

NORSK INSTITUTT FOR VANNFORSKNING

Blindern

0-111/70

RESPIENTUNDERSØKELSE AV NEDRE SKIENSELVA,
FRIERFJORDEN OG TILLIGGENDE FJORDOMRÅDER

Rapport 7

Hydrokjemiske data fra

tidsrommet mars 1974 - februar 1977

Blindern, 30. august 1977

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Medarbeidere : siv.ing. Birger Bjerkeng
cand.mag. Norman Green

FORORD

Foreliggende datarapport presenterer de hydrokjemiske måleresultatene fra en resipientundersøkelse i Skienselva og Grenlandsfjordene som Norsk institutt for vannforskning (NIVA) gjennomførte i tidsrommet mars 1974 - februar 1977.

NIVAs oppdragsgiver var Fylkesmannen i Telemark, ved Tilsynsutvalget for resipientundersøkelser i Skiensvassdraget og Skiensvassdragets fjordområder.

Dataene er tidligere delvis blitt presentert i to fremdriftsrapporter for tidsrommet 1974 - 1975, og en rekke toktrapper.

Ved instituttet har siv.ing. Birger Bjerkgeng og cand.mag. Norman Green hatt hovedansvaret for å tilrettelegge dataene for EDB, samt utlistingen av dataene. Disse er lagret i NIVAs databank.

Brekke, 30. august 1977


Jarle Molver

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Side:

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1. INNLEDNING

1.1 Generelt

I løpet av de tre år (1974-77) som NIVAs resipientundersøkelse av Skienselva og Grenlandsfjordene foregikk, ble det utført i alt 29 tokt med innsamling av vannprøver. 4 tokt pr. år har vært såkalte hovedtokt med innsamling av vannprøver for bestemmelse av vannmassens temperatur, saltholdighet, oksygeninnhold, konsentrasjon av fosfor- og nitrogenforbindelser, organisk stoff (som total organisk karbon), jern, metaller og til dels også forskjellige typer av klorerte hydrokarboner. Utover dette har det blitt samlet inn planktonprøver, vannprøver for bestemmelse av overflatelagets algevekstpotensial og klorofyllinnhold, samt en del prøver for bestemmelse av vannmassenes turbiditet og innhold av suspendert materiale. Man skal imidlertid være oppmerksom på at prøvetakingsprogrammet ikke var det samme for alle stasjoner, og at det ble gjort visse endringer i måleprogrammet underveis.

Mellom hvert hovedtokt ble det fram til juni 1975 utført to hydrografiske tokt, og deretter ett hydrografisk tokt mellom hvert hovedtokt. Siktemålet med de hydrografiske tokt var særlig å følge med i vannutskiftningen i de dypereliggende vannlag ved målinger av temperatur, saltholdighet og oksygeninnhold. Det er dertil gjort observasjoner på overflatelaget ved innsamling av planteplankton- og vannprøver til måling av algevekstpotensial og klorofyllinnhold.

Figur 1 viser stasjonsnettets som har vært benyttet. Stasjonene BD-1 og BC-2 ble tatt i tidsrommet september 1974 - januar 1975. Stasjon CD-1 ble erstattet av st. DD-1 fra september 1975. Da ble også st. BN-1 opprettet.

Med unntak av mai og juli 1974 har stasjonene i Skienselva blitt tatt under hovedtoktene.

Stasjonene i Gunnekleivfjorden ble tatt i september 1975 og under hovedtoktene i 1976.

På stasjonene har en vanligvis også observert værforhold, vind, skydekke, bølgehøyde og siktedyp.

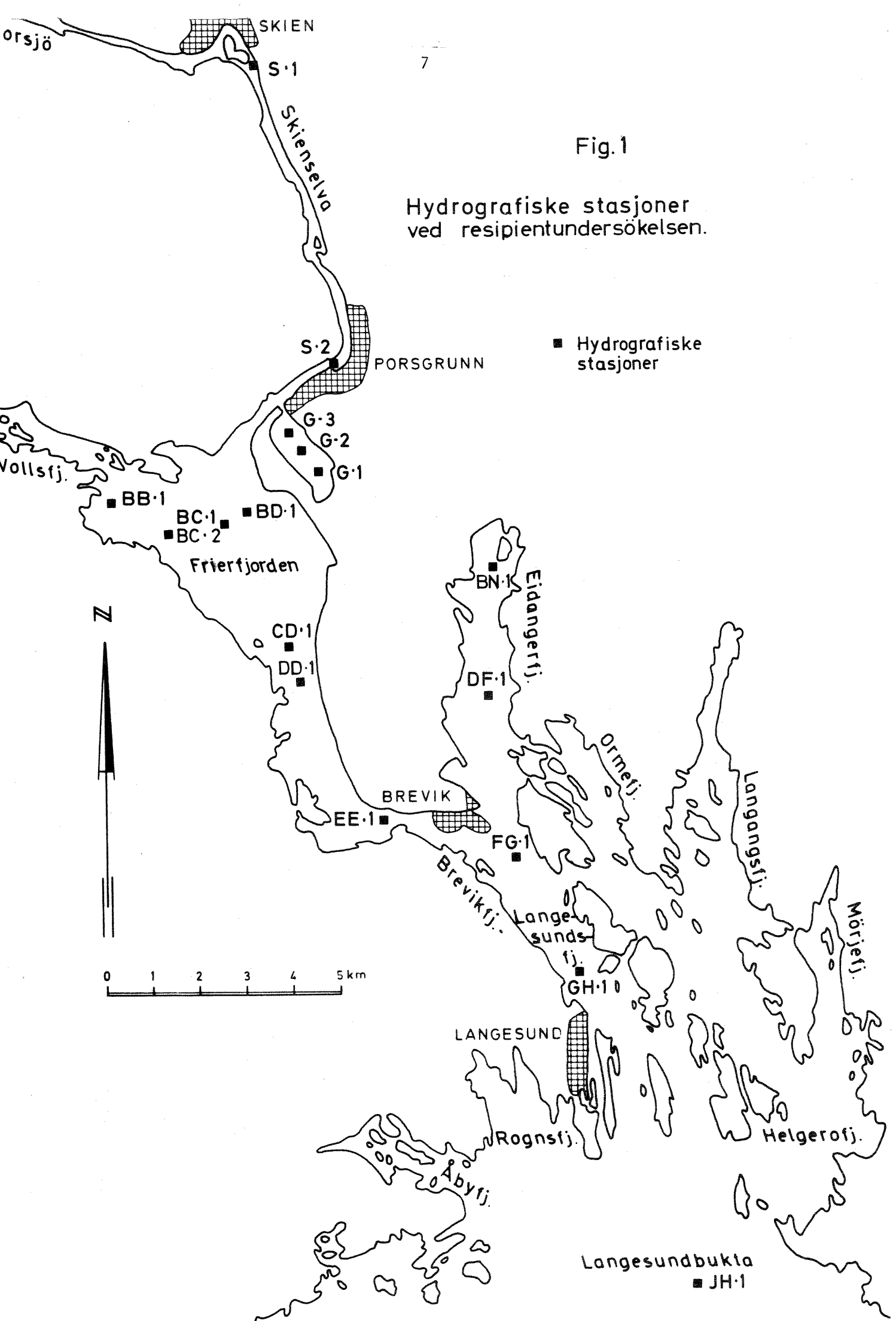
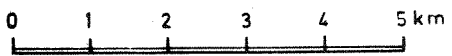


Fig.1

Hydrografiske stasjoner ved resipientundersøkelsen.

■ Hydrografiske stasjoner



1.2 Kort beskrivelse av det utlistede datamateriale

Ved NIVA har de innsamlede hydrokjemiske måleresultater for hvert tokt blitt tilrettelagt for EDB og listet ut stasjon for stasjon. Samtidig er det utført noen enkle beregninger som er til nytte under vurderingen og bruken av tallmaterialet. Disse vil bli nærmere omtalt nedenfor.

Av hensyn til at dataene skal inngå i en nasjonal databank ved Norsk Oseanografisk Datasenter i Bergen, hvor utveksling av data med utenlandske institusjoner foregår, er tabellteksten på engelsk.

Av praktiske grunner er ikke analyseresultatene for klorerte hydrokarboner tatt med i denne rapporten. Dette materialet er imidlertid allerede presentert i Fremdriftsrapport nr. 5 (NIVA 1976b) for tidsrommet 1974-75, og i rapportene fra hovedtoktene i 1976. Materialet vil også bli tatt med i sluttrapporten for 3-års undersøkelsen.

Det samme er tilfelle for målingene av algevekstpotensial, klorofyll, suspendert tørrstoff og gløderest.

Tabell 1 gir en kortfattet oversikt over parametre, analysemetoder, analyselaboratorier, samt presisjon og deteksjonsgrense ved sjøvannsanalysene.

Resultatene er listet ut kronologisk tokt for tokt, med 12.-14.3.1974 som tidspunkt for første tokt og 15.-16.2.1977 som siste tokt.

Hver utlisting begynner med stasjonen innerst i Frierfjorden (st. BB-1) og avsluttes med stasjonen på Langesundsbukta (st. JH-1) eller stasjonen i Langesundsfjorden (st. GH-1) i de tilfeller st. JH-1 ikke er tatt pga. dårlig vær.

I de tilfeller stasjonene i Skienselva og Gunnekleivfjorden er tatt, står disse sist under de enkelte tokt.

Vinterstid måtte iblant stasjonene i Eidangerfjorden sløyfes pga. is.

Vi gjør oppmerksom på at stasjonene ikke alltid er tatt i den rekkefølge de her er listet ut.

I tabellene står alle overflateprøvene for tungmetaller angitt ved 0 m dyp. Fra og med junitoktet 1975 ble imidlertid tungmetallprøvene innsamlet som blandingsprøver fra 0-2 m dyp. Av programmeringstekniske årsaker står imidlertid også disse resultater ved 0 m dyp.

Tabell 1. Oversikt over parametre, analysemetoder, analyselaboratorier, samt antatt presisjon og deteksjonsgrenser ved sjøvannsanalyser x)

Parameter	Metode	Laboratorium	Presisjon	Deteksjonsgrense
Temperatur (TEMP.)	Vendeterminometer aylest med lupe		± 0,01°C	-
Saltholdighet (SAL.)	Konduktivitetsmåling ved laboratorisalinometer	NIVA	± 0,003‰	2,846‰
Oksygen/Hydrogensulfid (O ₂ /H ₂ S)	Jodometrisk titrering	NIVA	± 2-4 %	-
Ortofosfat (PO ₄ -P)	Kolorimetrisk.Auto-Analyzer		± 0,5 µg/l	2 µg/l
Totalfosfor (Tot-P)	" U.V.-lys+H ₂ O ₂ "		± 0,5 " "	2 " "
Nitratnitritt (NO ₃ -N)	" NO ₃ red. NO ₂ "		± 10 " "	10 " "
Ammonium (NH ₄ -N)	Fotometrisk.Indol-metoden	NIVA	± 5 " "	10 " "
Totalnitrogen (Tot-N)	U.V.lys.Ellers som NO ₃ -N		± 10 " "	10 " "
Total org. karbon (TOC)	Persulfatoksydasjon, CO ₂ -bestemmelse		± 0,05 mg/l	0,2 mg/l
Kopper (Cu)	MIBK-APDC ekstraksjon.Atomabsorpsjon		± 10 %	0,5 µg/l
Bly (Pb)	" " "		± 10 %	1,0 " "
Sink (Zn)	" " "		± 10-15 %	1,0 " "
Kvikksølv (Hg)	H ₂ SO ₄ +KMnO ₄ .Flammeløs A.A.		± 10 %	0,05 " "
Kadmium (Cd)	MIBK-APDC ekstraksjon,A.A.		± 10 %	0,1 " "
Krom (Cr ⁶⁺)	" " "		± 10 %	1,0 " "
Vanadium (V)	" " "	S.I.	± 10 %	50,0 " "
Nikkel (Ni)	" " "		± 10 %	0,5 " "
Kobolt (Co)	" " "		± 10 %	0,5 " "
Molybden (Mo)	" " "		± 15 %	20,0 " "
Jern (Fe)	" " "		± 10 %	0,5 " "
Mangan (Mn)	Direkte atomabsorpsjon		± 10 %	40,0 " "
Fluor (F)	Spektrofotometri		± 10 %	0,05 mg/l

x) Presisjon vil for enkelte parametre kunne variere noe fra prøveserie til prøveserie avhengig av konsentrasjonsnivåene.

En tabellarisk datautskrift av dette omfang, må nødvendigvis bli knapp på beskrivende og forklarende tekst. I det etterfølgende skal vi gi en kort forklaring til enkelte av de målte og beregnede størrelser. For en mer detaljert forklaring til forkortelsene som er brukt, viser vi til Appendix, Fremdriftsrapporter nr. 4 og 5 (NIVA 1976a, 1976b) og sluttrapporten fra denne resipientundersøkelsen.

Vi gjør oppmerksom på at det under COMMENTS ofte er gitt en del tilleggsopplysninger om prøveinnsamlinger på den enkelte stasjon og dermed om resultater som av praktiske grunner ikke er tatt med i tabellene. Forkortelsene som er brukt under COMMENTS blir forklart i Appendix.

SHIP

Her er anført navn på båten som er benyttet ved feltarbeidet. Der NIVAs båt "H. H. Gran" ikke er brukt, er rubrikken blank, dvs. at man har benyttet lokal båt.

SECCHI-DISC

Under denne betegnelsen er siktedypet angitt. Siktedypet måles ved å senke en hvit skive (25 cm diameter) ned i vannmassen, og angis som dypet hvor skiven akkurat forsvinner av syne. Fargen angis som skivens farge når den er senket til halve siktedypet.

CLOUDS

I følge vanlig meteorologisk praksis er skydekket angitt ved åttendedelen. Skyfri himmel angis ved 0/8 og helt overskyet vær som 8/8.

DENS, SIGMA-T

Dette er et mål på vannmassens tetthet (egenvekt). Størrelsen σ_t (sigma-t) er beregnet som $\sigma_t = (\rho - 1) \cdot 1000$, der ρ er egenvekten ved atmosfæretrykk.

ORG P og ORG N

Organisk fosfor (ORG P) defineres som differansen mellom totalfosfor (TOT P) og ortofosfat (PO₄P). I enkelte tilfeller vil en se at konsentrasjonen av ortofosfat er litt høyere enn for totalfosfor. Dette kan ha sammenheng med hvor lenge prøvene er lagret før analysene er utført. Det er da rimelig å anta at TOT P-verdien er korrekt mens PO₄P-verdien er litt for høy.

Organisk nitrogen (ORG N) defineres som differansen mellom totalnitrogen (TOT N) og ammonium (NH₄N) pluss nitrat+nitritt (NO₃N).

For 1974-75 vil en se at ORG N i 0 m og 4 m dyp ofte er negativ, noe som åpenbart ikke er riktig. Årsaken er at man på denne tiden hadde vanskeligheter med bestemmelsene av totalnitrogen og ammonium i brakkvannslaget. Her ble ammoniumkonsentrasjonene i områder med store mengder nitrogenforbindelser målt 2-3 ganger for høye. For totalnitrogen var forholdet at de målte konsentrasjoner kan har vært for lave.

Forholdene NO₃N/PO₄P, TOC/TOTN, TOC/TOTP og TOTP/TOTN

Dette er beregnede verdier til hjelp under tolkningen av dataene.

2

**Hydrokjemiske måleresultater
for tidsrommet mars 1974 - februar
1977**

Tokt i 1974

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTIITUTION * ANIVA
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * NORTH
* POSITION * EAST
* DEPTH * 57
* DATE * 740313
* TIME * 11
* ANIVA *
* AIR TEMP. *
* SECCHI-DISC *
* WIND DIRECTION *
* DEPTH * 3.0
* MET *
* DRY *
* WET *
* DEGREE CELS *
* WIND *
* DRY *
* WET *
* DEPTH * 3.0
* COLOUR *
* PARTLY CLOUDY
* OIL *
* WRECK *
* SEA-NEED *
* BATHY-SLIDE *
* SALINOTHERM *
* NO *
* NO *
* NO *
* SEA *
* WAVES 0.1-0.5M
* NO *
* SMOOTH *
* ICE *
* NO *
* COMMENTS *
* TRB-TSM+SUP 0-2,4,50M, GP 0-2M
*****

```

DEPTH	TEMP.	SAL.	SIGMA-T	DENS.	O2	H2S	O2-SAT	TOTP	PO4P	ORGP	TOTN	NO3N	NH4N	ORGN	IOC	FE
0	1.80	3.130		2.638	8.54		89.7	25	20	5	2000	560	1500	-60	3.60	50.0
4	1.90	4.645		3.840	8.40		89.4	29	22	7	2200	560	1750	-110	3.10	70.0
8	2.15	22.492		18.012	9.17		110.8	10	3	7	300	30	40	230	2.55	40.0
12	2.71	24.961		19.948	8.18		102.0	22	14	8	370	110	80	180	2.10	100.0
16	3.12	26.103		20.830	7.76		98.5	22	14	8	370	110	80	180	2.10	100.0
20	4.36	29.414		23.358	6.17		82.6	48	45	3	330	170	<10	>150	1.75	40.0
30	6.53	33.017		25.962	4.59		66.3	37	35	2	270	150	20	100	1.25	40.0
40	6.35	33.274		26.187	5.22		75.2									
50	6.45	33.422		26.290	7.25		104.8									

DEPTH	RATIOS		MOL/MOL		TOC/TOTN		TOC/TOTP		TOC/TOTN		TOC/TOTN		TOC/TOTN		TOC/TOTN		TOC/TOTN		
	NO3/	P04	IOC/	TOTN/	TOC/	TOTN/	TOC/	TOTN/	TOC/	TOTN/	TOC/	TOTN/	TOC/	TOTN/	TOC/	TOTN/	TOC/	TOTN/	
0	62	56	371	177	0.3	0.05	0.3	0.05	0.3	0.05	0.3	0.05	0.3	0.05	0.3	0.05	0.3	0.05	
4	56	22	276	168	0.05	0.05	4.3	0.10	4.3	0.10	4.3	0.10	4.3	0.10	4.3	0.10	4.3	0.10	
8	22	10	658	66															
12	17	7	246	37															
16																			
20																			
30	8	6	94	15															
40	9	5	87	16	<0.05	<0.05	3.9	0.20	3.9	0.20	3.9	0.20	3.9	0.20	3.9	0.20	3.9	0.20	
50																			

```

*****
* :LESS THAN VALUE
* :GREATER THAN VALUE
* :APPROXIMATE VALUE
*****

```



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*****
** COUNTRY * NORWAY
** INSTITUTION *
** SHIP *
** PROJECT * 0-11/70
** LOCATION * BREVIKFJORD
** STATION * NORTH
** POSITION * 59.2.7 9.43.2
** DEPTH * 105
** DATE * 740314
** TIME * 15
** NIVA *
** FGI *
** WEATHER * CLOUDS
** WIND *
** AIR TEMP. *
** SECCHI-DISC *
** DIRECTION *
** DEPTH *
** DEG.CELS *
** DRY *
** WET *
** PARTLY CLOUDY
** (0-36) *
** 15 *
** 4.4 *
** ICE *
** WAVES 0.1-0.5M * NO
** SAL. *
** DENS. *
** SIGMA-T *
** H2S *
** O2 *
** 02-SAT *
** O/O *
** TO/P *
** P04P *
** ORGP *
** TOTN *
** NH4N *
** ORGN *
** IOC *
** FE *
** VI. *
** 7.705
** 21.190
** 22.622
** 25.287
** 30.335
** 34.094
** 34.427
** 34.611
** 34.725
** 34.800
** 34.902
** 34.937
** TSK+TRB+SUP 0-2,4M
*****

```

DEPTH M	TEMP. DEG.C	SAL. O/100	DENS. SIGMA-T	H2S ML/L	O2 O/O	02-SAT O/O	TO/P	P04P	ORGP	TOTN	NH4N	ORGN	IOC	FE
0	2.30	9.522	7.705	8.72	97.0	14	22	14	8	1120	410	850	-140	3.60
4	1.93	21.190	16.984	9.53	113.5	4	17	4	13	285	20	30	235	3.30
8	2.12	22.622	18.117	8.93	107.9	2	12	2	10	275	20	30	225	2.60
12	2.78	25.287	20.203	8.26	103.4									
16	5.01	30.335	24.062	6.19	84.7		38	(104)	(-66)	345	170	45	130	1.60
20	7.22	34.094	26.716	5.45	80.5		36	25	11	200	100	<10	>90	0.95
30	5.69	34.427	27.179	6.41	91.6									
40	5.78	34.611	27.313	7.51	107.7									
50	5.82	34.725	27.398	6.35	91.2		24	24	0	210	90	<10	>110	0.80
60	5.38	34.800	27.450	6.74	97.0									
80	5.93	34.902	27.524	6.51	93.8									
100	5.96	34.937	27.548	6.39	92.2		22	26	-4	190	100	<10	>80	0.80

DEPTH M	RATIOS										HEAVY METALS				
	NO3/	P04	TOC/	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P	TO/P
0	65	4	422	113	0.07	2.0	1.3	<0.05	0.15	<0.05	<1.0	<1.0	<1.0	<1.0	<1.0
4	11	14	501	37	0.13	45.0	3.0	<0.05	<0.05	<0.05	<1.0	<1.0	<1.0	<1.0	<1.0
8	22	11	559	51											
12	(4)	5	109	20											
16															
20															
30	9	6	68	12	0.05	4.9	1.0	<0.05	<0.05	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
40															
50	8	4	86	19											
60															
80															
100	9	5	94	19	0.07	11.0	4.6	<0.05	<0.05	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

< :LESS THAN VALUE > :GREATER THAN VALUE () :UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTIUTION * NIVA
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* POSITION * NORTH 59.6.6 EAST 9.34.2
* DEPTH * 57 M
* DATE * 740424
* TIME * 15
* WEATHER * CLOUDS
* STATION * BBI
* BATHY-SLIDE *
* SEA *
* WRECK *
* NO *
* NO *
* NO *
* PARTLY CLOUDY
* OIL *
* NO *
* NO *
* NO *
* SALINOTHERM *
* WIND *
* DIRECTION * (0-36)
* SPEED * 36
* M/S *
* 2.C *
* AIR TEMP. *
* DEG.CELS *
* WET *
* DRY *
* SECCHI-DISC *
* COLOUR *
* DEPTH * 2.5 M
* BROWN
* ICE *
* NO
* WAVES 0.0-0.1M
* NO
* COMMENTS
*****

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```

*****
* DEPTH * 0
* M * 4
* 6
* 8
* 12
* 16
* 20
* 30
* 40
* 50
* SAL. * 3.153
* DEG.C * 7.43
* O/00 * 33.075
* VI. * 7.18
* TEMP. * 7.01
* DEG.C * 6.94
* 30 * 6.49
* 40 * 6.25
* 50 * 6.01
* DENS. * 2.660
* SIGMA-I * 6.390
* O2 * 7.67
* ML/L * 7.03
* H2S * 2.24
* O2-SAT * 0.78
* TOTP * 90.4
* P04P * 88.2
* ORGP * 11.5
* NH4N * 0.42
* NO3N * 0.42
* MICROGR./L * 1.06
* ORGN * 0.92
* FE * 0.14
* * 2.39
*****

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```

*****
L :LACKING FOR UNKNOWN REASONS
*****

```

* COUNTRY * NORWAY *
* INSTITUTE * NIVA *
* SHIP * *
* PROJECT * *
* LOCATION * *
* FRIERFJORD * *
* 0-11170 * *
* BC1 * *
* NORTH * *
* 59.6.7 * *
* 9.36.5 * *
* EAST * *
* 87 * *
* M * *
* DEPTH * *
* DATE * *
* 740424 * *
* 14 * *
* TIME * *
* WEATHER * *
* CLOUDS * *
* PARTLY CLOUDY * *
* 5/8 * *
* WRECK * *
* SEA-WEED * *
* BATHY-SLIDE * *
* SALINOTHERM * *
* OIL * *
* NO * *
* NO * *
* NO * *
* NO * *
* ICE * *
* WAVES 0.0-0.1M * *
* NO * *
* COMMENTS * *
* GP 0-2M * *

DEPTH	TEMP.	SAL.	DENS.	H2S	02-SAT	TOTP	PO4P	ORGP	TOTN	NO3N	MICROGR./L	TOC	FE
M	DEG.C	O/O	ML/L	ML/L	O/O	ML/L			MG/L	MG/L		MG/L	MG/L
0	6.00	4.058	3.265	7.85	94.0	25	21	4	1196	610	1800	-1214	2.50
4	6.35	7.933	6.319	7.38	90.1								
6	6.24	29.083	22.901	4.69	65.6								
8	5.99	33.427	26.353	2.17	31.0								
12	5.99	33.665	26.541	1.24	17.8								
16	6.03	33.857	26.687	0.14	2.0								
20	6.06	33.861	26.687	0.04	0.6								
30	5.19	33.173R	(26.247)	0.39	(5.5)								
40	5.09	34.049	26.951	0.18	2.5								
50	6.68	34.053	26.758	4.01	58.5								
60	6.92	34.088	26.753	4.58	67.2								
70	6.98	34.116	26.781	4.54	66.6								
85	6.67	34.135	26.824	4.47	65.2								

* RATIO5 *
* NO3/ *
* P04 *
* 64 *
* TOC/ *
* TOIN *
* 2 *
* TOC/ *
* TOIN/ *
* 258 *
* 106 *
* TOIN/ *
* HG *
* MYG/L *
* MYG/L *
* MYG/L *
* PB *
* MYG/L *
* MYG/L *
* MYG/L *
* CU *
* MYG/L *
* CD *
* MYG/L *
* MN *
* MG/L *
* NI *
* MYG/L *
* CR *
* MYG/L *
* F *
* MG/L *

* () *
* :UNCERTAIN VALUE *
* R *
* :REPEATED ANALYSIS *

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION *
* SHIP *
* NIVA *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * EE1
* POSITION * NORTH
* EAST * 59,3.2
* DATE * 740423
* TIME * 15
* DEPTH * 57
* WEATHER * CLOUDS
* WIND *
* DIRECTION *
* (0-36) *
* M/S * 27
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* PARTLY CLOUDY
* WIND *
* DEPTH * 3.0
* COLOUR * YELLOW/BROWN
* SECCHI-DISC *
* ICE *
* SEAS *
* WAVES * 0.0-0.1M
* NO *
* COMMENTS *
* CP * 0-2M
*****

```

```

*****
* : DEPTH * 0 4 8 12 16 20 30 40 50
* M *
* : SAL. * 34.79 34.83 34.372 33.614 33.888 34.316 33.763R 34.575 34.630
* DEG.C * 0/00
* SIGMA-T *
* VH. *
* VI. *
* DENS. * 2.871 3.365 26.182 26.415 26.680 27.060 (26.647) 27.275 27.317
* H2S * 8.02 7.74 2.70 3.05 4.08 5.33 5.75 5.89 5.93
* ML/L *
* O2-SAT * 93.8 16 12 4 916 460 1200 -744 2.70 50.0
* TOTP *
* P04P *
* ORCP *
* T03N *
* N03N *
* NH4N *
* MICROGR./L *
* TOC *
* ORGN *
* MG/L *
* FE *
*****

```

```

*****
* : DEPTH * 0 4 8 12 16 20 30 40 50
* M *
* : RATIOS *
* NO3/ *
* P04 *
* TOC/ *
* T03N *
* TOTP *
* MOL/MOL *
* TOC/ *
* TOTP *
* 435
* HG *
* MYG/L *
* PB *
* MYG/L *
* CU *
* MYG/L *
* ZN *
* MYG/L *
* CD *
* MN *
* MG/L *
* NI *
* MYG/L *
* CR *
* MG/L *
* F *
*
*****

```

```

*****
* : UNCERTAIN VALUE
* : REPEATED ANALYSIS
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTIUTION * SHIP
* PROJECT * 0-111/70
* LOCATION * LANGESUNDSFJORD
* STATION * GH1
* POSITION * NORTH * 59,1.3
* EAST * 9,45.1
* DATE * 740423
* TIME * 13
* WIND *
* WIVA *
* WEATHER * CLOUDS
* AIR TEMP. *
* DEGREE CELLS *
* DRY *
* WET *
* DIRECTION *
* (0-36) *
* 35 *
* SPEED *
* M/S *
* 4.5 *
* PARTLY CLOUDY
* BATHY-SLIDE *
* SEA-WEED *
* SALINOTHERM *
* WAVES 0.1-0.5M
* ICE *
* NO *
* COMMENTS
*****

```

```

*****
* DEPTH * 0
* M * 4
* 8
* 12
* 16
* 20
* 30
* 40
* 50
* 60
* 80
* 105
* SAL. * 34.902R
* DEG.C * 5.85
* O/VO * 34.933
* O/VO * 34.902R
* O/VO * 34.858R
* O/VO * 34.827
* O/VO * 34.976
* H2S * 7.60
* ML/L * 6.67
* ML/L * 4.62
* ML/L * 5.68
* ML/L * 5.61
* ML/L * 6.11
* ML/L * 5.57
* ML/L * 6.18
* ML/L * 6.11
* ML/L * 6.25
* ML/L * 6.14
* ML/L * 6.11
* 02-SAT * 94.4
* O/VO * 91.5
* O/VO * 65.2
* O/VO * 80.9
* O/VO * 80.3
* O/VO * 87.7
* O/VO * (79.8)
* O/VO * 89.1
* O/VO * (88.1)
* O/VO * (90.2)
* O/VO * 88.6
* O/VO * 88.4
* TO4P *
* GRGP *
* TOTN *
* MICROCR./L *
* NO3N *
* NH4N *
* ORGN *
* MG/L *
* TOC *
* FE *
* R *
*****

```

() : UNCERTAIN VALUE

R : REPEATED ANALYSIS

* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-111/70 *
* LOCATION * FRIERFJORD
* STATION * BBI
* POSITION * NORTH * 59.6.6 * EAST * 9.34.2 *
* DEPTH * 58 * M *
* DATE * 740521 *
* TIME * 10 *
* WEATHER * *
* WIND DIRECTION * (0-36) * 0 * DRY *
* WIND SPEED * M/S *
* AIR TEMP. * DEG.CELS * WET *
* SECCHI-COLOUR * 2.2 *
* DEPTH * M *
* BROWN/YELLOW *
* CONTINUOUS LAYER OF CLOUDS * 8/8 *
* ICE * NO *
* WAVES * 0.0M *
* CALM * WAVES 0.0M *
* COMMENTS *
* NTR OM. *

* DEPTH * 0
* TEMP. * 10.20
* SAL. * 34.167
* O/GU * 34.077
* V.H. * 6.09
* DENS. * 2.073
* SIGMA-T * 26.847
* H2S * 0.74
* O2 * 7.21
* O/O * (93.5)
* P04P * 8
* TOIN * 980
* TOPT * 24
* ORGP * 16
* MICROGR./L * 430
* NH4N * 1200
* ORGN * -650
* FE * 4.95

* RATIOS *
* NO3/ * 119
* P04 * 6
* TOC/ * 532
* TOIN * 90
* TOPT * 90
* MOL/MOL *
* TOC/ *
* TOIN *
* TOPT *
* HEAVY METALS *
* CD *
* NI *
* MN *
* CR *
* MG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *

< () : UNCERTAIN VALUE

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * * * * * 0-111/70 * FRIERFJORD * CDI * * * * * 95 * * 740521 * 14 *
* WIND * DIRECTION * SPEED * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
* 7.5 * (0-36) * 36 * DRY * 3.0 * YELLON/GREEN * * * * * 6/S *
* SEA * WAVES 0.0-0.1M * * * * * * * * * * * * * * * * * * * * *
* RIPPLED * WAVES 0.0-0.1M * * * * * * * * * * * * * * * * * * * * *
* COMMENTS *
* GP 0-2M *
*****
* DEPTH * M * 0 4 8 12 16 20 30 40 50 60 80 90
* TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * TOTP P04P ORGP TOTN NO3N NH4N ORGN *MICROGR./L * TOC * FE *
* DEG.C * O/100 * * * * * ML/L * * 0/0 * * * * * 34 20 14 1320 570 2000 -1250 *MG/L * *
* VI. * VH. * * * * * S * * * * * * * * * * * * * * * * *
* 8.40 <2.846 3.848 7.14 93.0
* 8.11 11.354 3.848 7.63 105.7
* 9.58 15.497 11.903 7.63 93.5
* 8.49 27.026 21.006 6.43 15.7
* 7.24 33.142 25.966 1.07 0.0
* 6.53 33.924 26.676 0.00 42.4
* 6.05 34.049 26.836 2.95 60.3
* 6.05 34.112 26.886 4.19 53.2
* 6.12 34.151 26.908 3.69 55.2
* 6.14 34.182 26.930 3.83 (56.3)
* 6.13 33.996R (26.784) 3.91
* 6.12 34.245 26.982 3.73
*****
* RATIO * * * * * MOL/MOL * * * * *
* NO3/ TOC/ * NO3/ TOC/ * HG * PB * CU * ZN * MN * NI * CR * F *
* P04/ TOTN/ * TOTN/ TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L *
* 63 3 224 86
*****
* LESS THAN VALUE
* SPOILED OR DAMAGED SAMPLE
*****
<
S
*****

```

:UNCERTAIN VALUE
:REPEATED ANALYSIS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * * * * * 0-111/70 * FRIERPJORD * EE1 * *59,3.2 * 9,40.6 * *55 * 740520 * 16 *
* WIND * DIRECTION * (0-36) * AIR TEMP. * DEG.CELS * WET * * * * * * WEATHER * * CLOUDS *
* SPEED * M/S * 0.0 * * DRY * * * * * * CONTINUOUS LAYER OF CLOUDS * * 8/8 *
* SEA * RIPPLED; WAVES 0.0-0.1M * * NO * * * * * * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS *
* GP 0-2M *
*****

```

```

*****
* DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * 02-SAT * TOTP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * TOC * MG/L * FE *
* M * * VI. * * VH. * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 0 * 9.40 * <2.846 * <2.148 * 7.60 * (96.7) * 31 * 12 * 19 * 1320 * 520 * 2000 * -1200 * 3.70 *
* 4 * 8.78 * <2.846 * <2.200 * 7.63 * (95.6) *
* 6 * 10.29 * 21.493 * 16.451 * 7.49 * 109.5 *
* 8 * 9.94 * 23.476 * 18.039 * 7.49 * 110.0 *
* 12 * 8.91 * 26.342 * 20.415 * 7.06 * 103.2 *
* 16 * 6.62 * 33.316 * 25.186 * 2.02 * 29.3 *
* 20 * 6.39 * 33.860 * 26.644 * 1.67 * 24.2 *
* 30 * 6.23 * 34.186 * 26.921 * 2.95 * 42.6 *
* 40 * 6.15 * 34.280 * 27.006 * 3.55 * 51.2 *
* 50 * 6.15 * 34.288 * 27.012 * 3.16 * 45.6 *
*****

```

```

*****
* DEPTH * RATIOS * MOL/MOL * HEAVY METALS *
* M * * NO3/ * TOC/ * TOCN/ * TOCN * HG * PB * CU * ZN * MN * NI * CR * F *
* * * P04 * TOTP * TOTP * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L *
* 0 * 96 * 308 * 94 *
* 4 *
* 6 *
* 8 *
* 12 *
* 16 *
* 20 *
* 30 *
* 40 *
* 50 *
*****
< * LESS THAN VALUE *
*****
< * UNCERTAIN VALUE *
*****

```

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

CONTROLLED DATA

77.5.26-13:18:25 PAGE:48

```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-11170
* LOCATION * EIDANGERFJORD
* STATION * DFI
* POSITION * NORTH * 59.4.6 * EAST * 9.42.5
* DEPTH * 103 * M * 740521 *
* DATE * 16 *
* TIME *
* WIND *
* DIRECTION *
* (0-36) *
* SPEED *
* M/S * 4.0
* W/S *
* DEPTH * 2.5 * M *
* SECCHI-DISC *
* COLOUR * GREEN/YELLOW
* WEATHER *
* CONTINUOUS LAYER OF CLOUDS *
* WRECK * NO *
* OIL * NO *
* SEA-WEED * BATHY-SLIDE *
* SALINOTHERM *
* ICE * NO
* WAVES * 0.0-0.1M
* COMMENTS

```

```

*****
** DEPTH * M * 0 4 8 12 16 20 30 40 50 60 80 90
** TEMP. * DEG.C * 13.10 10.13 8.41 7.88 6.96 6.28 5.94 5.93 5.95 6.02 6.05
** SAL. * O/00 * 21.867 21.867 25.080 27.949 31.749 33.861 34.398 34.595 34.811 34.894 34.929 34.961
** SIGMA-T * VT. * 7.150 7.150 7.150 7.150 7.150 7.150 7.150 7.150 7.150 7.150 7.150
** DENS. * 5.016 16.764 19.493 21.809 24.909 26.659 27.125 27.281 27.452 27.515 27.534 27.555
** 02 * ML/L * 8.17 8.38 6.96 6.43 4.54 3.20 5.33 5.50 6.04 6.18 5.93 5.50
** H2S * ML/L *
** 02-SAT * O/O * 116.2 122.4 99.8 92.7 65.7 46.2 76.6 79.1 87.0 89.1 85.7 79.5
** TOTP * P04P *
** ORGP *
** TOTN * NO3N *
** MICROGR./L * NH4N *
** ORGN *
** TOC * MG/L *
** FE *

```


MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.26-13:18:13 PAGE:1

```

*****
** COUNTRY * NORWAY
** INSTITUTION * SHIP
** PROJECT * 0-111/70
** LOCATION * LANGESUNDBUKTA
** POSITION * NORTH 58,58.1 EAST 9,47.0
** DATE * 740520
** TIME * 11
** DEPTH * 200
** WEATHER * CLOUDS
** STATION * JHI
** WIND DIRECTION * (0-36) 16
** WIND SPEED * 6.0
** AIR TEMP. *
** DEG.CELS * DRY
** NET * 2.0
** COLOUR * BROWN/YELLOW
** CONTINUOUS LAYER OF CLOUDS * 8/8
** OIL * NO
** WRECK * SEA-WEED
** BATHY-SLIDE * SALINOFHERM
** NO * NO
** SEA *
** COMMENTS * GP 0-2M
*****

