

Overflow tests Dutch levees Annexes



Foto: Vilda-Yves Adams



Adaptation
to climate
change

Overflow tests Dutch levees

Annexes

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INTERREG Polder2C's project

The INTERREG Polder2C's is an international research project within the framework of the updated Sigma plan for the river Schelde. The Hedwige-Prosperpolder will be transformed into tidal nature. Depoldering of Hedwige-Prosperpolder offers a unique testing ground, the Living Lab Hedwige-Prosperpolder, for flood defence and emergency response experts. In this environment current and innovative techniques, processes, methods and products can be tested for practical validation. Thirteen project partners, led by the Dutch Foundation of Applied Water Research (STOWA) and the Flemish Department of Mobility and Public Works (DMOW, Flanders Hydraulics Research), are working together. Together, they aim to improve the 2 Seas regions' capacity to adapt to the challenges caused by climate change.

Flood Defence

The rising sea level is a serious threat to the countries in 2 Seas region. How strong are our current flood defences? What is the impact of environmental elements such as the weather, the presence of vegetation or man-made objects on our flood defences? To answer these questions numerous destructive field tests are carried out in the Living Lab to validate flood defence practices. The project entails in situ testing, guidance on levee maintenance and validation of flood defence infrastructure.

Emergency Response

We aim to improve emergency response by developing the right tools for inspection of water defences, risk evaluation and solutions for flooding. If our water defences do not operate as designed, we must take the right measures to prevent flooding of valuable areas. The Hedwige-Prosperpolder Living Lab offers unique possibilities to exercise emergency management in the event of calamities under controlled but realistic circumstances. Activities that are part of the programme are levee surveillance and monitoring, emergency response exercises, breach initiation and the large European exercise.

Knowledge Infrastructure

We aim to develop a knowledge infrastructure through which existing and new to be developed knowledge will become available and accessible. A necessary success factor for any initiative to improve knowledge is to have its outcomes integrated in practices of a wider community. Knowledge Infrastructure focuses therefore on the consolidation of knowledge acquired in the Living Lab with a variety of activities. Accessibility of data in a user-friendly manner, educational activities in the field and incorporation of knowledge in educational curricula are considered key elements.

Field Station

How can we make sure that both experts in the field and the local public benefit from our project and the learnings about climate change, flood resilience, emergency response and the unique environment of the Hedwige-Prosperpolder? An important and unique way of reaching this goal is realising a Field Station at the project site. It will be used during and after the project for educational purposes, research and as a special meeting place for exclusive occasions.

1 Introduction

Overflow tests on levees are designed to test the strength of levees and levee covers under the load of a continuously overflowing discharge of water. For this purpose, Flanders Hydraulics Research have designed and built an Overflow Generator (Vercruysse et al., 2022) within the framework of the Polder2C's project. This device allows to generate a controlled and homogenous discharge of water over the levee crest.

Within the Polder2C's project, 25 overflow tests on Belgian and Dutch levee stretches have been executed in 3 episodes from 30/10/20 to 28/11/20, 17/02/21 to 31/03/21 and 16/11/21 to 20/12/21. Different test goals have been addressed, to understand the normal performance of a levee cover, and the influence of different anomalies and/or deviations from the 'standard' levee.

This report bundles the **annexes** for the data report of the overflow tests executed on the Belgian part of the Hedwige-Propserpolder levees. The information shown herein pertains to the tests indicated by the striped box:

<u>Name</u>	<u>Category</u>
- B-OF01 Reference	Reference
- B-OF02 Short Grass + Artif. Anom	Alternative vegetation + Slope anomaly
- B-OF03 High Discharge	High Discharge
- B-OF04 Tree	Tree
- B-OF05 Erosion cliff	Slope anomaly
- B-OF05B Damage repair	Damage repair
- B-OF06 Clay Erosion	Clay Erosion
- B-OF07 Levee Challenge	Damage repair
- B-OF08 Reference	Reference
- B-OF09 High Discharge	High Discharge
- B-OF10 High Discharge	High Discharge
- B-OF11 Tree	Tree

- N-OF01 Reference	Reference
- N-OF02 Clay Erosion	Clay Erosion
- N-OF03 Reference	Reference
- N-OF04 Reference	Reference
- N-OF05 Burrow	Burrow
- N-OF05B Damage repair	Damage repair
- N-OF05C RTM	RTM
- N-OF06 RTM	RTM
- N-OF07 RTM	RTM
- N-OF08 Grass sods	RTM
- N-OF09 Burrow protection	Burrow protection
- N-OF10 Reed vegetation	Alternative vegetation
- N-OF11 Reed vegetation	Alternative vegetation

2 Other reports (references)

The reports related to the overflow tests are listed below.

Design, setup and validation of the monitoring data:

- Vercruysse, J., Depreiter, D., Verelst, K., Peeters, P. (2022). Design and application of an Overflow Generator for levee strength testing.

Test results (factual data):

- Depreiter, D., Vercruysse, J., Verelst, K., Lopez Castaño, S., Koelewijn, A., Zomer, W., Tsimopoulou, V., Peeters, P. (2022). Polder2C's Overflow tests on Belgian levees. WL2022R20_047_1_P2C_Overflow_Tests_BelgianLevee. Main document + Annexes.
- Depreiter, D., Vercruysse, J., Verelst, K., Lopez Castaño, S., Koelewijn, A., Zomer, W., Tsimopoulou, V., Peeters, P. (2022). Polder2C's Overflow tests on Dutch levees. WL2022R20_047_2_P2C_Overflow_Tests_BelgianLevee. Main document + Annexes.

Integration and comparison of results:

- Depreiter, D., Vercruysse, J., Verelst, K., Lopez Castaño, S., Koelewijn, A., Zomer, W., Tsimopoulou, V., Peeters, P. (2022). Polder2C's Overflow and overtopping test integration report. WL2022R20_047_2_P2C_Overflow_Tests_BelgianLevee.

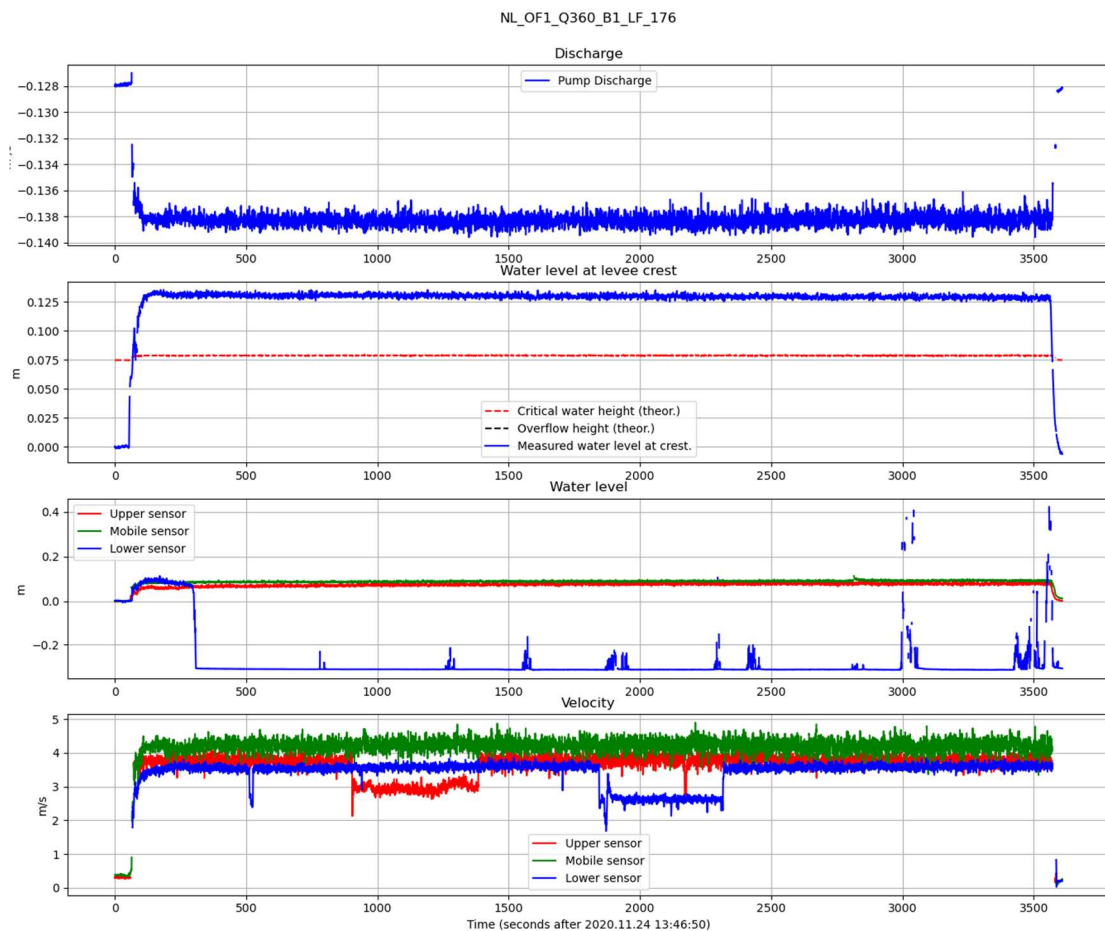
Annex A - N-OF01 Reference timeseries

The following timeseries details are reproduced in this section:

A.1	N-OF01: Block 1	3
A.2	N-OF01: Block 2	4
A.3	N-OF01: Block 3	5
A.4	N-OF01: Block 4	6
A.5	N-OF01: Block 5	7
A.6	N-OF01: Block 6	8
A.7	N-OF01: Block 7	9
A.8	N-OF01: Block 7 (bis)	10
A.9	N-OF01: Block 8	11
A.10	N-OF01: Block 8bis	12
A.11	N-OF01: Block 9	13
A.12	N-OF01: Block 10	14
A.13	N-OF01: Block 11	15
A.14	N-OF01: Block 12	16
A.15	N-OF01: Block 13	17
A.16	N-OF01: Block 14	18
A.17	N-OF01: Block 15	19
A.18	N-OF01: Block 16	20
A.19	N-OF01: Block 17	21
A.20	N-OF01: Block 18	22
A.21	N-OF01: Block 19	23
A.22	N-OF01: Block 20	24
A.23	N-OF01: Block 21	25
A.24	N-OF01: Block 22	26
A.25	N-OF01: Block 23	27
A.26	N-OF01: Block 24	28
A.27	N-OF01: Block 25	29
A.28	N-OF01: Block 26	30
A.29	N-OF01: Block 27	31
A.30	N-OF01: Block 29	32
A.31	N-OF01: Block 30	33

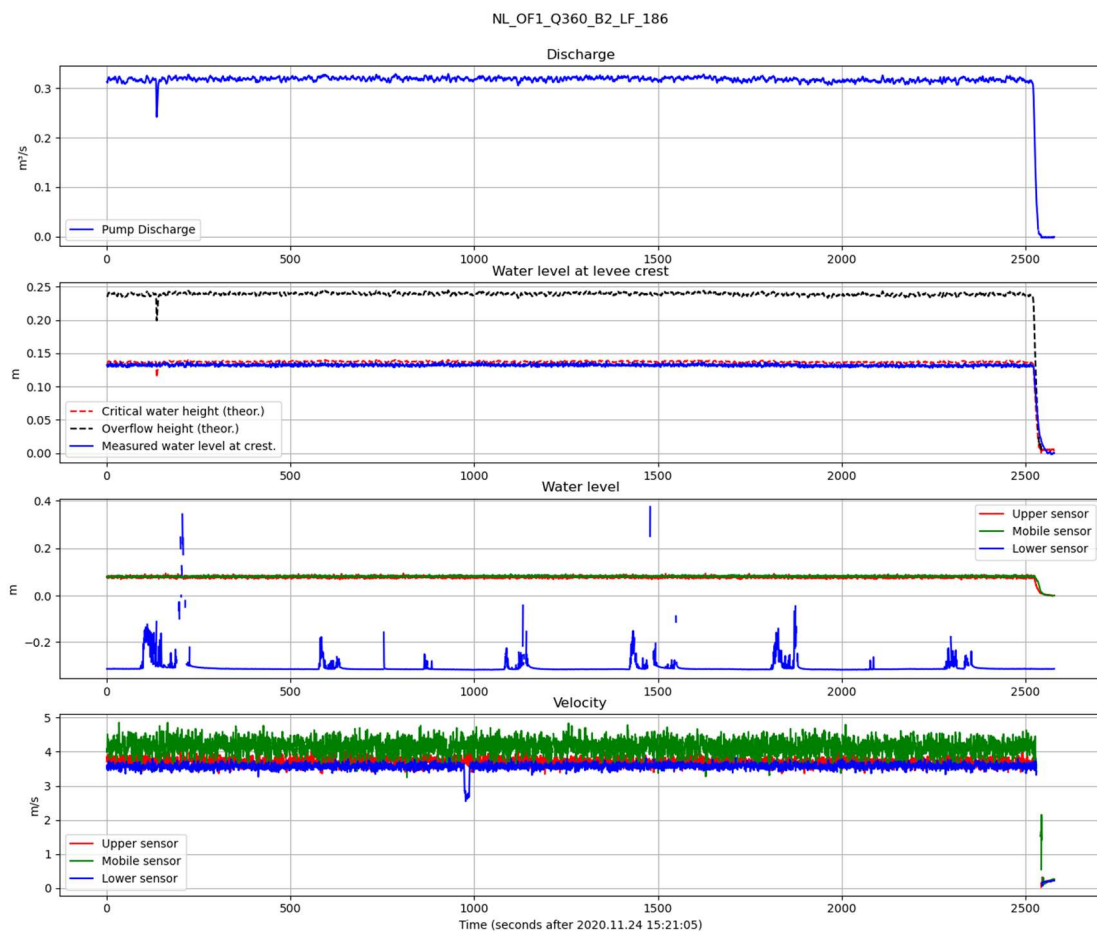
A.1 N-OF01: Block 1

Start	24/11/2020 14:47					
Stop	24/11/2020 15:46					
Duration	59 minutes					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	360 L/s nominal (approx. 320 L/s in reality, based on following blocks)					
Notes	- WH_LOWER has error state.					
Statistics	Calculated from t=109 to 3540 sec (n=34306).					
series	Min	max	mean	std	Unit	
DISCHARGE					m³/s	
WH_CREST	0.124	0.135	0.130	0.002	m	
WH_UPPER	0.052	0.094	0.074	0.006	m	
WH_MOBILE	0.077	0.112	0.089	0.003	m	
WH_LOWER					m	
VXY_UPPER	2.13	4.37	3.66	0.31	m/s	
VXY_MOBILE	3.35	4.89	4.22	0.16	m/s	
VXY_LOWER	1.68	3.87	3.43	0.34	m/s	



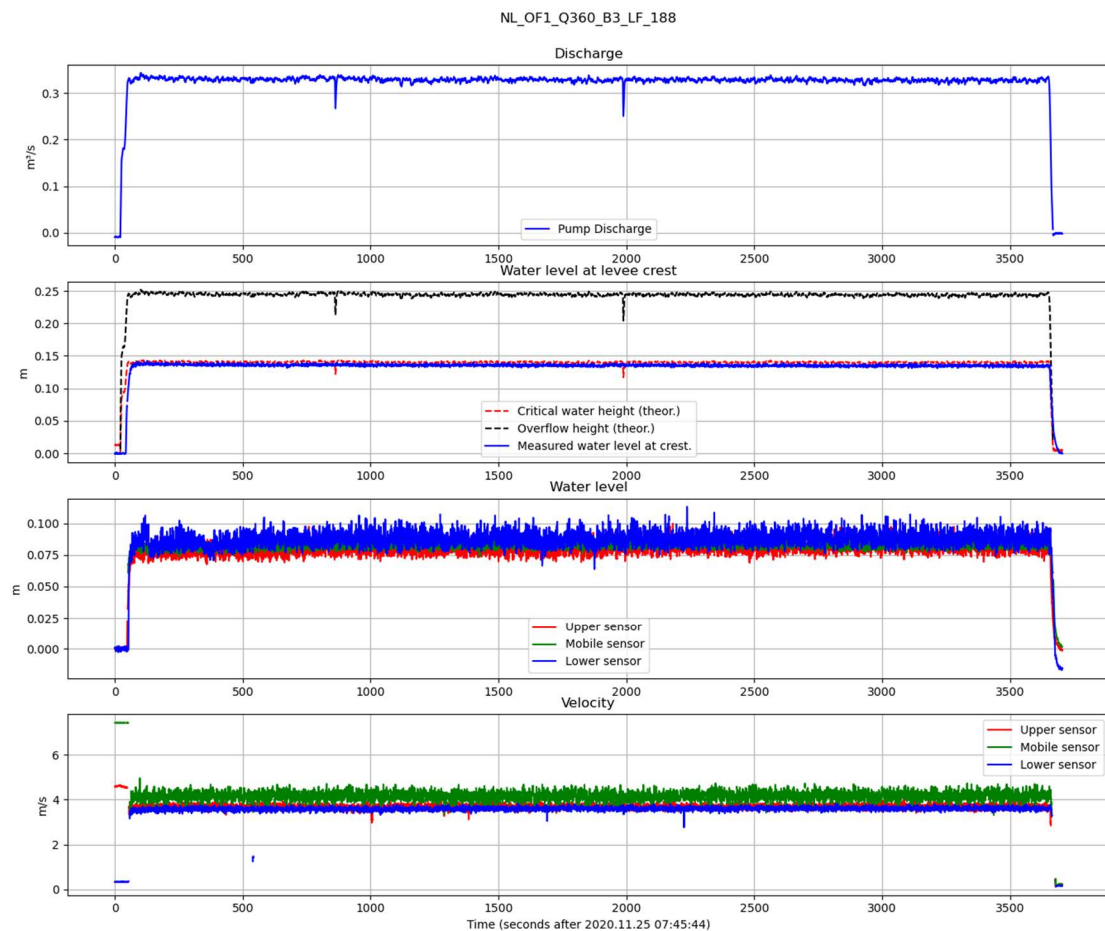
A.2 N-OF01: Block 2

Start	24/11/2020 16:03					
Stop	24/11/2020 17:04					
Duration	1 hour 1 minute					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	318 L/s					
Notes	- From 16:03 to 16:21, PTV tests have been executed. Data exists in different timeseries files not reproduced here. Only last part (ID 186) shown.					
Statistics	Calculated from t=0 to 2509 sec (n=25088).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.242	0.329	0.318	0.004	m³/s
	WH_CREST	0.127	0.138	0.132	0.001	m
	WH_UPPER	0.068	0.094	0.079	0.004	m
	WH_MOBILE	0.075	0.091	0.082	0.002	m
	WH_LOWER					m
	VXY_UPPER	3.34	4.14	3.70	0.10	m/s
	VXY_MOBILE	3.24	4.85	4.15	0.20	m/s
	VXY_LOWER	2.55	3.83	3.57	0.09	m/s



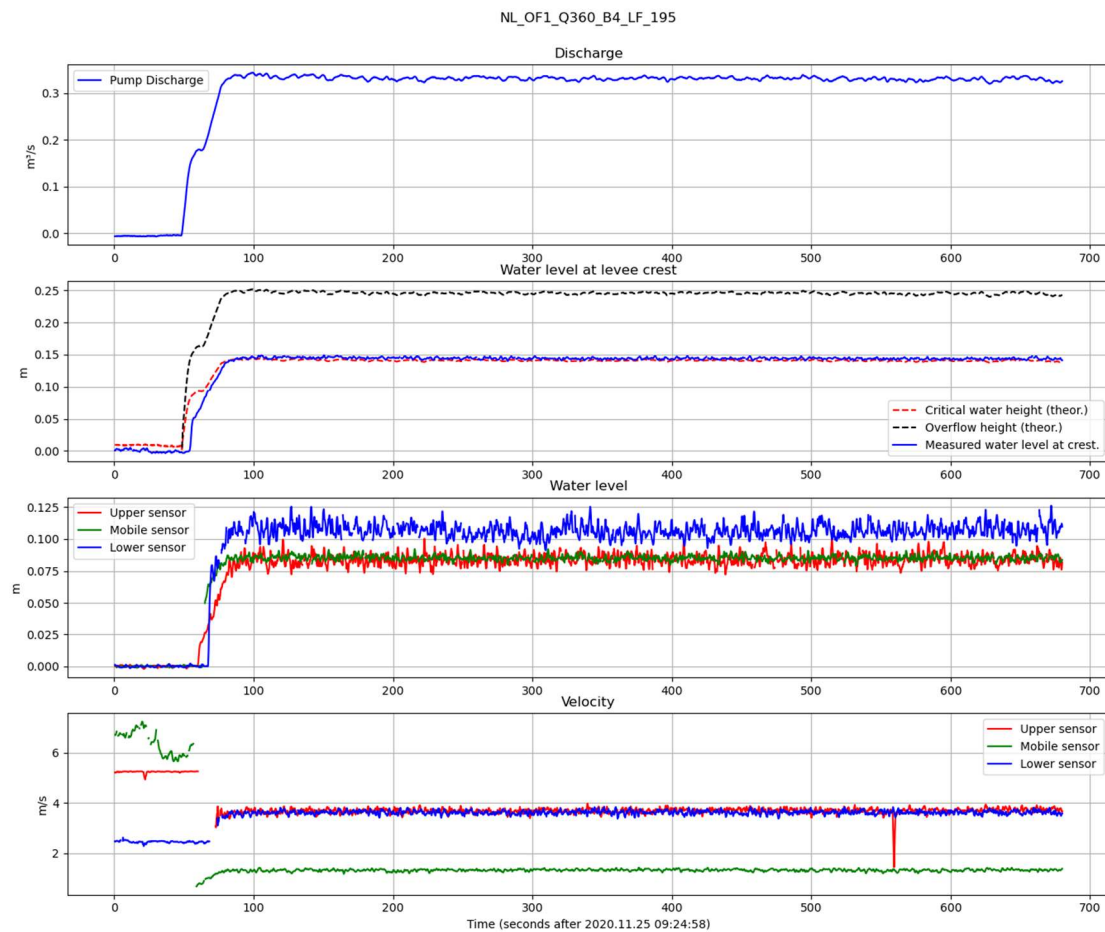
A.3 N-OF01: Block 3

Start	25/11/2020 8:45					
Stop	25/11/2020 9:46					
Duration	1 hour 1 minute					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	329 L/s					
Notes	-					
Statistics	Calculated from t=59 to 3634 sec (n=35747).					
series	Min	max	mean	std	Unit	
DISCHARGE	0.251	0.343	0.329	0.004	m³/s	
WH_CREST	0.123	0.143	0.136	0.001	m	
WH_UPPER	0.063	0.100	0.080	0.004	m	
WH_MOBILE	0.073	0.092	0.082	0.002	m	
WH_LOWER	0.064	0.113	0.088	0.005	m	
VXY_UPPER	2.97	4.10	3.69	0.09	m/s	
VXY_MOBILE	3.32	4.96	4.17	0.17	m/s	
VXY_LOWER	1.24	3.82	3.59	0.09	m/s	



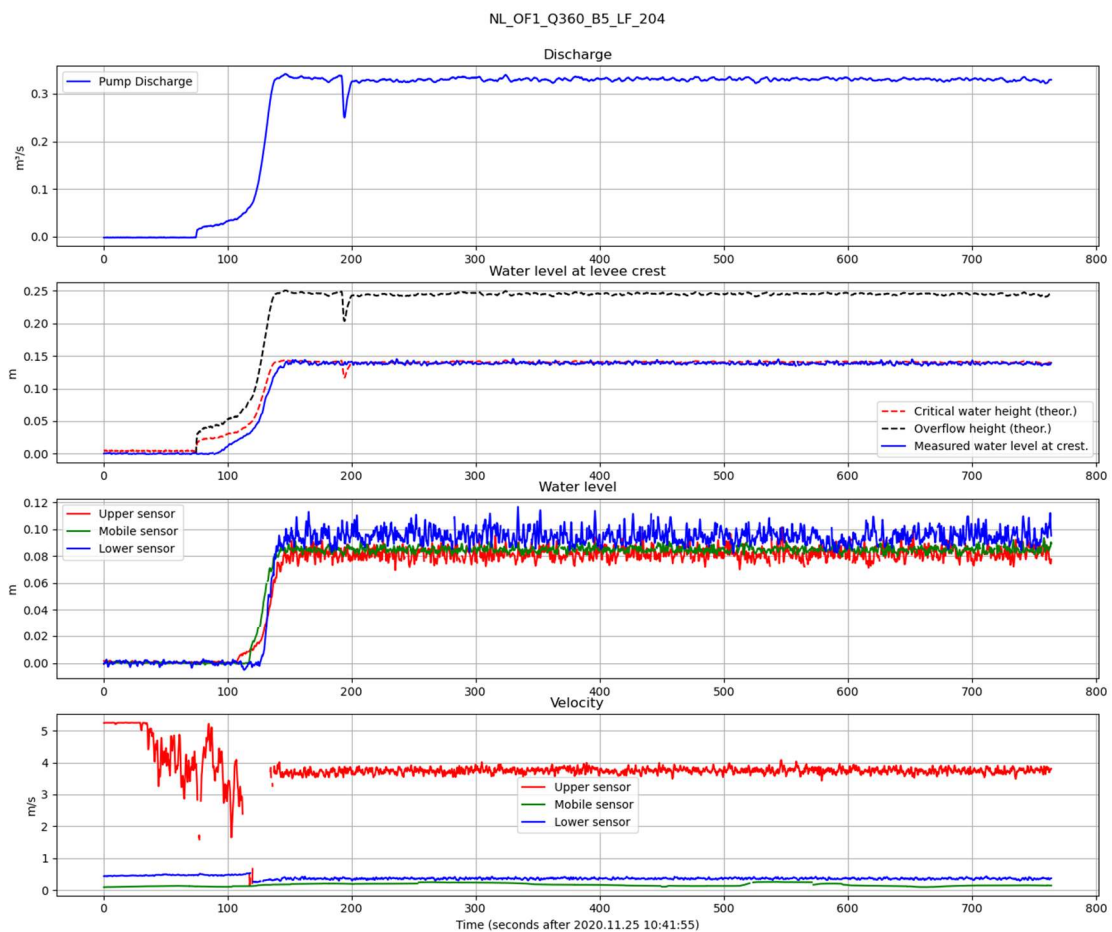
A.4 N-OF01: Block 4

Start	25/11/2020 10:25					
Stop	25/11/2020 11:25					
Duration	1 hour					
Pump	Twin parallel Hidrosta F10K-HD					
Discharge						
Notes	From 10:40 to 11:25, PTV tests have been executed. Data exists in different timeseries files not reproduced here. VP_MOBILE POSITIONED ON CREST					
Statistics	Calculated from t=1692 to 2865sec (n=11737).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.320	0.344	0.332	0.004	m³/s
	WH_CREST	0.140	0.149	0.144	0.001	m
	WH_UPPER	0.070	0.102	0.084	0.004	m
	WH_MOBILE	0.079	0.092	0.085	0.002	m
	WH_LOWER	0.091	0.126	0.107	0.005	m
	VXY_UPPER	1.44	3.97	3.68	0.11	m/s
	VXY_MOBILE	1.17	1.42	1.32	0.04	m/s
	VXY_LOWER	3.37	3.85	3.62	0.07	m/s



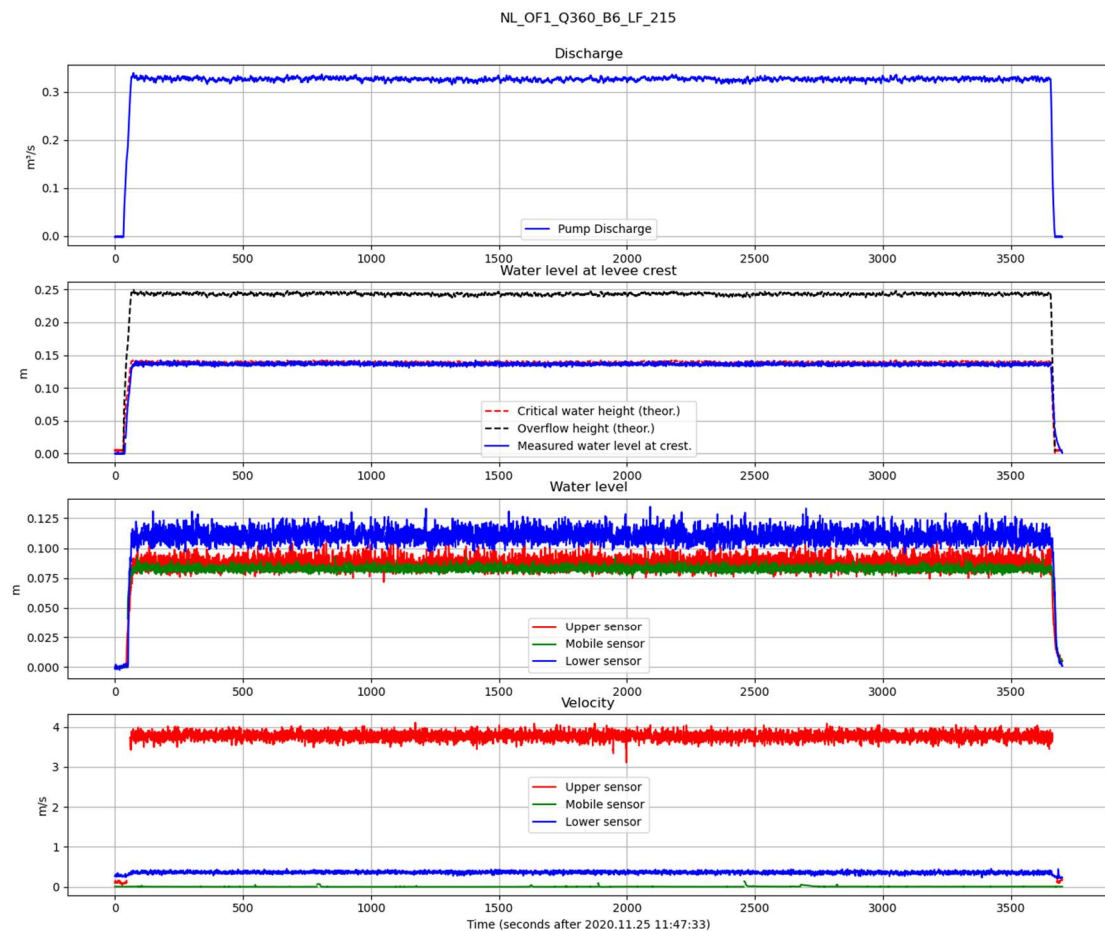
A.5 N-OF01: Block 5

Start	25/11/2020 11:42					
Stop	25/11/2020 12:44					
Duration	1 hour 2 minutes					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	From 11:56 to 12:44, PTV tests have been executed. Data exists in different timeseries files not reproduced here. Only first part shown. VP_LOWER ON CREST					
Notes	-					
Statistics	Calculated from t=1692 to 2865sec (n=11737).					
series	Min	max	mean	std	Unit	
DISCHARGE	0.250	0.341	0.330	0.006	m³/s	
WH_CREST	0.132	0.146	0.139	0.002	m	
WH_UPPER	0.070	0.101	0.082	0.004	m	
WH_MOBILE	0.080	0.094	0.085	0.002	m	
WH_LOWER	0.082	0.117	0.095	0.005	m	
VXY_UPPER	3.43	4.08	3.74	0.08	m/s	
VXY_MOBILE	0.09	0.26	0.17	0.04	m/s	
VXY_LOWER	0.29	0.43	0.36	0.02	m/s	



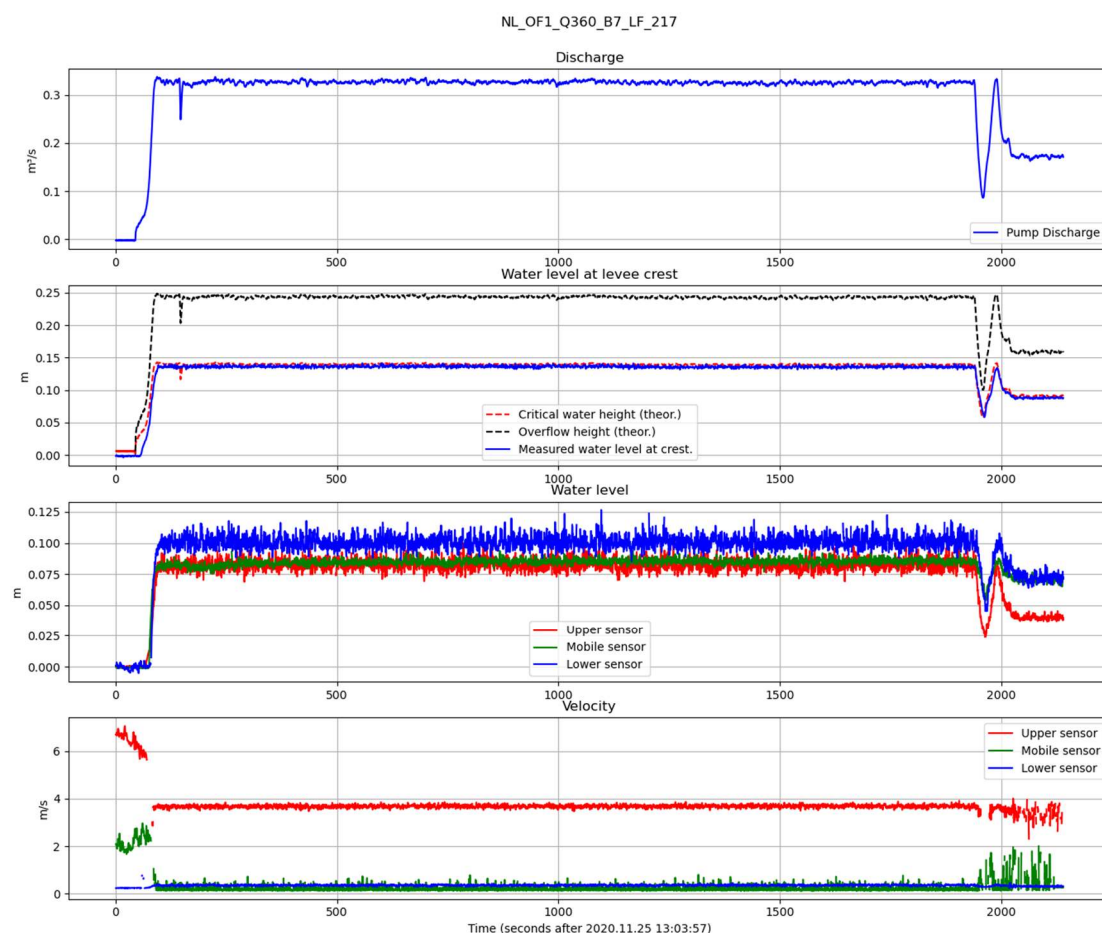
A.6 N-OF01: Block 6

Start	25/11/2020 12:47					
Stop	25/11/2020 13:48					
Duration	1 hour 1 minute					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	326 L/s					
Notes	- VP_LOWER ON CREST					
Statistics	Calculated from t=74 to 3645 sec (n=35707).					
series	Min	max	mean	std	Unit	
DISCHARGE	0.315	0.336	0.326	0.003	m³/s	
WH_CREST	0.131	0.142	0.136	0.002	m	
WH_UPPER	0.072	0.109	0.088	0.004	m	
WH_MOBILE	0.077	0.093	0.083	0.002	m	
WH_LOWER	0.096	0.135	0.111	0.005	m	
VXY_UPPER	3.11	4.11	3.77	0.08	m/s	
VXY_MOBILE	0.00	0.14	0.01	0.01	m/s	
VXY_LOWER	0.23	0.45	0.36	0.03	m/s	



