312	10	67		
	1992-NIVA	1H	W	312	10	191	4		312	10	111		
	1993-NIVA	1H	W	312	50	221	98		312	50	79		
	1994-NIVA	1Z	W	312	50	302	134		312	50	81		
	1995-NIVA		W	312	50	318	129		312	50	139	2	
	1996-NIVA	V1	W						312	50	125		
	1996-NIVA	V2	W	312	50	368	128						
	1997-NIVA		W	312	50	287	90						
	1997-NIVA	AH	W						312	50	107		
	1998-NIVA		W	312	50	285	101		312	50	93		
	1999-NIVA		W	312	50	235	79						
	1999-NIVA	EF	W						312	50	132	15	
	2000-NIVA		W	312	50	227	82						
	2000-NIVA	GS	W						312	50	90		
	2001-NIVA		W	312	50	261	103						
	2001-NIVA	IM	W						312	50	93		
CDD1N	1995-NILU		W						841	0.00002	6	1	1
	1996-NILU		W						841	0.00001	18		2
CDD4X	1995-NILU		W						841	0.00002	6	3	1
	1996-NILU		W						841	0.00002	18		1
CDD6P	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00004	18		
CDD6X	1995-NILU		W						841	0.00002	6		1
	1996-NILU		W						841	0.00002	18		1
CDD9X	1995-NILU		W						841	0.00002	6	2	1
	1996-NILU		W						841	0.00002	18		1
CDDO	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.0001	18		
CDDSN	1995-NILU		W						841	0.00002	5		
	1996-NILU		W						841	0.00001	18		3
CDDSP	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00004	18		
CDDST	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00001	18		
CDDSX	1995-NILU		W						841	0.00002	5		
	1996-NILU		W						841	0.00002	18		2
CDF2N	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00001	18		1
CDF2T	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00001	18		
CDF4X	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00002	18		1
CDF6P	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00004	18	2	1
CDF6X	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00002	18		1
CDF9P	1995-NILU		W						841	0.00002	6	2	1
	1996-NILU		W						841	0.00008	17	3	1
CDF9X	1995-NILU		W						841	0.00002	6	3	1
	1996-NILU		W						841	0.00002	18		1
CDFDN	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00001	18		1
CDFDX	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00002	18		1
CDFO	1995-NILU		W						841	0.00002	6		1
	1996-NILU		W						841	0.0001	18	3	1
CDFSN	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00001	18		1

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
CDFSP	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00008	18	6	1
CDFST	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00001	18		
CDFSX	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.00002	18		1
CHR	1992-NIVA		W	309	0.2	8			309	0.2	44		
	1995-NIVA		W						309	0.2	56		
	1996-NIVA		W						309	0.2	65		3
CHRTR	1995-NIVA		W						309	0.2	15		2
	1997-NIVA		W						309	0.5	36		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
CO	1996-NIVA		W						999	miss	3		
COR	1992-NIVA		W	309	0.2	8			309	0.2	46		
CR	1992-NIVA		W						312	10	6		
	1996-NIVA		W						999	miss	3		
CU	1983-SIIF	1G	W						130	10	12		
	1984-SIIF	1G	W						130	10	27		
	1986-NIVA	1H	D	311	150	56			311	150	20		
	1987-FIER	1G	W	404	50	37							
	1987-NIVA	1H	D	311	150	57			311	150	37		
	1988-NIVA	1H	D	311	150	61			311	150	55		
	1989-NIVA	1H	D	311	150	135							
	1989-NIVA	1H	W						311	150	36		
	1990-NIVA	1H	W	311	150	189			311	150	77		
	1991-NIVA	1H	W	311	50	193	2		311	50	67		
	1992-NIVA	1H	W	311	10	191			311	10	111		
	1993-NIVA	1H	W	311	10	221			311	10	79		
	1994-NIVA	1Z	W	311	10	302			311	10	81		
	1995-NIVA		W	311	10	318			311	10	124		
	1996-NIVA	V1	W						311	10	113		
	1996-NIVA	V2	W	311	10	368							
	1997-NIVA		W	311	5000a	287	1						
	1997-NIVA	AH	W						311	10	96		
	1998-NIVA		W	311	10	285							
	1998-NIVA	CF	W						311	10	51		
	1999-NIVA		W	311	10	235							
	1999-NIVA	EF	W						311	10	99		
	2000-NIVA		W	311	10	227							
	2000-NIVA	GS	W						311	10	51		
	2001-NIVA		W	311	10	261							
	2001-NIVA	IM	W						311	10	51		
DBA3A	1992-NIVA		W	309	0.2	8			309	0.2	46		
	1995-NIVA		W						309	0.2	71		48
	1996-NIVA		W						309	0.2	65		53
	1997-NIVA		W						309	0.5	36		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
DBP	1992-NIVA		W	309	0.2	8			309	0.2	46		
DBT	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
DBTC1	1995-NIVA		W						309	0.2	57		14
	1996-NIVA		W						309	0.2	65		9
DBTC2	1995-NIVA		W						309	0.2	56		9

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1996-NIVA		W						309	0.2	62		11
DBTC3	1995-NIVA		W						309	0.2	57		4
	1996-NIVA		W						309	0.2	65		5
DBTIN	1997-NIVA		D						320	5	8		
	1998-NIVA		D						320	5	15		
	1999-NIVA		D						320	5	13		
	1999-NIVA		W						320	5	6	2	
	2000-NIVA		W						320	0.5	23		
	2001-GALG		W						999	miss	11		
	2001-NIVA		W						320	0.5	16		1
DBTIO	1997-NIVA		W						309	0.5	34		
DDEPP	1982-VETN		W	210	50	53							
	1983-VETN	2E	W	210	50	48			211a	50	48		
	1984-VETN	2E	W	210	50	66							
	1985-VETN	2E	W	210	50	45							
	1986-NACE	2Z	W	510	20	56							
	1987-NACE	2Z	W	510	40	53							
	1988-NACE	2Z	W	510	40	61							
	1989-NACE	2Z	W	510	20	93							
	1990-NIVA		W	340	1	169			341	0.05	58		
	1991-NIVA		W	340	1	179			341	0.05	62		
	1992-NIVA		W	340	5	192	2		341	0.1	140		
	1993-NIVA		W	340	4	212	3		341	0.1	133		
	1994-NIVA	2Z	W	340	4	300			341	0.1	165	27	
	1995-NIVA		W	340	4	318	2		341	0.1	225	30	
	1996-NIVA		W	340	4	332	2		341	0.1	237	47	
	1997-NIVA		W	340	4	260	3		341	0.1	221	1	
	1998-NIVA		W	340	4	284	6						
	1998-NIVA	CH	W						341	0.1	203	4	
	1999-NIVA		W	340	4	249							
	1999-NIVA	EG	W						341	0.1	226	2	
	2000-NIVA		W	340	4	230	7						
	2000-NIVA	GU	W						341	0.1	179	6	
	2001-NIVA		W	340	4	250		1					
	2001-NIVA	IO	W						341	0.1	205	1	7
DDTEP	1983-SIIF		W						111	0.5	12		
	1984-SIIF		W						111	0.5	24		1
	1985-SIIF		W						111	0.5	27	1	5
	1986-SIIF		W						111	0.5	21		
	1987-SIIF		W						111	0.5	21	1	
	1988-SIIF		D						111	0.5	6		
	1988-SIIF		W						111	0.5	22	1	
	1989-SIIF		W						111	0.5	36	1	
	1990-SIIF		W						111	0.2	41	1	
	1991-SIIF		W						111	0.3	35		
DDTPP	1986-NACE		W	510	40	56							
	1987-NACE		W	510	40	53							
	1988-NACE		W	510	40	61							
	1989-NACE		W	510	20	93							
	1995-NIVA		W						340	0.05	72		
	1996-NIVA		W	340	0.05	54		4	340	0.05	45		
	1997-NIVA		W	340	2	32							
	1997-NIVA	AJ	W						340	0.05	48		
	1998-NIVA		W	340	2	37	1	8	340	0.05	68		24
	1999-NIVA		W	340	2	29		4	340	0.05	93		7
	2000-NIVA		W	340	2	22			340	0.05	48		6
	2001-NIVA		W	340	2	46		2	340	0.05	48		11
DPTIN	1997-NIVA		D						320	5	8		
	1998-NIVA		D						320	5	15	9	
	1999-NIVA		D						320	5	13	12	
	1999-NIVA		W						320	5	6	6	

Tissue					Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis			Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	2000-NIVA		W							320	0.5	23	1	1
	2001-NIVA		W							320	0.5	16		16
EOCL	1989-SIIF		W							605	170	5		
EPOCL	1986-NACE		W		610	800	56							
	1986-SIIF		W							605	5000	21	21	
	1987-NACE		W		610	800	53							
	1987-SIIF		W							605	40	20		
	1988-NACE		W		610	800	60							
	1988-SIIF		W							605	40	27		
	1989-NACE		W		610	800	89	1						
	1989-SIIF		W							605	40	35		
	1990-NIVA		W		615	40	117		3					
	1990-SIIF		W							605	40	41		
	1991-NIVA		W		615	40	116		12					
	1991-SIIF		W							605	130	35		
	1997-IFEN		W							607	50	6		
	1998-IFEN		W							607	1	6		
	2000-SINT		W							607	1	6		
	2001-SINT		W							607	1	6		
FLE	1992-NIVA		W		309	0.2	8			309	0.2	45		
	1995-NIVA		W							309	0.2	72		22
	1996-NIVA		W							309	0.2	65		6
	1997-NIVA	AL	W							309	0.5	34		
	1998-NIVA	CI	W							309	0.5	39		
	1999-NIVA		W							309	0.5	34		
	2000-NIVA		W							309	0.5	39		
	2001-NIVA		W							309	0.5	42		
FLU	1992-NIVA		W		309	0.2	8			309	0.2	44		
	1995-NIVA		W							309	0.2	72		
	1996-NIVA		W							309	0.2	65		
	1997-NIVA	AL	W							309	0.2	36		
	1998-NIVA	CI	W							309	0.2	39		
	1999-NIVA	EK	W							309	0.2	34		
	2000-NIVA		W							309	0.2	39		
	2001-NIVA		W							309	0.2	42		
HCB	1983-SIIF		W							111	0.5	12		
	1983-VETN	2Z	W		210	10	48			211a	10	48		
	1984-SIIF		W							111	0.2	24		1
	1984-VETN	2Z	W		210	10	66							
	1985-SIIF		W							111	0.2	30	6	2
	1985-VETN	2Z	W		210	10	45		4					
	1986-NACE	2Z	W		510	10	56							
	1986-SIIF	2Z	W							111	0.2	21	3	
	1987-NACE	2Z	W		510	40	53							
	1987-SIIF	2Z	W							111	0.2	21	4	
	1988-NACE	2Z	W		510	40	61							
	1988-SIIF	2Z	D							111	0.2	6		
	1988-SIIF	2Z	W							111	0.2	22	2	
	1989-NACE	2Z	W		510	20	93							
	1989-SIIF	2Z	W							111	0.05	36		
	1990-NIVA		W		340	1	169	2		341	0.05	58		
	1990-SIIF	2Z	W							111	0.05	41	3	
	1991-NIVA		W		340	1	179	4	13	341	0.05	62	5	
	1991-SIIF	2Z	W							111	0.1	35		
	1992-NIVA		W		340	5	189	3		341	0.1	140		
	1993-NIVA		W		340	4	212	31		341	0.1	133		
	1994-NIVA	2Z	W		340	3	300	24	1	341	0.05	165	33	
	1995-NIVA		W		340	3	317	37		341	0.05	225	30	
	1996-NIVA		W		340	3	332	52		341	0.05	237	37	
	1997-NIVA		W		340	2	260	39						
	1997-NIVA	AJ	W							341	0.05	221	7	

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1998-NIVA		W	340	2	284	48	13	341	0.05	203	67	2
	1999-NIVA		W	340	2	249	18						
	1999-NIVA	EG	W						341	0.05	226	18	8
	2000-NIVA		W	340	2	230	40						
	2000-NIVA	GU	W						341	0.05	180	43	1
	2001-NIVA		W	340	2	250	36	1	341	0.05	205	36	2
HCHA	1990-NIVA		W	340	1	168			341	0.05	58		
	1991-NIVA		W	340	1	179	2	111	341	0.05	62	5	10
	1992-NIVA		W	340	5	192	3		341	0.1	140		
	1993-NIVA		W	340	4	212	45	22	341	0.1	133		
	1994-NIVA	2Z	W	340	3	296	32	3	341	0.05	165	85	
	1995-NIVA		W	340	3	318	45		341	0.05	225	98	
	1996-NIVA		W	340	3	332	111		341	0.05	231	100	
	1997-NIVA		W	340	0.5	260	2	10	341	0.05	221	20	11
	1998-NIVA		W	340	0.5	284	8	208	341	0.05	202	25	121
	1999-NIVA		W	340	0.5	249	17	78	341	0.05	226	23	150
	2000-NIVA		W	340	0.5	230	31	62	341	0.05	180	42	78
	2001-NIVA		W	340	0.5	250	25	50	341	0.05	205	20	179
HCHG	1986-NACE		W	510	30	56	1						
	1986-SIIF		W						111	3	21		
	1987-NACE		W	510	40	53							
	1987-SIIF		W						111	5	21		1
	1988-NACE		W	510	40	61							
	1989-NACE		W	510	20	93							
	1989-SIIF		W						111	50	36		
	1990-NIVA		W	340	1	169	1	9	341	0.05	58		
	1990-SIIF		W						111	0.1	41		
	1991-NIVA		W	340	1	179	3	18	341	0.05	62	5	1
	1991-SIIF		W						111	0.3	35		
	1992-NIVA		W	340	5	192	3		341	0.1	140		
	1993-NIVA		W	340	4	212	42	17	341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	24	1	341	0.05	165	46	
	1995-NIVA		W	340	3	313	31		341	0.05	213	29	
	1996-NIVA		W	340	3	330	68		341	0.05	220	8	
	1997-NIVA		W	340	2	260	47						
	1997-NIVA	AJ	W						341	0.05	221	3	9
	1998-NIVA		W	340	2	284	25	63					
	1998-NIVA	AJ	W						341	0.05	203	10	23
	1999-NIVA		W	340	2	249	52	3	341	0.05	226	19	62
	2000-NIVA		W	340	2	230	65	29	341	0.05	180	27	9
	2001-NIVA		W	340	2	250	96	20	341	0.05	205	21	154
HG	1981-SIIF	1E	W	120	10	15		1	120	10	35		
	1982-SIIF	1E	W						120	10	18		
	1982-VETN		W	220	10	51			220	10	54		
	1983-SIIF	1E	W						120	10	17		
	1983-VETN	1Z	W						220	10	48		
	1984-FIER	1G	W						401	10	39		
	1984-SIIF	1G	W						120	10	27	6	
	1984-VETN	1Z	W						220	10	66		
	1985-SIIF	1G	D						120	10	30		
	1985-VETN	1Z	W						220	10	90		
	1986-NIVA	1H	D						310	10	74		
	1987-FIER	1G	W						401	10	38		
	1987-NIVA	1H	D						310	10	93		14
	1988-NIVA	1H	D						310	10	116		
	1989-NIVA	1H	D						310	100	134		
	1989-NIVA	1H	W						310	10	36	5	
	1990-NIVA	1H	W						310	10	266		
	1991-NIVA	1H	W						310	100a	264	126	
	1992-NIVA	1H	W						310	100a	303	122	
	1993-NIVA	1H	W						310	5	300		

Tissue					Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Year	Lab.	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1994-NIVA		1Z	W						310	5	381		
	1995-NIVA			W						310	5	442	1	
	1996-NIVA		V1	W						310	5	481		
	1997-NIVA		AH	W						310	5	383		
	1998-NIVA		CF	W						310	5	381		
	1999-NIVA			W	310	5	3							
	1999-NIVA		EF	W						310	5	386		
	2000-NIVA		GS	W						310	5	330		
	2001-NIVA		IM	W						310	5	356		
ICDP	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	72		29
	1996-NIVA			W						309	0.2	65		23
	1997-NIVA			W						309	0.5	36		
	1998-NIVA		CI	W						309	0.5	37	2	
	1999-NIVA		EK	W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	42		
MBTIN	1997-NIVA			D						320	5	8		
	1998-NIVA			D						320	5	15		
	1999-NIVA			D						320	5	13		
	1999-NIVA			W						320	5	6	6	
	2000-NIVA			W						320	0.5	23		
	2001-GALG			W						999	miss	11		
	2001-NIVA			W						320	0.5	16		5
MN	1984-SIIF			W						132	40	27		
	1985-SIIF			D						132	40	35		
MPTIN	1997-NIVA			D						320	5	8		
	1998-NIVA			D						320	5	15	9	
	1999-NIVA			D						320	5	13	13	
	1999-NIVA			W						320	5	6	6	
	2000-NIVA			W						320	0.5	23	3	
	2001-NIVA			W						320	0.5	16		15
NAP	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	70		21
	1996-NIVA			W						309	0.2	61		11
	1997-NIVA			W						309	0.2	34		1
	1998-NIVA		CI	W						309	0.2	37		
	1999-NIVA			W						309	0.2	34		1
	2000-NIVA			W						309	0.2	37		7
	2001-NIVA			W						309	0.2	41		4
NAP1M	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	15		13
	1997-NIVA			W						309	0.5	34		
	1998-NIVA			W						309	0.5	37		
	1999-NIVA			W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	41		
NAP2M	1992-NIVA			W	309	0.2	8			309	0.2	46		
	1995-NIVA			W						309	0.2	15		13
	1997-NIVA			W						309	0.5	34		
	1998-NIVA			W						309	0.5	37		
	1999-NIVA			W						309	0.5	34		
	2000-NIVA			W						309	0.5	39		
	2001-NIVA			W						309	0.5	41		
NAPC1	1995-NIVA			W						309	0.2	55		6
	1996-NIVA			W						309	0.2	61		
NAPC2	1995-NIVA			W						309	0.2	57		6
	1996-NIVA			W						309	0.2	60		
NAPC3	1995-NIVA			W						309	0.2	57		5
	1996-NIVA			W						309	0.2	60		
NAPD2	1997-NIVA			W						309	0.5	34		