```

DEPTH	M	TEMP.	DEC.C	SAL.	VT.	SIGMA-T	DENS.	H2S	O2	02-SAT	O/O	TOTP	P04P	ORGP	TOTN	N03N	NH4N	ORGN	TOC	FE
0		13.40		18.552		13.691	7.65			120.6		19	6	13	820	130	800	-110	4.65	
4		11.52		20.997		15.882	7.85			117.6										
8		10.49		24.061		16.411	7.03			104.9										
12		9.15		26.682		20.646	7.38			108.7										
15		7.80		29.521		23.050	7.53			109.5										
20		6.14		33.195		26.151	6.04			86.5										
40		5.75		34.543		27.263	6.11			87.5										
60		5.91		34.795		27.442	6.11			88.0										
80		6.03		34.787		27.421	6.04			87.2										
100		6.10		35.024		27.599	6.21			89.9										
150		6.00		35.067		27.645	6.28			90.8										
190		6.01		35.095		27.666	6.25													

DEPTH	M	RATIOS	N03	P04	TOC/TOIN	TOC/TOIP	TOC/TOIP	HG	PB	CU	ZN	CD	MN	NI	CR	F
0		48	7	631	95											
4																
8																
12																
15																
20																
40																
60																
80																
100																
150																
190																

() : UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * FRIERFJORD
* LOCATION * NORTH
* STATION * 59,5.2
* POSITION * EAST
* DATE * 740620
* TIME * 12
* NIVA * HGRAN
* CD I * 95
* WEATHER * CLOUDS
* WIND * AIR TEMP.
* WET * DEPTH * 1.7
* DIRECTION * (0-36)
* DRY * WET
* SPEED * 1.5
* DEPTH * 36
* PARTLY CLOUDY * 2/8
* OIL *
* SEA * SEA-WEED * BATHY-SLIDE * SALINOTHERM
* NO * NO
* NO * NO
* NO * NO
* NO * NO
* RIPPLED; WAVES 0.0-0.1M
* NO
* COMMENTS * GP 0-2M
*****

```

DEPTH	TEMP.	SAL.	DENS.	VI.	SIGMA-T	O2	H2S	02-SAT	TOTP	P04P	ORGP	TOIN	N03N	MICROGR./L	ORGN	TOC	FE
0	16.40	5.084	2.911	6.23	93.9	29	11	18	2600	600	4000	-2000	4.55	210.0			
4	12.55	23.684	17.783	5.92	92.2	21	11	10	830	180	360	290	1.85	220.0			
8	11.75	28.354	21.527	5.74	90.5	26	11	15	195	20	70	105	1.20	210.0			
12	9.94	29.046	22.366	5.64	85.8	21	16	5	205	30	80	95	3.00	210.0			
16	9.68	30.475	23.519	3.64	55.6	23	17	6	210	30	60	120	0.85	210.0			
20	8.54	32.267	25.094	4.10	61.7	47	43	4	225	40	100	85	0.80	210.0			
30	6.06	34.060	26.843	3.36	48.3	62	L	2	295	160	60	75	0.45	L			
40	6.11	34.135	26.896	3.50	50.4	62	60	2	245	150	<10	85	L	210.0			
50	6.15	34.170	26.919	3.85	55.5	59	57	2	240	140	30	70	1.80	200.0			
60	6.15	34.190	26.935	3.64	52.5	62	60	2	230	130	40	60	1.05	210.0			
60	6.15	34.229	26.962	2.21	31.9	78	77	1	250	120	60	70	0.85	200.0			
90	6.16	34.229	26.964	2.56	36.9	89	87	2	280	110	120	50	1.05	210.0			

DEPTH	N03	RATIOS	TOC	TOIP	TOIN	HG	PB	CU	ZN	HEAVY METALS	MN	NI	CR	F
0	121	36	405	193	198	5.0	3.2	5.0	20.00	MYG/L	MG/L	MG/L	MG/L	MG/L
4	36	4	227	87	17	6.0	9.0	6.0	57.00	CD				
8	4	4	119	17	22									
12	4	4	368	22	19									
16	4	4	95	20	11									
20	4	2	44	11										
30														
40	6	6	79	9			12.6	16.0	118.00					
50	5	5	44	8										
60	5	5	28	7										
80	3	3	4	4										
90	3	3	30	7										

< :LESS THAN VALUE > :GREATER THAN VALUE

L :LACKING FOR UNKNOWN REASONS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY *
* INSTITUTION * NIVA *
* SHIP * HHGRAN *
* PROJECT * 0-11170 *
* LOCATION * FRIERFJORD *
* STATION * EEI *
* POSITION * NORTH *
* EAST * 59.3.2 *
* DEPTH * 57 *
* DATE * 740620 *
* TIME * 14 *
* WEATHER * CLOUDS *
* WIND * AIR TEMP. *
* DIRECTION * DEG.CELS *
* (0-36) * DRY * WET *
* SPEED * 2.5 *
* PARTLY CLOUDY *
* SEA * RIPPLED; WAVES 0.0-0.1M *
* ICE * NO *
* COMMENTS * GP 0-2M *
*****

```

DEPTH	TEMP.	SAL.	VT.	DENS.	SIGMA-T	02	H2S	02-SAT	TOTP	P04P	ORGP	TOTN	NH3N	NH4N	ORGN	TOC	FE
0	17.60	34.14	7.25	3.414	20.440	5.99	94.6	112.7	26	16	10	1730	640	4000	-2910	6.35	<20.0
4	12.21	27.053	5.99	20.440	21.666	5.74	89.0	89.0	18	11	8	85	40	140	-95	2.00	<20.0
8	10.99	28.365	5.74	21.666	22.471	6.06	93.6	93.6	17	10	7	80	20	70	-10	1.70	<20.0
12	10.54	29.306	5.67	22.471	23.596	5.25	87.0	87.0	23	16	7	85	20	60	5	1.60	<20.0
16	9.86	30.610	5.25	23.596	24.968	1.16	79.9	79.9	28	26	2	65	30	40	-20	2.25	<20.0
20	9.05	32.206	1.16	24.968	26.709	1.86	16.8	16.8	97	95	2	95	80	80	-65	1.10	<20.0
30	6.34	33.935	1.86	26.709	26.741	1.26	26.9	26.9	98	95	3	110	80	90	-60	1.15	<20.0
40	6.31	33.970	1.26	26.741	26.871		18.2	18.2	84	81	3	165	100	90	-25	1.25	<20.0
50	6.24	34.124		26.871													

HEAVY METALS																
DEPTH	M	NO3/	P04	RATIOS	TOC/	TOTN	TOCP	HG	PB	CU	ZN	CD	MN	NI	CR	F
0	4	38	147	147	630	147	147	3.0	2.8	3.0	12.00					
4	10	4	11	11	303	11	11	2.0	2.8	2.0	34.00					
8	4	4	10	10	244	10	10									
12	4	4	11	11	243	11	11									
16	3	3	6	6	252	6	6									
20	3	3	4	4	124	4	4									
30	2	2	14	14	29	2	2									
40	2	2	12	12	30	2	2									
50	3	3	9	9	38	3	3									

< LESS THAN VALUE

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

* COUNTRY * NORWAY
* INSTITUION *
* SHIP *
* PROJECT *
* LOCATION *
* FRIERFJORD
* DATE *
* DEPTH *
* POSITION *
* STATION *
* WEATHER *
* WIND *
* DIRECTION *
* DEPTH *
* COLOUR *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* WIND *
* DEPTH *
* COLOUR *
* SECCHI-DISC *
* DEPTH *
* WAVE *
* WAVES *
* CALM *
* WAVES *
* COMMENTS *
* GP *

* : DEPTH * 0 4 8 12 16 20 30 40 50 60 80 90
* : TEMP. * 16.00 14.88 13.19 11.19 9.69 9.07 6.19 6.14 6.15 6.16 6.15
* : SAL. * 33.864 33.158 30.458 30.901 31.261 32.005 34.041 34.147 34.171 34.198 34.226
* : SIGMA-T * 4.329 4.73 22.884 23.598 24.130 24.808 26.812 26.902 26.921 26.941 26.962
* : DENS. * 1025.2 1025.1 1024.9 1024.7 1024.5 1024.3 1023.9 1023.8 1023.7 1023.6 1023.5
* : H2S * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
* : O2-SAT * 82.5 77.1 92.2 82.0 70.9 61.8 27.3 28.7 29.1 29.4 37.4
* : O/O * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
* : TOIP * 18 5 13 5 18 5 18 5 18 5 18
* : PO4P * 13 5 13 5 13 5 13 5 13 5 13
* : TOTN * 980 260 980 260 980 260 980 260 980 260 980
* : MICROGR./L * 530 190 530 190 530 190 530 190 530 190 530
* : NH4N * 260 190 260 190 260 190 260 190 260 190 260
* : NO3N * 530 190 530 190 530 190 530 190 530 190 530
* : TOC * 4.35 70.0
* : FE *

* : DEPTH * 0 4 8 12 16 20 30 40 50 60 80 90
* : RATIO3 * NO3/ P04 234
* : TOC/ TOTN 5
* : MOL/MOL *
* : TOIP/ TOTP 120
* : HG *
* : MYG/L *
* : PB *
* : MYG/L *
* : CU *
* : ZN *
* : MYG/L *
* : CD *
* : MYG/L *
* : MN *
* : MYG/L *
* : NI *
* : MYG/L *
* : CR *
* : MYG/L *
* : F *
* : MG/L *

* : UNCERTAIN VALUE
* : REPEATED ANALYSIS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * EE-1
* POSITION * NORTH * 59.3.2 * EAST * 9.40.6
* DEPTH * M * 56
* DATE * 740718
* TIME * 12
* WEATHER * CLOUDS
* AIR TEMP. *
* DEG.CELS *
* DRY WET *
* WIND DIRECTION * (0-36) * 27
* SPEED * M/S * 5.0
* PARTLY CLOUDY
* OIL * NO * NO * NO
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
* SEA * RIPPLED; WAVES 0.0-0.1M
* NO * NO * NO
* COMMENTS *
* GP 0-2M
*****

```

```

*****
* DEPTH * M * 0 * 4 * 8 * 12 * 16 * 20 * 30 * 40 * 50
* SAL. * 36.0 * 36.0 * 36.0 * 36.0 * 36.0 * 36.0 * 36.0 * 36.0 * 36.0
* DEG.C * 0/00 * 0/00 * 0/00 * 0/00 * 0/00 * 0/00 * 0/00 * 0/00 * 0/00
* VI. * VH. * 8.120 * 8.120 * 8.120 * 8.120 * 8.120 * 8.120 * 8.120 * 8.120
* DENS. * 5.171 * 5.171 * 5.171 * 5.171 * 5.171 * 5.171 * 5.171 * 5.171
* SIGMA-T * 6.20 * 6.20 * 6.20 * 6.20 * 6.20 * 6.20 * 6.20 * 6.20
* H2S * ML/L * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0
* O2-SAT * 95.6 * 95.6 * 95.6 * 95.6 * 95.6 * 95.6 * 95.6 * 95.6
* TOTP * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20
* P04P * 6 * 6 * 6 * 6 * 6 * 6 * 6 * 6
* CRGP * 14 * 14 * 14 * 14 * 14 * 14 * 14 * 14
* T01N * 1300 * 1300 * 1300 * 1300 * 1300 * 1300 * 1300 * 1300
* N03N * 790 * 790 * 790 * 790 * 790 * 790 * 790 * 790
* NH4N * 620 * 620 * 620 * 620 * 620 * 620 * 620 * 620
* TOC * MG/L * 6.00 * 6.00 * 6.00 * 6.00 * 6.00 * 6.00 * 6.00 * 6.00
* FE * 80.0
*****

```

```

*****
* DEPTH * M * 0 * 4 * 8 * 12 * 16 * 20 * 30 * 40 * 50
* RATIOS *
* N03/ * 291 * 291 * 291 * 291 * 291 * 291 * 291 * 291 * 291
* P04 * 5 * 5 * 5 * 5 * 5 * 5 * 5 * 5 * 5
* TOC/ * 774 * 774 * 774 * 774 * 774 * 774 * 774 * 774
* TOTP * 144 * 144 * 144 * 144 * 144 * 144 * 144 * 144
* MOL/MOL *
* TOC/ *
* TOTP *
* TOC/ *
* TOTP *
* TOC/ *
* TOTP *
* TOC/ *
* TOTP *
* TOC/ *
* TOTP *
*****

```

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * 0-111/70
* LOCATION * EIDANGERFJORD
* STATION * DF-1
* POSITION * NORTH
* DEPTH * 59,4.6
* DATE * 96
* TIME * 740718
* NIVA *
* AIR TEMP. *
* SECCHI-DISC *
* WEATHER * CLOUDS
* WIND *
* DIRECTION *
* DEPTH * 3.8
* COLOUR *
* DEGREE CELS *
* DRY *
* WET *
* ICE *
* WAVES * 0.1-0.5M
* COMMENTS *

```

```

*****
* DEPTH * 0
* M * 4
* TEMP. * 18.30
* DEG.C * 14.54
* VT. * 13.18
* SAL. * 30.852
* O/00 * 31.560
* SIGMA-T * 31.726R
* VH. * 31.641R
* DENS. * 13.823
* ML/L * 20.011
* H2S * 29.924
* O2 * 22.201
* 02-SAT * 23.190
* O/O * 23.601
* T02 * 23.794
* T04 * (23.7900)
* T06 * 24.437
* T08 * 31.843
* T10 * 9.57
* T12 * 32.239
* T14 * 8.31
* T16 * 32.783
* T20 * 6.98
* T24 * 33.509
* T28 * 34.717
* T32 * 6.01
* T36 * 34.650

```

```

*****
* TOIN * 1020
* TO3N * 470
* TO4N * 180
* TO6N * 370
* TO8N * 120.0
* P04P * 4
* P04 * 13
* P06 * 107.2
* P08 * 100.6
* P10 * 93.1
* P12 * 100.2
* P14 * (97.1)
* P16 * (93.0)
* P18 * 79.2
* P20 * 75.5
* P22 * 59.2
* P24 * 55.3
* P26 * 74.8
* P28 * 70.3

```

```

*****
* RATIOS *
* NO3/ *
* P04 * 260
* TOC/ *
* TOIN * 4
* TCIP * 734
* TOIN/ *
* TOIP * 173
* TOIN *
* TOIP * 173

```

```

*****
* HEAVY METALS *
* CR *
* NI *
* MN *
* CU *
* PB *
* HG *
* TOIN *
* TOIP *

```


MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
* COUNTRY * NORWAY
* INSTITUTION *
* SHIP *
* NIVA *
* WIND *
* DIRECTION * (0-36)
* W/S * 17
* SPEED *
* DEPTH * M
* 5.0
* SEA *
* WAVES * 0.1-0.5M
* COMMENTS *
*****

```

```

*****
* PROJECT *
* 0-111/70
* LANGESUNDSFJORD
* GH-1
* STATION *
* GH-1
* LOCATION *
* LANGESUNDSFJORD
* SECCHI-DISC *
* COLOUR *
* DEPTH * M
* 3.9
* WET *
* DRY *
* AIR TEMP. *
* DEPTH * M
* 3.9
* YELLOW-BROWN
* PARTLY CLOUDY
* WEATHER *
* PARTLY CLOUDY
* OIL * NO
* NO * NO
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM +
* NO * NO
* MICROGR./L *
* TOCN * NO3N * NH4N * ORGN * MG/L *
* TOIP * P04P * NUTRIENTS *
* 02 * H2S * 02-SAT *
* O/O * ML/L *
* 5.75 * 10.859 * 22.628 * 22.940 * 23.024 * 23.162 * 23.540 * 24.115 * 24.640 * 25.113 * 26.110 * 27.370 * 27.487 *
* 5.89 * 93.8 * 18 * 6 * 12 * 12 * 500 * 260 * 210 * 3.55 * 50.0
* 5.72 * 98.8 * 100.0 * 98.9 * 100.1 * 94.9 * 80.3 * 74.4 * 62.4 * 78.9 * 73.4
* 31.103 * 31.196 * 31.316 * 31.614 * 32.025 * 32.149 * 33.411 * 34.772 * 34.870
* 17.10 * 15.759 * 15.54 * 15.32 * 15.26 * 15.05 * 14.35 * 13.08 * 10.77 * 9.84 * 7.72 * 6.33 * 6.02
* 10.859 * 22.628 * 22.940 * 23.024 * 23.162 * 23.540 * 24.115 * 24.640 * 25.113 * 26.110 * 27.370 * 27.487
* 5.75 * 5.89 * 5.72 * 5.79 * 5.75 * 5.89 * 5.72 * 5.08 * 4.79 * 4.19 * 4.43 * 5.08
* 93.8 * 18 * 6 * 12 * 500 * 260 * 210 * 3.55 * 50.0
*****

```

```

*****
* RATIO5 *
* N03/ * P04 * 166
* TOCN * TOIP * TOIN *
* MOL/MOL *
* TOCN * TOIP * TOIN *
* <8 * 509 * >61
* HEAVY METALS *
* NI * CR * F *
* .MG/L * MYG/L * MG/L *
* MN * CD *
* MG/L * MG/L *
* ZN * CU *
* MYG/L * MYG/L *
* PB *
* MYG/L *
* HG *
* MYG/L *
* TOIN *
* TOIP * TOIN *
* >61
* < LESS THAN VALUE
* > GREATER THAN VALUE
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

DATE TIME

DEPTH * M * 740718 * 10 *

STATION * NORTH * EAST * 59,8.5 * 9,38.7

PROJECT * : 0-11170 * SKIENSELVA

LOCATION * : S-2 * WEATHER * CLOUDS

SHIP * : 0-11170 * SKIENSELVA

INSTI * : 0-11170 * SKIENSELVA

INSTITUTION * : 0-11170 * SKIENSELVA

COUNTRY * : 0-11170 * SKIENSELVA

NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED

WIND * : 0-11170 * SKIENSELVA

AIR TEMP. * : 0-11170 * SKIENSELVA

DEG.CELS * : 0-11170 * SKIENSELVA

DEPTH * : 0-11170 * SKIENSELVA

SECCHI-DISC * : 0-11170 * SKIENSELVA

COLOUR * : 0-11170 * SKIENSELVA

DRY * : 0-11170 * SKIENSELVA

WET * : 0-11170 * SKIENSELVA

NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED

ICE * : 0-11170 * SKIENSELVA

NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED * NOT OBSERVED

COMMENTS * : 0-11170 * SKIENSELVA

SURFACE STATION, TRB+FSM+SUP+COD

HEAVY METALS * : 0-11170 * SKIENSELVA

MOL/MOL * : 0-11170 * SKIENSELVA

TOC/ * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA

TOIN * : 0-11170 * SKIENSELVA

TOIP * : 0-11170 * SKIENSELVA


```

*****
* COUNTRY * NORWAY
* INSTITUTION *
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * BCI
* POSITION * 59.6.7 NORTH 9.36.5 EAST
* DATE * 740815
* TIME * 10
* DEPTH * 90
* WEATHER *
* WIND *
* WIND DIRECTION *
* AIR TEMP. *
* WET *
* DRY *
* DEPTH * 1.2
* COLOUR * YELLOW/BROWN
* FOG, THICK DUST OR HAZE *
* SEA *
* WAVES * 0.0-0.1M
* NO *
* COMMENTS *
*****

```

```

*****
* : DEPTH * 0 4 8 12 16 20 30 40 50 60 70 85
* : M *
* : SAL. * 27.192 30.541 30.895 31.255 31.700 34.026 34.144 34.183 34.202 34.202 34.242
* : SIGMA-T * 5.573 8.752 17.00 15.99 14.68 12.51 11.34 10.08 6.20 6.13 6.15 6.15 6.15
* : SAL. * 27.192 30.541 30.895 31.255 31.700 34.026 34.144 34.183 34.202 34.202 34.242
* : VI. * 4.79 4.79 4.68 4.38 4.22 3.55 0.42 2.71 2.65 2.72 1.86 1.87
* : H2S * 0/0
* : O2-SAT * 74.8 81.9 79.5 71.3 67.2 55.1 6.1 39.1 38.2 39.2 26.8 27.0
* : TOTP * 44
* : P04P * 17
* : ORGP * 27
* : TOTN * 3400
* : NHAN * 880
* : ORGN * 5000
* : MICROGR./L *
* : TOC *
* : FE *
* : TOC *
* : NHAN *
* : ORGN *
* : MICROGR./L *
* : TOC *
* : FE *
*****

```

```

*****
* : DEPTH * 0 4 8 12 16 20 30 40 50 60 70 85
* : M *
* : RATIO *
* : NO3/ *
* : P04 *
* : TOC/ *
* : TOTN *
* : TOC/ *
* : TOTP *
* : MOL/MOL *
* : TOC/ *
* : TOTN *
* : TOC/ *
* : TOTP *
* : H2S *
* : PB *
* : HG *
* : MYG/L *
* : MYG/L *
* : MYG/L *
* : CU *
* : ZN *
* : MYG/L *
* : CD *
* : MN *
* : MG/L *
* : NI *
* : MYG/L *
* : CR *
* : MG/L *
* : F *
* :
*****

```



```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-11170 * FRIERFJORD
* LOCATION *
* POSITION * NORTH * 59.3.2 * EAST * 9.40.6 *
* STATION * EEI
* DEPTH * 56 * M *
* DATE * 740815 *
* TIME * 14 *
* WEATHER * CLOUDS
* WIND *
* AIR TEMP. *
* DEPTH * 1.2 * M *
* SECCHI-DISC * YELLOW/BROWN
* DEPTH * 1.2 * M *
* COLOUR *
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
* OIL * NO * NO *
* NO * NO *
* SEA *
* WAVES * 0.0-1M
* RIPPLED;
* COMMENTS *
*****

```

```

*****
* DEPTH * 0 * M *
* TEMP. * 18.40 *
* SAL. * 10.891 *
* O/00 * 6.66 *
* VI. * 6.906 *
* H2S * 0/0 *
* ML/L * 108.3 *
* 02-SAT * 98.3 *
* H2S * 98.3 *
* ML/L * 95.5 *
* SIGMA-T * 22.131 *
* 0/0 * 75.3 *
* VH. * 23.408 *
* 02 * 69.8 *
* O/0 * 62.4 *
* ML/L * 3.91 *
* 02 * 19.0 *
* SAL. * 33.740 *
* O/00 * 26.477 *
* VI. * 26.689 *
* H2S * 0.77 *
* ML/L * 11.2 *
* 02-SAT * 3.6 *
* H2S * 3.6 *
* ML/L *
*****

```

```

*****
* DEPTH * 0 * M *
* TOC/TOIN * 2 *
* P04 * 175 *
* RATIO * 2 *
* TOC/TOIN * 346 *
* TOC/TOIN * 205 *
* MOL/MOL *
* TOC/TOIN * 205 *
* TOC/TOIN * 346 *
* TOC/TOIN * 205 *
*****
* NUTRIENTS *
* TOIN * 3800 *
* PO4P * 29 *
* NH4N * 950 *
* NO3N * 950 *
* ORGN * 5000 *
* MICROGR./L * -2150 *
* TOC * 5.50 *
* FE * 250.0 *
*****
* HEAVY METALS *
* CU *
* ZN *
* CD *
* NI *
* MN *
* CR *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
* MYG/L *
*****

```

```

*****
** COUNTRY ** INSTITUTION * SHIP ** PROJECT ** LOCATION ** STATION ** POSITION ** DEPTH ** DATE ** TIME **
** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** NORWAY ** * NIVA * ** * ** * EIDANGERFJORD ** DFI ** NORTH ** EAST ** * 96 ** 740816 ** 12 **
*****
** WIND ** * AIR TEMP. ** SECCHI-DISC ** WEATHER ** * CLOUDS **
** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** SPEED DIRECTION * * DRY * * DEPTH * * M * * PARTLY CLOUDY * * * 7/8 * *
** M/S (0-36) * * WET * * M * * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** * * * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** SEA * * * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** SMOOTH; WAVES 0.1-0.5M * * NO * * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** * * * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
** COMMENTS ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **
*****

```

```

*****
** : DEPTH * TEMP. * SAL. * O/00 * VH. * SIGMA-T * DENS. * 02 * H2S * O2-SAT * TOTP * P04P * ORGP * T01N * NO3N * NH4N * ORGN * TOC * * MG/L * * FE *
** M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** : 0 * 19.10 * 20.050 * 6.61 * 112.9 * 22 * 7 * 15 * 2500 * 550 * 1600 * 350 * 4.20 * 250.0 *
** 4 * 17.56 * 28.142 * 5.90 * 104.7 *
** 8 * 16.16 * 30.279 * 5.52 * 96.5 *
** 12 * 14.72 * 31.065 * 4.89 * 83.4 *
** 16 * 13.16 * 31.448 * 4.50 * 74.5 *
** 20 * 12.87 * 31.776 * 4.40 * 72.6 *
** 30 * 12.24 * 32.216 * 4.43 * 72.3 *
** 40 * 11.58 * 32.344 * 4.29 * 69.1 *
** 50 * 11.09 * 32.609 * 4.26 * 68.0 *
** 60 * 9.43 * 32.897 * 4.12 * 63.5 *
** 80 * 6.15 * 34.674 * 4.69 * 67.9 *
** 90 * 6.04 * 34.874 * 3.94 * 56.9 *
*****

```

```

*****
** : DEPTH * RATIOS * MOL/MOL * * HEAVY METALS * * * * *
** M * * N03/ TOC/ TOCN/ * * HG * * CU * * ZN * * CD * * NI * * CR * * F * *
** : 0 * * 2 * * 492 * * 251 *
** 4 * * * * *
** 8 * * * * *
** 12 * * * * *
** 16 * * * * *
** 20 * * * * *
** 30 * * * * *
** 40 * * * * *
** 50 * * * * *
** 60 * * * * *
** 80 * * * * *
** 90 * * * * *
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY *INSTITUTION *SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * * * 0-11170 * LANGESUNDSFJORD * CHI * 59,1.3 9,45.1 * 108 * 740816 * 14 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * DIRECTION (0-36) * DRY * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * M/S * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SWOOTH; WAVES 0.1-0.5M * NO * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* VH. TURNED AT WRONG DEPTH BELOW 30M * * * * * * * * * * * * * * * * * * * * * * * * *
*****

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DEPTH M	TEMP. DEG.C	SAL. O/100	SIGMA-T	DENS.	02	H2S ML/L	O2-SAT O/O	TOTP	P04P	ORGP	TOTN	N03N	NH4N	ORGN	TOC MG/L	FE
0	18.00	20.206		14.084	6.59		112.5	23	5	18	2200	540	1250	410	4.10	180.0
4	17.27	28.371		20.413	5.74		101.4									
8	15.75	30.648		22.497	5.36		93.2									
12	15.04	31.425		23.248	5.12		88.1									
16	14.69	31.921		23.704	5.12		87.8									
20	14.32	32.204		24.000	5.12		87.3									
30	13.81	32.531		24.357	5.01		84.7									
(40)	13.08	32.671		24.613	4.98		83.0									
(50)	15.39	31.510		23.237	5.28		91.6									
(60)	14.39	32.290		24.051	5.36		91.5									
(80)	13.02	32.647		24.607	4.68		77.9									
(100)	8.92	34.803		27.018	4.82		74.4									

DEPTH M	RATIOS	TOC/	TOC/	N03/	P04	TOC/	TOTP	TOC/	TOTP	HG	PB	CU	ZN	CD	NI	CR	F
		MOL/MOL				MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MG/L	MG/L	MG/L	MG/L	MG/L
0	239	2	460	212													
4																	
8																	
12																	
16																	
20																	
30																	
(40)																	
(50)																	
(60)																	
(80)																	
(100)																	

() : UNCERTAIN VALUE

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*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DATE * TIME *
* NORWAY * NIVA * HHGRAH * 0-111/70 * FRIERFJORD * B81 * 59,6.6 * 9,34.2 * 55 * 740924 * 11 *
* WIND * DIRECTION * (O-36) * DRY * WET * DEPTH * M * SECCHI-DISC * WEATHER * CLOUDS *
* SPEED * M/S * 7.0 * 12 * 10.0 * AIR TEMP. * DEG.CELS * WIND * RAIN * S/R *
* SEA * WAVES * 0.1-0.5M * NO * ICE *
* SMOOTH * WAVES * 0.1-0.5M * NO *
* COMMENTS * TRB+TSM+SUP 0-2,6,30M *
*****

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*****
* DEPTH * M * TEMP. * DEG.C * SAL. * O/100 * SIGMA-T * VT. * DENS. * O2 * H2S * O2-SAT * O/O * TO1P * P04P * ORGP * TO1N * NO3N * NH4N * MICROGR./L * ORGN * IUC * FE *
* 0 * 12.80 * 2.846 * 34.191 * 26.932 * 0.47 * 0.47 * 0.19 * 19 * 8 * 11 * 1100 * 380 * 275 * 445 * 5.00 *
* 4 * 13.16 * 2.846 * 34.148 * 26.904 * 1.22 * 1.22 * (75.6) * 23 * 9 * 14 * 1000 * 490 * 620 * 110 * 2.35 *
* 8 * 14.52 * 27.162 * 33.975 * 26.714 * 0.29 * 0.29 * 72.2 * 23 * 22 * 1 * 360 * 100 * 145 * 115 * 2.25 *
* 12 * 15.89 * 29.810 * 33.975 * 26.714 * 0.29 * 0.29 * 69.8 * 23 * 18 * 5 * 325 * 90 * 115 * 120 * 1.15 *
* 16 * 14.99 * 29.956 * 33.975 * 26.714 * 0.29 * 0.29 * 67.8 * 23 * 19 * 4 * 265 * 100 * 45 * 120 * 1.00 *
* 20 * 12.57 * 30.922 * 34.148 * 26.904 * 1.22 * 1.22 * 52.7 * 37 * 32 * 5 * 170 * 100 * 20 * 75 * 0.70 *
* 30 * 6.55 * 33.975 * 34.148 * 26.904 * 1.22 * 1.22 * 4.2 * 100 * 100 * 0 * 195 * 100 * 20 * 75 * 0.50 *
* 40 * 6.13 * 34.148 * 34.191 * 26.932 * 0.47 * 0.47 * 17.6 * 90 * 86 * 4 * 305 * 190 * 40 * 95 * 4.20 *
* 50 * 6.18 * 34.191 * 26.932 * 0.47 * 0.47 * 6.8 * 102 * 95 * 7 * 195 * 50 * 50 * 95 * 4.20 *
*****

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*****
* DEPTH * M * RATIOS * TOC/TO1N * TOC/TO1P * TO1N/TO1P * HG * PB * CU * ZN * CD * MN * NI * CR * F *
* 0 * 105 * 5 * 679 * 128 * 128 * 0.14 * <1.0 * 2.2 * 25.00 * 0.10 * <1.0 *
* 4 * 120 * 3 * 263 * 96 * 0.19 * 7.4 * 3.7 * 26.00 * 0.15 * <1.0 *
* 8 * 10 * 7 * 252 * 35 * 0.22 * 1.0 * 1.2 * 7.00 * 0.06 * <1.0 *
* 12 * 11 * 4 * 129 * 31 * :UNCERTAIN VALUE *
* 16 * 12 * 4 * 112 * 25 * :UNCERTAIN VALUE *
* 20 * 12 * 4 * 49 * 4 * 0.19 * 7.4 * 3.7 * 26.00 * 0.15 * <1.0 *
* 30 * 2 * 2 * 16 * 4 * 0.22 * 1.0 * 1.2 * 7.00 * 0.06 * <1.0 *
* 40 * 5 * 1 * 106 * 4 * :UNCERTAIN VALUE *
* 50 * 1 * 25 * 106 * 4 * :UNCERTAIN VALUE *
*****
< :LESS THAN VALUE
:UNCERTAIN VALUE
:UNCERTAIN VALUE
: LACKING FOR UNKNOWN REASONS
*****

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*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * NIVA * HEGRAN * 0-111/70 * FRIERFJORD * BC1 * 59,6.7 * 9,36.5 * 87 * 740924 * 14 *
* WIND * DIRECTION * DEG.CELS * DEPTH * SECCHI-DISC * WEATHER * CLOUDS *
* 6.0 * 11 * 10.0 * 3.5 * BROWN/GREEN * * * * *
* SEA * WAVES 0.1-0.5M * ICE *
* SMOOTH * WAVES 0.1-0.5M * NO *
* COMMENTS *
* TRE+TSM+SUP 0-2,5-6,30M GP 0-2M
*****

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*****
* : DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * TOTP * P04P * ORGP * IOTN * NO3N * NH4N * ORGN * TOC * FE *
* : M * DEG.C * O/00 * O/00 * ML/L * ML/L * * * O/O * * * * * * * * * * * * * * * * * *
* : * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 * 11.80 * 3.033 * 2.041 * 5.69 * 76.6 * 37 * 23 * 14 * 1600 * 590 * 900 * 110 * 3.10
* : 4 * 13.44 * 3.902 * 2.490 * 5.55 * 78.0 * 52 * 40 * 12 * 1260 * 770 * 1300 * -810 * 2.90
* : 8 * 16.54 * 26.934 * 19.482 * 4.41 * 76.1 * 25 * 19 * 6 * 340 * 100 * 145 * 95 * 1.10
* : 12 * 15.94 * 28.665 * 20.937 * 4.12 * 71.0 * 27 * 23 * 4 * 320 * 100 * 130 * 90 * 0.85
* : 16 * 14.80 * 29.706 * 21.979 * 3.95 * 67.0 * 27 * 23 * 4 * 300 * 110 * 110 * 80 * 0.75
* : 20 * 13.09 * 30.726 * 23.110 * 3.55 * 58.4 * 30 * 26 * 4 * 260 * 140 * 20 * 100 * 0.65
* : 30 * 6.58 * 32.177 * 25.294 * 2.07 * 29.8 * 62 * 57 * 5 * 305 * 190 * 15 * 100 * 0.50
* : 40 * 6.15 * 34.101 * 26.864 * 1.89 * 27.2 * 87 * 83 * 4 * 310 * 220 * 20 * 70 * 0.45
* : 50 * 6.15 * 34.167 * 26.916 * 1.99 * 28.7 * 85 * 81 * 4 * 235 * 210 * 10 * 65 * 3.20
* : 60 * 6.16 * 34.202 * 26.943 * 1.89 * 27.3 * 85 * 83 * 2 * 285 * 180 * 10 * 95 * 0.40
* : 70 * 6.17 * 34.218 * 26.954 * 2.02 * 29.2 * 83 * 80 * 3 * 255 * 180 * <10 * >65 * 0.40
* : 85 * 6.16 * 34.230 * 26.965 * 2.00 * 28.9 * 84 * 81 * 3 * 255 * 210 * <10 * >35 * 0.35
*****

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*****
* : DEPTH * RATIOS * MOL/MOL * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ *
* : M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 * 57 * 2 * 216 * 96 * 0.13 * 3.6 * 22.9 * 1.0 * 1.1 * 4.00 * 0.10 * 0.06 * 0.17 * 0.10 * 0.10 * 0.10 * 0.10 *
* : 4 * 43 * 3 * 144 * 54 * 0.08 * 22.9 * 1.0 * 1.1 * 4.00 * 0.10 * 0.06 * 0.17 * 0.10 * 0.10 * 0.10 * 0.10 *
* : 8 * 12 * 4 * 113 * 30 * 0.15 * 1.0 * 1.1 * 4.00 * 0.10 * 0.06 * 0.17 * 0.10 * 0.10 * 0.10 * 0.10 *
* : 12 * 10 * 3 * 81 * 26 * 0.18 * <1.0 * 0.5 * 4.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 16 * 11 * 3 * 72 * 25 * 0.10 * (230.0) * 0.3 * 5.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 20 * 12 * 3 * 56 * 19 * 0.28 * 1.2 * 0.9 * 7.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 30 * 7 * 2 * 21 * 11 * 0.18 * <1.0 * 0.5 * 4.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 40 * 6 * 2 * 13 * 8 * 0.10 * (230.0) * 0.3 * 5.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 50 * 6 * 13 * 97 * 7 * 0.28 * 1.2 * 0.9 * 7.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 60 * 5 * 2 * 12 * 7 * 0.18 * <1.0 * 0.5 * 4.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 70 * 5 * 2 * 12 * 7 * 0.10 * (230.0) * 0.3 * 5.00 * <0.05 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 * <1.0 *
* : 85 * 6 * 2 * 11 * 7 * 0.15 * 1.0 * 1.1 * 4.00 * 0.10 * 0.06 * 0.17 * 0.10 * 0.10 * 0.10 * 0.10 *
*****
< : LESS THAN VALUE
> : GREATER THAN VALUE
() : UNCERTAIN VALUE
*****

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*****
* COUNTRY * NORWAY
* INSTITUTION *
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* H2S *
* H2S ML/L *
* O2 *
* O2 SAT *
* O2 SAT O/U *
* H2S ML/L *
* O2 ML/L *
* DENS. *
* SIGMA-T *
* SAL. *
* O/OC *
* VH. *
* TEMP. *
* DEG.C *
* VI. *
* WIND *
* DIRECTION *
* (0-36) *
* DRY *
* WET *
* 10.0 *
* AIR TEMP. *
* DEG.CELS *
* SECCHI-DISC *
* COLOUR *
* DEPTH *
* M *
* 3.3 *
* GREY/GREEN *
* RAIN *
* WEATHER *
* BDI *
* STATION *
* NORTH *
* 59.6.9 *
* EAST *
* 9.37.1 *
* DEPTH *
* M *
* 44 *
* DATE *
* 740924 *
* TIME *
* 16 *
* CLOUDS *
*
* WRECK *
* SEA-WEED *
* BATHY-SLIDE *
* SALINOTHERM *
* NO *
* NO *
* NO *
*
* OIL *
* NO *
* NO *
* NO *
*
* ICE *
* NO *
*
* WAVES *
* 0.0-0.1M *
*
* COMMENTS *
*****

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```

*****
* DEPTH * 0
* M * 4
* 8
* 12
* 16
* 20
* 30
* 40
*
* DENS. * 1.842
* SIGMA-T * 2.034
* SAL. * 3.257
* O/OC * 26.295
* VH. * 28.554
* TEMP. * 12.70
* DEG.C * 13.35
* VI. * 16.34
*
* O2 * 5.34
* O2 SAT * 4.22
* O2 SAT O/U * 4.84
* H2S ML/L * 4.06
* H2S ML/L * 4.84
*
* TOTP *
* P04P *
* ORGP *
* IOTN *
* NO3N *
* NH4N *
* MICROGR./L *
* TOC *
* FE *
*
* 73.3
* 58.9
* 82.9
* 69.9
* 65.3
* 54.4
* 33.4
* 3.5
*
* 0.24
* 2.30
* 26.662
* 26.896
*
* 0.24
* 2.30
* 26.662
* 26.896
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*****
** COUNTRY * INSITUATION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
** NORWAY * NIVA * HHGRAN * 0-111/70 * LANGESUNDSFJORD * CH1 * NORTH * EAST * M * * 740925 * 13 *
** WIND * DIRECTION * DEGC * DEGT * DEGR * DEG.C * DEG.T * DEG.R * SECCHI-DISC * WEATHER * CLOUDS *
** SPEED * W/S * DIR * WET * WIND * DRY * WET * AIR * TEMP. * COLOUR * CONTINUOUS * LAYER * OF * CLOUDS *
** * 8.5 * (0-36) * * * * 4.0 * YELLOW/GREEN * * * * * 8/8 *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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DEPTH M	TEMP.		DENS.		SIGMA-T		VT.		SAL.			O2			H2S		O2-SAT		TOLP		PO4P		ORGP		TOTN		MICROGR.		NH4N		ORGN		TOC			
	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR	DEGC	DEGT	DEGR			
0	12.20			4.637	5.90				81.9	20	11	9	520	500	800	-7.80	3.20																			
4	14.06			16.610	5.50				87.8	21	8	13	330	100	105		1.70																			
8	14.13			18.694	5.69				92.6	12	4	8	200	20	25		1.35																			
12	14.19			18.881	5.64				92.0	11	5	6	180	20	20		1.40																			
16	14.39			19.151	5.50				90.3	12	5	7	170	20	25		2.00																			
20	15.46			20.611	5.10				86.8	16	10	6	190	40	45		1.85																			
30	14.69			22.612	4.40				74.9	23	18	5	180	80	<10		1.45																			
40	14.29			23.922	4.17				71.0	24	17	7	170	70	<10		1.00																			
50	14.05			24.911	4.56				77.8	15	11	4	150	50	<10		1.15																			
60	13.26			25.339	4.61				77.6	17	15	2	120	60	<10		0.70																			
80	7.15			27.107	4.22				62.5	39	36	3	220	140	<10		0.80																			
100	6.11			27.442	3.55				51.4	54	52	2	280	190	35		0.50																			

DEPTH M	RATIOS		MOL/MOL		TOC/TOTN		HG		PB		CU		ZN		CD		MNI		NI		CR		F	
	NO3/	PO4	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN	TOC/	TOTN
0	101	7	413	57	35	35	0.18	2.7	4.3	28.00	<0.05	<1.0												
4	28	6	209	35																				
8	11	9	290	36																				
12	9	14	316	31																				
16	9	11	430	26																				
20	9	9	298	17																				
30	10	7	163	16																				
40	9	9	107	22																				
50	10	7	198	16																				
60	9	7	106	12																				
80	9	4	53	11																				
100	8	2	24	11																				

< : LESS THAN VALUE
> : GREATER THAN VALUE


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*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * : LOCATION * : STATION * : NORTH * : EAST * : DEPTH * : DATE * TIME *
* : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
* NORWAY * * * * 0-111/70 * : FRIERFJORD * : EEI * : 59,3.2 * : 9,40.5 * : 57 * : 741023 * : 9 *
*****
* NIVA * * * * AIR TEMP. * : SECCHI-DISC * : WEATHER * : CLOUDS *
* : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
* WIND DIRECTION * : DRY * : WET * : DEPTH * : M * : CONTINOUS LAYER OF CLOUDS * : 8/8 *
* : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
* S/P * : 33 * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
* M/S (0-36) * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
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* SEA * : WAVES 0.0-0.1M * : * NO * : * * : * : * : * : * : * : * : * : * : * : * : * : * : * :
*****
* GP 0-2M *
* COMMENTS *
*****
* : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
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*****

