



STRAUMMÅLING

NS 9425-2

LOKALITET DJUPESTALLEN

Tysnes kommune





Resipientanalyse AS

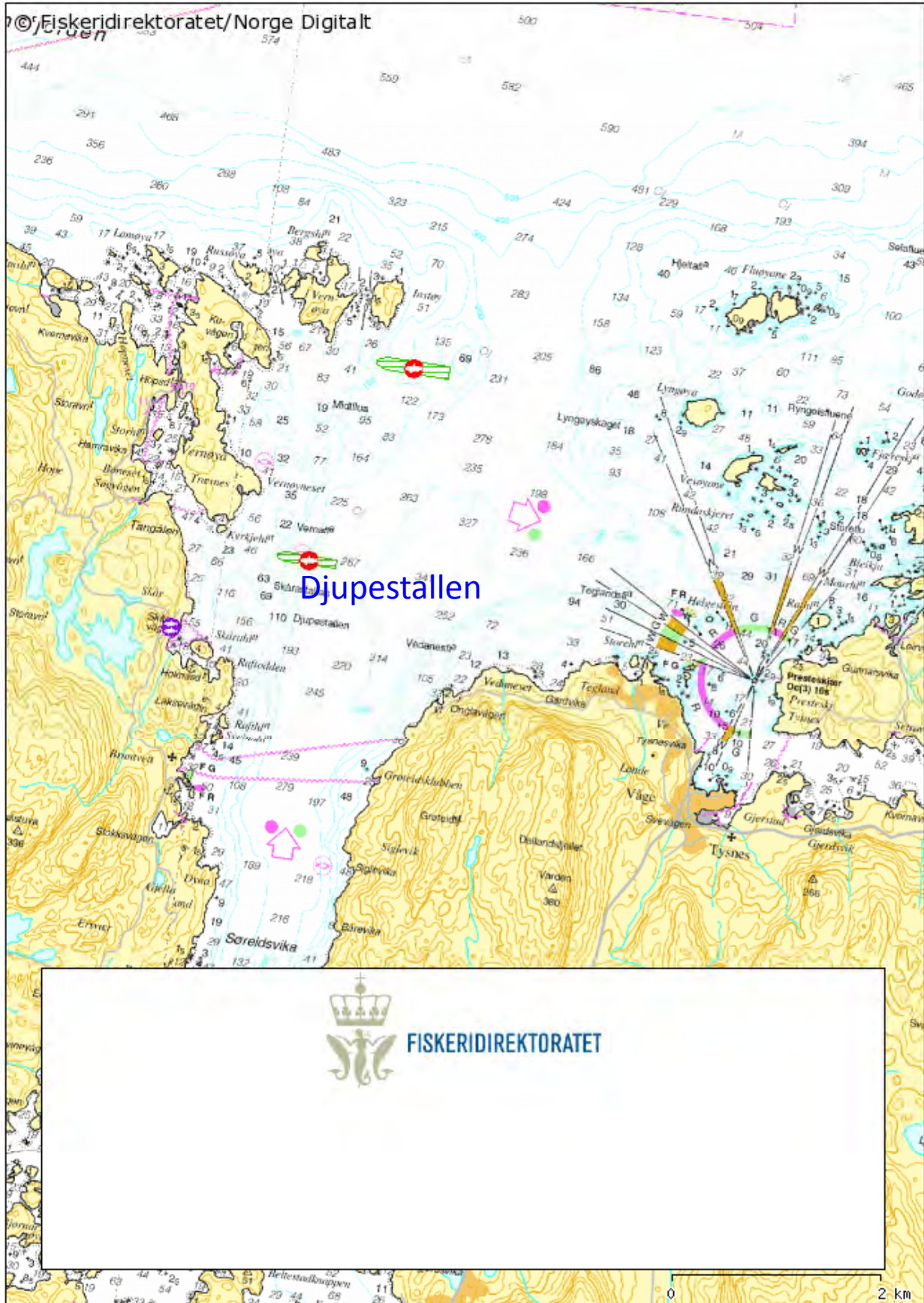
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Internett: <http://www.resipientanalyse.no>

<i>Lokalitetsnamn, lokalitetsnr. og biomasse tillatelse</i> Djupestallen – 14 799 – 3120 TN		<i>Dato, rapport</i> 17 / 12 – 2012
<i>Kommune</i> Tysnes kommune		<i>Dato, felt</i> Utsett: 13 / 11 – 2012 Opptak: 14 / 12 – 2012
<i>Oppdragsgjevar</i> Lerøy Vest AS		<i>Rapport nr.</i> 862 – 2012
<i>Oppdragsart</i> Straummåling		<i>Rapportsider</i> 12
<i>Personell feltundersøking</i> Frode Berge-Haveland, Resipientanalyse AS Øyvind Gjøvåg, Lerøy Vest AS Terje Helland, Lerøy Vest AS		Høgste målte vasstraum: Ved 5 meters djup: 0,256 m/s MOT nord (0°). Ved 15 meters djup: 0,328 m/s MOT nordaust (45°).
Den gjennomsnittlege Vassutskiftingstraumen i måleperioden: 5,7 cm/s Ved 5 meters djup.	Den gjennomsnittlege Vassutskiftingstraumen i måleperioden: 5,9 cm/s Ved 15 meters djup.	
<i>Samandrag</i> <p>2 Nortek Aquadopp punkt strauummålar blei sett ut på 5,4 og 15,4 meters djup. Disse strauummålar måler straumen i eit punkt 0,4 meter over seg. Straumretninga i både vassutskiftingslaget og spreingslaget er dominert av ein nord/sør gåande gjennomsnittlegstraum.</p> <p>Tidevatn og vinddrevet straum er dei dominerande straumkreftene på lokaliteten i løpet av måleperioden.</p>		
<i>Fagansvarleg i Resipientanalyse</i> Frode Berge-Haveland <i>Cand. Scient.</i> Marin mikrobiolog Daglegleiar i Resipientanalyse		<i>Kvalitetsansvarleg i Resipientanalyse</i> Kjetil Aursland <i>Cand. Scient.</i> Mikrobiolog Kvalitetsleiar i Resipientanalyse