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	41		
NAPD3	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	41		
NAPDI	1992-NIVA		W	309	0.2	8			309	0.2	46		
	1995-NIVA		W						309	0.2	15		6
	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	41		
NAPT2	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
NAPT3	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
NAPT4	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
NAPTM	1992-NIVA		W	309	0.2	8			309	0.2	46		
	1995-NIVA		W						309	0.2	15		11
	1997-NIVA		W						309	0.5	34		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
NI	1983-SIIF	1G	W						130	20	12		
	1992-NIVA		W						312	10	6		
	1996-NIVA		W						999	miss	3		
OCS	1990-NIVA		W	340	2	169	31	24	341	0.05	58		1
	1991-NIVA		W	340	2	179	14	81	341	0.05	62	5	8
	1992-NIVA		W	340	5	192	3		341	0.1	140		
	1993-NIVA		W	340	4	212	51	16	341	0.1	133		
	1994-NIVA		W	340	3	300	39	22	341	0.05	165	96	
	1995-NIVA		W	340	3	318	44		341	0.05	225	102	
	1996-NIVA		W	340	3	332	287		341	0.05	237	114	
	1997-NIVA		W	340	2	260	100		341	0.05	221	30	14
	1998-NIVA		W	340	2	277	132	101	341	0.05	203	182	1
	1999-NIVA		W	340	2	249	148	2	341	0.05	226	80	26
	2000-NIVA		W	340	2	230	140	21	341	0.05	180	103	58
	2001-NIVA		W	340	2	250	189	2	341	0.05	205	94	64
PA	1992-NIVA		W	309	0.2	8			309	0.2	45		
	1995-NIVA		W						309	0.2	72		
	1996-NIVA		W						309	0.2	65		
	1997-NIVA	AL	W						309	0.2	36		
	1998-NIVA	CI	W						309	0.2	39		
	1999-NIVA	EK	W						309	0.2	34		
	2000-NIVA		W						309	0.2	39		
	2001-NIVA		W						309	0.2	42		

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
PAC1	1995-NIVA		W						309	0.2	57		1
	1996-NIVA		W						309	0.2	65		
PAC2	1995-NIVA		W						309	0.2	56		
	1996-NIVA		W						309	0.2	65		2
PADM1	2001-NIVA		W						309	0.5	42		
PADM2	2001-NIVA		W						309	0.5	42		
PAH	1987-NIVA		W	309	0.02	1							
PAM1	1992-NIVA		W	309	0.2	8			309	0.2	45		
	1995-NIVA		W						309	0.2	15		2
	1997-NIVA		W						309	0.5	36		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
PAM2	1997-NIVA		W						309	0.5	36		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA		W						309	0.5	34		
	2000-NIVA		W						309	0.5	38		
	2001-NIVA		W						309	0.5	42		
PB	1983-SIIF	1G	W						130	20	12		
	1984-SIIF	1G	W						130	20	27		2
	1985-SIIF	1G	D						130	20	35		
	1986-NIVA	1Z	D	312	150	56	4		312	150	20		
	1987-FIER	1G	W	403	10	37	1						
	1987-NIVA	1Z	D	312	150	57		12	312	150	37		
	1988-NIVA	1Z	D	312	150	61	17	3	312	150	55		
	1989-NIVA	1Z	D	312	150	135	9	9					
	1989-NIVA	1Z	W						312	150	36		
	1990-NIVA	1Z	W	312	50	187	3	1	312	150	77	3	
	1991-NIVA	1Z	W	312	50	193	14		312	50	67		
	1992-NIVA	1Z	W	312	50	191	119		312	50	111	2	
	1993-NIVA	1H	W	312	30	221	40		312	30	79		
	1994-NIVA	1Z	W	312	30	302	3		312	30	81		
	1995-NIVA		W	312	30	318	162	30	312	30	124		
	1996-NIVA	V1	W						312	30	110		
	1996-NIVA	V2	W	312	30	368		109					
	1997-NIVA		W	312	40	287	10	28	312	40	92		
	1998-NIVA		W	312	40	285	126	2					
	1998-NIVA	CF	W						312	40	90		
	1999-NIVA		W	312	40	235	118	11					
	1999-NIVA	EF	W						312	40	129	10	
	2000-NIVA		W	312	40	227	67	4					
	2000-NIVA	GS	W						312	40	87		
	2001-NIVA		W	312	40	261	156	6					
	2001-NIVA	IM	W						312	40	90		
PCB	1981-SIIF	2D	W	110	10	27			110	10	35		
	1982-SIIF	2D	W						111	5	17		
	1982-VETN		W	210	50	53			211	50	54		
	1983-SIIF	2E	W						111	5	14		
	1983-VETN	2E	W						211	50	48		
	1983-VETN	2Z	W	210	50	48							
	1984-SIIF	2E	W						111	5	24		
	1984-VETN	2E	W						211	50	66		
	1984-VETN	2Z	W	210	50	66							
	1985-SIIF	2E	W						111	5	32		6
	1985-VETN	2E	W						211	50	90		1
	1985-VETN	2Z	W	210	50	45							
	1986-NACE	2Z	W	511a	40a	56			511	20	56		
	1986-SIIF	2E	W						111	5	21		
	1987-NACE	2Z	W	510	40	53			511	20	54		
	1987-NIVA		W	340	0.1	2							

Tissue				Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Lab. Year	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1987-SIIF	2E	W						111	5	21		
	1988-NACE	2Z	W	510	40	61			511	20	13		
	1988-SIIF	2E	D						111	5	6		
	1988-SIIF	2E	W						111	5	22	4	
	1989-NACE	2Z	W	510	20	93			511	20	17		
	1989-SIIF	2E	W						111	5	36	6	
	1990-SIIF	2E	W						111	5	41		
	1991-SIIF	2E	W						111	5	35		
PCC26	1996-NILU		W						842	0.001	6		
PCC32	1996-NILU		W						842	0.003	6		4
PCC50	1996-NILU		W						842	0.001	6		
PCC62	1996-NILU		W						842	0.025	6		6
PCDD	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.0001	18		
PCDF	1995-NILU		W						841	0.00002	6		
	1996-NILU		W						841	0.0001	18		
PER	1992-NIVA		W	309	0.2	8			309	0.2	46		
	1995-NIVA		W						309	0.2	72		32
	1996-NIVA		W						309	0.2	65		40
	1997-NIVA		W						309	0.5	36		
	1998-NIVA		W						309	0.5	39		
	1999-NIVA	EK	W						309	0.5	34		
	2000-NIVA		W						309	0.5	39		
	2001-NIVA		W						309	0.5	42		
PYR	1992-NIVA		W	309	0.2	8			309	0.2	44		
	1995-NIVA		W						309	0.2	72		4
	1996-NIVA		W						309	0.2	65		1
	1997-NIVA	AL	W						309	0.2	36		
	1998-NIVA	CI	W						309	0.2	39		
	1999-NIVA	EK	W						309	0.2	34		
	2000-NIVA		W						309	0.2	39		
	2001-NIVA		W						309	0.2	42		
QCB	1990-NIVA		W	340	2	169	33	39	341	0.05	58		
	1991-NIVA		W	340	2	178	13	97	341	0.05	57	5	7
	1992-NIVA		W	340	5	192	3		341	0.1	125		
	1993-NIVA		W	340	4	212	52	24	341	0.1	133		
	1994-NIVA		W	340	3	299	38	23	341	0.05	165	93	
	1995-NIVA		W	340	3	318	45		341	0.05	225	103	
	1996-NIVA		W	340	3	332	306		341	0.05	237	109	
	1997-NIVA		W	340	2	260	79		341	0.05	221	27	10
	1998-NIVA		W	340	2	284	121	101	341	0.05	203	171	1
	1999-NIVA		W	340	2	242	185	2	341	0.05	226	84	14
	2000-NIVA		W	340	2	230	198	1	341	0.05	180	123	1
	2001-NIVA		W	340	2	232	216	1	341	0.05	205	95	62
SE	1982-VETN		W	240	10	46			240	10	54		
TBTIN	1997-NIVA		D						320	5	8		
	1998-NIVA		D						320	5	15		
	1999-NIVA		D						320	5	13		
	1999-NIVA		W						320	5	6		
	2000-NIVA		W						320	0.5	23		
	2001-GALG		W						999	miss	11		
	2001-NIVA		W						320	0.5	16		
TCDD	1995-NILU		W						841	0.00002	6	1	
	1996-NILU		W						841	0.00001	18		
TDEPP	1991-NIVA		W	340	1	138		1	341	0.05	62		
	1992-NIVA		W	340	5	191	3		341	0.1	140		
	1993-NIVA		W	340	4	212	24	3	341	0.1	133		
	1994-NIVA	2Z	W	340	3	300	17	5	341	0.05	165	47	
	1995-NIVA		W	340	3	318	36		341	0.05	222	51	
	1996-NIVA		W	340	3	332	23		341	0.05	237	16	
	1997-NIVA		W	340	3	260	23						

Tissue					Fish liver					Fish fillet, Shrimp tail, Mussel, Other				
Contamin.	Mon. Year	Lab.	Inter-calibr. +basis		Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim	Analys method code	Detect limit (ppb)	Total value count	Count below d.lim	N (<) above d.lim
	1997-NIVA		AJ	W						341	0.05	221	11	
	1998-NIVA			W	340	3	278	19	26					
	1998-NIVA		CH	W						341	0.05	203	1	44
	1999-NIVA			W	340	3	249	6	1					
	1999-NIVA		EG	W						341	0.05	226	2	71
	2000-NIVA			W	340	3	230	35	4					
	2000-NIVA		GU	W						341	0.05	179	11	67
	2001-NIVA			W	340	3	250	24	3	341	0.05	205	1	101
TPTIN	1997-NIVA			D						320	5	8		
	1998-NIVA			D						320	5	15		5
	1999-NIVA			D						320	5	13		
	1999-NIVA			W						320	5	6	4	
	2000-NIVA			W						320	0.5	23		
	2001-GALG			W						999	miss	11		5
	2001-NIVA			W						320	0.5	16		9
V	1996-NIVA			W						999	miss	3		
ZN	1983-SIIF		1G	W						131	400	12		
	1984-SIIF		1G	W						132	400	27		
	1985-SIIF		1G	D						132	400	35		
	1986-NIVA		1H	D	311	3000	56			311	3000	20		
	1987-FIER		1G	W	405	20	37							
	1987-NIVA		1H	D	311	3000	57			311	3000	37		
	1988-NIVA		1H	D	311	3000	61			311	3000	55		
	1989-NIVA		1H	D	311	3000	135		1					
	1989-NIVA		1H	W						311	3000	36		
	1990-NIVA		1H	W	311	3000	189			311	3000	77		
	1991-NIVA		1H	W	311	1000	193			311	1000	67		
	1992-NIVA		1H	W	311	1000	191			311	1000	111		
	1993-NIVA		1H	W	311	1000	221			311	1000	79		
	1994-NIVA		1Z	W	311	1000	302			311	1000	81		
	1995-NIVA			W	311	1000	318			311	1000	142		
	1996-NIVA		V1	W						311	1000	131		
	1996-NIVA		V2	W	311	1000	368							
	1997-NIVA			W	311	1000	287							
	1997-NIVA		AH	W						311	1000	110		
	1998-NIVA			W	311	1000	285							
	1998-NIVA		CF	W						311	1000	51		
	1999-NIVA			W	311	1000	235							
	1999-NIVA		EF	W						311	1000	99		
	2000-NIVA			W	311	1000	227							
	2000-NIVA		GS	W						311	1000	51		
	2001-NIVA			W	311	1000	261							
	2001-NIVA		IM	W						311	1000	51		
Sum of counts							67305	9037	2364			60028	4925	4592

a(7) > ambigous value (Maximum value displayed)

Appendix C.
Participation in intercalibration exercises

Participation in intercalibration exercises other than QUASIMEME

Sea water:

4H ICES/JMG Fifth Round Intercalibration on Trace Metals in Sea Water - Section 4, analysis for Hg - 1983 - (5/TM/SW:4).

4I JMG Sixth Intercalibration on Trace Metals in Estuarine Waters - 1986 - (6/TM/SW).

4Z Intercalibration exercise for SIIF/SERI (Cd) and NIVA/IAMK (IAMK=Chalmers Inst., Göteborg) - 1985.

Seabed sediment:

7E ICES, First Intercalibration Exercise on Trace metals in Marine Sediments - 1984 - (1/TM/MS).

8B ICES/OSPAR, First Intercomparison Exercise on Organochlorines (individual chlorobiphenyl congeners) in Marine Sediments - Phase 1, analysis of standard solutions - 1989 - (1/OC/MS:1).

8C ICES/OSPAR, First Intercomparison Exercise on Organochlorines (individual chlorobiphenyl congeners) in Marine Sediments - Phase 2, analysis of standard solutions - 1991 - (1/OC/MS:2).

8B ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 1 - (analysis of standard solutions) - 1989 - (1/OC/MS-1).

8C ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 2 - 1990 - (1/OC/MS-2).

8D ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 3a (1/OC/MS-3a) 1991.

8E ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 3b - (1/OC/MS-3b) 1992.

8F ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 4 - (1/OC/MS-4) 1993.

Marine biota:

1E ICES, Fifth Intercalibration Exercise on Trace Metals in Biological Tissues - 1978 - (5/TM/BT).

1F ICES, Sixth Intercalibration Exercise on Trace Metals (Cadmium and Lead only) in Biological Tissues - 1979 - (6/TM/BT).

1G ICES, Seventh Intercalibration Exercise on Trace Metals in Biological Tissues - Part A - 1983 - (7/TM/BT).

1H ICES, Seventh Intercalibration Exercise on Trace Metals in Biological Tissues - Part B - 1985 - (7/TM/BT) (preliminary report 1987).

1Z VETN Interlabcalibration exercise with VETN and SIIF 1983, mercury and cadmium in cod filet and liver.

1Z NIVA	Interlabcalibration exercise with VETN, NACE and NIVA 1986 (Hg, Cd, Cu, Pb and Zn in 6 samples).
2D	ICES Fourth Intercalibration Exercise on Organochlorines (mainly PCBs) in Biological Tissues (Sample No.5) - 1979 - (4/OC/BT).
2E	ICES Fifth Intercalibration Exercise on Organochlorines (PCBs only) in Biological Tissues - 1982 - (5/OC/BT).
2G	ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 1 - (analysis of standard solutions) - 1989 - (7/OC/BT-1).
2H	ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 2 - 1990 - (7/OC/BT-2).
2I	ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 3a - (7/OC/BT-3a) 1991.
2J	ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 3b - (7/OC/BT-3b) 1992.
2K	ICES/IOC/OSPAR Intercomparison Programme on the Analysis of Chlorobiphenyls in Marine Media - Step 4 - (7/OC/BT-4) 1993.
2Z VETN	Interlabcalibration exercise with VETN among others, 1983, PCB and HCB in cod liver.
2Z NACE	Interlabcalibration exercise with NACE, VETNand SIIF 1986 (PCB (all labs), DDE, OCS, HCB and DCB (NACE and VETN).

Participation in QUASIMEME intercalibration exercises

IC	Code	Year	No.	Group	Matrix
QM	QOR002BT	1993	80	BT-2	CB's in standard solution and biota - Fish oil
V1	QTM028BT	1996	280	BT-1	Trace metals in cod muscle and cod liver
V2	QTM029BT	1996	280	BT-1	Trace metals in cod muscle and cod liver
AJ	QOR054BT	1997	347	BT-2	Chlorobiphenyls and organochlorine pesticides in biota
AL	QPH008BT	1997	348	BT-4	PAH's in biota
AH	QTM036BT	1997	346	BT-1	Metals in biota
CI	QPH010BT	1998	394	BT-4	Polyaromatic hydrocarbons in biota
CH	QOR059BT	1998	393	BT-2	Chlorobiphenyls and organochlorine pesticides in Biota
CF	QTM042BT	1998	392	BT-1	Trace metals in Biota
EF	QTM046BT	1999	433	BT-1	Trace metals in biota
EG	QOR062BT	1999	434	BT-2	Chlorobiphenyls and organochlorine pesticides in biota
EK	QPH012BT	1999	435	BT-4	Polyaromatic hydrocarbons in biota
GU	QOR066BT	2000	473	BT-2	Chlorobiphenyls and organochlorine pesticides in biota
GS	QTM049BT	2000	472	BT-1	Trace metals in biota
IO	QOR070BT	2001	510	BT-2	Chlorobiphenyls and organochlorine pesticides in biota
IM	QTM053BT	2001	509	BT-1	Trace metals in biota

Appendix D.
Overview of localities and sample counts 1981-2001

Station positions are shown on maps in Appendix E. .

jmpco: JAMP area code (J99 = unclassified)
jmpst: station code
stnam: station code
Lon: Longitude
Lat: Latitude
icear: ICES area
speci: species code (English, Norwegian (Latin))

- MYTI EDU - blue mussel, blåskjell (*Mytilus edulis*)
- BROS BRO - tusk, brosme (*Brosme brosme)*
- CHIM MON - rat fish, havmus (*Chimaera monstrosa*)
- GADU MOR - Atlantic cod, torsk (*Gadus morhua*)
- LEPI WHI - megrim, glassvar (*Lepidorhombus whiff-iagonis*)
- LIMA LIM - dab, sandflyndre (*Limanda limanda*)
- MICR KIT - lemon sole, lomre (*Microstomus kitt*)
- MOLV MOL - ling, lange (*Molva molva*)
- PAND BOR - shrimp, reker (*Pandalus borealis)*
- PLAT FLE - flounder, skrubbe (*Platichthys flesus*)
- PLEU PLA - plaice, rødspette (*Pleuronectes platessa*)

tissu: tissue:
SB - soft body
LI - liver
MU - fillet
TM - tail muscle

STATIONS AND SAMPLE COUNT FOR BIOTA

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J26	01A	Sponvika	59° 5.10	11° 13.90	47G13	MYTI EDU	SB		3			3					3											
J26	02A	Fugleskjær	59° 6.90	10° 59.0	47G09	MYTI EDU	SB		3			3					3											
J26	03A	Tisler	58° 58.80	10° 57.50	46G07	MYTI EDU	SB		2			3					3											
J26	301	Akershuskaia	59° 54.23	10° 45.47	48G07	MYTI EDU	SB												2									
J26	302	Ormøya	59° 52.69	10° 45.46	48G07	MYTI EDU	SB												2									
J26	303	Malmøya	59° 51.78	10° 45.95	48G07	MYTI EDU	SB												2									
J26	304	Gåsøya	59° 51.11	10° 35.51	48G04	MYTI EDU	SB												3									
J26	305	Lysaker	59° 54.36	10° 38.60	48G04	MYTI EDU	SB												2									
J26	306	Håøya	59° 42.69	10° 33.35	48G05	MYTI EDU	SB												3									
J26	30A	Gressholmen	59° 52.75	10° 43.0	48G07	MYTI EDU	SB				3	3	3	4	3	3	3	3	3	3	3	3	4	3	3	3	3	3
J26	30B	Oslo City area	59° 49.0	10° 33.0	48G05	GADU MOR	LI				29	25	25	25	25	25	25	24	21	24	25	25	50	50	50	25	25	25
J26	30B	Oslo City area	59° 49.0	10° 33.0	48G05	GADU MOR	MU				29	25	25	25	26	26	30	30	21	29	30	30	60	60	60	30	30	30
J26	30F	Oslo City area	59° 47.0	10° 34.0	48G05	PLEU PLA	LI												2		5	5						
J26	30F	Oslo City area	59° 47.0	10° 34.0	48G05	PLEU PLA	MU												2		5	5						
J26	30G	Spro	59° 45.80	10° 34.50	48G05	PAND BOR	TM															1						
J26	30H	Storegrunn	59° 48.50	10° 33.50	48G05	PAND BOR	TM															1						
J26	30X	West of Nesodden	59° 48.50	10° 36.0	48G05	GADU MOR	LI												22									
J26	30X	West of Nesodden	59° 48.50	10° 36.0	48G05	GADU MOR	MU												22									
J26	40C	Steilene	59° 49.0	10° 33.0	48G05	PAND BOR	TM				1								2									
J26	31A	Solbergstrand	59° 36.90	10° 39.40	48G06	MYTI EDU	SB	2		6	3	3	3	3	3	3	3	3	3	3	3	2	4	3	3	3	3	3
J26	31B	Solbergstrand	59° 36.90	10° 39.40	48G06	GADU MOR	LI	10	27																			
J26	31B	Solbergstrand	59° 36.90	10° 39.40	48G06	GADU MOR	MU	10	27																			
J26	31B	Solbergstrand	59° 36.90	10° 39.40	48G06	PLAT FLE	LI	8																				
J26	31B	Solbergstrand	59° 36.90	10° 39.40	48G06	PLAT FLE	MU	8																				
J26	31C	Solbergstrand	59° 36.90	10° 39.40	48G06	PAND BOR	TM				1																	
J26	32A	Rødtangen	59° 31.50	10° 25.60	48G06	MYTI EDU	SB	1	3			3																
J26	33B	Sande (east side)	59° 31.70	10° 21.0	48G06	PLAT FLE	LI			25		1	23	1	26	1	5	5	5	5	5	5	15	15	13	5	5	30
J26	33B	Sande (east side)	59° 31.70	10° 21.0	48G06	PLAT FLE	MU			25		25	1	1	26	1	5	5	5	5	5	5	15	15	13	5	5	30
J26	33C	Sande	59° 31.70	10° 21.0	48G06	PAND BOR	TM						1															
J26	33X	Sande (west side)	59° 31.70	10° 20.40	48G06	PLAT FLE	LI										3											
J26	33X	Sande (west side)	59° 31.70	10° 20.40	48G06	PLAT FLE	MU										3											