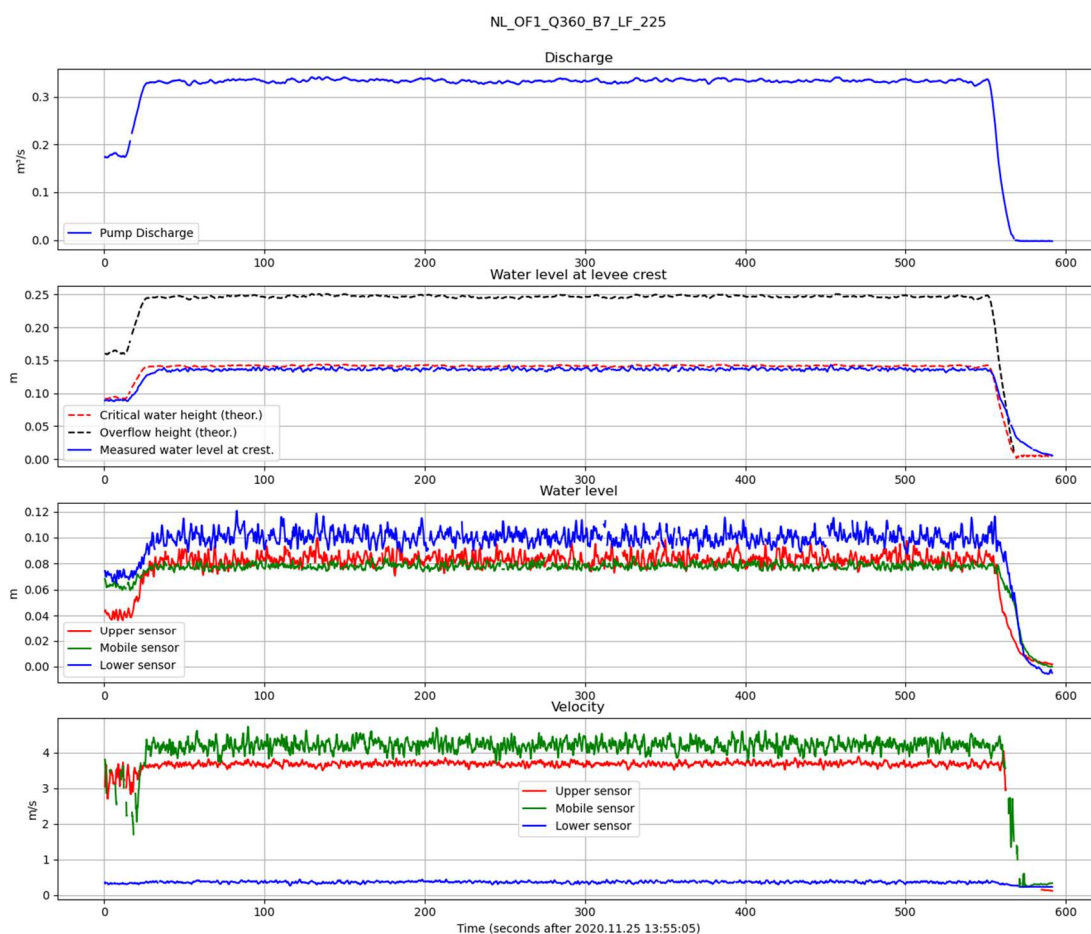
A.7 N-OF01: Block 7

Start	25/11/2020 14:04					
Stop	25/11/2020 14:40 (approx; logbook incomplete)					
Duration	1 hour 1 minute					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	326 L/s					
Notes	- VP_LOWER ON CREST - PTV tests executed during test; only first part is shown.					
Statistics	Calculated from t=84 to 19226 sec (n=18412).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.249	0.338	0.326	0.004	m³/s
	WH_CREST	0.099	0.141	0.136	0.002	m
	WH_UPPER	0.047	0.101	0.083	0.005	m
	WH_MOBILE	0.067	0.094	0.085	0.002	m
	WH_LOWER	0.062	0.127	0.101	0.005	m
	VXY_UPPER	3.47	3.91	3.68	0.06	m/s
	VXY_MOBILE	0.13	1.05	0.22	0.09	m/s
	VXY_LOWER	0.27	0.45	0.36	0.03	m/s



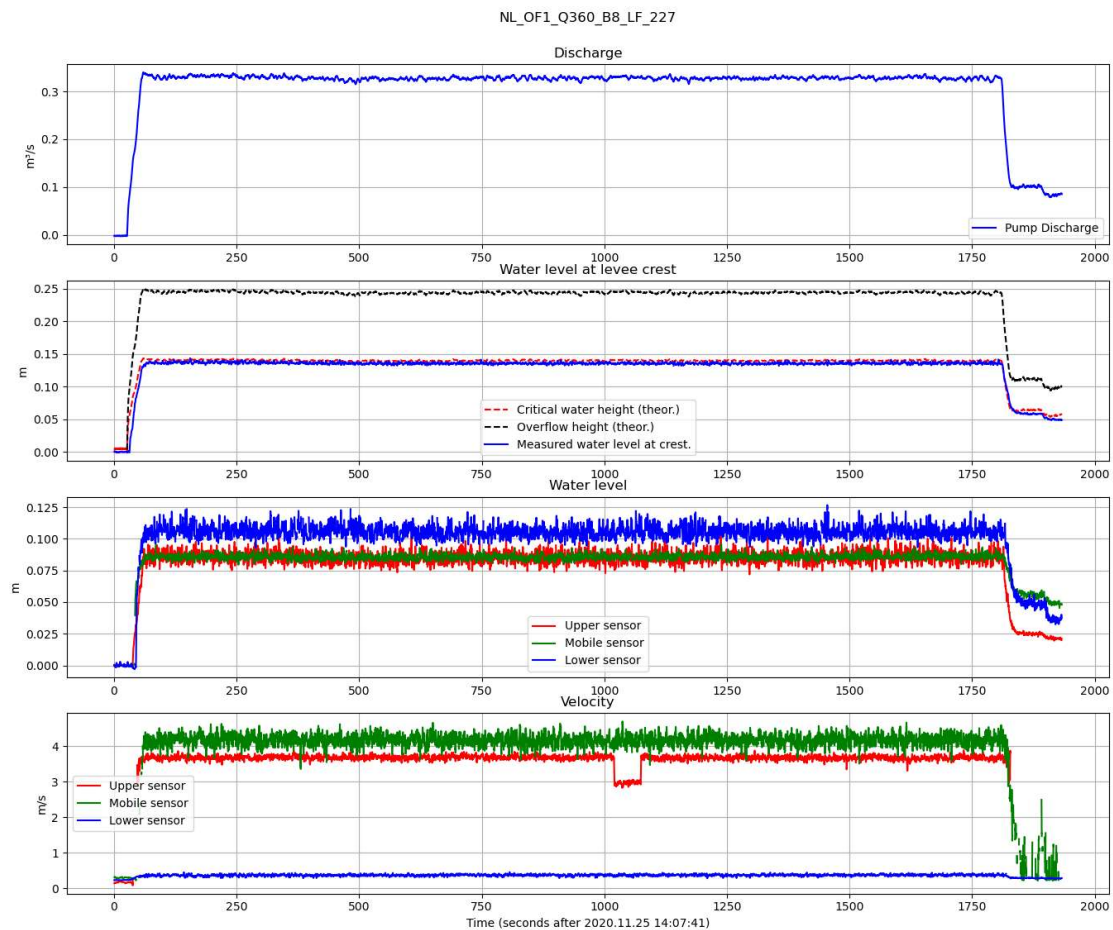
A.8 N-OF01: Block 7 (bis)

Start	25/11/2020 14:55					
Stop	25/11/2020 15:05					
Duration	10 minutes					
Pump	Twin parallel Hidrosta F10K-HD					
Discharge						
Notes	- PTV tests have been executed during +/- 15 minutes in between Block 7 and Block 7 Bis. Timeseries files exist. Only last part shown here. - VP_LOWER ON CREST					
Statistics	Calculated from t=28 to 550 sec (n=5213).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.323	0.341	0.333	0.003	m³/s
	WH_CREST	0.129	0.143	0.136	0.002	m
	WH_UPPER	0.070	0.100	0.083	0.004	m
	WH_MOBILE	0.073	0.086	0.078	0.002	m
	WH_LOWER	0.088	0.121	0.100	0.005	m
	VXY_UPPER	3.50	3.89	3.68	0.05	m/s
	VXY_MOBILE	3.70	4.73	4.21	0.15	m/s
	VXY_LOWER	0.26	0.44	0.36	0.03	m/s



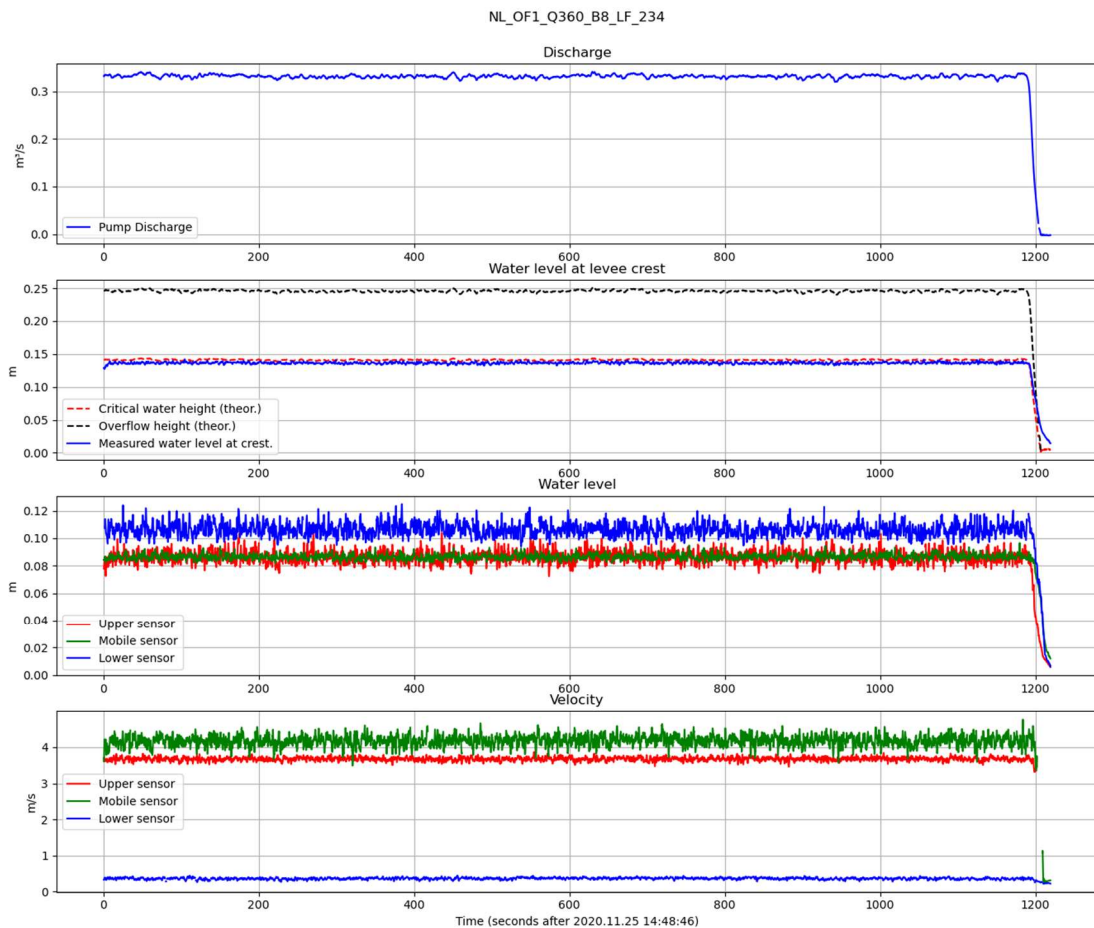
A.9 N-OF01: Block 8

Start	25/11/2020 15:07					
Stop	25/11/2020 15:30 (approx.)					
Duration	23 minutes (approx.)					
Pump	Twin parallel Hidrosta F10K-HD					
Discharge	328 L/s					
Notes	- File interrupted to perform PTV tests. Only first part of timeseries shown here. - VP_LOWER is on crest.					
Statistics	Calculated from t=66 to 1798 sec (n=17319).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.315	0.338	0.328	0.003	m³/s
	WH_CREST	0.132	0.143	0.136	0.001	m
	WH_UPPER	0.072	0.102	0.086	0.004	m
	WH_MOBILE	0.080	0.097	0.086	0.002	m
	WH_LOWER	0.093	0.127	0.106	0.005	m
	VXY_UPPER	2.82	3.90	3.65	0.14	m/s
	VXY_MOBILE	3.35	4.69	4.17	0.15	m/s
	VXY_LOWER	0.28	0.45	0.37	0.02	m/s



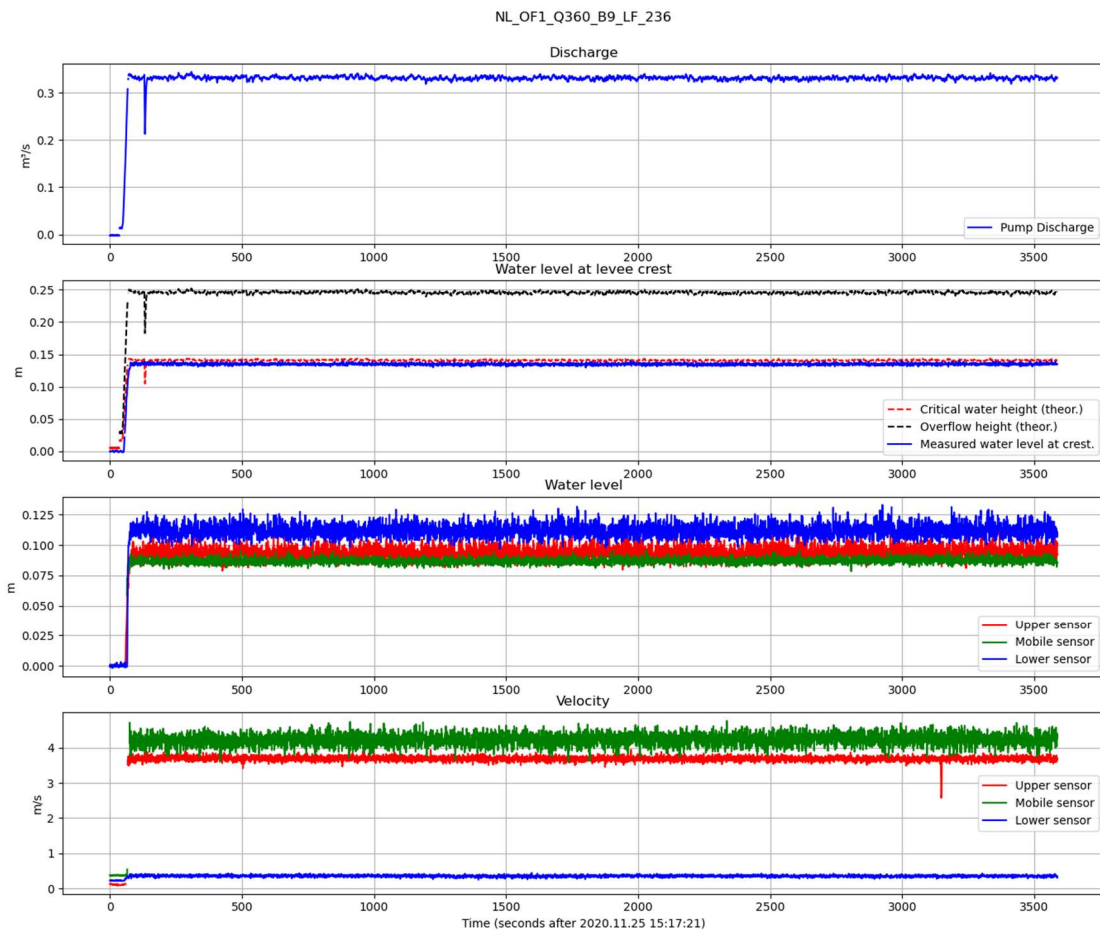
A.10 N-OF01: Block 8bis

Start	25/11/2020 15:48					
Stop	25/11/2020 16:09					
Duration	21 minutes					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	331 L/s					
Notes	- Continuation of Block 8; PTV tests have been executed in between. - VP_LOWER is on crest.					
Statistics	Calculated from t=0 to 1181 sec (n=11814).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.320	0.341	0.331	0.003	m³/s
	WH_CREST	0.127	0.142	0.136	0.001	m
	WH_UPPER	0.072	0.104	0.086	0.004	m
	WH_MOBILE	0.081	0.097	0.087	0.002	m
	WH_LOWER	0.094	0.125	0.106	0.005	m
	VXY_UPPER	3.46	3.87	3.68	0.05	m/s
	VXY_MOBILE	3.49	4.67	4.18	0.14	m/s
	VXY_LOWER	0.26	0.44	0.36	0.03	m/s



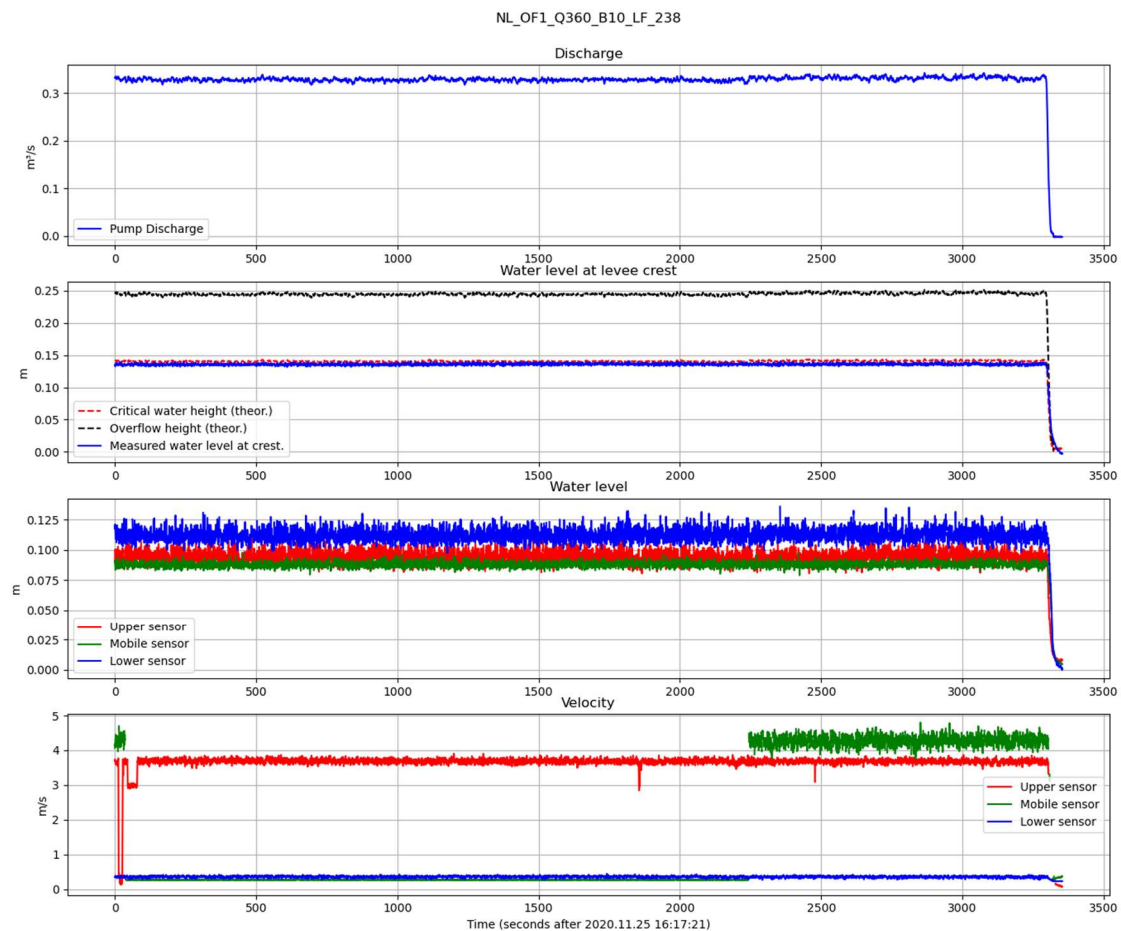
A.11 N-OF01: Block 9

Start	25/11/2020 16:17					
Stop	Continued in next block					
Duration	1 hour					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge						
Notes	Velocity "LOWER" is on crest. From this point on, the logbook is incomplete.					
Statistics	Calculated from t=76 to 3654 sec (n=11737).					
	series	Min	Max	mean	std	Unit
	DISCHARGE	0.213	0.344	0.331	0.005	m³/s
	WH_CREST	0.128	0.140	0.135	0.001	m
	WH_UPPER	0.079	0.115	0.094	0.005	m
	WH_MOBILE	0.078	0.096	0.087	0.002	m
	WH_LOWER	0.097	0.133	0.112	0.005	m
	VXY_UPPER	2.58	3.94	3.69	0.06	m/s
	VXY_MOBILE	3.59	4.76	4.23	0.14	m/s
	VXY_LOWER	0.25	0.45	0.36	0.02	m/s



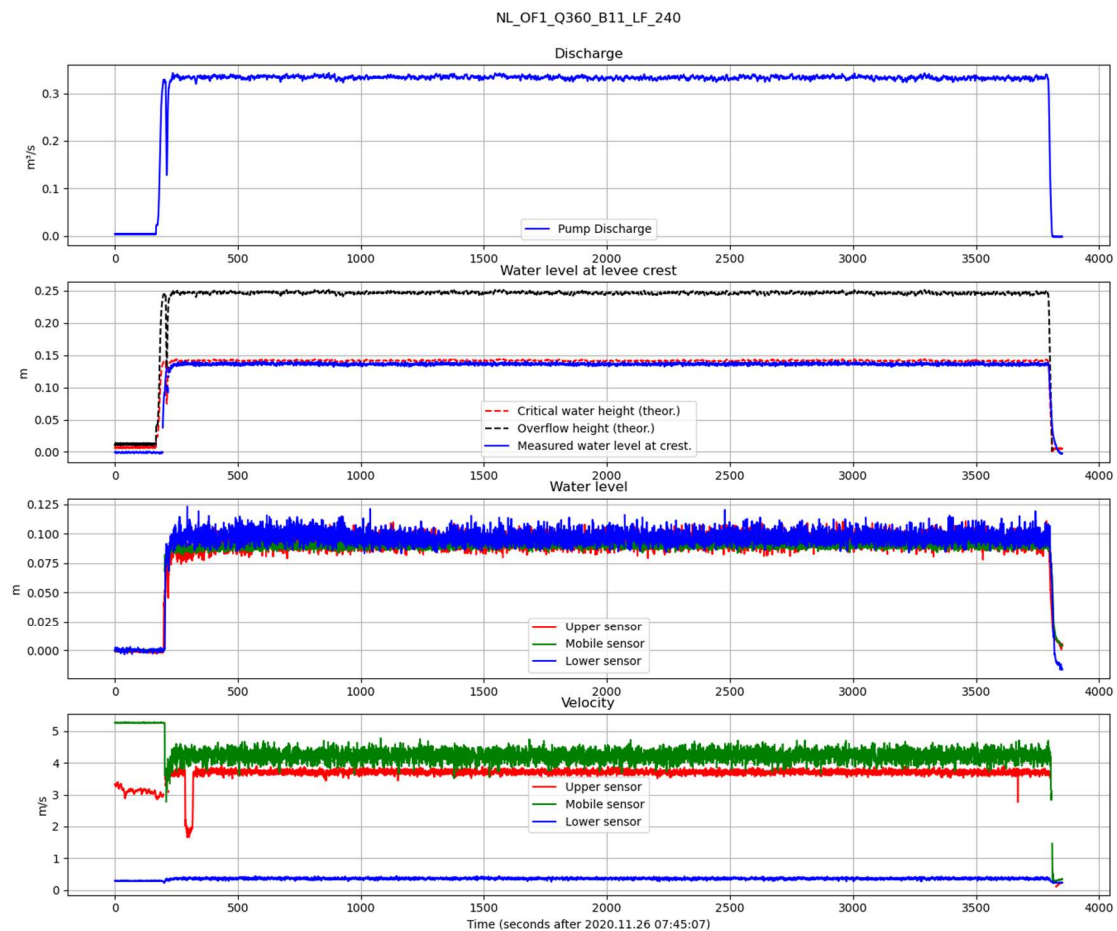
A.12 N-OF01: Block 10

Start	25/11/2020 17:17					
Stop	Approx. 25/11/2020 18:12					
Duration	Approx 55 minutes					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	330 L/s					
Notes	- Continuation without pump stop of Block 9					
Statistics	Calculated from t=0 to 3283 sec (n=32826).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.318	0.343	0.330	0.004	m³/s
	WH_CREST	0.131	0.142	0.136	0.001	m
	WH_UPPER	0.080	0.117	0.094	0.005	m
	WH_MOBILE	0.079	0.097	0.088	0.002	m
	WH_LOWER	0.097	0.136	0.112	0.005	m
	VXY_UPPER	0.13	3.90	3.66	0.23	m/s
	VXY_MOBILE	0.25	4.80	1.40	1.81	m/s
	VXY_LOWER	0.26	0.44	0.35	0.02	m/s



A.13 N-OF01: Block 11

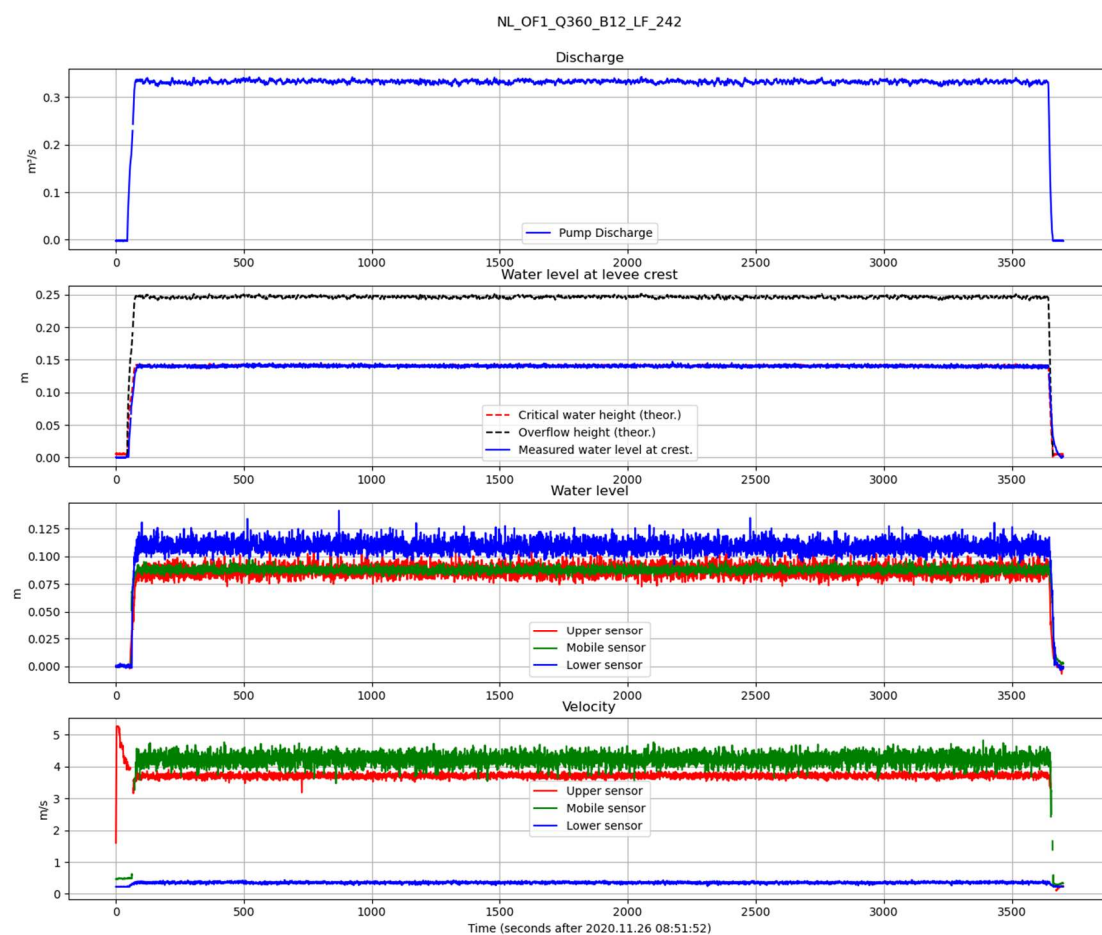
Start	26/11/2020 8:45					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	334 L/s					
Notes	- Logbook incomplete					
Statistics	Calculated from t=261 to 3761 sec (n=35007).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.320	0.343	0.334	0.003	m³/s
	WH_CREST	0.132	0.142	0.136	0.001	m
	WH_UPPER	0.074	0.111	0.093	0.005	m
	WH_MOBILE	0.082	0.100	0.090	0.002	m
	WH_LOWER	0.083	0.123	0.097	0.005	m
	VXY_UPPER	1.66	3.94	3.70	0.18	m/s
	VXY_MOBILE	3.51	4.78	4.23	0.15	m/s
	VXY_LOWER	0.26	0.44	0.36	0.02	m/s



A.14 N-OF01: Block 12

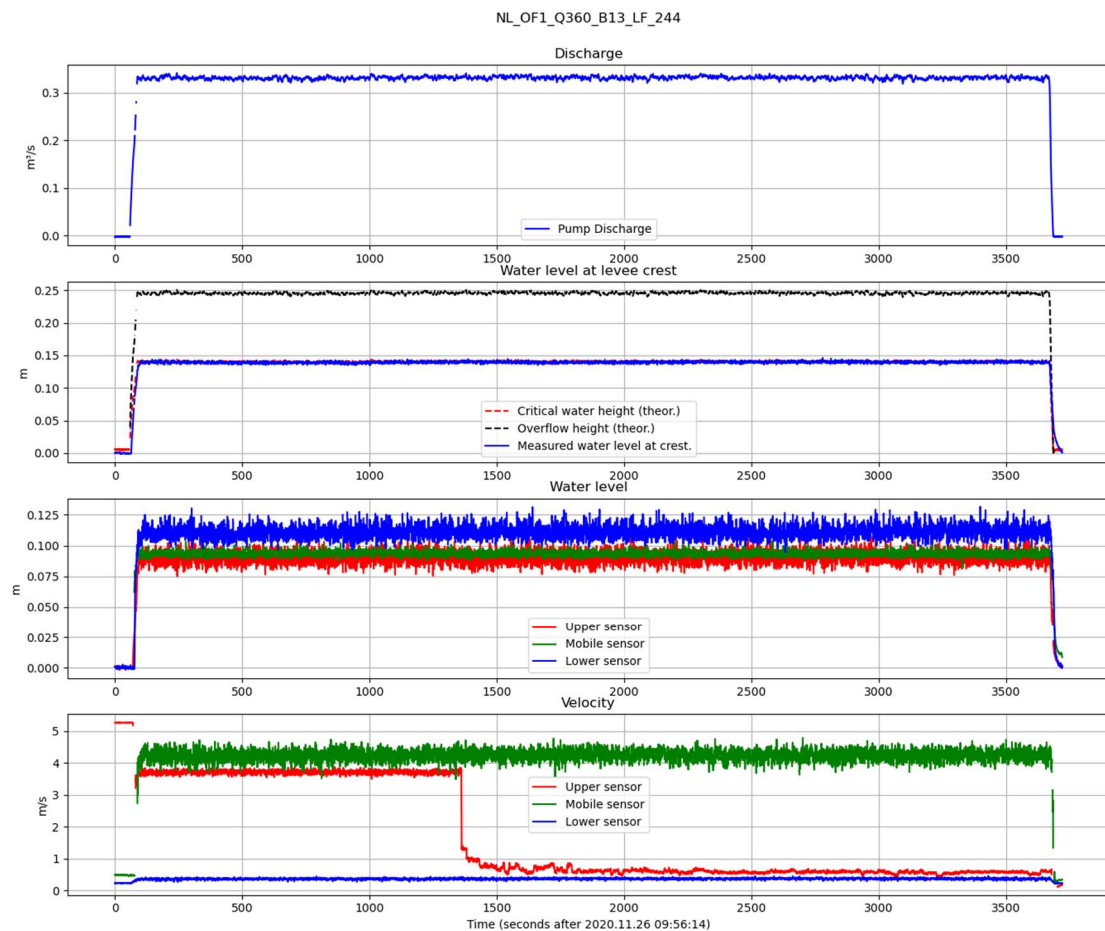
WATER LOG 12

Start	26/11/2020 9:51				
Stop					
Duration	1 hour				
Pump	Twin parallel Hidrostaal F10K-HD				
Discharge	~330 l/s				
Notes	-				
Statistics	Calculated from t=78 to 3634 sec (n=35563).				
series	Min	max	mean	std	Unit
DISCHARGE	0.322	0.343	0.333	0.003	m³/s
WH_CREST	0.132	0.147	0.140	0.001	m
WH_UPPER	0.073	0.107	0.087	0.004	m
WH_MOBILE	0.080	0.102	0.088	0.002	m
WH_LOWER	0.093	0.141	0.109	0.005	m
VXY_UPPER	3.18	3.92	3.71	0.05	m/s
VXY_MOBILE	3.47	4.82	4.23	0.15	m/s
VXY_LOWER	0.24	0.44	0.35	0.02	m/s



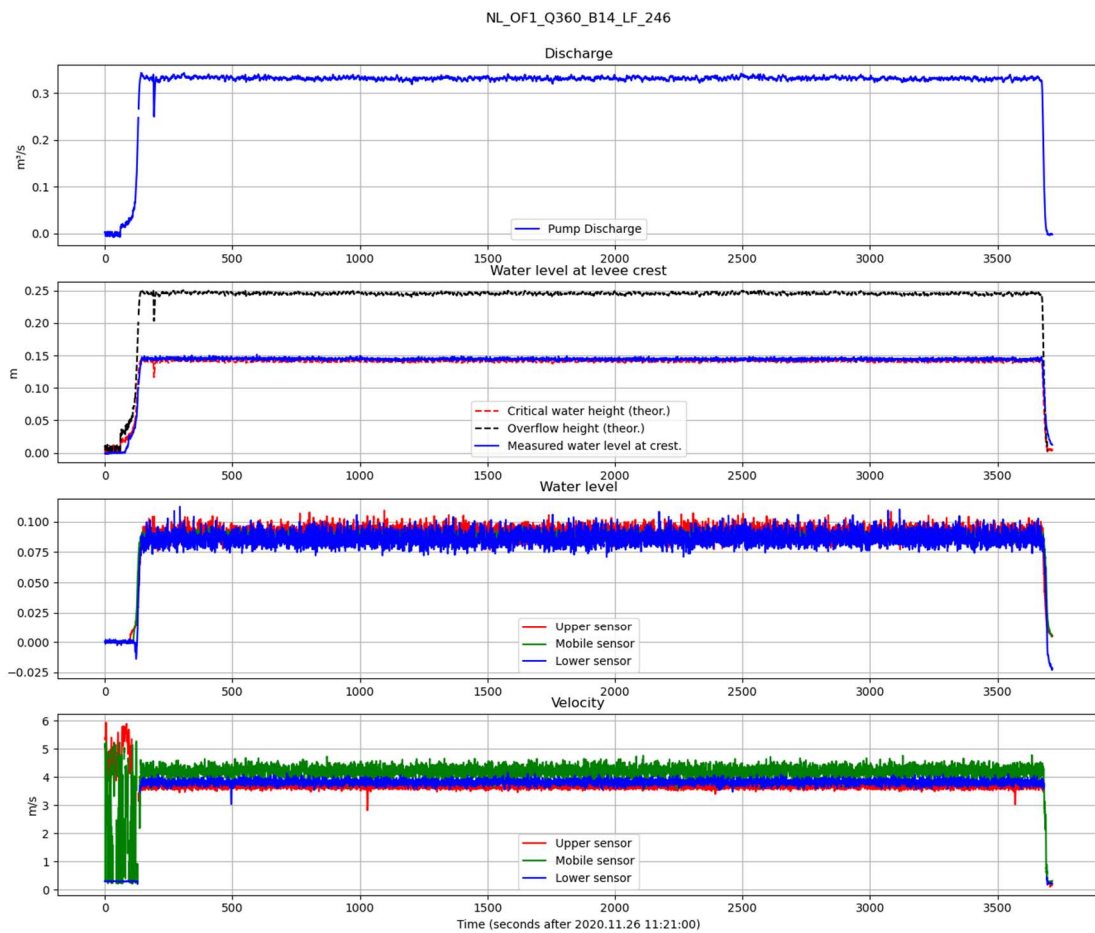
A.15 N-OF01: Block 13

Start	26/11/2020 10:56					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=94 to 3661 sec (n=35678).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.319	0.342	0.331	0.003	m³/s
	WH_CREST	0.134	0.146	0.139	0.001	m
	WH_UPPER	0.075	0.109	0.090	0.004	m
	WH_MOBILE	0.082	0.103	0.094	0.002	m
	WH_LOWER	0.095	0.132	0.111	0.005	m
	VXY_UPPER	0.38	3.88	1.71	1.48	m/s
	VXY_MOBILE	3.49	4.78	4.24	0.15	m/s
	VXY_LOWER	0.26	0.46	0.37	0.02	m/s