INNHALD

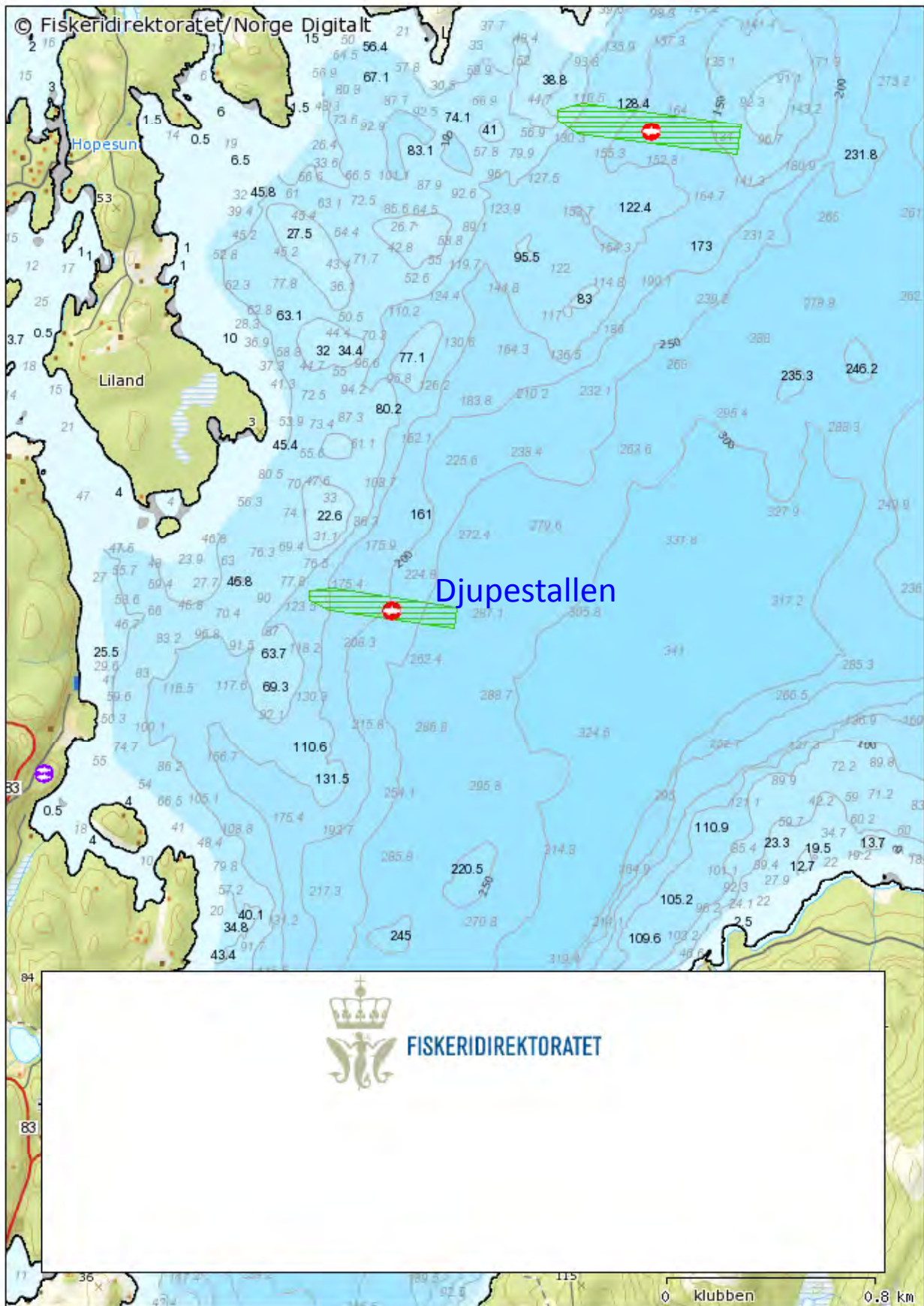
1.0	Skisse for utsett av strømmålar	1
2.0	Kart	2
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20.01.2010