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J26	35A	Mølen	59° 29.20	10° 30.10	47G04	MYTI EDU	SB	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
J26	35C	Holmestrand-Mølen	59° 29.20	10° 30.10	47G04	PAND BOR	TM		1						1		2											
J26	35C	Holmestrand-Mølen	59° 29.20	10° 30.10	47G04	PAND BOR	XX								1													
J26	36A	Færder	59° 1.60	10° 31.70	47G06	MYTI EDU	SB	1		5	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3	3	3
J26	36B	Færder	59° 2.0	10° 32.0	47G06	GADU MOR	LI	10	27	23	24	14	25	25	25	25	24	25	25	25	25	25	25	25	25	25	23	25
J26	36B	Færder	59° 2.0	10° 32.0	47G06	GADU MOR	MU	10	27	23	24	14	25	25	26	26	29	30	30	30	30	30	30	30	30	30	27	30
J26	36F	Færder area	59° 4.0	10° 23.0	47G06	LIMA LIM	LI										5	5	5	5	5	5	5	5	5	5	5	30
J26	36F	Færder area	59° 4.0	10° 23.0	47G06	LIMA LIM	MU										5	5	5	5	5	5	5	5	5	5	5	30
J26	73A	Lyngholmen	59° 2.60	10° 18.10	47G03	MYTI EDU	SB										3											
J26	74A	Oddneskjær	58° 57.30	9° 52.10	46F97	MYTI EDU	SB										3											
J26	71A	Bjørkøya (Risøyodd.)	59° 1.40	9° 45.40	47F99	MYTI EDU	SB	1	3	3	3	2	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
J99	76A	Risøy	58° 43.60	9° 17.0	46F92	MYTI EDU	SB										3	3	3	3			3	3	3	3	3	3
J99	77A	Flostafjord	58° 31.50	8° 56.90	46F89	MYTI EDU	SB										3	3										
J99	77B	Borøy area	58° 33.0	9° 1.0	45F93	GADU MOR	LI										14	25										
J99	77B	Borøy area	58° 33.0	9° 1.0	45F93	GADU MOR	MU										17	30										
J99	77B	Borøy area	58° 33.0	9° 1.0	45F93	LIMA LIM	LI											3										
J99	77C	Borøy area	58° 29.0	9° 10.0	45F91	PAND BOR	TM										2											
J99	79A	Gjerdsvoldsøyen east	58° 24.80	8° 45.30	45F87	MYTI EDU	SB										3	3										
J99	13A	Langøsund	57° 59.80	7° 34.60	45F74	MYTI EDU	SB										1	4										
J99	14A	Aavigen	58° 2.20	7° 13.20	45F73	MYTI EDU	SB										3	4										
J99	15A	Gåsøy	58° 3.7	6° 53.16	45F69	MYTI EDU	SB										4	4		3	3	4	4	3	3	3	3	3
J99	15B	Ullerø area	58° 3.0	6° 43.0	45F69	GADU MOR	LI										25	24	23	30	23	25	25	25	25	25	25	25
J99	15B	Ullerø area	58° 3.0	6° 43.0	45F69	GADU MOR	MU										30	29	27	30	28	29	30	30	30	30	30	30
J99	15F	Ullerø area	58° 3.0	6° 43.0	45F69	LIMA LIM	LI											3		2	4	5	5	5	5	5	5	30
J99	15F	Ullerø area	58° 3.0	6° 43.0	45F69	LIMA LIM	MU											3		2	4	5	5	5	5	5	5	30
J99	15F	Ullerø area	58° 3.0	6° 43.0	45F69	PLEU PLA	LI												3	2								
J99	15F	Ullerø area	58° 3.0	6° 43.0	45F69	PLEU PLA	MU												3	2								
J99	15F	Ullerø area	58° 3.0	6° 43.0	45F69	MICR KIT	LI														1							
J99	15F	Ullerø area	58° 3.0	6° 43.0	45F69	MICR KIT	MU														1							
J63	51A	Byrkjenes	60° 5.10	6° 33.10	49F66	MYTI EDU	SB							3	3							1	3	3	3	6	3	3
J63	52A	Eitrheimsneset	60° 5.80	6° 32.20	49F66	MYTI EDU	SB									3	3	3	3	2	3	3	3	3	3	6	3	3
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	GADU MOR	LI							13	26	12	25	25	22	25	25	25	50	30	30	25	25	25
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	GADU MOR	MU							12	26	15	30	30	26	30	30	30	56	36	36	30	30	30
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	PLAT FLE	LI				22				22	30	5	5	5	5	4	4	11	15	11	5	2	30

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	PLAT FLE	MU				22				22	30	5	5	5	5	4	4	11	15	11	5	2	30
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	GLYP CYN	LI							3														
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	GLYP CYN	MU							3														
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	SALM TRU	LI										12											
J63	53B	Inner Sørfjord	60° 10.0	6° 34.0	49F65	SALM TRU	MU										12											
J63	53D	Digraneset	60° 11.0	6° 34.5	49F65	BROS BRO	LI																					24
J63	53D	Digraneset	60° 11.0	6° 34.5	49F65	BROS BRO	MU																					24
J63	53D	Digraneset	60° 11.0	6° 34.5	49F65	MOLV MOL	LI																					30
J63	53D	Digraneset	60° 11.0	6° 34.5	49F65	MOLV MOL	MU																					30
J63	53D	Digraneset	60° 11.0	6° 34.5	49F65	CHIM MON	LI																					12
J63	53D	Digraneset	60° 11.0	6° 34.5	49F65	CHIM MON	MU																					12
J63	56A	Kvalnes	60° 13.40	6° 36.10	49F65	MYTI EDU	SB							3	15	3	3	3	3	3	3	3	3	3	3	6	3	3
J63	56D	Kvalnes	60° 15.00	6° 36.00	49F65	BROS BRO	LI																			3		
J63	56D	Kvalnes	60° 15.00	6° 36.00	49F65	BROS BRO	MU																			3		
J63	56D	Kvalnes	60° 15.00	6° 36.00	49F65	MOLV MOL	LI																			1		
J63	56D	Kvalnes	60° 15.00	6° 36.00	49F65	MOLV MOL	MU																			1		
J63	56D	Kvalnes	60° 15.00	6° 36.00	49F65	CHIM MON	LI																			1		
J63	56D	Kvalnes	60° 15.00	6° 36.00	49F65	CHIM MON	MU																			1		
J99	227X	Høievarde	59° 19.43	5° 19.11	47F52	MYTI EDU	SB																				3	3
J99	226X	Karmsund bridge (east)	59° 22.68	5° 17.91	47F51	MYTI EDU	SB																		1	3	3	
J99	222A	Kopervik harbour	59° 17.2	5° 18.94	47F52	MYTI EDU	SB																				3	
J63	5610	Kvalnes, north	60° 13.60	6° 36.45	49F65	MYTI EDU	SB																			3		
J63	5620	Kjeken, near Helland	60° 20.58	6° 39.50	49F64	MYTI EDU	SB																			3		
J63	5710	Urdhem, s. of Krossanes	60° 22.17	6° 40.65	49F67	MYTI EDU	SB																			3		
J63	57A	Krossanes	60° 23.20	6° 41.20	49F67	MYTI EDU	SB							3	3	3	3	3	3	3	3	3	3	3	3	6	3	3
J62	63A	Ranaskjær	60° 25.10	6° 24.50	49F64	MYTI EDU	SB							3	3	3	3	3	3	3	3	3	3	3	3	6	3	3
J62	65A	Vikingneset	60° 14.50	6° 9.60	49F62	MYTI EDU	SB							3	15	3	3	3	3	3	3	3	3	3	3	6	3	3
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	GADU MOR	LI							22	26	22	16	19	8	12	18	25	35	25	25	25	25	25
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	GADU MOR	MU							22	26	23	16	24	9	14	22	30	40	30	30	30	30	30
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	PLAT FLE	LI																3		4	5	5	30
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	PLAT FLE	MU																3		4	5	5	30
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	LIMA LIM	LI																		5			
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	LIMA LIM	MU																		5			
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	LEPI WHI	LI				19			1	26	30	5	5	3	5	5	5	5	5	5	5	5	30

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J62	67B	Strandebarm	60° 16.0	6° 2.0	49F62	LEPI WHI	MU				19			1	26	30	5	5	3	5	5	5	5	5	5	5	5	30
J62	69A	Lille Terøy	59° 58.79	5° 45.35	48F57	MYTI EDU	SB												3	1	3	3	3	3	3	6	3	3
J99	21F	Åkrefjord	59° 45.0	6° 7.0	48F62	PLAT FLE	LI																			3	5	30
J99	21F	Åkrefjord	59° 45.0	6° 7.0	48F62	PLAT FLE	MU																			3	5	30
J99	21F	Åkrefjord	59° 45.0	6° 7.0	48F62	LEPI WHI	LI																			5		
J99	21F	Åkrefjord	59° 45.0	6° 7.0	48F62	LEPI WHI	MU																			5		
J99	21D	Åkrafjord	59° 48.0	6° 11.0	48F62	BROS BRO	LI																			1		24
J99	21D	Åkrafjord	59° 48.0	6° 11.0	48F62	BROS BRO	MU																			1		24
J99	21D	Åkrafjord	59° 48.0	6° 11.0	48F62	MOLV MOL	LI																			1		24
J99	21D	Åkrafjord	59° 48.0	6° 11.0	48F62	MOLV MOL	MU																			1		24
J99	21D	Åkrafjord	59° 48.0	6° 11.0	48F62	CHIM MON	LI																			1		12
J99	21D	Åkrafjord	59° 48.0	6° 11.0	48F62	CHIM MON	MU																			1		12
J99	22A	Espevær, west	59° 35.20	5° 8.50	48F53	MYTI EDU	SB										3	3	3	3	3	3	5	3	3	3	3	3
J99	22C	Bømlofjord	59° 34.0	5° 11.0	48F53	PAND BOR	TM										2											
J99	22F	Borøyfjorden	59° 43.0	5° 21.0	48F55	LIMA LIM	LI										5	5	4		5	2						
J99	22F	Borøyfjorden	59° 43.0	5° 21.0	48F55	LIMA LIM	MU										5	5	4		5	2						
J99	22F	Borøyfjorden	59° 43.0	5° 21.0	48F55	PLEU PLA	LI																5	5	5			
J99	22F	Borøyfjorden	59° 43.0	5° 21.0	48F55	PLEU PLA	MU																5	5	5			
J99	22F	Borøyfjorden	59° 43.0	5° 21.0	48F55	MICR KIT	LI													5								
J99	22F	Borøyfjorden	59° 43.0	5° 21.0	48F55	MICR KIT	MU													5								
J99	23A	Austvik	59° 52.20	5° 6.60	48F51	MYTI EDU	SB										3	3										
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	GADU MOR	LI										25	25	25	25	26	25	25	25	25	25	25	25
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	GADU MOR	MU										30	30	30	30	30	30	30	30	30	30	30	30
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	PLAT FLE	LI														1							
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	PLAT FLE	MU														1							
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	PLEU PLA	LI														3							
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	PLEU PLA	MU														3							
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	MICR KIT	LI														1	4						
J99	23B	Karihavet area	59° 55.0	5° 7.0	48F51	MICR KIT	MU														1	4						
J99	24A	Vardøy	60° 10.20	5° 0.80	49F52	MYTI EDU	SB										3	3										
J65	80A	Østmarknes	63° 27.50	10° 27.50	55G04	MYTI EDU	SB				1	2																
J65	81A	Biologisk Stasjon	63° 26.50	10° 21.40	55G04	MYTI EDU	SB				1																	
J65	82A	Flakk	63° 27.10	10° 12.60	55G01	MYTI EDU	SB				1	2	2	3	1	2		3	2	2		3	3					
J65	83A	Frøsetskjær	63° 25.50	10° 7.80	55G01	MYTI EDU	SB				1																	

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J65	84A	Trossavika	63° 20.80	9° 57.80	55F97	MYTI EDU	SB				2	3	3	3	3	3		3	3	3		3	3					
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	GADU MOR	LI				13	1	1	1	5													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	GADU MOR	MU				13	10	1	1	5													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	MICR KIT	LI								3													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	MICR KIT	MU								3													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	MELA AEG	LI						14	1	4													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	MELA AEG	MU						1	1	5													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	MERL MNG	LI							1	7													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	MERL MNG	MU							1	7													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	POLL POL	LI					1	1		8													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	POLL POL	MU					16	1		8													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	POLL VIR	LI								4													
J65	84B	Trossavika	63° 20.80	9° 57.80	55F97	POLL VIR	MU								4													
J65	85A	Geitstrand	63° 21.90	9° 56.30	55F97	MYTI EDU	SB				1																	
J65	86A	Geitnes	63° 26.60	9° 59.20	55F97	MYTI EDU	SB				1																	
J65	87A	Ingdalsbukt	63° 27.80	9° 54.80	55F97	MYTI EDU	SB				1	1	1	1	1	1		1	2	1		2	2					
J65	88A	Rødberg	63° 29.20	10° 0.0	55G01	MYTI EDU	SB				1	1																
J99	25A	Hinnøy	61° 22.20	4° 52.80	51F47	MYTI EDU	SB												3	3								
J99	26A	Hamnen	61° 52.70	5° 13.60	52F51	MYTI EDU	SB												6	3								
J99	27A	Grinden	62° 12.20	5° 25.40	53F55	MYTI EDU	SB												2									
J99	28A	Eiksundet	62° 15.0	5° 51.60	53F58	MYTI EDU	SB												6	3								
J99	91A	Nerdvika	63° 21.20	8° 9.60	55F81	MYTI EDU	SB												4	3	3							
J99	92A	Stokken	64° 2.21	10° 1.10	57G03	MYTI EDU	SB												7	3	3	3	3	3				
J99	92B	Stokken area	64° 9.85	9° 53.0	57F99	GADU MOR	LI													25	24	25	25					
J99	92B	Stokken area	64° 9.85	9° 53.0	57F99	GADU MOR	MU													30	29	30	30					
J99	92B	Stokken area	64° 9.85	9° 53.0	57F99	LIMA LIM	LI															1						
J99	92B	Stokken area	64° 9.85	9° 53.0	57F99	LIMA LIM	MU															1						
J99	92B	Stokken area	64° 9.85	9° 53.0	57F99	PLEU PLA	LI															1						
J99	92B	Stokken area	64° 9.85	9° 53.0	57F99	PLEU PLA	MU															1						
J99	93A	Sætervik	64° 23.68	10° 29.0	57G04	MYTI EDU	SB												7	3								
J99	94A	Landfast	65° 38.40	12° 0.50	60G23	MYTI EDU	SB												3	3								
J99	95A	Flatskjær	66° 42.60	13° 15.80	62G32	MYTI EDU	SB												3	3								
J99	96A	Breiviken	66° 17.60	12° 50.50	61G28	MYTI EDU	SB												6	3								
J99	97A	Klakholmen	67° 39.90	14° 44.60	64G49	MYTI EDU	SB												4	3								

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J99	98A	Svolvær området	68° 16.90	14° 40.10	65G48	MYTI EDU	SB												4	3				3	3	3	3	3
J99	98B	Lille Molla	68° 12.0	14° 48.0	65G48	GADU MOR	LI												25	29	25	24	25	25	25	25	25	25
J99	98B	Lille Molla	68° 12.0	14° 48.0	65G48	GADU MOR	MU												30	29	30	29	30	30	30	30	30	30
J99	98B	Lille Molla	68° 12.0	14° 48.0	65G48	LIMA LIM	LI													4								
J99	98B	Lille Molla	68° 12.0	14° 48.0	65G48	LIMA LIM	MU													4								
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	LIMA LIM	LI														1	1	5					
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	LIMA LIM	MU														1	1	5					
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	PLEU PLA	LI													3		5		4	5	1	4	30
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	PLEU PLA	MU													3		5		4	5	1	4	30
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	MICR KIT	LI														1	1						
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	MICR KIT	MU														1	1						
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	GLYP CYN	LI															1						
J99	98F	Lille Molla	68° 12.0	14° 48.0	65G48	GLYP CYN	MU															1						
J99	98X	Skrova	68° 10.50	14° 40.15	65G48	MYTI EDU	SB														3	4	4					
J99	99A	Brunvær	68° 0.30	15° 5.60	65G53	MYTI EDU	SB												7	3								
J99	41A	Fensneset,Grytøya	68° 56.90	16° 38.47	66G64	MYTI EDU	SB														3	3	4	3				
J99	42A	Tennskjær,Malangen	69° 28.60	18° 18.0	67G81	MYTI EDU	SB														3	3						
J99	43A	Lyngneset,Langfjord	70° 6.20	20° 32.79	69H06	MYTI EDU	SB														3	3		3				
J99	43B	Kvænangen	70° 9.0	21° 22.0	69H16	GADU MOR	LI														25	25	25					
J99	43B	Kvænangen	70° 9.0	21° 22.0	69H16	GADU MOR	MU														30	30	30					
J99	43F	Kvænangen,Olderfjord	70° 9.0	21° 22.0	69H16	LIMA LIM	LI																3					
J99	43F	Kvænangen,Olderfjord	70° 9.0	21° 22.0	69H16	LIMA LIM	MU																3					
J99	43F	Kvænangen,Olderfjord	70° 9.0	21° 22.0	69H16	MICR KIT	LI																1					
J99	43F	Kvænangen,Olderfjord	70° 9.0	21° 22.0	69H16	MICR KIT	MU																1					
J99	44A	Elenheimsundet	70° 30.97	22° 14.80	70H23	MYTI EDU	SB														3	3	4	3				
J99	45A	Yttre Sauhamnneset	70° 45.81	24° 19.22	70H42	MYTI EDU	SB														3	3						
J99	46A	Smines ved Altesula	70° 58.38	25° 48.14	70H57	MYTI EDU	SB														3	3	5					
J99	46B	Hammerfest area	70° 50.0	23° 44.0	70H37	GADU MOR	LI														24	25						
J99	46B	Hammerfest area	70° 50.0	23° 44.0	70H37	GADU MOR	MU														29	30						
J99	47A	Kifjordneset	70° 52.89	27° 22.17	70H74	MYTI EDU	SB														3	3						
J99	48A	Trollfjorden i Tanafjord	70° 41.61	28° 33.28	70H85	MYTI EDU	SB														3	3	3					
J99	49A	Nordfjorden,Syltefj.	70° 33.10	30° 5.17	70J03	MYTI EDU	SB														3	3						
J99	10A	Skallneset	70° 8.3	30° 21.7	69J06	MYTI EDU	SB														3	3	4	3	3	3	3	3
J99	10B	Varangerfjorden	69° 56.0	29° 40.0	68H97	GADU MOR	LI														21	25	25	23	25	25	25	25