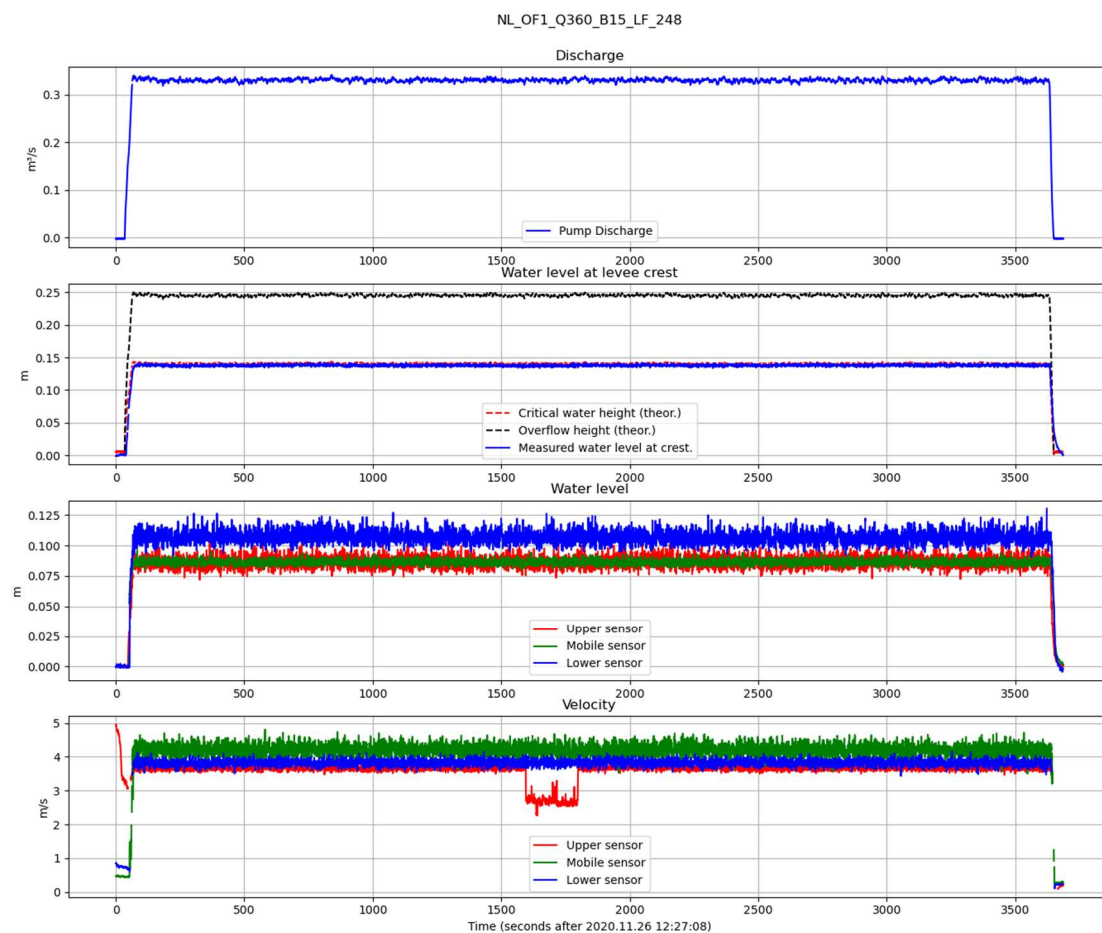
A.16 N-OF01: Block 14

Start	26/11/2020 12:21					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=169 to 3659 sec (n=34905).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.249	0.342	0.331	0.004	m³/s
	WH_CREST	0.140	0.151	0.144	0.001	m
	WH_UPPER	0.076	0.109	0.091	0.004	m
	WH_MOBILE	0.080	0.096	0.088	0.002	m
	WH_LOWER	0.071	0.113	0.086	0.005	m
	VXY_UPPER	2.82	3.89	3.66	0.06	m/s
	VXY_MOBILE	3.56	4.78	4.21	0.15	m/s
	VXY_LOWER	3.04	4.17	3.82	0.08	m/s



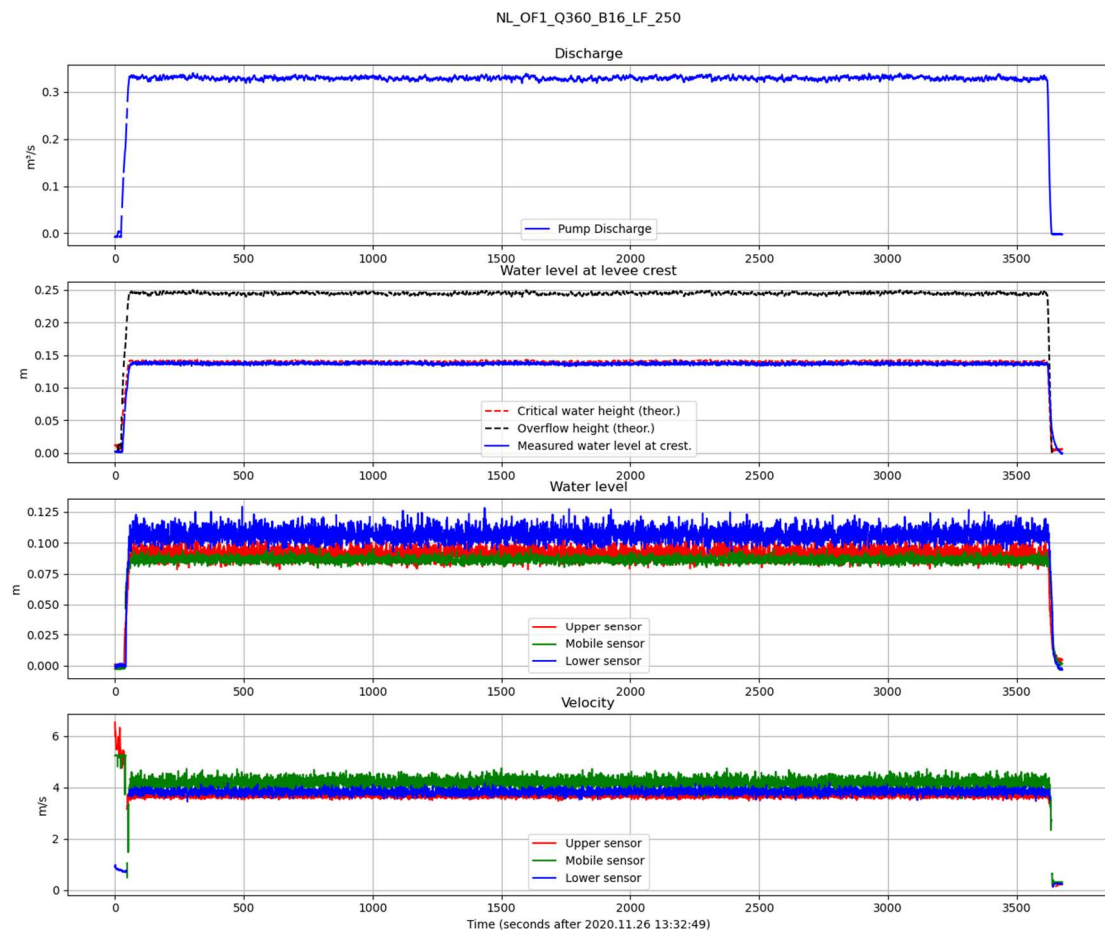
A.17 N-OF01: Block 15

Start	26/11/2020 13:27				
Stop					
Duration	1 hour				
Pump	Twin parallel Hidrostaal F10K-HD				
Discharge	~330 l/s				
Notes	-				
Statistics	Calculated from t=82 to 3632 sec (n=35504).				
series	Min	max	mean	std	Unit
DISCHARGE	0.319	0.341	0.331	0.003	m³/s
WH_CREST	0.133	0.143	0.138	0.001	m
WH_UPPER	0.072	0.106	0.087	0.004	m
WH_MOBILE	0.080	0.097	0.086	0.002	m
WH_LOWER	0.091	0.130	0.107	0.005	m
VXY_UPPER	2.27	3.86	3.61	0.23	m/s
VXY_MOBILE	3.50	4.81	4.21	0.15	m/s
VXY_LOWER	3.44	4.16	3.82	0.08	m/s



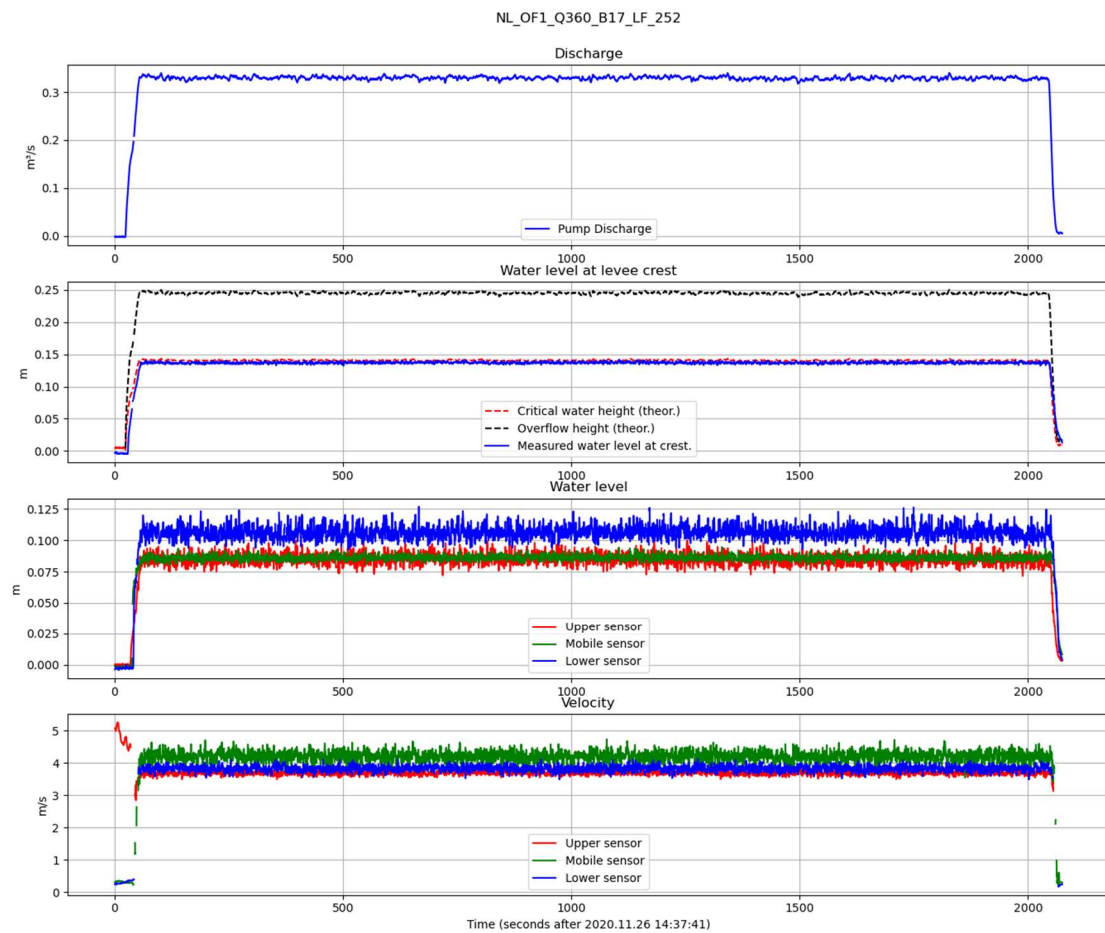
A.18 N-OF01: Block 16

Start	26/11/2020 14:32					
Stop						
Duration						
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=78 to 3595 sec (n=35175).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.319	0.340	0.329	0.003	m³/s
	WH_CREST	0.133	0.142	0.137	0.001	m
	WH_UPPER	0.078	0.111	0.091	0.004	m
	WH_MOBILE	0.080	0.096	0.086	0.002	m
	WH_LOWER	0.092	0.129	0.107	0.005	m
	VXY_UPPER	3.47	3.86	3.68	0.05	m/s
	VXY_MOBILE	3.57	4.75	4.20	0.15	m/s
	VXY_LOWER	3.45	4.19	3.83	0.08	m/s



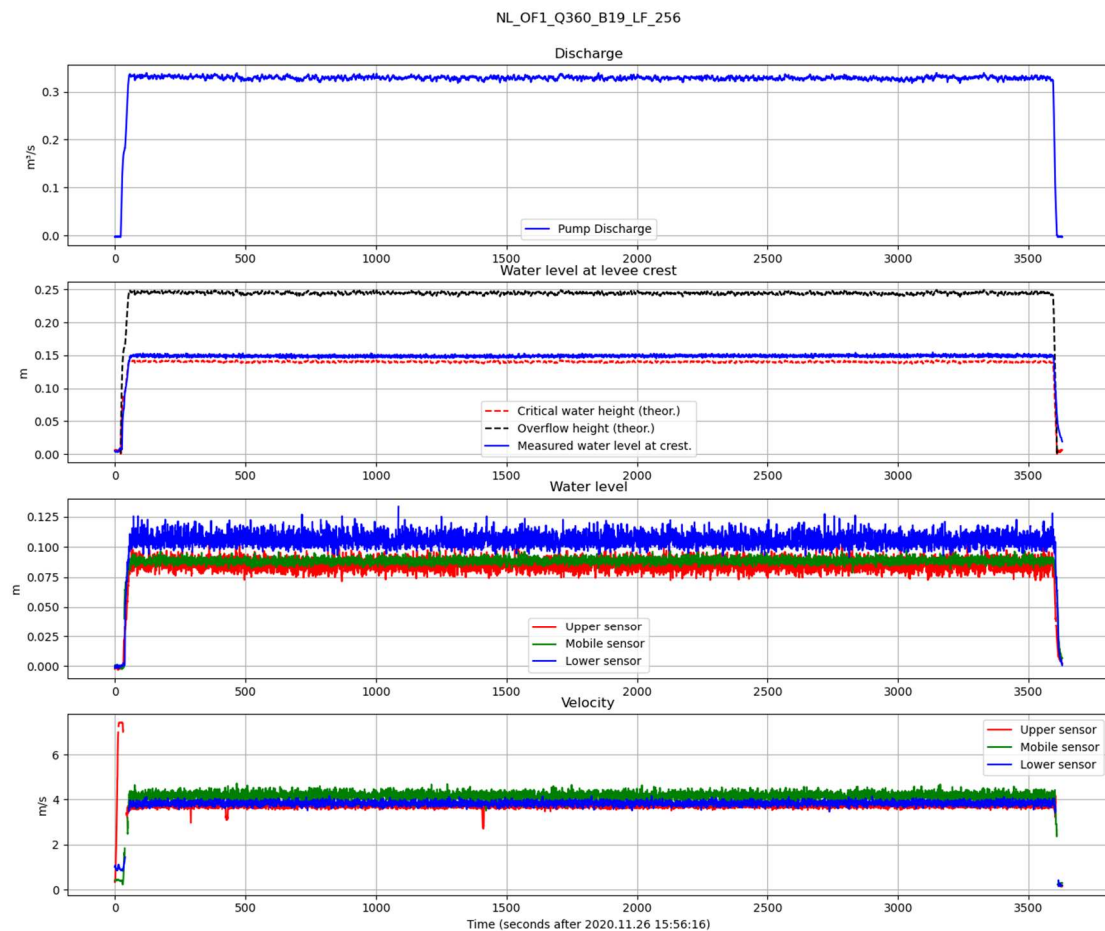
A.19 N-OF01: Block 17

Start	26/11/2020 15:37					
Stop						
Duration	~33 minutes					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=57 to 2036 sec (n=19790).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.317	0.340	0.330	0.003	m³/s
	WH_CREST	0.132	0.142	0.137	0.001	m
	WH_UPPER	0.072	0.100	0.085	0.004	m
	WH_MOBILE	0.080	0.095	0.086	0.002	m
	WH_LOWER	0.093	0.127	0.106	0.005	m
	VXY_UPPER	3.49	3.91	3.69	0.05	m/s
	VXY_MOBILE	3.54	4.73	4.20	0.14	m/s
	VXY_LOWER	3.48	4.12	3.83	0.08	m/s



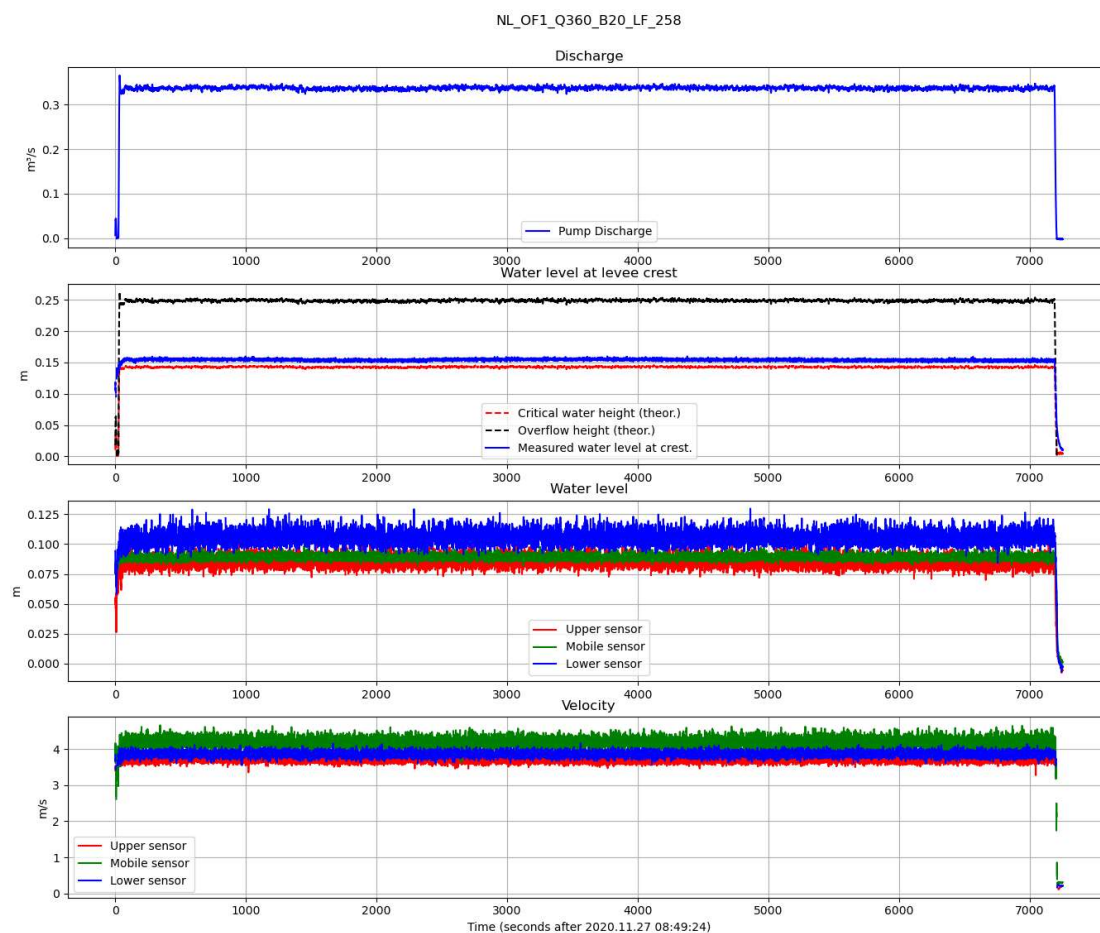
A.21 N-OF01: Block 19

Start	26/11/2020 16:56					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=66 to 3578 sec (n=35129).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.318	0.339	0.329	0.003	m³/s
	WH_CREST	0.145	0.155	0.149	0.001	m
	WH_UPPER	0.071	0.109	0.085	0.004	m
	WH_MOBILE	0.079	0.097	0.089	0.002	m
	WH_LOWER	0.091	0.134	0.106	0.005	m
	VXY_UPPER	2.70	3.93	3.70	0.07	m/s
	VXY_MOBILE	3.51	4.72	4.17	0.14	m/s
	VXY_LOWER	3.46	4.16	3.84	0.08	m/s



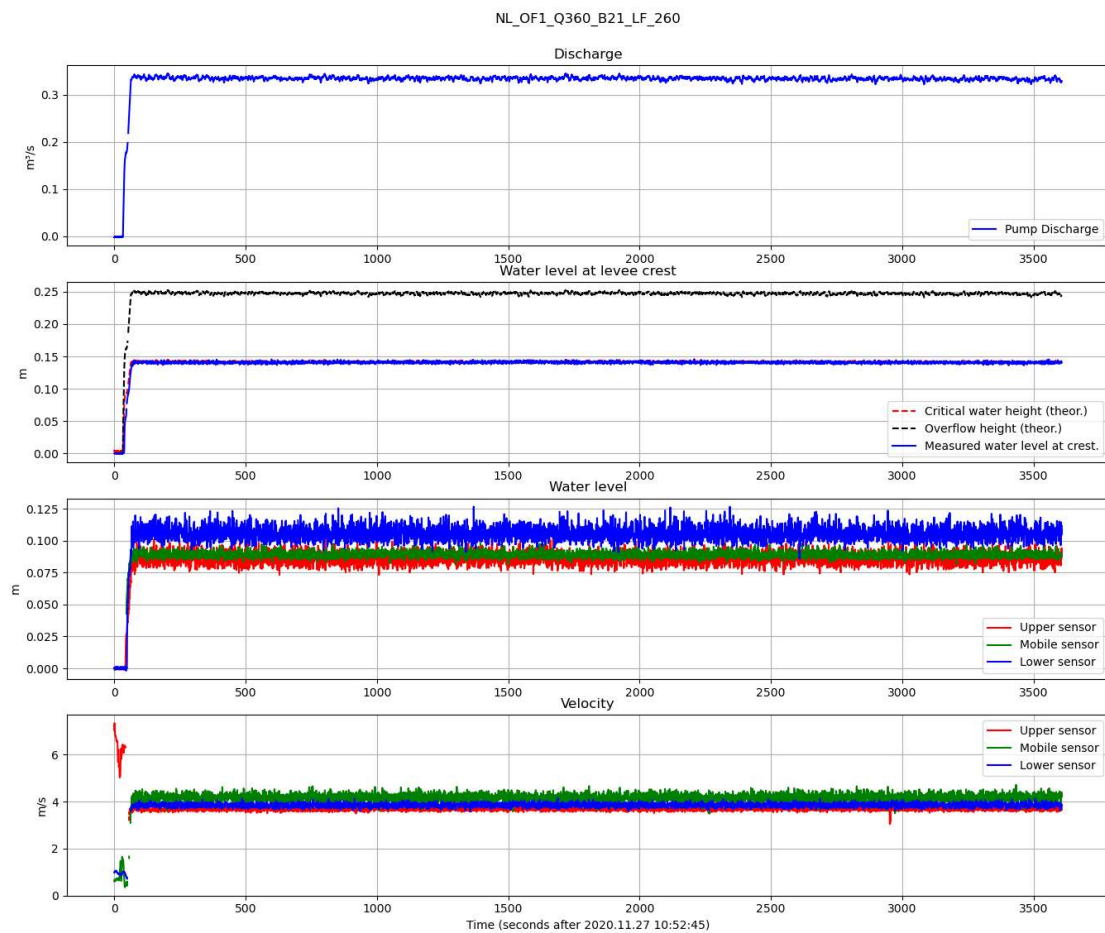
A.22 N-OF01: Block 20

Start	27/11/2020 09:49				
Stop					
Duration	2 hours				
Pump	Twin parallel Hidrostaal F10K-HD				
Discharge	~330 l/s				
Notes	-				
Statistics	Calculated from t=57 to 7166 sec (n=71088).				
series	Min	max	mean	std	Unit
DISCHARGE	0.324	0.348	0.338	0.003	m³/s
WH_CREST	0.149	0.160	0.154	0.001	m
WH_UPPER	0.070	0.105	0.085	0.004	m
WH_MOBILE	0.082	0.098	0.089	0.002	m
WH_LOWER	0.084	0.130	0.106	0.005	m
VXY_UPPER	3.27	3.89	3.68	0.05	m/s
VXY_MOBILE	3.63	4.66	4.19	0.12	m/s
VXY_LOWER	3.55	4.16	3.86	0.07	m/s



A.23 N-OF01: Block 21

Start	27/11/2020 11:52					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrosta F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=72 to 3703 sec (n=35346).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.322	0.346	0.335	0.003	m³/s
	WH_CREST	0.136	0.146	0.141	0.001	m
	WH_UPPER	0.073	0.103	0.086	0.004	m
	WH_MOBILE	0.081	0.098	0.089	0.002	m
	WH_LOWER	0.086	0.127	0.106	0.005	m
	VXY_UPPER	3.05	3.89	3.68	0.05	m/s
	VXY_MOBILE	3.48	4.71	4.17	0.14	m/s
	VXY_LOWER	3.57	4.15	3.85	0.07	m/s



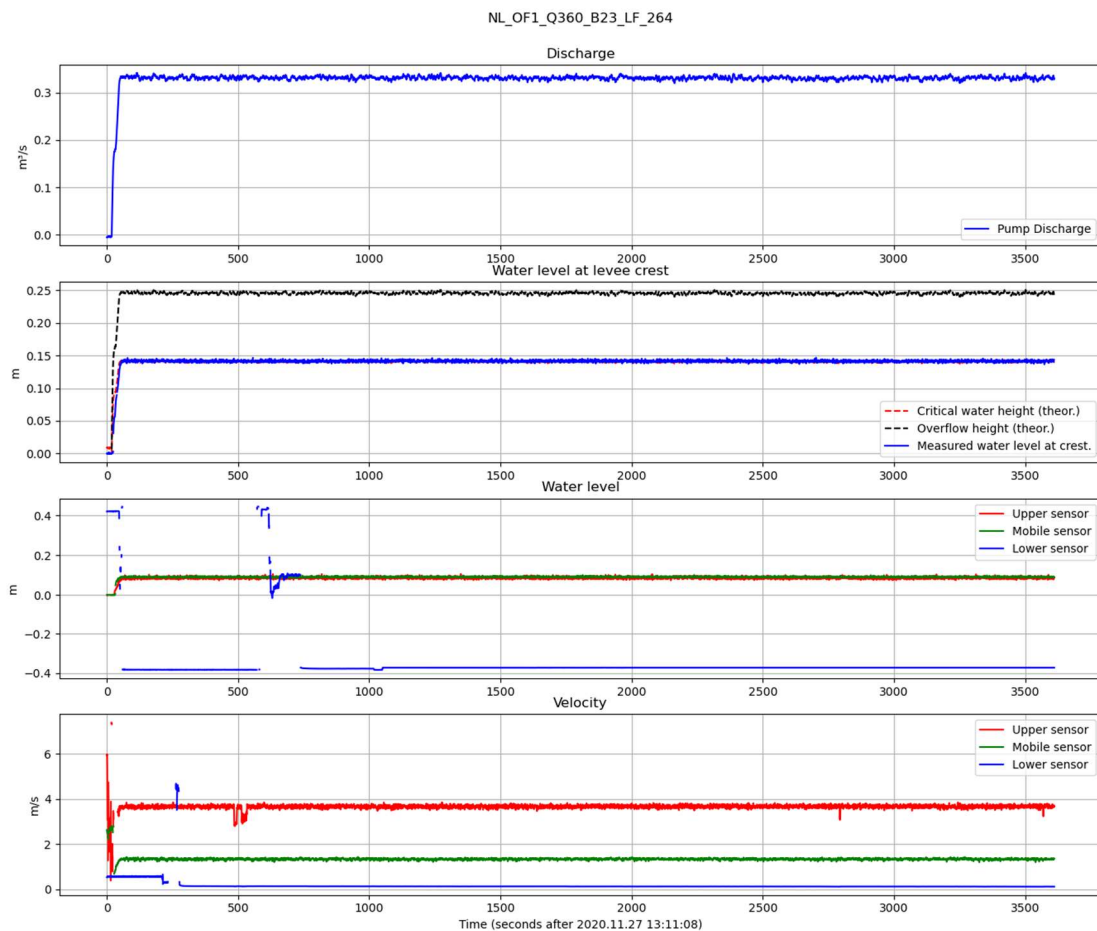
A.24 N-OF01: Block 22

Start	27/11/2020 12:53					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrostaal F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=3 to 3558 sec (n=35546).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.319	0.344	0.334	0.003	m³/s
	WH_CREST	0.122	0.132	0.127	0.001	m
	WH_UPPER	0.064	0.098	0.079	0.004	m
	WH_MOBILE	0.069	0.090	0.081	0.002	m
	WH_LOWER	0.092	0.126	0.106	0.005	m
	VXY_UPPER	2.72	3.87	3.68	0.07	m/s
	VXY_MOBILE	3.56	4.68	4.16	0.15	m/s
	VXY_LOWER	3.58	4.17	3.86	0.07	m/s



A.25 N-OF01: Block 23

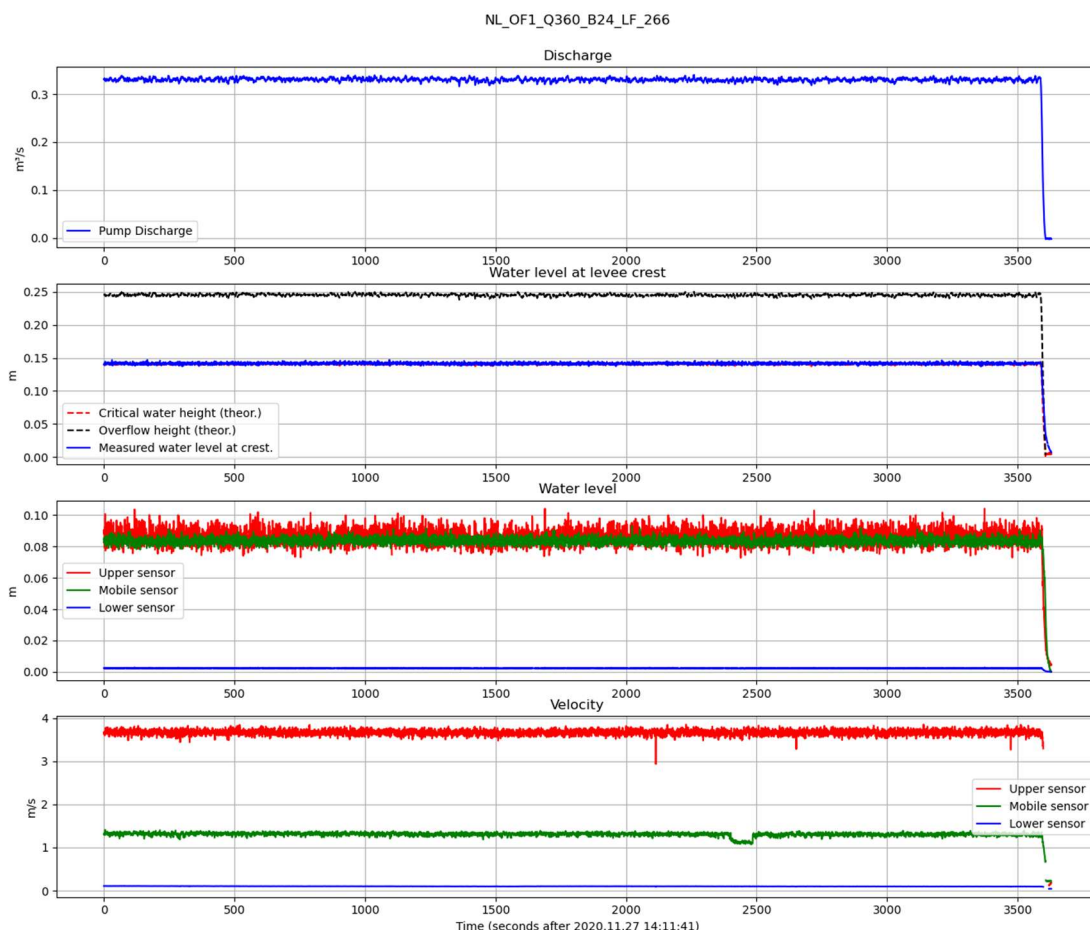
Start	27/11/2020 13:11					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrosta F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=58 to 3692 sec (n=35530).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.320	0.342	0.331	0.003	m³/s
	WH_CREST	0.137	0.147	0.142	0.001	m
	WH_UPPER	0.073	0.106	0.087	0.004	m
	WH_MOBILE	0.085	0.101	0.091	0.002	m
	WH_LOWER	-0.383	0.445	-0.352	0.109	m
	VXY_UPPER	2.79	3.85	3.66	0.08	m/s
	VXY_MOBILE	1.19	1.42	1.33	0.03	m/s
	VXY_LOWER	0.10	4.68	0.15	0.24	m/s



A.26 N-OF01: Block 24

WATER BUCK 2

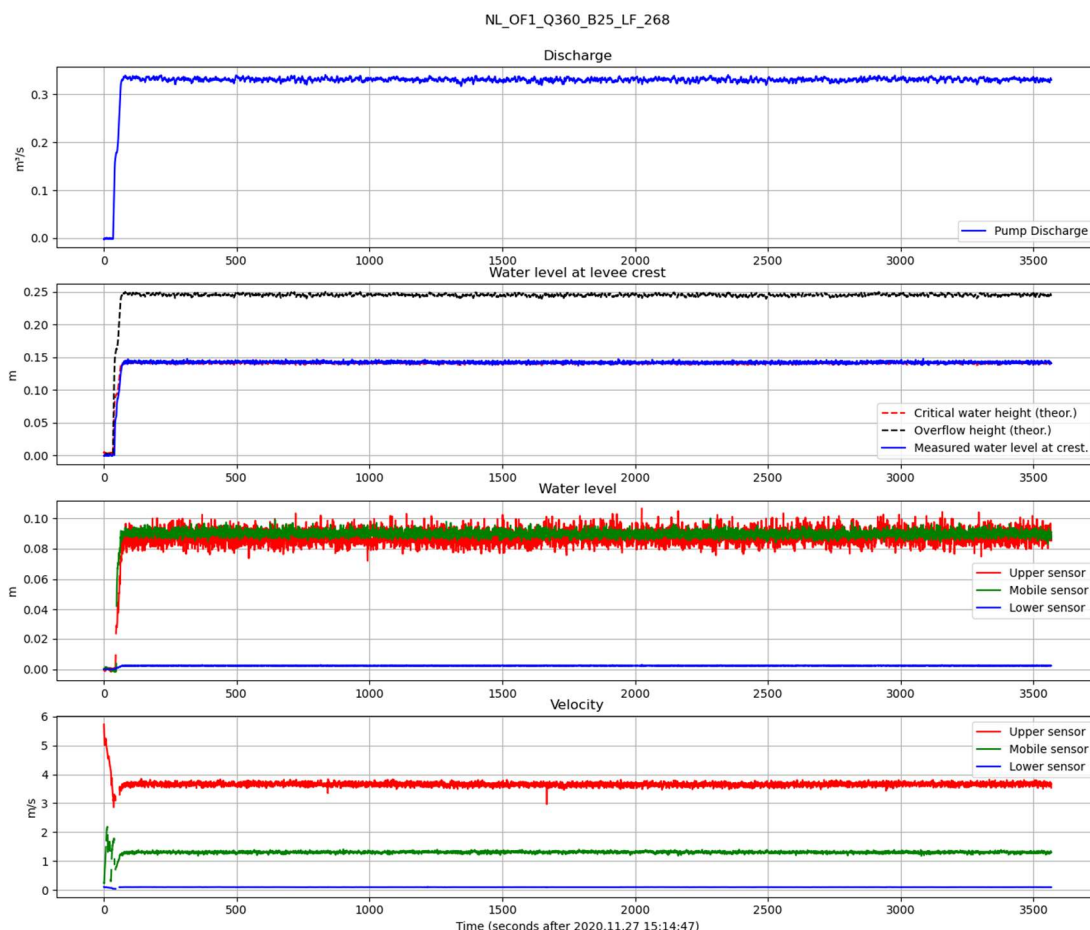
Start	27/11/2020 14:11				
Stop					
Duration	1 hour				
Pump	Twin parallel Hidrostaal F10K-HD				
Discharge	~330 l/s				
Notes	-				
Statistics	Calculated from t=0 to 3563 sec (n=35632).				
series	Min	max	mean	std	Unit
DISCHARGE	0.316	0.340	0.330	0.003	m³/s
WH_CREST	0.137	0.147	0.142	0.001	m
WH_UPPER	0.073	0.104	0.086	0.004	m
WH_MOBILE	0.077	0.093	0.084	0.002	m
WH_LOWER	0.002	0.003	0.002	0.000	m
VXY_UPPER	2.93	3.85	3.67	0.05	m/s
VXY_MOBILE	1.08	1.41	1.31	0.04	m/s
VXY_LOWER	0.09	0.11	0.10	0.00	m/s