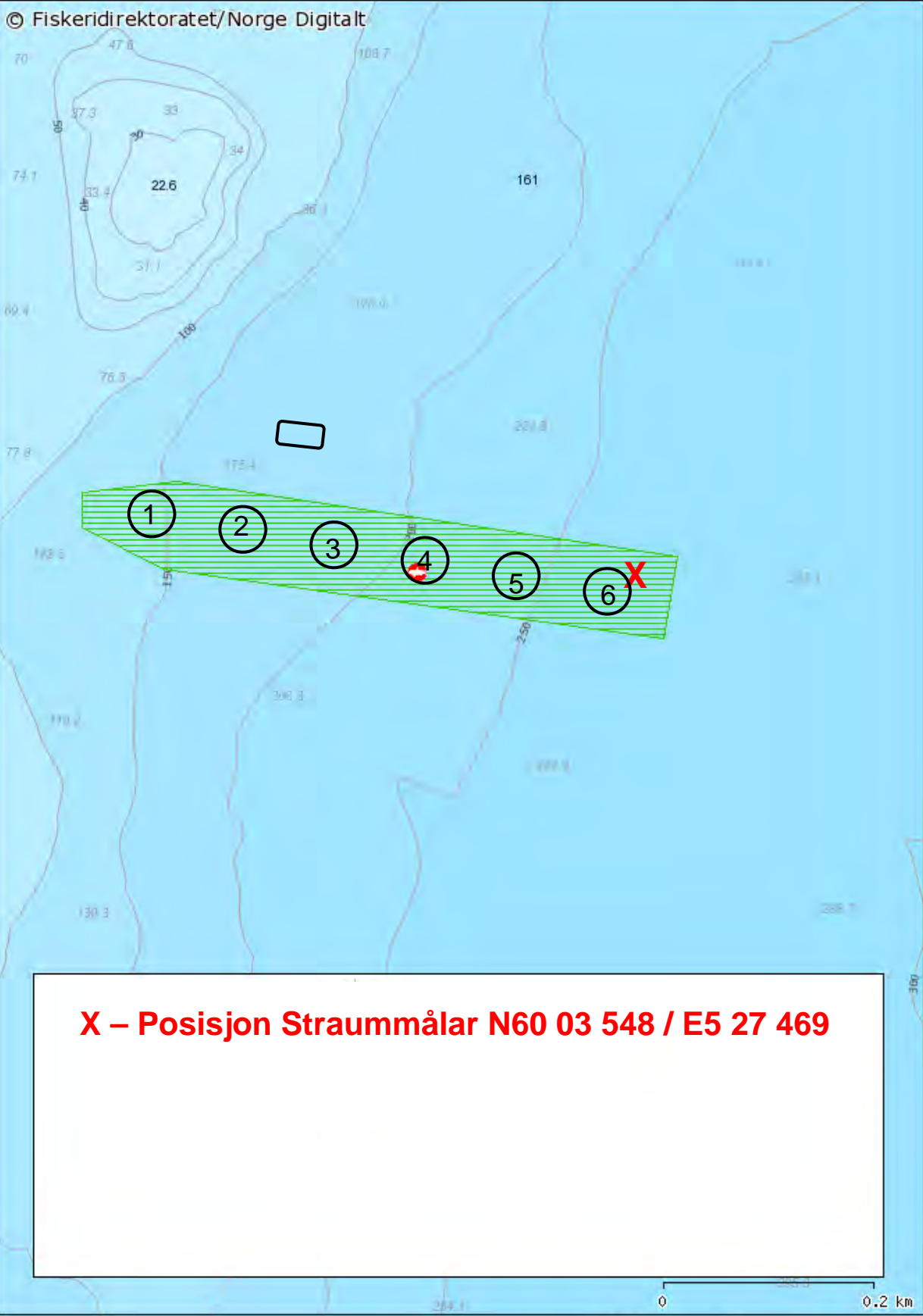
Målestokk: 1:50 000

20.01.2010



Målestokk: 1:20 000

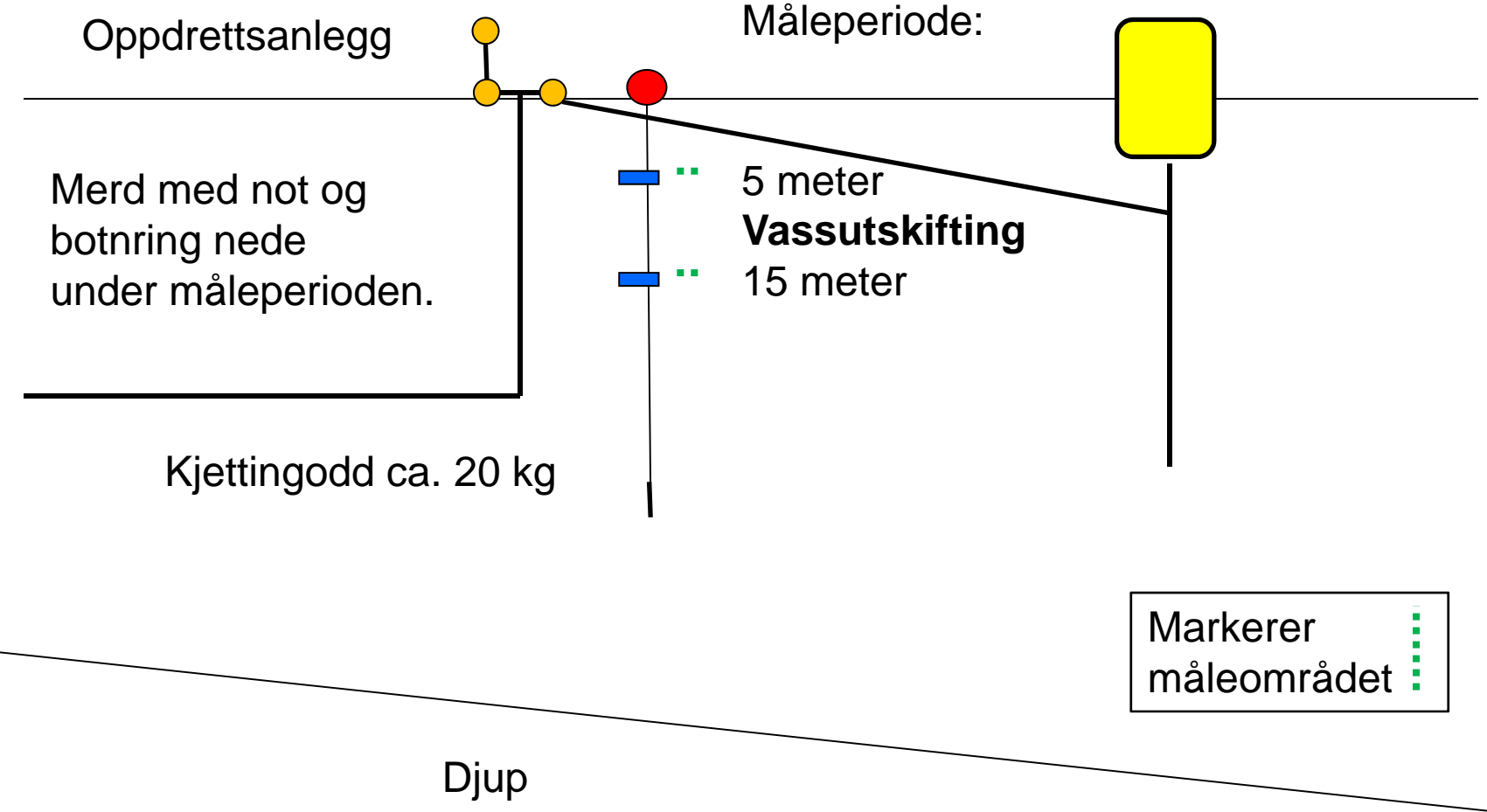
12.09.2010



X – Posisjon Straummålar N60 03 548 / E5 27 469

Målestokk: 1:5 000

Skisse for utsetting av punkt strømmålarar
ved 5 og 15 meters djup:



5.0 Straum 5 meter med eit punkts doppler straummmålar

5.1 Statistisk oppsummering av straummålingsdata

STATISTICAL SUMMARY

File name: Djupe301-1.SD6

Ref. number: 5622

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12

	Total	East / west	North / south
Mean current speed (cm/s)	5,7	3,1	4,2
Variance (cm/s) ²	13,426	6,562	12,166
Standard deviation (cm/s)	3,664	2,562	3,488
Mean standard deviation	0,642	0,819	0,833
Maximum current velocity	25,6		
Minimum current velocity	0,0		
Significant max velocity	9,9		
Significant min velocity	2,3		
	Velocity	Dir	Temp
Valid measurements	4440	4440	4493

CURRENT SPEED / DIRECTION MATRIX

File name: Djupe301-1.SD6

Ref. number: 5622

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12

	Current speed groups													Total flow		Max curr
	1	3	4	5	6	8	10	15	25	50	75	100	Sum%	m ³ /m ²	%	
0	16	66	27	29	20	33	32	28	7	0	0	0	5.8	8707	5.7	24.0
15	6	36	30	22	30	36	48	45	2	0	0	0	5.7	10204	6.7	20.0