```

() : UNCERTAIN VALUE

R : REPEATED ANALYSIS

*COUNTRY *NORWAY
*INSTITUION *SHIP *PROJECT *LOCATION *EIDANGERFJORD
*DEPTH *M *0-111/70
*NIVA *AIR TEMP. *SECOHI-DISC
*WIND DIRECTION *DRY *WET *DEPTH *COLOUR
*SPEED *M/S *36 *36 *6.0 *GREEN
*SEA *ICE *NO
*SMOOTH; WAVES 0.1-0.5M *NO

* COMMENTS

* : RATIO5 * TOC/ * MOLL/MOL
* : * NO3/ * TOC/ * MOL/MOL
* : * P04 * TOC/ * MOL/MOL
* : * 28 * (17) * 322 * (18)

* : RATIO5 * TOC/ * MOLL/MOL
* : * NO3/ * TOC/ * MOL/MOL
* : * P04 * TOC/ * MOL/MOL
* : * 28 * (17) * 322 * (18)

* : RATIO5 * TOC/ * MOLL/MOL
* : * NO3/ * TOC/ * MOL/MOL
* : * P04 * TOC/ * MOL/MOL
* : * 28 * (17) * 322 * (18)

* : RATIO5 * TOC/ * MOLL/MOL
* : * NO3/ * TOC/ * MOL/MOL
* : * P04 * TOC/ * MOL/MOL
* : * 28 * (17) * 322 * (18)

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
** COUNTRY *INSTITUTION *SHIP ** PROJECT ** LOCATION ** STATION ** POSITION ** DEPTH ** DATE ** TIME **
** NORWAY *NIVA * ** ** * 0-1111/70 ** BREVIKFJORD ** FGI ** *NORTH * EAST ** M ** * 104 ** 741023 ** 11 **
** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **
** WIND DIRECTION * (0-36) * DRY WET * AIR TEMP. * SECCHI-DISC * WEATHER * * CLOUDS *
** 4.5 * 34 * * * DEG.CELS * DEPTH * M * 3.5 GREEN/BROWN * * CONTINUOUS LAYER OF CLOUDS * * 8/8 *
** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** *
** *SEA *SM(X)TH; WAVES 0.1-0.5M * NO * * NO * NO * WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM *
** * COMMENTS *

```

```

*****
** DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * TOTP * P04P * ORGP * T01N * N03N * NH4N * ORGN * IXC * FE *
** M * DEG.C * O/00 * O/00 * O/00 * O/00 * ML/L * * ML/L * * ML/L * * O/O * * * * * * * * * * * *
** 0 * 8.70 * 12.116 * 9.381 * 6.36 * 84.4 * 23 * 15 * 8 * 410R * 400 * 700 * (-690) * 3.50
** 4 * 9.78 * 23.120 * 17.786 * 6.14 * 89.7 * * * * * * * * * * * * * * * *
** 8 * 10.36 * 29.321 * 22.513 * 5.88 * 90.5 * * * * * * * * * * * * * * * *
** 12 * 10.81 * 29.639 * 22.685 * 6.10 * 95.0 * * * * * * * * * * * * * * * *
** 16 * 11.30 * 30.192 * 23.029 * 5.85 * 92.4 * * * * * * * * * * * * * * * *
** 20 * 11.52 * 30.404 * 23.155 * 5.55 * 88.2 * * * * * * * * * * * * * * * *
** 30 * 12.69 * 31.454 * 23.750 * 5.12 * 84.0 * * * * * * * * * * * * * * * *
** 40 * 13.60 * 31.976 * 23.973 * 4.76 * 79.8 * * * * * * * * * * * * * * * *
** 50 * 12.01 * 33.436 * 25.413 * 4.13 * 67.6 * * * * * * * * * * * * * * * *
** 60 * 11.46 * 34.434 * 26.290 * 4.61 * 75.0 * * * * * * * * * * * * * * * *
** 80 * 8.70 * 34.721 * 26.988 * 4.31 * 66.2 * * * * * * * * * * * * * * * *
** 100 * 6.29 * 34.772 * 27.375 * 2.69 * 39.1 * * * * * * * * * * * * * * * *

```

```

*****
** DEPTH * RATIOS * MOL/MOL * HEAVY METALS *
** M * N03/ * P04 * IOC/ * TOC/ * TO1N/ * TO2P/ * TO3P * CU * ZN * MN * NI * CR * F *
** * * * * (10) * (39) * (39) * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MG/L *
** 0 * 59 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 4 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 8 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 12 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 16 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 20 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 30 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 40 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 50 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 60 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 80 * * * * * * * * * * * * * * * * * * * * * * * * * *
** 100 * * * * * * * * * * * * * * * * * * * * * * * * * *

```

() :UNCERTAIN VALUE R :REPEATED ANALYSIS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTIUTION * SHIP
* PROJECT * 0-111/70
* LOCATION * LANGESUNDSFJORD
* STATION * GH1
* POSITION * NORTH 59.1.3
* EAST 9.45.1
* DEPTH * M 108
* DATE * 741023
* TIME * 13
* WEATHER *
* WIND *
* DIRECTION *
* (0-36) *
* SPEED * M/S 6.0
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* DEPTH * M 4.5
* SECCHI-DISC *
* COLOUR * YELLOW/GREEN
* CONTINUOUS LAYER OF CLOUDS *
* OIL * NO
* WRECK * SEA-NEED
* BATHY-SLIDE * SALINOTHERM
* NO * NO
* SEA * WAVES 0.1-0.5M
* SMOOTH *
* COMMENTS *
*****

```

```

*****
* DEPTH * 0
* M * 4
* 8
* 12
* 16
* 20
* 30
* 40
* 50
* 60
* 80
* 100
* SAL. * 34.83
* DEG.C * 9.91
* VT. * 10.08
* 10.22
* 10.90
* 11.54
* 12.78
* 13.51
* 12.33
* 11.61
* 9.28
* 6.70
* DENS. * 10.463
* 9.91
* 22.044
* 22.364
* 22.473
* 22.956
* 23.214
* 23.735
* 24.072
* 25.524
* 26.268
* 26.935
* 27.315
* SIGMA-T * 6.50
* 6.21
* 6.10
* 5.81
* 5.74
* 5.55
* 5.19
* 4.35
* 4.75
* 4.61
* 3.37
* O2 * 86.7
* H2S * 94.2
* ML/L * 93.1
* 89.1
* 89.8
* 88.3
* 71.8
* 77.6
* 71.7
* 49.4
* TO2P * 24
* P04P * 13
* ORGP * 11
* TO3N * 375R
* NO3N * 370
* NH4N * 580
* MICROGR./L * (-575)
* TOC * 3.00
* FE *
* * *
*****

```

```

*****
* DEPTH * 0
* M * 4
* 8
* 12
* 16
* 20
* 30
* 40
* 50
* 60
* 80
* 100
* RATIO5 *
* NO3/ *
* P04 *
* TOC/ *
* TO3N *
* TO2P *
* MOL/MOL *
* TO3N/ *
* TO2P *
* HG *
* MYG/L *
* PB *
* CU *
* ZN *
* MYG/L *
* CD *
* MN *
* MYG/L *
* NI *
* MYG/L *
* CR *
* MYG/L *
* F *
* MG/L *
* *
*****

```

() UNCERTAIN VALUE

R REPEATED ANALYSIS

L LACKING FOR UNKNOWN REASONS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * * * * * 0-111/70 * FRIERFJORD * BCI * 59.6.7 * 9.36.5 * 90 * 741120 * 11 *
* WIND * DIRECTION * (0-36) * DRY * AIR TEMP. * DEG.CELS * SECCHI-DISC * WEATHER * CLOUDS *
* SPEED * M/S * * * * * 2 * * * * * 3.0 * YELLOW/BROWN * CONTINUOUS LAYER OF CLOUDS * 8/8 *
* SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SMOOTH * WAVES 0.1-0.5M * * NO * * OIL * WRECK * SEA-WEED * BATHY-SLIDE * SAL IN THERM *
* COMMENTS * GP 0-2M LAST VH. TOUCHED BOTTOM * * * * * * * * * * * * * * * * * * * * * * *
*****

```

DEPTH	TEMP.	SAL.	DENS.	H2S	02-SAT	TOTIP	P04P	ORGP	TOTN	N03N	NH4N	ORGN	TOC	FE
0	5.20	2.895	2.436	7.59	87.1	31.5	22	9.5	940	600	470	-130	3.30	130.0
4	5.54	2.980	2.491	7.59	87.9									
8	9.64	27.203	20.979	5.60	83.7									
12	12.42	31.372	23.738	3.19	52.0									
16	11.99	32.081	24.367	3.58	58.1									
20	11.28	32.532	24.847	3.33	53.4									
30	9.91	33.624	25.935	3.55	55.6									
40	6.29	34.066	26.819	0.85	12.3									
50	6.23	34.117	26.867	1.20	17.3									
60	6.19	34.136	26.887	1.34	19.3									
70	6.21	34.164	26.906	0.64	9.2									
85	6.27	(34.105)	(26.852)											

DEPTH	NO3/	TOC/	NO3/	TOC/	TOIP	TOIP	TOIP	TOIP	TOIP	TOIP	TOIP	TOIP	TOIP	TOIP	TOIP
0	4	60	4	60	270	66	66	66	66	66	66	66	66	66	66
4															
8															
12															
16															
20															
30															
40															
50															
60															
70															
85															

() : UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY      * NORWAY
* INSTITUTION *
* SHIP        *
* PROJECT     * 0-111/70
* LOCATION    * FRIERFJORD
* NORTH       * 59.6.4
* EAST        * 9.35.7
* DATE        * 741120
* DEPTH       * 55
* M           *
* WEATHER     *
* CLOUDS      *
* STATION     *
* POSITION     * NORTH
* EAST       * 9.35.7
* CONTINUOUS LAYER OF CLOUDS * 8/8
* SEA         *
* WAVES 0.1-0.5M
* COMMENTS
    
```

```

*****
* WIND DIRECTION * (0-36) * 3
* AIR TEMP.      *
* DEG.CELS       *
* WET           *
* DRY           *
* DEPTH         * 2.0
* M             *
* YELLOW/BROWN *
* CONTINUOUS LAYER OF CLOUDS *
* OIL           *
* NO           *
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTERM *
* NO           *
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTERM *
    
```

```

*****
* DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT *
* M      *      *      *      * ML/L * O/O * TOTP P04P ORGP TOTN NO3N NH4N ORGN * MG/L *
* 0      * 6.00 * 2.001 * 1.710 * 7.38 * 85.9 * .76 * 1200 * 950 * 2500 * -2250 * 3.30 * 160.0
* 4      * 5.79  * 3.069 * 2.552 * 7.52 * 87.7
* 8      * 10.21 * 28.904 * 22.213 * 5.25 * 80.3
* 12     * 11.35 * 30.755 * 23.457 * 3.90 * 61.9
* 16     * 11.88 * 32.136 * 24.430 * 3.40 * 55.0
* 20     * 11.26 * 32.576 * 24.885 * 3.90 * 62.5
* 30     * 9.45  * 33.542 * 25.947 * 2.70 * 41.8
* 40     * 6.27  * 34.089 * 26.840 * 0.85 * 12.3
* 50     * 6.22  * 34.124 * 26.874 * 0.64 * 9.2
    
```

```

*****
* RATIOs
* NO3/ P04 30
* TOC/ TOIN 3
* TOTP TOTP 112 35
* MOL/MOL
* TOC/ TOIN
* TOTP TOTP
    
```

```

*****
* DEPTH * RATIOS *
* M      * NO3/ P04 30
* 0      * TOC/ TOIN 3
* 4      * TOTP TOTP 112 35
* 8      *
* 12     *
* 16     *
* 20     *
* 30     *
* 40     *
* 50     *
    
```

```

*****
* HEAVY METALS
* MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L
* CU ZN CD MN NI CR F
* MYG/L MYG/L MYG/L MYG/L MYG/L MYG/L
    
```


MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * NORTH EAST
* POSITION * 59,5.2 9,38.3
* DEPTH * 95
* DATE * 741120
* TIME * 13
* NIVA *
* CDI *
* WEATHER * CLOUDS
* WIND *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* DIRECTION *
* (0-36) *
* SPEED *
* M/S *
* 3.0 *
* SEA *
* WAVES * 0.1-0.5M
* NO *
* COMMENTS *
* NIR OM GP * 0-2M
*****

```

DEPTH	TEMP.	SAL.	DENS.	H2S	02-SAT	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	SIGMA-T	ML/L	O/O	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L
0	5.30	<2.846	<2.395	7.52	(86.5)	24	14	10	740	530	340	-130	4.05	120.0
4	5.46	<2.846	<2.389	8.02	(92.6)									
8	9.08	28.916	22.397	6.03	89.9									
12	9.51	29.858	23.066	5.67	85.9									
16	11.61	32.066	24.426	3.47	55.8									
20	11.03	32.699	25.021	4.26	68.0									
30	9.01	33.573	26.042	2.41	37.0									
40	6.42	34.101	26.830	1.13	16.4									
50	6.25	34.121	26.867	1.13	16.3									
60	6.22	34.128	26.877	1.06	15.3									
70	6.22	34.144	26.889	1.06	15.3									
80	6.23	34.156	26.898	0.92	13.3									
90	6.22	34.172	26.911	0.92	13.3									

DEPTH	NO3/	P04	RATIOS	TOC/	TOTN/	HG	PB	CU	ZN	CD	MN	NI	CR	F
M				TOTP	TOTP	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MG/L
0	84	6	435	0.68										
4														
8														
12														
16														
20														
30														
40														
50														
60														
70														
80														
90														

< LESS THAN VALUE () UNCERTAIN VALUE *****

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* NIVA *
* WIND *
* SPEED *
* M/S *
* 7.0 *
* SEA *
* SM(X)TH: WAVES 0.1-0.5M
* COMMENTS
*****

```

```

*****
* STATION *
* PROJECT *
* LOCATION *
* SHIP *
* INSITUATION *
* NORTHERN *
* POSITION *
* EAST *
* 9,45.1 *
* 108 *
* 741119 *
* 13 *
* WEATHER *
* CLOUDS *
* 8/8 *
* RAIN *
* OIL *
* WRECK *
* SEA-WEED *
* BATHY-SLIDE *
* SALINOTHERM *
* NO *
* NO *
* NO *
*****

```

```

*****
* DEPTH *
* M *
* 0 *
* 4 *
* 8 *
* 12 *
* 16 *
* 20 *
* 30 *
* 40 *
* 50 *
* 60 *
* 80 *
* 100 *
*****

```

DEPTH (M)	SAL.	TEMP.	DEG.C	DEG.F	DENS.	SIGMA-T	ML/L	H2S	ML/L	O2	O2-SAT	O/O	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	ORGN	MG/L	TOC	MG/L	FE	MG/L
0	5.80	9.819	7.825	7.825	7.825	7.825	7.06	86.1	25	15	10	740	420	180	140	3.35	80.0							
4	7.68	24.690	19.286	5.89	19.286	19.286	5.89	82.8	82.8															
8	8.23	28.805	22.431	6.38	22.431	22.431	6.38	93.3	93.3															
12	8.41	29.356	22.837	6.24	22.837	22.837	6.24	91.9	91.9															
16	9.14	31.465	24.376	6.10	24.376	24.376	6.10	92.6	92.6															
20	9.23	31.977	24.761	6.03	24.761	24.761	6.03	92.0	92.0															
30	10.34	32.890	25.290	5.46	25.290	25.290	5.46	85.9	85.9															
40	10.42	33.627	25.850	5.17	25.850	25.850	5.17	81.9	81.9															
50	9.68	34.085	26.333	5.32	26.333	26.333	5.32	83.1	83.1															
60	9.06	34.485	26.746	5.32	26.746	26.746	5.32	82.2	82.2															
80	7.71	34.910	27.287	4.61	27.287	27.287	4.61	69.3	69.3															
100	7.56	34.957	27.346	4.33	27.346	27.346	4.33	64.9	64.9															

```

*****
* RATIO5 *
* NO3/ *
* P04 *
* 62 *
* 5 *
* 346 *
* 65 *
*****

```

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.26-15:34:15 PAGE #1

```

*****
* COUNTRY * NORWAY
* INSTITUTION *
* SHIP *
* PROJECT * 0-111/70
* LOCATION * LANGESUNDBUKTA
* JHI * 58,58.1
* NORTH * 9,47.0
* POSITION * EAST
* DEPTH * 208
* M * 741119
* DATE *
* TIME * 11
* NIVA *
* WIND *
* DIRECTION *
* (0-36) * 25
* SPEED * 6.0
* M/S *
* WIND *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* SECCHI-DISC *
* COLOUR * GREEN
* DEPTH * 7.5
* M *
* RAIN *
* WEATHER *
* NO *
* NO *
* NO *
* SEA *
* WAVES * 0.5-1.25M
* NO *
* SLIGHT *
* COMMENTS *
* CP * 0-2M
*****

```

DEPTH	M	TEMP	SAL	DEG.C	VT	SIGMA-T	H2S	O2-SAT	O/O	TOTP	P04P	ORGP	TOIN	NO3N	NH4N	MICROGR./L	TOC	FE
0		7.20	26.877	21.056	6.66	93.9	14	8	(12.0)	120	44	(-44)	3.50	90.0				
4		7.93	28.233	22.025	6.45	93.3												
8		8.08	28.602	22.293	6.45	93.8												
14		8.23	28.965	22.557	6.52	95.4												
16		8.52	29.398	22.854	6.24	92.2												
20		8.82	30.712	23.837	6.24	93.6												
30		8.79	32.074	24.905	6.10	92.2												
40		9.43	33.011	25.536	5.89	90.9												
50		9.38	33.620	26.019	5.89	91.1												
60		9.20	33.968	26.320	6.03	93.1												
70		9.23	34.093	26.413	5.82	90.0												
90		9.30	34.211	26.494	6.03	93.5												
140		9.21	34.336	26.606	5.60	86.7												
211		8.71	34.827	27.070	6.39	98.2												

DEPTH	M	RATIO5	NO3/	P04	19	TOC/	TOIN	TOIN/	HG	MYG/L	PB	MYG/L	CU	MYG/L	ZN	MYG/L	CD	MN	MYG/L	NI	MYG/L	CR	MYG/L	F	MG/L
0						410																			
4																									
8																									
14																									
16																									
20																									
30																									
40																									
50																									
60																									
70																									
90																									
140																									
211																									

() UNCERTAIN VALUE

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*****
** COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
** NORWAY * NIVA * HUGIN * 0-11/70 * FRIERJORD * * * * 57 * 741210 * 11 *
** WIND * DIRECTION * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
** M/S * (0-36) * DEG.CELS * DEPTH * COLOUR * * * *
** 0.0 * * * 3.0 * YELLOW/BROWN * * * * 1/8 OR LESS *
** SEA * CALM; WAVES 0.0M * ICE * NO * * * *
** COMMENTS *

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TRB+TSM+SUP 0-2.5-6.30M

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*****
** DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * 02-SAT * IOTP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * TOC * FE *
** M * * * * * ML/L * * * * * O/O * * * * * * * * * * * * * * * * *
** 0 * 3.60 * 34.149 * 2.568 * 6.67 * 73.5 * 22 * 16 * 6 * 1000 * 440 * 190 * 370 * 1.00 * 160.0 *
** 4 * 6.44 * 30.476 * 11.997 * 5.70 * 73.1 * 37 * 33 * 4 * 1000 * 430 * 280 * 290 * 1.90 * 70.0 *
** 8 * 10.71 * 31.882 * 24.245 * 4.17 * 65.1 * 40 * 37 * 3 * 270 * 160 * 30 * 80 * 0.75 * 60.0 *
** 12 * 11.82 * 32.775 * 25.130 * 2.92 * 47.1 * 50 * 49 * 1 * 285 * 170 * 10 * 105 * 0.60 * 60.0 *
** 16 * 10.75 * 33.016 * 26.665 * 3.41 * 50.1 * 48 * 48 * 2 * 280 * 180 * 25 * 75 * 0.60 * 60.0 *
** 20 * 9.04 * 34.137 * 26.881 * 0.21 * 52.2 * 49 * 48 * 1 * 305 * 190 * 10 * 105 * 0.95 * 70.0 *
** 30 * 6.92 * 34.137 * 26.881 * 0.38 * 3.1 * 120 * 100 * 20 * 3 * 245 * 80 * <10 * >30 * 0.60 * 70.0 *
** 40 * 6.24 * 34.137 * 26.881 * 0.17 * 5.5 * 100 * 97 * 3 * 2 * 245 * 160 * 25 * 60 * 0.60 * 140.0 *
** 50 * 6.22 * 34.149 * 26.893 * 0.17 * 2.5 * 95 * 93 * 2 * 170 * 80 * <10 * >80 * 0.50 * 60.0 *

```

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*****
** DEPTH * RATIO3 * RATIO4 * TOC/TOIN * TOC/TOTP * TOIN/TOTP * HG * PB * CU * ZN * CD * MN * NI * CR * F *
** M * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** 0 * 61 * 29 * 1 * 117 * 101 * 0.05 * 10.5 * 6.5 * 22.00 * 0.88 * 2.0 * * * *
** 4 * 29 * 10 * 2 * 132 * 60 * 0.08 * 1.8 * 2.3 * 17.00 * 0.15 * 1.2 * * * *
** 8 * 10 * 8 * 3 * 48 * 15 * * * * * * * * * * * * * * * *
** 12 * 8 * 3 * 2 * 31 * 13 * * * * * * * * * * * * * * * *
** 16 * 8 * 3 * 3 * 34 * 12 * * * * * * * * * * * * * * * *
** 20 * 9 * 4 * 4 * 50 * 14 * * * * * * * * * * * * * * * *
** 30 * 2 * 6 * 2 * 13 * 2 * 0.07 * <1.0 * 1.1 * 5.00 * <0.10 * 1.1 *
** 40 * 4 * 4 * 3 * 15 * 5 * 0.26 * <1.0 * 1.1 * 6.00 * <0.10 * 1.1 *
** 50 * 2 * 3 * 3 * 14 * 4 * * * * * * * * * * * * * * * *

```

< * LESS THAN VALUE

* GREATER THAN VALUE

77.5.31-16:34:42 PAGE:3

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

**COUNTRY *INSTITUTION *SHIP **PROJECT **LOCATION **STATION **POSITION **DEPTH **DATE **TIME
 *NORWAY *NIVA **RHGRAN **0-111/70 **FRIERFJORD **BCI **59,6.7 9,36.5 *90 **741210 *14
 *SPEED M/S **DIRECTION (0-36) **DRY WEI **DEPTH *M **WEATHER *CLOUDS
 **AIR TEMP. *SECCI-DISCOLOUR *COLOUR *CONTINUOUS LAYER OF CLOUDS *8/8
 **SEA **WAVES 0.0M **ICE *NO **WRECK *SEA-NEED *BATHY-SLIDE *SALINOTHERM *
 **COMMENTS TRB+TSM+SUP 0-2,5-6,30M, GP 0-2M

DEPTH M	TEMP. * SAL.	DENS.	SIGMA-T	H2S * ML/L *	02 * ML/L *	02-SAT * O/O *	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	MICROGR./L	ORGN	MG/L *	TOC	FE
0	4.80	3.908	3.240	7.26	83.0	26	22	4	4	1200	580	<10	<10	>610	3.10	100.0	
4	5.74	10.019	7.985	6.50	79.2	27	24	3	3	1400	480	80	80	840	2.95	90.0	
8	9.59	29.843	23.041	4.90	74.4	34	33	1	1	235	130	20	20	85	1.65	80.0	
12	11.91	31.953	24.283	3.20	51.8	48	46	2	2	240	180	<10	<10	>50	1.10	60.0	
16	10.53	32.711	25.119	3.48	54.9	49	45	4	4	320	160	25	25	135	0.95	70.0	
20	10.08	32.917	25.356	3.75	58.7	49	44	5	5	290	160	<10	<10	>120	0.75	70.0	
30	8.59	33.631	26.153	2.36	35.9	76	9	67	230	230	230	<10	<10	>10	0.60	70.0	
40	6.32	34.117	26.855	0.56	8.1	100	72	28	230	225	180	<10	<10	>35	0.60	60.0	
50	6.23	34.140	26.885	0.94	13.6	98	97	1	90	90	190	<10	<10	>110	0.60	50.0	
60	6.20	34.168	26.911	1.29	18.6	94	93	1	225	190	190	<10	<10	>25	0.60	50.0	
70	6.21	34.187	26.925	0.52	7.5	120	91	29	205	170	170	<10	<10	>25	0.40	50.0	
85	6.20	34.195	26.932	0.52	7.5	130	95	35	195	150	150	<10	<10	>35	0.45	50.0	

DEPTH M	HEAVY METALS												
	MOL/MOL												
	RATIOS	NO3/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/
0	58	307	102	<0.05	8.0	4.4	19.00	0.11	0.11	0.11	0.11	0.11	0.11
4	44	282	115	0.05	1.5	4.1	12.00	0.12	0.12	0.12	0.12	0.12	0.12
8	9	125	15	0.09	<1.0	1.9	5.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
12	9	59	11	0.32	<1.0	1.0	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
16	8	50	14	0.30	<1.0	1.8	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
20	8	39	13	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
30	57	33	20	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
40	6	15	5	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
50	4	16	2	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
60	5	16	5	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
70	4	9	4	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
85	3	9	3	0.27	<1.0	0.7	3.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

< : LESS THAN VALUE > : GREATER THAN VALUE

77.5.31-16:34:51 PAGE:8

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
**COUNTRY * INSTITUTE * SHIP ** PROJECT ** LOCATION ** STATION * POSITION * DEPTH * DATE * TIME *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**NORWAY * NIVA * HHGRAN ** 0-111/70 ** FRIERFJORD ** FGI *59,2.7 9,43.2 * 104 * 741211 * 12 *
*****
** WIND * DIRECTION * * DRY * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * (0-36) * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**SPEED * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**M/S * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**4.0 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****
**SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**SMOOTH; WAVES 0.1-0.5M * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****
** COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

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TRB+TSM+SUP 0-2,5-6M

DEPTH M	TEMP.	SAL.	DENS.	SIGMA-T	O2	H2S	O2-SAT	TOTP	P04P	ORGP	TOTN	NH4N	NO3N	MICROGR./L	ORGN	TOC	FE
0	4.40	6.750	5.481	7.09	81.8	60	81.8	32	28	1400	1400	360	510	360	530	2.30	440.0
4	6.94	28.546	22.396	6.26	88.7	140	88.7	100	40	600	600	35	90	35	475	2.10	540.0
8	9.38	32.732	25.326	5.35	82.3	29	82.3	21	8	130	130	<10	90	<10	>30	0.75	50.0
12	9.37	33.468	25.902	5.42	83.8	41	83.8	36	5	135	135	<10	80	<10	>45	0.80	270.0
16	9.06	33.695	26.129	5.80	89.2	26	89.2	17	9	165	165	<10	70	<10	>85		50.0
20	9.10	33.824	26.224	5.77	88.8	32	88.8	23	9	145	145	<10	70	<10	>65	1.35	60.0
30	9.18	34.023	26.366	5.84	90.2	65	90.2	53	12	140	140	<10	60	<10	>70	0.75	220.0
40	9.24	34.121	26.433	5.98	92.5	25	92.5	16	9	120	120	<10	60	<10	>50	0.60	40.0
50	9.18	34.133	26.452	5.84	90.3	26	90.3	17	9	130	130	<10	70	<10	>50	0.60	820.0
60	9.26	34.250	26.531	5.84	90.5 (140)	33	90.5 (140)	13	(127)	145	145	<10	70	<10	>65	0.60	140.0
80	8.61	34.654	25.950	4.54	69.5	55	69.5	33	22	215	215	<10	130	<10	>75	0.30	70.0
100	7.49	34.921	27.328	3.87	57.9	55	57.9	46	9	250	250	10	170	10	70	0.30	

DEPTH M	NO3/	P04	RATIOS	MOL/MOL	TOC/	TOTN/	TOC/	TOTN/	HG	PB	CU	ZN	CD	HEAVY METALS	MN	NI	CR	MG/L	MG/L	F	
0	35	2	2	99	52	0.05	10.2	8.0	24.00	0.20	0.8	<0.5									
4	4	4	4	39	9	0.20	2.2	1.4	5.00	<0.10											
8	9	7	7	67	10																
12	5	7	7	50	7																
16	9	9	9		14																
20	7	11	11	109	10																
30	3	7	7		5																
40	8	7	7	77	11																
50	9	9	9		11																
60	12	5	(11)		(2)																
80	9	9	9		9																
100	8	1	14		10																

< : LESS THAN VALUE > : GREATER THAN VALUE () : UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
** COUNTRY ** *INSTITUTION *SHIP ** PROJECT ** *LOCATION ** *STATION ** *NORTH *EAST ** *DEPTH * DATE * TIME **
** NORWAY ** *NIVA ** *HHGRAN ** *0-111/70 ** *LANGESUNDBUKTA ** *JHI ** *58,58.1 9,47.0 ** *208 ** *741211 ** *15 **
** *WIND *DIRECTION * (0-36) ** *DRY *WET * * *AIR TEMP. * *DEPTH * * *WEATHER * * * *CLOUDS **
** *SPEED * *M/S * *22 * * * * *PARTLY CLOUDY ** * * *7/8 **
** *SEA * *ROUGH; WAVES 2.5-4M * *NO ** * * *WRECK * *SEA-WEED * *BATHY-SLIDE * *SALINOTHERM. **
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * COMMENTS **
** * GP 0-2M **
*****

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DEPTH	TEMP.	SAL.	DENS.	SIGMA-T	H2S	O2	02-SAT	TOTP	P04P	ORGP	TOTN	N03N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	ML/L	ML/L	ML/L	ML/L	O/O	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	MG/L	MG/L
0	5.40	23.480	18.577	6.96	91.9	30	30	30	30	0	600	200	160	240	1.35	<10.0
4	8.01	31.971	24.940	6.33	94.0	31	31	24	24	7	400	80	30	290	0.60	130.0
8	8.11	33.223	25.906	6.19	92.8	46	46	36	36	10	240	60	20	160	0.60	370.0
12	8.31	33.492	26.087	5.98	90.3	31	31	25	25	6	225	60	<10	>155	0.55	170.0
16	8.49	33.699	26.221	6.40	97.1	26	26	25	25	1	255	60	30	165		70.0
20	8.55	33.812	26.301	6.19	94.1	30	30	24	24	6	235	50	44	141	0.70	60.0
30	8.54	33.828	26.315	5.91	89.9	31	31	26	26	5	235	50	<10	>175	0.70	100.0
40	8.60	33.933	26.387	5.91	90.0	30	30	25	25	5	235	50	<10	>155	0.70	220.0
50	8.66	33.976	26.412	5.84	89.1	30	30	25	25	5	235	50	40	145		60.0
60	8.51	33.984	26.441	6.05	92.0	31	31	25	25	6	225	50	45	130	0.75	60.0
80	8.54	34.004	26.452	5.98	91.0	30	30	24	24	6	230	50	25	155		50.0
100	8.57	34.031	26.469	5.91	90.0	55	55	49	49	6	240	50	10	180	0.80	210.0
150	8.90	34.106	26.476	5.98	91.8	28	28	25	25	3	190	50	<10	>130		80.0
200	9.50	34.384	26.596	6.12	95.4	27	27	21	21	6	145	50	<10	>85		110.0

DEPTH	RATIO3	N03/	P04	TOCN	TOCP	TOC/T	TOCN/	TOCP/	HG	CU	ZN	MYG/L	MYG/L	MYG/L	CD	MN	NI	CR	F
M				MOL/MOL	TOCN/	TOCP/	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
0	15	3	3	116	44	44	1.7	1.7	0.11	1.0	9.00	0.20	9.00	0.5					
4	7	2	2	50	29	29													
8	4	3	3	34	12	12													
12	5	3	3	46	16	16													
16	5	3	3	60	22	22													
20	5	3	3	60	17	17													
30	4	4	4	60	17	17													
40	4	4	4	60	16	16													
50	4	4	4	62	17	17													
60	4	4	4	62	16	16													
80	5	4	4	38	17	17													
100	2	4	4	38	10	10													
150	4	4	4	15	15	15													
200	5	5	5	12	12	12													

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*****
** * LESS THAN VALUE **
** * GREATER THAN VALUE **
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

 COUNTRY * INSITUATION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
 * NORWAY * NIVA * HHRAN * 0-111/70 * SKIENSELVA * S-2 * NORTH * EAST * 741211 * 10 *
 * WIND * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
 * SPEED * DIRECTION * DEPTH * DRY * WET * M * * NOT OBSERVED *
 * I/M/S * (0-36) * * * * * NOT OBSERVED *
 * SEA * NOT OBSERVED * * * * * NOT OBSERVED *
 * NOT OBSERVED * * ICE * * * * * NOT OBSERVED *
 * NOT OBSERVED * * NOT OBSERVED * * * * * NOT OBSERVED *
 * COMMENTS * * * * * NOT OBSERVED *
 * TRB+TSM+SUP COD * SURFACE STATION * * * * * NOT OBSERVED *

 DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
 * M * DEG.C * 0/00 * * SIGMA-T * * ML/L * * * O/O * * TOIP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * MG/L * * *
 * * VI. * * VH. * * * * * * 14 * 10 * 4 * 460 * 380 * 10 * 70 * 4.50 * 30.0 *
 0

 DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * *
 * M * N03/ * TOC/ * TOCN/ * HG * PB * CU * ZN * CD * MN * NI * CR * F * *
 * * * P04 * TOIN * TOCP * TOIP * TOIP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * *
 * * * * * 84 * 11 * 829 * 73

Tokt i 1975

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
** COUNTRY * NORWAY
** INSTITUTION * NIVA
** SHIP *
** PROJECT * 0-111/70
** LOCATION * FRIERFJORD
** POSITION * NORTH * EAST
** DEPTH * 57
** DATE * 750114
** TIME * 9
** WEATHER *
** CLOUDS *
** WIND *
** WET *
** DRY *
** DIRECTION *
** DEGREE CELS *
** WIND *
** DEPTH *
** M * 2.6
** S * GREEN/BROWN
** P *
** S *
** O *
** I *
** C *
** W *
** A *
** I *
** R *
** I *
** P *
** P *
** L *
** E *
** D *
** W *
** A *
** V *
** E *
** S *
** E *
** A *
** R *
** I *
** P *
** P *
** L *
** E *
** D *
** W *
** A *
** V *
** E *
** S *
** E *
** A *
** R *
** I *
** P *
** P *
** L *
** E *
** D *

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*****
** PROJECT * BBI
** LOCATION * FRIERFJORD
** POSITION * NORTH * EAST
** DEPTH * 57
** DATE * 750114
** TIME * 9
** WEATHER *
** CLOUDS *
** WIND *
** WET *
** DRY *
** DIRECTION *
** DEGREE CELS *
** WIND *
** DEPTH *
** M * 2.6
** S * GREEN/BROWN
** P *
** S *
** O *
** I *
** C *
** W *
** A *
** I *
** R *
** I *
** P *
** P *
** L *
** E *
** D *

```