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J99	10B	Varangerfjorden	69° 56.0	29° 40.0	68H97	GADU MOR	MU														25	30	30	27	30	30	30	30
J99	10B	Varangerfjorden	69° 56.0	29° 40.0	68H97	BROS BRO	LI														1							
J99	10B	Varangerfjorden	69° 56.0	29° 40.0	68H97	BROS BRO	MU														1							
J99	10F	Skogerøy	69° 55.0	29° 51.0	68H97	PLEU PLA	LI																	5		4	3	30
J99	10F	Skogerøy	69° 55.0	29° 51.0	68H97	PLEU PLA	MU																	5		4	3	30
J99	11A	Sildkroneset,Bøkfj	69° 47.2	30° 11.10	68J02	MYTI EDU	SB														3	3	4	3				
J99	11X	Brashavn	69° 53.92	29° 44.65	68H97	MYTI EDU	SB																	3	3	3	3	3
J26	I001	Sponvikskansen	59° 5.40	11° 12.50	47G13	MYTI EDU	SB															3	3					
J26	I011	Kråkenebbet	59° 6.10	11° 17.30	47G13	MYTI EDU	SB															3	3					
J26	I021	Kjøkø,south	59° 7.79	10° 57.11	47G09	MYTI EDU	SB															3	3	3	3		3	3
J26	I022	West Damholmen	59° 6.20	10° 57.90	47G09	MYTI EDU	SB															3	3	3	3	3	3	3
J26	I023	Singlekalven, south	59° 5.70	11° 8.20	47G13	MYTI EDU	SB															3	3	3	3	3	3	3
J26	I024	Kirkøy, north west	59° 4.90	10° 59.20	47G09	MYTI EDU	SB															3	3	3	3	3	3	3
J26	I301	Akershuskaia	59° 54.23	10° 45.47	48G07	MYTI EDU	SB															3	3	3	3	3	3	3
J26	I304	Gåsøya	59° 51.11	10° 35.51	48G04	MYTI EDU	SB															3	3	3	3	3	3	3
J26	I306	Håøya	59° 42.69	10° 33.35	48G05	MYTI EDU	SB															3	3	3	3	3	3	3
J26	I307	Ramtonholmen	59° 44.70	10° 31.40	48G05	MYTI EDU	SB															3	3	3	3	3	3	3
J99	I711	Steinholmen	59° 3.15	9° 40.70	47F99	MYTI EDU	SB															3	4	3	3	3	3	
J99	I712	Gjemesholmen	59° 2.75	9° 42.47	47F99	MYTI EDU	SB															3	4	3	3	3	3	3
J99	I131	Lastad	58° 3.30	7° 42.40	45F79	MYTI EDU	SB															3	3	3	3	3	3	3
J99	I132	Fiskåtangen	58° 7.75	7° 58.60	45F79	MYTI EDU	SB															4	4	3	3	3	3	3
J99	I133	Odderø,west	58° 7.90	8° 0.15	45F83	MYTI EDU	SB															4	4	3	3	3	3	3
J99	I201	Ekkjegrunn (G1)	59° 38.65	6° 21.38	48F66	MYTI EDU	SB															3	3	3	3	3	3	3
J99	I205	Bølsnes (G5)	59° 35.50	6° 18.30	48F63	MYTI EDU	SB															3		3	3	3	3	3
J99	I241	Nordnes	60° 24.10	5° 18.20	49F51	MYTI EDU	SB															3	3	3	3	3	3	3
J99	I242	Valheimneset	60° 23.70	5° 16.10	49F51	MYTI EDU	SB															3	3	3	3	3	3	3
J99	I243	Hegreneset	60° 24.90	5° 18.50	49F51	MYTI EDU	SB															3	3	3	3	3	3	3
J99	I911	Horvika	62° 44.10	8° 31.40	54F85	MYTI EDU	SB															3	3					
J99	I913	Fjøseid	62° 48.59	8° 16.48	54F82	MYTI EDU	SB																			3	3	3
J99	I912	Honnhammer	62° 51.20	8° 9.70	54F81	MYTI EDU	SB															3	3	3	3	3	3	3
J65	I080	Østmerknes	63° 27.50	10° 27.50	55G04	MYTI EDU	SB															3	3					
J99	I962	Koksverktomta (B2)	66° 19.57	14° 8.38	61G42	MYTI EDU	SB															3	3	2	3			
J99	I965	Moholmen (B5)	66° 18.72	14° 7.62	61G42	MYTI EDU	SB																					3
J99	I969	Bjørnbærviken (B9)	66° 16.79	14° 2.13	61G42	MYTI EDU	SB															3	3	3	3	3	3	3

jmpco	jmpst	stnam	lat	lon	icear	speci	tissu	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
J99	R096	Breiviken, Tomma	66° 17.60	12° 50.50	61G28	MYTI EDU	SB															3	3					
J26	A3*	Svartskjær	58° 58.90	9° 49.90	46F97	MYTI EDU	SB	1																				

Appendix E.
Map of stations

Station positions 1981-2001

(cf. Appendix D.)

Appendix E. (cont.) Map of stations

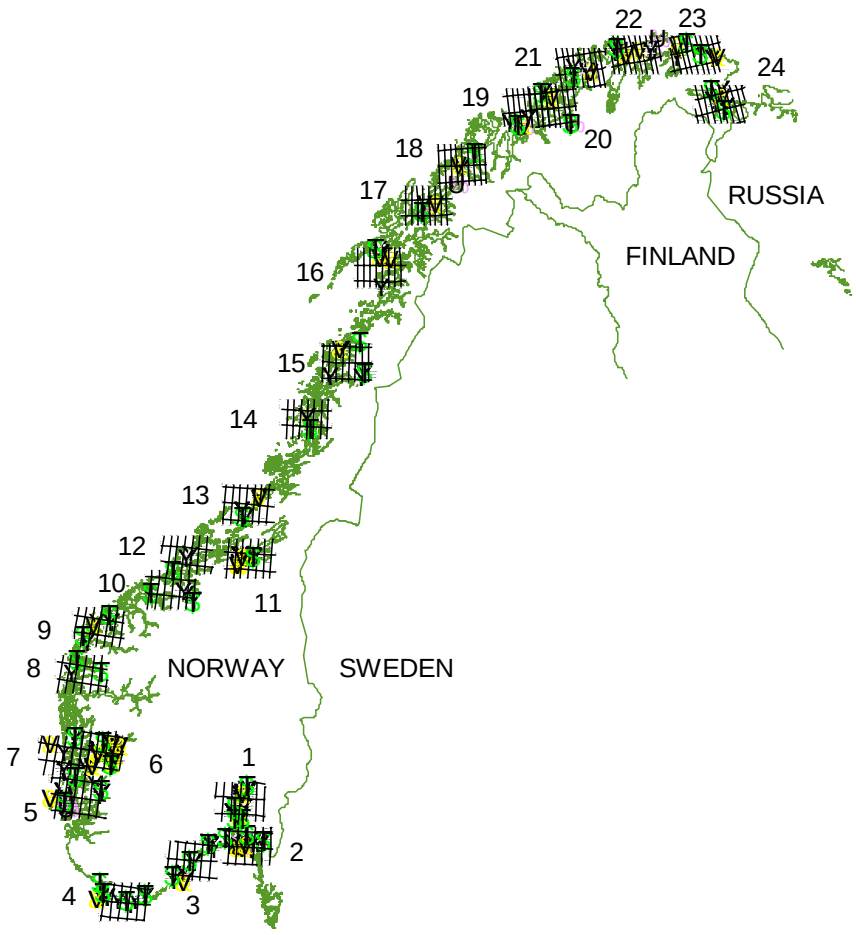
NOTES

For a few stations the geolocation has varied somewhat in order to collect sufficient material (e.g., st. 36B and 98A) or investigate local geographical variations (e.g., in the inner Oslofjord and Sørfjord). Hence, the same station name may appear more than once on a map.

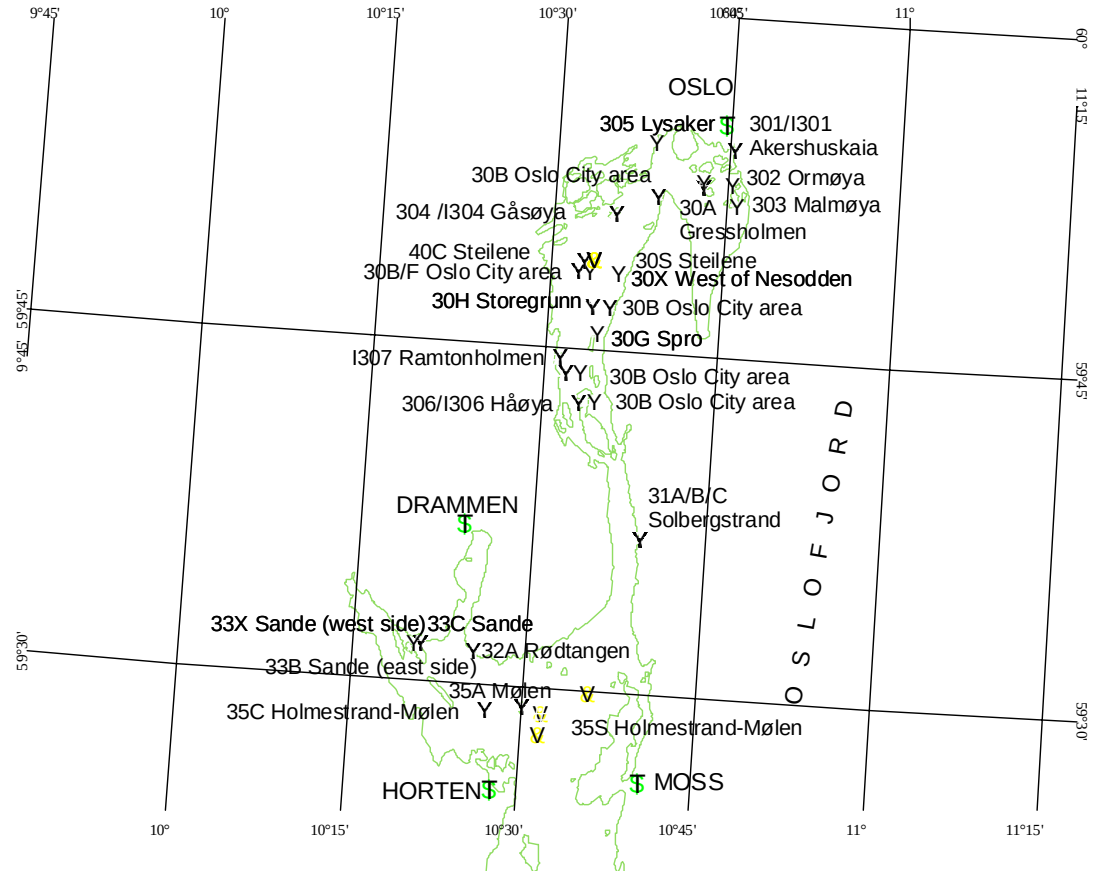
The letter A following the station identification number indicates that blue mussels were sampled. The letter B indicates sampling for cod and the letter F indicates sampling for flatfish. This system for fish is not consistent for some older stations (30, 33, 52 and 67) where only the letter B is used indicating that either cod or flatfish or both were sampled. An encircled dot indicates a mussel, shrimp or fish station. The letter G indicates sampling for dog whelks and S indicates sampling for sediment. A square and pentegon symbol indicates the position for sampling dog whelks or sediment, respectively.

The letter "I" preceeding the station identification number indicates an INDEX station for determining a "pollution" index. The letter R indicates a station for evaluating a "reference" index. Only blue mussels are used for these indices. The indices are based on a selection of JAMP and INDEX stations (cf. Green *et al.* 2002).

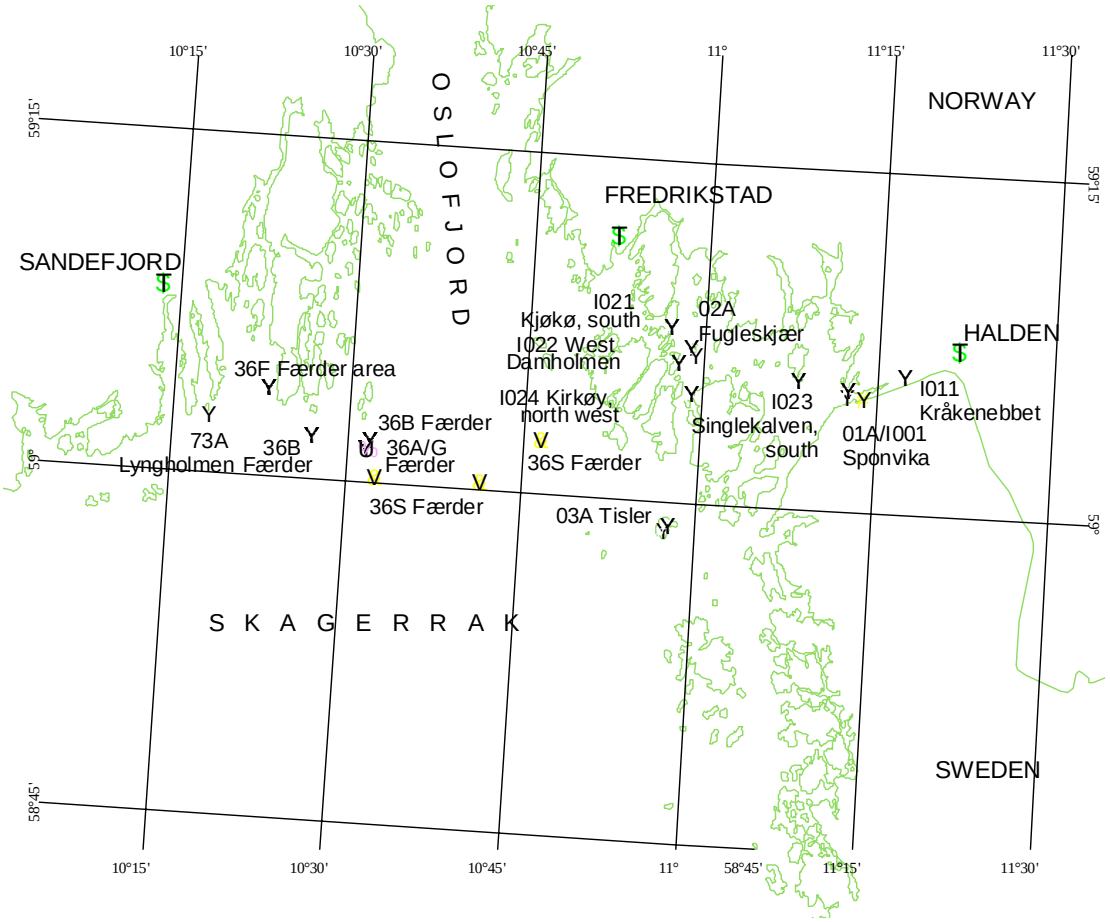
The maps are generated using ArcView GIS version 3.3.



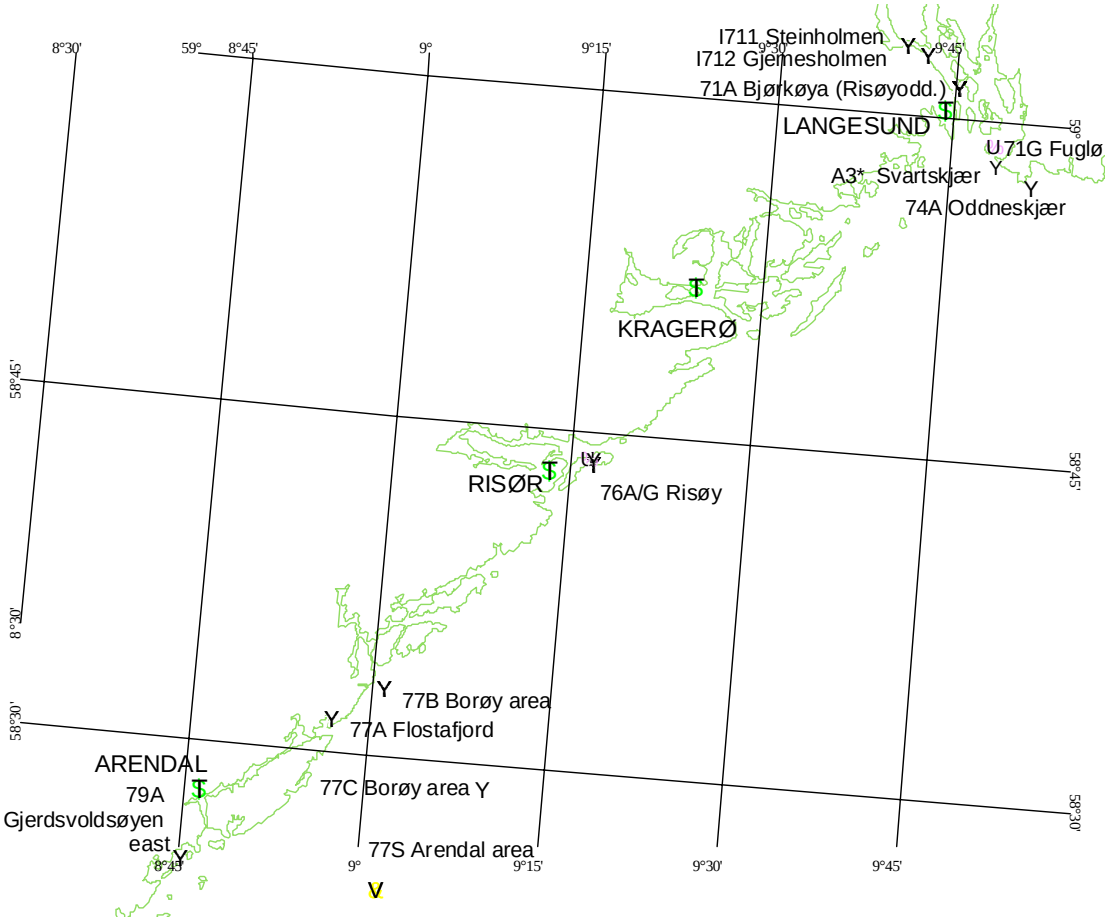
JAMP stations Norway. Numbers indicate map reference.