30	4	45	20	22	22	30	52	44	3	0	0	0	5.5	9770	6.4	16.7
45	10	45	31	17	13	24	14	8	0	0	0	0	3.6	4464	2.9	14.5
60	2	40	23	21	10	11	2	1	0	0	0	0	2.5	2524	1.7	13.6
75	3	26	27	25	17	14	9	8	2	0	0	0	3.0	3879	2.6	17.0
90	12	44	29	31	29	22	16	7	5	0	0	0	4.4	5740	3.8	16.6
105	7	40	18	34	29	29	14	8	0	0	0	0	4.0	5305	3.5	13.6
120	10	40	39	34	25	38	18	10	0	0	0	0	4.8	6349	4.2	14.5
135	4	46	43	25	27	31	21	12	0	0	0	0	4.7	6320	4.2	13.6
150	8	42	28	23	24	34	21	10	0	0	0	0	4.3	5835	3.8	13.3
165	4	36	25	25	23	35	18	14	1	0	0	0	4.1	5959	3.9	16.0
180	5	54	21	26	20	34	25	19	5	0	0	0	4.7	7165	4.7	17.4
195	4	29	9	26	17	25	25	25	2	0	0	0	3.6	6141	4.0	15.4
210	3	24	15	18	19	28	21	28	9	0	0	0	3.7	6969	4.6	21.5
225	12	29	11	10	11	21	11	10	11	0	0	0	2.8	4672	3.1	21.8
240	5	25	8	21	11	12	4	7	5	0	0	0	2.2	3177	2.1	20.4
255	4	30	11	13	12	18	3	1	1	0	0	0	2.1	2439	1.6	18.0
270	5	45	17	25	13	5	1	1	0	0	0	0	2.5	2355	1.5	13.5
285	6	39	18	10	17	21	15	9	0	0	0	0	3.0	3997	2.6	11.9
300	4	35	33	21	25	44	19	30	1	0	0	0	4.8	7601	5.0	23.0
315	8	42	29	31	43	43	32	33	6	0	0	0	6.0	9822	6.5	19.7
330	9	44	40	24	38	38	37	36	24	1	0	0	6.6	12223	8.0	25.6
345	7	45	40	19	10	27	22	56	18	0	0	0	5.5	10512	6.9	22.0
Sum%	3.6	21.3	13.3	12.4	11.4	14.7	10.8	10.1	2.3	0.0	0.0	0.0		152127		25.6