```

*****
** PROJECT * BBI
** LOCATION * FRIERFJORD
** POSITION * NORTH * EAST
** DEPTH * 57
** DATE * 750114
** TIME * 9
** WEATHER *
** CLOUDS *
** WIND *
** WET *
** DRY *
** DIRECTION *
** DEGREE CELS *
** WIND *
** DEPTH *
** M * 2.6
** S * GREEN/BROWN
** P *
** S *
** O *
** I *
** C *
** W *
** A *
** I *
** R *
** I *
** P *
** P *
** L *
** E *
** D *

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*****
** PROJECT * BBI
** LOCATION * FRIERFJORD
** POSITION * NORTH * EAST
** DEPTH * 57
** DATE * 750114
** TIME * 9
** WEATHER *
** CLOUDS *
** WIND *
** WET *
** DRY *
** DIRECTION *
** DEGREE CELS *
** WIND *
** DEPTH *
** M * 2.6
** S * GREEN/BROWN
** P *
** S *
** O *
** I *
** C *
** W *
** A *
** I *
** R *
** I *
** P *
** P *
** L *
** E *
** D *

```

```

*****
** PROJECT * BBI
** LOCATION * FRIERFJORD
** POSITION * NORTH * EAST
** DEPTH * 57
** DATE * 750114
** TIME * 9
** WEATHER *
** CLOUDS *
** WIND *
** WET *
** DRY *
** DIRECTION *
** DEGREE CELS *
** WIND *
** DEPTH *
** M * 2.6
** S * GREEN/BROWN
** P *
** S *
** O *
** I *
** C *
** W *
** A *
** I *
** R *
** I *
** P *
** P *
** L *
** E *
** D *

```

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
**COUNTRY *INSTITUTION *SHIP ** PROJECT ** LOCATION ** STATION * ** POSITION * ** DEPTH ** DATE * TIME *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**NORWAY *NIVA * * * * * 0-11170 * FRIERJORD * BC1 *59,6.7 * 9,36.5 * 90 * 750114 * 12 *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** WIND DIRECTION * AIR TEMP. * DEPTH * WEATHER * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** (0-36) * DRY * M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** 6.5 * 17 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**SM(X)TH WAVES 0.1-0.5M * NO * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** GP 0-2M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

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*****
** DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * O/O * TOTP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * *MG/L * * * * *
** M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** 0 3.80 4.793 3.956 7.53 84.4 24 16 8 1220 620 600 0 3.30 140.0
** 4 4.85 15.226 12.123 6.24 77.0
** 8 6.88 31.234 24.515 5.75 82.8
** 12 8.91 32.308 25.069 4.33 65.7
** 16 9.21 32.923 25.503 4.12 63.2
** 20 8.73 33.247 25.831 4.19 63.7
** 30 8.46 33.478 26.053 3.34 50.6
** 40 6.51 34.061 26.786 0.71 10.3
** 50 6.38 34.069 26.810 0.28 4.1
** 60 6.38 34.065 26.807 0.36 5.2
** 70 6.38 34.065 26.807 0.28 4.1
** 85 6.43 (34.033) (26.775) 0.36 (5.2)
*****

```

```

*****
** DEPTH * RATIOS * MOL/MOL * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** 0 0 3 355 112
** 4 0 3 355 112
** 8 0 3 355 112
** 12 0 3 355 112
** 16 0 3 355 112
** 20 0 3 355 112
** 30 0 3 355 112
** 40 0 3 355 112
** 50 0 3 355 112
** 60 0 3 355 112
** 70 0 3 355 112
** 85 0 3 355 112
*****

```

() *UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

COUNTRY	* INSTITUTE	* SHIP	* PROJECT	* LOCATION	* STATION	* POSITION	* DEPTH	* DATE	* TIME
* NORWAY	* NIVA	* HHGRAN	* 0-111/70	* EIDANGERFJORD	* DFI	* NORTH EAST	* 96	* 750317	* 9
* WIND	* DIRECTION	* AIR TEMP.	* DEPTH	* SECCHI-DISC	* WEATHER	* CLOUDS			
* M/S	(0-36)	* WET	* COLOUR						
* 7.0	* 36	* DRY	* 3.5	* GREEN	* CLEAR	* NO			
* SEA		* ICE							
* SALINITY	* WAVES	* 0.1-0.5M	* NO		* OIL	* SEA-NEED	* BATHY-SLIDE	* SALINOTHERM	
* COMMENTS					* NO	* NO			
* NS, QP 0-2, 4, 8, 12M,									

DEPTH	* TEMP.	* SAL.	* DENS.	* 02	* H2S	* 02-SAT	* TOIP	* P04P	* ORGP	* TOTN	* NO3N	* NH4N	* MICROGR./L	* IOC	* FE
0	2.10	19.378	15.535	8.71	102.9	16	8	1200	8	1200	120	125	955	2.65	70.0
4	3.05	21.978	17.559	9.05	111.5	17	7	800	10	800	70	30	700	2.90	30.0
8	3.37	23.517	18.761	8.29	104.1	20	10	380	10	380	80	45	255	2.55	20.0
12	3.49	25.271	20.145	6.83	87.0	22	17	5	5	365	130	50	185	1.90	10.0
16	5.13	29.980	23.730	5.78	79.1	31	29	2	2	265	120	10	135	1.00	30.0
20	7.79	33.787	26.394	4.49	67.1	36	34	2	2	250	120	15	115	1.15	70.0
30	6.83	34.359	26.978	5.15	75.6	36	25	1	1	210	100	<10	>100	1.45	60.0
40	6.53	34.461	27.099	5.99	87.3	26	25	2	2	600	110	<10	>480	1.45	80.0
50	6.58	34.599	27.169	6.13	89.5	27	25	2	2	220	110	10	100	1.15	60.0
60	6.64	34.650	27.233	6.09	110.3	27	25	2	2	220	110	10	100	1.15	60.0
80	6.73	34.740	27.292	7.52	88.9	27	25	2	2	220	110	10	100	1.15	60.0
90	6.74	34.732	27.284	6.06											

DEPTH	* RATIO5	* TOC/	* TOC/	* TOIP/	* TOIP/	* HG	* PB	* CU	* ZN	* CD	* MN	* NI	* CR	* F
0	33	3	427	166	0.14	0.77	<1.0	2.3	7.00	<0.10	<0.02	<1.0		
4	22	4	440	104	0.77		<1.0	1.1	3.00	<0.10	<0.02	<1.0		
8	18	8	329	42					3.00	<0.10	<0.02	<1.0		
12	17	6	223	37					3.00	<0.10	<0.02	<1.0		
16									3.00	<0.10	<0.02	<1.0		
20	9	4	83	19				0.5	3.00	<0.10	<0.02	<1.0		
30	8	5	82	15				0.5	3.00	<0.10	<0.02	<1.0		
40	9	8	144	18				0.5	3.00	<0.10	<0.02	<1.0		
50		3	138	49				0.5	3.00	<0.10	<0.02	<1.0		
60	10	6	110	18				0.5	3.00	<0.10	<0.02	<1.0		
80								0.5	3.00	<0.10	<0.02	<1.0		
90								0.5	3.00	<0.10	<0.02	<1.0		

< * LESS THAN VALUE
 * GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * NIVA * HHGRAN * 0-111/70 * BREVIKFIJORD * FGI * 59,2.8 * 9,43.2 * 104 * 750317 * 10 *
* WIND * DIRECTION * (0-36) * 36 * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
* SPEED * M/S * 6.0 * DEGREE CELS * WET * M * 2.5 * GREEN * CLEAR * NO *
* SEA * SMOOTH * WAVES * 0.1-0.5M * NO * ICE *
* COMMENTS *
* NS, OP 0-2, 4, 8, 12M, TRB 0-2M *
*****

```

```

*****
* DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * O/O * TOTP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * TOC * FE *
* M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 0 * 2.10 * 9.001 * 7.293 * 8.50 * 93.7 * 23 * 14 * 9 * 1400 * 350 * 360 * 690 * 3.35 * 100.0 *
* 2 * 3.20 * 22.000 * 17.569 * 7.38 * 91.3 * 21 * 5 * 16 * 600 * 50 * 20 * 530 * 2.95 * 40.0 *
* 4 * 3.39 * 23.074 * 18.409 * 8.36 * 104.7 * 19 * 9 * 10 * 365 * 80 * 35 * 250 * 2.65 * 50.0 *
* 8 * 3.67 * 25.361 * 20.203 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 12 * 4.60 * 28.601 * 22.692 * 5.99 * 80.2 * 25 * 16 * 9 * 360 * 120 * 60 * 180 * 2.20 * 50.0 *
* 16 * 6.67 * 33.083 * 25.996 * 5.50 * 79.7 * 31 * 29 * 2 * 285 * 140 * 10 * 135 * 1.00 * 60.0 *
* 20 * 7.46 * 34.175 * 26.746 * 5.05 * 75.1 * 36 * 32 * 4 * 400 * 120 * <10 * >270 * 0.80 * 50.0 *
* 30 * 6.64 * 34.355 * 27.001 * 5.54 * 80.9 * 31 * 31 * 0 * 210 * 110 * <10 * >90 * 0.65 * 70.0 *
* 40 * 6.55 * 34.477 * 27.109 * 6.06 * 88.4 * 26 * 25 * 1 * 240 * 100 * <10 * >130 * 0.70 * 70.0 *
* 50 * 6.63 * 34.618 * 27.209 * 6.13 * 89.7 * 30 * 28 * 2 * 220 * 110 * <10 * >100 * 0.70 * 80.0 *
* 60 * 6.66 * 34.740 * 27.301 * 6.13 * 89.8 *
* 80 * 6.73 * 34.827 * 27.360 * 5.99 * 87.9 *
* 100 *
*****

```

```

*****
* DEPTH * RATIOS * MOL/MOL * HEAVY METALS *
* M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 0 * 55 * 3 * 376 * 135 * 0.10 * 0.10 * 1.7 * 16.00 * <0.10 * <0.02 * 2.0 *
* 2 * 22 * 6 * 362 * 63 * 0.12 * 0.10 * 0.5 * 2.00 * <0.10 * <0.02 * <1.0 *
* 4 * 20 * 8 * 360 * 42 * 0.20 * 0.10 * 0.8 * 2.00 * <0.10 * <0.02 * <1.0 *
* 8 * 17 * 7 * 227 * 32 * 0.8 * 2.00 * <0.10 * <0.02 * <1.0 *
* 16 * 11 * 4 * 83 * 20 *
* 20 * 8 * 2 * 57 * 25 *
* 30 * 8 * 4 * 54 * 15 *
* 40 * 9 * 3 * 69 * 20 *
* 60 * 9 * 4 * 60 * 16 *
* 80 * 9 * 4 * 60 * 16 *
* 100 *
*****
* < * LESS THAN VALUE *
* > * GREATER THAN VALUE *
*****

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MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.31-16:35:40 PAGE:8

COUNTRY *INSTITUTION *SHIP *PROJECT ** LOCATION ** STATION * POSITION * DEPTH ** DATE * TIME *
** NORWAY *NIVA **HHGRAJ ** 0-111/70 ** FRIERFJORD ** GH1 **59,1.3 9.45.1 * 108 ** 750318 * 14 *
** WIND DIRECTION * DEG.CELS * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
** SPEED M/S * (0-36) * DRY * 3.1 * 3.2 * BROWN/GREEN * PARTLY CLOUDY * 1/8 OR LESS
** SEA *SM(X)TH: WAVES 0.1-0.5M * NO * ICE *
** COMMENTS
** NS, OP 0-2,4,12M, TRB 0-2M VH. TURNED AT WRONG DEPTH

Table with columns: DEPTH, TEMP, SAL, DENS, SIGMA-T, H2S, O2-SAT, O/O, TOTP, P04P, ORGP, TOIN, NO3N, NH4N, ORGN, TOC, FE. Rows 0-85 meters depth.

Table with columns: DEPTH, RATIO5, N03/, P04, TOC/, TOIN, TOCP, TOIP, HG, PB, CU, ZN, CD, MN, NI, CR, F, MG/L. Rows 0-85 meters depth.

< ** LESS THAN VALUE
R ** REPEATED ANALYSIS
** NA ** GREATER THAN VALUE
** NA ** NONACCLIMATED (TEMPERATURE)
** () ** UNCERTAIN VALUE

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DAIF * TIME *
* NORWAY * NIVA * HHGRAN * 0-111/70 * LANGESUNDSBUKTA * JHI * 58.58.1 * 9.47.0 * 208 * 750318 * 13 *
*****
* WIND * DIRECTION * DEG.CELS * DEPTH * SECCHI-DISC * WEATHER * CLOUDS *
* 2.5 * 18 * DRY * 3.5 * GREEN * PARTLY CLOUDY * 1/8 OR LESS *
*****
* SEA * WAVES * WAVES * 0.1-0.5M * NO * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
* SMOOTH *
*****
* COMMENTS *
* NS, QP 0-2,4,8,12M, TRB 0-2M, GP 0-2M
*****

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```

*****
* : DEPTH * TEMP. * SAL. * SIGMA-T * DENS. * 02 * H2S * 02-SAT * TO1P * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * ITC * FE *
* M * DEG.C * O/00 * VH. * ML/L * ML/L * * * O/0 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 * 3.10 * 20.716 * 16.556 * 8.57 * 104.9 * 17 * 6 * 11 * 1000 * 30 * 155 * 815 * 2.95 * 30.0 *
* 4 * 3.04 * 21.830 * 17.442 * 9.05 * 111.4 * 16 * 6 * 10 * 800 * 10 * 140 * 650 * 3.25 * 10.0 *
* 8 * 2.80 * 22.214 * 17.760 * 8.67 * 106.3 * 13 * 5 * 8 * 255 * <10 * <10 * >235 * 2.70 * 20.0 *
* 12 * 3.10 * 22.609 * 18.057 * 8.57 * 106.2 *
* 14 *
* 16 * 4.20 * 27.176 * 21.600 * 7.31 * 96.0 *
* 20 * 5.66 * 32.292 * 25.497 * 6.27 * 88.3 * 26 * 25 * 1 * 325 * 140 * <10 * >175 * 0.95 * 20.0 *
* 30 * 6.33 * 34.450 * 27.116 * 6.20 * 89.9 * 25 * 24 * 1 * 200 * 110 * <10 * >80 * 0.55 * 20.0 *
* 40 * 6.54 * 34.756 * 27.330 * 6.27 * 91.6 * 23 * 22 * 1 * 185 * 90 * <10 * >85 * 0.90 * 30.0 *
* 50 * 6.82 * 34.972 * 27.462 * 5.36 * 78.9 * 26 * 26 * 0 * 185 * 120 * <10 * >55 * 0.85 * 30.0 *
* 60 * 6.81 * 35.059 * 27.532 * 5.68 * 83.7 * 26 * 26 * 2 * 270 * 130 * <10 * >130 * 0.65 * 20.0 *
* 80 * 6.69 * 35.138 * 27.611 * 5.61 * 82.4 * 30 * 28 * 1 * 230 * 130 * <10 * >90 * 0.40 * 30.0 *
* 100 * 6.76 * 35.161 * 27.619 * 5.50 * 81.0 * 28 * 27 * 1 * 230 * 130 * <10 * >90 * 0.40 * 30.0 *
* 150 * 6.65 * 35.157R * (27.631) * 6.13 * (90.0) * 30 * 29 * 1 * 230 * 130 * <10 * >90 * 0.25 * 30.0 *
* 200 * 6.52 * 35.149 * 27.642 * 5.75 * 84.2 *
*****

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```

*****
* : DEPTH * RATIOS * MOL/MOL * HEAVY METALS *
* : M * N03/ * P04 * TOC/ * TOTN/ * HG * PB * CU * ZN * MN * NI * CR * F *
* : 0 * 11 * 4 * <4 * 448 * 130 * 0.06 * <1.0 * 1.7 * 7.00 * <0.10 * <0.02 * <1.0 *
* 4 * 5 * 524 * 111 *
* 8 * 12 * 536 * 43 *
* 12 *
* 14 *
* 16 *
* 20 * 12 * 3 * 94 * 28 *
* 30 * 10 * 3 * 57 * 18 *
* 40 * 9 * 6 * 101 * 18 *
* 50 *
* 60 * 10 * 5 * 84 * 16 *
* 80 *
* 100 * 10 * 3 * 56 * 20 *
* 150 * 11 * 2 * 37 * 18 *
* 200 * 10 * 1 * 21 * 17 *
*****

```



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*****
** COUNTRY * NORWAY
** INSTITUTION *
** SHIP *
** PROJECT * 0-11/70
** LOCATION * FRIERFJORD
** NIVA *
** DATE * 750423
** TIME * 9
** DEPTH * 57
** POSITION * EAST 9,34.2
** NORTH * 59,6.1
** WEATHER * CLOUDS
** STATION * BBI
** BATHY-SLIDE *
** SEA * SALINOTERM
** WAVES * 0.M
** CALM *
** COMMENTS *
** NS OP * 0-2,4M

```

```

*****
** DEPTH * 0
** M * 4
** * 8
** * 12
** * 16
** * 20
** * 30
** * 40
** * 50
** TEMPERATURE * 5.40
** SAL. * 34.96
** DEG.C * 4.13
** VT. * 5.01
** DENSITY * 1.024
** SIGMA-T * 20.302
** H2S * 0.00
** O2-SAT * 95.2
** TO2P * 74.5
** TO2M * 35.8
** TO2B * 32.4
** TO2D * 13.8
** TO2S * 2.6

```

```

*****
** DEPTH * 0
** M * 4
** * 8
** * 12
** * 16
** * 20
** * 30
** * 40
** * 50
** TOC/TOCN * 8
** TOC/TOCP * 1576
** TOC/TOCD * 197
** TOC/TOCF * 142

```

< : LESS THAN VALUE () : UNCERTAIN VALUE


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*****
**COUNTRY *NORWAY
**INSTITUTION *NIVA
**SHIP *HHCORAN
**PROJECT *0-111/70
**LOCATION *FRIERFJORD
**STATION *BC1
**POSITION *NORTH *59.6.7 *87 *750514
**DEPTH * * * * *
**DATE * * * * *
**TIME * * * * *
**WEATHER *CLOUDS
**CONTINUOUS LAYER OF CLOUDS *8/8
**WIND DIRECTION * * * * *
**DRY * * * * *
**WET * * * * *
**AIR TEMP. * * * * *
**DEPT * * * * *
**COLOUR * * * * *
**SECCHI-DISC * * * * *
**ICE * * * * *
**CALM; WAVES 0.0M * * * * *
**NS OP 0-2,4M CP 0-2M
*****
** COMMENTS
*****

```

DEPTH	TEMP.	SAL.	DENS.	H2S	02	02-SAT	TOTP	P04P	ORGP	TOTN	N03N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	SIGMA-T	ML/L	O/0	O/0	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	MG/L	MG/L
0	6.60	<2.846	<2.342	8.14	(96.7)	14	3	11	1.000	490	780	-270			
4	6.51	<2.846	<2.346	7.94	(94.2)										
8	6.00	22.754	17.951	6.62	88.3										
12	5.30	25.957	20.538	6.35	85.0										
16	5.34	28.412	22.470	5.31	72.3										
20	6.64	32.789	25.768	3.31	47.9										
30	6.64	33.821	26.580	1.73	25.2										
40	6.51	33.835	26.609	1.38	20.0										
50	6.52	33.918R	(26.673)	1.14	(16.6)										
60	6.54	33.894	26.651	1.17	17.0										
80	6.54	33.902	26.657	0.97	14.1										

DEPTH	N03/	P04	T03/	T04	T05	HG	PB	CU	ZN	CD	MN	NI	CR	F
M	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
0	361													
4														
8														
12														
16														
20														
30														
40														
50														
60														
80														

< LESS THAN VALUE () UNCERTAIN VALUE R REPEATED ANALYSIS *****

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * NIVA * HHGRAN * 0-111/70 * FRIERFJORD * 59.5.2 * NORTH * EAST * 100 * 750514 * 1400 *
* WIND * DIRECTION * (O-36) * DRY * 18 * 9.9 * SECCHI-DISC * COLOUR * WEATHER * CLOUDS *
* SPEED * M/S * 1.0 * AIR TEMP. * DEG.CELS * WET * 2.9 * GREEN * RAIN * * * 8/8 *
* SEA * CALM; WAVES 0.0M * NO * ICE * OIL * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
* COMMENTS * NS OP 0-2.4M GP 0-2M PEN *
*****

```

DEPTH	TEMP.	SAL.	O/00	VI.	DENS.	O2	H2S	O2-SAT	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	0/00	0/00	ML/L	ML/L	ML/L	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	MG/L	MG/L
0	5.40	<2.846	<2.846	<2.391	8.31		(95.8)		13	4	9	1020	480	500	40		
4	5.40	<2.846	<2.391	8.07			(93.1)										
8	6.28	22.688	17.872	6.69			89.8										
12	6.41	25.727	20.244	6.21			85.3										
16	5.34	28.667	22.671	5.24			71.5										
20	6.73	32.630	25.632	3.17			45.9										
30	6.61	33.817	26.581	1.59			23.1										
40	6.54	33.880	26.640	1.14			16.6										
50	6.53	33.884	26.644	1.17			17.0										
60	6.53	33.884	26.644	1.17			17.0										
80	6.51	33.892	26.653	1.31			19.0										
90	6.52	33.896	26.655	1.24			18.0										

DEPTH	RATIO5	NO3/	P04	TOC/	TOCN	HG	PB	CU	ZN	CD	MN	NI	CR	F
M		TOCN	TOCN	TOCN	TOCN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
0	265													
4														
8														
12														
16														
20														
30														
40														
50														
60														
80														
90														

< LESS THAN VALUE () UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
** COUNTRY * NORWAY
** INSTITUTION *
** SHIP *
** NIVA *
** PROJECT * 0-111/70
** LOCATION * BHEVIKFJORD
** STATION * NORTH * 59,2.8
** POSITION * EAST * 9,43.2
** DEPTH * M * 105
** DATE * 750514
** TIME * 905
** WEATHER *
** CLOUDS *
** WIND *
** AIR TEMP. *
** DEG.CELS *
** WET *
** DRY *
** 10.3 *
** DIRECTION *
** (0-36) *
** 0 *
** SPEED *
** M/S *
** 0.0 *
** WIND *
** AIR TEMP. *
** DEG.CELS *
** WET *
** DRY *
** 10.3 *
** DIRECTION *
** (0-36) *
** 0 *
** SPEED *
** M/S *
** 0.0 *
** WIND *
** AIR TEMP. *
** DEG.CELS *
** WET *
** DRY *
** 10.3 *
** DIRECTION *
** (0-36) *
** 0 *
** SEA *
** RIPPLED; WAVES 0.0-0.1M
** * NO
** * ICE
** * CONTINUOUS LAYER OF CLOUDS * 8/8
** * WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM
** * NO * NO *
*****
** COMMENTS
** NS OP 0-2,4,8,12M
*****

```

```

*****
** DEPTH * 0
** M * 4
** 8
** 12
** 16
** 20
** 30
** 40
** 50
** 60
** 80
** 100
** DENS. * <2.342
** SAL. * 11.769
** O2 * 7.52
** H2S * 18.671
** ML/L * 6.83
** O2-SAT * 20.568
** O/O * 6.35
** TO2P * 21.899
** P04P * 22.887
** ORGP * 25.736
** 4 * 4.73
** 9 * 26.399
** 13 * 26.863
** 1020 * 27.069
** 430 * 27.332
** 660 * 27.394
** 660 * 27.394
** TOCN * 34.866
** NH4N * 34.866
** ORGN * 34.866
** MICROGR./L * 34.866
** TOC * 34.866
** FE * 34.866
*****

```

```

*****
** DEPTH * 0
** M * 4
** 8
** 12
** 16
** 20
** 30
** 40
** 50
** 60
** 80
** 100
** RATIO5 *
** NO3/ *
** P04 *
** TOC/ *
** TOCN *
** TOCP *
** TOIP *
** MOL/MOL *
** TOCN/ *
** TOCP/ *
** TOIP/ *
** HG *
** MYG/L *
** PB *
** MYG/L *
** CU *
** MYG/L *
** ZN *
** MYG/L *
** CD *
** MYG/L *
** MN *
** MG/L *
** NI *
** MYG/L *
** CR *
** MYG/L *
** F *
** MG/L *
*****
** HEAVY METALS
*****
** UNCERTAIN VALUE
*****

```

```

*****
* COUNTRY * INSITUITION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * HHGRAN * 0-111/70 * LANGESUNDSFJORD * GHI * NORTH * EAST * M * * 1940 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * NIVA * HHGRAN * 0-111/70 * LANGESUNDSFJORD * GHI * NORTH * EAST * M * * 1940 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * DIRECTION * (0-36) * DRY * WET * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * M/S * 8.0 * 15 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * WAVES 0.1-0.5M * ICE * RAIN *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * COMMENTS *
* * NS .5M GP 0-2,4,8,12M *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

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*****
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAI * TOTP * P04P * ORGP * TOTN * N03N * NH4N * ORGN * MG/L * FE *
* * M * DEG.C * 0/00 * SIGMA-T * ML/L * * ML/L * * U/O * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 0 * 8.10 * 10.352 * 8.070 * 7.59 * 98.2 * 19 * 8 * 11 * 940 * 320 * 680 * -60 *
* * 4 * 8.05 * 12.060 * 9.402 * 7.14 * 93.3 *
* * 8 * 9.45 * 23.863 * 18.410 * 6.76 * 98.4 *
* * 12 * 8.56 * 25.272 * 19.628 * 6.62 * 95.3 *
* * 16 * 7.07 * 27.357 * 21.448 * 6.35 * 89.5 *
* * 20 * 6.86 * 28.214 * 22.145 * 6.14 * 86.6 *
* * 30 * 6.02 * 32.333 * 25.487 * 5.00 * 71.0 *
* * 40 * 6.02 * 33.429 * 26.351 * 5.31 * 76.0 *
* * 50 * 6.07 * 34.040 * 26.826 * 5.59 * 80.4 *
* * 60 * 6.10 * 34.221 * 26.965 * 5.59 * 80.5 *
* * 80 * 6.60 * 34.740 * 27.309 * 5.38 * 78.7 *
* * 100 * 6.68 * 34.862 * 27.395 * 5.24 * 76.9 *

```

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * * * * * * * * * * * * * * * * * * * * * * *
* * M * N03/ * TOC/ * TOTN/ * TOC/ * TOTN/ * HG * PB * CU * ZN * MN * NI * CR * F * MG/L *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 0 * 88 * 109 *
* * 4 *
* * 8 *
* * 12 *
* * 16 *
* * 20 *
* * 30 *
* * 40 *
* * 50 *
* * 60 *
* * 80 *
* * 100 *

```

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
**COUNTRY *NORWAY
**INSTITUTION *NIVA
**SHIP *HGRAN
**PROJECT *0-111/70
**LOCATION *LANGESUNDSBUKTA
**STATION *JHI
**POSITION *NORTH *EAST
**DEPTH *212
**DATE *750513
**TIME *1735
**NORTH *58,58.1
**EAST *9,47.0
**CLLOUDS
**WEATHER
**CONTINUOUS LAYER OF CLOUDS *8/8
**SEA *SLIGHT; WAVES 0.5-1.25M
**NO
**COMMENTS
**NS, GP 0-2M, OP 0-2,4,8,12M, VH. TURNED AT WRONG DEPTH
*****

```

DEPTH M	TEMP. * DEG.C	SAL. * O/0	VI. * VH.	DENS. * SIGMA-T	H2S * ML/L	O2 * ML/L	02-SAI * O/O	TOTP * P04P	TOTN. * NO3N	ORGP * NH4N	ORCN * NH4N	TOC * MG/L	FE * MG/L	
0	10.30	19.063		14.569	7.11		102.4	3	14	11	385	90	230	65
4	10.47	22.413		17.138	6.97		102.9							
8	10.17	23.490		18.017	6.83		100.9							
12	9.56	24.656		19.011	6.49		95.2							
15	9.20NA	26.425R		(20.438)	6.49		(95.5)							
16	7.74	27.156		21.207	6.42		91.8							
20	6.99	29.147		22.862	6.42		91.4							
25	6.51NA	31.525		(24.790)	6.18		(88.3)							
30	5.75	32.570		25.706	6.14		86.8							
35	5.85NA	33.097		(26.110)	6.07		(86.3)							
55	5.55NA	33.942		(26.813)	6.52		(92.5)							
75	5.58NA	34.303		(27.094)	6.35		(90.4)							
100	6.41NA	34.744		(27.338)	5.38		(78.3)							
125	5.99NA	34.803		(27.438)	6.21		(89.6)							
175	6.25NA	34.988		(27.551)	6.07		(88.2)							

DEPTH M	RATIO3 * N03/ P04	TOC/ TOTN	MOL/MOL	HG * TOTN/ TOTP	PB * MYG/L	CU * MYG/L	ZN * MYG/L	CD * MYG/L	MN * MG/L	NI * MYG/L	CR * MYG/L	F * MG/L
0												
4												
8												
12												
15												
16												
20												
25												
30												
35												
55												
75												
100												
125												
175												

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * NIVA * HGRAH * 0-111/70 * FRIER-JOHD * CD1 * NORTH * 59,5.2 * 9,38.3 * 98 * 750610 * 16 *
* SPEED * DIRECTION * WIND * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS
* SEA * SMOOTH: WAVES 0.1-0.5M * ICE
* COMMENTS
* NS, QP 0-2, 4M, GP 0-2M

* : DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * TOTP * P04P * ORGP * T0TN * NO3N * NH4N * ORGN * I0C * FE *
* : * * * * * ML/L * ML/L * * * * * O/O * * * * * MICROGR./L * MG/L * *
* : * * * * * VH. *
0 12.60 3.252 2.109 6.29 86.4 18 5 13 1800 440 1350 10 4.15 60.0
4 9.32 16.176 12.460 6.02 83.2 17 9 8 1400 280 530 590 2.70 50.0
8 10.51 25.404 19.449 6.16 92.8 9 5 4 185 40 25 120 2.20 20.0
12 8.88 26.933 20.880 5.69 83.4 13 9 4 300 70 70 160 1.95 <20.0
16 6.29 31.016 24.417 3.91 55.4 50 46 4 330 220 50 60 1.05 60.0
20 6.44 33.010 25.968 3.31 47.7 69 64 5 265 170 <10 >85 0.85 20.0
30 6.42 33.746 26.550 2.12 30.7 15.7 10.5 88 85 3 225 140 <10 >75 0.90 30.0
40 6.50 33.856 26.626 1.08 15.7 9.9 89 85 4 220 130 <10 >80 0.75 40.0
60 6.54 33.887 26.646 0.68 (9.4) 90 87 3 225 140 <10 >75 0.75 60.0
70 6.53 33.879R (26.641) 10.5 90 90 0 205 140 <10 >55 0.80 60.0
80 6.54 33.887 26.646 9.4 90 84 6 200 120 <10 >70 0.85 40.0
95 6.55 33.891 26.647 0.65

* : DEPTH * RATIOS * MOL/MOL * HEAVY METALS *
* : * NO3/ * TOC/ * TOCN/ * TOIP * HG * PB * CU * ZN * CD * MN * NI * CR * F * *
* : * * * * * TOIP * TOIP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L *
0 195 3 595 221
4 69 2 410 182
8 18 14 630 45
12 17 8 367 51
16 11 4 54 15
20 6 4 32 8
40 4 5 26 6
60 3 4 22 5
80 4 4 21 6
80 3 5 23 5
95 3 5 24 5
< * LESS THAN VALUE
R * REPEATED ANALYSIS
> * GREATER THAN VALUE
() * UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSITUATION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * NIVA * HHGRAN * 0-11/70 * FRIERFJORD * EEI * 59.3.2 * 9.40.6 * 57 * 750611 * 10 *
* WIND * DIRECTION * (0-36) * DRY * M * DEPTH * SECCI-DISC * WEATHER * CLOUDS *
* SPEED * M/S * 16 * 20.0 * 3.2 * YELLOW/GREEN * CLEAR * NO *
* SEA * CALM; WAVES 0.0M * NO *
* COMMENTS
* NS, OP 0-2,4M, GP 0-2M,
*****

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```

*****
* : DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * O/O * TOTP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * TOC * FE *
* : M * DEG.C * O/OO * SIGMA-T * ML/L * * ML/L * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 13.30 3.227 1.995 6.70 93.4 12 4 8 1800 460 360 980 3.80 70.0
* 4 10.84 7.741 5.767 6.70 90.9 15 6 9 2000 510 345 1145 3.60 90.0
* 8 11.47 25.129 19.081 6.70 102.9 7 4 3 185 20 <10 >155 2.30 30.0
* 12 10.29 27.218 20.891 6.34 96.1 7 6 1 190 30 40 120 1.95 30.0
* 16 7.49 29.959 23.435 5.04 73.0 (4 ) 375 220 55 100 1.20 70.0
* 20 6.41 32.577 25.631 3.82 54.8 (52 ) 48 (4 ) 330 200 30 100 0.95 40.0
* 25 6.40 32.995 25.961 3.60 51.8 (53 ) 49 (4 ) 295 190 85 20 1.25 40.0
* 30 6.40 33.233 26.149 3.53 50.9 53 50 3 385 150 <10 >225 0.95 20.0
* 40 6.39 33.397 26.279 3.31 47.8
* 50 6.46 33.738 26.539 5.33 77.2 30 27 3
*****

```

```

*****
* : DEPTH * RATIOS * MOL/MOL * TOIN/ * HG * PB * CU * ZN * CD * MN * NI * CR * F *
* : M * NO3/ * TOC/ * TOTN * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L *
* : 0 254 2 817 332 0.06 1.0 2.3 9.00 <0.10 0.07 <1.0 <1.0
* 4 188 2 619 295 0.05 2.2 7.5 60.00 <0.10 0.07 <1.0
* 8 11 14 847 58
* 12 11 12 718 60
* 16
* 20 10 4 (60) (16)
* 25 9 3 (46) (14)
* 30 8 5 61 12
* 40
* 50 12 3 82 28 0.08 8.1 18.3 160.00 <0.10 0.04 <1.0
*****
* : LESS THAN VALUE > : GREATER THAN VALUE < : UNCERTAIN VALUE
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * HHGRAN * 0-111/70 * EIDANGERFJORD * DFI * NORTH * EAST * 98 * 750611 * 14 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * DIRECTION * (0-36) * DRY * WET * AIR TEMP. * DEPTH * SECCHI-DISC * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * M/S * 6.0 * 17 * 19.2 * 4.0 * 4.0 * YELLOW/BROWN * PARTLY CLOUDY * 1/8 OR LESS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SM(CO)TH; WAVES 0.1-0.5M * NO * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NS, OP 0-2, 4, 8, 12M, * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

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DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAI	TOTP	P04P	ORGP	TOIN	NO3N	NO4N	ORGN	IOCGR./L	IOCGR./L	FE
0	17.80	9.272	5.808	6.90	109.8	25	8	17	1200	420	760	20	4.40	50.0		
4	12.58	23.219	17.419	6.84	106.3	12	6	6	450	240	45	165	3.95	30.0		
8	12.11	24.679	18.626	6.63	102.9	7	3	4	210	20	<10	>180	2.85	<20.0		
12	10.11	25.837	19.847	6.43	96.2	17	5	12	205	30	20	155	2.35	40.0		
16	9.07	28.153	21.807	5.71	84.7		6	5	315	100	40	175	1.65	30.0		
20	7.35	30.298	23.719	5.13	74.2	11	6	5	295	160	20	115	1.20	20.0		
30	6.21	32.768	25.806	4.38	62.7	34	29	5	265	150	10	105	1.10	70.0		
40	6.01	33.546	26.444	5.13	73.4	35	28	7								
50	6.12	33.989	26.780	5.20	74.8		24	12	275	160	<10	>105	0.55	<20.0		
60	6.30	34.307	27.008	5.26	76.2	36	24	6	530	400	<10	>120	0.45	50.0		
80	6.48	34.645	27.250	4.99	72.7	48	42	6								
95	6.63	34.783	27.339	4.44	65.0											

DEPTH	M	RATIOS		HEAVY METALS										
		NO3/	P04	TOC/	TOIN/	HG	PB	CU	ZN	CD	MN	NI	CR	F
0	4	116	88	4	106	0.06	<1.0	2.0	5.00	<0.10	0.06	<1.0		
4	8	15	13	849	83	0.06	1.6	6.1	22.00	<0.10	0.03	2.0		
12	16	37	12	356	27									
20	30	12	12	387	63									
30	40	5	5	91	19									
40	50	15	21	81	17									
60	80	15	24	39	17									
95	95	21	24	24	24	0.08	2.2	0.5	3.00	<0.10	0.10	<1.0		

< LESS THAN VALUE > GREATER THAN VALUE


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*****
* COUNTRY * INSTITUTE * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * HAGRAN * 0-11170 * LANGESUNDSFJORD * GH1 * NORTH * EAST * 108 * 750611 * 15 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * DIRECTION * (0-36) * DRY * WET * AIR TEMP. * DEPTH * COLOUR * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * M/S * 6.5 * 18 * 18.0 * 6.0 * YELLOW/GREEN * PARTLY CLOUDY * 1/8 OR LESS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SMOOTH: WAVES 0.1-0.5M * NO * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NS, OP 0-2,4,8,12M, * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