OSLO
305 Lysaker
301/I301
Akershuskaia
30B Oslo City area
302 Ormøya
304 /I304 Gåsøya
30A
303 Malmøya
Gressholmen
40C Steilene
30S Steilene
30B/F Oslo City area
30X West of Nesodden
30H Storegrunn
30B Oslo City area
30G Spro
I307 Ramtonholmen
30B Oslo City area
306/I306 Håøya
30B Oslo City area
O S L O F J O R D
DRAMMEN
31A/B/C
Solbergstrand
33X Sande (west side)
33C Sande
32A Rødtangen
33B Sande (east side)
35A Mølen
35C Holmestrand-Mølen
35S Holmestrand-Mølen
HORTEN
MOSS
9°45'
10°
10°15'
10°30'
10°45'
11°
11°15'
60°
59°45'
59°30'

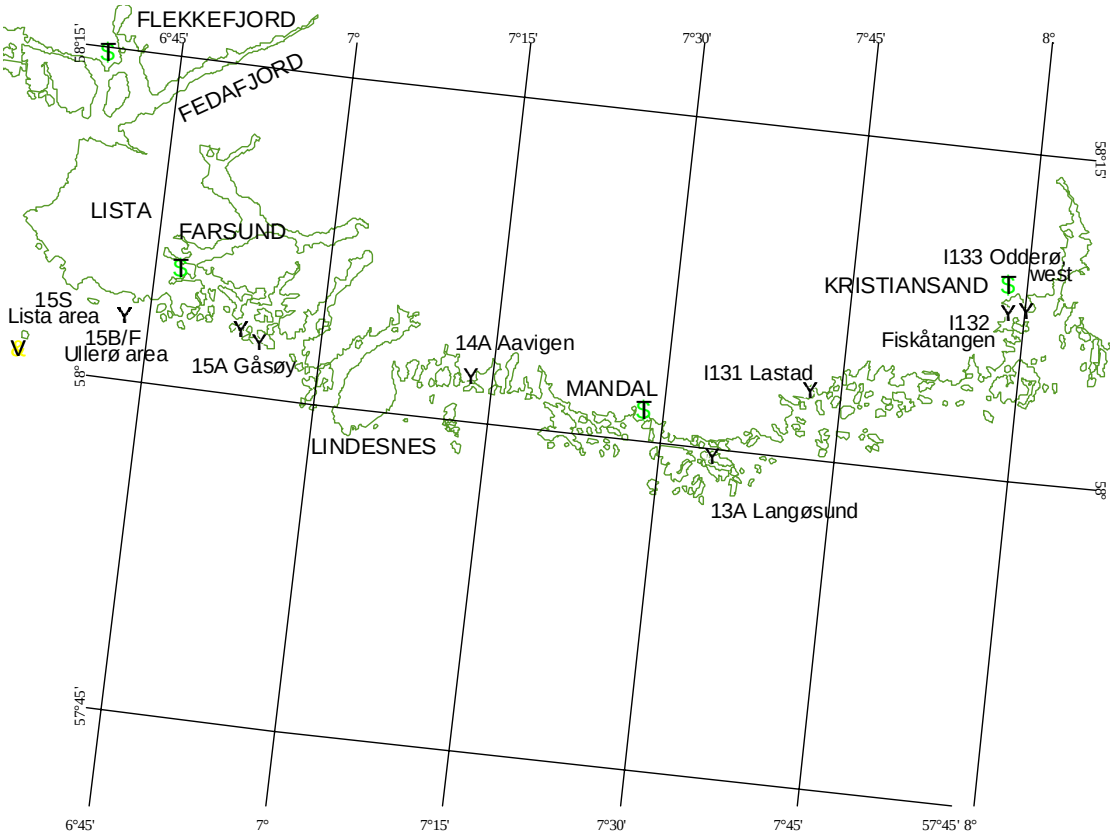
MAP 1


10°15'
10°30'
10°45'
11°
11°15'
11°30'
59°15'
59°
58°45'
O S L O F J O R D
NORWAY
FREDRIKSTAD
SANDEFJORD
I021
Kjøkø, south
02A
Fugleskjær
I022 West
Damholmen
HALDEN
36F Færder area
I024 Kirkøy,
north west
I023
Singlekalven,
south
I011
Kråkenebbet
01A/I001
Sponvika
73A
36B
Lyngholmen
36B Færder
36A/G
Færder
36S Færder
36S Færder
03A Tisler
S K A G E R R A K
SWEDEN

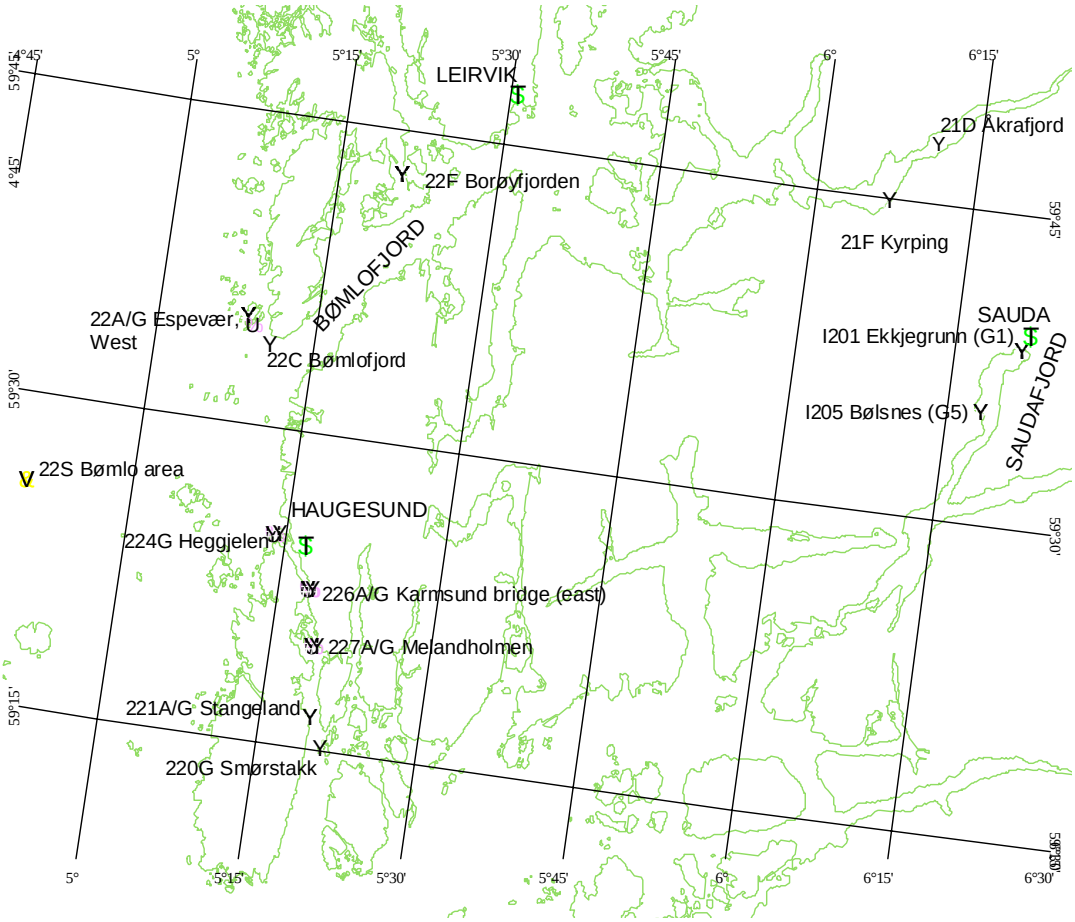
MAP 2


I711 Steinholmen
I712 Gjemesholmen
71A Bjørkøya (Risøyodd.)
LANGESUND
U71G Fugløy
A3* Svartskjær
74A Oddneskjær
KRAGERØ
RISØR
76A/G Risøy
77B Borøy area
77A Flostafjord
77C Borøy area
ARENDAL
79A
Gjerdsvoldsøyen
east
77S Arendal area
8°30'
59°
8°45'
9°
9°15'
9°30'
9°45'
58°45'
58°30'

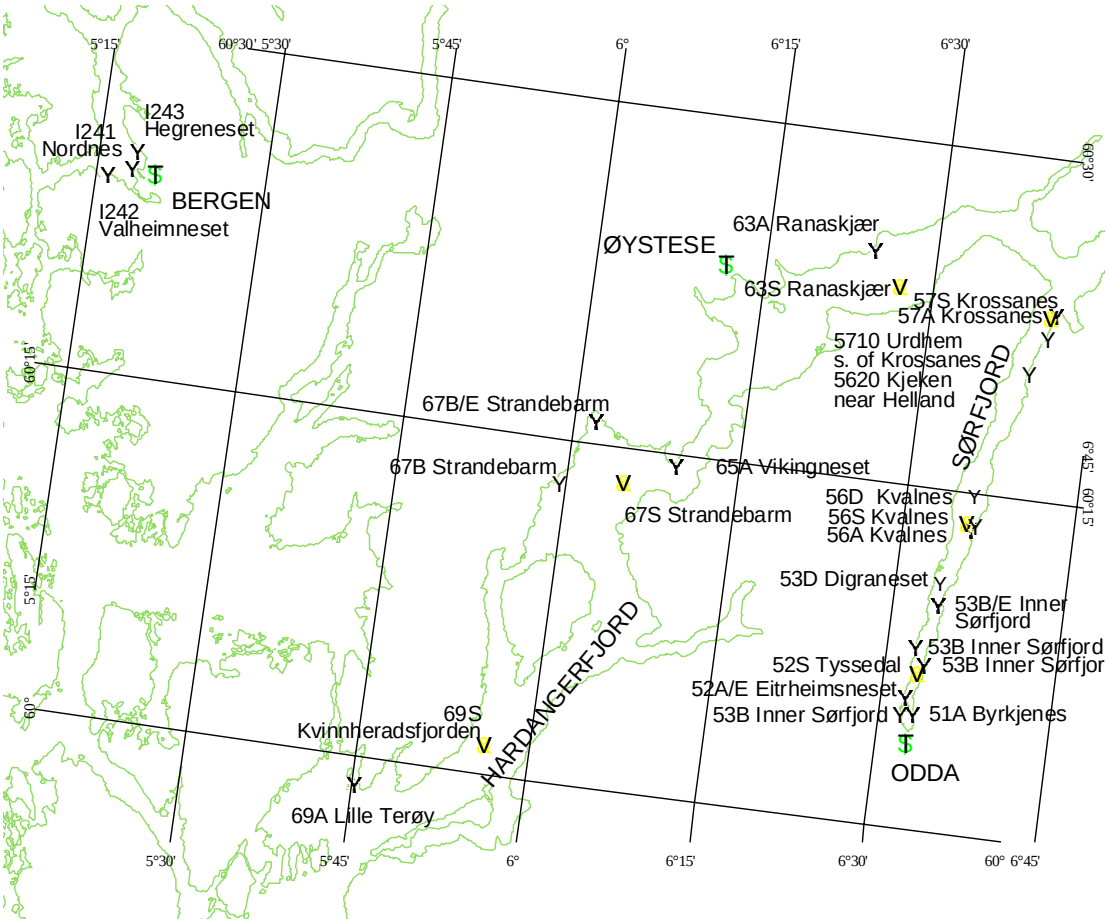
MAP 3


FLEKKEFJORD
FEDAFJORD
LISTA
FARSUND
15S
Lista area
15B/F
Ullerø area
15A Gåsøy
14A Aavigen
LINDESNES
MANDAL
I131 Lastad
13A Langøsund
I133 Odderøya west
KRISTIANSAND
I132
Fiskåtangen
58°15'
58°
57°45'
6°45'
7°
7°15'
7°30'
7°45'
8°

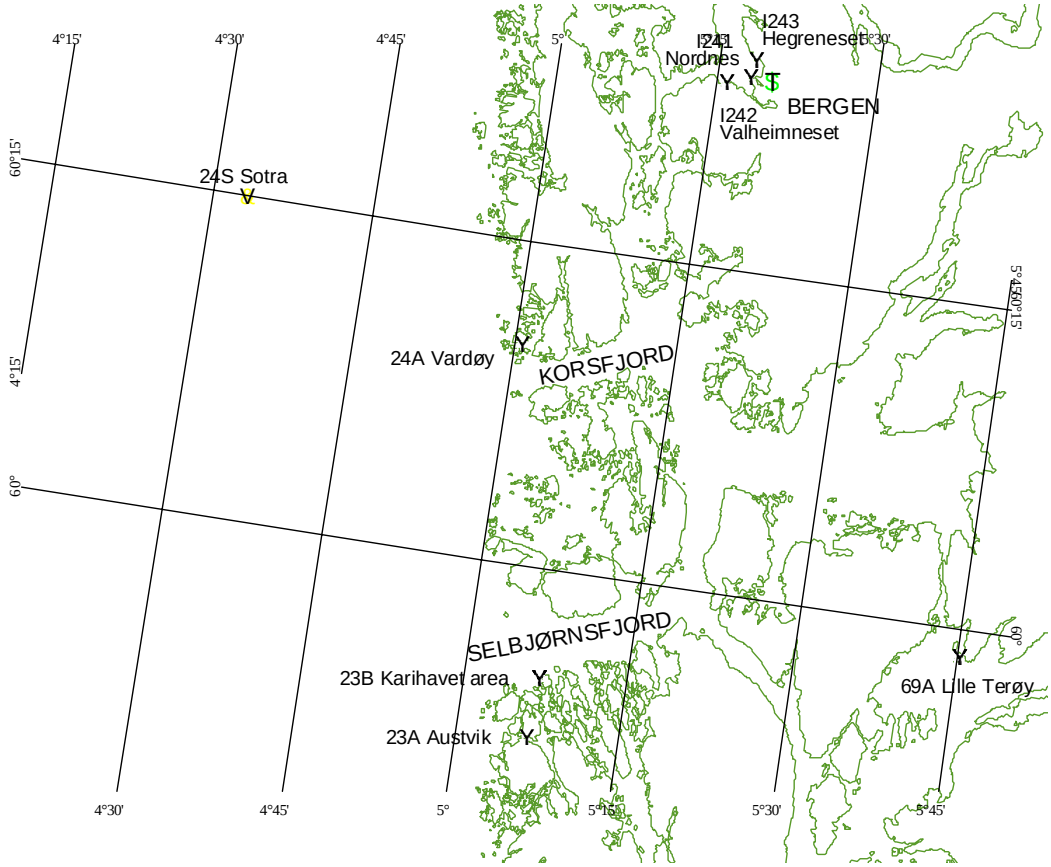
MAP 4


LEIRVIK
21D Åkrafjord
22F Borøyfjorden
21F Kyrping
BØMLOFJORD
22A/G Espevær, West
22C Bømlofjord
SAUDA
I201 Ekkjegrunn (G1)
SAUDAFJORD
I205 Bølsnes (G5)
22S Bømlo area
HAUGESUND
224G Heggjelen
226A/G Karmsund bridge (east)
227A/G Melandholmen
221A/G Stangeland
220G Smørstakk
5°
5°15'
5°30'
5°45'
6°
6°15'
6°30'
59°45'
59°30'
59°15'

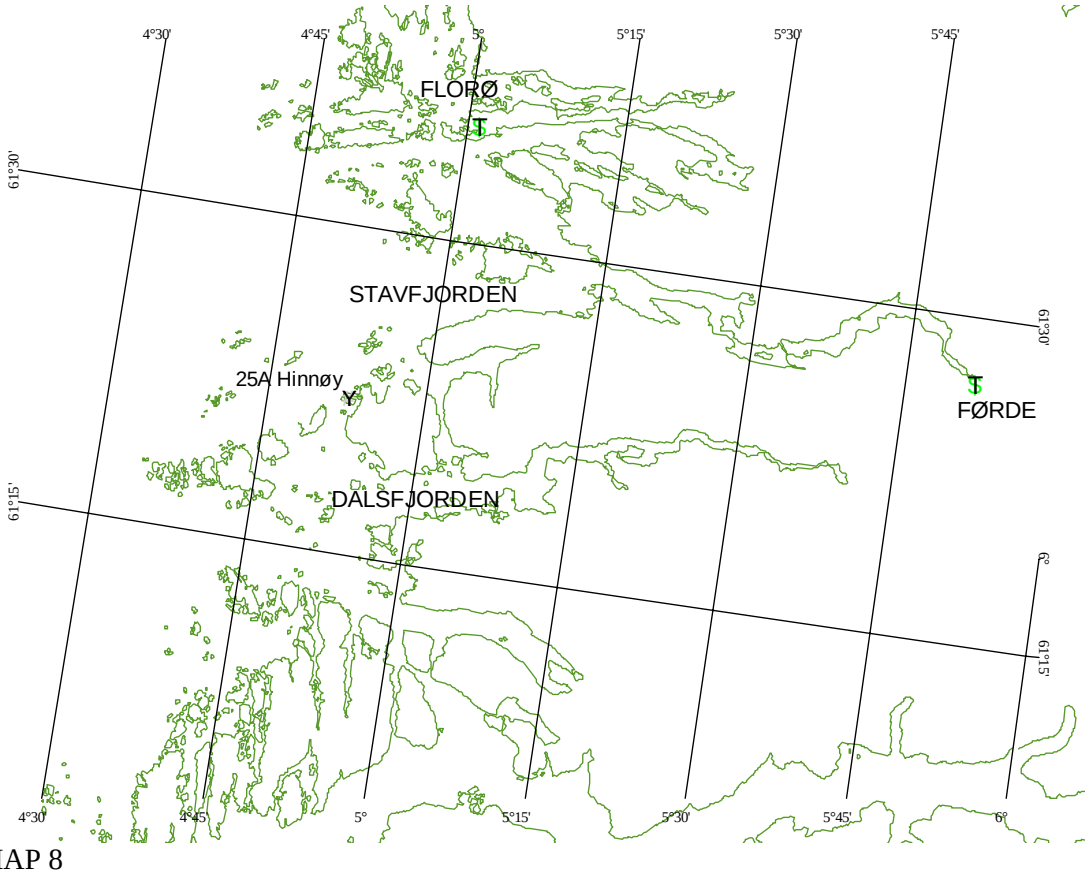
MAP 5


I243
I241 Hegreneset
Nordnes
BERGEN
I242
Valheimneset
ØYSTESE
63A Ranaskjær
63S Ranaskjær
57S Krossanes
57A Krossanes
5710 Urdheim
s. of Krossanes
5620 Kjeken
near Helland
SØRFJORD
67B/E Strandebarm
67B Strandebarm
65A Vikingneset
67S Strandebarm
56D Kvalnes
56S Kvalnes
56A Kvalnes
53D Digraneset
53B/E Inner Sørfjord
53B Inner Sørfjord
52S Tyssedal
53B Inner Sørfjor
52A/E Eitrheimsneset
53B Inner Sørfjord
51A Byrkjenes
ODDA
HARDANGERFJORD
69S
Kvinnheradsfjorden
69A Lille Terøy
5°15'
5°30'
5°45'
6°
6°15'
6°30'
60°30'
60°15'
60°