5.2 Straummålingsdata i graf for heile måleperioden

CURRENT SPEED

File name: Djupe301-1.SD6

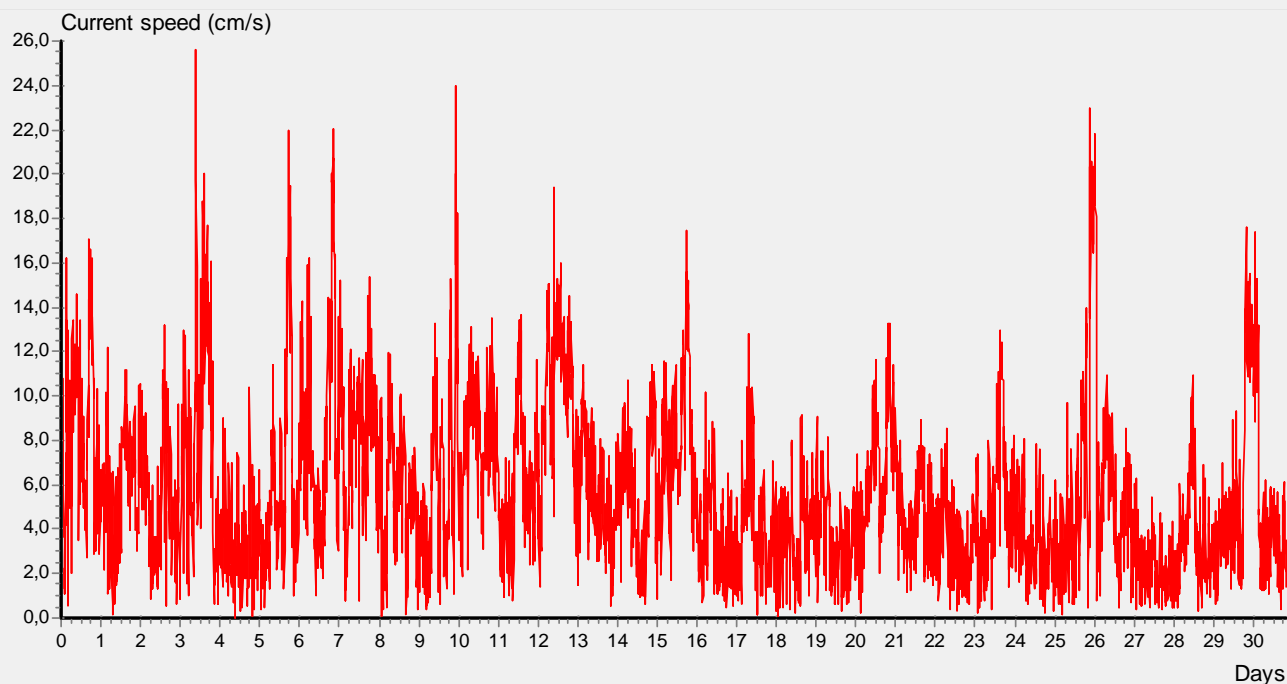
Ref. number: 5622

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12



5.3 Straummålingsdata i histogram for heile måleperioden

CURRENT SPEED BAR CHART

File name: Djupe301-1.SD6

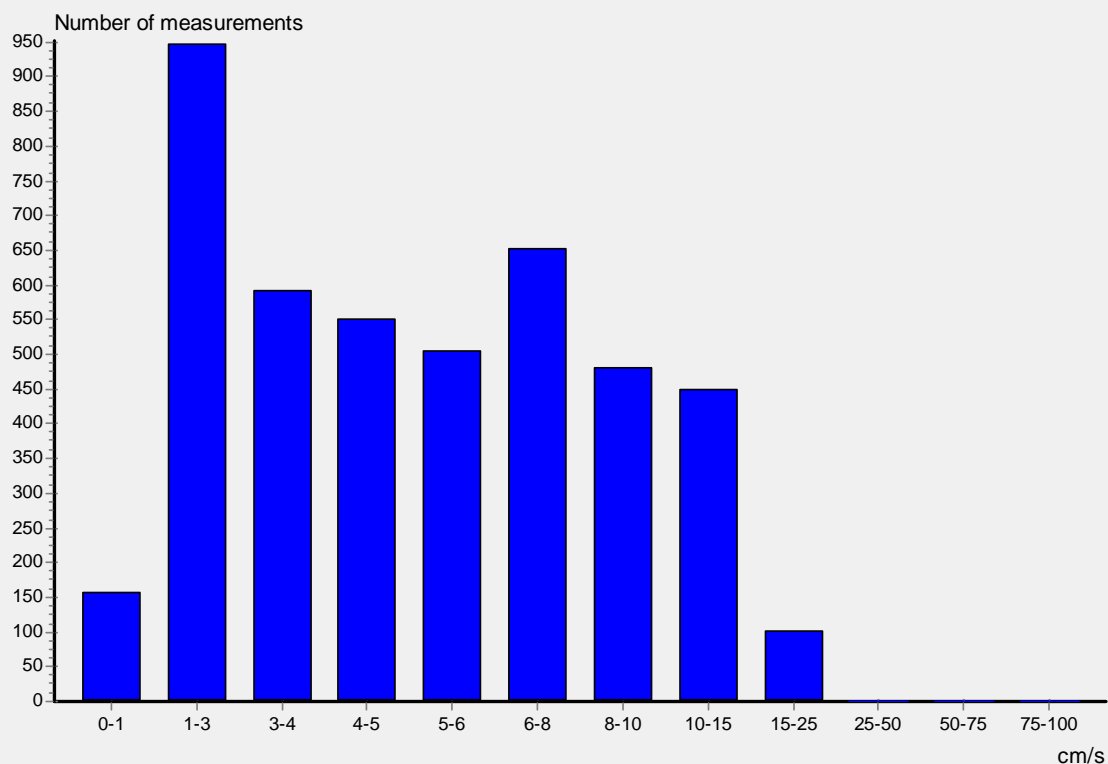
Ref. number: 5622

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12



5.4 Temperaturdata i graf for heile måleperioden

TEMPERATURE AT CURRENT METER POSITION

File name: Djupe301-1.SD6

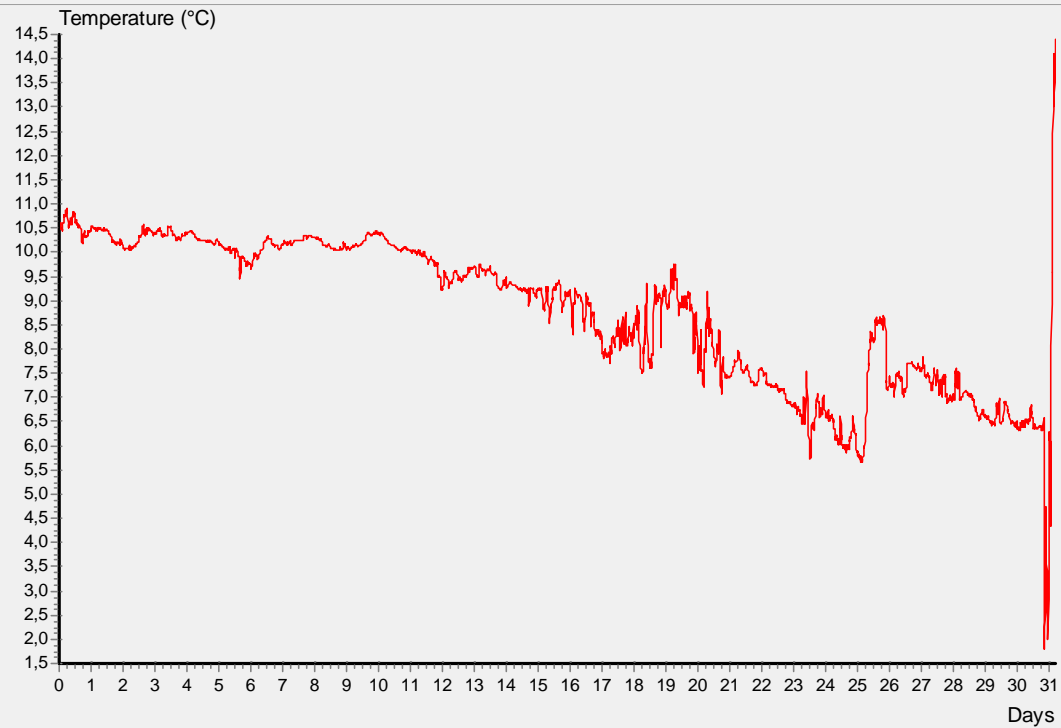
Ref. number: 5622

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12



5.5 Progressiv vektor

PROGRESSIVE VECTOR

File name: Djupe301-1.SD6

Ref. number: 5622

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12

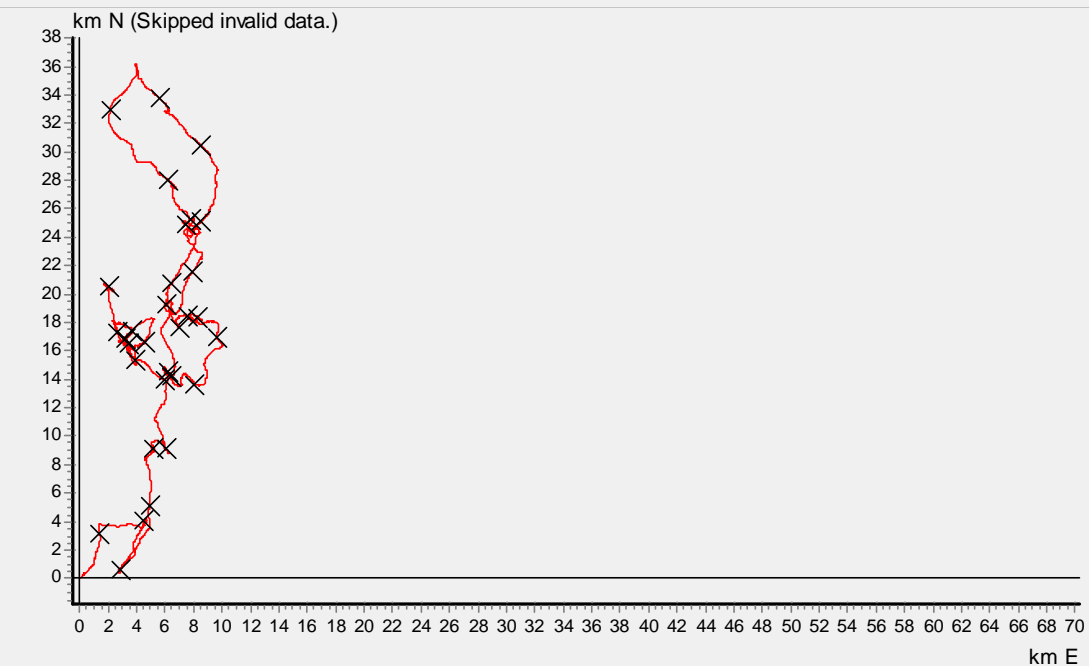
Neumann parameter: 0.135

Rest speed: 0.8 cm/s

Valid data points: 4440

Average speed: 5.7 cm/s

Rest direction: 6 deg.