```

```

*****
** DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * O/O * TOTP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * TOC * FE *
** M * DEG.C * O/OO * SIGMA-T * ML/L * ML/L * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * VI. * VH. * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
0 14.30 10.798 7.611 6.22 92.9 25 16 9 940 350 910 320 2.90 180.0
4 13.52 23.360 17.359 6.70 106.3 12 4 8 250 30 35 185 2.15 <20.0
8 11.97 25.144 19.009 6.63 102.9 11 4 7 205 30 15 >180 1.95 60.0
12 10.95 26.581 20.291 6.36 97.4 12 6 6 235 30 15 >215 1.60 70.0
16 9.54 28.811 22.246 5.88 88.6 16 9 7 230 60 30 140 0.85 20.0
20 8.43 31.136 24.225 5.54 82.6 16 9 7 280 160 15 105 0.65 30.0
30 6.40 32.780 25.792 4.51 74.6 34 28 6 300 140 15 >150 0.95 20.0
40 6.09 33.546 26.434 5.20 78.8 27 22 5 4 225 130 10 >85 0.50 40.0
50 6.12 34.036 26.817 5.47 77.2 41 36 5 240 170 10 >60 0.40 40.0
60 6.13 34.323 27.042 5.47 L
80 6.21 34.614 27.261
100 6.52 34.767 27.341
*****

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*****
** DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * * * *
** M * NO3 * P04 * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
0 48 17 10 462 46 0.08 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
4 8 6 11 457 41 0.05 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
12 2 4 8 344 43 0.08 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
16 15 13 4 137 32 0.05 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
20 13 14 3 49 18 0.05 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
30 40 12 3 48 18 0.05 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
40 50 10 2 25 13 0.05 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
50 80 100 10 25 13 0.05 1.3 7.00 0.06 0.02 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
*****
< * LESS THAN VALUE *
> * GREATER THAN VALUE *
L * LACKING FOR UNKNOWN REASONS *
*****

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*****
* COUNTRY * INSTITUTE * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * * * * * 0-111/70 * SKIENSELVA * S-1 * 59,11.8 8,37.1 * * * * * 750611 * 9 *
* WIND * DIRECTION * DEG.CELS * AIR TEMP. * SECCHI-DISC * WEATHER * * * * * CLOUDS *
* * * * * (0-36) * DRY * WET * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * NOT OBSERVED * ICE * NOT OBSERVED * * * * * NOT OBSERVED *
* NOT OBSERVED * * NOT OBSERVED * * OIL * WRECK * SEA-NEED * BATHY-SLIDE * SALINOTERM *
* COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * TRB+TSM+SUP+COD 0-2M, TEMP+SAL BY SLN, SURFACE STATION * * * * *
*****

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```

*****
* * * * * DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAI * NUTRIENTS * MICROGR./L * TOC * FE *
* * * * * M * DEG.C * 0/00 * SIGMA-T * ML/L * * O/O * TOTP * P04P * ORGP * TOTN * N03N * NH4N * ORGN * MG/L * * * * *
* * * * * 0 * 8.40 * 0.900 * 0.725 * 10 * 12 * -2 * S * 350 * 10 * 10.00 * 140.0 *
*****

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*****
* * * * * DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * * * *
* * * * * M * * * * * TOC/ * TOCN/ * HG * CU * PB * CD * MN * NI * CR * F *
* * * * * 0 * * * * * 2579 * TOTP * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * < * LESS THAN VALUE * S * SPOILED OR DAMAGED SAMPLE * * * * *
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
** COUNTRY * * * * *
** *NORWAY * * * * *
** *NIVA * * * * *
** *INSTITUTION * * * * *
** *SHIP * * * * *
** *PROJECT * * * * *
** *0-111/70 * * * * *
** *LANGESUNDSBUKTA * * * * *
** *JHI * * * * *
** *NORTH * * * * *
** *58,58.1 * * * * *
** *9,47.0 * * * * *
** *EAST * * * * *
** *208 * * * * *
** *750729 * * * * *
** *1130 * * * * *
** *CLOUDS * * * * *
** *WEATHER * * * * *
** *CLEAR * * * * *
** *1/8 OR LESS * * * * *
** *OIL * * * * *
** *NO * * * * *
** *SEA * * * * *
** *WRECK * * * * *
** *SEA-WEED * * * * *
** *BATHY-SLIDE * * * * *
** *SALINOTHERM * * * * *
** *NO * * * * *
** *ICE * * * * *
** *NO * * * * *
** *SLIGHT; WAVES 0.5-1.25M * * * * *
** *SEA * * * * *
** *COMMENTS * * * * *
** *NS OP 0-2,4,8,12M GP 0-2M * * * * *
*****

```

```

*****
** DEPTH * * * * *
** M * * * * *
** 0 * * * * *
** 4 * * * * *
** 8 * * * * *
** 12 * * * * *
** 16 * * * * *
** 20 * * * * *
** 30 * * * * *
** 40 * * * * *
** 50 * * * * *
** 60 * * * * *
** 80 * * * * *
** 100 * * * * *
** 150 * * * * *
** 200 * * * * *
** *TEMP. * * * * *
** *DEG.C * * * * *
** *19.22 * * * * *
** *18.40 * * * * *
** *17.73 * * * * *
** *17.23 * * * * *
** *16.62 * * * * *
** *15.89 * * * * *
** *10.05 * * * * *
** *8.42 * * * * *
** *8.10 * * * * *
** *7.87 * * * * *
** *7.74 * * * * *
** *7.30 * * * * *
** *7.09 * * * * *
** *6.89 * * * * *
** *SAL. * * * * *
** *0/00 * * * * *
** *23.423 * * * * *
** *24.488 * * * * *
** *25.709 * * * * *
** *26.771 * * * * *
** *27.850 * * * * *
** *28.805 * * * * *
** *32.237 * * * * *
** *33.781 * * * * *
** *34.287 * * * * *
** *34.330 * * * * *
** *34.503 * * * * *
** *34.626 * * * * *
** *34.819 * * * * *
** *34.957 * * * * *
** *SIGMA-T * * * * *
** *ML/L * * * * *
** *16.194 * * * * *
** *17.196 * * * * *
** *18.280 * * * * *
** *19.203 * * * * *
** *20.164 * * * * *
** *21.055 * * * * *
** *24.831 * * * * *
** *26.296 * * * * *
** *26.741 * * * * *
** *26.809 * * * * *
** *26.963 * * * * *
** *27.123 * * * * *
** *27.304 * * * * *
** *27.441 * * * * *
** *DENS. * * * * *
** *ML/L * * * * *
** *5.72 * * * * *
** *5.93 * * * * *
** *5.86 * * * * *
** *6.01 * * * * *
** *5.63 * * * * *
** *5.58 * * * * *
** *5.22 * * * * *
** *5.79 * * * * *
** *6.21 * * * * *
** *6.07 * * * * *
** *6.07 * * * * *
** *6.07 * * * * *
** *5.86 * * * * *
** *5.79 * * * * *
** *5.72 * * * * *
** *O2-SAT * * * * *
** *O/O * * * * *
** *101.9 * * * * *
** *104.6 * * * * *
** *102.8 * * * * *
** *105.1 * * * * *
** *97.9 * * * * *
** *96.2 * * * * *
** *81.3 * * * * *
** *87.8 * * * * *
** *93.8 * * * * *
** *91.2 * * * * *
** *91.0 * * * * *
** *87.1 * * * * *
** *85.7 * * * * *
** *84.4 * * * * *
** *T02P * * * * *
** *P04P * * * * *
** *ORGP * * * * *
** *TOTN * * * * *
** *2 * * * * *
** *MICROGR./L * * * * *
** *N03N * * * * *
** *N04N * * * * *
** *ORGN * * * * *
** *MG/L * * * * *
** *4.15 * * * * *
** *TOC * * * * *
** *MG/L * * * * *
** *FE * * * * *
*****

```

```

*****
** DEPTH * * * * *
** M * * * * *
** 0 * * * * *
** 4 * * * * *
** 8 * * * * *
** 12 * * * * *
** 16 * * * * *
** 20 * * * * *
** 30 * * * * *
** 40 * * * * *
** 50 * * * * *
** 60 * * * * *
** 80 * * * * *
** 100 * * * * *
** 150 * * * * *
** 200 * * * * *
** *RATIO5 * * * * *
** *N03/ * * * * *
** *P04 * * * * *
** *TOC/ * * * * *
** *TOTN * * * * *
** *3227 * * * * *
** *MOL/MOL * * * * *
** *TOC/ * * * * *
** *TOTP * * * * *
** *1784 * * * * *
** *HEAVY METALS * * * * *
** *PB * * * * *
** *MYG/L * * * * *
** *CU * * * * *
** *MYG/L * * * * *
** *ZN * * * * *
** *MYG/L * * * * *
** *MN * * * * *
** *MG/L * * * * *
** *NI * * * * *
** *MYG/L * * * * *
** *CR * * * * *
** *MG/L * * * * *
** *F * * * * *
** *MG/L * * * * *
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

COUNTRY * NORWAY *
INSTITUTION *
SHIP * HHGRAN *
PROJECT * 0-111/70 *
LOCATION * FRIERFJORD *
NORTH * 59.6 *
EAST * 9.34.2 *
DATE * 750916 *
DEPTH * 57 *
TIME * 11 *
STATION * BBI *
WEATHER *
CLOUDS *
WIND DIRECTION * 0 *
DEGREE CELS * 0 *
DRY WET * *
AIR TEMP. * *
SECCI-DISC *
COLOUR *
DEPTH * 2.5 *
YELLOW/BROWN * *
PARTLY CLOUDY * *
OIL * *
SEA-WEED * *
SLIDE * *
SALINOTHERM * *
ICE *
WAVES * 0.0-0.1M *
RIPPLED * *
COMMENTS *
NS, QP 0-2, 4M, SES 3-5M, GP 0-2M, HC 0.4-5.50M * * *

TEMP.		DENS.		SIGMA-T		O2		H2S		O2-SAT		TTP		PO4P		TOTN		NO3N		NH4N		ORGAN		TOC		FE	
DEPTH	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.	VI.
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0	14.80	4.869	3.020	4.49	65.4	17	6	11	1400	350	275	775	13.00														
4	16.45	12.577	3.576	3.82	60.3	29	16	13	2200	560	810	830	3.10														
8	15.71	28.151	20.594	4.49	76.8	16	13	3	270	130	30	110	2.95														
12	14.91	28.941	21.369	4.08	69.0	19	17	2	265	140	20	105	1.30														
16	12.77	29.615	22.315	3.97	64.5																						
20	12.92	30.654	23.088	3.97	65.1	97	95	2	235	130	<10	>95	1.10														
30	6.61	33.548	26.370	1.12	16.3	80	74	6	275	170	10	95	0.65														
40	6.54	33.830	26.601	0.15	2.2																						
50	6.55	33.841	26.608	0.15	2.2	100	99	1	125	<10	50	>65	1.70														

RATIO		TOC/TOTN		HG		PB		CU		Zn		CD		MN		NI		CR		F						
DEPTH	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
0	129	11	1972	0.60	1.2	1.7	3.5	4.0	26.00	<0.10	<2.0	<2.0	0.04	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
4	77	2	276	0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
8	22	13	475	0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
12	18	6	176	0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
16	3	5	29	0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
20	5	3	21	0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
30				0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
40				0.61	3.5	4.0	3.5	4.0	13.00	<0.10	<2.0	<2.0	0.10	0.10	<2.0	<1.0	<1.0	<1.0	0.26	0.49						
50	<0	16	44	3.29	1.0	3.5	8.00	<0.10	0.16	<2.0	<2.0	<1.0	1.18													

< * LESS THAN VALUE
> * GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```
*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * HHGRAN * 0-111/70 * FRIEHFJORD * BCI * 59.6.4 * 9.37.1 * 90 * 750916 * 12 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * WIND DIRECTION * (O-36) * DEPTH * SECCHI-DISC * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * SPEED * DEGREE * DRY * WEI * M * 2.3 * YELLOW/BROWN * CONTINUOUS LAYER OF CLOUDS * 8/8 *
* * M/S * 18 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 5.0 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * SM(X)TH; WAVES * 0.1-0.5M * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * NS, QP * 0-2,4M, SES * 3-5M, GP * 0-2M, HC * 0,4-5,85M * * * * * * * * * * * * * * * * *
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*****
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * TOTP * PO4P * ORGP * TOIN * NO3N * MICROGR./L * ORGN * MG/L * * * *
* * M * DEG.C * O/00 * O/00 * ML/L * ML/L * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 0 * 14.60 * 5.837 * 3.787 * 5.69 * 83.0 * 12 * 5 * 7 * 2000 * 470 * 540 * 990 * 4.50 * *
* * 4 * 16.37 * 18.949 * 13.433 * 4.27 * 70.0 * 31 * 25 * 6 * 1800 * 470 * 640 * 690 * 2.15 * *
* * 8 * 16.21 * 28.635 * 20.855 * 4.79 * 83.0 * 15 * .11 * 4 * 230 * 100 * 15 * 115 * 1.20 * *
* * 12 * 14.46 * 28.596 * 21.965 * 4.34 * 73.0 * 18 * 16 * 2 * 240 * 120 * 10 * 110 * 1.00 * *
* * 16 * 13.05 * 30.046 * 22.594 * 4.04 * 66.2 * 22 * 19 * 3 * 210 * 110 * <10 * >90 * 0.80 * *
* * 20 * 13.86 * 31.145 * 23.280 * 4.19 * 70.3 * 22 * 19 * 3 * 210 * 110 * <10 * >90 * 0.80 * *
* * 25 * 11.28 * 31.563 * 24.096 * 3.89 * 61.9 * 27.1 * 90 * 65 * 25 * 305 * 220 * <10 * >75 * 0.70 * *
* * 30 * 6.66 * 33.341 * 26.200 * 1.87 * 3.2 * 3.2 * 100 * 98 * 2 * 185 * 100 * 10 * 75 * 0.75 * *
* * 40 * 6.58 * 33.826 * 26.592 * 0.22 * 3.2 * 3.2 * 100 * 99 * 1 * 165 * 60 * 20 * 85 * 0.70 * *
* * 50 * 6.60 * 33.849 * 26.608 * 0.22 * 3.2 * 3.2 * 100 * 99 * 1 * 165 * 60 * 20 * 85 * 0.70 * *
* * 60 * 6.56 * 33.849 * 26.613 * 0.22 * 2.2 * 2.2 * 120 * 110 * 10 * 175 * <10 * >75 * 0.80 * *
* * 80 * 6.57 * 33.853 * 26.615 * 0.15 * 1.0 * 1.0 * 120 * 110 * 10 * 175 * <10 * >75 * 0.80 * *
* * 90 * 6.58 * 33.841 * 26.604 * 0.07 * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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*****
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * DEPTH * RATIOS * MOL/MOL * * * * * * * * * * * * * * * * * * * * *
* * M * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 0 * 208 * 3 * 967 * 369 * 1.7 * 1.4 * 7.00 * <0.10 * 0.08 * <2.0 * <1.0 * 0.29 * *
* * 4 * 42 * 1 * 179 * 128 * 1.7 * 1.7 * 7.00 * <0.10 * 0.04 * <2.0 * <1.0 * 0.71 * *
* * 8 * 20 * 6 * 206 * 34 * * * * * * * * * * * * * * * * *
* * 12 * 17 * 5 * 143 * 29 * 0.47 * 1.7 * 1.5 * 4.00 * <0.10 * <0.04 * <2.0 * <1.0 * 1.07 * *
* * 16 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 20 * 13 * 4 * 94 * 21 * 3.05 * <1.0 * 0.8 * 2.00 * <0.10 * <0.04 * <2.0 * <1.0 * 1.18 * *
* * 25 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 30 * 7 * 3 * 20 * 7 * 3.05 * <1.0 * 0.8 * 2.00 * <0.10 * <0.04 * <2.0 * <1.0 * 1.18 * *
* * 40 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 50 * 2 * 5 * 19 * 4 * * * * * * * * * * * * * * * * *
* * 60 * 1 * 5 * 18 * 4 * * * * * * * * * * * * * * * * *
* * 80 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * 90 * <0 * 5 * 17 * 3 * 1.08 * <1.0 * 0.5 * 2.00 * <0.10 * 0.62 * <2.0 * <1.0 * 1.18 * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

< :LESS THAN VALUE
> :GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

 *COUNTRY *INSTITUTION *SHIP *PROJECT *LOCATION *STATION *POSITION *DEPTH *DATE *TIME
 *NORWAY *NIVA *HHGRAN *0-111/70 *FRIERFJORD *DDI *NORTH *EAST *M *750916 *14
 *WIND *DIRECTION *DEG.CELS *WET *WIND *DEPTH *M *PARTLY CLOUDY *SEA-WEED *BATHY-SLIDE *SALINOTHERM *
 *SPEED *M/S *0-36) *DRY *ICE *NO *NO *SEA-WEED *BATHY-SLIDE *SALINOTHERM *
 *SEA *SMOOTH; WAVES 0.1-0.5M *NO *NO *SEA-WEED *BATHY-SLIDE *SALINOTHERM *
 *SMOOTH; WAVES 0.1-0.5M *NO *NO *SEA-WEED *BATHY-SLIDE *SALINOTHERM *
 *COMMENTS *GP 0-2M, SES 3-5M *
 *NS 0.5M, OP 0-2.4M, *

DEPTH M	TEMP. DEG.C	SAL. O/100	DENS. SISMA-T	H2S ML/L	02-SAT O/O	TOTP	P04P	ORGP	TOTN	NO3N	MICROGR./L NH4N	ORGN	TOC MG/L	FE
0	15.50	35.743	3.567	5.47	81.3	15	4	11	485	1600	380	-1495	3.95	
4	16.17	21.980	15.782	5.24	87.1	14	9	5	320	1000	250	-930	2.20	
8	16.35	28.012	20.347	5.54	95.9	7	5	2	175	30	45	100	1.45	
12	16.23	29.291	21.352	5.17	90.0	10	8	2	185	30	20	135	1.90	
16	13.61	29.827	22.315	4.12	68.2									
20	13.89	30.990	23.154	4.12	69.1	26	23	3	235	130	10	95	1.00	
25	12.64	31.601	23.873	4.12	67.6	90	86	4	240	180	<10	>50	0.80	
30	6.60	33.631	26.436	0.11	1.6									
40	6.51	33.819	26.596			100	90	10	170	80	25	65	0.80	
55	6.57	33.850	26.612	L										

HEAVY METALS

DEPTH M	TOC TOTN	NO3/ P04	SI	CU	ZN	CD	MN	NI	CR	F
0	884	9	679	71						
4	246	8	405	51						
8	13	10	534	55						
12	8	12	490	41						
16										
20	12	5	99	20						
25										
30	5	4	23	6						
40										
55	2	5	21	4						

< * LESS THAN VALUE
 * GREATER THAN VALUE
 * LACKING FOR UNKNOWN REASONS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
** COUNTRY * NORWAY
** INSTITUTION *
** SHIP *
** PROJECT * 0-111/70
** LOCATION * FRIERFJORD
** POSITION * NORTH * 59,3.2 EAST * 9,40.6
** DATE * 750916
** TIME * 15
** STATION * EE1
** DEPTH * 57
** WEATHER * CLOUDS
** WIND *
** DIRECTION * SECCHI-DISC
** SPEED *
** M/S * DRY * 2.3 * PARTLY CLOUDY
** 7.0 * WET * BROWN
**
** SEA * ICE
** SM(X)TH; WAVES 0.1-0.5M
**
** COMMENTS
** NS, GP 0-2,4M, HC 0.4-5,50M, GP 0-2M, SES 2-4M

```

```

*****
** DEPTH * 0
** M * 4
** TEMP * 16.14
** DEG.C * 16.51
** * 15.89
** VT. * 12
** SAL. * 35.18
** SIGMA-T * 20.714
** * 21.615
** DENS. * 1.024
** * 1.024
** O2 * 5.99
** H2S * 0.0
** ML/L * 0.0
** O/O * 0.0
** P04P * 5
** TOIN * 2000
** ORGN * 980
** MICROGR./L * 520
** NH4N * 240
** NO3N * 240
** TOIN * 180
** ORGN * 130
** MICROGR./L * 40

```

```

*****
** DEPTH * 0
** M * 4
** N03/ * 230
** P04 * 66
** * 4
** * 8
** RATIO3 * 12
** TOC/ * 12
** TOIN * 11
** * 6
** * 4
** * 50
** * 14

```

```

*****
** DEPTH * 0
** M * 4
** N03/ * 230
** P04 * 66
** * 4
** * 8
** RATIO3 * 12
** TOC/ * 12
** TOIN * 11
** * 6
** * 4
** * 50
** * 14

```

```

*****
** DEPTH * 0
** M * 4
** N03/ * 230
** P04 * 66
** * 4
** * 8
** RATIO3 * 12
** TOC/ * 12
** TOIN * 11
** * 6
** * 4
** * 50
** * 14

```


COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * NIVA * HHGRAN * 0-111/70 * LANGESUNDSBUKTA * JHI * 58,58.1 * 9,47.0 * 208 * 750917 * 10 *
* WIND * DIRECTION * DEG.CELS * DRY * WEI * M * SECCHI-DISC * AIR TEMP. * DEPTH * M * COLOUR * WEATHER * CLOUDS *
* SPEED * M/S * 4.5 * (0-36) * 24 * DRY * 4.5 * GREEN * PARTLY CLOUDY * 2/8 *
* SEA * SLIGHT; WAVES 0.5-1.25M * * NO * ICE * OIL * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
* COMMENTS * NS, OP 0-2, 4, 8, 12M, HC 0.50, 100M, GP 0-2M, SES 2-4M * * * * *

Table with columns: DEPTH, SAL, DENS, SIGMA-T, O2, H2S, ML/L, O2-SAT, TO2P, TO4P, DRGP, TOTN, MICROGR., NH4N, NO3N, TOC, ORGN, FE. Rows show data for depths 0, 4, 8, 12, 16, 20, 30, 40, 50, 60, 80, 100, 150, 200 meters.

Table with columns: DEPTH, RATIO, TOC, TOTN, TO4P, TOTP, Hg, Pb, Cu, Zn, Ni, Mn, Cd, Cr, Ni, Fe. Rows show data for depths 0, 4, 8, 12, 16, 20, 30, 40, 50, 60, 80, 100, 150, 200 meters.

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
**COUNTRY *INSTITUTION *SHIP *PROJECT *LOCATION *STATION *NORTH *EAST *DEPTH *DATE *TIME *
**NORWAY *NIVA *HHGRAN *0-111/70 *GUNNEKLEIVFJORD *G-1 *59,7.1 *9,38.7 *4 *750918 *15 *
**WIND *DIRECTION *DEG.CELS *DEPTH *M *WEATHER *CLOUDS *
**SPEED *M/S *DRY *WET *M *NOT OBSERVED *NOT OBSERVED *
**SEA *ICE *NOT OBSERVED *NOT OBSERVED *BATHY-SLIDE *SALINOTHERM *
**NOT OBSERVED *NOT OBSERVED *OIL *WRECK *SEA-WEED *NH4N *MG/L *
**COMMENTS *TEMP 0.3M+SALT OM BY SLN *
*****

```

```

*****
**DEPTH *TEMP. *SAL. *DENS. *02 *H2S *02-SAT *T01P *P04P *ORGP *TOTN *NO3N *NH4N *ORGN *MG/L * *
**M *DEG.C *O/OO *SIGMA-I *ML/L *ML/L *O/O * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**VT. * *VH. * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**0 15.50 6.300 3.989 4.500 4.62 69.9 11 3 8 3800 650 2050 1100 1.65
**3 16.00 7.090 4.500 4.62
*****

```

```

*****
**DEPTH * RATIOS *MOL/MOL *HEAVY METALS * * * * *
**M *NO3/ *P04 *TOTN *TOC/ *TOTP *TOTN *TOTP *CU *Zn *MN *NI *CR *F *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**0 479 1 387 764 1.01 1.12 1.3 3.1 2.0 6.00 <0.10 <0.04 <2.0 <1.0 0.14
**3 479 1 387 764 1.01 1.12 1.3 3.1 2.0 6.00 <0.10 <0.04 <2.0 <1.0 0.12
*****
< *LESS THAN VALUE
*****

```


77.5.31-16:38:35 PAGE:6

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

 *COUNTRY *INSTITUTION *SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
 * NORWAY *NIVA * FRIERFJORD * 0-111/70 * FRIERFJORD * BCI *59,6.4 * 9,37.1 * 95 * 751029 * 1045 *
 * WIND *AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
 * SPEED * DIRECTION * DES.CELS * WET * DRY * DEPTH * M * FOG, THICK DUST OR HAZE * NOT OBSERVED *
 * M/S * (0-36) * DRY * 9.1 * 5.2 * YELLOW/GREEN * * OIL * WRECK * SEA-WEED *RATHY-SLIDE *SALINOTHERM *
 * 0.0 *
 *SEA * CALM; WAVES 0.0M * ICE * NO *
 * COMMENTS * NS OP 0-2,4M GP 0-2M *

 ** DEPTH * TEMP. * SAL. * O/100 * SIGMA-T * VI. * DENS. * H2S * O2-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
 ** M * DEG.C * O/100 * VH. * * ML/L * * * ML/L * * O/O * TOTP * P04P * ORGP * TOTN * N03N * NH4N * ORGN * MG/L * * * *
 ** 0 8.60 4.269 3.314 6.51 82.0 17 9 8 1400 470 280 650 2.90
 4 11.59 22.678 17.168 0T
 8 13.73 30.660 22.933 3.85 64.2
 12 13.81 31.541 23.595 3.77 63.3
 16 13.51 31.932 23.957 3.74 62.6
 20 13.48 32.297 24.244 4.00 67.0
 25 13.02 32.737 24.676 3.92 65.3
 30 7.30 33.267 26.056 1.41 20.8
 40 6.63 33.822 26.583 0.22 3.2
 50 6.59 33.838 26.600 (0.00)
 60 6.59 33.842 26.604 0.21
 80 6.57 33.854 26.616 0.14
 90 6.57 33.862 26.622 0.14

 ** DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * * * *
 ** M * N03/ * TOC/ * TOTN/ * HG * PB * CU * ZN * MN * NI * CR * F *
 ** * P04 * TOTN * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MG/L *
 ** 0 115 2 440 182
 4
 8
 12
 16
 20
 25
 30
 40
 50
 60
 80
 90

 (*) : UNCERTAIN VALUE *****

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * NIVA * * * 0-111/70 * FRIERFJORD * DD1 * NORTH * EAST * M * * *
* WIND * DIRECTION * DEG.CELS * DEPTH * SECCHI-DISC * WEATHER * * * * *
* SPEED * DRY * WET * * * * *
* M/S * 7.3 * * * * *
* U.O * * * * *
* SEA * * * * *
* CALM; WAVES 0.0M * * * * *
* COMMENTS * * * * *
* NS OP 0-2,4M GP 0-2M * * * * *
*****

```

```

*****
* : DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
* : M * DEG.C * O/00 * SIGMA-T * ML/L * * O/O * TOTP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * MG/L * * *
* : * * VI. * * VH. * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
0 9.10 4.257 3.263 16.662 5.07 83.0 14 8 6 1200 450 205 545 3.00
4 12.46 22.208 16.662 5.07 78.1
8 13.81 30.795 23.020 3.85 64.4
12 13.82 31.618 23.652 3.70 62.2
16 13.96 32.212 24.081 4.40 74.4
20 13.90 32.594 24.357 4.37 74.0
25 13.65 33.088 24.820 4.81 81.3
30 6.94 33.482 26.274 1.04 15.2
40 6.60 33.822 26.587 0.19 2.8
55 6.58 33.858 26.617 0.40 5.8
*****

```

```

*****
* : DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * *
* : M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
0 124 3 553 190
4
8
12
16
20
25
30
40
55
*****

```

```

*****
** COUNTRY * NORWAY
** INSTITUTION * NIVA
** PROJECT * 0-111/70
** LOCATION * FRIERFJORD
** STATION * EEI
** POSITION * NORTH * 59.3.2 * EAST * 9.40.6
** DEPTH * 57 * M * 751029 * TIME * 1415
** WEATHER * CLOUDS
** WIND DIRECTION * (0-36) * 7.2
** WIND * DRY *
** AIR TEMP. * 3.5
** DEPTH * 3.5 * M
** SECCHI-COLOUR * YELLOW/GREEN
** DEPTH * 3.5 * M
** FOG, THICK DUST OR HAZE * NOT OBSERVED
** SEA * RIPPLED; WAVES 0.0-0.1M * NO
** COMMENTS * NS GP 0-2,4M GP 0-2M
*****

```

```

*****
** DEPTH * 0 * M
** TEMP. * 9.00 * DEG.C * 9.84 *
** SAL. * 30.367 *
** O/00 * 31.436 *
** H2S * 4.43 * ML/L *
** 02 * 4.43 * ML/L *
** 02-SAT * 84.3 * O/0 *
** DENS. * 24.350 *
** SIGMA-T * 24.807 *
** VT. * 24.877 *
** 02 * 5.18 *
** 02 * 5.18 *
** 02 * 5.10 *
** 02 * 5.33 *
** 02 * 5.18 *
** 02 * 5.18 *
** 02 * 5.18 *
*****

```

```

*****
** DEPTH * 0 * M
** RATIO5 * 113
** TOC/ * 2
** TOIN * 186
** MOL/MOL * 360
*****
** DEPTH * 0 * M
** RATIO5 * 113
** TOC/ * 2
** TOIN * 186
** MOL/MOL * 360
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTE * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * * * * * 0-1111/70 * BREVIKFJORD * * NORTH EAST * 104 * 751029 * 1510 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * DIRECTION * (0-36) * DRY * WEI * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * M/S * 0.0 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * RIPPLED; WAVES 0.0-0.1M * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS *
* NS OP 0-2.4, 8, 12M
*****

```

```

*****
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : DEPTH * M * 0 * 4 * 8 * 12 * 16 * 20 * 25 * 30 * 40 * 50 * 60 * 80 * 100 *
* : * SAL. * 34.769 * 34.994 * 34.262 * 34.589 * 34.842 * 33.037 * 33.209 * 33.342 * 33.650 * 33.705 * 33.916 * 34.057 *
* : * DEG.C * 10.00 * 13.46 * 13.83 * 13.53 * 13.62 * 13.77 * 13.90 * 13.91 * 13.94 * 13.61 * 13.10 * 8.99 * 6.58 *
* : * VI. * 14.769 * 29.994 * 32.262 * 32.589 * 32.842 * 33.037 * 33.209 * 33.342 * 33.650 * 33.705 * 33.916 * 34.057 *
* : * H2S * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 * 0.0 *
* : * O2-SAT * 63.7 * 81.8 * 88.6 * 95.8 * 93.6 * 86.4 * 89.3 * 89.4 * 92.1 * 86.5 * 89.5 * 71.5 * 46.0 *
* : * TOTP * 18 * 11 * 7 * 1200 * 370 * 190 * 640 * 2.00 *
* : * P04P * 7 * 11 * 7 * 1200 * 370 * 190 * 640 * 2.00 *
* : * MICROGR./L * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * TOC * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * NH4N * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * ORGN * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * FE * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

```

```

*****
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : DEPTH * M * 0 * 4 * 8 * 12 * 16 * 20 * 25 * 30 * 40 * 50 * 60 * 80 * 100 *
* : * RATIO5 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * TOC/ * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * TOTN * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * TOTP * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * H2S * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * O2-SAT * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * TOTP * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * P04 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * NI * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * CR * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * MG/L * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * F * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : * MG/L * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

```


MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
** COUNTRY          ** INSTITUTION ** SHIP          ** PROJECT ** LOCATION ** STATION ** POSITION ** DEPTH ** DATE ** TIME **
**                **            **             **         **         **        **        **      **
** NORWAY          ** NIVA       ** HHGRAN      ** 0-1111/70 ** FRIERFJORD ** DDI      ** NORTH  ** * 60 ** 751216 ** 1210 **
*****
** WIND            ** AIR TEMP. ** SECCHI-DISC ** WEATHER ** CLOUDS **
**                **             **             **         **
** SPEED          ** DEPTH     ** M          ** CONTINUOUS LAYER OF CLOUDS **
** M/S           ** (0-36)   **          ** WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM *
** 5.2          ** 27      **          ** * NO * NO * - *
*****
** SEA            ** WAVES 0.1-0.5M ** ICE
** SMOOTH        **          ** NO
*****
** COMMENTS
** NS 0.5M, OP 0-2.4M, GP 0-2M
*****

```

```

*****
** DEPTH * M          ** SAL. *          ** DENS. *          ** H2S *          ** 02-SAT *          ** O2 *          ** TOTP *          ** P04P *          ** ORGP *          ** T0TN *          ** NO3N *          ** NH4N *          ** ORGN *          ** MG/L *          ** *          ** ITC *          ** *          ** FE *          ** *          **
** 0      ** 4.80 ** 5.088 ** 4.165 ** 68.4 ** 85.0 ** 14 ** 8 ** 6 ** 2800 ** 510 ** 285 ** 2005 ** 3.35 **
** 4      ** 9.18 ** 21.810 ** 16.851 ** 4.79 ** 68.4 ** 33 ** 29 ** 4 ** 2400 ** 320 ** 245 ** 1835 ** 1.60 **
** 8      ** 11.32 ** 32.221 ** 24.599 ** 4.17 ** 66.7 ** 33 ** 33 ** 0 ** 255 ** 130 ** <10 ** >115 ** 1.90 **
** 12     ** 10.86 ** 32.579 ** 24.958 ** 4.20 ** 66.7 ** 32 ** 32 ** 0 ** 220 ** 110 ** <10 ** >100 ** 1.00 **
** 16     ** 9.85  ** 32.793 ** 25.297 ** 5.30 ** 82.4 ** 22 ** 22 ** 0 ** 205 ** 90 ** <10 ** >105 ** 1.20 **
** 20     ** 9.65 ** 32.960 ** 25.460 ** 5.48 ** 85.0 ** 32 ** 31 ** 1 ** 190 ** 70 ** <10 ** >110 ** 0.85 **
** 25     ** 9.39 ** 33.233 ** 25.716 ** 5.52 ** 85.2 ** 110 ** 130 ** -20 ** 170 ** 10 ** 65 ** 95 ** 1.30 **
** 30     ** 9.11 ** 33.463 ** 25.940 ** 5.04 ** 77.4 ** 2.2 **
** 40     ** 6.94 ** 33.800 ** 26.524 ** 0.15 **
** 55     ** 6.61 ** 33.835 ** 26.595 **
*****

```

```

*****
** DEPTH * M          ** RATIO5 *          ** NUTRIENTS *          ** MICROGR./L *          ** *          ** ITC *          ** *          ** FE *          **
**                ** N03/   *          **          *          **          *          **          *          **          *          **
**                ** TOTP  *          **          *          **          *          **          *          **          *          **
** 0      ** 141 ** 617 ** 442 **          *          **          *          **          *          **          *          **
** 4      ** 24  ** 125 ** 161 **          *          **          *          **          *          **          *          **
** 8      ** 9   ** 148 ** 17  **          *          **          *          **          *          **          *          **
** 12     ** 8   ** 81  ** 15  **          *          **          *          **          *          **          *          **
** 16     ** 9   ** 141 ** 21  **          *          **          *          **          *          **          *          **
** 20     ** 5   ** 69  ** 13  **          *          **          *          **          *          **          *          **
** 25     ** 0   ** 30  ** 3   **          *          **          *          **          *          **          *          **
** 30     **          **          **          **          *          **          *          **          *          **          *          **
** 40     **          **          **          **          *          **          *          **          *          **          *          **
** 55     **          **          **          **          *          **          *          **          *          **          *          **
*****

```

< * LESS THAN VALUE
* GREATER THAN VALUE

COUNTRY *INSITUITION *SHIP ** PROJECT ** LOCATION ** STATION ** POSITION ** DEPTH ** DATE ** TIME **
* NORWAY *NIVA ** HYGAN ** 0-11170 ** EIDANGERFJORD ** BN-1 ** 59.6.1 ** 9,42.7 ** 751217 **
* SPEED WIND ** AIR TEMP. ** DEPTH M ** WEATHER ** CLOUDS **
* M/S (0-36) ** DRY ** WET ** M ** NOT OBSERVED ** NOT OBSERVED **
* SEA * NOT OBSERVED ** ICE ** NOT OBSERVED ** * OIL * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM **
* SURFACE STATION ** COMMENTS ** * * * * *
** * * * * *

** DEPTH * TEMP. * SAL. * H2S * O2 * 02-SAT * NUTRIENTS ** MICROGR./L ** TOC * FE **
* M * DEG.C * O/00 * SIGMA-T * ML/L * * O/0 * TOTP * P04P * ORGP * TOTN * N03N * NH4N * ORGN * MG/L * * *
* 0 1.60 17.978 14.434 35 33 32 1400 320 105 975 1.65

** DEPTH * RATIOS MOL/MOL ** HEAVY METALS **
* M * NO3/ TOC/ TOTN/ * HG * CU * ZN * CD * MN * NI * CR * F *
* 0 21 122 88
* () UNCERTAIN VALUE

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.31-16.39:36 PAGE:8

***** COUNTRY *INSITUITION *SHIP *HHGRAN *NORWAY *INSITUITION *SHIP *HHGRAN *NORWAY *WIND DIRECTION * (0-36) * DRY * 3.0 * SPEED M/S * 3.0 * SEA *HIPPLD; WAVES 0.0-0.1M * COMMENTS * NS 0.5M, QP 0-2,4,3,12M, HC 0.5,4,90M *****

Table with columns: DEPTH, M, TEMP, SAL, DENS, SIGMA-T, H2S, O2, H2O, TO2P, TO4P, ORGP, TO1N, NO3N, NH4N, ORGN, TOC, FE. Includes data for depths 0, 4, 8, 12, 16, 20, 30, 40, 50, 60, 80, 90.

Table with columns: DEPTH, M, NO3P, P04, TO4N, TO1P, TO2, TO3, TO4, TO5, TO6, TO7, TO8, TO9, TO10, TO11, TO12, TO13, TO14, TO15, TO16, TO17, TO18, TO19, TO20, TO21, TO22, TO23, TO24, TO25, TO26, TO27, TO28, TO29, TO30, TO31, TO32, TO33, TO34, TO35, TO36, TO37, TO38, TO39, TO40, TO41, TO42, TO43, TO44, TO45, TO46, TO47, TO48, TO49, TO50, TO51, TO52, TO53, TO54, TO55, TO56, TO57, TO58, TO59, TO60, TO61, TO62, TO63, TO64, TO65, TO66, TO67, TO68, TO69, TO70, TO71, TO72, TO73, TO74, TO75, TO76, TO77, TO78, TO79, TO80, TO81, TO82, TO83, TO84, TO85, TO86, TO87, TO88, TO89, TO90, TO91, TO92, TO93, TO94, TO95, TO96, TO97, TO98, TO99, TO100. Includes data for depths 0, 4, 8, 12, 16, 20, 30, 40, 50, 60, 80, 90.

< * LESS THAN VALUE * GREATER THAN VALUE >

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * 0-111/70
* LOCATION * LANGESUNDSFJORD
* STATION * GHI
* POSITION * NORTH 59,1.3 EAST 9,45.1
* DATE * 751217
* TIME * 1225
* DEPTH * 108
* CLOUDS
* WEATHER
* WIND * AIR TEMP.
* DIRECTION * DEG.CELS
* WET * DRY
* W/S * (0-36)
* SPEED * 36
* PARTLY CLOUDY
* SEA * WAVES 0.1-0.5M
* ICE * NO
* COMMENTS
* NS 0.5M, QP 0-2M
*****