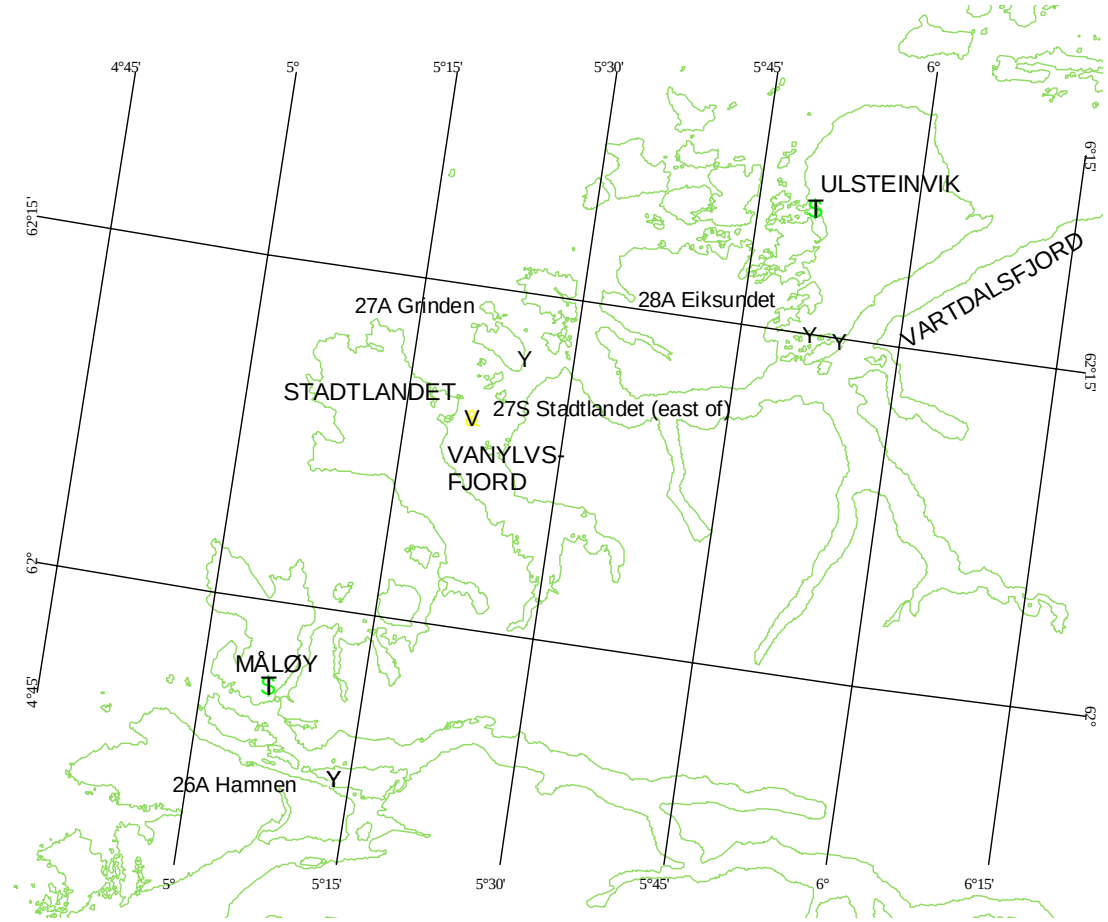
MAP 6


I243
Hegreneset
I241
Nordnes
I242
Valheimneset
BERGEN
24S Sotra
24A Vardøy
KORSFJORD
SELBJØRNSFJORD
23B Karihavet area
23A Austvik
69A Lille Terøy
4°15'
4°30'
4°45'
5°
5°15'
5°30'
5°45'
60°15'
60°
60°15'

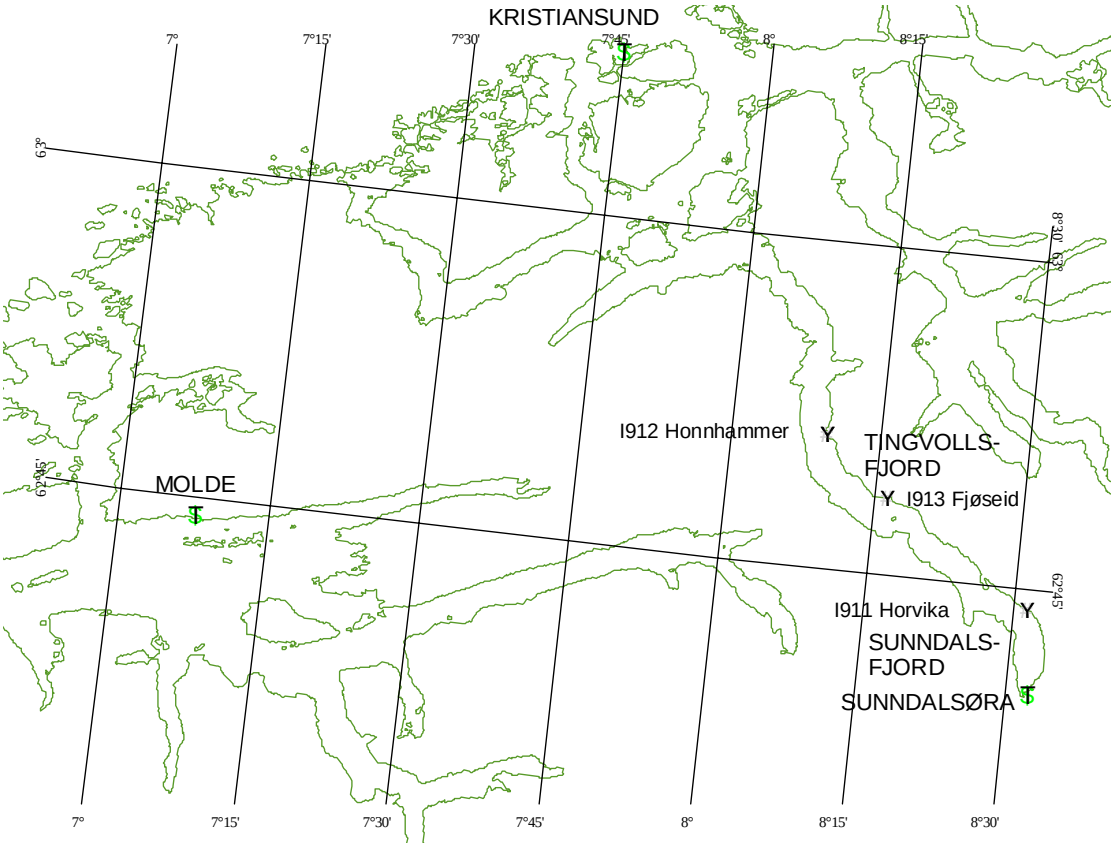
MAP 7


FLORØ
STAVFJØRDEN
25A Hinnøy
FØRDE
DALSFJØRDEN
4°30'
4°45'
5°
5°15'
5°30'
5°45'
6°
61°30'
61°15'

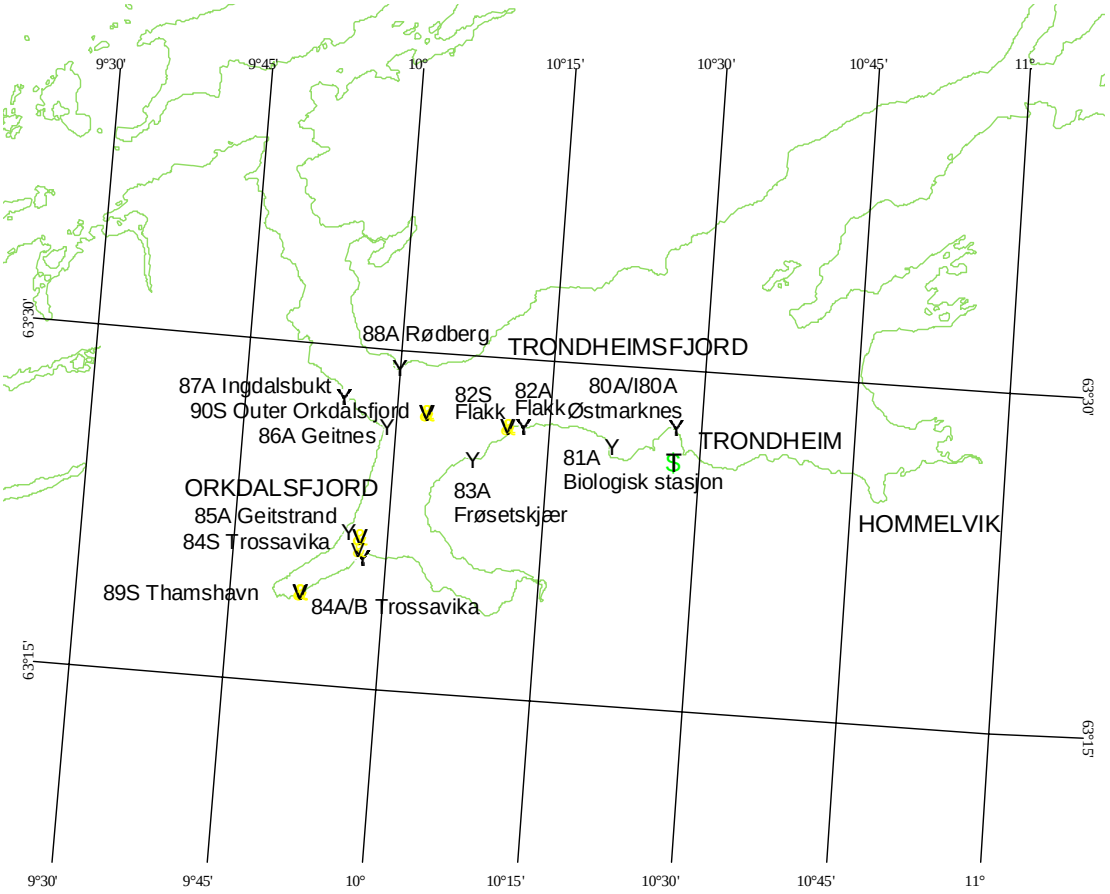
MAP 8


4°45'
5°
5°15'
5°30'
5°45'
6°
6°15'
62°15'
62°
ULSTEINVIK
VARTDALSFJORD
28A Eiksundet
27A Grinden
STADTLANDET
27S Stadtlandet (east of)
VANYLVS-
FJORD
MÅLØY
26A Hamnen

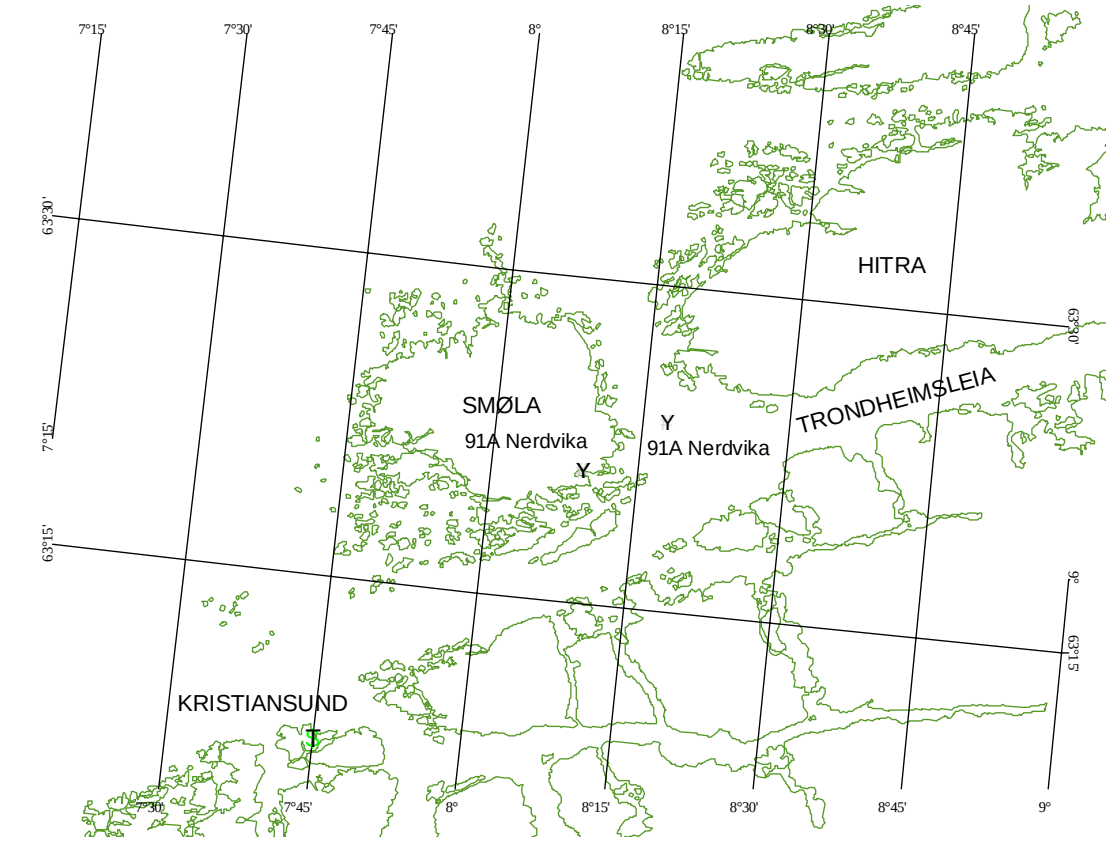
MAP 9


7°
7°15'
7°30'
7°45'
8°
8°15'
8°30'
63°
62°45'
KRISTIANSUND
I912 Honnhammer
TINGVOLLS-
FJORD
I913 Fjøseid
MOLDE
I911 Horvika
SUNNDALS-
FJORD
SUNNDALSØRA

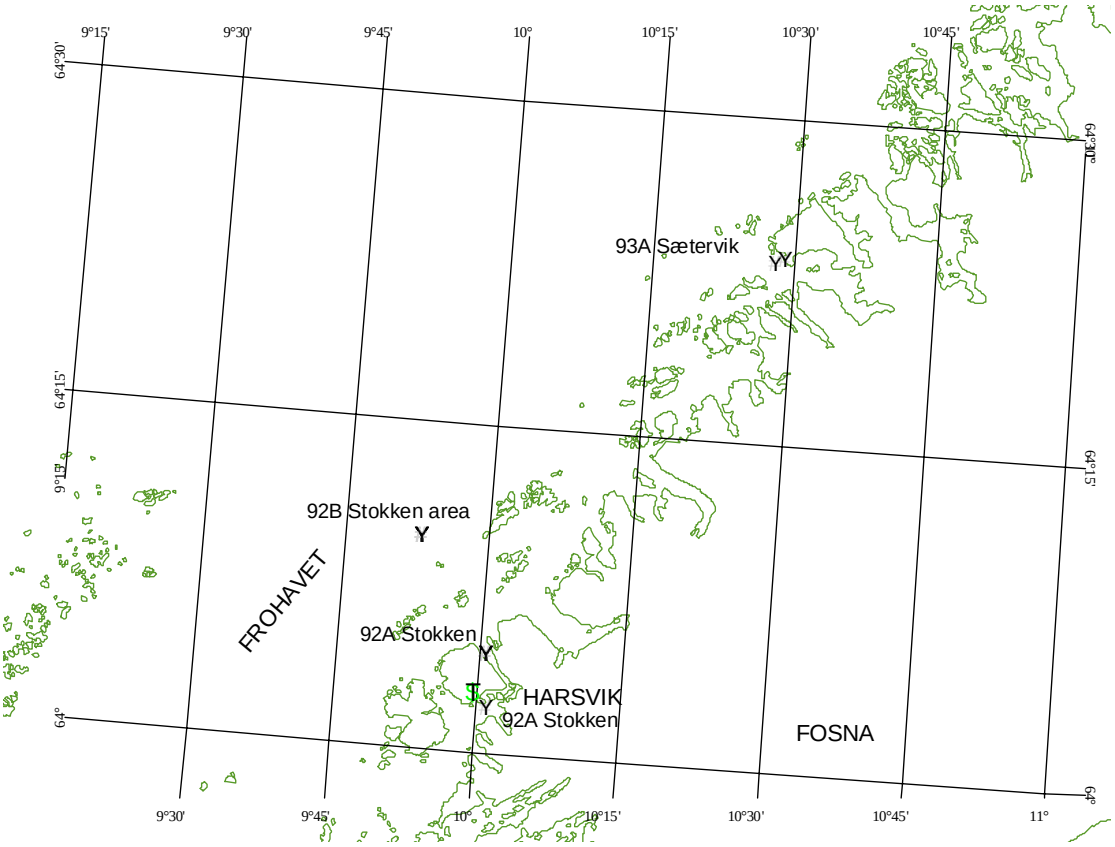
MAP 10


9°30'
9°45'
10°
10°15'
10°30'
10°45'
11°
63°30'
63°15'
88A Rødberg
TRONDHEIMSFJORD
87A Ingdalsbukt
90S Outer Orkdalsfjord
86A Geitnes
82S
82A
Flakk
Flakk
80A/I80A
Østmarknes
TRONDHEIM
81A
Biologisk stasjon
ORKDALSFJORD
85A Geitstrand
84S Trossavika
83A
Frøsetskjær
HOMMELVIK
89S Thamshavn
84A/B Trossavika