5.6 Maksimum og gjennomsnittlig straumfordelings diagram

CURRENT VELOCITY DISTRIBUTION DIAGRAM

File name: Djupe301-1.SD6

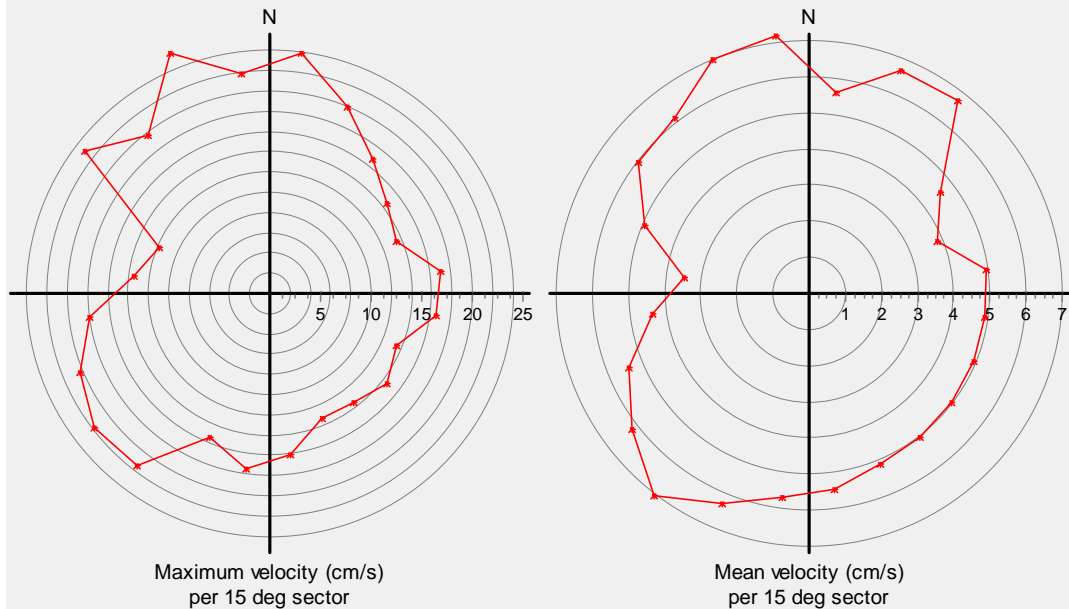
Series number: 1

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12

Ref. number: 5622

Interval time: 10 Minutes



5.7 Vassflux

CURRENT VELOCITY DISTRIBUTION DIAGRAM

File name: Djupe301-1.SD6

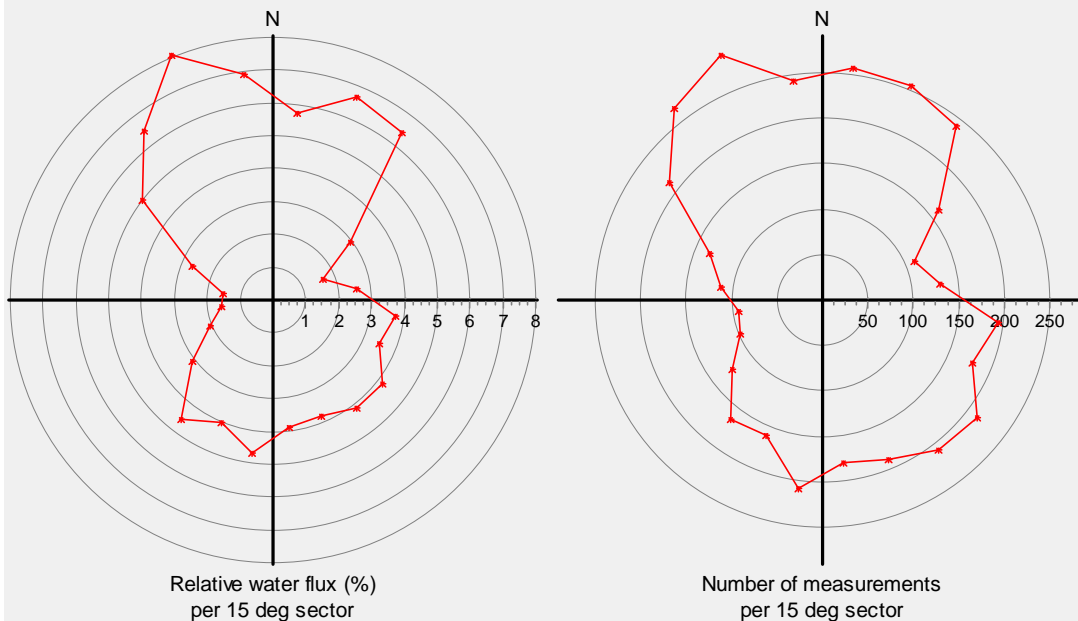
Series number: 1

Number of measurements in data set: 4493

Data displayed from: 12:00 - 13.Nov-12 To: 16:40 - 14.Dec-12

Ref. number: 5622

Interval time: 10 Minutes



5.0 Straum 15 meter med eit punkts doppler straummmålar

5.1 Statistisk oppsummering av straummålingsdata

STATISTICAL SUMMARY

File name: Djupe401-1.SD6

Ref. number: 5707

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12

	Total	East / west	North / south
Mean current speed (cm/s)	5,9	3,5	4,0
Variance (cm/s) ²	16,289	9,692	13,427
Standard deviation (cm/s)	4,036	3,113	3,664
Mean standard deviation	0,685	0,898	0,919
Maximum current velocity	32,8		
Minimum current velocity	0,0		
Significant max velocity	10,1		
Significant min velocity	2,5		
	Velocity	Dir	Temp
Valid measurements	4440	4440	4493

CURRENT SPEED / DIRECTION MATRIX

File name: Djupe401-1.SD6

Ref. number: 5707

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12

	Current speed groups													Total flow		Max curr
	1	3	4	5	6	8	10	15	25	50	75	100	Sum%	m ³ /m ²	%	
0	10	36	23	17	18	24	18	25	15	1	0	0	4.2	7662	4.9	27.7
15	3	25	13	7	8	6	7	8	27	15	0	0	2.7	8251	5.3	32.8
30	3	22	12	8	2	1	2	9	13	9	0	0	1.8	4759	3.0	31.4
45	1	23	8	6	5	2	1	0	1	0	0	0	1.1	1030	0.7	22.3
60	2	20	8	7	3	4	1	1	0	0	0	0	1.0	1007	0.6	12.9
75	0	17	13	13	7	5	3	0	0	0	0	0	1.3	1407	0.9	8.4
90	12	37	20	12	16	15	7	3	0	0	0	0	2.7	2870	1.8	11.1
105	2	33	29	22	18	15	9	12	0	0	0	0	3.2	4123	2.6	14.1
120	1	52	32	29	22	20	4	2	0	0	0	0	3.6	4021	2.6	12.8
135	5	43	36	35	26	23	14	4	0	0	0	0	4.2	4993	3.2	11.1
150	5	45	45	33	19	41	8	9	2	0	0	0	4.7	6021	3.8	16.8
165	1	44	26	37	32	41	28	22	1	0	0	0	5.2	7990	5.1	15.7
180	10	36	29	37	28	47	16	10	0	0	0	0	4.8	6528	4.2	13.8
195	7	42	19	29	31	50	15	10	0	0	0	0	4.6	6333	4.0	13.2
210	7	38	30	35	25	45	28	21	0	0	0	0	5.2	7802	5.0	14.1
225	8	52	35	20	27	52	29	20	6	0	0	0	5.6	8752	5.6	22.1
240	8	44	30	33	30	47	23	29	21	0	0	0	6.0	10782	6.9	23.9
255	5	29	34	32	33	53	24	23	12	0	0	0	5.5	9492	6.0	22.2
270	7	53	36	26	31	46	41	22	6	0	0	0	6.0	9477	6.0	19.8
285	1	36	24	32	31	37	25	19	2	0	0	0	4.7	7275	4.6	15.8
300	0	24	23	21	31	52	15	17	1	0	0	0	4.1	6619	4.2	16.3
315	3	40	28	27	35	49	42	10	0	0	0	0	5.3	8008	5.1	12.7
330	3	48	31	30	34	65	43	34	1	0	0	0	6.5	10684	6.8	15.9
345	5	25	14	36	36	53	47	49	2	0	0	0	6.0	11158	7.1	16.2
Sum%	2.5	19.5	13.5	13.2	12.3	17.9	10.1	8.1	2.5	0.6	0.0	0.0		157044		32.8