```

DEPTH M	TEMP. * DEG.C	SAL. * O/100	SIGMA-T * KG/D3	DENS. * KG/D3	VI. * %	H2S * ML/L	O2 * ML/L	02-SAT * %	T01P * O/0	PO4P * MICROMOL/L	ORGP * MICROMOL/L	T01N * MICROMOL/L	N03N * MICROMOL/L	NH4N * MICROMOL/L	ORGN * MICROMOL/L	TOC * MG/L	FE * MG/L
0	5.00	13.661		10.884		6.69		82.0	14	.11	3	1800	360	120	1320	1.75	
4	9.10	29.294		22.688		5.48		82.0	21	20	1	2600	140	<50	>2410	0.65	
8	9.16	33.132		25.674		5.70		87.5	19	17	2	245	90	<10	>145	0.45	
12	8.73	33.440		25.982		6.03		91.9	19	17	2	225	70	20	135	0.45	
16	8.65	33.495		26.037		6.18		94.0									
20	8.75	33.639		26.134		6.04		92.2	69	53	16	220	70	40	110	0.45	
30	8.84	33.784		26.234		5.99		91.7	20	18	2	225	70	40	115	0.45	
40	8.94	33.921		26.325		5.99		92.0									
50	9.00	34.019		26.392		5.92		91.1	19	18	1	195	70	20	105	0.55	
60	9.07	34.179		26.506		5.70		87.9	27	28	-1	215	100	15	100	0.45	
80	8.96	34.450		26.735		5.07		78.1	47	44	3	300	160	<10	>130	<0.20	
100	8.15	34.591		26.971		3.73		56.5									

DEPTH M	RATIO5		MOL/MOL		HEAVY METALS										
	NO3/	PO4	TOC/	T01N/	TOC/	T01P/	HG	PB	CU	ZN	CD	MN	NI	CR	F
0	72	1	322	284											
4	15	0	80	274											
8	12	2	61	29											
12	9	2	61	26											
16															
20	3	2	17	7											
30	9	2	58	25											
40															
50	9	3	75	23											
60															
80	8	2	43	18											
100	8	<1	<11	14											

< * LESS THAN VALUE > * GREATER THAN VALUE

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * HIGRAN * O-111/70 * SKIENSELVA * S-1 * *NORTH * 59.11.8 * 9.37.1 * 14 * 751218 * 9
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * DIRECTION * (0-36) * DRY * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * M/S * 0.0 * DEPTH * M * 3.2 * CONTINUOUS LAYER OF CLOUDS * 8/8
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* *SEA * CALM; WAVES 0.0M * ICE * NO * OIL * NO * WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * COMMENTS * TRB+TSM+SUP 0-2,12M * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

```

```

*****
* : DEPTH * TEMP. * SAL. * O2 * DENS. * H2S * 02-SAT * 02 * 02 * 02 * 02 * 02 * 02 * 02 * 02 * 02 * 02 *
* : M * DEG.C * O/100 * SIGMA-T * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L * ML/L *
* : * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 * 3.76 * <2.846 * <2.425 * 7.63 * (84.3) * 13 * 8 * 5 * 1200 * 410 * <50 * >740 * 8.50
* : 12 * 10.20 * 26.427 * 20.291 * 1.63 * 24.5 * 26 * 15 * 11 * 310 * 110 * 95 * 105 * 1.95
*****

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```

*****
* : DEPTH * RATIOS * MOL/MOL * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ *
* : M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 * 113 * 1686 * 204 * 0.13 * <1.0 * 0.9 * 6.00 * <0.10 * <0.04 * * * * * * * * * * * * * * * * * * * * * * * *
* : 12 * 16 * 193 * 26 * 0.28 * <1.0 * 0.4 * 2.50 * <0.10 * 0.11 * * * * * * * * * * * * * * * * * * * * * * * *
* : * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : < * LESS THAN VALUE * > * GREATER THAN VALUE * ( ) * UNCERTAIN VALUE
*****

```

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.31-16.39:43 PAGE:12

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*****
**COUNTRY *INSTITUTION *SHIP ** PROJECT ** LOCATION ** STATION * POSITION * DEPTH * DATE * TIME *
** NORWAY *NIVA *HICRAN ** 0-111/70 ** SKIENSELVA ** S-2 ** *NORTH * EAST * M ** *
** WIND DIRECTION (0-36) ** DRY WET ** DEPTH * COLOUR * SECCHI-DISC * WEATHER * CLOUDS *
** * * * * * 4.0 GREEN * CONTINUOUS LAYER OF CLOUDS * 8/8 *
** * * * * * * ICE *
** * * * * * * NO *
**CALM: WAVES 0.0M *
** COMMENTS *
** TRB+ISM+SUP 0-2,12M *
*****

```

```

*****
** DEPTH * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
** M * DEG.C * O/OO * SIGMA-T * ML/L * * O/O * * TOIP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * MG/L * * *
** 0 * 4.67 * 32.846 * 2.411 * 7.78 * (88.0) * 8 * 6 * 2 * 1200 * 380 * 450 * 770 * 2.90 *
** 12 * 11.26 * 32.509 * 24.833 * 2.48 * 39.7 * 34 * 32 * 2 * 235 * 110 * 115 * 115 * 0.88 *
*****

```

```

*****
** DEPTH * RATIOS * MOL/MOL * HEAVY METALS *
** M * N03/ * TOC/ * TOTN/ * HG * PB * CU * ZN * CD * MN * NI * CR * F * *
** 0 * 140 * 3 * 935 * 332 * 0.06 * 0.9 * 5.80 * 5.80 * <0.10 * <0.04 * * * *
** 12 * 8 * 4 * 67 * 15 * 0.13 * 0.7 * 5.80 * 5.80 * <0.10 * 0.20 * * * *
*****
< *LESS THAN VALUE *
> *GREATER THAN VALUE *
() *UNCERTAIN VALUE *

```

Tokt i 1976

77.5.26-18:17:35 PAGE:5

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
COUNTRY *INSTITUTION *SHIP *PROJECT *LOCATION *STATION *NORTH *EAST *DEPTH *DATE *TIME
* NORWAY *NIVA *HICRAN * 0-11170 * FRIERFJORD * EEI *59,3.2 * 9,40.6 * 57 * 760203 * 1715
*****
WIND *DIRECTION *DRY *WET *AIR TEMP. *SECCHI-DISC *WEATHER *CLOUDS
* SPEED M/S * O.0 * (0-36) * * * * *
*****
SEA * CALM; WAVES 0.0M * IN VICINITY, TYPE/AMOUNT UNKNOWN
*****
* COMMENTS
*****

```

```

*****
* : DEPTH * TEMP. * SAL. * VH. * DENS. * O2 * H2S * O2-SAT * O/O * TOTP * P04P * ORGP * TOIN * NO3N * NO3N * NH4N * ORGN * MG/L * * TOC * FE *
* : M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 0.10 5.609 * 4.559 7.87 80.3 29 24 5 3200 650 660 1890 3.10
* : 4 1.13 6.279 * 5.123 7.47 78.7
* : 8 4.20 32.565 * 25.870 6.85 93.2
* : 12 5.06 32.869 * 26.021 6.53 91.0
* : 16 5.31 32.931 * 26.042 6.56 92.0
* : 20 5.86 33.122 * 26.128 6.31 89.7
* : 25 6.19 33.278 * 26.211 6.16 88.4
* : 30 6.36 33.352 * 26.247 6.02 86.8
* : 40 6.57 33.434 * 26.285 6.02 87.3
* : 50 6.66 33.481 * 26.310 6.02 87.5
*****

```

```

*****
* : DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * * * *
* : M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 60 276 244
* : 4
* : 8
* : 12
* : 16
* : 20
* : 25
* : 30
* : 40
* : 50
*****

```

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* NIVA
* WIND DIRECTION * (0-36)
* SPEED M/S * 0.0
* AIR TEMP. * DEG.CELS
* DEPTH M * 6.5
* SECCHI-DISC COLOUR * GREEN
* WEATHER * CLEAR
* STATION * NORTH * 59,2.8
* POSITION * EAST * 9,43.2
* DATE * 760203
* TIME * 16
* DEPTH * 104
* CLLOUDS
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM
* OIL * NO
* NO
* IN VICINITY, TYPE/AMOUNT UNKNOWN
* ICE
* WAVES 0.0M
* CALM: WAVES 0.0M
* COMMENTS
*****

```

```

*****
* TEMPERATURE * SAL. * DENS. * 02 * H2S * 02-SAT * NUTRIENTS
* DEPTH * M * DEG.C * VH. * ML/L * ML/L * O/O * IOTP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * MG/L * * TOC * FE
* VI. * 1.40 * 15.251 * 12.265 * 7.32 * 82.6 * 26 * 22 * 4 * 2600 * 430 * 385 * .1785 * 2.00
* 4 * 3.28 * 32.146 * 25.623 * 6.89 * 91.4
* 8 * 3.84 * 32.468 * 25.828 * 7.18 * 96.8
* 12 * 4.39 * 32.686 * 25.947 * 6.85 * 93.8
* 16 * 4.71 * 32.857 * 26.049 * 6.53 * 90.2
* 20 * 5.44 * 33.040 * 26.113 * 6.49 * 91.3
* 25 * 6.49 * 33.375 * 26.249 * 5.95 * 86.0
* 30 * 7.13 * 33.621 * 26.357 * 5.73 * 84.2
* 40 * 8.05 * 34.039 * 26.554 * 5.29 * 79.7
* 50 * 7.49 * 34.102 * 26.685 * 5.44 * 80.9
* 60 * 7.43 * 34.212 * 26.780 * 5.22 * 77.6
* 80 * 6.69 * 34.188 * 26.863 * 5.87 * 85.7
* 100 * 6.08 * 34.192 * 26.945 * 6.53 * 94.0
*****

```

```

*****
* RATIO5 * TOC/ * TOC/ * MOL/MOL
* DEPTH * M * NO3/ * P04 * TOTN/ * TOTN/ * IOTP * IOTP * HG * PB * CU * ZN * CD * NI * CR * F
* 0 * 43 * 1 * 198 * 221
* 4
* 8
* 12
* 16
* 20
* 25
* 30
* 40
* 50
* 60
* 80
* 100
*****

```

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
*COUNTRY *INSTITUTION *SHIP *PROJECT *LOCATION *STATION *NORTH *EAST *DEPTH *DATE *TIME
*NORWAY *NIVA *HHGRAN *0-111/70 *LANGESUNDSFJORD *GHI *59.1.3 *9.45.1 *108 *760204 *1130
*****
*WIND *DIRECTION *DRY *WET *AIR TEMP. *SECCHI-DISC *WEATHER *CLOUDS
*0-36 *36 * * * * * * *
* * * * * * * * * * * * * * * * *
*SPEED *M/S *3.6 * * * * * * * * * * *
* * * * * * * * * * * * * * * * *
*SEA *RIPPLED; WAVES 0.0-0.1M *IN VICINITY, TYPE/AMOUNT UNKNOWN *OIL *NO *SEA-WEED *BATHY-SLIDE *SALINOTHERM
*****
*COMMENTS
*****

```

```

*****
*DEPTH *M *TEMP. *DEG.C *SAL. *VT. *SIGMA-T *O/0 *H2S *02-SAI *T0TP *P04P *ORGP *TOTN *NO3N *NH4N *MICOGR./L *TOC *MG/L *FE
*0 *4 *8 *12 *16 *20 *30 *40 *50 *60 *80 *100
*1.20 *2.66 *3.54 *3.82 *4.50 *4.83 *6.54 *6.90 *7.32 *6.85 *6.33 *6.06
*16.865 *31.560 *32.444 *32.607 *32.766 *32.891 *33.441 *33.730 *34.133 *34.168 *34.152 *34.199
*7.40 *25.206 *25.837 *25.940 *25.999 *26.063 *26.294 *26.474 *26.733 *26.825 *26.882 *26.953
*84.0 *93.4 *92.2 *92.0 *90.6 *93.4 *86.2 *86.5 *81.6 *89.2 *94.0
*21 *19 *2 *2600 *360 *230 *2010 *2.55
* * * * * * * * * * * * * * * * *

```

```

*****
*DEPTH *M *RATIO5 *N03/ *P04 *TOC/ *TOTN *MOL/MOL *TOC/ *TOTP *TOC/ *TOTN *TOTP *TOTN *PB *MYG/L *HG *MYG/L *CU *MYG/L *Zn *MYG/L *CD *MYG/L *Mn *MYG/L *Ni *MYG/L *CR *MYG/L *F *MG/L
*0 *4 *8 *12 *16 *20 *30 *40 *50 *60 *80 *100
*42 *1 *313 *274
* * * * * * * * * * * * * * * * *

```

S *SPOILED OR DAMAGED SAMPLE

COUNTRY	INSITUITION	SHIP	PROJECT	LOCATION	STATION	POSITION	DEPTH	DATE	TIME
NORWAY	NIVA	HIGHAN	0-111/70	FRIERFJORD	BCI	NORTH EAST 59.6.4 9,37.1	90	760316	10
WEATHER * WEATHER * CLOUDS									
SPEED * WIND * AIR TEMP. * SECCHI-DISC * CLEAR * NO									
M/S * DRY * WEI * M * DEPTH * COLOUR * YELLOW/GREEN * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTERM									
SEA * CALM; WAVES 0.0M * ICE * CLOSE PACK ICE < 1 NAUT.MILE DISTANT * NO * NO * - * +									
COMMENTS * NS, GP 0-2M, QP 0-2.4M, SES IN PYC, MCL, HC 0.5, 4M									
DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAT	0/0	TOTP	NUTRIENTS
M	DEG.C	O/00	ML/L	ML/L	ML/L				
	VI.	VH.							
0	0.70	4.572	3.754	8.79	90.5	34	22	12	2000
4	1.88	17.299	13.887	7.90	91.5	36	25	11	1800
8	2.67	29.251	23.366	7.75	99.3	21	11	10	295
12	4.76	31.209	24.740	6.05	82.8	38	32	6	340
16	6.30	32.800	25.820	5.06	72.6		52	6	265
20	7.49	33.338	26.085	3.93	58.2		70	6	255
30	6.96	33.600	26.364	2.67	39.1	76			
40	6.84	33.741	26.491	0.52	7.6				
50	6.72	33.780	26.538			150	100	50	180
60	6.58	33.792	26.566		0.30	140	100	40	200
80	6.58	33.811	26.580		0.78				
90	6.59	33.787	26.560		0.99	170	130	40	270
MICROGR./L * TOC * MG/L * NH4N * ORGN * FE									
MICROGR./L * TOC * MG/L * NH4N * ORGN * FE									
HEAVY METALS									
DEPTH	RATIOS	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/
M	N03/	P04	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/
0	65	42	1	161	111	31	20	0.14	0.18
4	42	12	6	190	31	20	0.04	0.08	0.62
8	12	8	4	78	20	0.18	0.04	0.08	0.18
12	8	6	4	44	10	1.18	0.04	0.08	0.18
16	6	4	4	34	7	1.21	0.08	0.08	0.18
20	4	4	5	44	10	1.24	0.08	0.08	0.18
30	4	4	5	34	7	1.21	0.08	0.08	0.18
40	<0	7	19	19	3	1.24	0.44	0.44	0.18
50	<0	7	21	21	3	1.21	0.43	0.43	0.18
60	<0	7	21	21	3	1.24	0.43	0.43	0.18
80	<0	5	17	17	4	1.24	0.37	0.37	0.18
90	<0	5	17	17	4	1.24	0.37	0.37	0.18
* LESS THAN VALUE > * GREATER THAN VALUE									

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.26-18:18:28 PAGE:5

COUNTRY *NORWAY
 INSTITUTION *NIVA
 PROJECT *0-111/70
 LOCATION *FRIERFJORD
 STATION *EE1
 POSITION *NORTH *EAST
 DEPTH *59,3.2 *9,40.6 *57 *760316 *1430
 DATE *760316 *1430
 TIME *1430
 WEATHER *CLEAR
 CLOUDS *NO
 AIR TEMP. *3.5
 DEG.CELS *3.5
 WIND *3.5
 DIRECTION *GREEN/YELLOW
 (0-36) *3.5
 WET *M
 DRY *M
 DEPTH *3.5
 COLOUR *GREEN/YELLOW
 *OPEN PACK ICE <1 NAUT. MILE DISTANT
 *ICE
 *SEA
 *SMOOTH; WAVES 0.1-0.5M
 *COMMENTS
 *NS, GP 0-2.4M, GP 0-2M, HC 0.5M+PYC, SES IN PYC, PEN, MCL

DEPTH M	VI	SAL.	TEMP. DEG.C	DENS.	SIGMA-T	H2S ML/L	O2 ML/L	02-SAT	TOTP	PO4P	ORGP	TOIN	NO3N	NH4N	ORGN	TOC MG/L	FE
0	1.30	4.252	8.74	16.974	3.517	8.74	91.3	28	12	16	1800	580	310	910	3.80	60.0	
4	1.55	21.162	8.48	22.922	15.974	8.48	100.0	20	13	7	1600	230	165	1205	2.00	60.0	
8	1.90	28.633	8.55	24.798	22.922	8.55	107.0	12	5	7	235	30	40	165	1.85	10.0	
12	3.82	31.169	7.28	25.612	24.798	7.28	97.3	21	15	6	240	80	<10	>150	1.45	40.0	
16	4.88	32.328	6.60	26.174	25.612	6.60	91.2	36	27	9	250	110	<10	>130	1.05	60.0	
20	5.52	32.826	6.04	26.174	25.935	6.04	85.0	35	29	6	245	120	<10	>115	1.20	20.0	
25	5.69	33.154	5.74	26.266	26.174	5.74	81.3	34	27	7	250	140	<10	>100	0.90	30.0	
30	5.82	33.290	5.78	26.675	26.266	5.78	82.2	34	27	7	250	140	<10	>100	0.90	30.0	
40	5.96	33.830	6.08	26.709	26.675	6.08	87.1	34	27	7	250	140	<10	>100	0.90	30.0	
50	6.03	33.885	6.00	26.709	26.709	6.00	86.1	34	27	7	250	140	<10	>100	0.90	30.0	

HEAVY METALS

DEPTH M	TOC/ TOTP	TOIN/ TOTP	HG	PB	CU	ZN	MN	NI	CR	F
0	350	142	0.10	1.3	1.5	8.90	0.07	0.19	0.19	0.83
4	258	177	0.21	3.2	1.2	6.40	<0.04			
8	398	43								
12	178	25								
16										
20	75	15								
25										
30	88	15								
40										
50	68	16	0.37	1.9	1.3	3.00	0.07	1.25		

< *LESS THAN VALUE > *GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

*COUNTRY *NORWAY
 *INSTITUTION *SHIP *MIVA
 *PROJECT *0-111/70 *EIDANGERFJORD
 *LOCATION *NORTH *59,4.6 *EAST *9,42.5
 *DATE *760317 *16
 *DEPTH *96 *M
 *STATION *DF1
 *WEATHER *CLOUDS
 *WIND *AIR TEMP. *WRECK *SEA-WEED *BATHY-SLIDE *SALINOTHERM *2/8
 *DIRECTION *DEG.CELS *DRY *WET *LIGHT-GREEN
 *COLOUR *7.0
 *PARTLY CLOUDY
 *NO *ICE *OPEN PACK ICE <1 NAUT. MILE DISTANT
 *SEA *RIPPLED! WAVES 0.0-0.1M
 *COMMENTS *NS, OP 0-2,4,8,12M, SES IN PYC, MCL
 *

DEPTH M	TEMP.	SAL.	DEG.C	SIGMA-T	DENS.	02	H2S	02-SAT	TOTIP	P04P	ORGP	TOTN	N03N	MICROGR./L	NH4N	ORGN	TOC	FE
0	0.80	14.692			11.823	8.96	99.1	16	8	8	8	1400	340	135	925	925	2.35	10.0
4	2.16	27.344			21.878	8.51	106.3	16	6	6	10	1000	60	15	925	925	1.60	<10.0
8	2.27	28.810			23.041	8.28	104.7	20	6	6	14	245	40	10	195	195	1.50	<10.0
12	2.80	29.833			23.820	8.09	104.4	16	7	7	9	210	30	<10	>170	>170	1.60	30.0
16	3.99	31.727			25.226	7.11	95.8				9	250	120	<10	>120	>120	0.95	10.0
20	5.10	32.741			25.915	6.20	86.4	31	22	22	9	270	110	<10	>150	>150	0.80	20.0
30	6.38	34.222			25.930	5.93	86.0	34	25	25	9							
40	6.04	34.442			27.147	6.54	94.2		20	20	8	230	100	<10	>120	>120	0.70	10.0
50	6.05	34.571			27.261	6.62	95.5	28										
60	5.97	34.658			27.327	6.58	94.9	30	22	22	8	230	110	10	110	110	0.50	40.0
80	6.10	34.764			27.394	6.46	93.4	32	23	23	9	240	110	10	120	120	1.10	50.0

*HEAVY METALS
 *MOL/MOL
 *P04 TOC/TOCP *HC MYG/L *PB MYG/L *CU MYG/L *Zn MYG/L *CD MYG/L *MN MG/L *NI .MYG/L *CR MYG/L *F MG/L *

0	94	2	379	193	0.32	<1.0	0.9	3.40	0.05	<0.04								0.67	
4	22	2	258	138	0.48	<1.0	1.3	1.50										1.07	
8	15	7	193	27															
12	9	9	258	29															
16																			
20	12	4	79	18															
30	10	3	61	18															
40																			
50	11	4	64	18															
60																			
80	11	3	43	17															
90	11	5	89	17	0.23	<1.0	1.0	1.40	0.04										1.29

< *LESS THAN VALUE
 > *GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * * HHGRAN * 0-111/70 * SKIENSELVA * S-1 * * NORTH * EAST * M * *
* WIND * * AIR TEMP. * * DEPTH * SECCHI-DISC * WEATHER * * CLOUDS *
* M/S * DIRECTION * DEG.CELS * WET * M * COLOUR * * * * *
* * * * * * * 4.0 * GREY-GREEN * * CLEAR * * NO *
* SEA * * * * * * * * * * * * * * * * * * * * * * * *
* CALM: WAVES 0.0M * * ICE * * IN VICINITY, TYPE/AMOUNT UNKNOWN * * * * * * * * * * * * * * * *
* COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
    
```

HC 0.5,5,10M, TRB+TSM+SUP 0-2M

```

*****
*! DEPTH * TEMP. * SAL. * O/OO * SIGMA-T * ML/L * * 02 * H2S * 02-SAT * O/O * TOTP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * MG/L * * TOC * FE *
* M * * VI. * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 0 * 1.00 * 21.186 * 2.800 * 2.355 * 8.80 * * * 7 * 2 * 1600 * 420 * <10 * >1170 * 7.00 * 50.0
* 5 * 1.32 * 2.800 * 2.365 * 8.66 * * * 5 * 6 * 1600 * 410 * <10 * >1180 * 5.00 * 20.0
* 10 * 2.22 * 21.186 * 16.969 * 5.09 * * * 25 * .18 * 415 * 180 * 35 * 200 * 2.35 * 20.0
    
```

```

*****
*! DEPTH * RATIOS * MOL/MOL * * * * * * * * * * * * * * * * * * * * * * * * *
*! * * N03/ * TOC/ * TOC/ * TOTN/ * HG * PB * CU * ZN * MN * NI * CR * F *
* * * P04 * TOTN * TOTP * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * *
* 0 * 133 * 5 * 2006 * 393 * 0.06 * <1.0 * 0.9 * 6.30 * <0.10 * <0.04 * <1.0 *
* 5 * 181 * 4 * 1172 * 322 * 0.15 * 1.8 * 1.3 * 35.00 * 0.20 * <0.04 * <1.0 *
* 10 * 16 * 7 * 141 * 21 * 0.11 * <1.0 * 0.8 * 4.20 * <0.10 * 0.12 * <1.0 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
    
```

> : GREATER THAN VALUE

() : UNCERTAIN VALUE

< : LESS THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * DDI
* POSITION * NORTH * 59,4.6 * EAST * 9,38.6
* DATE * 760428
* TIME * 12
* WIND *
* DIRECTION *
* (0-36) *
* SPEED * 3.3
* M/S *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* DEPTH *
* M *
* 4.5
* COLOUR * BROWN
* SECCHI-DISC *
* WEATHER *
* PARTLY CLOUDY
* OIL *
* NO *
* SEA *
* WAVES * 0.1-0.5M
* NO *
* COMMENTS *
* NS OP 0-2,4M CP 0-2M
*****

```

```

*****
* DEPTH * 0
* M *
* TEMP. * 4.20
* DEG.C * 4.39
* VT. * 5.23
* SAL. * 26.712
* O/00 * 28.152
* 36 * 31.035
* VH. * 32.817
* 20 * 33.434
* 25 * 33.508
* 30 * 33.586
* 40 * 33.727
* 55 * 33.727
* DENS. * 3.494
* SIGMA-I * 6.071
* 21.140
* 22.388
* 24.642
* 25.900
* 26.243
* 26.351
* 26.492
* 26.551
* H2S * 8.64
* ML/L * 8.38
* 7.82
* 7.49
* 6.00
* 5.36
* 3.28
* 3.50
* 0.78
* O2-SAT * 97.5
* O/O * 105.0
* 93.6
* 81.2
* 75.9
* 47.9
* 51.8
* 50.0
* 11.3
* NUTRIENTS *
* TOTP *
* P04P *
* ORGP *
* TOTN *
* NH4N *
* MICROGR./L *
* TOC *
* MG/L *
* FE *
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * INSTITUTE * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * * * * * 0-11170 * EIDANGERJORD * DF1 * *NORTH * EAST * M * * 96 * 760427 * 14 *
* WIND * DIRECTION * AIR TEMP. * DEPTH * SECHI-DISC * WEATHER * CLOUDS *
* * (0-36) * DEG.CELS * M * * * PARTLY CLOUDY * * 2/8 *
* * * DRY * WET * * * * * * *
* * * * * * * * * *
*SEA *
*SM(X)TH: WAVES 0.1-0.5M * NO * * * * *
* * * * *
* COMMENTS *
* NS OP 0-2,4,8,12M *
*****

```

DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAT	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/O	M/L	M/L	M/L	O/O	S	S	S		NO3N	NH4N	ORGN	MG/L	MG/L
0	5.90	25.723	20.295	8.90	120.7		S	S		600	10	(25)	(565)	2.40	
4	5.89	25.749	20.316	8.94	121.3										
8	5.86	25.964	20.488	9.05	122.8										
12	5.13	27.030	21.401	8.20	110.1										
16	4.46	29.322	23.275	7.67	102.9										
20	4.73	32.337	25.635	6.71	92.4										
30	5.21	33.559	26.550	6.63	93.1										
40	5.43	34.041	26.905	6.78	96.0										
50	5.79	34.320	27.082	6.78	97.0										
60	5.85	34.528	27.239	6.74	96.7										
80	6.06	34.720	27.364	6.26	90.4										
90	6.05	34.732	27.375	6.33	91.4										

DEPTH	RATIOS	MO/L MOL	HEAVY METALS								
M	NO3/	TOC/	TOIN/	HG	PB	CU	ZN	MN	NI	CR	F
	P04	TOIN	TOTP	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
0	5										
4											
8											
12											
16											
20											
30											
40											
50											
60											
80											
90											

() :UNCERTAIN VALUE S :SPOILED OR DAMAGED SAMPLE

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.26-18:38:47 PAGE:8

```

*****
* COUNTRY      * INSTITUTION * SHIP
* NORKAY      * NIVA      *
* PROJECT     * 0-111/70 * BREVIKFJORD
* LOCATION    *          *
* STATION     *          * NORTH      * POSITION   * DATE     * TIME
*          *          *          *          *          *          *          *
* FGI         *          *          *          *          *          *          *
*          *          *          *          *          *          *          *
* WEATHER     *          *          *          *          *          *          *
*          *          *          *          *          *          *          *
* PARTLY CLOUDY
*          *          *          *          *          *          *          *
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM
*          *          *          *          *          *          *          *
*          *          *          *          *          *          *          *
* OIL      *          *          *          *          *          *          *
*          *          *          *          *          *          *          *
*          *          *          *          *          *          *          *
*          *          *          *          *          *          *          *
*****
* SMOOTH; WAVES 0.1-0.5M
* ICE
* NO
* COMMENTS
* NS OP 0-2,4,8,12M
*****

```

```

*****
* DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * 02-SAT * TO1P * P04P * ORGP * TOTN * N03N * NH4N * ORGN * *MG/L * * TOC * * FE *
* M      * DEGC * O/00 * SIGMA-T * ML/L * ML/L * O/O * O/O * * * * * * * * * * *
*          *          *          *          *          *          *          *          *          *          *          *          *          *
* 0      * 5.50 * 13.413 * 10.659 * 8.34 *          * 103.3 *          *          *          *          *          *          *
* 4      * 5.83 * 25.764 * 20.334 * 8.31 *          * 112.6 *          *          *          *          *          *          *
* 8      * 5.63 * 26.323 * 20.794 * 7.90 *          * 106.9 *          *          *          *          *          *          *
* 12     * 5.23 * 27.334 * 21.631 * 7.86 *          * 106.0 *          *          *          *          *          *          *
* 16     * 4.59 * 30.278 * 24.020 * 6.85 *          * 92.7 *          *          *          *          *          *          *
* 20     * 5.01 * 32.723 * 25.911 * 6.18 *          * 85.9 *          *          *          *          *          *          *
* 25     * 5.09 * 33.336 * 26.337 * 6.44 *          * 90.0 *          *          *          *          *          *          *
* 30     * 5.20 * 33.798 * 26.740 * 6.44 *          * 90.6 *          *          *          *          *          *          *
* 40     * 5.36 * 34.170 * 27.015 * 6.48 *          * 91.7 *          *          *          *          *          *          *
* 50     * 5.64 * 34.449 * 27.202 * 6.26 *          * 89.3 *          *          *          *          *          *          *
* 60     * 5.59 * 34.602 * 27.329 * 6.41 *          * 91.5 *          *          *          *          *          *          *
* 80     * 5.61 * 34.667 * 27.378 * 6.30 *          * 90.0 *          *          *          *          *          *          *
* 100    * 5.45 * 34.689 * 27.415 * 6.71 *          * 95.5 *          *          *          *          *          *          *
*****

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MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
** COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * NORTH * EAST * DATE * TIME *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** NORWAY * NIVA * HEGHAN * 0-11170 * FRIERFJORD * EE-1 * 59.3.2 * 9.40.6 * 57 * 760609 * 15 *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** WIND * DIRECTION * DEGREE * CELLS * DEPTH * METERS * WEATHER * CLOUDS *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** SPEED * M/S * 1.3 * 20 * DRY * 3.7 * GREEN/BROWN * PARTLY CLOUDY * 6/8 *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** SEA * SMOOTH; WAVES 0.1-0.5M * * NO * ICE *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** COMMENTS * NS 0.5M, OP 0-2.4M, GP 0-2M, HC 0.5,4M, PEN
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

```

DEPTH	M	TEMP.	* SAL.	* DEG.C	* O/00	* VH.	* DENS.	* SIGMA-T	* ML/L	* H2S	* 02	* ML/L	* 02-SAT	* O/0	* TOIP	* P04P	* ORGP	* TOTN	* NO3N	* NH4N	* ORGN	* MG/L	* TOC	* FE
0	4	11.99	23.707	17.896	7.25	111.6	11	5	6	800	135	615	100.00	20.0										
8	10.30	28.030	21.520	6.96	106.1	8	4	4	190	45	135	1.85	10.0											
12	6.47	31.553	24.817	6.59	94.1	15	13	2	185	25	120	1.25	<10.0											
16	6.84	32.268	25.333	6.30	91.2	18	14	4	185	15	130	<10.0	<10.0											
20	6.55	32.762	25.759	6.07	87.5	24	20	4	200	25	115	1.10	<10.0											
25	6.46	32.961	25.927	5.85	84.3	29	27	2	190	25	95	0.85	<10.0											
30	6.35	33.141	26.083	5.59	80.4	32	29	3	200	10	120	<10.0	<10.0											
40	6.34	33.258	26.176	5.52	79.5	31	29	2	185	10	105	0.90	<10.0											
50	6.32	33.328	26.234	5.52	79.5	31	29	2	185	10	105	0.90	<10.0											

DEPTH	M	* RATIO	* NO3	* P04	* TOC	* TOTN	* TOIP	* TOTP	* HG	* MYG/L	* PB	* MYG/L	* CU	* MYG/L	* ZN	* MYG/L	* CD	* HEAVY METALS	* MN	* MG/L	* NI	* MYG/L	* CR	* MYG/L	* F	* MG/L
0	4	6	11	596	53	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
8	6	7	8	215	27	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
12	7	8	215	27	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
16	6	6	118	18	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
20	7	6	118	18	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
25	6	5	76	14	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
30	5	5	76	14	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
40	5	5	76	14	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												
50	5	5	76	14	14	14	14	14	0.22	<1.0	0.6	1.90	0.10	1.17												

< LESS THAN VALUE

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.26-18:42:36 PAGE:6

COUNTRY *INSTITUTION *SHIP ** PROJECT ** LOCATION ** STATION ** POSITION ** DEPTH ** DATE ** TIME **
*NORWAY *NIVA **HGRAN ** 0-111/70 ** EIDANGERFJORD ** DF-1 ** *NORTH EAST *M ** 760610 * 14 *
** WIND ** AIR TEMP. ** DEPTH ** COLOUR ** WEATHER ** CLOUDS **
* SPEED DIRECTION * DEG.CELS * DRY WET * SECCHI-DISC * CONTINUOUS LAYER OF CLOUDS * 8/8 *
* M/S (0-36) * 18 * * * * * *
* SEA *SMOOTH; WAVES 0.1-0.5M * * * * * *
* COMMENTS ** NS 0.5M, QP 0-2,4,8,12M, HC 0.5,3,5M ** * * * *

** DEPTH * TEMP. * SAL. * SIGMA-T * H2S * O2 * 02-SAT * TOTP P04P DRGP T0TN N03N NH4N ORGN ** TOC * FE *
M * DEG.C * O/00 * * ML/L * * ML/L * * O/O * * * * * * * * * * * * * * * *
* *
0 14.80 14.865 10.625 7.75 119.9 15 4 11 1200 290 275 635 4.20 45.0
4 12.42 23.779 17.878 8.13 126.4 22 12 10 1000 60 85 855 2.80 15.0
8 11.70 26.253 19.911 7.16 111.3 6 <2 >4 200 10 20 170 2.40 <10.0
12 10.09 27.093 20.825 7.01 105.7 7 2 5 280 20 35 225 1.90 <10.0
16 7.15 30.922 24.235 6.56 94.8 16 17 -1 210 60 10 140 1.05 <10.0
20 6.56 32.352 25.435 6.41 92.2 16 17 2 205 80 15 110 0.85 <10.0
30 6.23 33.152 26.106 6.34 91.0 19 17 2 255 130 10 115 0.70 <10.0
40 5.64 33.739 26.642 6.19 87.9 27 25 2 245 150 20 75 0.75 <10.0
50 5.59 34.178 26.994 6.11 86.9 27 25 2 230 140 <10 0.65 10.0
60 5.68 34.504 27.241 6.34 90.6 38 34 4 230 140 <10 0.65 10.0
80 5.71 34.740 27.424 5.78 82.8 36 32 4 230 140 <10 0.65 10.0
90 5.74 34.803 27.470 6.67 95.6 36 32 4 230 140 <10 0.65 10.0

** DEPTH * RATIO5 MOL/MOL ** ** ** ** HEAVY METALS * *
* *
** NO3/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/ TOC/
* * P04 TOTN TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP TOTP
* *
0 160 4 722 177 177 177 177 177 177 177 177 177 177 177 177 177 177 177 177 177
4 11 3 328 101 101 101 101 101 101 101 101 101 101 101 101 101 101 101 101 101
8 22 14 1032 74 74 74 74 74 74 74 74 74 74 74 74 74 74 74 74 74 74
16 16 8 700 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
20 8 6 169 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29
30 10 5 115 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
40 11 3 67 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21
60 10 4 51 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14
80 10 3 47 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14
90 10 3 47 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

```

*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * LOCATION
* STATION * NORTH
* POSITION * EAST
* DATE * 760609
* TIME * 16
* DEPTH * 104
* M * 104
* FC-1 * 9,43.2
* WEATHER * CLOUDS
* NIVA * HHGRAN
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WIND DIRECTION *
* (0-36) *
* WET *
* SPEED *
* M/S *
* 6.3 *
* SEA *
* SMOOTH: WAVES 0.1-0.5M
* COMMENTS
* NS 0.5M, OP 0-2,4,3,12M, HC 05,4M
*****

```

DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAT	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	SIGMA-T	ML/L	ML/L	O/O	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L
0	13.90	14.816	10.745	7.18		109.0									
4	12.65	25.008	18.785	7.11		111.9									
8	11.63	26.901	20.424	7.04		109.7									
12	10.86	27.718	21.187	7.04		108.4									
16	9.08	29.997	23.240	6.92		103.9									
20	7.79	31.750	24.798	6.70		98.8									
25	7.15	32.618	25.567	6.44		94.1									
30	7.04	32.903	25.805	6.55		95.7									
40	6.14	33.520	26.408	4.66		66.9									
50	5.52	34.029	26.885	6.52		92.5									
60	5.67	34.488	27.230	6.00		85.7									
80	5.73	34.775	27.449	6.07		87.0									
100	5.90	34.862	27.496	6.18		89.0									

DEPTH	RATIOS		MOL/MOL		HEAVY METALS		CR	F							
	NO3/	P04	TOC/	TOTN/	ZN	CU			CD	MN	NI	MYG/L	MYG/L	MYG/L	
0															
4															
8															
12															
16															
20															
25															
30															
40															
50															
60															
80															
100															

< LESS THAN VALUE *****

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-111/70
* LOCATION * LANGESUNDSFJORD
* STATION * GH-1
* POSITION * EAST
* DATE * 760610
* DEPTH * 108
* TIME * 12
* NIVA *
* HHRAN *
* WEATHER *
* WIND *
* DIRECTION *
* (0-36) *
* DRY *
* WET *
* AIR TEMP. *
* DEG.CELS *
* 4.0 *
* PARTLY CLOUDY
* WRECK *
* SEA-WEED *
* BATHY-SLIDE *
* SALINOTHERM *
* ICE *
* NOT OBSERVED
* NS 0.5M, QP 0-2,4,8,12M
    
```