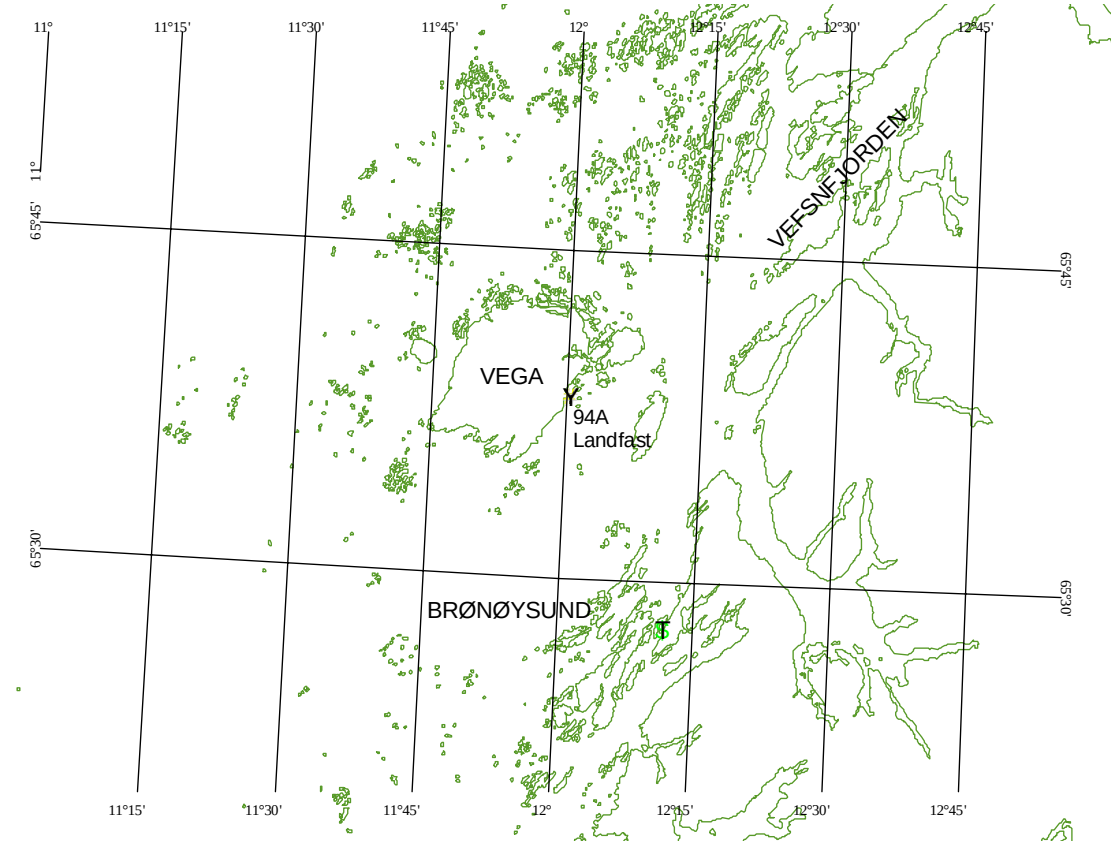
MAP 11


7°15'
7°30'
7°45'
8°
8°15'
8°30'
8°45'
9°
63°30'
63°15'
HITRA
SMØLA
91A Nerdvika
91A Nerdvika
TRONDHEIMSLEIA
KRISTIANSUND

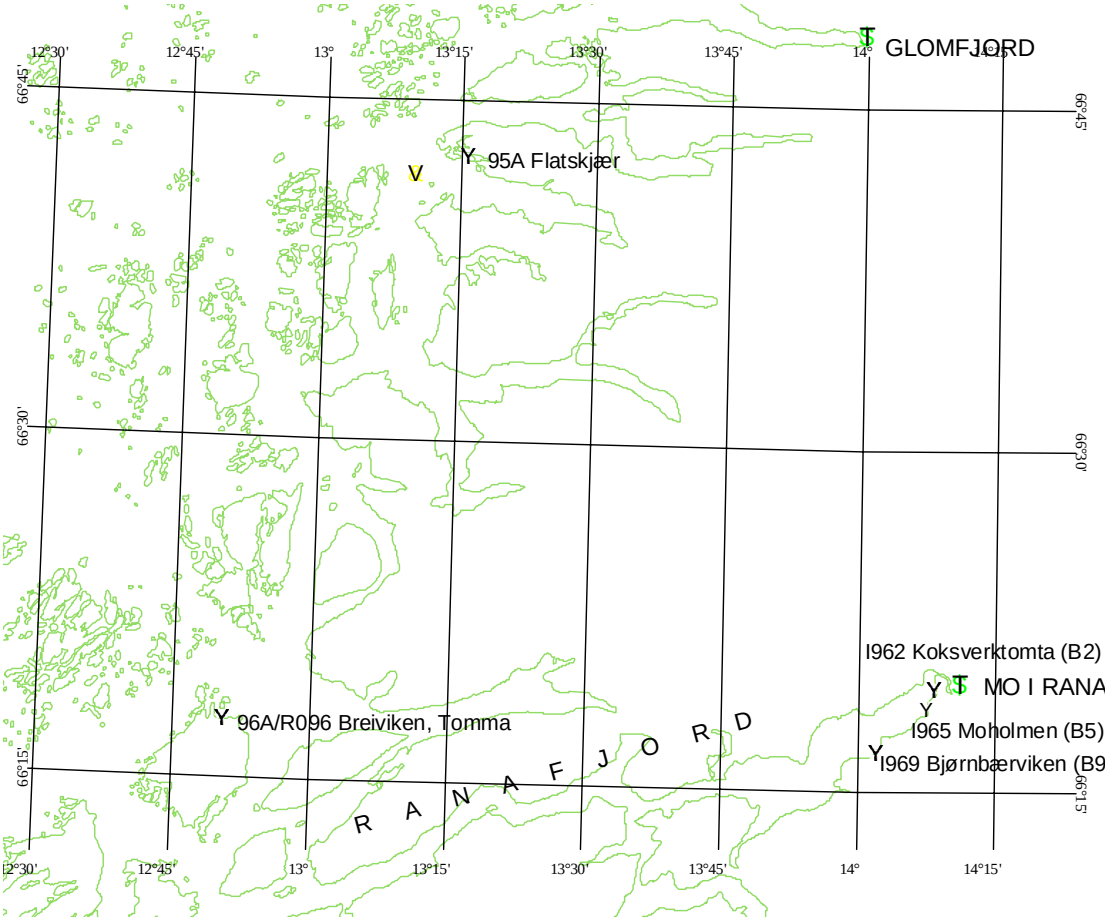
MAP 12


9°15'
9°30'
9°45'
10°
10°15'
10°30'
10°45'
64°30'
64°15'
64°
93A Sætervik
92B Stokken area
FROHAVET
92A Stokken
HARSVIK
92A Stokken
FOSNA
9°30'
9°45'
10°
10°15'
10°30'
10°45'
11°

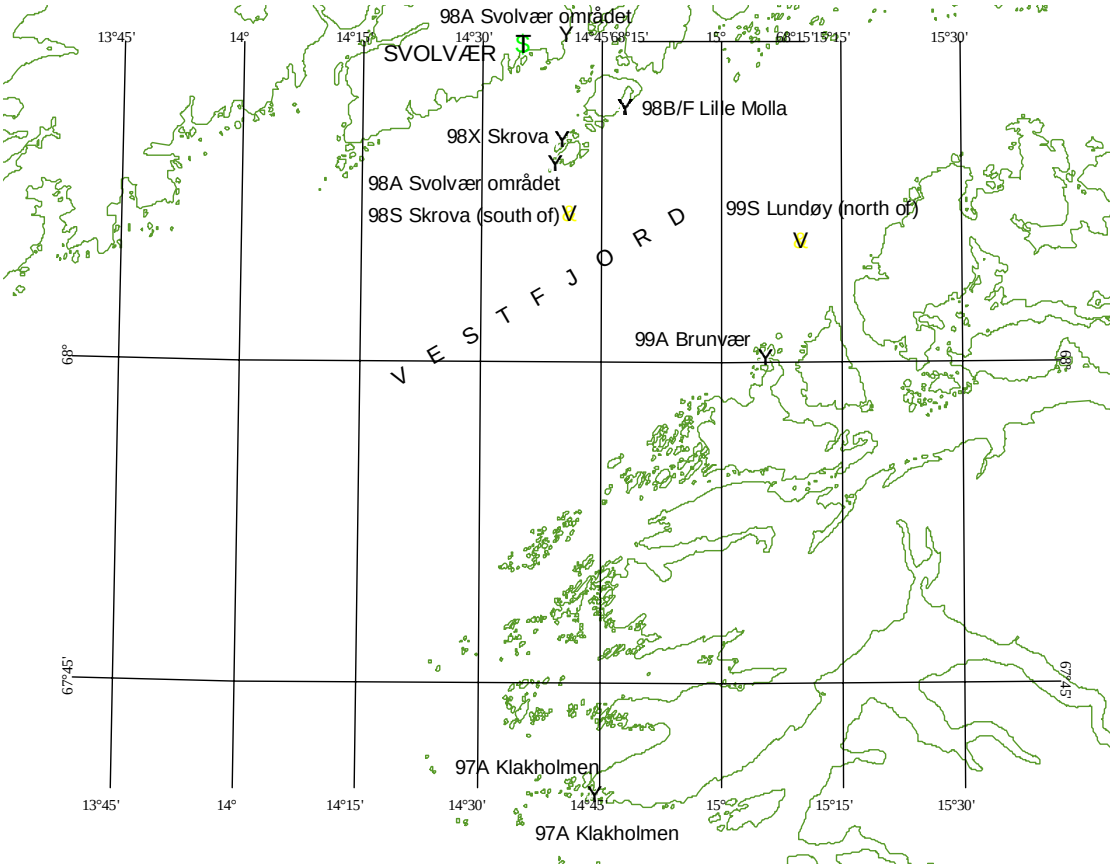
MAP 13


11°
11°15'
11°30'
11°45'
12°
12°15'
12°30'
12°45'
65°45'
65°30'
VEFSNFJORDEN
VEGA
94A
Landfast
BRØNØYSUND
11°15'
11°30'
11°45'
12°
12°15'
12°30'
12°45'

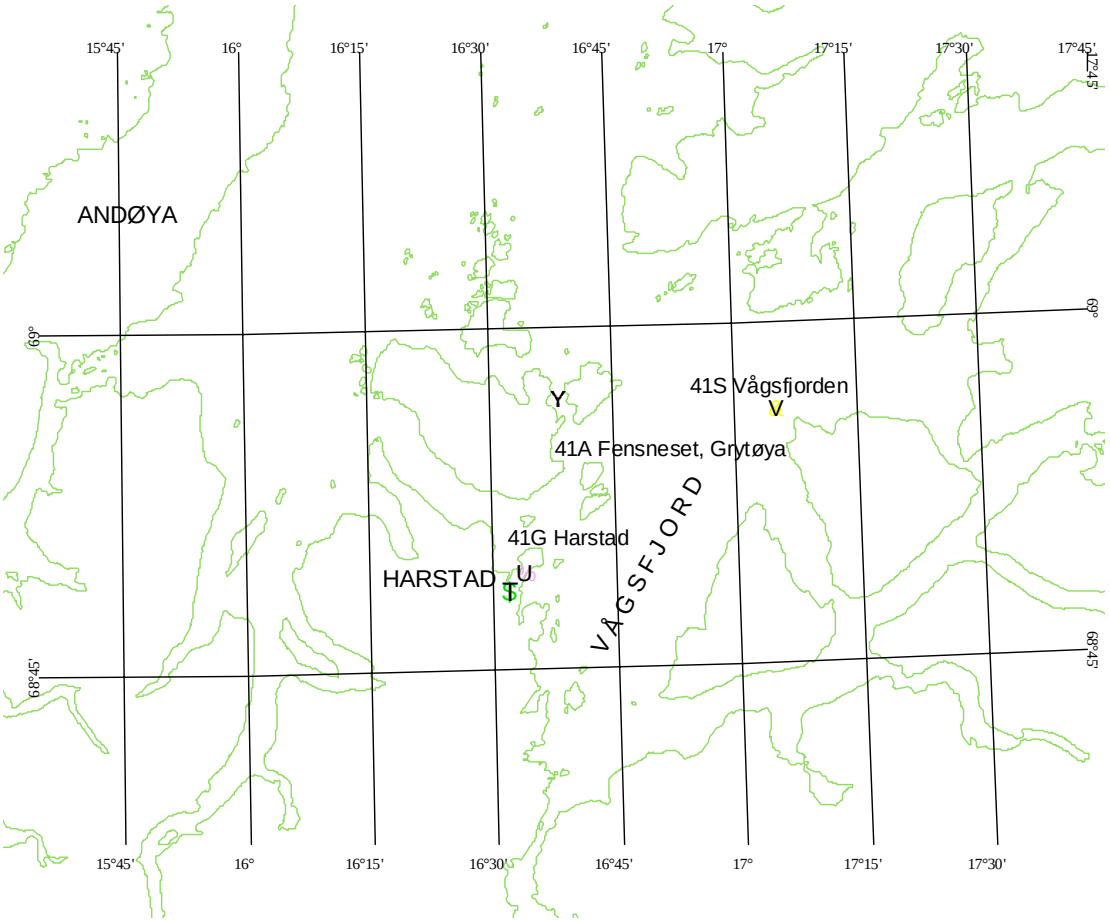
MAP 14


GLOMFJORD
95A Flatskjær
I962 Koksverktomta (B2)
MO I RANA
96A/R096 Breiviken, Tomma
I965 Moholmen (B5)
I969 Bjørnbærviken (B9
RANAFJORD
12°30'
12°45'
13°
13°15'
13°30'
13°45'
14°
14°15'
66°45'
66°30'
66°15'

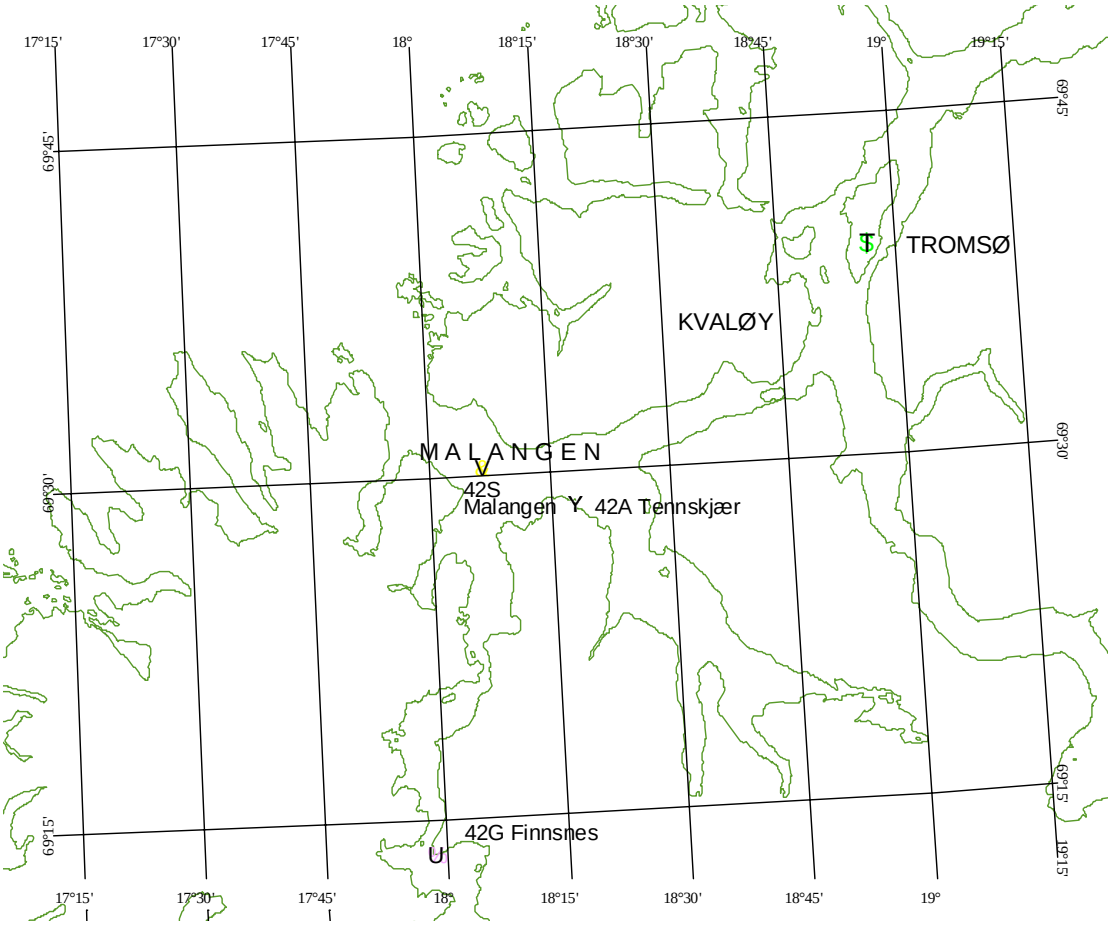
MAP 15


98A Svolvær området
SVOLVÆR
98B/F Lille Molla
98X Skrova
98A Svolvær området
98S Skrova (south of)
99S Lundøy (north of)
VESTFJORD
99A Brunvær
97A Klakholmen
97A Klakholmen
13°45'
14°
14°15'
14°30'
14°45'
15°
15°15'
15°30'
68°
67°45'

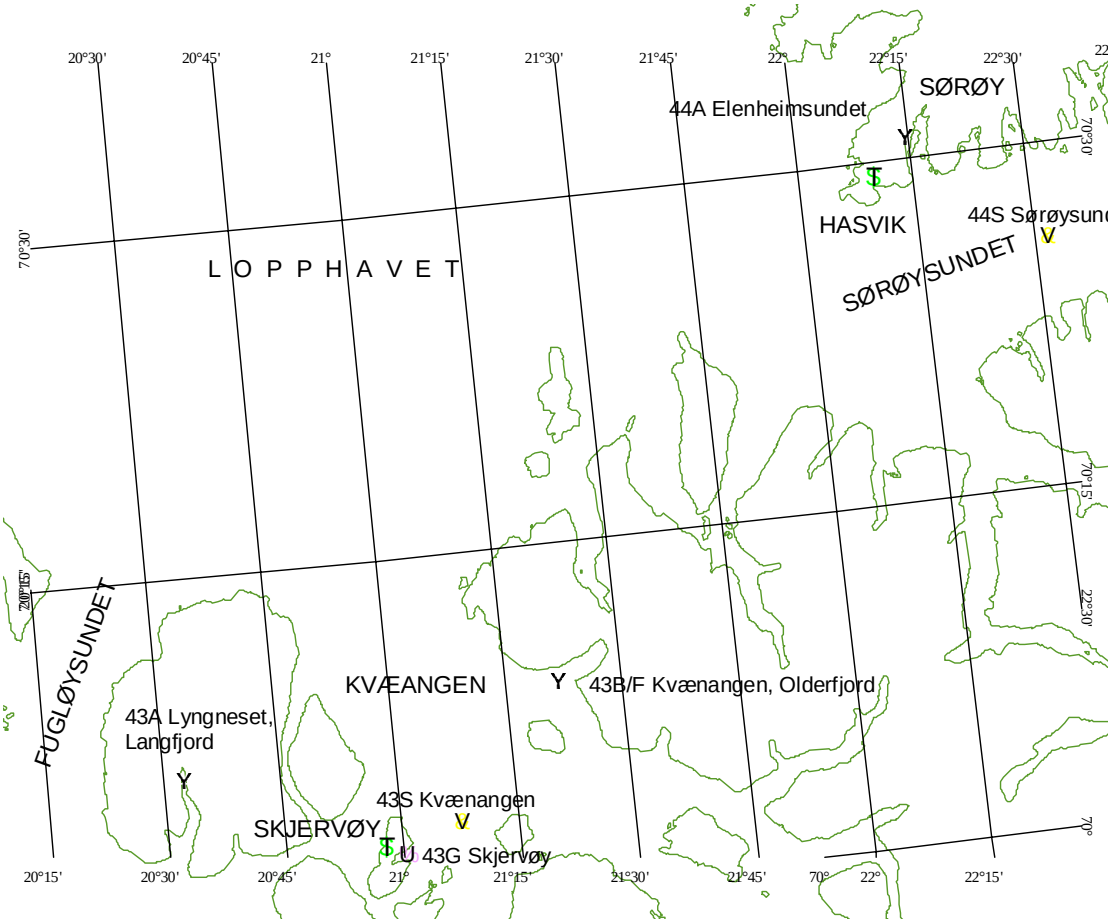
MAP 16


15°45'
16°
16°15'
16°30'
16°45'
17°
17°15'
17°30'
17°45'
69°
68°45'
ANDØYA
41S Vågsfjorden
Y
41A Fensneset, Grytøya
41G Harstad
HARSTAD
U
VÅGSFJORD