A.27 N-OF01: Block 25

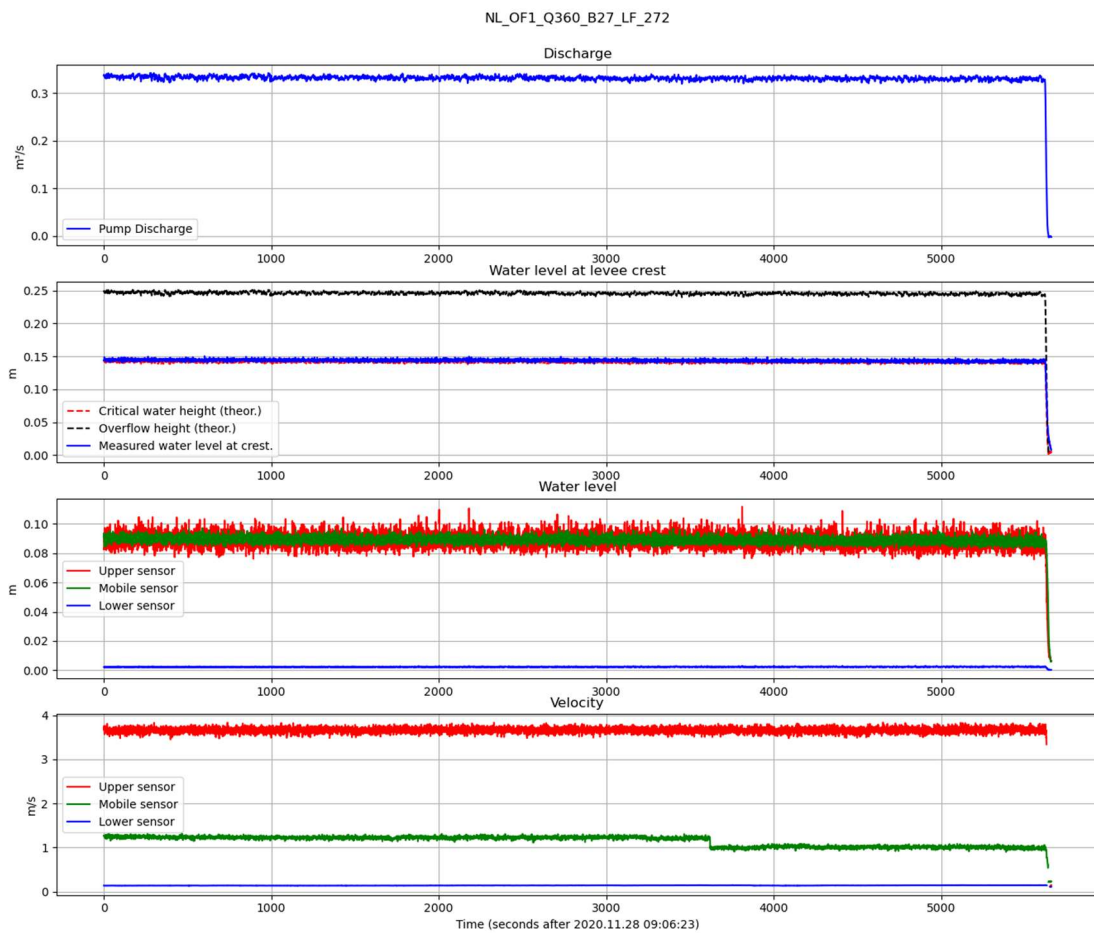
WATER BUCKETS

Start	27/11/2020 15:14					
Stop						
Duration	1 hour					
Pump	Twin parallel Hidrostral F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=75 to 3586 sec (n=34920).					
series	Min	max	mean	std	Unit	
DISCHARGE	0.317	0.340	0.331	0.003	m³/s	
WH_CREST	0.137	0.148	0.142	0.001	m	
WH_UPPER	0.072	0.106	0.088	0.004	m	
WH_MOBILE	0.083	0.100	0.090	0.002	m	
WH_LOWER	0.002	0.003	0.002	0.000	m	
VXY_UPPER	2.97	3.85	3.66	0.05	m/s	
VXY_MOBILE	1.18	1.41	1.30	0.03	m/s	
VXY_LOWER	0.08	0.10	0.09	0.00	m/s	



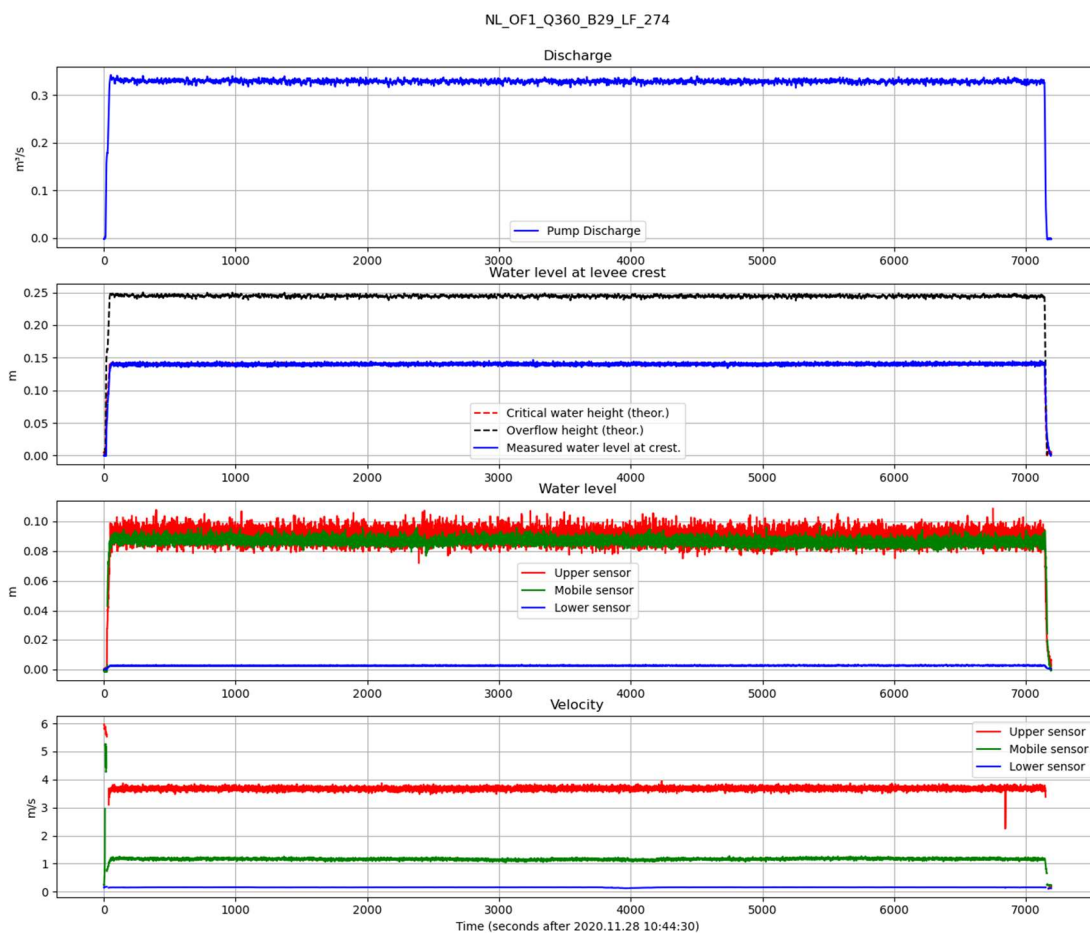
A.29 N-OF01: Block 27

Start	28/11/2020 10:06					
Stop						
Duration	1.5 hours					
Pump	Twin parallel Hidrosta F10K-HD					
Discharge	~330 l/s					
Notes	-					
Statistics	Calculated from t=0 to 3479 sec (n=34677).					
	series	Min	max	mean	std	Unit
	DISCHARGE	0.323	0.346	0.334	0.003	m³/s
	WH_CREST	0.139	0.150	0.145	0.001	m
	WH_UPPER	0.076	0.109	0.089	0.004	m
	WH_MOBILE	0.084	0.097	0.090	0.002	m
	WH_LOWER	0.002	0.003	0.002	0.000	m
	VXY_UPPER	2.87	3.84	3.63	0.14	m/s
	VXY_MOBILE	0.87	1.36	1.12	0.12	m/s
	VXY_LOWER	0.13	0.14	0.14	0.00	m/s



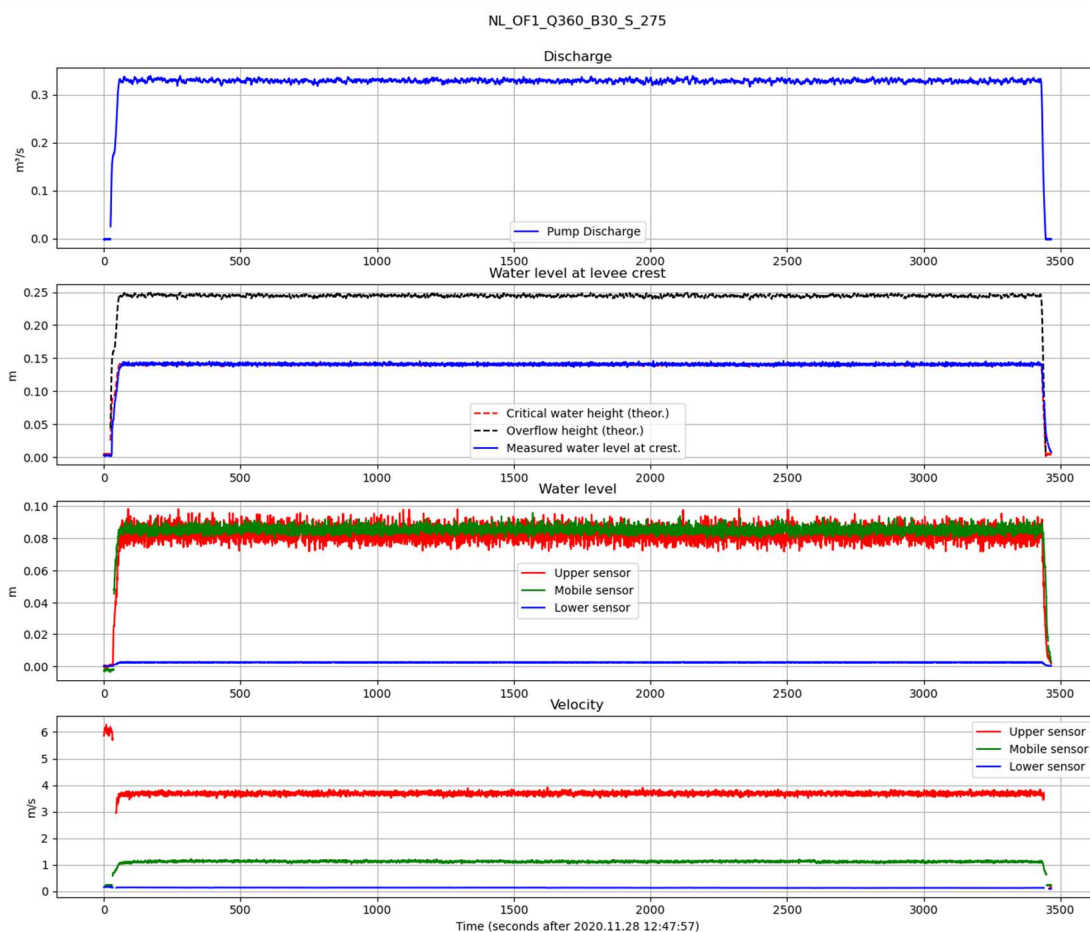
A.30 N-OF01: Block 29

Start	28/11/2020 11:44				
Stop					
Duration	120 min				
Pump	Twin parallel Hidrostaal F10K-HD				
Discharge	~330 l/s				
Notes	-				
Statistics	Calculated from t=64 to 7115 sec (n=70510).				
series	Min	max	mean	std	Unit
DISCHARGE	0.315	0.341	0.329	0.003	m³/s
WH_CREST	0.134	0.147	0.140	0.001	m
WH_UPPER	0.072	0.108	0.090	0.004	m
WH_MOBILE	0.077	0.096	0.086	0.002	m
WH_LOWER	0.002	0.003	0.002	0.000	m
VXY_UPPER	2.25	3.94	3.68	0.05	m/s
VXY_MOBILE	1.05	1.27	1.16	0.03	m/s
VXY_LOWER	0.12	0.16	0.15	0.00	m/s



A.31 N-OF01: Block 30

Start	28/11/2020				
Stop					
Duration	56'				
Pump	Twin parallel Hidrostaal F10K-HD				
Discharge	~330 l/s				
Notes	-				
Statistics	Calculated from t=63 to 3418 sec (n=33556).				
series	Min	max	mean	std	Unit
DISCHARGE	0.317	0.339	0.329	0.003	m³/s
WH_CREST	0.136	0.146	0.141	0.001	m
WH_UPPER	0.072	0.098	0.083	0.004	m
WH_MOBILE	0.079	0.096	0.085	0.002	m
WH_LOWER	0.002	0.003	0.003	0.000	m
VXY_UPPER	3.46	3.92	3.69	0.05	m/s
VXY_MOBILE	1.03	1.21	1.12	0.02	m/s
VXY_LOWER	0.13	0.15	0.14	0.00	m/s



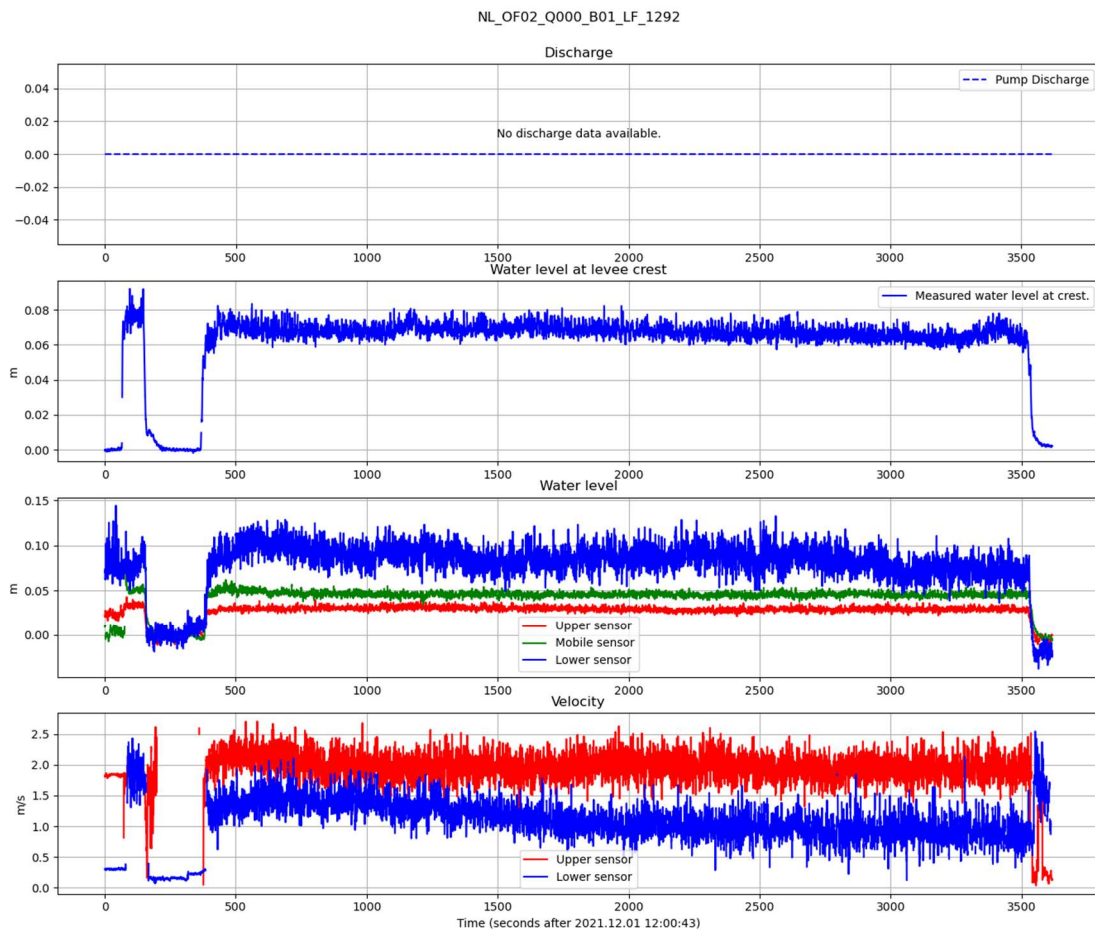
Annex B - N-OF02 timeseries

The following timeseries details are reproduced in this section:

B.1	N-OF02 Block 1	35
B.2	N-OF02 Block 1	36
B.3	N-OF02 Block 3	37
B.4	N-OF02 Block 3 bis	38
B.5	N-OF02 Block 4	39
B.6	N-OF02 Block 6	40
B.7	N-OF02 Block 7	41
B.8	N-OF02 Block 8	42
B.9	N-OF02 Block 9	43
B.10	N-OF02 Block 10	44
B.11	N-OF02 Block 11	45

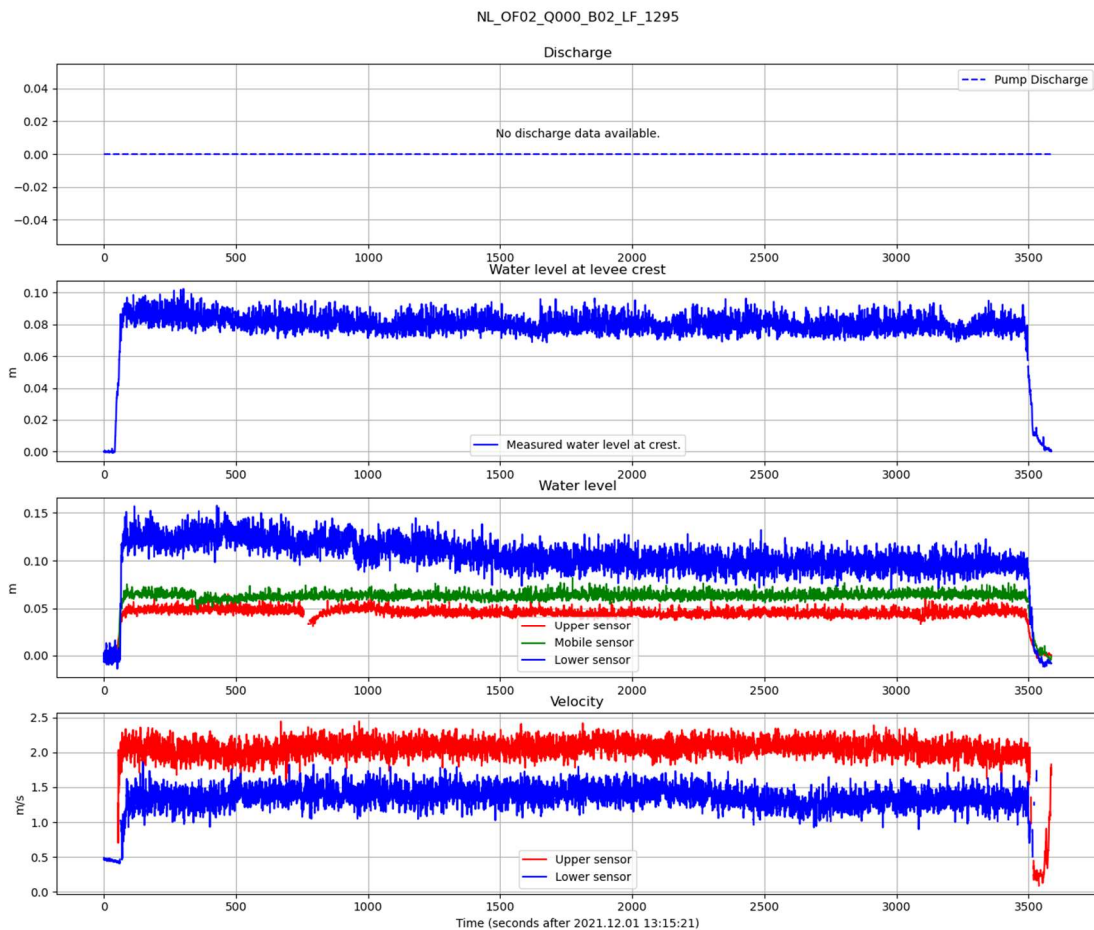
B.1 N-OF02 Block 1

Start	1/12/2021 13:01
Stop	1/12/2021 14:00
Duration	59 minutes
Pump and pump power	BA300
Discharge	5 m³/min
Notes	
Statistics	Not calculated.
series	MinmaxmeanstdUnit
DISCHARGE	m³/s
WH_CREST	m
WH_UPPER	m
WH_MOBILE	m
WH_LOWER	m
VXY_UPPER	m/s
VXY_MOBILE	m/s
VXY_LOWER	m/s



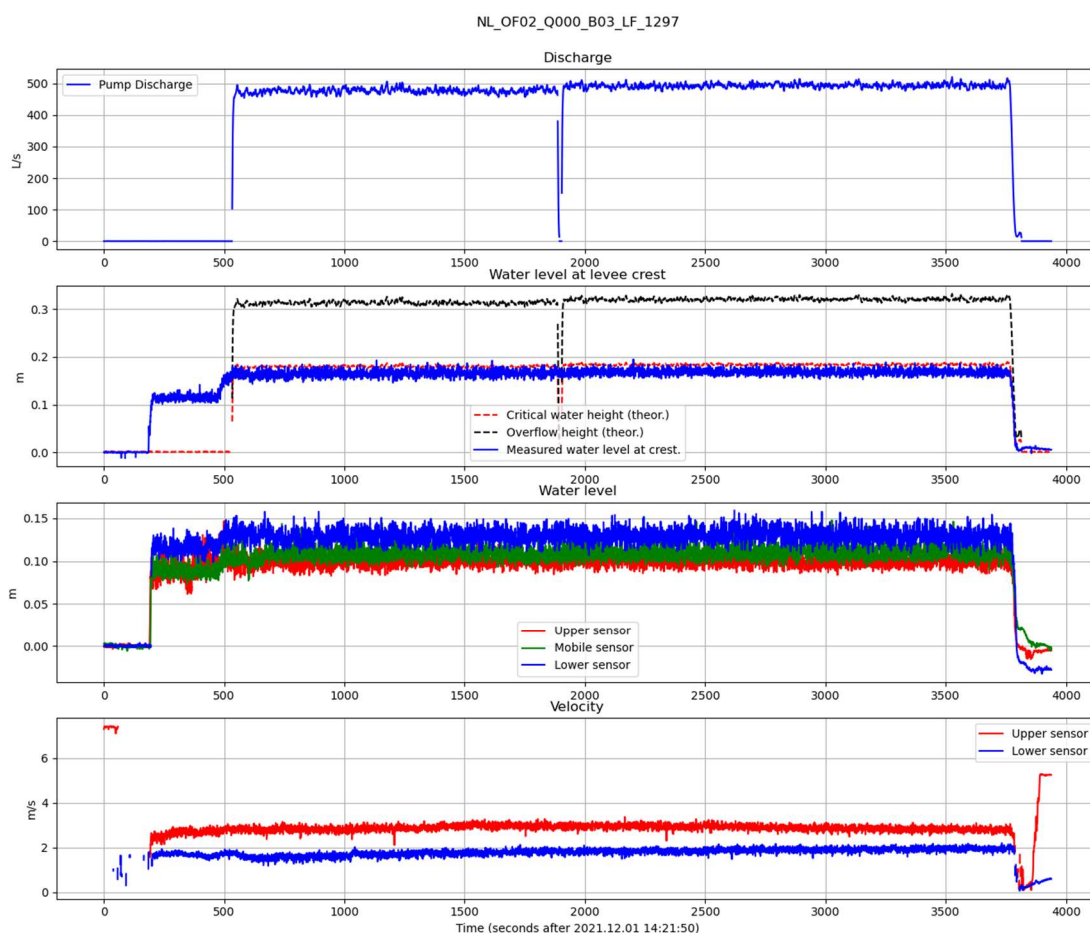
B.2 N-OF02 Block 2

Start	1/12/2021 14:16
Stop	1/12/2021 15:13
Duration	57 minutes
Pump and pump power	BA300
Discharge	10 m³/min
Notes	
Statistics	Not calculated.
series	MinmaxmeanstdUnit
DISCHARGE	m³/s
WH_CREST	m
WH_UPPER	m
WH_MOBILE	m
WH_LOWER	m
VXY_UPPER	m/s
VXY_MOBILE	m/s
VXY_LOWER	m/s



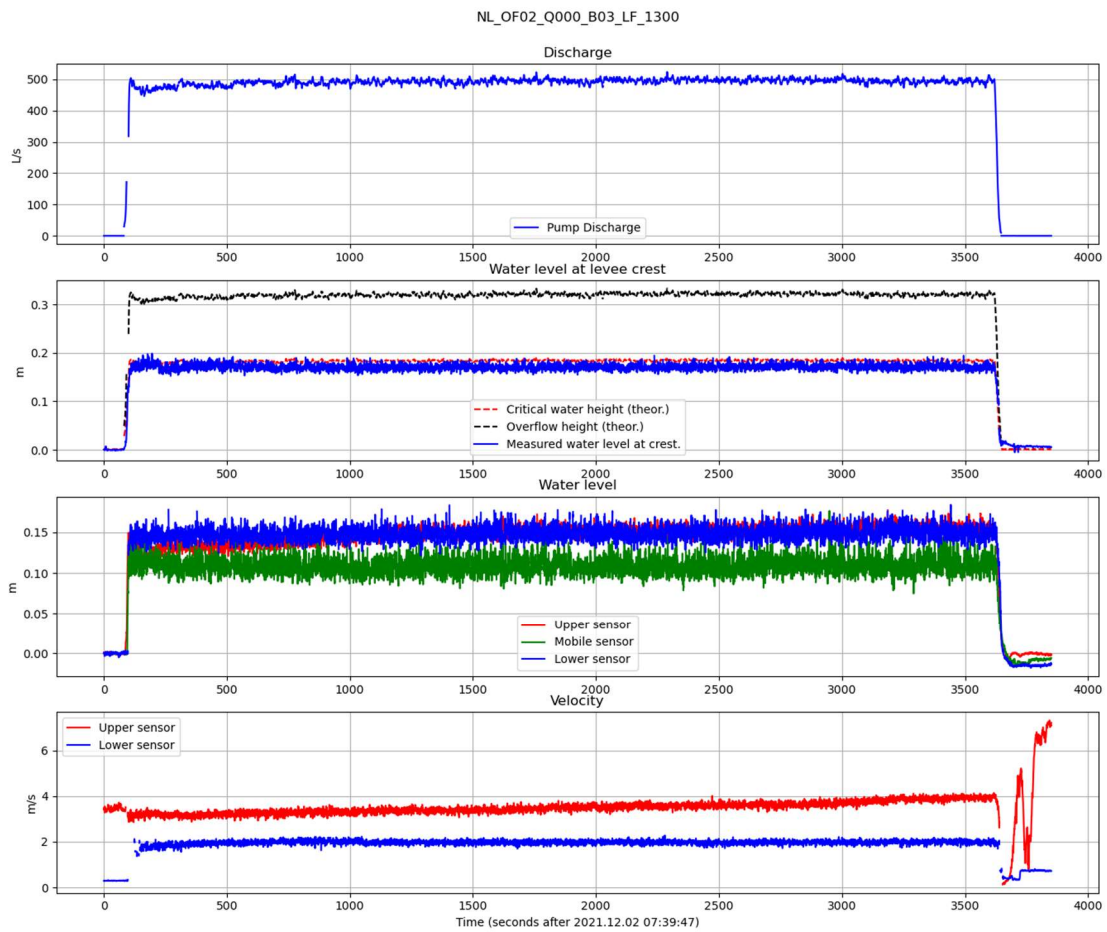
B.3 N-OF02 Block 3

Start	1/12/2021 15:21
Stop	1/12/2021 16:25
Duration	64 minutes
Pump and pump power	BA500
Discharge	20 m³/min
Notes	
Statistics	Not calculated.
series	MinmaxmeanstdUnit
DISCHARGE	m³/s
WH_CREST	m
WH_UPPER	m
WH_MOBILE	m
WH_LOWER	m
VXY_UPPER	m/s
VXY_MOBILE	m/s
VXY_LOWER	m/s



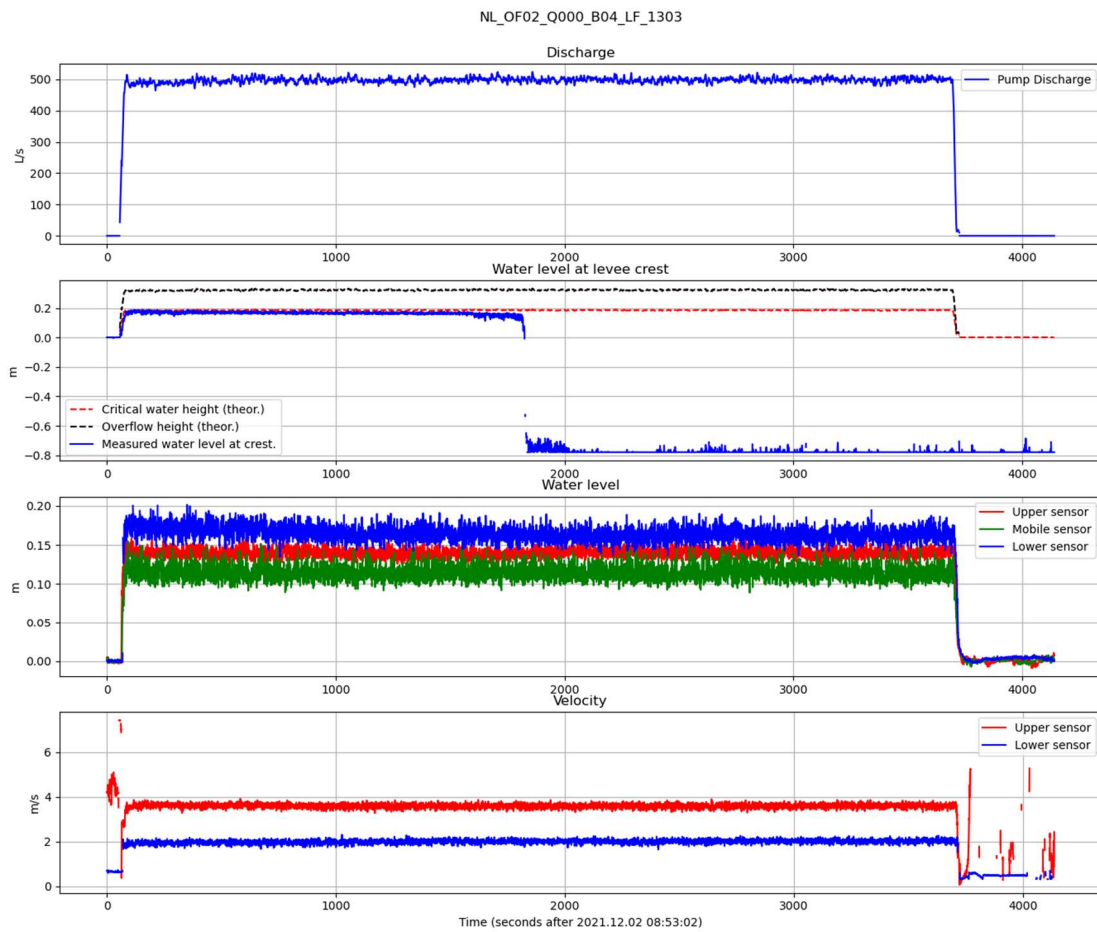
B.4 N-OF02 Block 3 bis

Start	2/12/2021 8:39				
Stop	2/12/2021 9:39				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	500 L/s				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



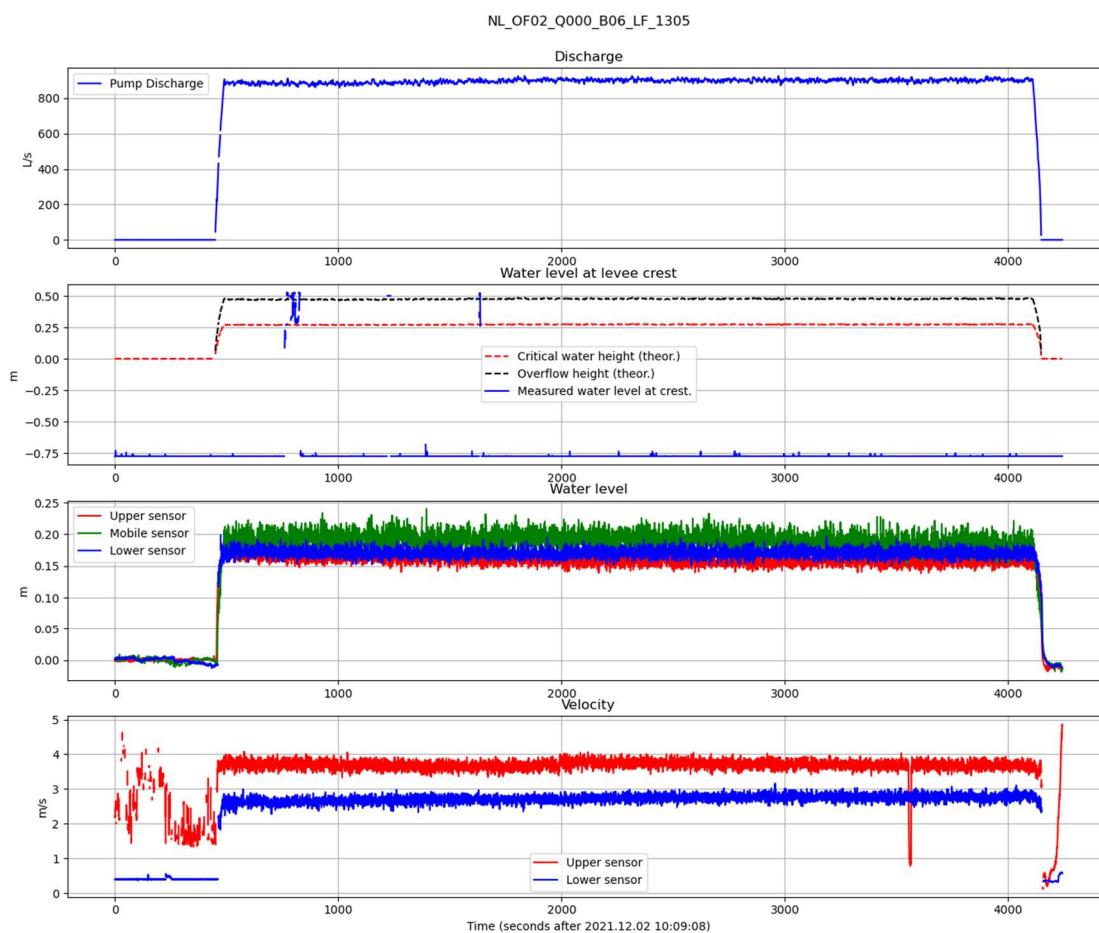
B.5 N-OF02 Block 4

Start	2/12/2021 9:53				
Stop	2/12/2021 10:53				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	500 L/s				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