TEMP.		SAL.		DENS.		SIGMA-T		O2		H2S		O2-SAT		NUTRIENTS			MICROGR./L		TOC		FE		
DEPTH	TEMP.	DEG.C	O/00	O/00	VH.	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	O/O	TOTP	P04P	DRGP	TOTN	N03N	NH4N	ORGN	MG/L	MG/L	MG/L	
0	14.40	13.532	13.532	13.532	9.679	7.31	7.31	111.3	12	8	1600	4	12	4	8	1600	390	375	835	4.15	45.0		
4	13.07	24.452	24.452	24.452	18.281	7.31	7.31	115.7	7	4	1400	3	7	3	4	1400	10	30	1360	2.80	<10.0		
8	11.91	26.510	26.510	26.510	20.074	6.78	6.78	106.0	7	5	170	2	7	2	5	170	10	10	150	2.20	<10.0		
12	10.65	27.838	27.838	27.838	21.314	7.01	7.01	107.5	8	6	185	2	8	2	6	185	10	<10	>165	2.00	<10.0		
16	7.70	31.514	31.514	31.514	24.625	6.71	6.71	98.6	14	2	165	12	14	12	2	165	40	15	110	1.05	<10.0		
20	7.19	32.500	32.500	32.500	25.468	6.49	6.49	94.9	16	2	165	14	16	14	2	165	60	10	95	1.05	<10.0		
30	6.68	33.187	33.187	33.187	26.076	6.56	6.56	95.4	19	1	175	18	19	18	1	175	60	15	100	0.95	<10.0		
40	6.62	33.704	33.704	33.704	26.491	6.56	6.56	95.4	22	1	280	21	22	21	1	280	100	10	170	0.65	<10.0		
50	6.15	34.406	34.406	34.406	27.105	6.34	6.34	91.3	28	0	240	28	28	28	0	240	130	10	100	0.65	<10.0		
60	5.98	34.606	34.606	34.606	27.284	6.30	6.30	90.7	27	0	260	27	27	27	0	260	130	30	100	5.00	<10.0		
80	5.79	34.787	34.787	34.787	27.451																		
100	5.89	34.874	34.874	34.874	27.507																		

```

*****
* RATIO5 *
* N03/ *
* P04 *
* 216 *
* 7 *
* 11 *
* 11 *
* 7 *
* 9 *
* 7 *
* 11 *
* 10 *
* 11 *
* 22 *
* 3 *
* 7 *
* 7 *
* 6 *
* 3 *
* 3 *
* 10 *
* 11 *
* 22 *
* 478 *
* 21 *
    
```

MOL/MOL		TOC/TOTN		HG		PB		CU		Zn		MYG/L		MYG/L		MYG/L		MYG/L		MYG/L		F	
DEPTH	M	TOC/TOTN	TOC/TOTN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	
0	0	3	892	295																			
4	4	2	1032	442																			
8	8	15	811	54																			
12	12	13	645	51																			
16	16																						
20	20	7	193	26																			
30	30	7	169	23																			
40	40	7	129	20																			
50	50	11	76	28																			
60	60																						
80	80	10	60	19																			
100	100	11	478	21																			

< ***** LESS THAN VALUE ***** >
 ***** GREATER THAN VALUE *****

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.8.3-15:3143 PAGE 1

```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP * HFGRAN
* PROJECT * 0-111/70
* LOCATION * SKIENSELVA
* STATION * S-1
* POSITION * NORTH
* EAST * 59,11.8
* DEPTH * 760610
* DATE * 9
* TIME * 9
* NIVA *
* AIR TEMP. *
* SECCHI-DISC *
* WEATHER * CLOUDS
* DRY NET *
* NOT OBSERVED *
* SEA * NOT OBSERVED
* NOT OBSERVED *
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHEKM
* COMMENTS *
* HM 0-2M *
*****

```

```

*****
* DEPTH * 0 5 10
* TEMP. * 10.10 8.70 7.60
* SAL. * <2.846 10.491 25.733
* DENS. * <2.083 8.122 20.111
* SIGMA-T * 7.60 5.81 1.49
* H2S *
* ML/L *
* O/O * (98.3) 76.3 21.0
* TOTP * 19 9 5
* P04P * 11 16 14
* ORGP * 8 16 14
* TOFN * 1000 1000 295
* MICROGR./L *
* NH4N * 400 250 30
* ORGN * 550 650 170
* TOC * 9.50 3.35 2.30
* FE * 70.0 80.0 35.0
*****

```

```

*****
* DEPTH * 0 5 10
* RATIOS *
* NO3/ * 80 61 13
* P04 * 11 4 9
* TOC/ * 1269 346 312
* TOTP * 116 88 34
* HG * 0.11 0.02 0.02
* MYG/L *
* PB * <1.0 <1.0 <1.0
* CU * 2.2 0.8 0.3
* ZN * 6.50 8.30 5.90
* MYG/L *
* CD * <0.10 <0.10 <0.10
* MN * <0.05 0.09 0.25
* NI *
* CH * <1.0 <1.0 <1.0
* F *
* MG/L *
*****
< : LESS THAN VALUE
. ( ) : UNCERTAIN VALUE
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
** COUNTRY * NORWAY
** INSTITUTION * NIVA
** PROJECT * 0-11170
** LOCATION * FRIERFJORD
** STATION * BB-1
** POSITION * NORTH 59,6.1 EAST 9,34.2
** DEPTH * M 57
** DATE * 760728
** TIME * 9
** WEATHER * CLOUDS
** AIR TEMP. *
** DEG.CELS *
** DRY NET *
** WIND *
** DIRECTION *
** (0-36) *
** SPEED *
** M/S *
** 8.5 *
** WIND *
** DEPTH *
** SECCHI-DISC *
** COLOUR *
** 2.5 *
** BROWN *
** PARTLY CLOUDY *
** 1/8 OR LESS *
** SEA *
** WAVES * 0.1-0.5M *
** SMOOTH *
** COMMENTS *
** NS 0.5M, OP 0-2M *
*****

```

```

*****
** DEPTH * 0
** M * 4
** 8
** 12
** 16
** 20
** 30
** 40
** 50
** TEMP. * 18.20
** DEG.C * 18.42
** * 15.90
** * 12.89
** * 10.80
** * 9.72
** * 6.41
** * 6.47
** * 6.53
** SAL. * 11.515
** O/O * 20.772
** * 27.902
** * 28.435
** * 29.975
** * 30.696
** * 33.297
** * 33.649
** * 33.724
** DENS. * 7.419
** H2S * 14.373
** * 20.362
** * 21.382
** * 22.947
** * 23.685
** * 26.198
** * 26.467
** * 26.519
** SIGMA-T * 14.373
** O/O * 20.362
** * 21.382
** * 22.947
** * 23.685
** * 26.198
** * 26.467
** * 26.519
** TOTP * 6.20
** P04P * 6.10
** ORGP * 5.50
** * 5.30
** * 5.20
** * 5.00
** * 3.10
** * 0.70
** TO2-SAT * 100.8
** O/O * 105.3
** * 94.3
** * 85.7
** * 81.1
** * 76.5
** * 44.7
** * 10.1
** TOTP * 14
** P04P * 3
** ORGP * 11
** TOIN * 2400
** NH4N * 430
** NH4N * 700
** MICROGR./L * 1270
** NUTRIENTS * 4.20
** TOC * 45.0
*****

```

```

*****
** DEPTH * 0
** M * 4
** 8
** 12
** 16
** 20
** 30
** 40
** 50
** RATIOS *
** N03/ * 317
** P04 * 319
** TOC/ * 774
** TOIN/ * 774
** TOTP * 379
** HG *
** MYG/L *
** PB *
** MYG/L *
** CU *
** MYG/L *
** ZN *
** MYG/L *
** CD *
** MYG/L *
** MN *
** MYG/L *
** NI *
** MYG/L *
** CR *
** MYG/L *
** F *
** MG/L *
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
**COUNTRY *INSITUATION *SHIP *****
**        *NIVA *****
**        *WIND *****
**        *SPEED *****
**        *M/S *****
**        *7.9 *****
**        *DIRECTION *****
**        *(0-36) *****
**        *315 *****
**        *DRY *****
**        *WEI *****
**        *3.0 *****
**        *YELLOW/GREEN *****
**        *DEPTH *****
**        *M *****
**        *3.0 *****
**        *SECCHI-DISC *****
**        *COLOUR *****
**        *WEATHER *****
**        *DD-1 *****
**        *59,4.6 *****
**        *NORTH *****
**        *9,38.6 *****
**        *EAST *****
**        *M *****
**        *59 *****
**        *760728 *****
**        *DATE *****
**        *13 *****
**        *TIME *****
**        *CLOUDS *****
**        *1/8 OR LESS *****
**        *BATHY-SLIDE *****
**        *SEA-WEED *****
**        *WRECK *****
**        *OIL *****
**        *SALINOTHERM *****
**SEA *****
**SMOOTH: WAVES 0.1-0.5M *****
**        *ICE *****
**        * *****
** COMMENTS *****
** NS 0.5M, GP 0-2.4M, GP 0-2M *****
*****

```

```

*****
** DEPTH * TEMP. * SAL. * SIGMA-T * DENS. * 02 * H2S * 02-SAT * O/O * TOTP * PO4P * ORGP * TOTN * N03N * NH4N * ORGN * MG/L * * FE * * *
**    M   * DEG.C * O/00 * O/1000 * g/cm3 * %  * ML/L * * ML/L * * %  * %  * %  * %  * %  * %  * %  * %  * %  * %  * %  * %  *
**    *   *    *    *    *    *   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *
0   18.30 * 35.00 * 8.425 * 24.130 * 1.023 * 0.067 * 6.20 * 99.2 *
4   18.19 * 35.00 * 10.522 * 24.130 * 1.023 * 6.671 * 6.10 * 98.6 *
8   17.14 * 35.00 * 28.233 * 24.130 * 1.023 * 20.338 * 5.40 * 95.1 *
12  14.85 * 35.00 * 29.922 * 24.130 * 1.023 * 22.134 * 5.30 * 90.0 *
16  13.37 * 35.00 * 30.727 * 24.130 * 1.023 * 23.056 * 5.20 * 86.1 *
20  10.59 * 35.00 * 31.453 * 24.130 * 1.023 * 24.130 * 4.90 * 76.8 *
30  6.20   * 35.00 * 33.352 * 26.268 * 2.90   * 26.268 * 2.90 * 41.6 *
40  6.41   * 35.00 * 33.626 * 26.457 * 0.50   * 26.457 * 0.50 * 7.2  *
50  6.44   * 35.00 * 33.692 * 26.505 * 0.00   * 26.505 * 0.00 * 0.0  *
55  6.46   * 35.00 * 33.720 * 26.524 * 0.00   * 26.524 * 0.00 * 0.0  *
*****

```



```

*****
**COUNTRY *INSTITUTION *SHIP ** PROJECT ** LOCATION ** STATION ** NORTH EAST ** DEPTH ** DATE ** TIME **
**NORWAY * * * * * ** 0-111/70 ** FRIERFJORD ** BN-1 ** *59,6.1 9,42.7 * * * 760729 * 1230 *
** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** * WEATHER * CLOUDS *
** WIND * AIR TEMP. * SECCHI-DISC * ** NOT OBSERVED * ** NOT OBSERVED *
** SPEED DIRECTION * * DEG.CELS * * DEPTH * ** NOT OBSERVED * ** NOT OBSERVED *
** M/S * DRY * WEI * M * * * * * * * * * *
**SEA * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**NOT OBSERVED * * ICE * * NOT OBSERVED * * OIL * WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM *
** ** ** ** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** SURFACE STATION * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

```

```

*****
** DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
** M * DEG.C * O/OO * SIGMA-T * ML/L * ML/L * O/O * TOTP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * MG/L * * * *
** 0 * 16.40 * 29.246 * 21.279 * 5.70 * 99.5 * 10 * 4 * 6 * 1200 * 10 * 930 * 260 * L * 60.0
*****

```

```

*****
** DEPTH * RATIOS * MOL/MOL * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** M * N03/ * TOC/ * TOTN/ * HG * CU * ZN * CD * HEAVY METALS * * * * * * * * * * * * * * * * * * * * * * * *
** 0 * P04 * TOTN * TOTP * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MN * NI * CR * F * MG/L * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

```

L * LACKING FOR UNKNOWN REASONS

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
** COUNTRY * NORWAY
** INSTITUTION *
** SHIP *
** PROJECT * 0-111/70
** LOCATION * EIDANGERJORD
** DEPTH * 19
** WEATHER *
** STATION * DF-1
** POSITION * NORTH * 59.4.6
** EAST * 9.42.5
** DEPTH * 96
** DATE * 760729
** TIME * 13
** WIND *
** DIRECTION *
** (0-36) *
** SPEED *
** M/S * 7.1
** WIND *
** DIRECTION *
** (0-36) *
** AIR TEMP. *
** DEG.CELS *
** WEI *
** DRY *
** ICE *
** SM(X)TH; WAVES 0.1-0.5M
** NS 0.5M, OP 0-2,4,8,12M
** COMMENTS
*****

```

```

*****
** DEPTH * 0
** M * 4
** * 8
** * 12
** * 16
** * 20
** * 24
** * 28
** * 32
** * 36
** * 40
** * 44
** * 48
** * 52
** * 56
** * 60
** * 64
** * 68
** * 72
** * 76
** * 80
** * 84
** * 88
** * 90
*****

```

```

*****
** DEPTH * 0
** M * 4
** * 8
** * 12
** * 16
** * 20
** * 24
** * 28
** * 32
** * 36
** * 40
** * 44
** * 48
** * 52
** * 56
** * 60
** * 64
** * 68
** * 72
** * 76
** * 80
** * 84
** * 88
** * 90
*****

```

```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-111170
* LOCATION * BREVIKFIJORD
* STATION * FG-1
* POSITION * NORTH 59,2.8 EAST 9,43.2
* DEPTH * 64 M
* DATE * 760728
* TIME * 15
* WEATHER * CLOUDS
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* WIND DIRECTION *
* (0-36) *
* 32 *
* SPEED *
* M/S *
* 8.1 *
* PARTLY CLOUDY
* WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM
* OIL *
* ICE
* SMOOTH; WAVES 0.1-0.5M
* NS 0.5M, OP 0-2,4,8,12M
* COMMENTS
*****

```

```

*****
* DEPTH * 0
* M * 4
* VI. * 8
* VI. * 12
* VI. * 16
* VI. * 20
* VI. * 25
* VI. * 30
* VI. * 40
* VI. * 50
* VI. * 60
* VI. * 80
* VI. * 100
* DENS. * 11.252
* SIGMA-T * 19.600
* SAL. * 27.502
* O/100 * 30.530
* O/100 * 31.349
* O/100 * 32.482
* O/100 * 32.876
* O/100 * 33.794
* O/100 * 33.853
* O/100 * 34.241
* O/100 * 34.489
* O/100 * 34.599
* O/100 * 34.642
* O/100 * 34.748
* H2S * 6.40
* ML/L * 6.30
* ML/L * 5.40
* ML/L * 5.20
* ML/L * 5.30
* ML/L * 5.50
* ML/L * 5.50
* ML/L * 5.50
* ML/L * 5.60
* ML/L * 5.60
* ML/L * 5.50
* ML/L * 4.70
* 02-SAT * 108.2
* O/O * 112.1
* O/O * 91.1
* O/O * 85.0
* O/O * 85.8
* O/O * 88.6
* O/O * 84.9
* O/O * 83.5
* O/O * 82.4
* O/O * 83.3
* O/O * 83.2
* O/O * 80.2
* O/O * 67.6
* TOIN *
* ORGP *
* P04P *
* P04N *
* NH4N *
* NO3N *
* MICROGR./L *
* TOC *
* ORGN *
* MG/L *
* FE *
*****

```


77.5.26-18:43:0 PAGE:24

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTIUTION * SHIP
* NIVA
* PROJECT * O-111/70
* LOCATION * FRIERFJORD
* STATION * JH-1
* POSITION * NORTH * EAST
* DEPTH * M * 208
* DATE * 760729
* TIME * 10
* WEATHER * CLOUDS
* WIND *
* AIR TEMP. *
* DIRECTION * (0-36)
* DRY *
* WET *
* DEPTH * M * 10.0
* SECCHI-DISC *
* COLOUR * LIGHT/GREEN
* PARTLY CLOUDY * 3/8
* SPEED * M/S * 1.5
* DEPTH * M * 10.0
* WRECK * SEA-WEED * BATHY-SLIDE * SALINOTERM *
* SEA *
* WAVES * 0.0-0.1M
* ICE
* COMMENTS
* NS 0.5M, GP 0-2, 4, 8, 12M, GP 0-2M
*****

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*****
* DEPTH * TEMP. * SAL. * DENS. * H2S * O2 * O2-SAT * TOTP * P04P * ORGP * T01N * N03N * NH4N * ORGN * MICROGR./L * TOC * FE
* M * DEG.C * O/00 * O/00 * ML/L * ML/L * O/O * O/O *
* VT. * VH.
0 17.00 25.621 18.378 6.10 105.4
4 17.59 28.816 20.678 5.70 101.6
8 17.90 29.968 21.483 5.40 97.5
12 16.13 30.866 22.676 6.10 107.0
16 15.54 31.577 23.253 5.60 97.5
20 12.49 33.387 25.283 5.70 94.2
30 8.42 34.112 26.555 5.50 83.6
40 8.32 34.473 26.853 5.90 89.6
50 7.88 34.646 27.055 5.60 84.3
60 7.51 34.886 27.297 6.00 89.7
80 7.34 34.996 27.408 6.00 89.4
100 7.00 35.028 27.481 5.90 87.3
150 6.81 35.075 27.545 5.70 84.0
200
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
* COUNTRY * NSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * NIVA * JH GRAN * 0-111/70 * FRIERFJORD * EE-1 * 59.3.2 * 9.40.6 * 57 * 760907 * 15 *
*****
* WIND * DIRECTION * (0-36) * DRY * WET * AIR TEMP. * SECCHI-DISC * COLOUR * WEATHER * CLOUDS *
* SPEED * M/S * 6.3 * 31 * * * 2.5 * BROWN * * * * * PARTLY CLOUDY * * 1/8 OR LESS *
*****
* SEA * RIPPLED; WAVES 0.0-0.1M * * NO * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * NS 0.5M, OP 0-2.4M, GP 0-2M, HC 0.5,4M, PEN, * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

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DEPTH	M	TEMP.	DEG.C	SAL.	0/00	SIGMA-T	ML/L	H2S	ML/L	02-SAT	O/O	TOTP	P04P	ORGP	TOTN	N03N	NH4N	MICROGR./L	ORGN	MG/L	TUC	MG/L	FE
0		16.00		9.474		6.307	6.38			98.0		16	5.5	10.5	2000	500	1500		0			200.0	
4		17.97		26.719		18.992	5.31			94.2		11	6	5	1000	70	145		785			30.0	
8		15.56		30.689		22.570	5.50			95.2		9	4.5	4.5	195	30	20		145			40.0	
12		14.72		31.547		23.410	5.20			89.0		16	15	1	175	40	10		125			50.0	
16		11.22		33.231		25.400	5.31			85.3		23	17	6	195	70	<10		>115			45.0	
20		10.00		33.845		26.092	5.50			86.4		38	32	6	190	80	<10		>100			200.0	
25		9.57		33.959		26.253	5.35			83.3		22	21	1	185	90	<10		>85			50.0	
30		9.28		34.010		26.340	5.57			86.2		25	21	4	185	100	<10		>75			30.0	
40		9.05		34.108		26.454	5.35			82.4		36	30	6	190	100	<10		>80			45.0	
50		9.14		34.155		26.476	5.46			84.3		29	25	4	220	90	<10		>120			50.0	

DEPTH	M	RATIOS		MOL/MOL			HEAVY METALS							OTHER											
		N03/	P04	TOC/	TOIN/	TOPT/	HG	MYG/L	PB	MYG/L	CU	MYG/L	ZN	MYG/L	CD	MYG/L	MN	MG/L	NI	MYG/L	CR	MYG/L	F	MG/L	
0		201	201	276	276	201	0.20	<1.0	<1.0	0.9	5.50	0.17	<0.05											0.32	
4		26	26	201	201	48	0.44	<1.0	<1.0	1.1	4.40													0.95	
8		15	15	48	48	24																			
12		6	6	24	24	19																			
16		9	9	19	19	11																			
20		6	6	11	11	19																			
25		9	9	19	19	16																			
30		11	11	16	16	12																			
40		7	7	12	12	17																			
50		8	8	17	17	10.13	0.13	2.1	1.2	1.2	4.00	<0.05												1.20	

< * LESS THAN VALUE > * GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
** COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** NORWAY * NIVA * H GRAN * 0-11170 * EIDANGERFJORD * BN-1 * NORTH * 59,6.1 * 9,42.7 * 760907 * 14 *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** WIND * DIRECTION * (0-36) * 32 * DRY * WET * * AIR TEMP. * DEPTH * SECCHI-DISC * WEATHER * CLOUDS *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** SPEED * M/S * 3.0 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * ICE *
** * NO *
** * WAVES 0.1-0.5M *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * COMMENTS *
** * SURFACE STATION *
*****

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*****
** * TEMP. * SAL. * DENS. * O2 * H2S * O2-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
** * DEG.C * O/OO * SIGMA-T * ML/L * * O/O * * P04P * ORGP * TOTN * N03N * NH4N * ORGN * MG/L * * * *
** * VT. * VH. * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * 14.90 * 18.228 * 13.172 * 6.57 * 104.0 * 13 * 6 * 7 * 1600 * 360 * 410 * 830 * * * * 60.0
*****

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*****
** * RATIOS * MOL/MOL *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * N03/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ *
** * P04 * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN * TOTN *
** * 0 * 133 * 272 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
* COUNTRY * NORWAY
* INSTITUTION * SHIP
* PROJECT * 0-11170
* LOCATION * EIDANGERFJORD
* STATION * DF-1
* NORTH * 59,4.6
* POSITION * EAST
* DATE * 760907
* TIME * 1300
* DEPTH *
* M *
* H GRAN *
* AIR TEMP. *
* WIND *
* DIRECTION * (0-36)
* DRY *
* WET *
* DEPTH *
* COLOUR *
* SECCHI-DISC *
* WEATHER *
* PARTLY CLOUDY
* OIL *
* NO *
* WRECK *
* SEA-WEED *
* BATHY-SLIDE *
* SALINOTHERM *
* ICE *
* WAVES *
* 0.1-0.5M
* COMMENTS
* NS 0.5M, OP 0-2,4,8,12M, HC 0.5,4M
*****

```

DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAT	TOTP	P04P	.ORGP	TOTN	N03N	NH4N	ORGN	TOC	FE
M	DEC.C	O/00	ML/L	ML/L	ML/L	O/O	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	MG/L	MG/L
0	14.90	18.460	13.349	6.53		103.5	10	3.5	6.5	1200	250	375	575		40.0
4	16.40	30.007	21.861	5.63		98.7	6	2	4	600	10	10	580		25.0
8	14.69	31.582	23.443	4.330T		(74.1)	7	3	4	210	70	<10	>130		30.0
12	11.43	32.939	25.136	4.73		76.2	17	14	3	200	100	<10	>90		35.0
16	9.28	33.822	26.193	5.23		80.9	23.5	21	2.5	195	100	<10	>85		45.0
20	8.79	34.060	26.473	5.34		81.8	22	20	2	175	90	<10	>75		40.0
30	8.33	34.540	26.904	5.52		83.9									
40	6.74	34.500	27.102	5.41		79.3	30	28	2	245	130	<10	>105		30.0
50	7.08	34.693	27.207	5.27		77.9									
60	7.04	34.740	27.249	5.27		77.9	37	34	3	245	150	40	55		65.0
80	6.71	34.752	27.304	4.94		72.5	40	38	2	265	180	<10	>75		75.0
90	6.61	34.760	27.324	4.76		69.7									

DEPTH	NO3	NO3/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/	TOC/
M	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04
0	158																
4	11																
8	52																
12	16																
16																	
20	11																
30	10																
40																	
50	10																
60																	
80	10																
90	10																

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*****
* LESS THAN VALUE
* OVER-TITRATED VALUE
* GREATER THAN VALUE
* UNCERTAIN VALUE
*****

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CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
* COUNTRY * INSTITUTE * SHIP * PROJECT * LOCATION * STATION * POSITION * DATE * TIME *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NORWAY * NIVA * H H GRAN * 0-11170 * BREVIKFJORD * FG-1 * 59,2.8 * 9,43.2 * 760907 * 14 *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* WIND * DIRECTION * (0-36) * DEG.CELS * AIR TEMP. * WEATHER * CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SPEED * M/S * 8.8 * DRY * 35 * WET * SECHI-DISC * SECCHI COLOUR * CONTINUOUS LAYER OF CLOUDS *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * SMOOTH * WAVES 0.1-0.5M * NO * ICE * * * * * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * NS 0.5M, OP 0-2,4,8,12M, HC 0.5,4M * * * * * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *

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DEPTH	TEMP.	SAL.	SIGMA-T	O2	H2S	O2-SAT	TOTP	PO4P	ORGP	TOTN	N03N	NH4N	ORGN	MICROGR./L	TOC	FE
M	DEC.C	O/OO	ML/L	ML/L	ML/L	O/O	O/O	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	MG/L	MG/L
0	16.40	20.408	14.537	5.56	92.0											
4	15.90	30.257	22.164	5.59	97.2											
8	15.00	31.522	23.331	4.58	78.8											
12	11.80	33.041	25.146	4.91	79.8											
16	10.57	34.081	26.177	5.34	85.1											
20	10.20	34.297	26.410	5.48	86.7											
30	8.70	34.701	26.973	5.63	86.4											
40	8.61	34.729	27.009	5.63	86.2											
50	8.06	34.815	27.161	5.63	85.2											
60	7.73	34.847	27.235	5.59	84.0											
80	7.46	34.874	27.295	5.79	86.5											
100	7.30	34.910	27.346	5.34	79.5											

DEPTH	RATIOS		HEAVY METALS						
	N03/	P04	TOC/	TO3N	TO3P	TO3T	TO3I	TO3V	TO3F
M	MOL/MOL	MOL/MOL	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
0	0.38	0.33	0.38	0.33	1.5	0.7	1.5	0.7	1.5
4	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
8	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
12	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
16	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
20	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
30	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
40	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
50	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
60	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
80	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6
100	0.33	0.33	0.33	0.33	1.6	0.7	1.6	0.7	1.6

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*****
< * LESS THAN VALUE
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*****
* COUNTRY * INSITUATION * SHIP * PROJECT * LOCATION * STATION * POSITION * DEPTH * DATE * TIME *
* NORWAY * NIVA * H H GRAN * 0-111/70 * LANGESUNDSFJORD * JH-1 * NORTH EAST * 208 * 760907 * 940 *
* WIND * DIRECTION * (0-36) * DRY * WET * AIR TEMP. * SECCHI-DISC * WEATHER * CLOUDS *
* SPEED * M/S * 7.0 * 27 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* SEA * MODERATE; WAVES 1.25-2.5M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * NS 0.5M, OP 0-2,4,8,12M, GP 0-2M, HC 0.5,4M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

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DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAT	O/O	TOTP	PO4P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
0	14.50	24.626	18.144	6.10	99.6	11	4	7	80	100	135	-155				
4	13.86	32.596	24.397	5.70	96.5											
8	13.33	33.415	25.137	5.56	93.5											
12	12.06	33.920	25.778	5.52	90.7											
16	11.31	33.116	25.295	5.56	89.5											
20	10.41	34.371	26.431	5.59	88.9											
30	9.63	34.618	26.757	5.52	86.4											
40	8.88	34.811	27.030	5.63	86.8											
50	8.39	34.898	27.175	5.77	88.0											
60	8.02	34.961	27.281	5.81	87.9											
80	7.69	34.996	27.358	5.74	86.3											
100	7.56	35.020	27.395	5.70	85.4											
150	7.32	35.047	27.451	5.74	85.5											
200	7.19	35.067	27.485	5.77	85.7											

DEPTH	RATIOS		HEAVY METALS												
	NO3/	PO4	TOC/	TOIN/	HG	PB	CU	ZN	CD	MN	NI	MYG/L	CR	MG/L	F
0	55	55	16	16	0.59	26.3	15.6	65.00	0.08	0.05	0.74	1.15			
4					1.20	<1.0	0.4	1.80							
8															
12					0.25	<1.0	0.2	6.50		0.05				1.20	
16															
20															
30					1.30	<1.0	0.4	3.80		0.05				1.23	
40															
50															
60															
80					0.21	<1.0	0.2	3.80		0.05				1.23	
100															
150															
200															

< * LESS THAN VALUE *****

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA

COUNTRY * NORWAY
INSTITUTION * NIVA
SHIP * GUNNEKLEIVFJORD
PROJECT * 0-111/70
LOCATION * NORTH EAST
STATION * 9,38.7
DEPTH * M 4
DATE * 760909
TIME * 9
NIVA *
WIND DIRECTION *
WIND (0-36) * 30
SPEED M/S * 3.8
AIR TEMP. *
DEG.CELS * DRY * WET *
WEATHER *
SEA * RIPPLED; WAVES 0.0-0.1M *
CONTINIOUS LAYER OF CLOUDS * 8/8
OIL * NO *
WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
NO *
ICE *
COMMENTS * HC
LESS THAN VALUE

DEPTH * M * 0 * 3
TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * O/O * TOTP * P04P * ORGP * TOIN * NO3N * NH4N * ORGN * MG/L * * TOC * * FE * *
DEG.C * O/00 * SIGMA-T * ML/L * * ML/L * * * 81.3 * 46 * 39 * 7 * 4600 * 460 * 6600 * -2460 * * * 140.0
VI. * VH. * * * * * 56.6 * 19 * 10 * 9 * 4200 * 410 * 2900 * 890 * * * 60.0

MOL/MOL *
RATIO5 *
NO3/ * TOC/ *
P04 * TOTN *
26 * 221 *
91 * 489 *
TOIN * TOC *
TOTN * TOTP *
221 * 489 *
TOTP * TOC *
TOTN * TOTP *
0.92 * 0.47 *
1.9 * 1.7 *
10.00 * 5.10 *
MYG/L * MYG/L *
<1.0 * <1.0 *
1.9 * 1.7 *
10.00 * 5.10 *
MYG/L * MYG/L *
0.05 * 0.17 *
MG/L * MG/L *
F *
0.12 * 0.35 *
MG/L * MG/L *
CR *
F *
0.12 * 0.35 *
MG/L * MG/L *
HEAVY METALS *
MOL/MOL *
RATIO5 *
NO3/ * TOC/ *
P04 * TOTN *
26 * 221 *
91 * 489 *
TOIN * TOC *
TOTN * TOTP *
221 * 489 *
TOTP * TOC *
TOTN * TOTP *
0.92 * 0.47 *
1.9 * 1.7 *
10.00 * 5.10 *
MYG/L * MYG/L *
<1.0 * <1.0 *
1.9 * 1.7 *
10.00 * 5.10 *
MYG/L * MYG/L *
0.05 * 0.17 *
MG/L * MG/L *
F *
0.12 * 0.35 *
MG/L * MG/L *
CR *
F *
0.12 * 0.35 *
MG/L * MG/L *
HEAVY METALS *
MOL/MOL *
RATIO5 *
NO3/ * TOC/ *
P04 * TOTN *
26 * 221 *
91 * 489 *
TOIN * TOC *
TOTN * TOTP *
221 * 489 *
TOTP * TOC *
TOTN * TOTP *
0.92 * 0.47 *
1.9 * 1.7 *
10.00 * 5.10 *
MYG/L * MYG/L *
<1.0 * <1.0 *
1.9 * 1.7 *
10.00 * 5.10 *
MYG/L * MYG/L *
0.05 * 0.17 *
MG/L * MG/L *
F *
0.12 * 0.35 *
MG/L * MG/L *
CR *
F *
0.12 * 0.35 *
MG/L * MG/L *
HEAVY METALS *

< LESS THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

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*****
* COUNTRY * INSTITUTION * SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * * * * * 0-1111/70 * FRIERFJORD * BC-1 * 59,6.4 * 9,37.1 * 95 * 761020 * 1030 *
* WIND * DIRECTION * (0-36) * DRY * WEI * M * DEPTH * SECCHI-DISC * WEATHER * CLOUDS *
* 4.4 * 5 * 3.0 * BROWN * * * * * DRIZZLE * * 8/8 *
* SEA * RIPPLED; WAVES 0.0-0.1M * ICE * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* COMMENTS * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* NS, OP 0-2, 4H, GP 0-2M * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

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*****
* : DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * NUTRIENTS * MICROGR./L * * TOC * FE *
* : M * DEG.C * O/00 * SIGMA-T * ML/L * * O/O * * TOTP * P04P * ORGP * TOTN * N03N * NH4N * ORGN * *MG/L * * *
* : 0 7.15 * 2.846 * <2.312 * 7.07 * (85.2) * 16 * .11.5 * 4.5 * 1800 * 690 * 460 * 650 * 2.60 * 60.0 *
* 4 8.46 * 4.538 * 3.534 * 6.43 * 80.9 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 8 11.80 * 24.415 * 18.475 * 5.73 * 88.2 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 12 12.28 * 26.037 * 19.644 * 5.44 * 85.5 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 16 12.84 * 28.170 * 21.187 * 4.98 * 80.3 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 20 13.36 * 30.551 * 22.922 * 3.96 * 65.5 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 25 9.38 * 32.474 * 25.125 * 2.66 * 40.9 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 30 7.73 * 33.495 * 26.174 * 2.33 * 34.7 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 40 6.53 * 33.620 * 26.437 * 0.53 * 7.7 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 50 6.51 * 33.686 * 26.491 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 60 6.53 * 33.714 * 26.511 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 80 6.54 * 33.726 * 26.519 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* 90 6.55 * 33.726 * 26.517 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

```

```

*****
* : DEPTH * RATIOS * MOL/MOL * * * * * HEAVY METALS * * * * *
* : M * N03/ * P04 * I133 * TOC/ * TOTN/ * TOC/ * TOTN/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ * TOC/ *
* : 0 4 8 12 16 20 25 30 40 50 60 80 90 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

```

< : LESS THAN VALUE () : UNCERTAIN VALUE *****

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION *
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FRIERFJORD
* STATION * DD-1
* POSITION * NORTH 59,4.6 EAST 9,38.6
* DEPTH * 59
* DATE * 761020
* TIME * 1305
*
* WIND *
* DIRECTION *
* (0-36) * 5
* WIND *
* AIR TEMP. *
* DEG.CELS *
* DEPTH * 3.0
* MET * BROWN
*
* SPEED *
* M/S * 3.0
*
* SEA *
* WAVES * 0.0-0.1M
*
* COMMENTS *
* NS, OP 0-2, 4M, GP 0-2M
*****

```

```

*****
* : DEPTH * 0 4 8 12 16 20 25 30 40 55
* M *
* : TEMP. * 7.80 8.14 11.86 12.00 11.65 9.03 7.64 6.89 6.56
* DEG.C * 0/00
* : SAL. * 34.846 34.286 34.981 34.576 34.402 32.937 33.542 33.695 33.722
* : SIGMA-T * 2.272 2.589 18.902 20.109 21.582 23.215 25.542 26.224 26.448 26.513
* : VI. *
* : VH. *
* : DENS. * 02
* : H2S * 0/0
* : O2-SAT * 0/0
* : TOTP * 11
* : P04P * 7
* : ORGP * 4
* : TOTN * 1200
* : MICROGR./L * 570
* : NH4N * 200
* : NO3N * 430
* : NH4N * 3.15
* : TOC * 430
* : ORGN * 200
* : FE * 55.0
*****

```

```

*****
* : DEPTH * 0 4 8 12 16 20 25 30 40 55
* M *
* : RATIO5 *
* : NO3/ *
* : P04 * 180
* : TOC/ *
* : TOTN * 3
* : TOCP * 738
* : TOTN/ * 241
* : TOCP * 241
* : HG *
* : MYG/L *
* : PB *
* : MYG/L *
* : CU *
* : MYG/L *
* : ZN *
* : MYG/L *
* : CD *
* : MYG/L *
* : MN *
* : MYG/L *
* : NI *
* : MYG/L *
* : CR *
* : MYG/L *
* : F *
* : MG/L *
*****
< LESS THAN VALUE ( ) UNCERTAIN VALUE
*****

```

 *COUNTRY *INSTITUTION *SHIP *PROJECT *LOCATION *STATION *DEPTH *DATE *TIME *
 *NORWAY *NIVA * * * 0-111/70 * FRIERFJORD * EE-1 * 59,3.2 * 9,40.6 * 57 * 761019 * 1640 *
 *WIND *DIRECTION * * AIR TEMP. * * WEATHER * * CLOUDS * *
 * * (0-36) * DRY * WET * * * * * * * * * *
 * * 1.9 * 5 * * * 2.8 * BROWN * * DRIZZLE * * 8/8 * *
 *SEA *
 *RIPPLED; WAVES 0.0-0.1M * ICE * * OIL * WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM * *
 *
 * COMMENTS * * NO * NO *
 * NS, OP 0-2.4M, GP 0-2M, PEN *

DEPTH	TEMP.	SAL.	DENS.	02	H2S	02-SAT	TOTP	P04P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	SIGMA-T	ML/L	ML/L	O/O	0/0	0/0						MG/L	MG/L
0	7.30	<2.846	<2.303	6.79	(82.1)	10	5	5	1400	600	240	560	2.70	115.0	
4	8.10	<2.846	<2.251	6.83	(84.2)										
8	S	24.389		5.67											
12	11.87	25.777	19.515	5.60	87.1										
16	12.06	28.612	21.671	5.18	82.3										
20	11.64	30.243	23.008	4.62	73.5										
25	9.49	32.688	25.274	2.77	42.7										
30	8.89	33.078	25.674	2.45	37.4										
40	9.16	34.223	26.526	3.50	54.1										
50	9.11	34.340	26.625	3.43	53.0										

DEPTH	RATIO5	NO3/	TOC/	TOCN/	TOC/	TOCN/	TOC/	TOCN/	TOC/	TOCN/	TOC/	TOCN/	TOC/	TOCN/	TOC/	TOCN/
M	NO3/	P04	P04	MN	CD	ZN	CU	PB	HG	CD	MN	NI	CR	F	MG/L	MG/L
0																
4		2	696													
8																
12																
16																
20																
25																
30																
40																
50																

 < *LESS THAN VALUE
 * () *UNCERTAIN VALUE
 * S *SPOILED OR DAMAGED SAMPLE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUTION * NIVA
* SHIP *
* PROJECT * 0-111/70
* LOCATION * EIDANGERFJORD
* STATION * BN-1
* POSITION * NORTH 59,6.1 EAST 9,42.7
* DEPTH * M 761019
* DATE * 761019
* TIME * 13
* WEATHER *
* CLOUDS *
* WIND *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* SPEED *
* M/S *
* DIRECTION *
* (0-36) *
* SEA *
* ICE *
*
*****

```