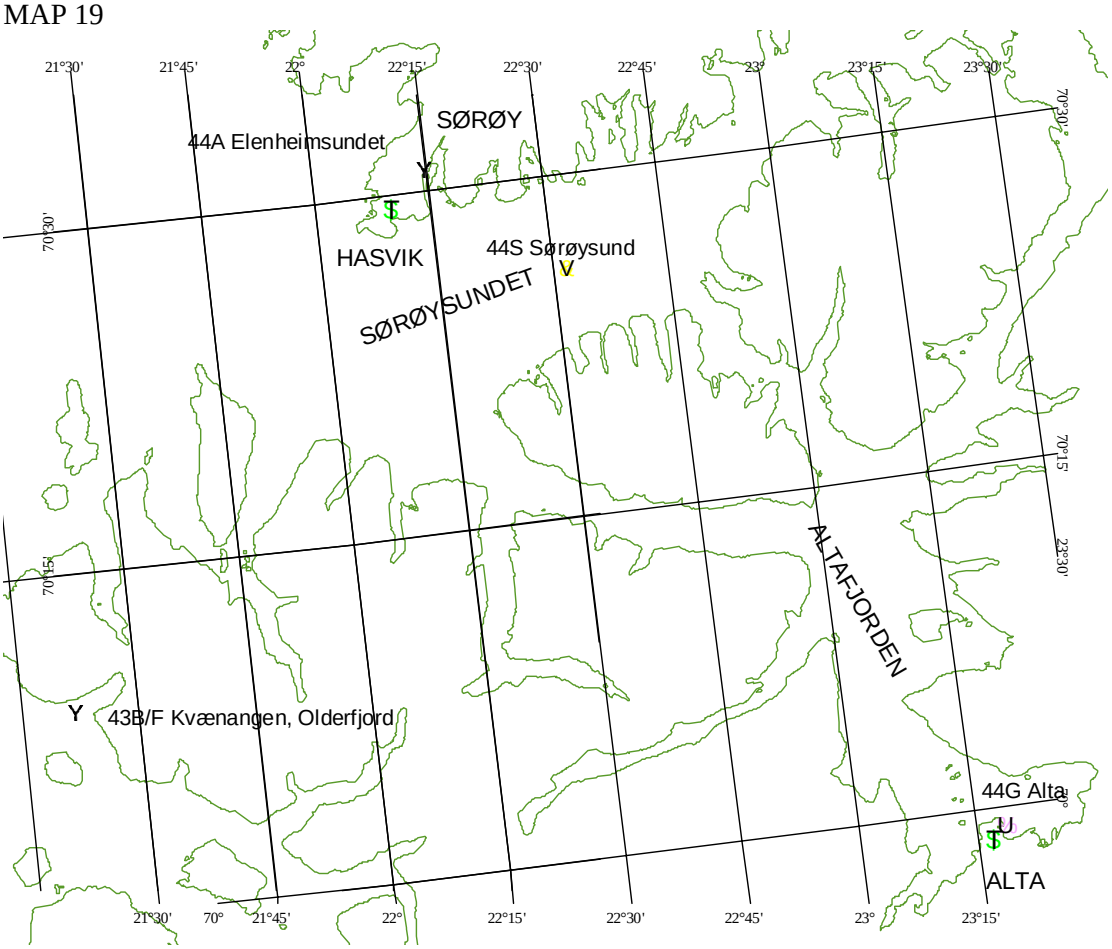
MAP 17


17°15'
17°30'
17°45'
18°
18°15'
18°30'
18°45'
19°
19°15'
69°45'
69°30'
69°15'
TROMSØ
KVALØY
MALANGEN
42S
Malangen
Y
42A Tennskjær
42G Finnsnes
U

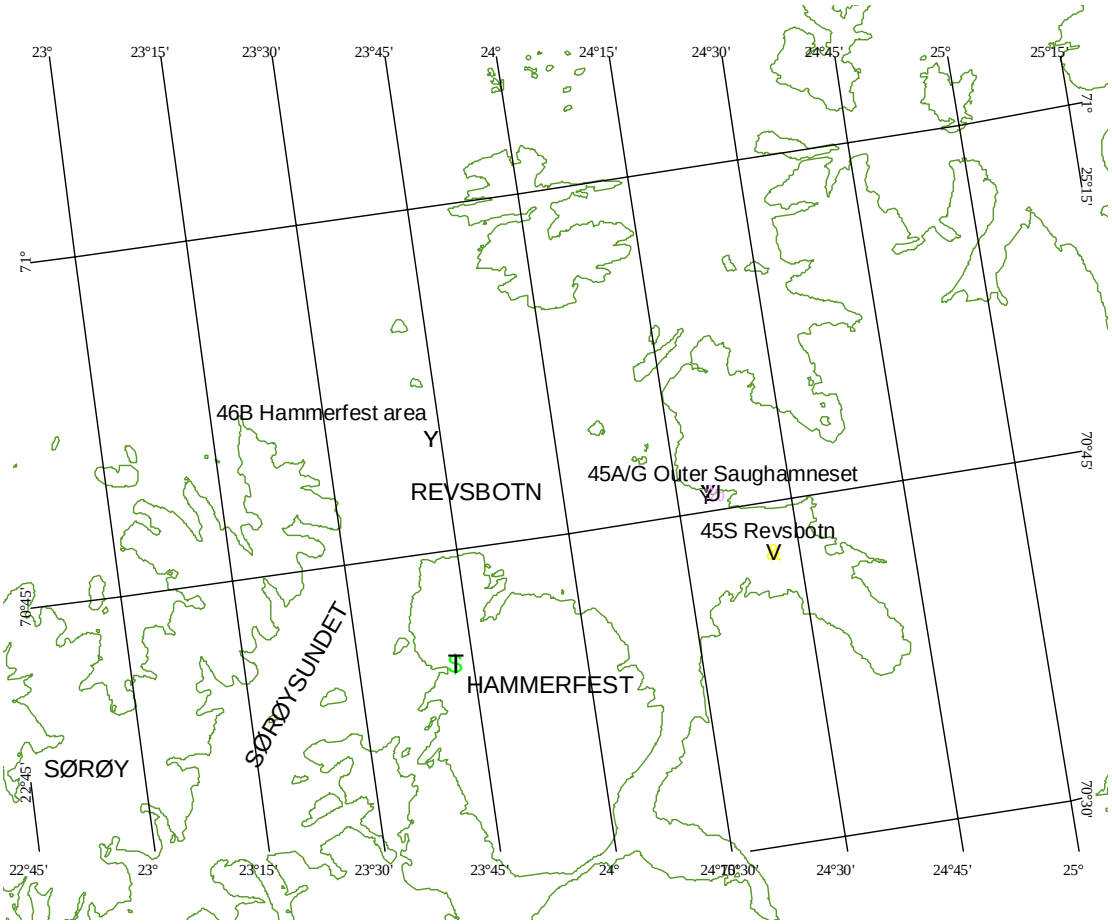
MAP 18


SØRØY
44A Elenheimsundet
HASVIK
44S Sørøysund
SØRØYSUNDET
L O P P H A V E T
FUGLØYSUNDET
KVÆANGEN
43B/F Kvænangen, Olderfjord
43A Lyngneset, Langfjord
43S Kvænangen
SKJERVØY
43G Skjervøy

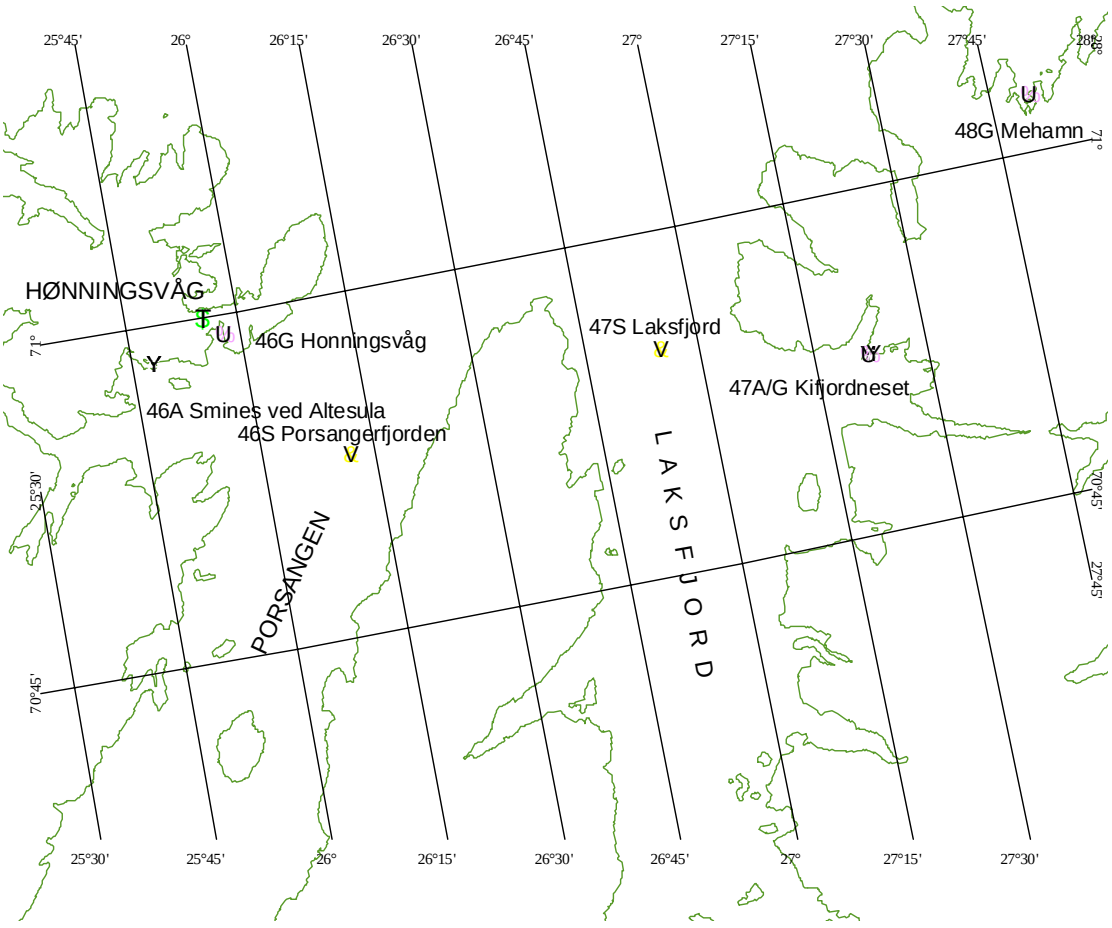
MAP 19


SØRØY
44A Elenheimsundet
HASVIK
44S Sørøysund
SØRØYSUNDET
ALTAFJORDEN
43B/F Kvænangen, Olderfjord
44G Alta
ALTA

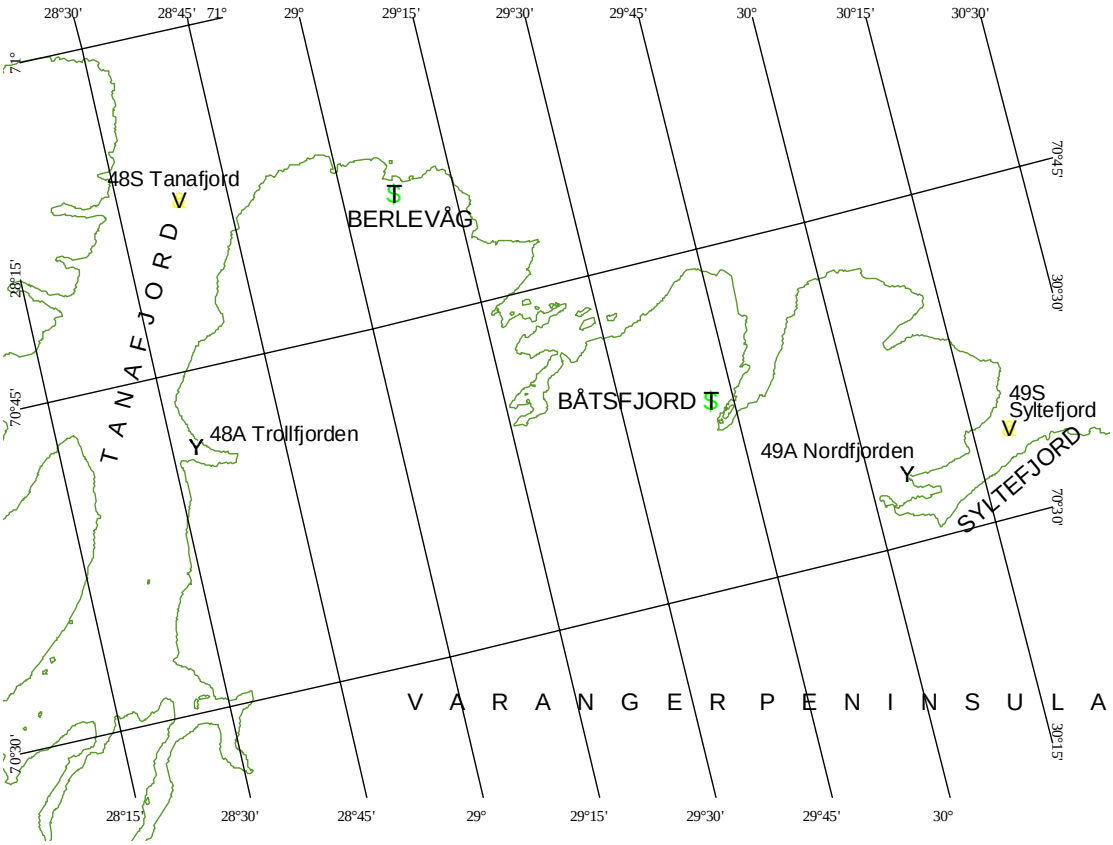
MAP 20


46B Hammerfest area
REVSBOTN
45A/G Outer Saughamneset
45S Revsbotn
HAMMERFEST
SØRØYSUNDET
SØRØY

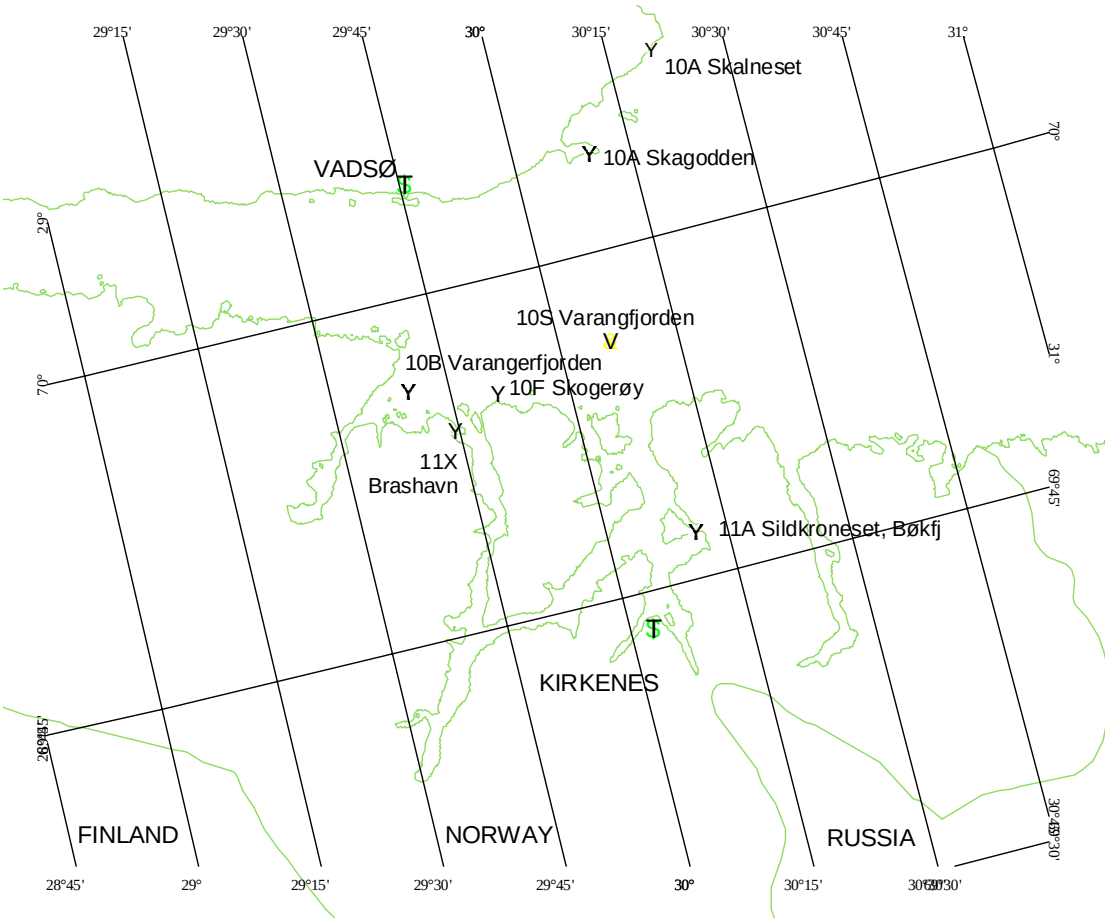
MAP 21


48G Mehamn
HØNNINGSVÅG
46G Honningsvåg
47S Laksfjord
47A/G Kjfjordneset
46A Smines ved Altesula
46S Porsangerfjorden
PORSANGEN
LAKSFJORD

MAP 22


48S Tanafjord
BERLEVÅG
TANAFJORD
48A Trollfjorden
BÅTSFJORD
49S
Syltefjord
49A Nordfjorden
SYLTEFJORD
VARANGERPENINSULA

MAP 23


10A Skalneset
VADSØ
10A Skagodden
10S Varangfjorden
10B Varangerfjorden
10F Skogerøy
11X
Brashavn
11A Sildkroneset, Bøkfj
KIRKENES
FINLAND
NORWAY
RUSSIA

MAP 24