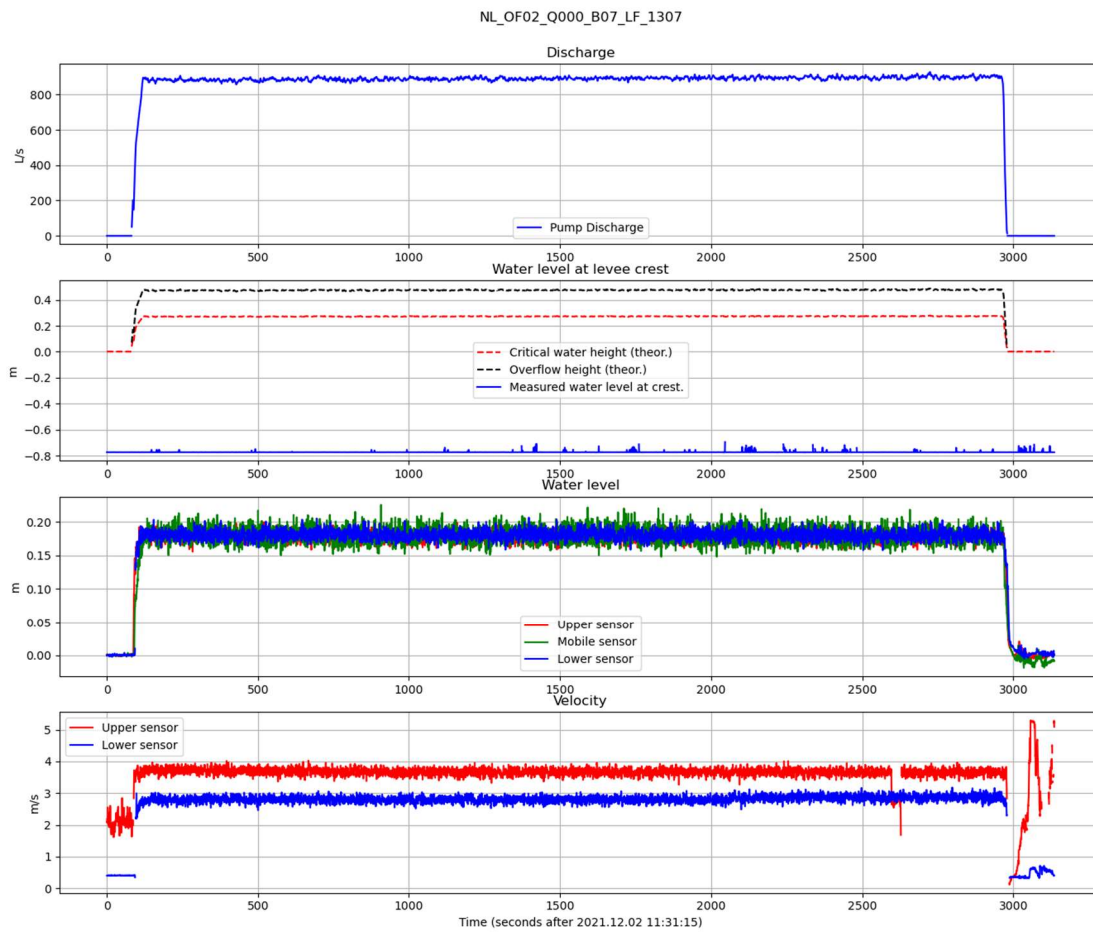
B.6 N-OF02 Block 6

Start	2/12/2021 9:53				
Stop	2/12/2021 10:53				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	850 L/s				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



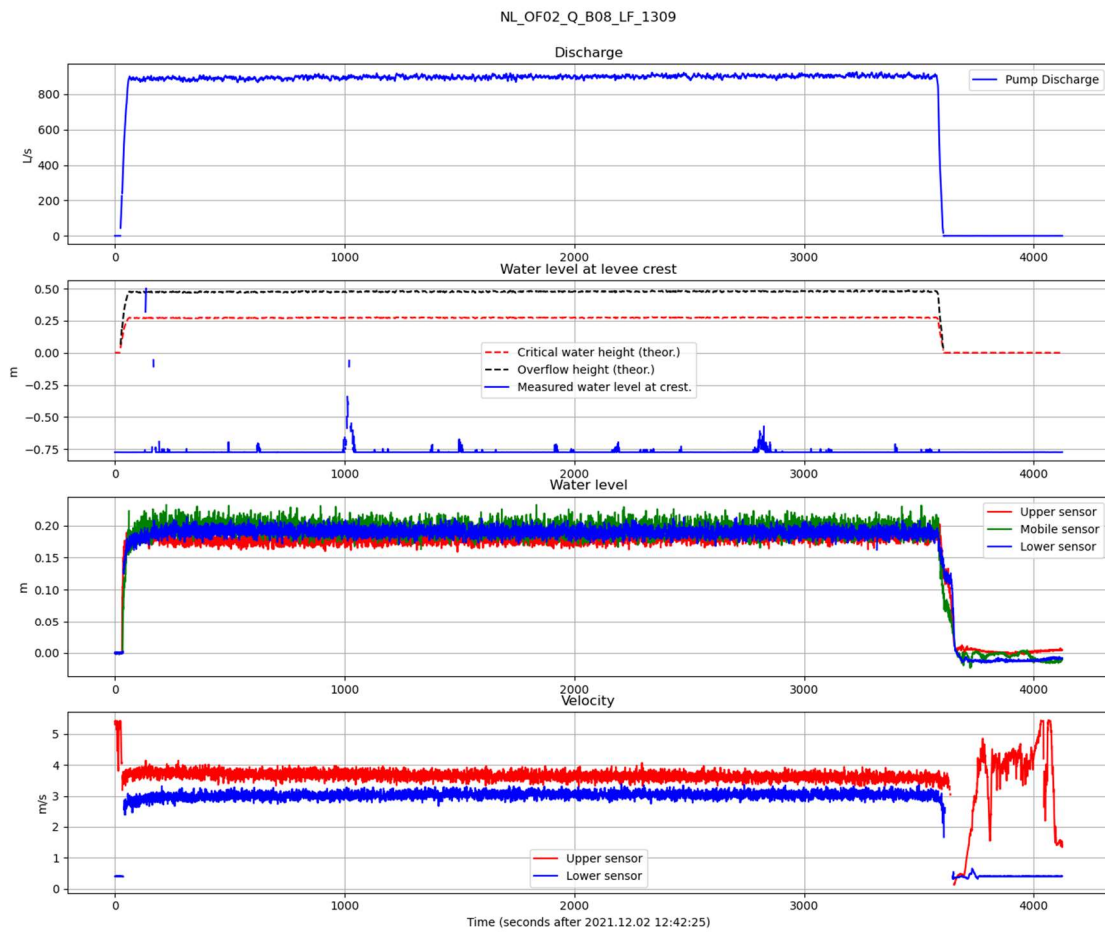
B.7 N-OF02 Block 7

Start	2/12/2021 11:09				
Stop	2/12/2021 12:09				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	850 L/s				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



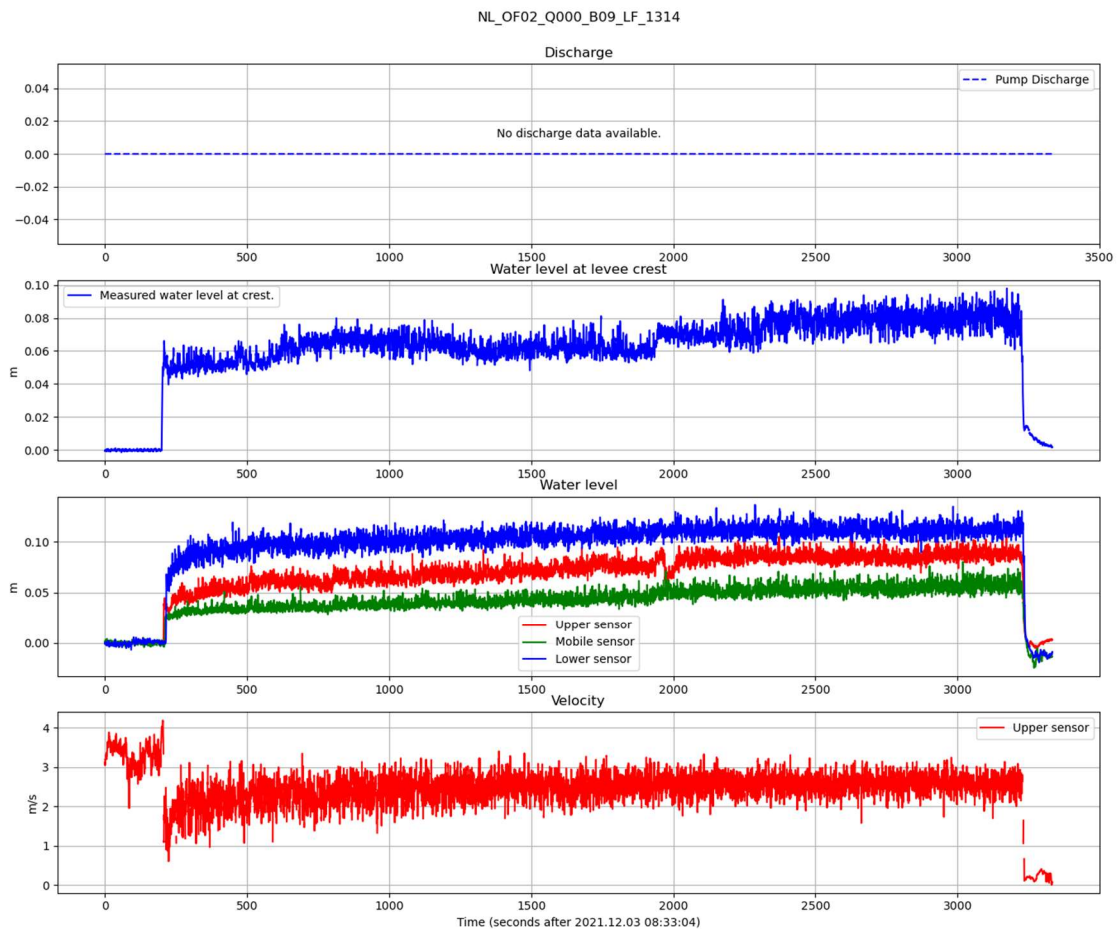
B.8 N-OF02 Block 8

Start	2/12/2021 12:31				
Stop	2/12/2021 13:31				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	850 L/s				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



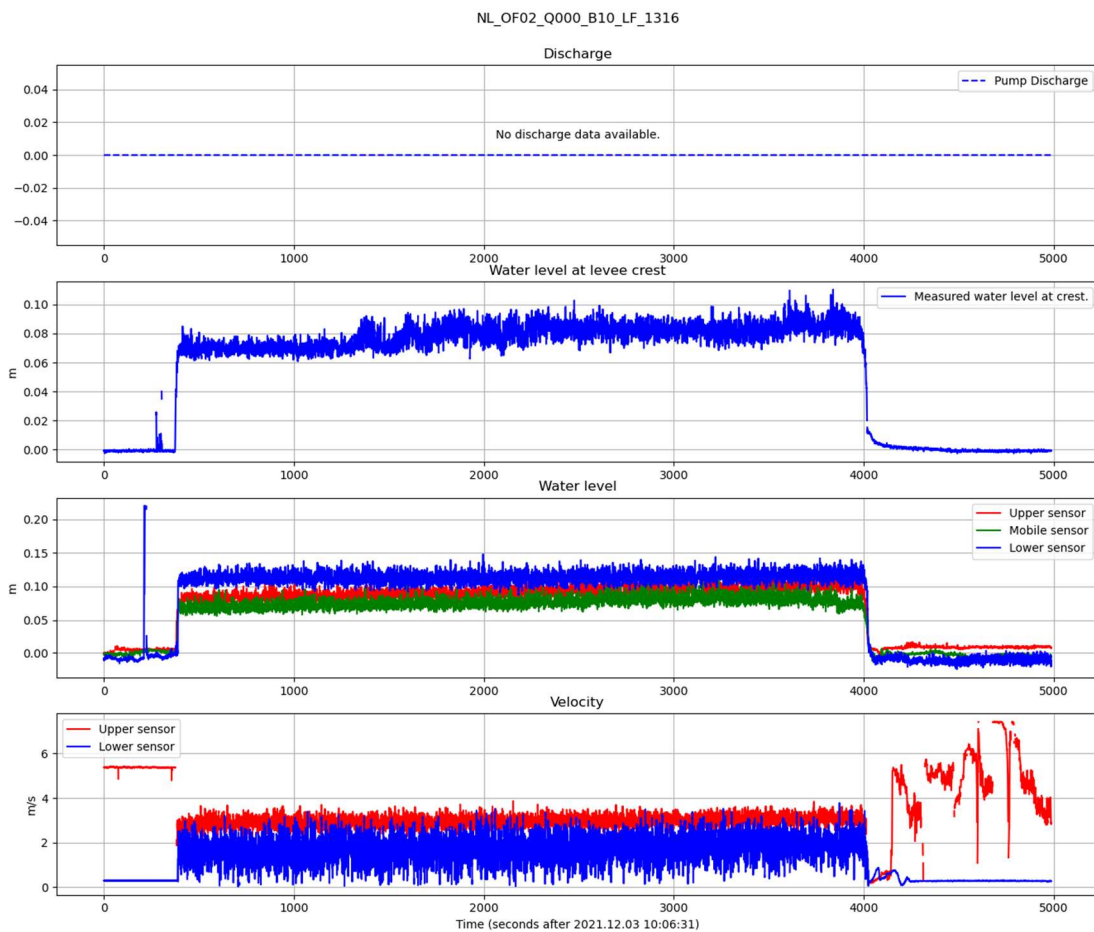
B.9 N-OF02 Block 9

Start	3/12/2021 9:35
Stop	3/12/2021 10:26
Duration	51 minutes
Pump and pump power	BA300
Discharge	Power at 1130 rpm and add 20 rpm every 5 minutes until 1310 rpm
Notes	Start of Erosion Experiment RWS/TUD (see van Damme et al., 2022)
Statistics	Not calculated
series	MinmaxmeanstdUnit
DISCHARGE	m ³ /s
WH_CREST	m
WH_UPPER	m
WH_MOBILE	m
WH_LOWER	m
VXY_UPPER	m/s
VXY_MOBILE	m/s
VXY_LOWER	m/s



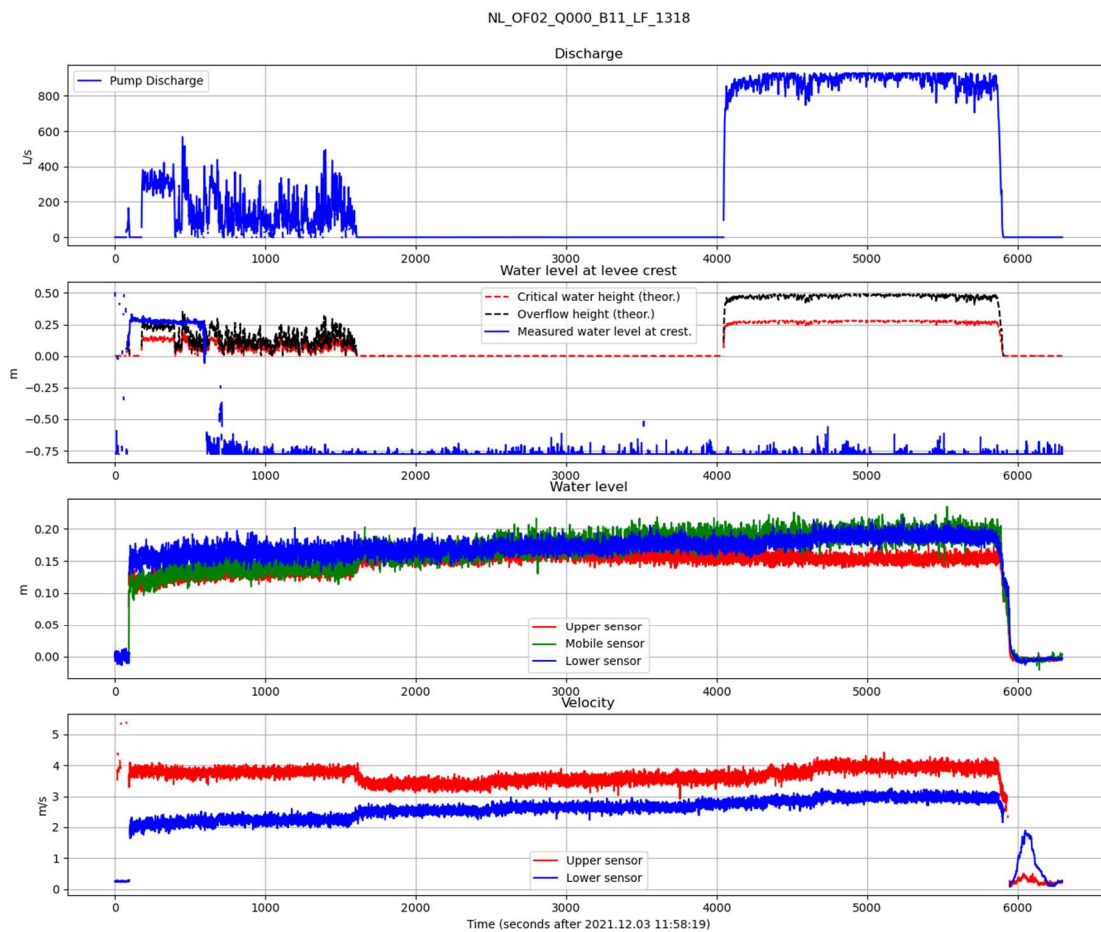
B.10 N-OF02 Block 10

Start	3/12/2021 11:12				
Stop	3/12/2021 12:12				
Duration	1 hour				
Pump and pump power	BA300				
Discharge	Pump power 1310 rpm + 20 rpm every 5 minutes until 1510 and at 12:07 steady at 1520 rpm.				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



B.11 N-OF02 Block 11

Start	2/12/2021 12:58				
Stop	2/12/2021 14:41				
Duration	1 hour				
Pump and pump power	BA500 (+ BA300 at end)				
Discharge	Pump power: 1200 rpm (until 10'), 1240 rpm (until 25'), 1440 rpm (40'), 1540 until 55', 1600 until 70' + addition of BA300, Both max at 14:14 (~1000 l/s)				
Notes					
Statistics	Not calculated				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST					m
WH_UPPER					m
WH_MOBILE					m
WH_LOWER					m
VXY_UPPER					m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s



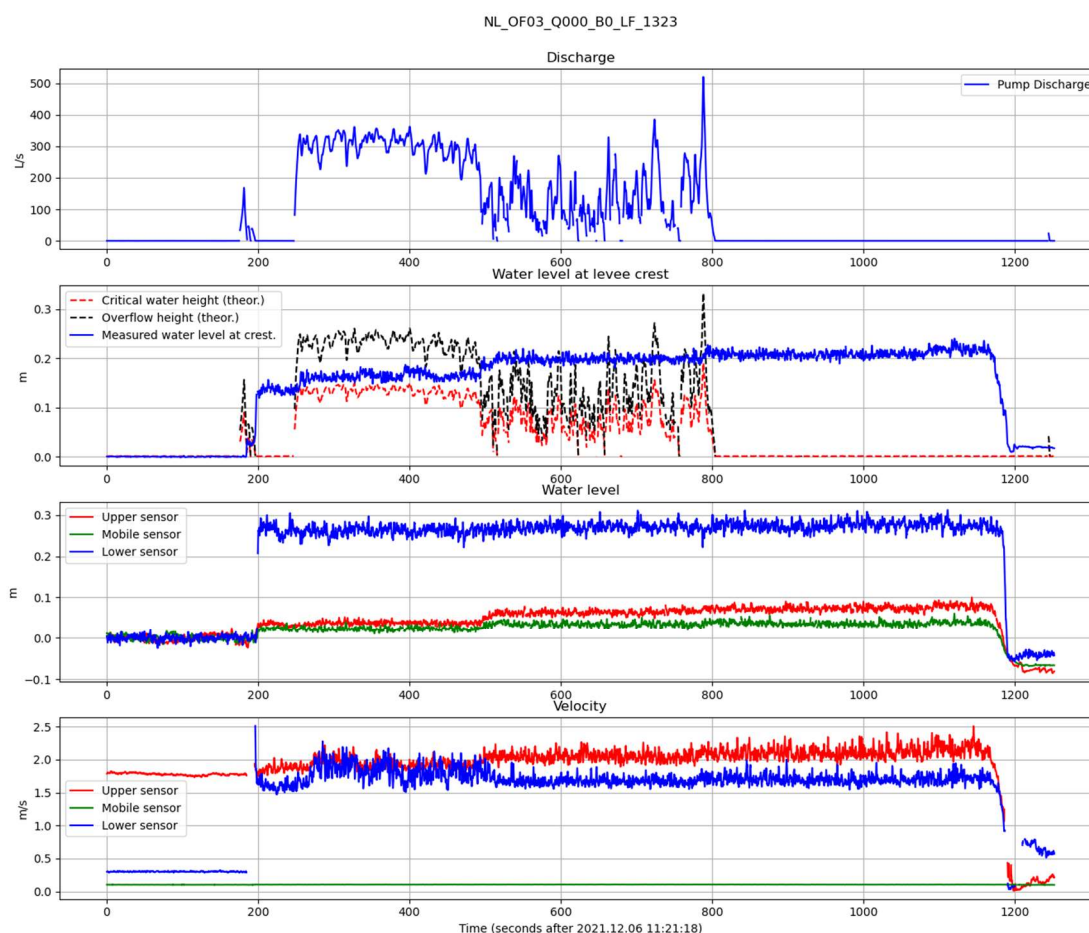
Annex C - N-OF04 timeseries

The following timeseries details are reproduced in this section:

C.1	N-OF03 Block 0	47
C.2	N-OF03 Block 1	48
C.3	N-OF03 Block 2	49
C.4	N-OF03 Block 3	50
C.5	N-OF03 Block 4	51
C.6	N-OF03 Block 5	52
C.7	N-OF03 Block 6	53
C.8	N-OF03 Block 7	54
C.9	N-OF03 Block 8	55
C.10	N-OF03 Block 9	56
C.11	N-OF03 Block 10	57

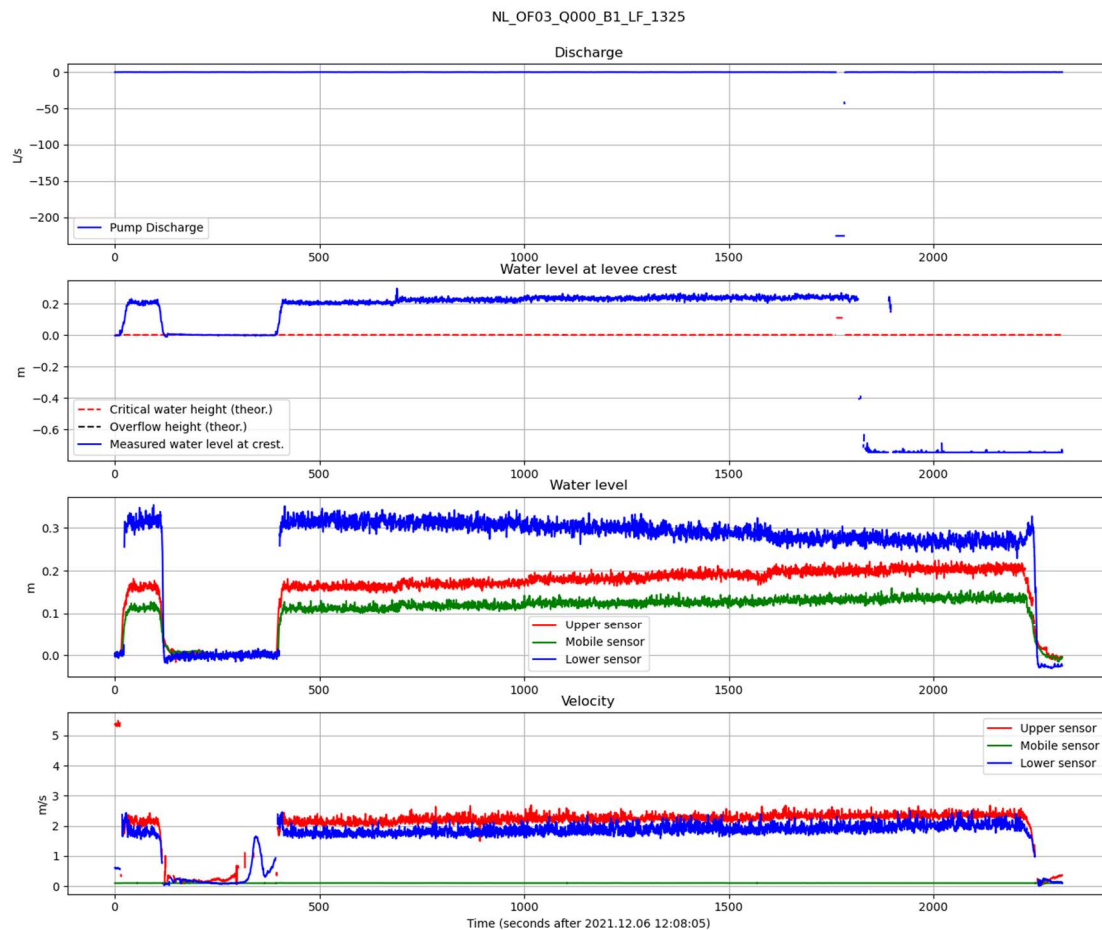
C.1 N-OF03 Block 0

Start	6/12/2021 12:23				
Stop	6/12/2021 12:40				
Duration	17 minutes				
Pump and pump power	BA500.				
Discharge	Start at 1200 rpm, after 5' to 1250 and after 10' to 1300 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed.				
Statistics	Statistics calculated from 258 until 476 s (n=2182).				
series	Min	max	mean	std	Unit
DISCHARGE	194	362	305	32	l/s
WH_CREST	0,143	0,187	0,164	0,007	m
WH_UPPER	0,028	0,052	0,038	0,004	m
WH_MOBILE	0,011	0,040	0,023	0,004	m
WH_LOWER	0,221	0,297	0,262	0,011	m
VXY_UPPER	1,781	2,219	1,940	0,070	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,508	2,279	1,831	0,139	m/s



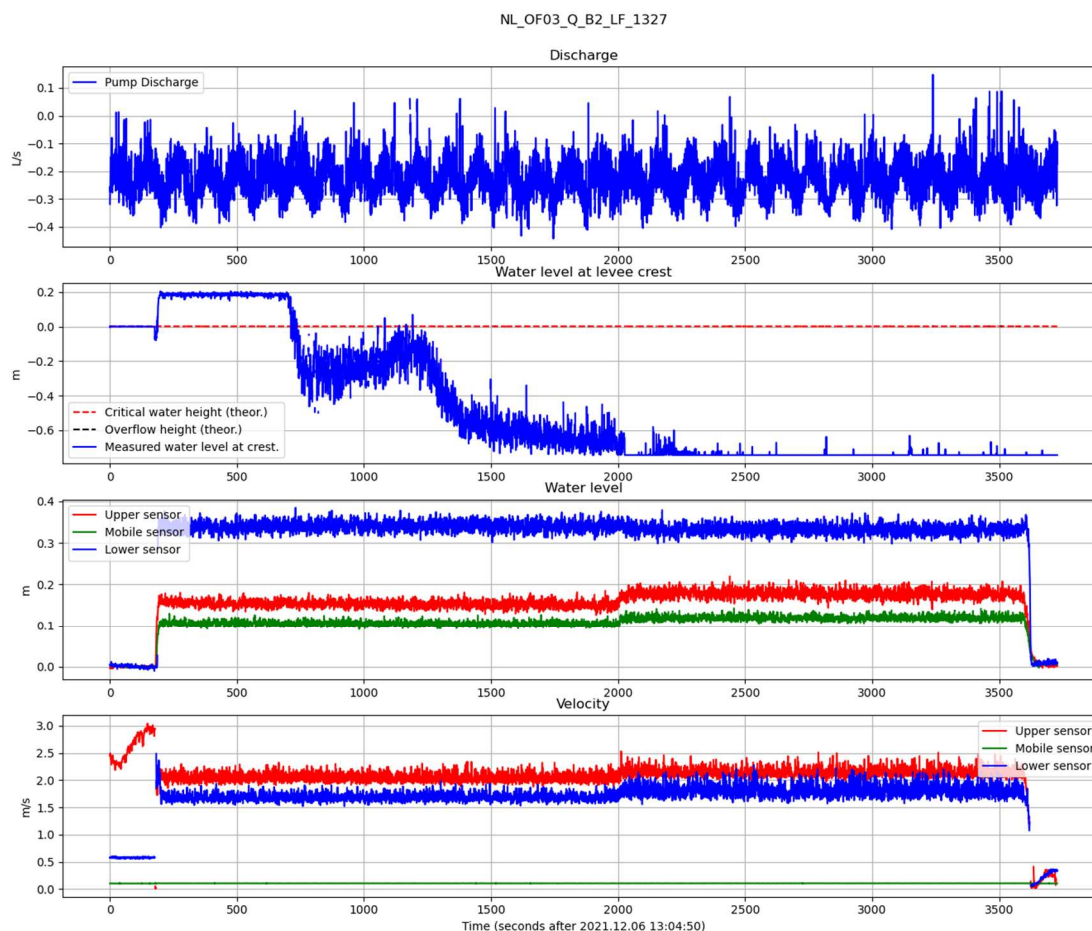
C.2 N-OF03 Block 1

Start	6/12/2021 13:08				
Stop	6/12/2021 13:45				
Duration	37 minutes				
Pump and pump power	BA500.				
Discharge	Start at 1350 rpm; 1400 at 13:19; 1450 at 13:24; 1500 at 13:34 and 1600 at 13:39.				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed.				
Statistics	Statistics calculated from ... until ... (n=...).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	-0,746	0,296	0,028	0,392	m
WH_UPPER	0,148	0,224	0,184	0,016	m
WH_MOBILE	0,101	0,159	0,125	0,010	m
WH_LOWER	0,229	0,351	0,294	0,020	m
VXY_UPPER	1,495	2,688	2,266	0,115	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,576	2,506	1,887	0,145	m/s



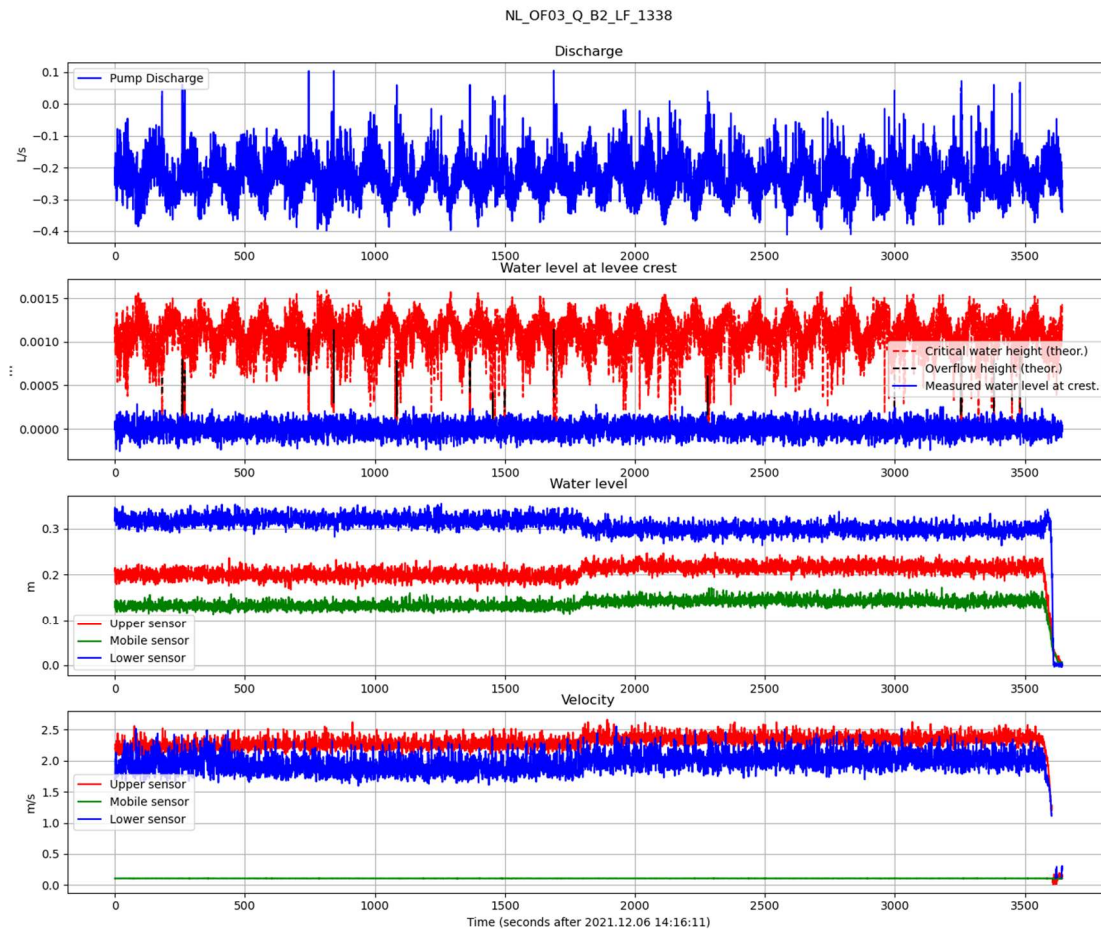
C.3 N-OF03 Block 2

Start	6/12/2021 14:07				
Stop	6/12/2021 15:05				
Duration	58 minutes				
Pump and pump power	BA500.				
Discharge	1300 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. Execution of PTV tests. Not all data shown here.				
Statistics	Statistics calculated from 215 until 672 s (n=4573).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,149	0,205	0,185	0,007	m
WH_UPPER	0,134	0,180	0,154	0,007	m
WH_MOBILE	0,091	0,130	0,106	0,005	m
WH_LOWER	0,306	0,376	0,338	0,011	m
VXY_UPPER	1,857	2,326	2,053	0,068	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,542	1,937	1,686	0,058	m/s



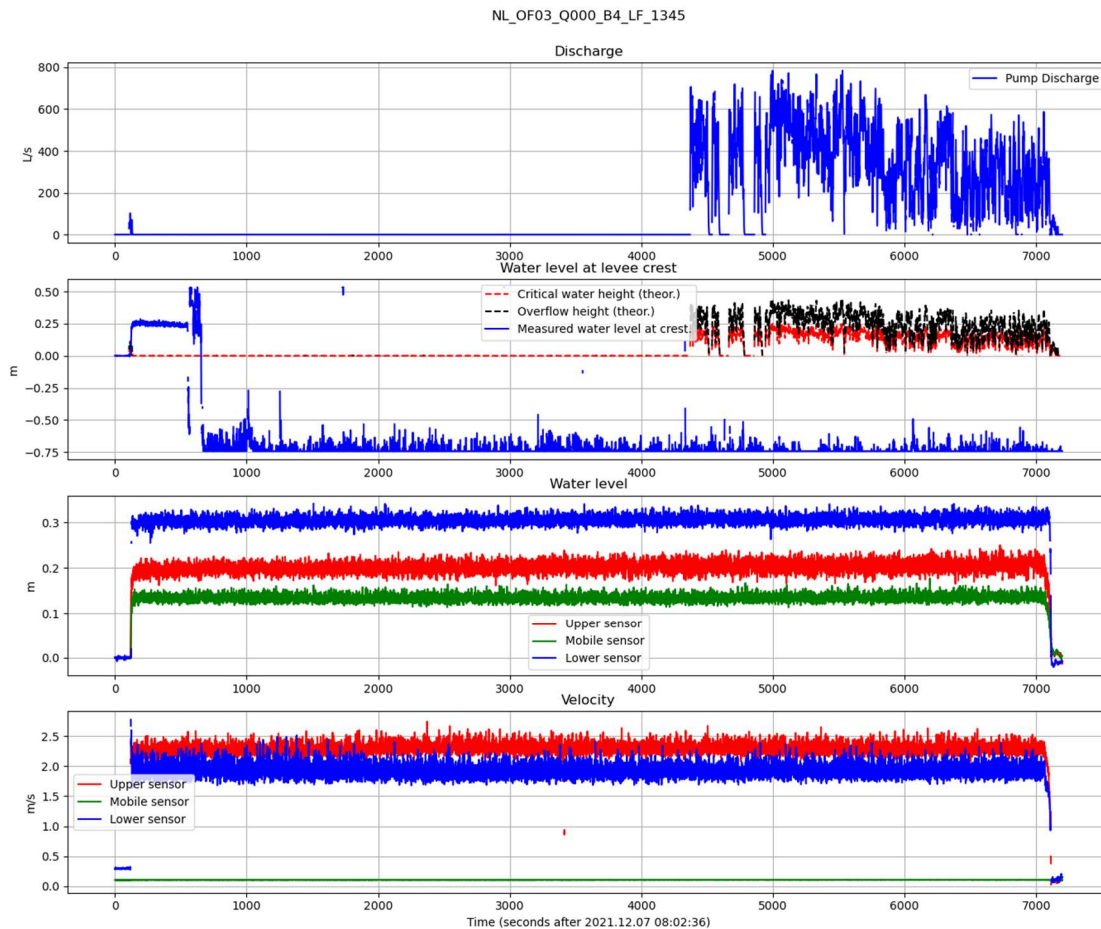
C.4 N-OF03 Block 3

Start	6/12/2021 15:15				
Stop	6/12/2021 16:16				
Duration	61 minutes				
Pump and pump power	BA500.				
Discharge	1300 rpm, and increase to 1400 rpm at 14:37				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED.				
Statistics	Statistics calculated from 25 until 3556 s (n=35312).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,164	0,248	0,208	0,013	m
WH_MOBILE	0,113	0,172	0,137	0,009	m
WH_LOWER	0,263	0,355	0,309	0,014	m
VXY_UPPER	2,065	2,661	2,308	0,082	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,596	2,554	1,972	0,134	m/s