```

*****
* COMMENTS *
* SURFACE STATION *
*****
* DENS. * 02
* H2S *
* ML/L *
* O2-SAI *
* O/O *
* TOTP *
* P04P *
* ORGP *
* TOIN *
* NH4N *
* ORGN *
* MG/L *
* TOC *
* FE *
*
*****

```

```

*****
* DEPTH * 0
* M *
* VT. *
* 7.40
* 13.102
* 10.272
* 6.65
* 86.1
* 16
* 11
* 5
* 1200
* 550
* 275
* 375
* 2.70
* 140.0
*
*****

```

```

*****
* DEPTH * 0
* M *
* RATIOS *
* NO3/ *
* P04 *
* TOTN *
* TOTP *
* TOTN/ *
* TOTP *
* HG *
* MYG/L *
* PB *
* MYG/L *
* CU *
* MYG/L *
* ZN *
* MYG/L *
* CD *
* MYG/L *
* MN *
* MYG/L *
* NI *
* MYG/L *
* CR *
* MYG/L *
* F *
* MG/L *
*
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
**COUNTRY *INSTITUTION *SHIP *PROJECT ** LOCATION ** STATION * POSITION * DEPTH ** DATE * TIME *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**NORWAY *NIVA *HHGRAN ** 0-11170 ** FRIEREJORD ** BB-1 ** *59,6.6 9,34.2 ** 57 ** 761207 * 13 *
*****
** WIND DIRECTION * AIR TEMP. * SECCHI-DISC ** WEATHER * CLOUDS *
** (0-36) * DEG.CELS * DEPTH * M * * * * * * * * * * * * * * * * * *
** 4.0 * DRY * M * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
**SEA *ICE *
**SAL(OBT); WAVES 0.1-0.5M * NO *
*****
** COMMENTS
** NS 0.5M, OP 0-2.4M, HC 0.5.4M, SURFACE SAMPLES 0-2M
*****

```

```

*****
** DEPTH * TEMP. * SAL. * DENS. * 02 * H2S * 02-SAT * O/O * TOTP * P04P * ORGP * TOTN * NO3N * NH4N * ORGN * MG/L * * *
** M * DEG.C * O/OO * SIGMA-T * ML/L * * ML/L * * * * * * * * * * * * * * * * * * * * * * * *
** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** 0 4.50 18.372 14.503 4.80 62.4 29 11 4 7 1200 530 360 310 360 310 3.30
** 4 6.10 18.372 14.503 3.30 52.3 29 25 4 4 1600 570 370 660 2.10
** 8 10.87 32.170 24.639 3.30 58.8 33 32 0 0 425 250 <10 >165 0.70
** 12 10.52 32.675 25.092 3.73 59.9 30 30 3 3 495 200 125 170 0.50
** 16 10.37 33.023 25.389 3.80 62.0 32 30 2 2 440 180 85 175 0.40
** 20 10.26 33.247 25.582 3.94 69.6 31 30 1 370 170 30 170 0.85
** 25 10.07 33.259 25.624 4.44 44.2 45 32 1 365 170 <10 >185 0.30
** 30 9.28 33.329 25.808 2.87 1.6 79 44 1 345 200 <10 >135 0.35
** 40 6.62 33.532 26.356 0.11 0.84 140 75 4 190 15 165 0.85
** 50 6.51 33.664 26.474 0.11 0.84 140 140 0 245 20 90 135 0.80
*****

```

```

*****
** DEPTH * RATIOS * MOL/MOL * HEAVY METALS * * *
** M * NO3/ * TOC/ * TOCN/ * TOPT/ * HG * PB * CU * ZN * MN * NI * CR * F *
** * P04 * TOC/ * TOPT/ * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MG/L *
** * 293 * 774 * 241 * 0.22 * (3.2) * 3.1 * (16.20) * <0.05 * 0.24 *
** 4 50 187 122 0.36 (1.0) 1.7 (10.90) <0.05 0.69
** 8 17 2 56 29 33
** 12 15 1 39 33
** 16 13 1 32 30
** 20 13 3 71 26
** 25 12 1 23 24
** 30 10 1 20 17
** 40 0 5 28 5 0.225 4.25 0.55 3.505 0.205 1.205
** 50 0 4 15 4 0.21 (41.6) 0.5 (8.80) 0.48 1.20
*****
< *LESS THAN VALUE
S *SPOILED OR DAMAGED SAMPLE
> *GREATER THAN VALUE
() *UNCERTAIN VALUE
*****

```


77.5.31-16:41:29 PAGE 12

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* NIVA
* WIND * DIRECTION (0-36) *
* SPEED * M/S
* SEA
* NOT OBSERVED
* COMMENTS
* NS 0.5M, GP 0-2.4M, HC 0.5.4M, SURFACE SAMPLES 0-2M
*****

```

DEPTH M	TEMP.	SAL.	SIGMA-T	DENS.	H2S	O2	O/SAT	NUTRIENTS			TOIN	MICROGR./L		TOC	FE
								P04P	ORGP	NO3N		NH4N	ORGN		
0	4.50	5.372	4.396	10.985	0.31	4.87	63.0	21	9	12	2000	730	440	830	2.85
4	7.08	13.981	10.985	24.372	0.71	5.66	85.2	23	14	9	1600	510	280	810	2.25
8	8.81	31.396	24.372	25.036	0.98	4.22	66.9	27	18	4	330	120	<10	>200	1.20
12	10.77	32.659	25.036	25.363	1.64	4.08	64.5	29	23	4	390	170	30	190	0.90
16	10.49	33.017	25.363	25.513	2.80	4.30	68.1	29	27	2	430	190	80	160	0.95
20	10.52	33.216	25.513	25.654	0.14	4.44	70.1	30	26	3	345	130	35	180	1.05
25	10.35	33.360	25.654	25.885	0.98	4.44	43.0	49	27	3	325	130	<10	>185	1.00
30	9.14	33.399	25.885	26.409	0.14	2.80	2.0	44	46	3	395	210	15	170	0.85
40	6.79	33.629	26.409	26.477	0.31	0.14	2.0	44	33	11	295	90	30	175	0.75
50	6.61	33.684	26.477	26.496	0.71	0.14	2.0	140	140	0	270	20	110	140	0.30
60	6.56	33.700	26.496	26.500	0.98	0.71	2.0	150	150	0	320	<10	140	>170	0.80
80	6.54	33.702	26.500	26.500	0.98	0.98	2.0	160	150	10	330	<10	150	>170	0.95
90	6.55	33.707	26.503	26.503	1.64	1.64	2.0	170	160	10	385	<10	210	>165	3.15

DEPTH M	RATIO5	NO3/	P04	TOC/TOTN	HG	PB	CU	ZN	HEAVY METALS		MN	NI	CR	F
									MG/L	MYG/L				
0	179	2	2	350	0.11	(34.7)	7.3	(16.70)	0.12	0.08	0.12	0.31	0.31	0.61
4	81	2	2	252	0.09	(117.0)	6.4	(17.40)	0.08	0.08	0.08	0.31	0.31	0.61
8	15	4	4	141	0.21	(14.5)	3.7	(10.30)	<0.05	<0.05	<0.05	1.20	1.20	1.175
12	16	3	3	86	0.49	(52.0)	2.9	(9.20)	0.23	0.23	0.23	1.20	1.20	1.175
16	16	3	3	84	0.63	(1.0)	1.0	(4.80)	0.545	0.545	0.545	1.20	1.20	1.175
20	11	4	4	93	0.105	11.95	0.35	2.705	0.57	0.57	0.57	1.20	1.20	1.175
25	11	4	4	86	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175
30	10	3	3	45	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175
40	6	3	3	44	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175
50	0	3	3	15	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175
60	<0	3	3	14	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175
80	<0	3	3	15	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175
90	<0	10	10	48	0.14	<(1.0)	0.5	(4.90)	0.57	0.57	0.57	1.20	1.20	1.175

<() UNCERTAIN UPPER LIMIT
> GREATER THAN VALUE
> SPOILED OR DAMAGED SAMPLE
> UNCERTAIN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

 * COUNTRY * NORWAY *
 * INSTITUTION * *
 * NIVA *
 * SHIP *
 * HHGRAN *
 * PROJECT * 0-111/70 *
 * LOCATION * FRIERFJORD *
 * STATION * DD-1 *
 * POSITION * NORTH * 59,4.6 *
 * EAST * 9,38.6 *
 * DEPTH * 59 *
 * M * 59 *
 * DATE * 761207 *
 * TIME * 13 *
 * WEATHER * *
 * DRIZZLE * *
 * WRECK * *
 * SEA-WEED * *
 * BATHY-SLIDE * *
 * SALINOTHERM * *
 * OIL * *
 * NO * *
 * NO * *
 * SEA * *
 * WAVES 0.0-J,1M *
 * ICE *
 * NO *
 * COMMENTS *
 * NS 0.5M, OP 0-2.4M, GP 0-2M, HC 0.5,4M, SURFACE SAMPLES 0-2M *

DEPTH	TEMP.	SAL.	DENS.	H2S	02-SAT	0/0	TOIP	P04P	ORGP	TOIN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/00	ML/L	ML/L	O/0	O/0	16	8	8	2100	780	480	840	2.95	
0	4.80	6.182	5.022												
4	5.43	10.703	8.538		74.2										
8	8.12	31.056	24.208		87.7										
12	7.81	31.822	24.851		80.6										
16	10.56	32.990	25.330		71.0										
20	10.68	33.222	25.490		74.2										
25	10.40	33.343	25.632		76.2										
30	9.69	33.422	25.814		57.0										
40	7.04	33.659R	(26.399)		(1.0)										
55	6.56	33.656R	(26.461)		0.98										

DEPTH	RATIOS		MOL/MOL		HEAVY METALS		PB	CU	ZN	CD	MN	NI	CR	F
	NO3/	TOC/	TOC/	TOIP/	MYG/L	MYG/L								
M	P04	TOIN	TOIP	TOIN	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MYG/L	MG/L
0	216	2	475	290	0.22	(2.1)	(1.0)	2.4	(9.90)	0.09	0.06			0.36
4	216	2	475	290	0.14	(1.0)	(1.0)	2.4	(9.50)	0.06	0.06			0.44
8														
12														
16														
20														
25					0.14	<(1.0)	1.0	(2.20)		<0.05				1.17
30														
40					0.245	8.7S	0.55	4.20S		0.065				1.20S
55														

 * LESS THAN VALUE *
 * REPEATED ANALYSIS *
 * UNCERTAIN VALUE *
 * SPOILED OR DAMAGED SAMPLE *
 * UNCERTAIN UPPER LIMIT *

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B. CONTROLLED DATA 77.5.31-16:41:36 PAGE:5

COUNTRY * NORWAY *
INSTITUTION * *
SHIP * *
PROJECT * *
LOCATION * *
STATION * *
POSITION * *
DEPTH * *
DATE * *
TIME * *
NIVA * *
FRIERFJORD * *
EE-1 * *
59.3.2 * *
761207 * *
15 * *
WEATHER * *
CLOUDS * *
WIND * *
AIR TEMP. * *
WET * *
DIRECTION * *
DEG.CELS * *
WIND * *
(0-36) * *
M * *
10 * *
3.0 * *
GREY * *
RAIN * *
SEA * *
ICES * *
WAVES * *
O.0-U.1M * *
NS 0.5M, GP 0-2.4M, HC 0.5,4M, PEN, SURFACE SAMPLES 0-2M

Table with columns: DEPTH, SAL., DENS., SIGMA-T, H2S, O2, SAT, O/P, TOPTP, P04P, ORGP, TOIN, NO3N, NH4N, MICROGR./L, TOC, FE, etc.

Table with columns: RATIO, NO3/P04, TOC/T04, TOC/T0N, MOL/MOL, Hg, Pb, Cu, Zn, Cd, Ni, Mn, Cr, F, etc.

REASONS * *
LACKING FOR UNKNOWN REASONS * *
GREATER THAN VALUE * *
SPOILED OR DAMAGED SAMPLE * *
UNCERTAIN VALUE * *
LESS THAN VALUE * *
L

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

 * COUNTRY * NORWAY *
 * INSTITUTION * HHGRAN *
 * SHIP * *
 * PROJECT * 0-111/70 *
 * LOCATION * EIDANGERFJORD *
 * STATION * DF-1 *
 * NORTH * 59,4.6 *
 * EAST * 9,42.5 *
 * DEPTH * 96 *
 * DATE * 761208 *
 * TIME * 12 *
 * WEATHER * *
 * CLOUDS * *
 * WIND * *
 * AIR TEMP. * *
 * SECCHI-DISC * *
 * DEPTH * 6.0 *
 * COLOUR * GREEN *
 * WET * *
 * DRY * *
 * CONTINUOUS LAYER OF CLOUDS * 8/8 *
 * WRECK * SEA-WEED * BATHY-SLIDE * SALINOTERM * *
 * OIL * NO *
 * YES * NO *
 * SEA * *
 * SM(X)TH; WAVES 0.1-0.5M *
 * NO *
 * ICE *
 * COMMENTS *
 * NS 0.5M, QP 0-2,4,8,12M, HC 0.5,4M, SURFACE SAMPLES 0-2M *

DEPTH	TEMP.	SAL.	DENS.	H2S	O2-SAT	TOTP	PO4P	ORGP	TOTN	NO3N	NH4N	ORGN	TOC	FE
M	DEG.C	O/100	ML/L	ML/L	O/O	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	MG/L	MG/L
0	4.70	16.009	12.748			20	14	6	1200	450			2.05	
4	6.85	29.630	23.258	6.40	91.1	19	16	3	800	410	50	340	1.25	
8	7.19	30.810	24.142	6.25	90.4	22	16	6	275	130	<10	>135	1.20	
12	7.43	31.141	24.370	6.11	89.0	19	16	3	250	120	<10	>120	1.20	
16	7.32	31.354	24.551	6.11	88.9									
20	8.00	31.733	24.755	6.00	88.9	21	18	3	255	110	<10	>135	1.00	
30	10.36	32.912	25.304	5.25	82.6	22	19	3	240	100	<10	>130	0.85	
40	10.71	33.343	25.582	5.10	81.1									
50	10.65	33.696	25.863	5.00	79.6	20	19	1	215	80	<10	>125	1.25	
60	9.85	34.059	26.284	5.03	78.9	38	38	0	295	170	(100)	(25)	0.75	
80	7.24	34.847	27.305	4.53	67.3	42	42	0	265	160	<10	>95	0.55	
90	7.26	34.933	27.370	4.67	69.5									

DEPTH	RATIOS		MOL/MOL		HEAVY METALS		CR	F						
	N03/	P04	TOC/	TOTN/	HG	PB			CU	ZN	MN	NI	MYG/L	MYG/L
0	71	2	264	133	0.19	1.6	2.0	<0.05	<0.05					0.60
4	57	2	170	93	0.24	<1.0	1.5	3.00						1.05
8	18	5	141	28										
12	17	6	163	29	0.19	<1.0	1.0	1.90	<0.05					1.10
16														
20	14	5	123	27										
30	12	4	100	24										
40														
50	9	7	161	24										
60														
80	10	3	51	17										
90	8	2	34	14	0.21	<1.0	0.7	1.20	<0.05					1.17

 < : LESS THAN VALUE
 > : GREATER THAN VALUE
 () : UNCERTAIN VALUE

```

*****
* COUNTRY * NORWAY
* INSTITUTION *
* NIVA
* PROJECT * 0-111/70
* LANGESUNDSFJORD
* GH-1
* NORTH EAST
* 59.1.3 9.45.1
* DATE * 761208
* TIME * 11
* POSITION *
* STATION *
* DEPTH * 108
* M *
* WEATHER *
* CLOUDS *
* WIND *
* DIRECTION *
* (0-36) *
* 23 *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* 5.0 *
* GREEN *
* CONTINUOUS LAYER OF CLOUDS *
* 8/8 *
* SPEED *
* M/S *
* 8.3 *
* SEA *
* SLIGHT; WAVES 0.5-1.25M
* NO
* COMMENTS
* NS 0.5M, OP 0-2,4,8,12M, HC 0.5,4M SURFACE SAMPLES 0-2M
*****
    
```

DEPTH	TEMP.	SAL.	DENS.	02	H2S	0/0	0/0	TO1P	P04P	ORGP	TO1N	N03N	NH4N	MICROGR./L	TOC	FE
M	DEG.C	0/00	SIGMA-T	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	MG/L	MG/L
0	5.80	21.090	16.662					19	14	5	1000	340	260	400	1.80	
4	6.73	29.534	23.198	6.30	89.4	19	17	17	17	2	600	160	50	390	1.40	
8	6.93	30.752	24.130	6.33	90.9	18	17	18	17	1	275	130	15	130	1.20	
12	7.04	31.203	24.470	6.33	91.4	18	16	18	16	2	265	110	<10	>145	1.15	
16	7.12	31.462	24.663	6.19	89.7											
20	8.39	32.170	25.040	5.90	88.5	19	16	19	16	3	225	100	<10	>115	1.30	
30	9.17	32.675	25.315	4.03	61.7	20	18	20	18	2	250	100	<10	>140	1.05	
40	10.20	33.146	25.513	5.34	83.9											
50	10.30	33.602	25.851	5.25	82.9	20	18	20	18	2	195	90	<10	>95	0.95	
60	9.90	34.004	26.233	5.25	82.4											
80	7.31	34.894	27.332	4.75	70.7	34	34	34	34	0	265	160	<10	>95	0.55	
100	7.30	34.945	27.374	5.04	75.0	36	36	36	36	0	310	180	<10	>120	0.75	

DEPTH	RATIO5	NO3	NO4	TOC	TO1N	TO1P	HG	PB	CU	ZN	CD	MN	NI	CR	F
M		ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L	ML/L
0	54	2	244	116	116	0.16	13.6	1.0	2.8	8.70	0.06	0.05			0.61
4	21	3	190	70	34	0.33	1.0	2.3	2.80	2.80	<0.05	<0.05			1.00
8	17	5	172												
12	15	5	165	33											
16															
20	14	7	176	26											
30	12	5	135	28											
40															
60	11	6	122	22											
80	10	2	42	17											
100	11	3	54	19											

< * LESS THAN VALUE > * GREATER THAN VALUE

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTIGATION *
* NIVA *
* WIND DIRECTION * (0-36)
* SPEED M/S *
* AIR TEMP. *
* DEG.CELS * DRY * WET *
* DEPTH * M *
* SECCHI-DISC *
* WEATHER *
* STATION * G-3
* NORTH * 59,7.7
* EAST * 9,38.2
* POSITION *
* DEPTH * M *
* DATE * 761208 *
* TIME * 1030 *
* CLOUDS *
* NOT OBSERVED *
* SEA *
* ICE *
* NOT OBSERVED *
* COMMENTS *
* HC 0.5,8M *
    
```

```

*****
* SAL. * 34.70
* DEG.C * 0/00
* VI. * 7.30
* DENS. * 2.254
* SIGMA-T * 2.651
* O2 * 5.04
* H2S * 0.00
* O2-SAI * 63.4
* TO2P * 27
* TO3P * 21
* TO4P * 50
* P04P * 10
* ORGP * 17
* TOTN * 5400
* NO3N * 830
* NH4N * 640
* MICROGR./L *
* TOC * 2.80
* ORGN * 3930
* FE * 2.95
* TOC/MG/L *
* TOC/MG/L *
    
```

```

*****
* RATIO3 * NO3/TO3
* RATIO4 * P04/TO4
* RATIO5 * 25
* TOC/TO3 * 1
* TOC/TO4 * 1
* TOC/TO5 * 2
* TO3/TO4 * 442
* TO3/TO5 * 548
* TO4/TO5 * 80
* TO3/MOL * 267
* TO4/MOL * 362
* TO5/MOL * 137
* HG/MG/L * 0.50
* PB/MG/L * 4.9
* CU/MG/L * 4.4
* ZN/MG/L * 12.70
* CD/MG/L * <0.05
* NI/MG/L * <0.05
* MN/MG/L * <0.05
* CR/MG/L * 0.17
* F/MG/L * 0.24
* HEAVY METALS *
    
```

< *LESS THAN VALUE

```

*****
* COUNTRY *INSITUITION *SHIP * PROJECT * LOCATION * STATION * NORTH * EAST * DEPTH * DATE * TIME *
* NORWAY * NIVA * HOGHAN * 0-111/70 * SKIENSELVA * S-1 * 59,11.8 * 9,37.1 * 15 * 761207 * 9 *
* WIND * AIR TEMP. * DEPTH * SECHI-DISC * WEATHER * CLOUDS *
* SPEED * DIRECTION * DEG.CELS * DIR * WEI * M * DRIZZLE *
* M/S * (0-36) * * * * * * * 8/8 *
* O.O * * * * * * * * * * *
* SEA * * * * * * * * * * * * * * * * *
* CALM; WAVES 0.0M * * NO * * * * * * * * * * * * * * * * *
* COMMENTS * * * * * * * * * * * * * * * * *
* HC 0.5,10M TRB+SUP+TSM, SURFACE SAMPLES 0-2M * * * * * * * * * * * * * * * * *
*****

```

```

*****
* : DEPTH * TEMP. * SAL. * SIGMA-T * DENS. * 02 * H2S * 02-SAT * O/O * IOTP * P04P * ORGP * IOIN * NO3N * NH4N * ORGN * TOC * FE *
* : M * DEG.C * O/OO * ML/L * * ML/L * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 0 * 4.50 * <2.846 * <2.415 * <2.415 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
* : 5 * 4.83 * <2.846 * <2.408 * <2.408 * 7.45 * (84.7) * 8 * 4 * 4 * 4 * 800 * 460 * <10 * >330 * 4.65 *
* : 10 * 10.37 * 30.467 * 23.401 * 1.08 * 16.7 * 30 * 15 * 15 * 495 * 160 * 40 * 295 * 1.55 *
*****

```

```

*****
* : DEPTH * RATIOS * MOL/MOL * TOC/ * IOTN/ * HG * PB * CU * ZN * CD * MN * NI * CR * F *
* : M * NO3/ * P04 * IOTN * TOTP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MG/L *
* : 0 * 181 * 5 * 1199 * 221 * 0.11 * 8.1 * 3.9 * 23.20 * <0.20 * <0.05 * <1.0 *
* : 5 * 254 * 5 * 1064 * 221 * 0.12 * 7.9 * 4.2 * 10.20 * <0.20 * <0.05 * <1.0 *
* : 10 * 24 * 4 * 133 * 36 * 0.30 * 8.9 * 4.6 * 14.80 * <0.20 * 0.09 * <1.0 *
*****
< * : LESS THAN VALUE
> * : GREATER THAN VALUE
() * : UNCERTAIN VALUE
*****

```

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
** COUNTRY * NORWAY *
** INSTITUTION * NIVA *
** SHIP * HIGHAN *
** PROJECT * 0-111/70 *
** LOCATION * SKIENSELVA *
** STATION * S-2 *
** POSITION * NORTH * EAST *
** DEPTH * 15 *
** DATE * 761207 *
** TIME * 10 *
** WEATHER * CLOUDS *
** CONTINUOUS LAYER OF CLOUDS * 8/8 *
** WRECK * SEA-WEED * BATHY-SLIDE * SALINOTHERM *
** OIL * NO * NO *
** NO * NO *
** ICE * NO *
** WAVES * 0.0M *
** CALM * WAVES 0.0M *
** COMMENTS *
** HC 0.5,10M TRB+SUP+TSM, SURFACE SAMPLES 0-2M *

```

```

*****
** DEPTH * M *
** TEMP. * 4.80 *
** SAL. * <2.846 *
** DEG.C * 10.23 *
** O/100 * 29.569 *
** VI. * 10.72 *
** VH. * 32.093 *
** DENS. * <2.408 *
** SIGMA-T * 22.726 *
** H2S * 24.605 *
** O2-SAT * 3.30 *
** O/O * 2.15 *
** TOTP * 10 *
** PO4P * 7 *
** ORGP * 3 *
** TOIN * 1000 *
** NO3N * 480 *
** NH4N * <10 *
** MICROCR./L * 510 *
** TOC * 3.15 *
** ORGN * 360 *
** FE * 1.35 *

```

```

*****
** DEPTH * M *
** RATIO3 * 152 *
** N03/ * 16 *
** P04 * 15 *
** TOC/ * 812 *
** TOIN * 4 *
** TOCP * 105 *
** MOL/MOL * 90 *
** TOCN * 27 *
** TOIN/ * 40 *
** TOCN/ * 27 *
** H2S * 0.07 *
** O2-SAT * 4.4 *
** O/O * 6.1 *
** PB * 3.9 *
** MYG/L * 6.7 *
** MYG/L * 3.9 *
** MYG/L * 6.1 *
** CU * 2.5 *
** MYG/L * 4.4 *
** MYG/L * 4.0 *
** ZN * 7.40 *
** MYG/L * 17.60 *
** MYG/L * 15.70 *
** CD * <0.20 *
** MYG/L * <0.20 *
** CR * <1.0 *
** MYG/L * <1.0 *
** NI * <0.05 *
** MYG/L * 0.08 *
** MN * 0.14 *
** MG/L * 0.14 *
** HEAVY METALS *
** TOC * 3.15 *
** TOIN * 1000 *
** NO3N * 480 *
** NH4N * <10 *
** MICROCR./L * 510 *
** TOC * 3.15 *
** ORGN * 360 *
** FE * 1.35 *

```

```

*****
** DEPTH * M *
** RATIO3 * 152 *
** N03/ * 16 *
** P04 * 15 *
** TOC/ * 812 *
** TOIN * 4 *
** TOCP * 105 *
** MOL/MOL * 90 *
** TOCN * 27 *
** TOIN/ * 40 *
** TOCN/ * 27 *
** H2S * 0.07 *
** O2-SAT * 4.4 *
** O/O * 6.1 *
** PB * 3.9 *
** MYG/L * 6.7 *
** MYG/L * 3.9 *
** MYG/L * 6.1 *
** CU * 2.5 *
** MYG/L * 4.4 *
** MYG/L * 4.0 *
** ZN * 7.40 *
** MYG/L * 17.60 *
** MYG/L * 15.70 *
** CD * <0.20 *
** MYG/L * <0.20 *
** CR * <1.0 *
** MYG/L * <1.0 *
** NI * <0.05 *
** MYG/L * 0.08 *
** MN * 0.14 *
** MG/L * 0.14 *
** HEAVY METALS *
** TOC * 3.15 *
** TOIN * 1000 *
** NO3N * 480 *
** NH4N * <10 *
** MICROCR./L * 510 *
** TOC * 3.15 *
** ORGN * 360 *
** FE * 1.35 *

```

Tokt i 1977

CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
**COUNTRY * *INSTITUTION *SHIP ** PROJECT ** LOCATION ** STATION ** NORTH ** POSITION ** DEPTH ** DATE ** TIME **
**NORWAY * *NIVA * * 0-111/70 ** FRIERFJORD ** BB-1 ** 59,6.6 ** 9,34.2 ** 57 ** 770216 ** 12 **
** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** * WEATHER ** * * ** * CLLOUDS **
** WIND * * DIRECTION * * DEPTH M ** SECCHI-DISC ** * CONTINUOUS LAYER OF CLOUDS ** * 8/8 **
** * (0-36) * * DRY * * WET * * M * * WRECK * SEA-WEED *BATHY-SLIDE *SALINOTHERM *
** 0.0 * * 0 * * 1.5 * * BROWN * * NO * NO * * - *
** ** ** ** ** * ICE ** * IN VICINITY, TYPE/AMOUNT UNKNOWN **
**SEA ** ** * CALM: WAVES 0.0M * * * * * *
** ** ** ** * COMMENTS **
** ** ** * SURFACE SAMPLE 0-2M, GP **
*****

```

```

*****
** ** ** ** * SAL. ** DENS. * 02 * H2S * 02-SAT * NUTRIENTS * MICROGR./L * TOC * FE *
** * DEG.C * 0/00 * SIGMA-T * ML/L * O/O * TOTP P04P ORGP TOIN NO3N NH4N ORGN *MG/L * * *
** * VI. * VH. * * * * * * * * * * * * * * * * * * * * * * * * * * * *
** 0 0.10 3.669 3.011 87.0 16 9 7 1900 490 310 1100 5.60 70.0
** 4 1.08 9.131 7.391 92.4 87.0
** 8 0.55 28.014 22.491 93.1 92.4
** 12 0.71 28.532 22.900 88.8 88.8
** 16 2.37 29.673 23.723 60.2 60.2
** 20 6.85 32.162 25.248 44.4 44.4
** 25 7.83 33.182 25.914 44.4 44.4
** 30 7.24 33.295 26.086 44.4 44.4
** 40 6.94 33.553 26.330 2.0 2.0
** 50 6.71 33.643 26.431 1.06 1.06
*****

```

```

*****
** ** ** * RATIO5 * MOL/MOL ** HEAVY METALS **
** * NO3/ * TOIN/ * HC * CU * ZN * NI * CR * F *
** * P04 * TOIP * MYG/L * MYG/L * MYG/L * MYG/L * MYG/L * MG/L *
** * 120 * 263 * 263 *
** 0 903 903
** 4
** 8
** 12
** 16
** 20
** 25
** 30
** 40
** 50
*****

```


CONTROLLED DATA

MARINE HYDROGRAPHIC DEPTH STATION, TYPE B.

```

*****
* COUNTRY * NORWAY
* INSTITUION *
* SHIP *
* PROJECT * 0-111/70
* LOCATION * FHIERFJORD
* NORTH * 59.4.6
* EAST * 9.38.6
* DATE * 770216
* TIME * 9
* DEPTH * 58
* M *
* WEATHER *
* WIND DIRECTION *
* WIND SPEED *
* M/S *
* O.0 *
* AIR TEMP. *
* DEG.CELS *
* DRY *
* WET *
* DEPTH * 3.5
* M *
* COLOUR * GREEN-YELLOW
* SECCHI-DISC *
* ICE *
* IN VICINITY, TYPE/AMOUNT UNKNOWN
* WAVES *
* CALM *
* SEA *
* COMMENTS *
* SURFACE SAMPLE 0-2M, GP+QP
*****

```

```

*****
* DEPTH * 0 4 8 12 16 20 25 30 40 55
* M *
* SAL. * 34.418 34.418 34.418 34.418 34.418 34.418 34.418 34.418 34.418 34.418
* O/100 * 0.84 0.84 0.84 0.84 0.84 0.84 0.84 0.84 0.84 0.84
* VI. * 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34
* SIGMA-T * 1.60 1.60 1.60 1.60 1.60 1.60 1.60 1.60 1.60 1.60
* DENS. * 3.595 3.595 3.595 3.595 3.595 3.595 3.595 3.595 3.595 3.595
* H2S * 8.11 8.11 8.11 8.11 8.11 8.11 8.11 8.11 8.11 8.11
* O2 * 7.83 7.83 7.83 7.83 7.83 7.83 7.83 7.83 7.83 7.83
* O/SAT * 93.5 93.5 93.5 93.5 93.5 93.5 93.5 93.5 93.5 93.5
* TO2P * 94.0 94.0 94.0 94.0 94.0 94.0 94.0 94.0 94.0 94.0
* P04P * 82.9 82.9 82.9 82.9 82.9 82.9 82.9 82.9 82.9 82.9
* ORGP * 61.0 61.0 61.0 61.0 61.0 61.0 61.0 61.0 61.0 61.0
* TOTP * 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0
* TO3N * 26.345 26.345 26.345 26.345 26.345 26.345 26.345 26.345 26.345 26.345
* NH4N * 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.43
* TON * 22 22 22 22 22 22 22 22 22 22
* CR * 17 17 17 17 17 17 17 17 17 17
* NI * 5 5 5 5 5 5 5 5 5 5
* MN * 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400
* MG/L * 600 600 600 600 600 600 600 600 600 600
* MYG/L * 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100
* MICROGR./L * 700 700 700 700 700 700 700 700 700 700
* TOC * 4.50 4.50 4.50 4.50 4.50 4.50 4.50 4.50 4.50 4.50
* FE *
*****

```

```

*****
* DEPTH * 0 4 8 12 16 20 25 30 40 55
* M *
* RATIOS *
* NO3/ *
* P04 *
* TOC/ *
* TO3N *
* TO3P *
* TO3M/ *
* TO3N/ *
* TO3P/ *
* TO3M *
* TO3N *
* TO3P *
* TO3M *
* TO3N *
* TO3P *
* MOL/MOL *
* TOC/ *
* TO3N/ *
* TO3P/ *
* TO3M *
* TO3N *
* TO3P *
* Hg *
* MYG/L *
* PB *
* MYG/L *
* CU *
* MYG/L *
* ZN *
* MYG/L *
* CD *
* MYG/L *
* CR *
* MYG/L *
* F *
* MG/L *
*****

```


3. REFERANSER

NIVA 1976a

0-111/70 Resipientundersøkelse av nedre Skienselva, Frierfjorden og tilliggende fjordområder.

Rapport nr. 4. Fremdriftsrapport fra undersøkelser av vannutskiftningen i fjordområdene mars 1974-desember 1975.

Saksbehandler: Jarle Molvær.

Stensilert, 49s.+figurer. 18.5.1976.

NIVA 1976b

0-111/70 Resipientundersøkelse av nedre Skienselva, Frierfjorden og tilliggende fjordområder.

Rapport nr. 5. Fremdriftsrapport fra de hydrokjemiske undersøkelsene mars 1974-desember 1975.

Saksbehandler: Jarle Molvær.

Stensilert, 143s. 25.11.1976.

APPENDIX

I datautskriftene fra de enkelte stasjoner opptrer endel forkortelser og betegnelser som ikke aller er like lette å forstå. Dette gjelder spesielt for rubrikken COMMENTS, men tildels også listen over parametre som er målt. Det følgende gir en oversikt over de forkortelser og tegn som er brukt.

Generelle kommentarer (COMMENTS)

COD	Chemical Oxygen Demand	<i>Kjemisk oksygenforbruk (dikromattall)</i>
GP	Growth Potential	<i>Algevekstpotensial</i>
HC	HydroCarbons	<i>Hydrokarboner</i>
HM	Heavy Metals	<i>Tungmetaller</i>
MCL	MicroLayer, surface film sample	<i>Mikrolag, overflatefilmprøve</i>
NH ₄ N	Ammonium NH ₄ N	<i>Ammonium NH₄N</i>
NS	Near Surface Plankton haul	<i>Plankton tatt ved overflate- håvtrekk</i>
NTR	NuTRients, which includes TOC and Fe	<i>Næringssalter, omfatter TOC og Fe</i>
PEN	PENdulum current measurement taken	<i>Pendelstrømmåler brukt</i>
PYC	PYCnocline	<i>Sprangsjiktet</i>
QP	Quantitative Plankton	<i>Kvantitativ planktonprøve</i>
SES	SESton net sample (subsurface)	<i>Seston håvtrekk</i>

SLN	SaLiNOterm (salinity and temperature measuring bridge)	<i>Salinoterm</i>
SUP	SUSPended inorganic particulate matter	<i>Suspendert gløderest (EDB-kode:S-GR)</i>
TRB	TuRBidity	<i>Turbiditet</i>
TSM	Total Suspended Matter (organic+inorganic)	<i>Suspendert tørrstoff</i>
VH	Water sampler	<i>VannHenter</i>
VT	Reversing thermometer	<i>VendeTermometer</i>

Parameternavn og måleenheter

CD	cadmium (Cd)	<i>kadmium (Cd)</i>
CR	chromium (Cr)	<i>krom (Cr)</i>
CU	copper (Cu)	<i>kopper (Cu)</i>
DENS	DENSity Sigma t (σ_t)	<i>tetthet, sigma t (σ_t)</i>
F	fluorine (F)	<i>fluor (F)</i>
FE	iron (Fe)	<i>jern (Fe)</i>
H2S	hydrogen sulphide H ₂ S	<i>hydrogensulfid H₂S</i>
HG	mercury (Hg)	<i>kvikksølv (Hg)</i>
M	meter	<i>meter</i>
MG/L	MilliGram/Liter, mg/l	<i>mg/l</i>
MICROGR/L	MICROGram/Liter, µg/l	<i>µg/l</i>

ML	MilliLiter	<i>milliliter</i>
ML/L	MilliLiter/Liter, ml/l	<i>ml/l</i>
MN	manganese (Mn)	<i>mangan (Mn)</i>
MYG/L	microgram/liter, $\mu\text{g/l}$	<i>$\mu\text{g/l}$</i>
NI	nickel (Ni)	<i>nikkel (Ni)</i>
NO ₃ N	nitrate NO_3N	<i>nitrat NO_3N</i>
O ₂	molecular oxygen - O_2	<i>molekylær oksygen-O_2</i>
O ₂ -SAT%	oxygen-SATuration %	<i>oksygenmetning %</i>
ORG N	ORGanic Nitrogen	<i>organisk nitrogen</i>
ORG P	ORGanic Phosphate	<i>organisk fosfat</i>
PB	lead (Pb)	<i>bly (Pb)</i>
PO ₄ P	ortophosphate PO_4P	<i>ortofosfat - PO_4P</i>
SAL	SALinity	<i>saltholdighet</i>
SAL ^o /oo	SALinity in parts per thousand	<i>saltholdighet i promille</i>
TEMP	TEMPerature	<i>temperatur</i>
TEMP DEG C	TEMPerature in DEGrees Celsius	<i>temperatur i grader Celsius</i>
TOC	Total Organic Carbon	<i>total organisk karbon</i>
TOT N	TOTAL Nitrogen	<i>total nitrogen</i>

TOT P	TOTAL Phosphate	<i>total fosfat</i>
ZN	zinc (Zn)	<i>sink (Zn)</i>

Diverse forkortelser og tegn

<	less than value	<i>mindre enn verdi</i>
>	greater than value	<i>større enn verdi</i>
(*)	uncertain value	<i>usikker verdi</i>
ca.	approximate value	<i>cirka</i>
L	value planned but lacking for unknown reason	<i>verdi planlagt, men mangler av ukjent grunn</i>
NA	value NonAcclimated, usually refers to temperature which hasn't been given enough time to adequately adjust to ambient conditions	<i>temperatur registrert før termometret var helt innstilt på omgivelsenes temperatur (oftest pga. vannhenteren har snudd for tidlig)</i>
OT	Over-Titrated value	<i>over-titrert verdi</i>
R	Repeated analysis	<i>reanalysert prøve</i>
S	Spoiled or damaged sample	<i>ødelagt prøve</i>