5.2 Straummålingsdata i graf for heile måleperioden

CURRENT SPEED

File name: Djupe401-1.SD6

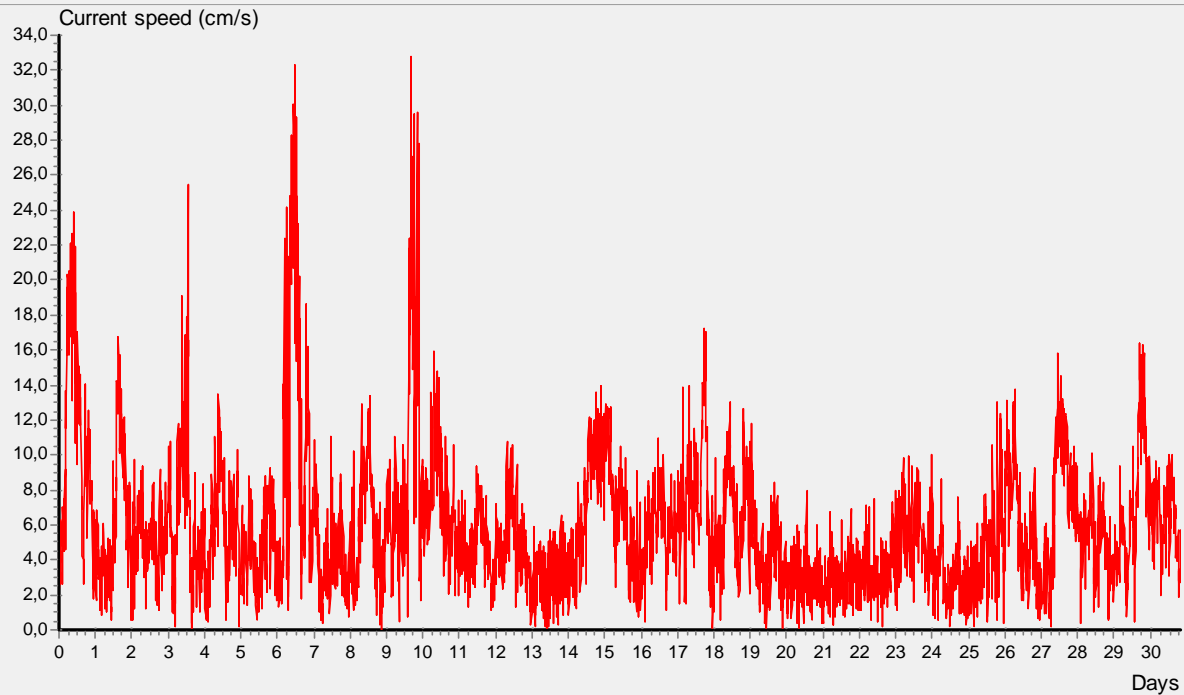
Ref. number: 5707

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12



5.3 Straummålingsdata i histogram for heile måleperioden

CURRENT SPEED BAR CHART

File name: Djupe401-1.SD6

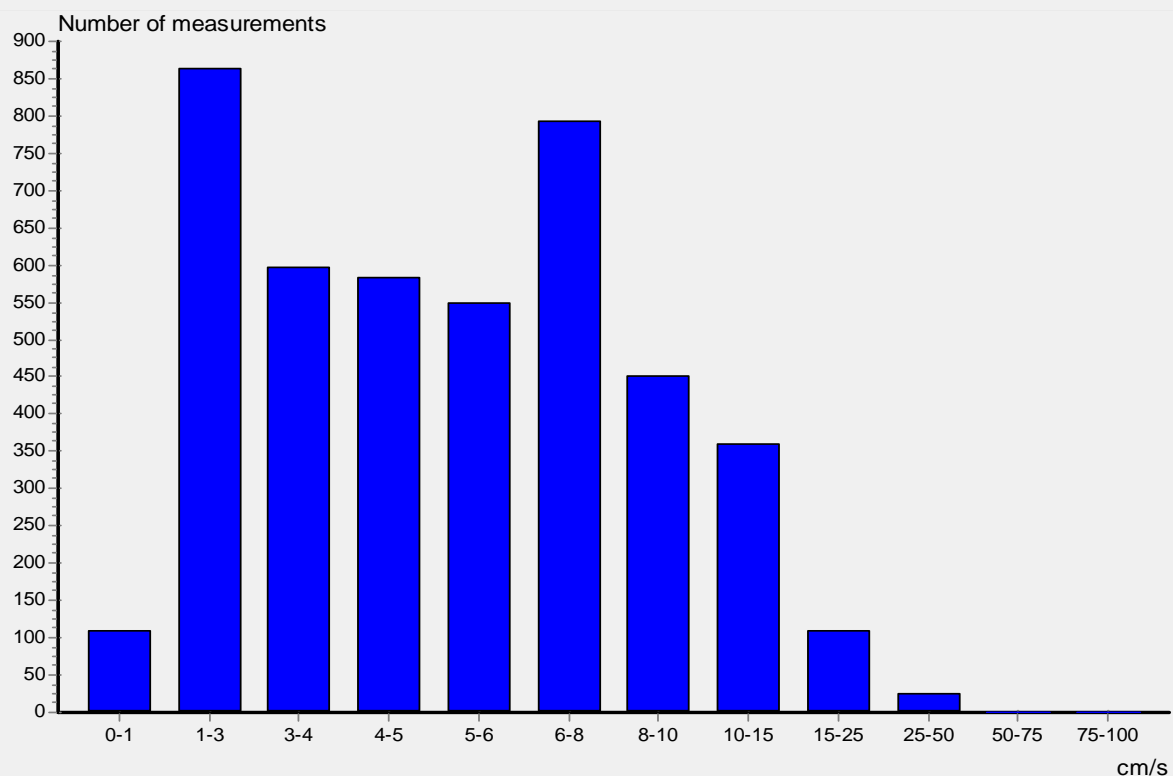
Ref. number: 5707

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12



5.4 Temperaturdata i graf for heile måleperioden

TEMPERATURE AT CURRENT METER POSITION

File name: Djupe401-1.SD6

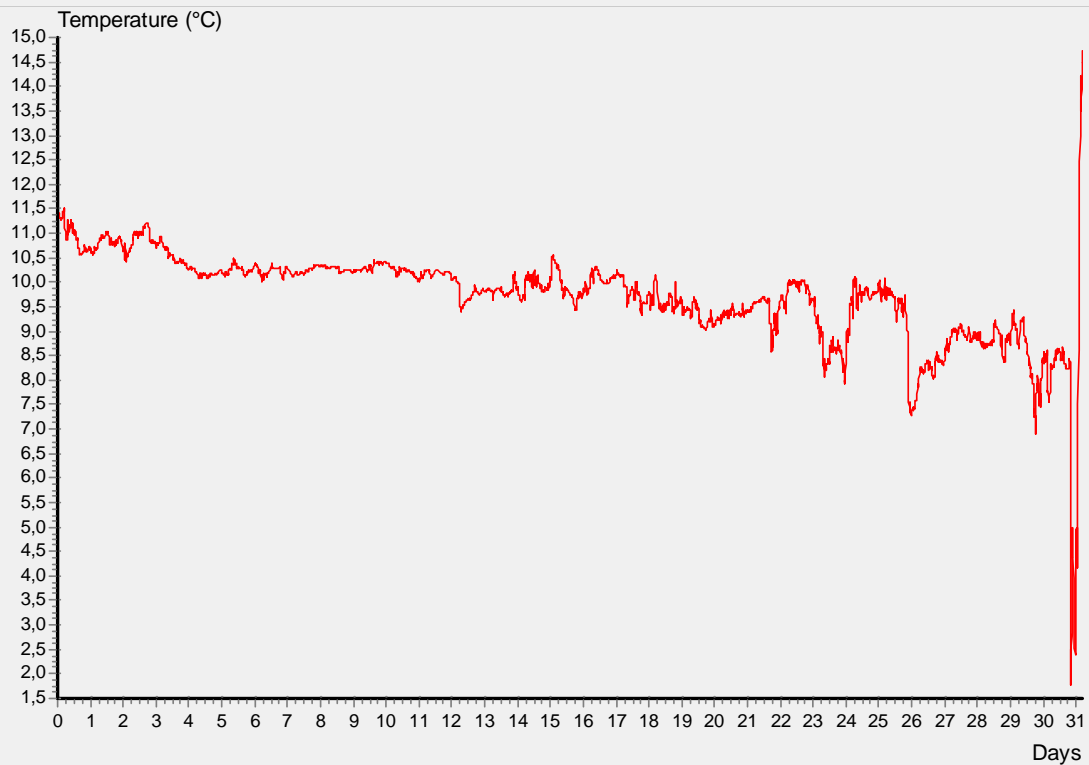
Ref. number: 5707

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12



5.5 Progressiv vektor

PROGRESSIVE VECTOR

File name: Djupe401-1.SD6

Ref. number: 5707

Series number: 1