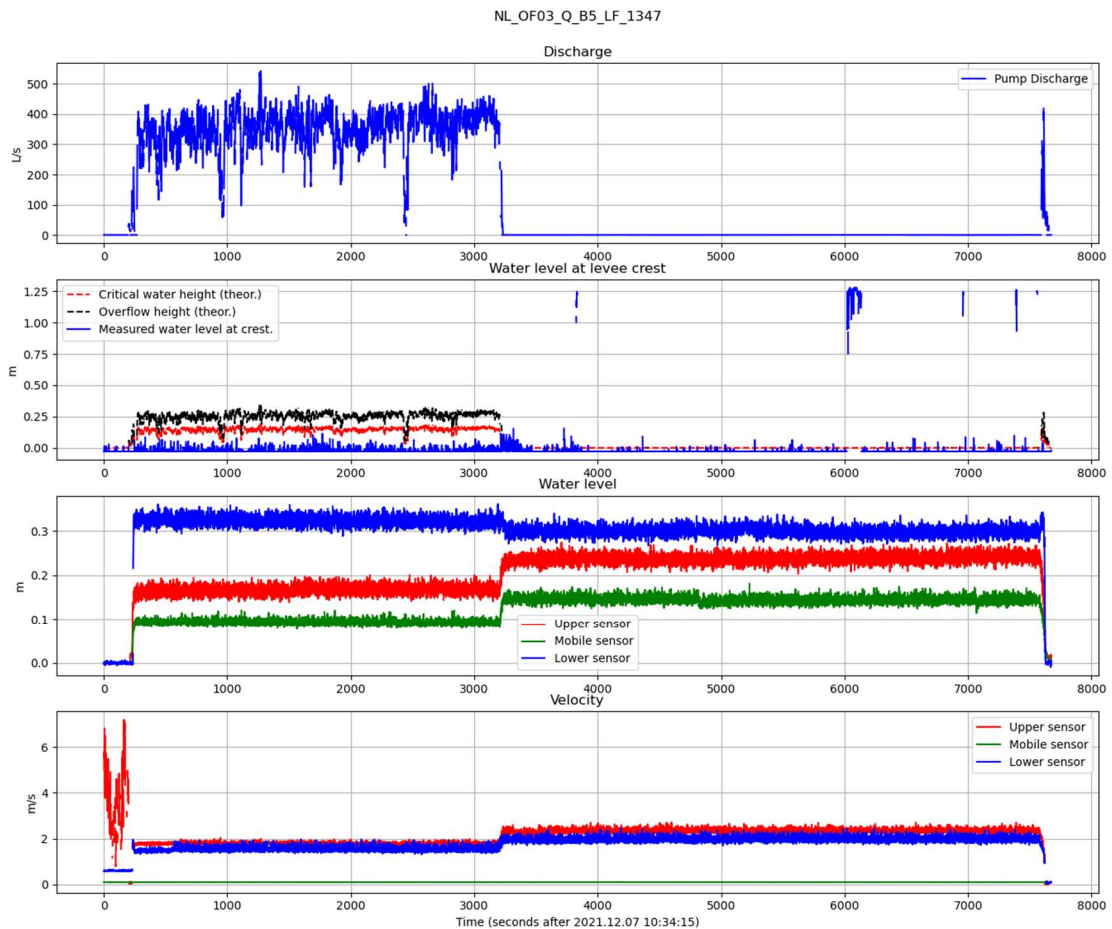
C.5 N-OF03 Block 4

Start	7/12/2021 9:03				
Stop	7/12/2021 11:01				
Duration	1 hour 58 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED.				
Statistics	Statistics calculated from 4390 until 7031 s (n=26411).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,165	0,250	0,205	0,011	m
WH_MOBILE	0,113	0,177	0,135	0,007	m
WH_LOWER	0,263	0,341	0,307	0,008	m
VXY_UPPER	2,077	2,672	2,294	0,072	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,691	2,395	1,932	0,093	m/s



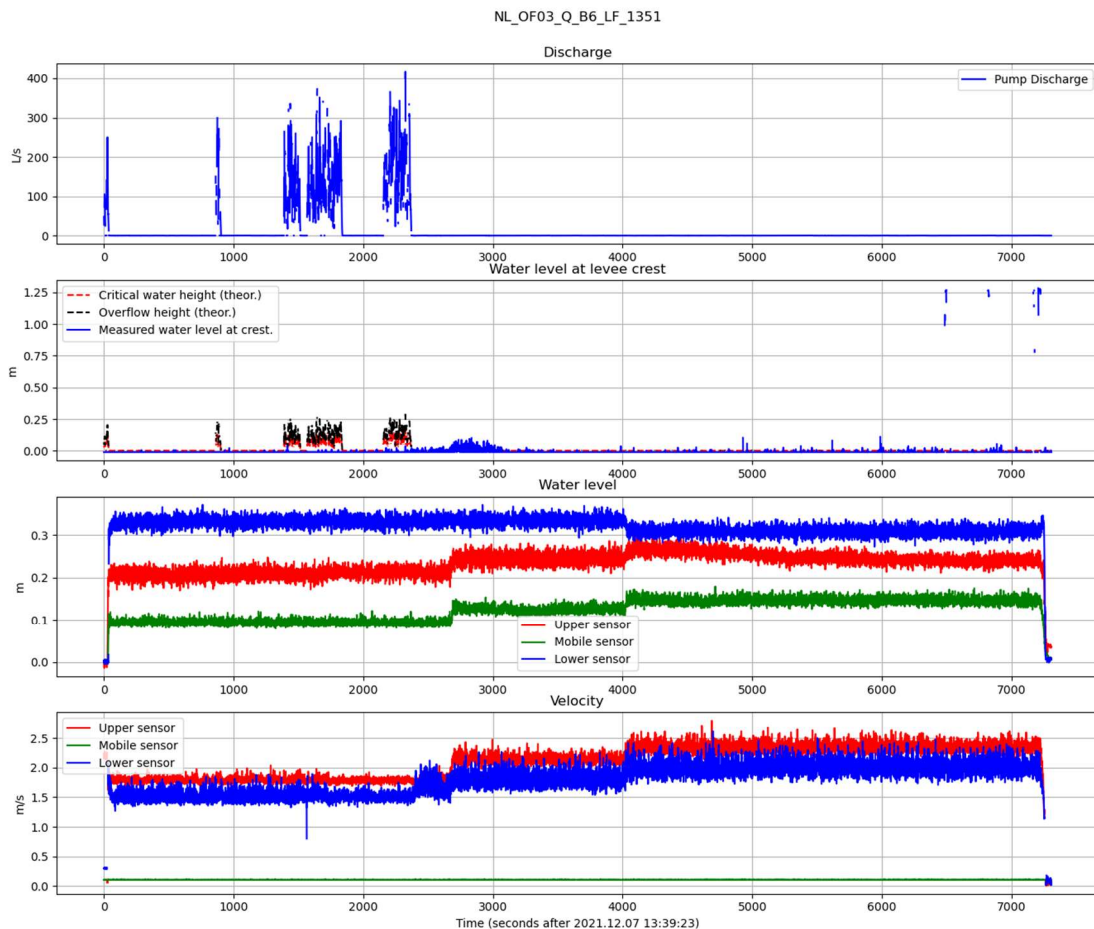
C.6 N-OF03 Block 5

Start	7/12/2021 11:37				
Stop	7/12/2021 13:41				
Duration	2 hours and 4 minutes				
Pump and pump power	BA500				
Discharge	1200 rpm, 1600 rpm after 12:29				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED. Lidar, LSPIV and High speed camera measurements conducted.				
Statistics	Statistics calculated from 317 until 3187 s (n=28705).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,139	0,201	0,167	0,009	m
WH_MOBILE	0,077	0,121	0,093	0,005	m
WH_LOWER	0,289	0,361	0,324	0,009	m
VXY_UPPER	1,681	2,040	1,804	0,039	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,314	1,971	1,558	0,092	m/s



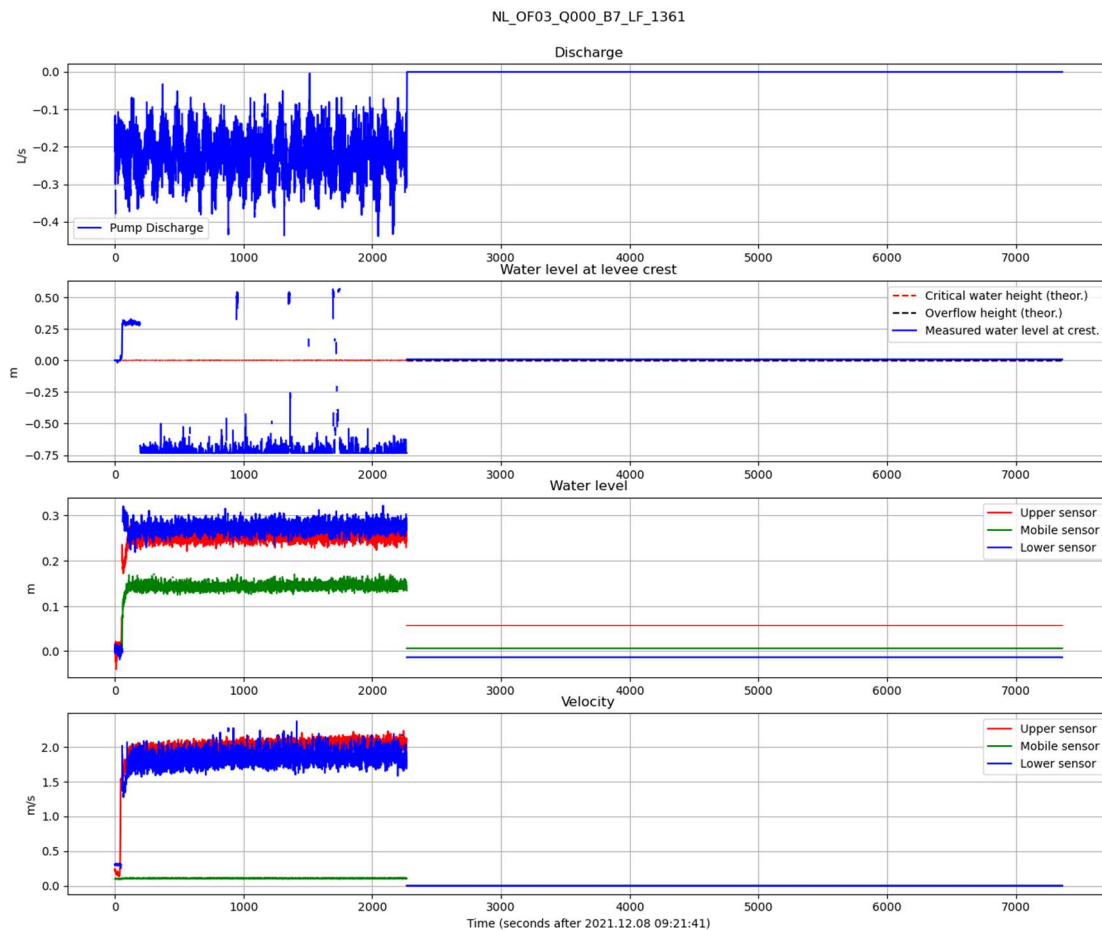
C.7 N-OF03 Block 6

Start	7/12/2021 14:39				
Stop	7/12/2021 16:39				
Duration	2 hours				
Pump and pump power	BA500				
Discharge	1200 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED. Lidar, LSPIV and High speed camera measurements conducted.				
Statistics	Statistics calculated from 2160 until 2323 s (n=1630).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST					m
WH_UPPER	0,184	0,238	0,215	0,009	m
WH_MOBILE	0,080	0,112	0,093	0,005	m
WH_LOWER	0,302	0,362	0,331	0,010	m
VXY_UPPER	1,685	1,871	1,789	0,029	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,391	1,748	1,515	0,050	m/s



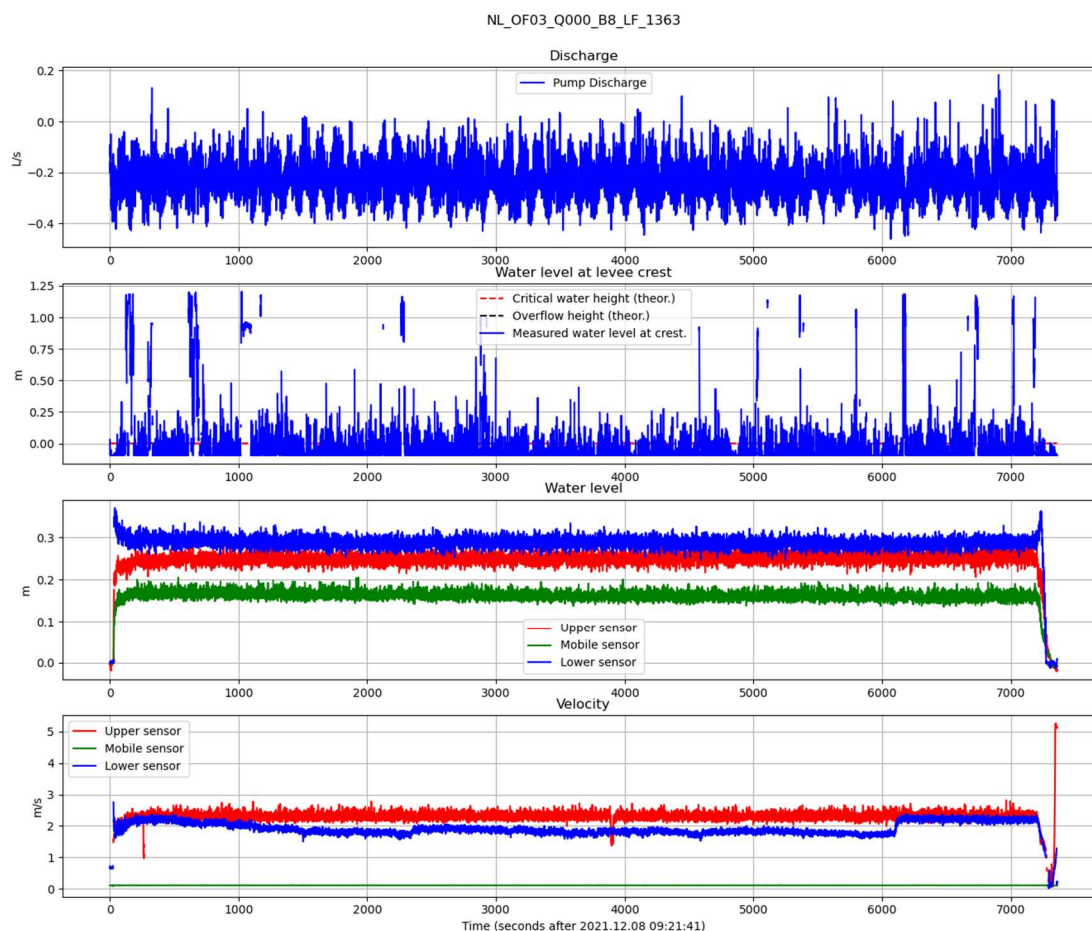
C.8 N-OF03 Block 7

Start	8/12/2021 8:02				
Stop	8/12/2021 9:46				
Duration	1 hour 44 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed.				
Statistics	Statistics calculated from 73 until 185 s (n=1119).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,277	0,329	0,299	0,008	m
WH_UPPER	0,186	0,276	0,243	0,019	m
WH_MOBILE	0,114	0,168	0,142	0,010	m
WH_LOWER	0,219	0,311	0,269	0,016	m
VXY_UPPER	1,616	2,064	1,879	0,099	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,349	2,067	1,721	0,146	m/s



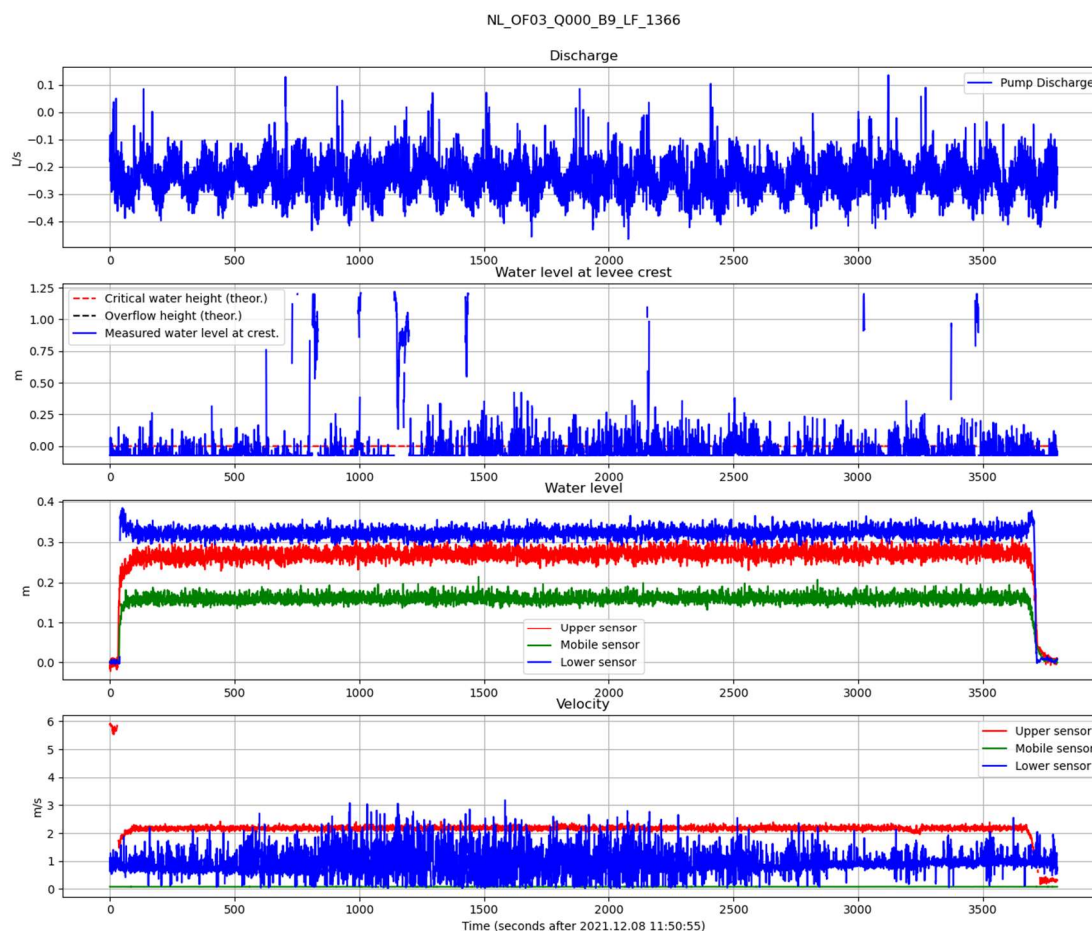
C.9 N-OF03 Block 8

Start	8/12/2021 8:02				
Stop	8/12/2021 9:46				
Duration	1 hour 44 minutes				
Pump and pump power	BA500 + BA300				
Discharge					
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED. 2 holes drilled at end of test, 1 m deep, at lower camera portal.				
Statistics	Statistics calculated from 140 until 7132 s (n=69919).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,206	0,295	0,250	0,010	m
WH_MOBILE	0,135	0,205	0,163	0,008	m
WH_LOWER	0,247	0,337	0,289	0,010	m
VXY_UPPER	0,966	2,813	2,305	0,102	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,501	2,387	1,921	0,176	m/s



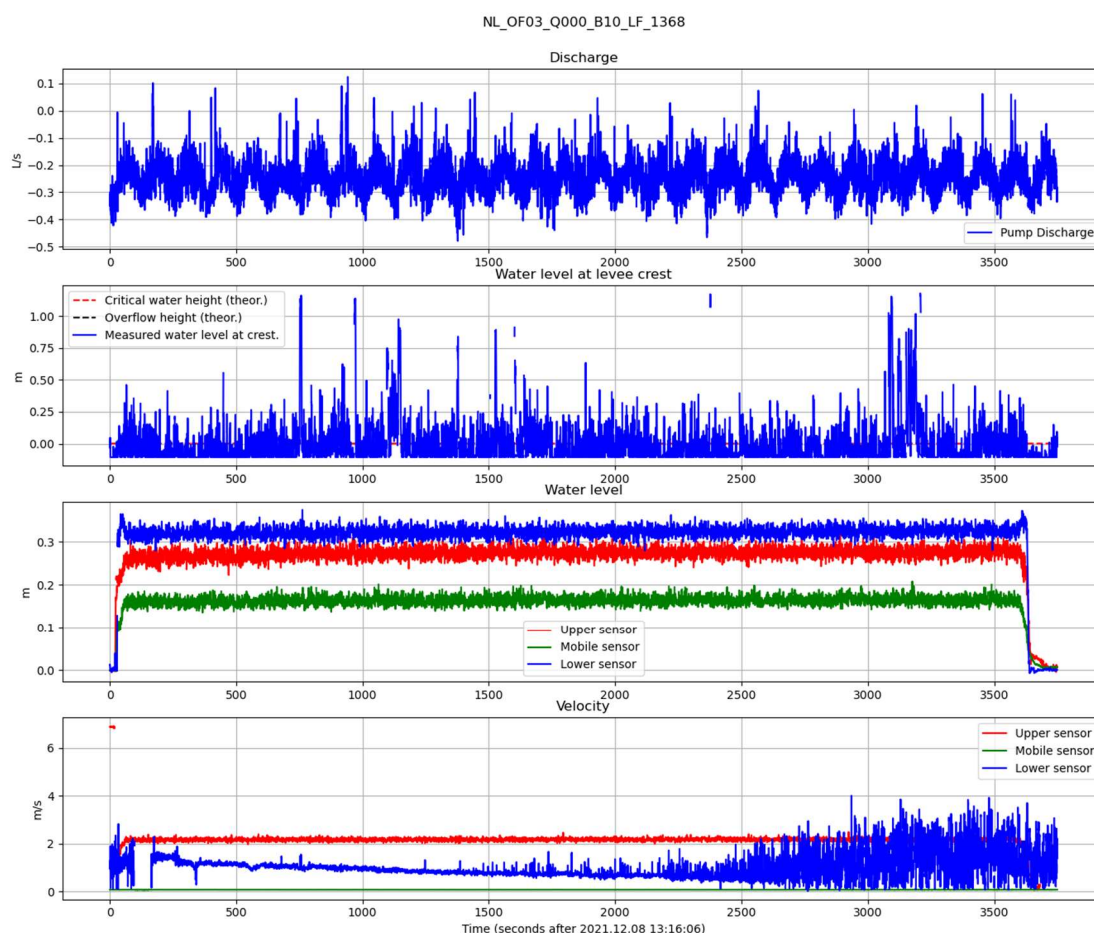
C.10 N-OF03 Block 9

Start	8/12/2021 12:50				
Stop	8/12/2021 13:52				
Duration	1 hour 2 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED. 2 holes drilled before test, 1 m deep, at lower camera portal.				
Statistics	Statistics calculated from 146 until 3641 s (n=34952).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,228	0,325	0,271	0,011	m
WH_MOBILE	0,132	0,214	0,160	0,009	m
WH_LOWER	0,287	0,365	0,323	0,010	m
VXY_UPPER	1,951	2,418	2,175	0,051	m/s
VXY_MOBILE					m/s
VXY_LOWER	0,017	3,177	0,946	0,402	m/s



C.11 N-OF03 Block 10

Start	8/12/2021 14:16				
Stop	8/12/2021 15:16				
Duration	1 hour 2 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	Valeports (Current meters) UPPER en LOWER ARE ON THE CREST! MOBILE not installed. WH CREST SENSOR IS REMOVED. 1 additional hole drilled 18 m from crest + 1 additional hole below the lowest portal. Only VXY_UPPER → LOCATED ON CREST.				
Statistics	Statistics calculated from 113 until 3568 s (n=34547).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,222	0,323	0,273	0,011	m
WH_MOBILE	0,135	0,208	0,163	0,009	m
WH_LOWER	0,279	0,374	0,322	0,010	m
VXY_UPPER	1,970	2,489	2,172	0,051	m/s
VXY_MOBILE					m/s
VXY_LOWER	0,019	4,003	0,994	0,450	m/s



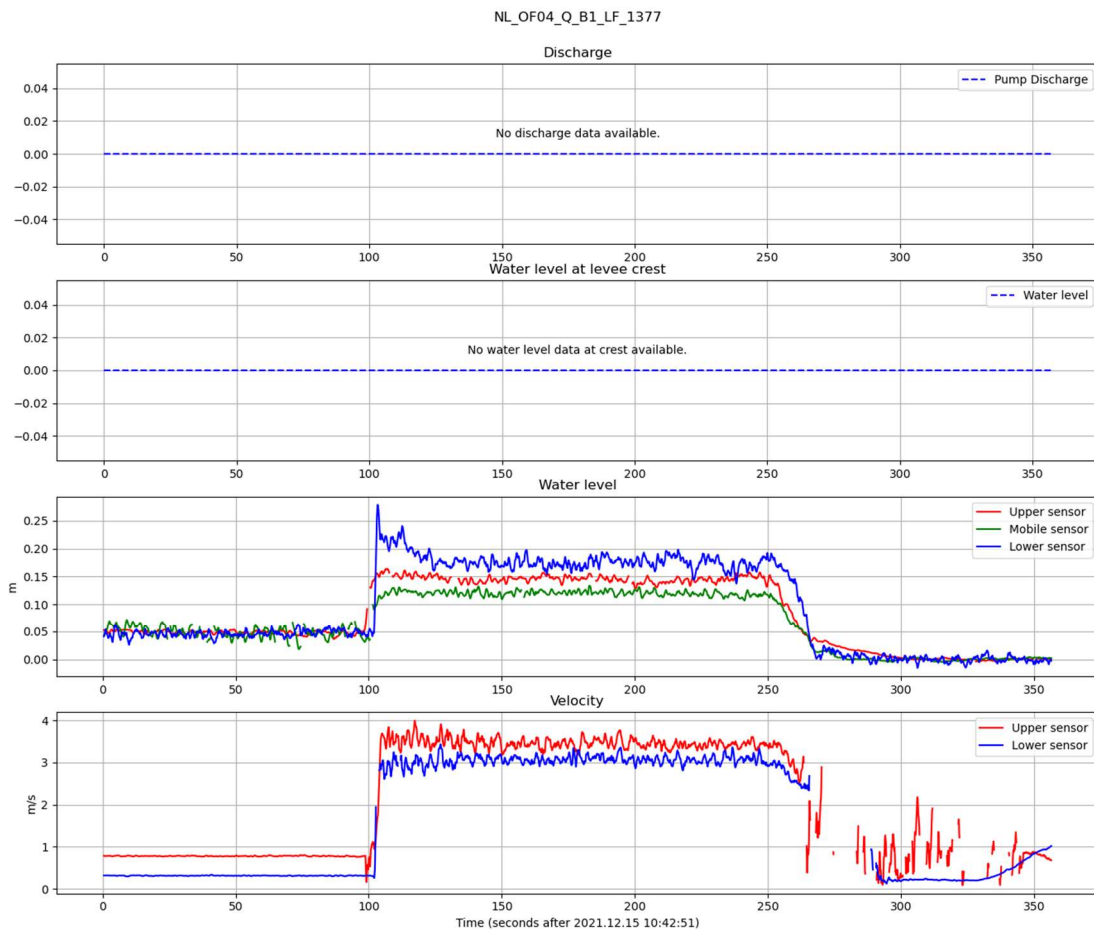
Annex D - N-OF04 timeseries

The following timeseries details are reproduced in this section:

D.1	N-OF04 Block 1	59
D.2	N-OF04 Block 2	60
D.3	N-OF04 Block 3	61
D.4	N-OF04 Block 4	62
D.5	N-OF04 Block 5	63
D.6	N-OF04 Block 6	64
D.7	N-OF04 Block 7	65
D.8	N-OF04 Block 8	66
D.9	N-OF04 Block 9	67
D.10	N-OF04 Block 10	68
D.11	N-OF04 Block 11	69
D.12	N-OF04 Block 12	70
D.13	N-OF04 Block 13	71
D.14	N-OF04 Block 14	72
D.15	N-OF04 Block 15	73
D.16	N-OF04 Block 16	74
D.17	N-OF04 Block 17	75
D.18	N-OF04 Block 18	76

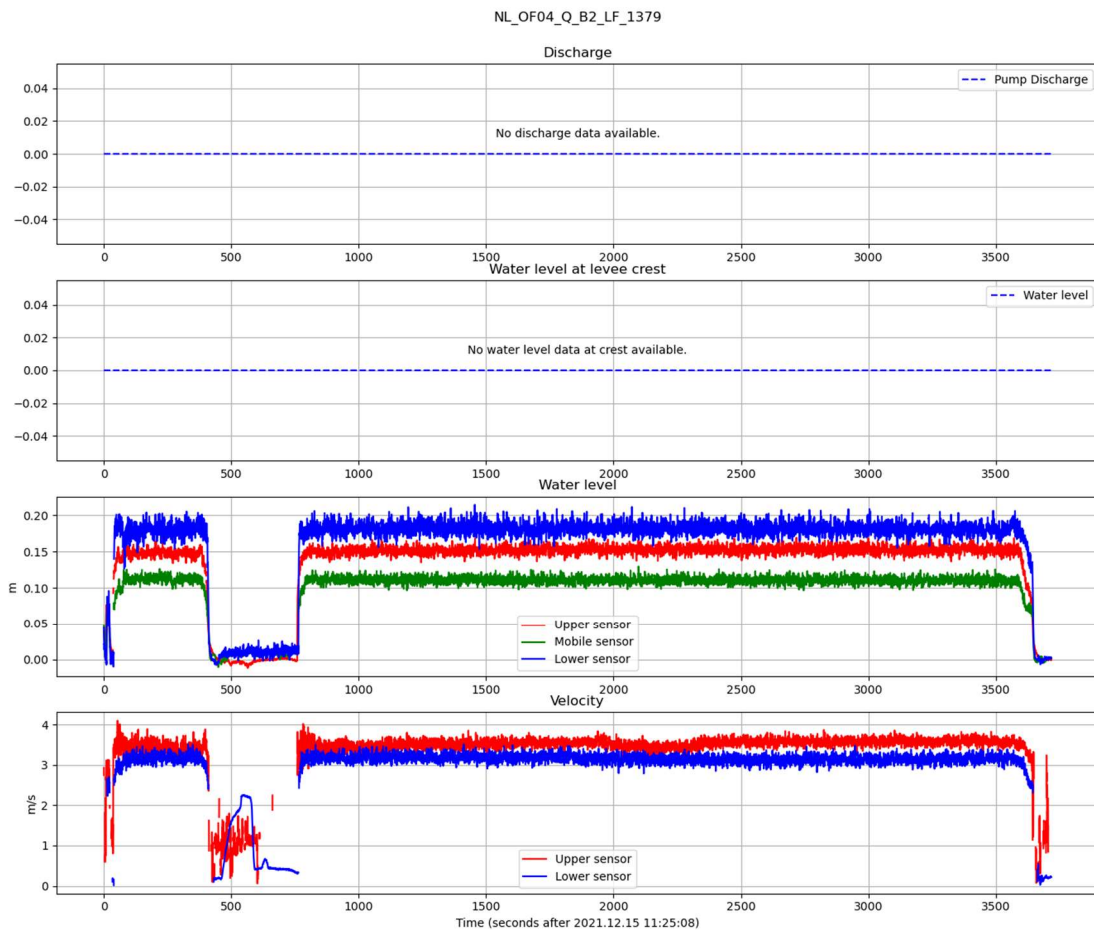
D.1 N-OF04 Block 1

Start	15/12/2021 11:42				
Stop	15/12/2021 11:48				
Duration	6 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	No ultrasonic on crest, no vxy_mobile.				
Statistics	Statistics calculated from 105 to 205 s (n=1480)				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,129	0,164	0,146	0,006	m
WH_MOBILE	0,107	0,134	0,120	0,005	m
WH_LOWER	0,137	0,241	0,178	0,014	m
VXY_UPPER	3,18	3,99	3,46	0,12	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,61	3,43	3,05	0,11	m/s



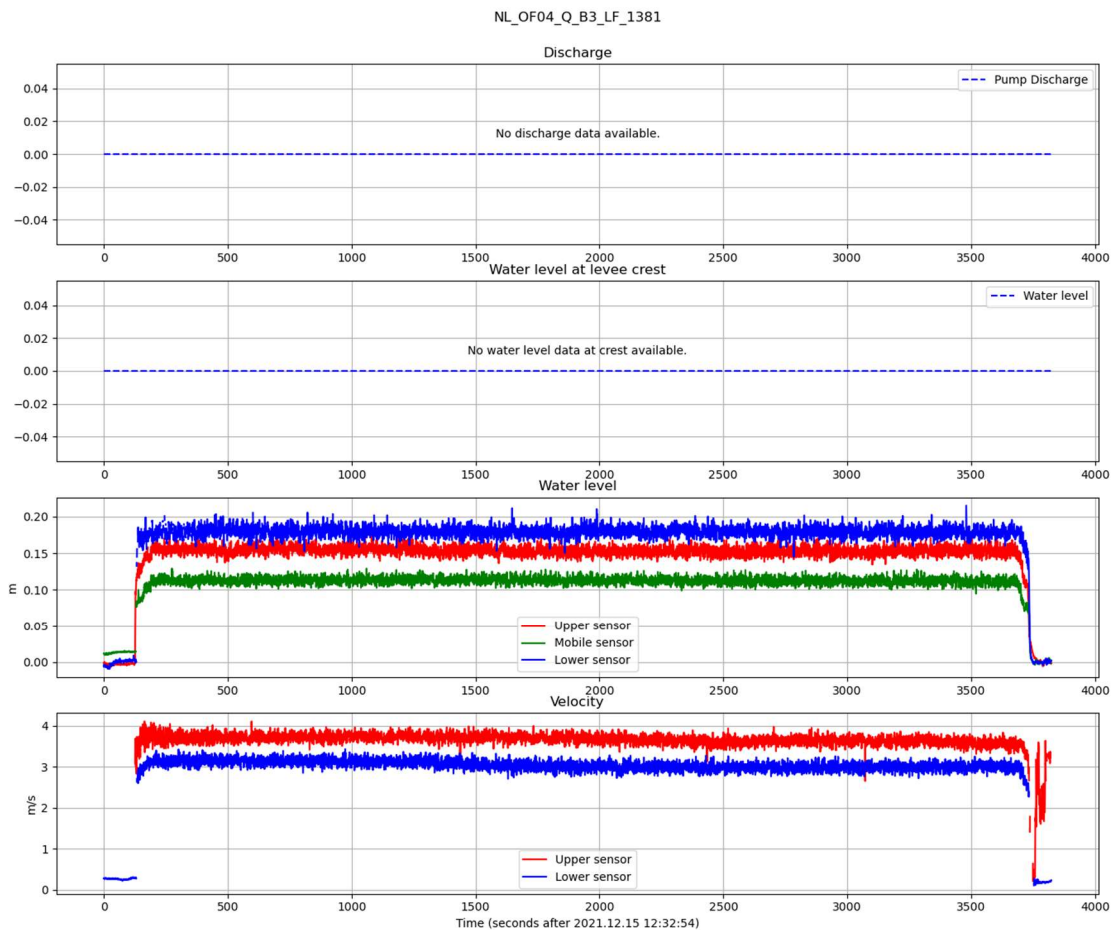
D.2 N-OF04 Block 2

Start	15/12/2021 12:23				
Stop	15/12/2021 13:25				
Duration	1 hour 2 minutes				
Pump and pump power	BA 500				
Discharge	Variable up to 1600 rpm				
Notes	See Block 1				
Statistics	Statistics calculated from 809 until 3568 s (n=27583).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,135	0,170	0,152	0,005	m
WH_MOBILE	0,096	0,130	0,111	0,004	m
WH_LOWER	0,153	0,215	0,182	0,007	m
VXY_UPPER	3,08	3,87	3,54	0,10	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,79	3,52	3,16	0,09	m/s



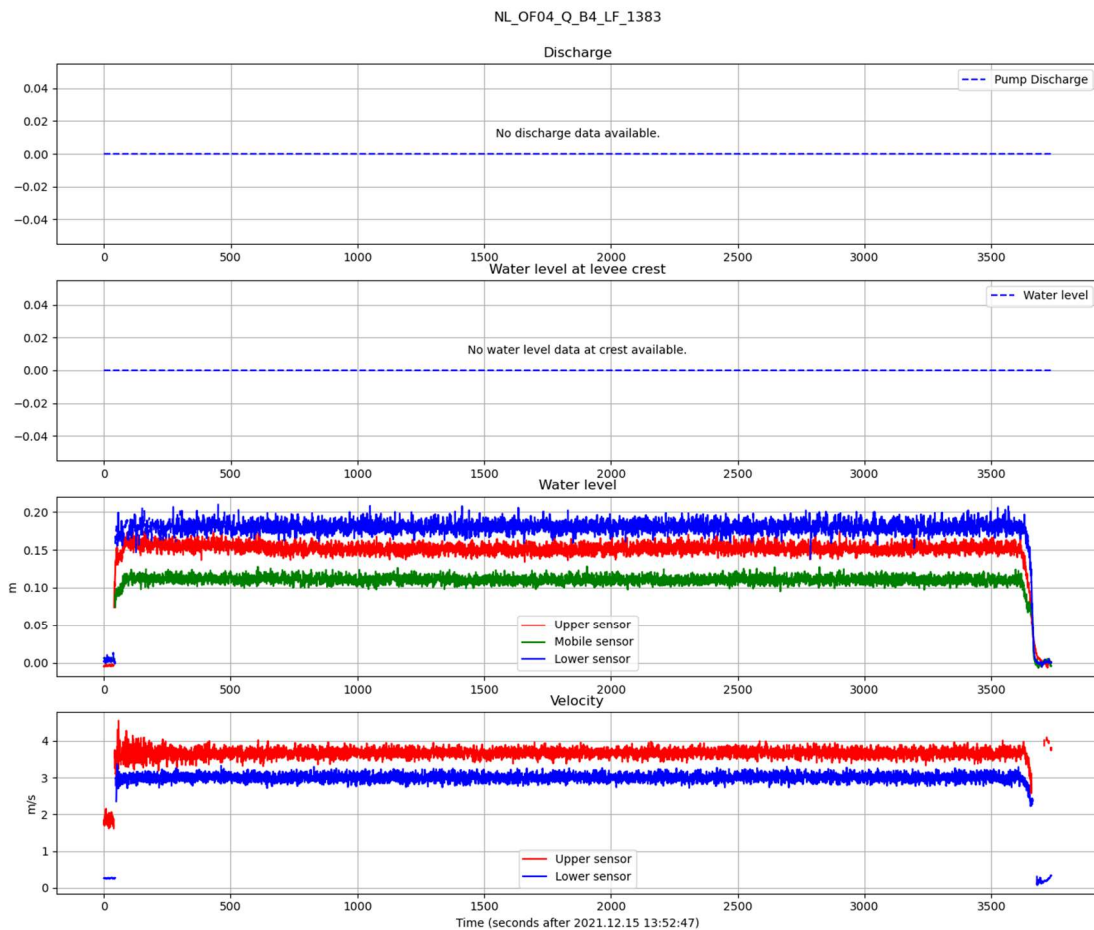
D.3 N-OF04 Block 3

Start	15/12/2021 13:34				
Stop	15/12/2021 14:34				
Duration	1 hour				
Pump and pump power	BA 500				
Discharge	1600 rpm				
Notes	See Block 1				
Statistics	Statistics calculated from 170 until 3665 s (n=34956).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,134	0,176	0,154	0,005	m
WH_MOBILE	0,095	0,129	0,113	0,004	m
WH_LOWER	0,145	0,215	0,179	0,006	m
VXY_UPPER	2,65	4,11	3,68	0,10	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,71	3,43	3,05	0,11	m/s



D.4 N-OF04 Block 4

Start	15/12/2021 14:53				
Stop	15/12/2021 15:53				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	1600 RPM				
Notes	See block 1				
Statistics	Statistics calculated from 71 until 3612 s (n=35409).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,134	0,175	0,152	0,005	m
WH_MOBILE	0,095	0,128	0,111	0,004	m
WH_LOWER	0,138	0,210	0,181	0,006	m
VXY_UPPER	3,19	4,28	3,67	0,10	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,71	3,33	3,01	0,08	m/s



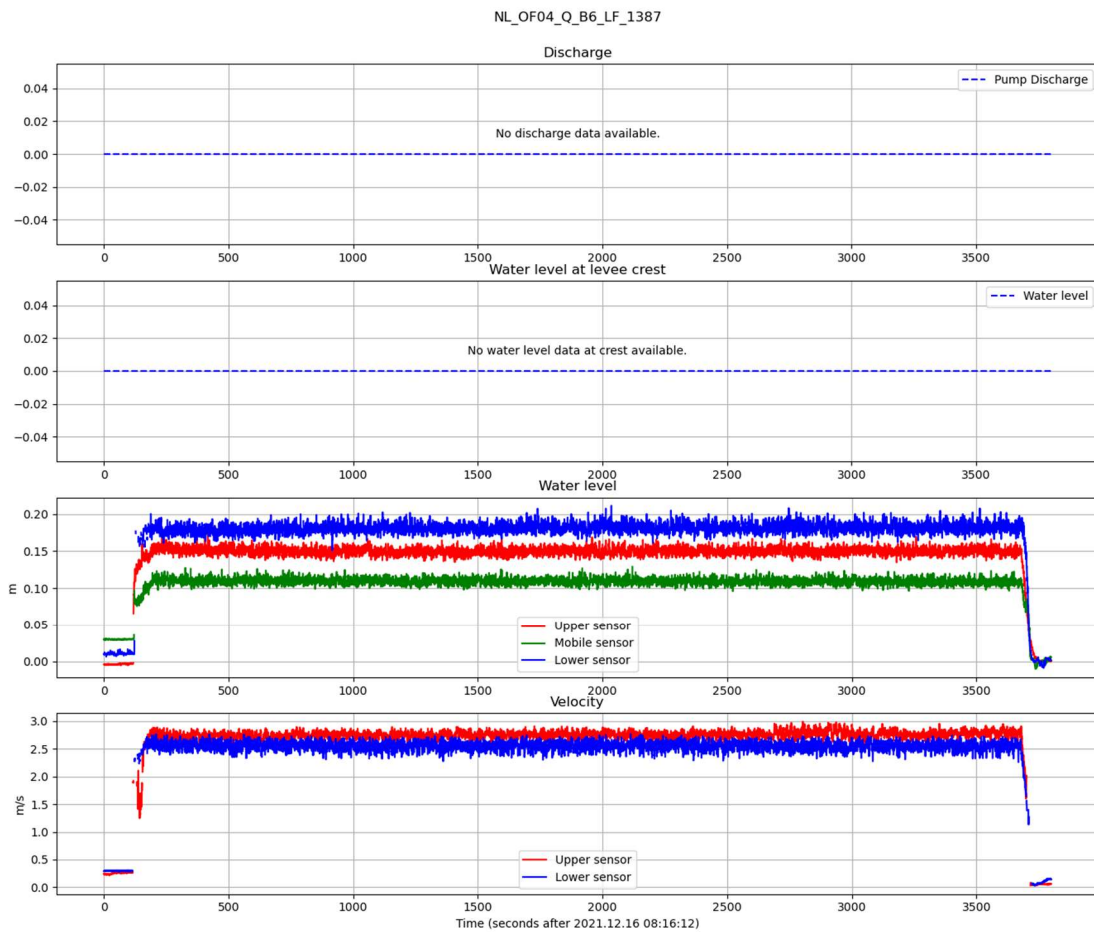
D.5 N-OF04 Block 5

Start	15/12/2021 16:03				
Stop	15/12/2021 17:00				
Duration	57 minutes				
Pump and pump power	BA500				
Discharge	1600 RPM				
Notes	See block 1				
Statistics	Statistics calculated from 57 until 3422 s (n=33654).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,137	0,176	0,152	0,005	m
WH_MOBILE	0,091	0,128	0,105	0,004	m
WH_LOWER	0,150	0,208	0,177	0,006	m
VXY_UPPER	2,58	4,06	3,68	0,10	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,72	3,36	3,03	0,08	m/s



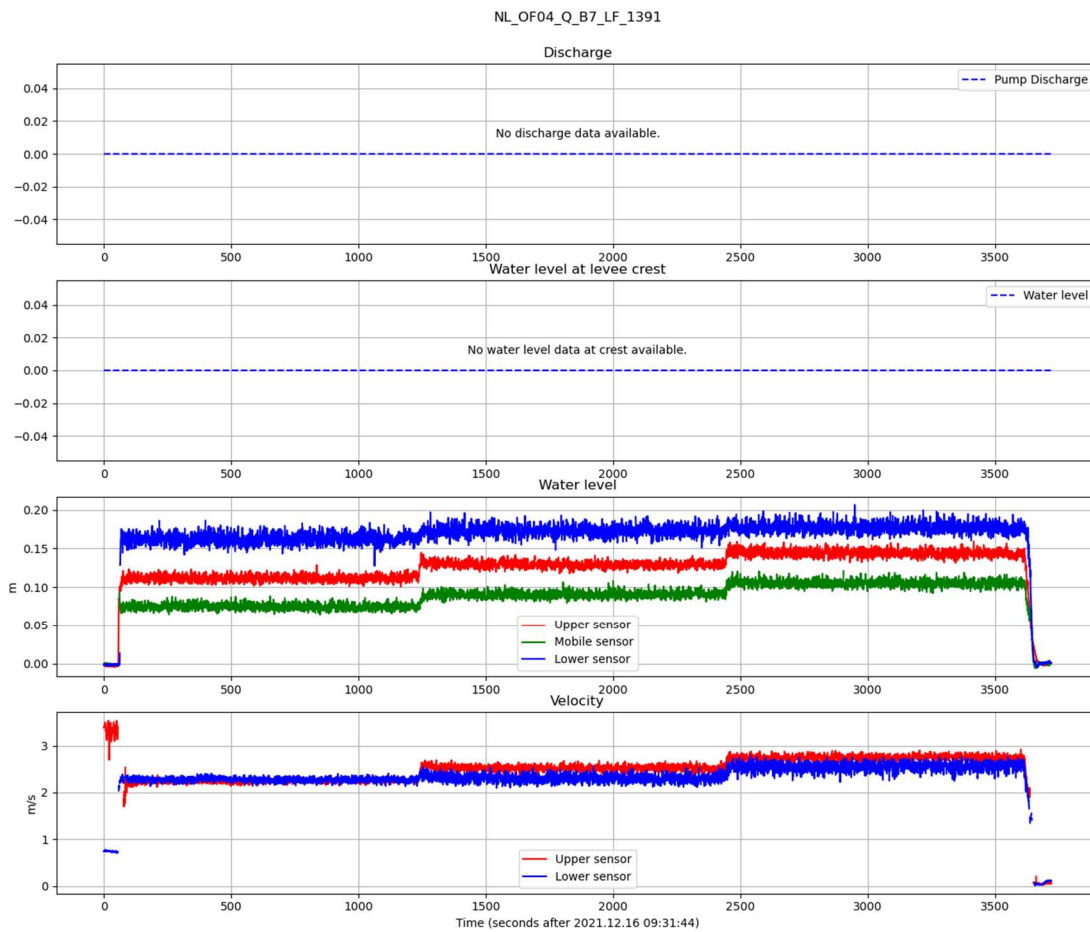
D.6 N-OF04 Block 6

Start	16/12/2021 9:16				
Stop	16/12/2021 10:17				
Duration	1 hour 1 minute				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	See Block 1. Valeports VXY both on CREST: Upper = left side, Lower = right side.				
Statistics	Statistics calculated from 230 until 3643 s (n=34129).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST					m
WH_UPPER	0,135	0,174	0,150	0,005	m
WH_MOBILE	0,096	0,129	0,110	0,004	m
WH_LOWER	0,151	0,211	0,181	0,006	m
VXY_UPPER	2,52	2,99	2,75	0,06	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,28	2,77	2,55	0,07	m/s



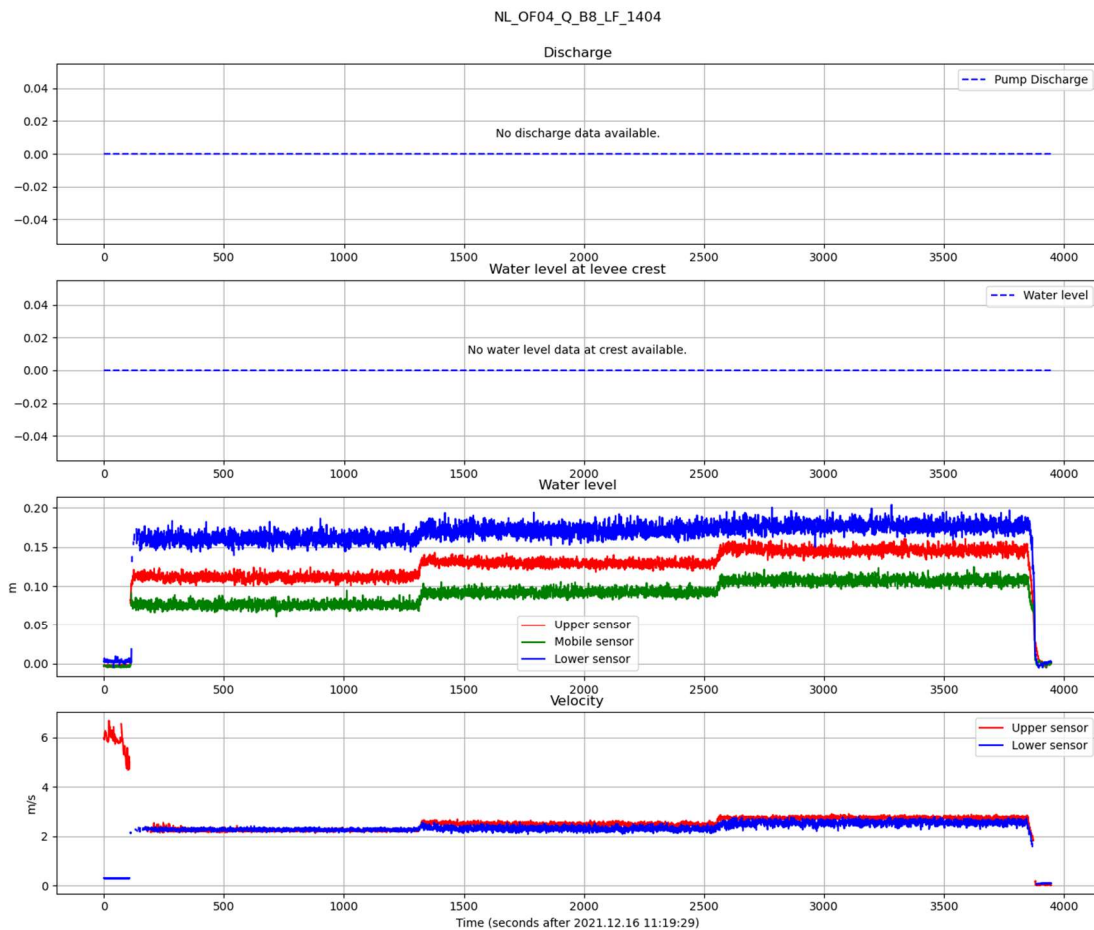
D.7 N-OF04 Block 7

Start	16/12/2021 10:32				
Stop	16/12/2021 11:31				
Duration	59 minutes				
Pump and pump power	BA500				
Discharge	1200, 1400 and 1600 rpm				
Notes	See notes block 1, 6. Lidar, PTV measurements.				
Statistics	Statistics calculated from 82 until 3582 s (n=34998).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,101	0,159	0,128	0,014	m
WH_MOBILE	0,064	0,121	0,090	0,013	m
WH_LOWER	0,127	0,206	0,171	0,009	m
VXY_UPPER	1,77	2,90	2,51	0,21	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,10	2,79	2,37	0,14	m/s



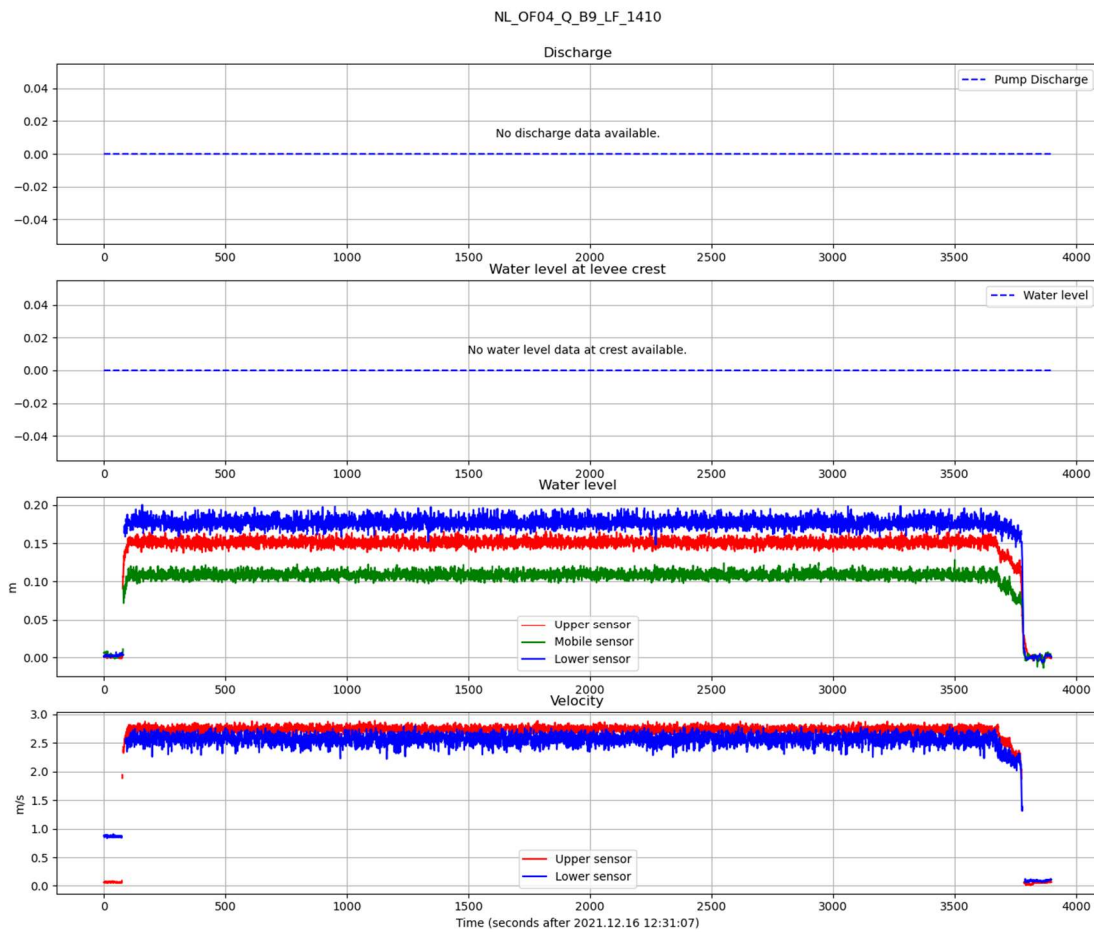
D.8 N-OF04 Block 8

Start	16/12/2021 12:21				
Stop	16/12/2021 13:23				
Duration	1 hour 2 minutes				
Pump and pump power	BA500				
Discharge	1200, 1400 and 1600 rpm				
Notes	See notes block 1, 6 and 7.				
Statistics	Statistics calculated from 131 until 3827 s (n=36961).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,100	0,161	0,129	0,015	m
WH_MOBILE	0,061	0,125	0,092	0,013	m
WH_LOWER	0,140	0,204	0,170	0,009	m
VXY_UPPER	2,13	2,91	2,52	0,21	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,09	2,80	2,39	0,14	m/s



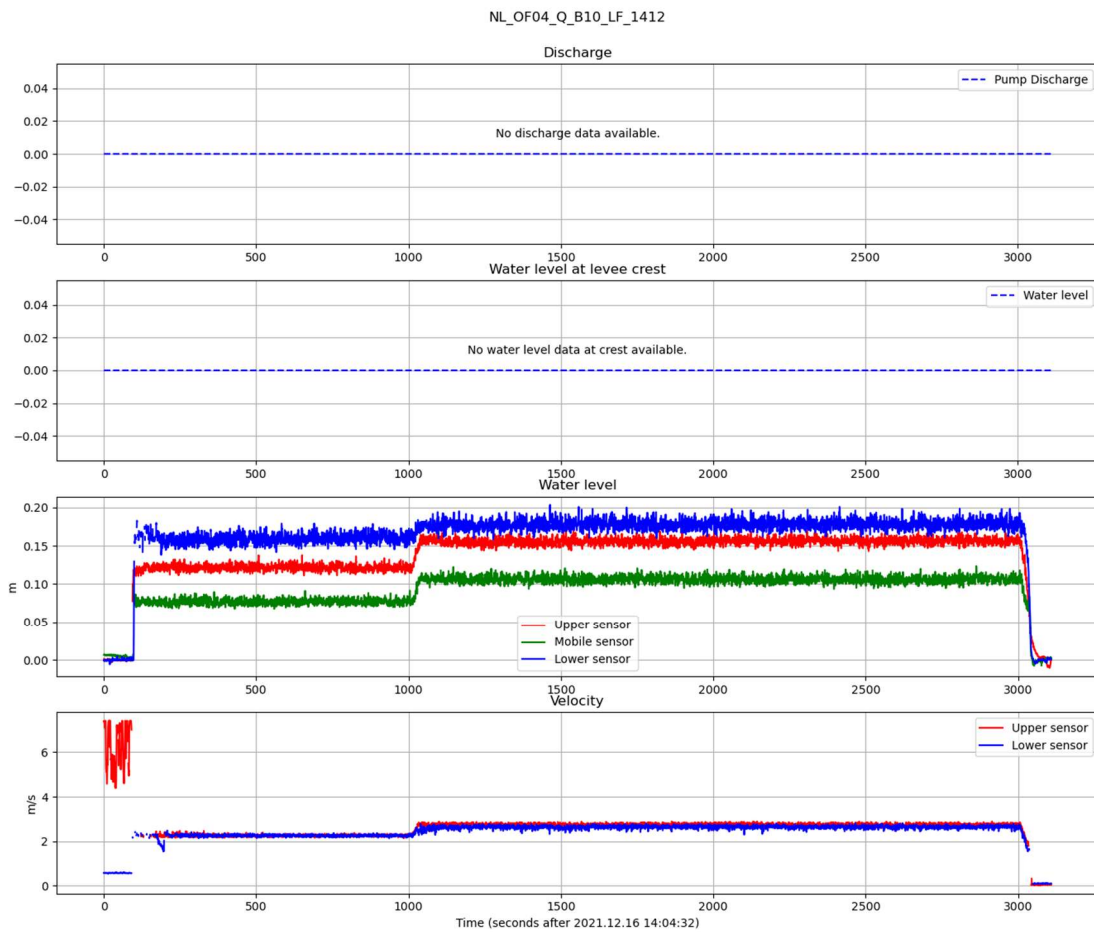
D.9 N-OF04 Block 9

Start	16/12/2021 13:32				
Stop	16/12/2021 14:32				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 110 until 3661 s (n=35508).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,137	0,166	0,151	0,004	m
WH_MOBILE	0,097	0,128	0,109	0,004	m
WH_LOWER	0,148	0,200	0,177	0,006	m
VXY_UPPER	2,55	2,89	2,74	0,04	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,22	2,80	2,57	0,08	m/s



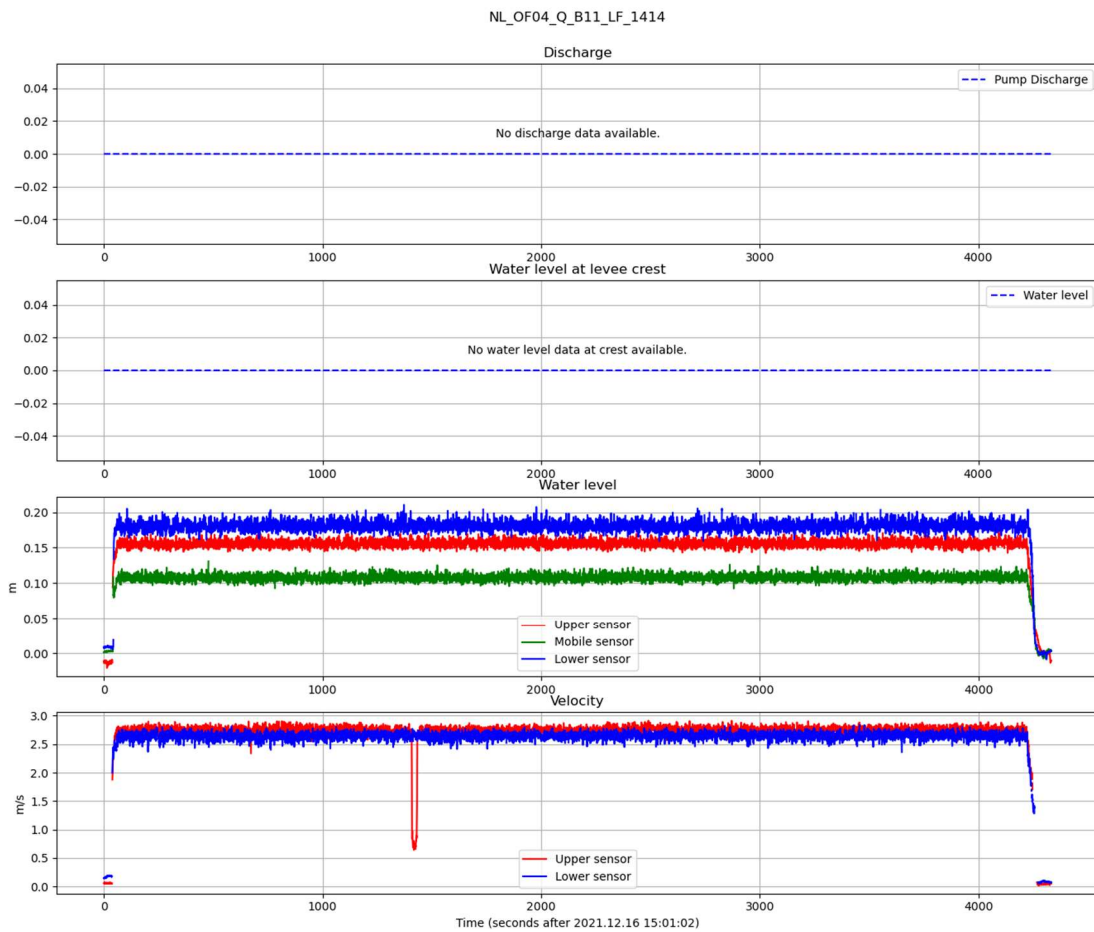
D.10 N-OF04 Block 10

Start	16/12/2021 15:04				
Stop	16/12/2021 15:54				
Duration	50 minutes				
Pump and pump power	BA500				
Discharge	1200, 1600 rpm				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 126 until 2993 s (n=28679).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CRESC					m
WH_UPPER	0,111	0,171	0,145	0,016	m
WH_MOBILE	0,068	0,124	0,097	0,014	m
WH_LOWER	0,138	0,203	0,172	0,010	m
VXY_UPPER	2,13	2,89	2,60	0,23	m/s
VXY_MOBILE					m/s
VXY_LOWER	1,54	2,81	2,52	0,19	m/s



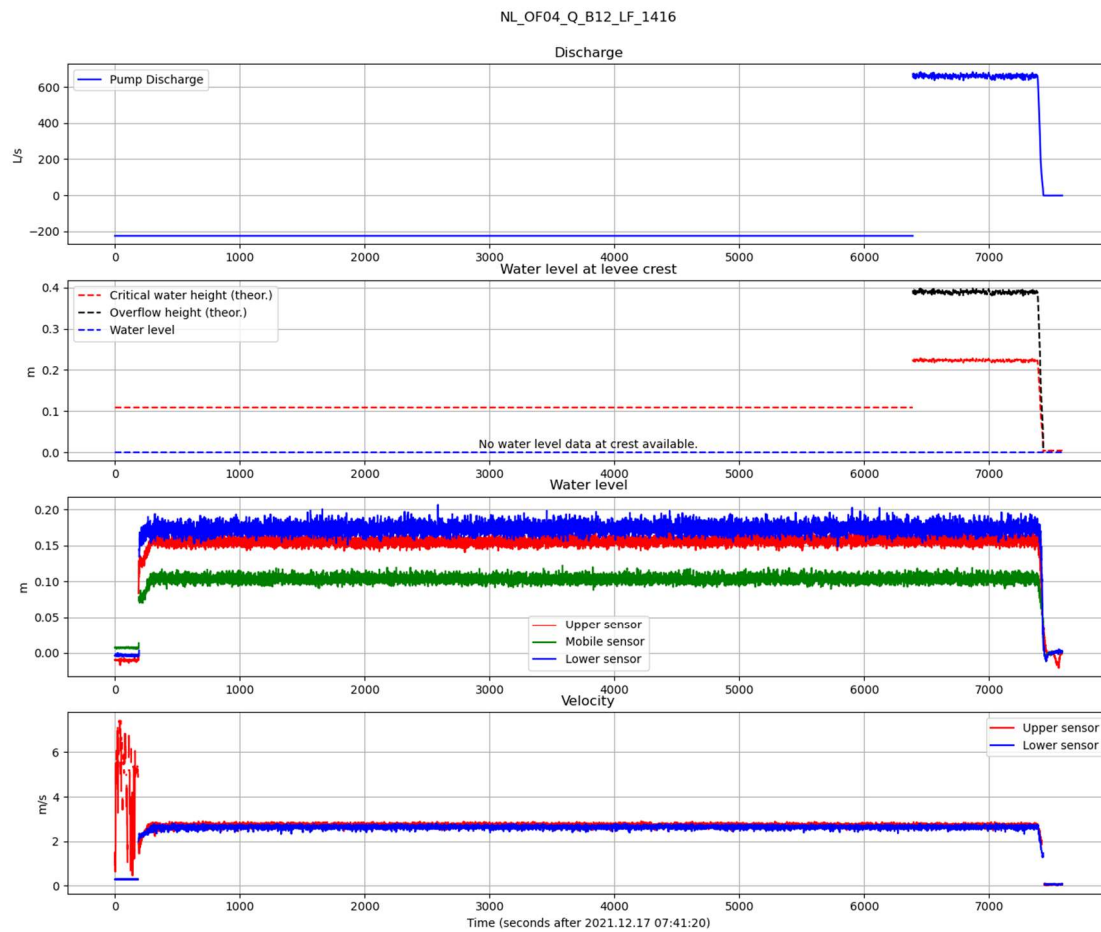
D.11 N-OF04 Block 11

Start	16/12/2021 16:01				
Stop	16/12/2021 17:11				
Duration	1 hour and 10 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 87 until 4203 s (n=41159).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,142	0,172	0,156	0,004	m
WH_MOBILE	0,092	0,131	0,108	0,004	m
WH_LOWER	0,160	0,211	0,181	0,006	m
VXY_UPPER	0,64	2,91	2,73	0,16	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,36	2,84	2,65	0,05	m/s



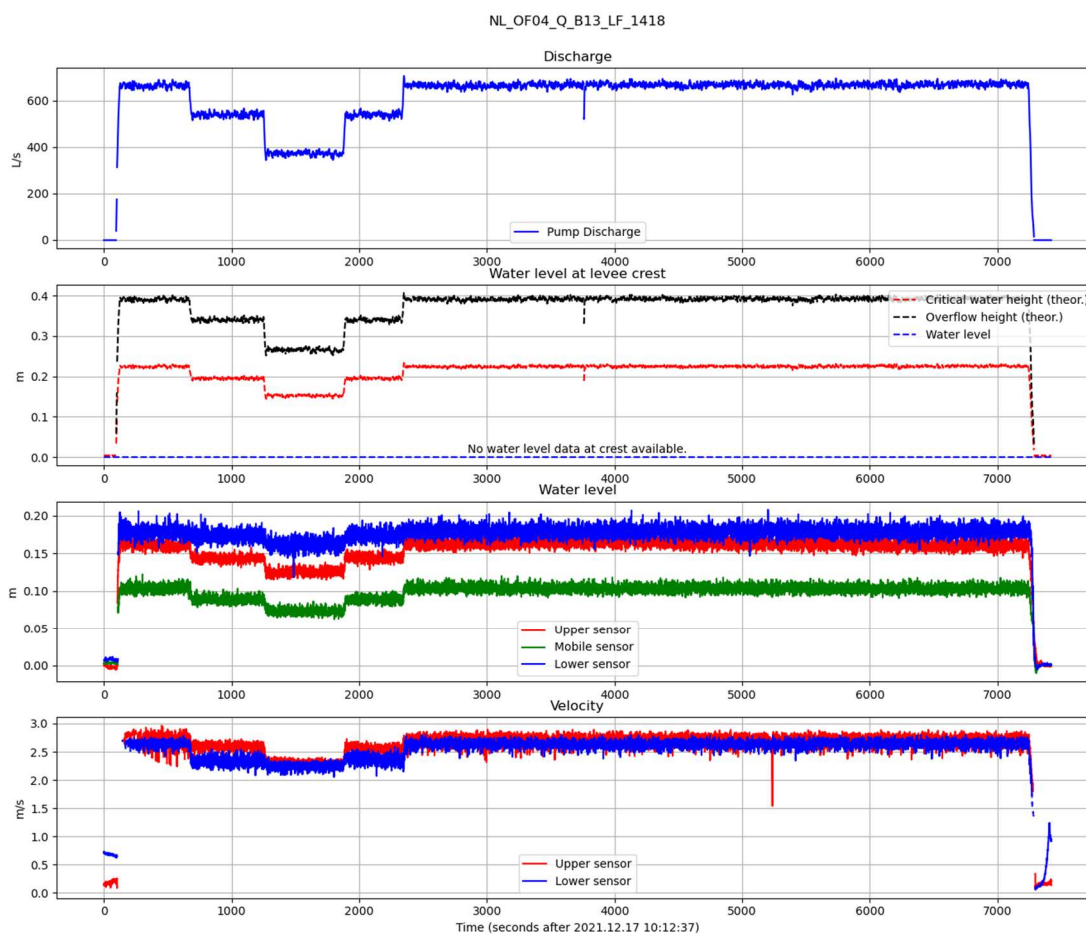
D.12 N-OF04 Block 12

Start	17/12/2021 8:46				
Stop	17/12/2021 10:46				
Duration	2 hours				
Pump and pump power	BA500				
Discharge	1600 rpm				
Notes	See notes block 1, 6. Discharge meter back operational.				
Statistics	Statistics calculated from 6403 until 7364 s (n=9611).				
series	Min	max	mean	std	Unit
DISCHARGE	636	683	660	8	l/s
WH_CREST					m
WH_UPPER	0,145	0,175	0,157	0,004	m
WH_MOBILE	0,090	0,119	0,104	0,004	m
WH_LOWER	0,153	0,196	0,174	0,006	m
VXY_UPPER	2,48	2,87	2,72	0,05	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,34	2,80	2,64	0,05	m/s