Interval time: 10 Minutes

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12

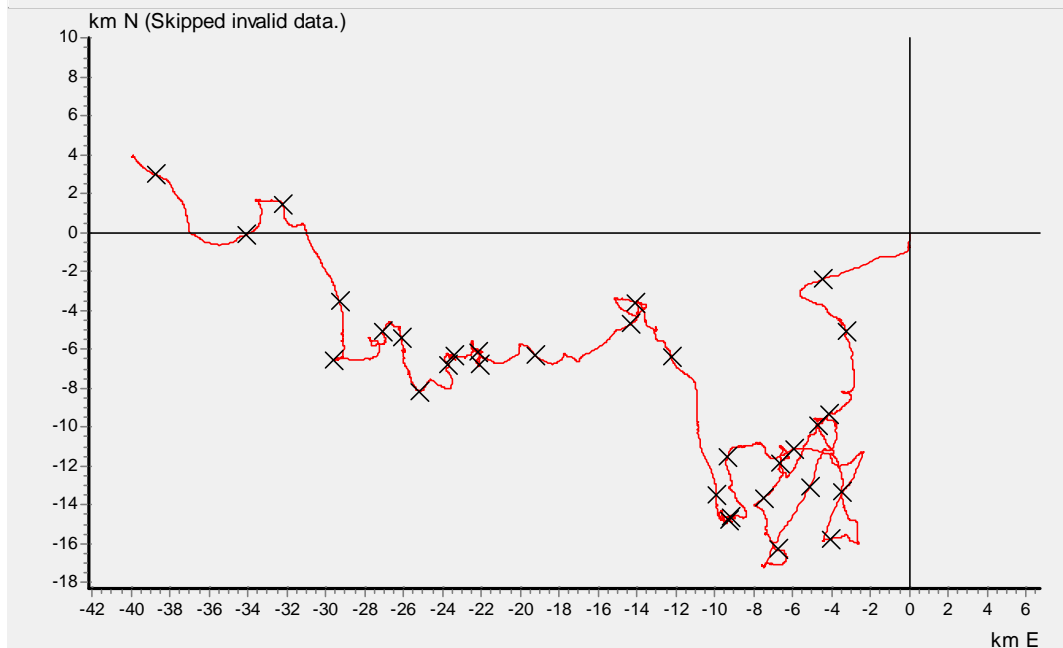
Neumann parameter: 0.256

Rest speed: 1.5 cm/s

Valid data points: 4440

Average speed: 5.9 cm/s

Rest direction: 276 deg.



5.6 Maksimum og gjennomsnittlig straumfordelings diagram

CURRENT VELOCITY DISTRIBUTION DIAGRAM

File name: Djupe401-1.SD6

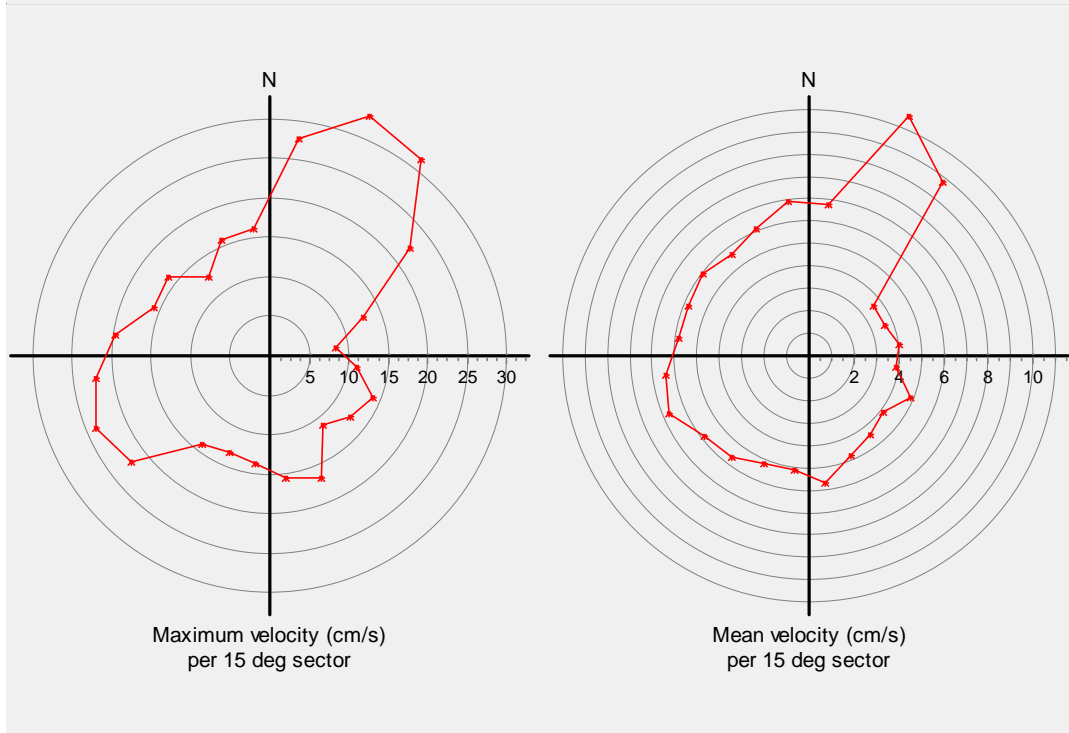
Series number: 1

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12

Ref. number: 5707

Interval time: 10 Minutes



5.7 Vassflux

CURRENT VELOCITY DISTRIBUTION DIAGRAM

File name: Djupe401-1.SD6

Series number: 1

Number of measurements in data set: 4493

Data displayed from: 12:05 - 13.Nov-12 To: 16:45 - 14.Dec-12

Ref. number: 5707

Interval time: 10 Minutes