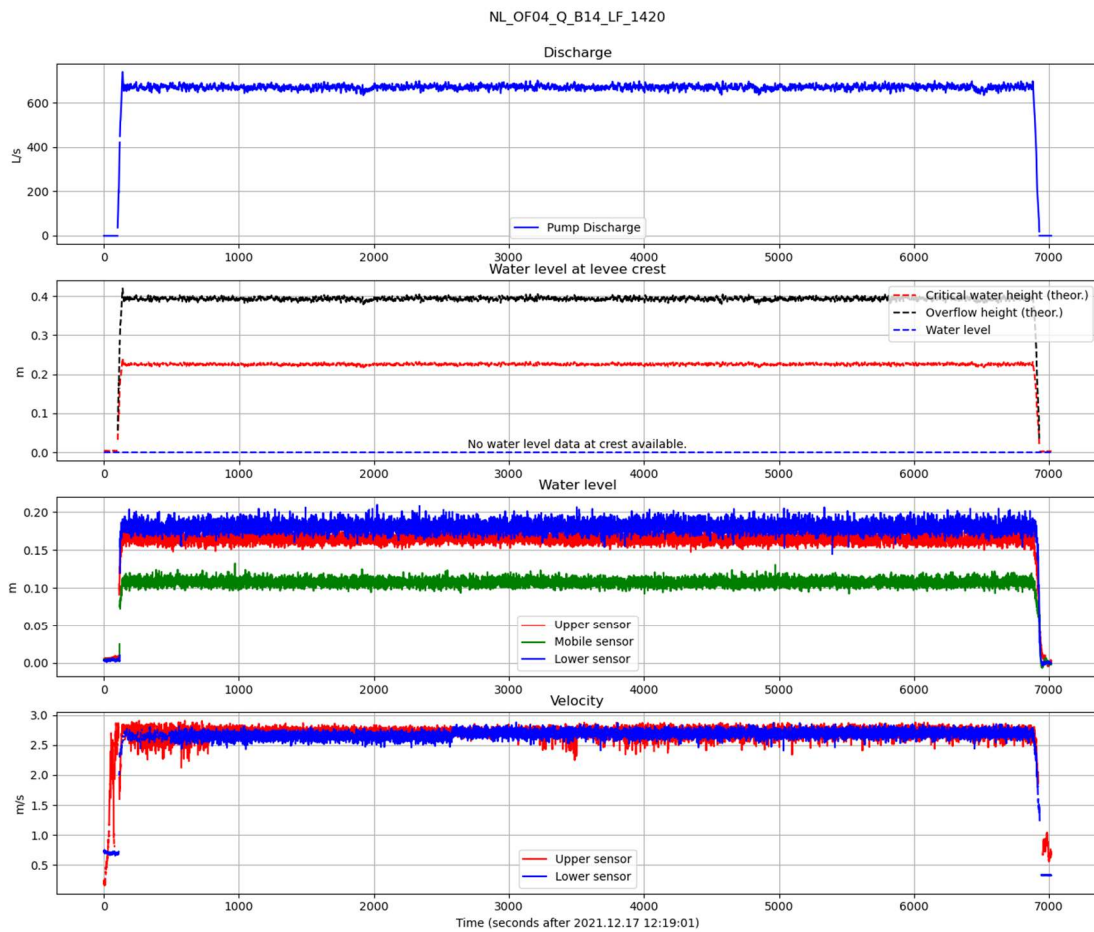
D.13 N-OF04 Block 13

Start	17/12/2021 11:13				
Stop	17/12/2021 13:13				
Duration	2 hours				
Pump and pump power	BA500				
Discharge	1200, 1400 and 1600 rpm ; 660, 530, 360, 540, 660 l/s				
Notes	See notes block 1, 6. Small interruption in logging. Different discharges 1200, 1400 and 1600 rpm.				
Statistics	Statistics calculated from 2368 until 7196 s (n=48293).				
series	Min	max	mean	std	Unit
DISCHARGE	521	697	668	10	l/s
WH_CREST					m
WH_UPPER	0,146	0,187	0,163	0,005	m
WH_MOBILE	0,090	0,120	0,103	0,004	m
WH_LOWER	0,147	0,208	0,179	0,006	m
VXY_UPPER	1,54	2,89	2,71	0,08	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,34	2,80	2,64	0,05	m/s



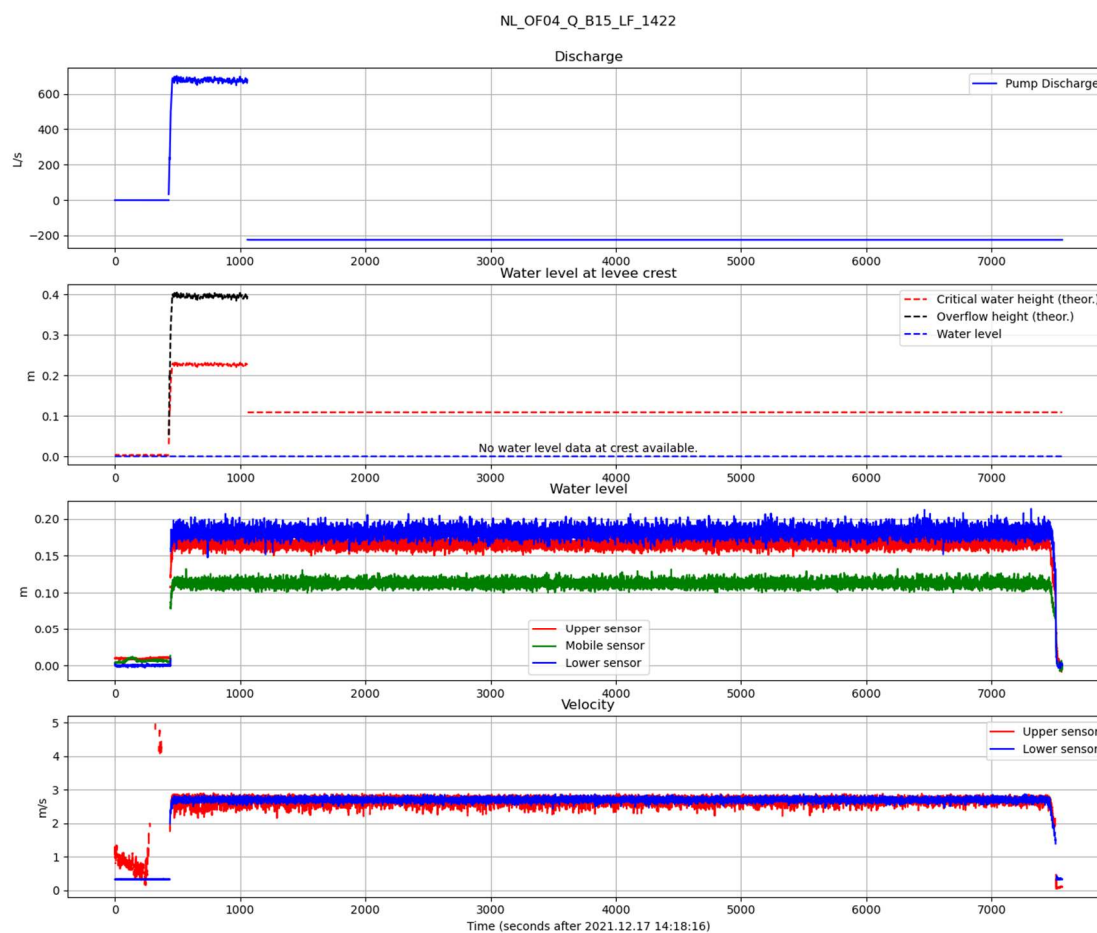
D.14 N-OF04 Block 14

Start	17/12/2021 13:20				
Stop	17/12/2021 15:14				
Duration	1 hour 54 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm (670 l/s)				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 154 until 6869 s (n=67142).				
series	Min	max	mean	std	Unit
DISCHARGE	634	701	671	9	l/s
WH_CREST					m
WH_UPPER	0,147	0,184	0,165	0,005	m
WH_MOBILE	0,092	0,132	0,107	0,004	m
WH_LOWER	0,145	0,210	0,181	0,006	m
VXY_UPPER	2,13	2,91	2,71	0,07	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,41	2,88	2,68	0,06	m/s



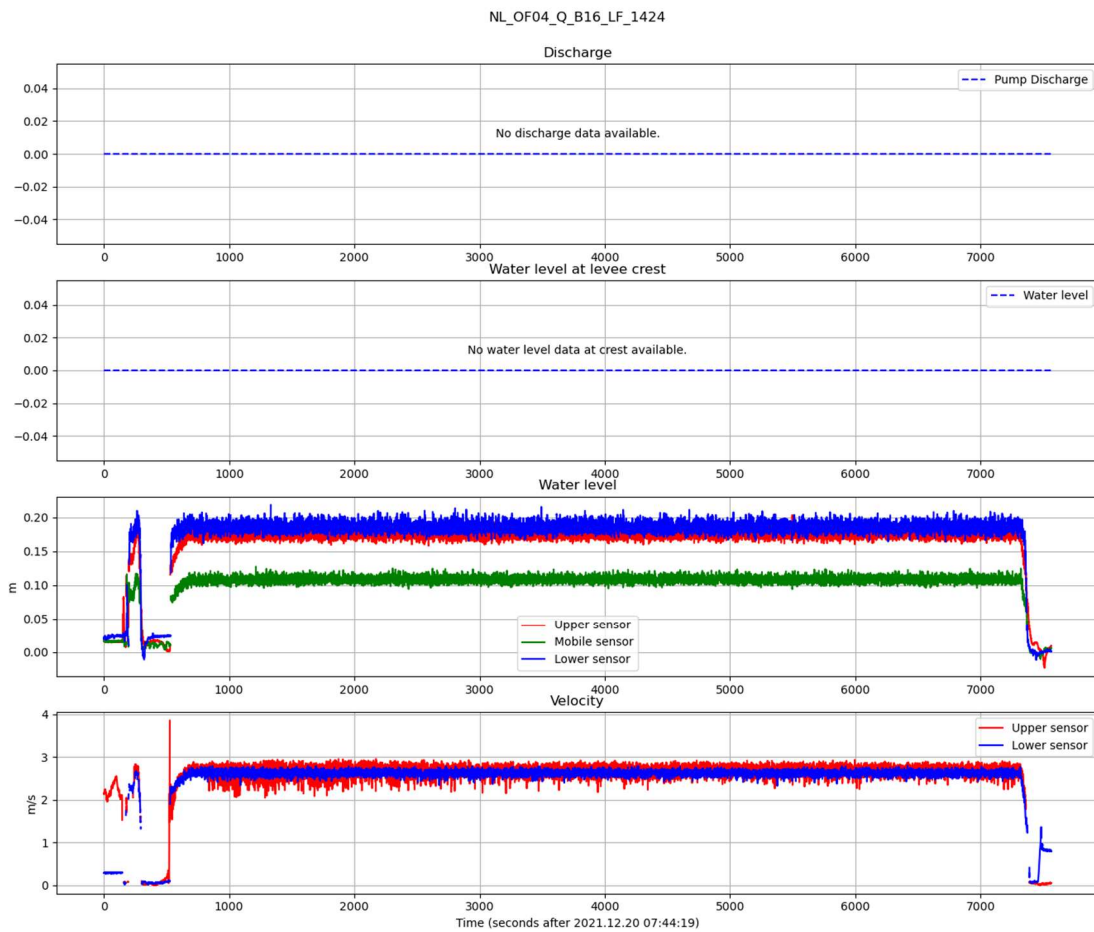
D.15 N-OF04 Block 15

Start	17/12/2021 15:25				
Stop	17/12/2021 17:22				
Duration	1 hour 54 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm (670 l/s)				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 466 until 1049 s (n=5828).				
series	Min	max	mean	std	Unit
DISCHARGE	649	702	677	9	m ³ /s
WH_CREST					m
WH_UPPER	0,152	0,185	0,166	0,005	m
WH_MOBILE	0,102	0,132	0,113	0,004	m
WH_LOWER	0,148	0,207	0,182	0,006	m
VXY_UPPER	2,16	2,90	2,68	0,13	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,51	2,85	2,71	0,05	m/s



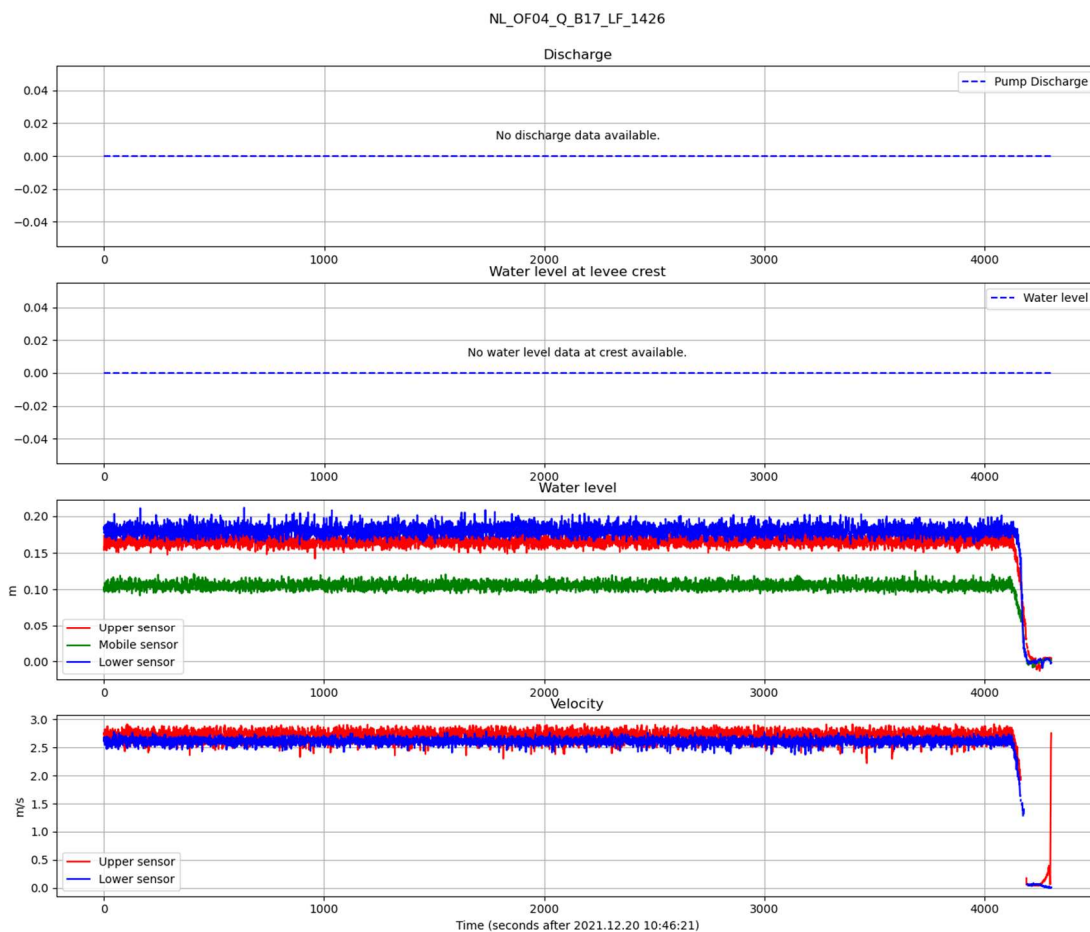
D.16 N-OF04 Block 16

Start	20/12/2021 8:46				
Stop	20/12/2021 10:46				
Duration	2 hours				
Pump and pump power	BA500				
Discharge	1600 rpm (670 l/s)				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 696 until 7290 s (n=65946).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,158	0,203	0,175	0,005	m
WH_MOBILE	0,094	0,127	0,108	0,004	m
WH_LOWER	0,161	0,218	0,186	0,006	m
VXY_UPPER	2,05	2,96	2,69	0,12	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,33	2,80	2,63	0,05	m/s



D.17 N-OF04 Block 17

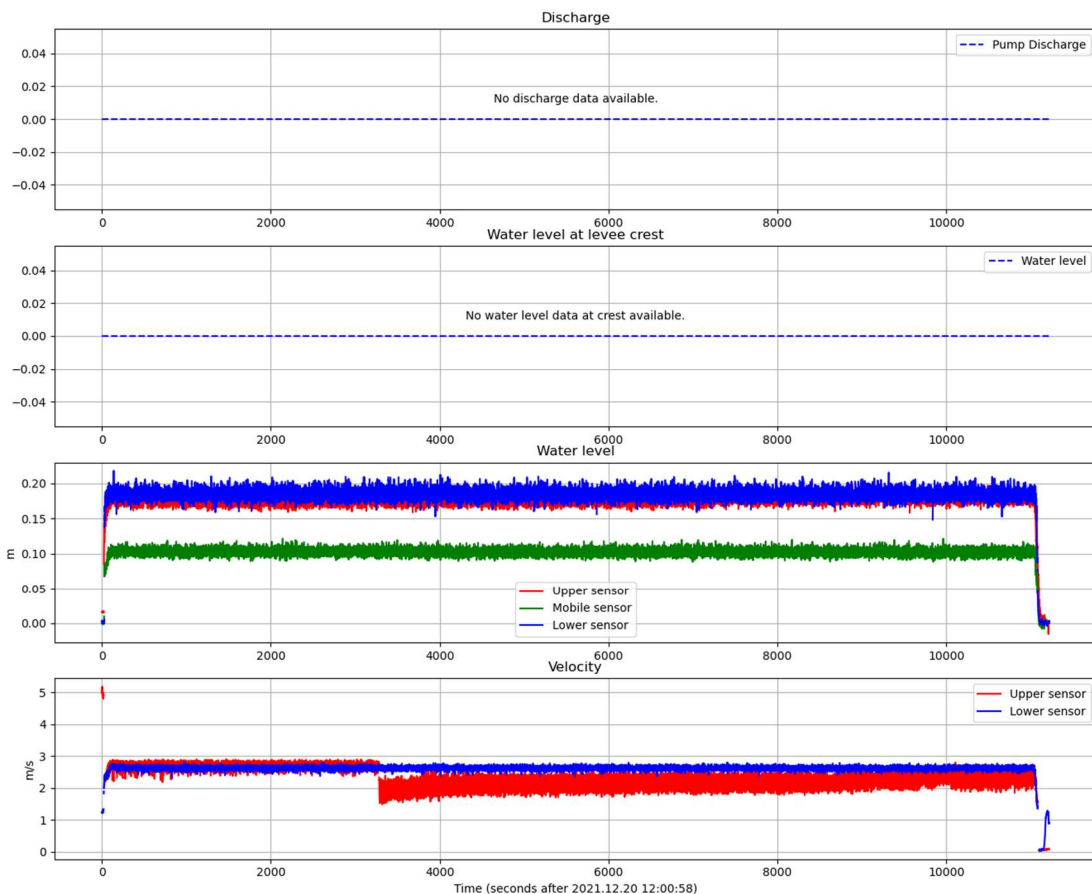
Start	20/12/2021 10:55 + 11:46
Stop	20/12/2021 11:45 + 12:55
Duration	50 minutes + 1 hour and 10 minutes
Pump and pump power	BA500
Discharge	1600 rpm (670 l/s)
Notes	See notes block 1, 6. Interruption in acquisition; second part shown in figure.
Statistics	Statistics calculated from 55 until 3565 s (n=34820).
series	MinmaxmeanstdUnit
DISCHARGE	m³/s
WH_CREST	m
WH_UPPER	0,1500,1910,1710,005m
WH_MOBILE	0,0940,1260,1070,004m
WH_LOWER	0,1610,2150,1830,006m
VXY_UPPER	1,922,932,720,09m/s
VXY_MOBILE	m/s
VXY_LOWER	2,242,792,610,05m/s



D.18 N-OF04 Block 18

Start	20/12/2021 13:01				
Stop	20/12/2021 16:05				
Duration	3 hours and 4 minutes				
Pump and pump power	BA500				
Discharge	1600 rpm (670 l/s)				
Notes	See notes block 1, 6.				
Statistics	Statistics calculated from 145 until 11018 s (n=108729).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST					m
WH_UPPER	0,158	0,201	0,177	0,005	m
WH_MOBILE	0,088	0,121	0,102	0,004	m
WH_LOWER	0,149	0,216	0,185	0,006	m
VXY_UPPER	1,48	2,90	2,32	0,31	m/s
VXY_MOBILE					m/s
VXY_LOWER	2,30	2,81	2,62	0,05	m/s

NL_OF04_Q_B18_LF_1428



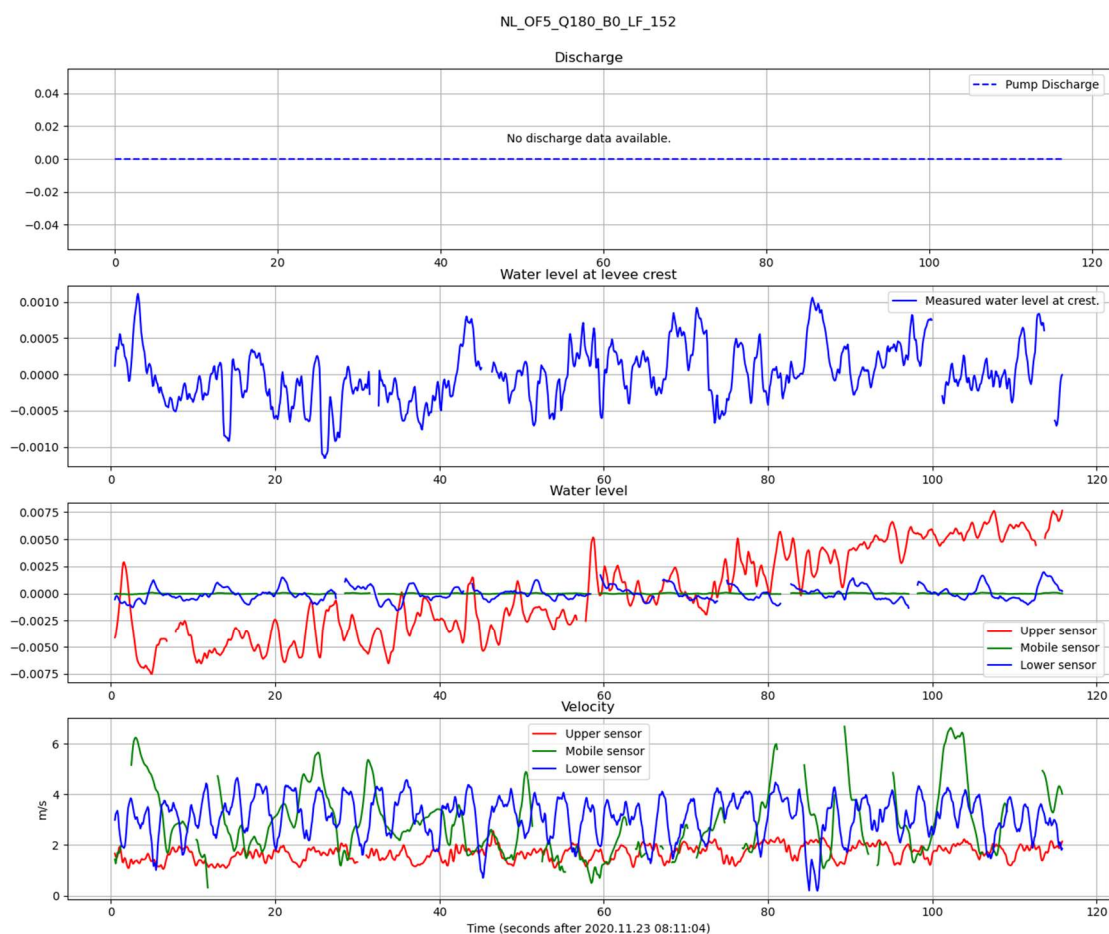
Annex E - N-OF05 timeseries

The following timeseries details are reproduced in this section:

F.1	N-OF09 Block 1	78
F.2	N-OF09 Block 1	79
F.3	N-OF09 Block 1	80
F.4	N-OF09 Block 1	81
F.5	N-OF09 Block 1	82
F.6	N-OF09 Block 1	83
F.7	N-OF09 Block 1	84
F.8	N-OF09 Block 1	85
F.9	N-OF09 Block 1	86
F.10	N-OF09 Block 1	87
F.11	N-OF09 Block 1	Fout! Bladwijzer niet gedefinieerd.
F.12	N-OF09 Block 1	Fout! Bladwijzer niet gedefinieerd.

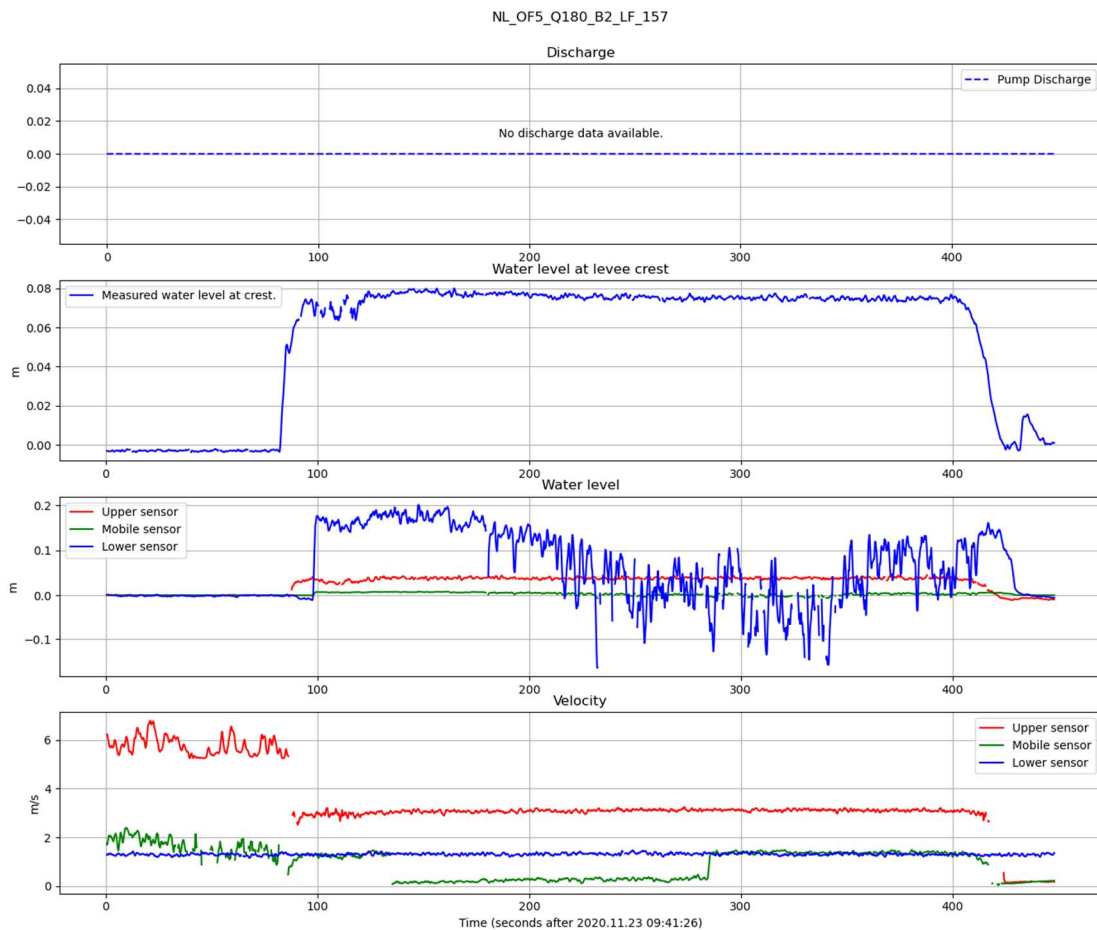
E.1 N-OF05 Block 1

Start	23/11/2020 10:15				
Stop	23/11/2020 10:22				
Duration	7 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	Valeport EM current meter "MOBILE" is on the crest! Also for following runs.				
Statistics	Statistics calculated from 89 until 395 s (n=3065).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,048	0,080	0,075	0,005	m
WH_UPPER	0,018	0,048	0,039	0,005	m
WH_MOBILE	0,000	0,007	0,006	0,002	m
WH_LOWER	-0,001	0,183	0,138	0,037	m
VXY_UPPER	2,02	3,34	3,14	0,14	m/s
VXY_MOBILE	0,75	1,49	1,38	0,12	m/s
VXY_LOWER	0,04	3,38	1,25	0,85	m/s



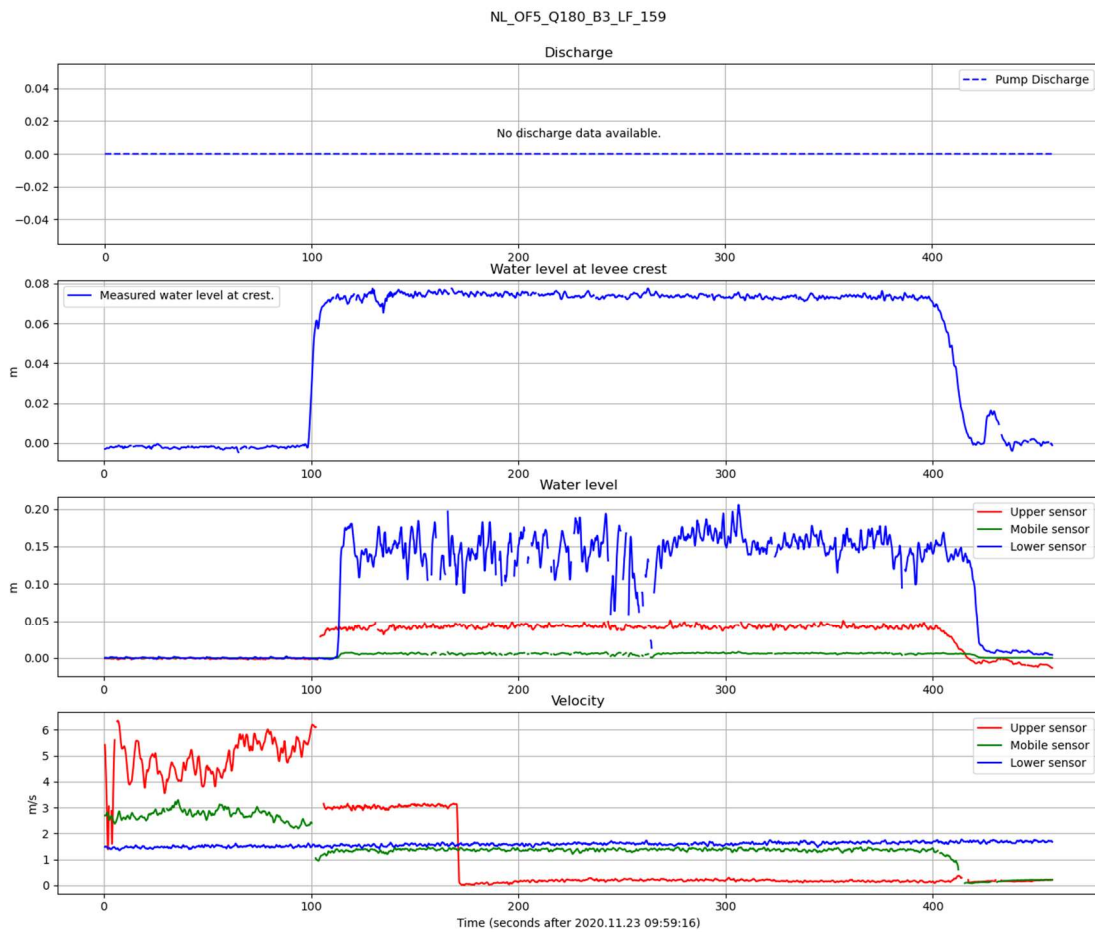
E.2 N-OF05 Block 2

Start	23/11/2020 10:42				
Stop	23/11/2020 10:48				
Duration	6 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See block 1.				
Statistics	Statistics calculated from 92 until 406 s (n=3145).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,064	0,080	0,075	0,002	m
WH_UPPER	0,024	0,045	0,037	0,003	m
WH_MOBILE	-0,007	0,008	0,003	0,003	m
WH_LOWER	-0,164	0,201	0,077	0,082	m
VXY_UPPER	2,67	3,25	3,08	0,07	m/s
VXY_MOBILE	0,08	1,48	0,82	0,56	m/s
VXY_LOWER	1,20	1,47	1,31	0,04	m/s



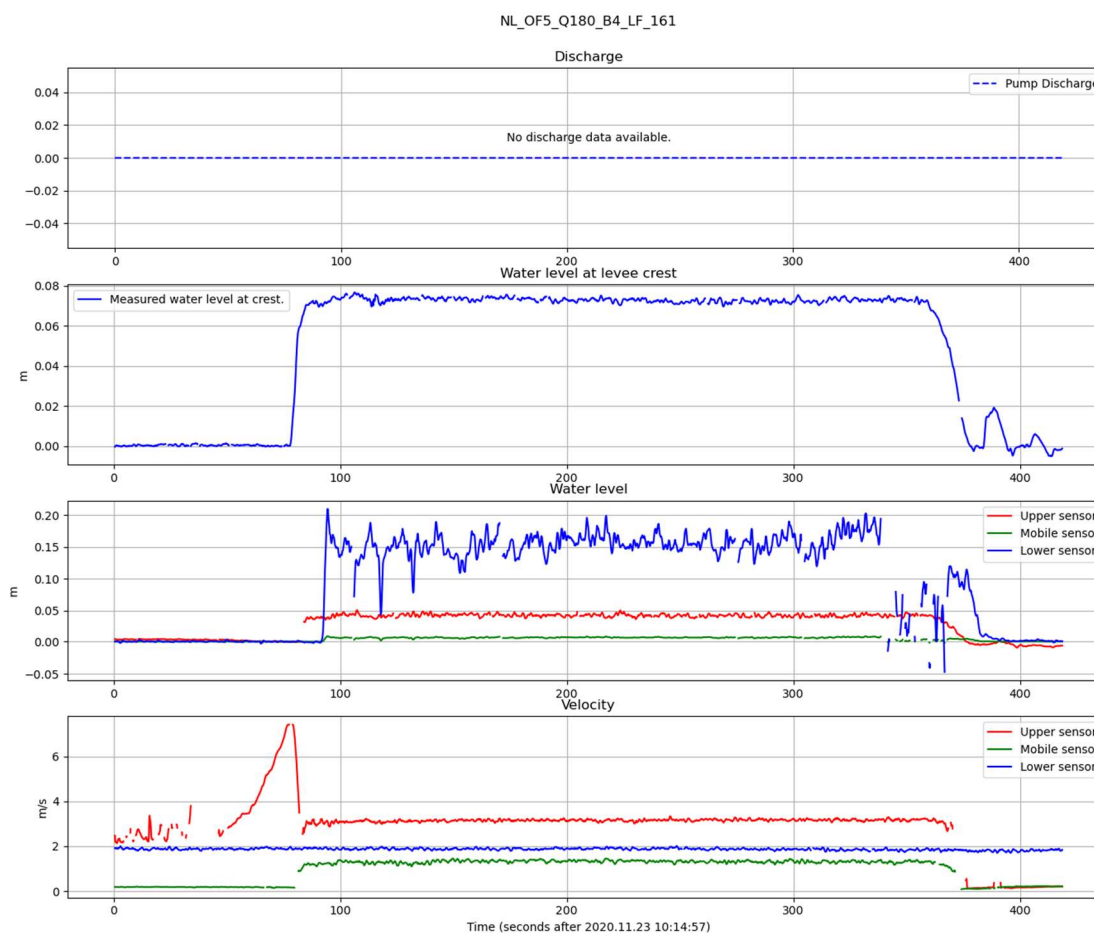
E.3 N-OF05 Block 3

Start	23/11/2020 11:00				
Stop	23/11/2020 11:05				
Duration	5 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See block 1.				
Statistics	Statistics calculated from 107 until 404 s (n=2966).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,065	0,078	0,074	0,001	m
WH_UPPER	0,032	0,051	0,042	0,003	m
WH_MOBILE	0,000	0,008	0,006	0,001	m
WH_LOWER	-0,002	0,206	0,145	0,031	m
VXY_UPPER	0,01	3,16	0,79	1,18	m/s
VXY_MOBILE	1,15	1,48	1,37	0,05	m/s
VXY_LOWER	1,41	1,75	1,60	0,06	m/s



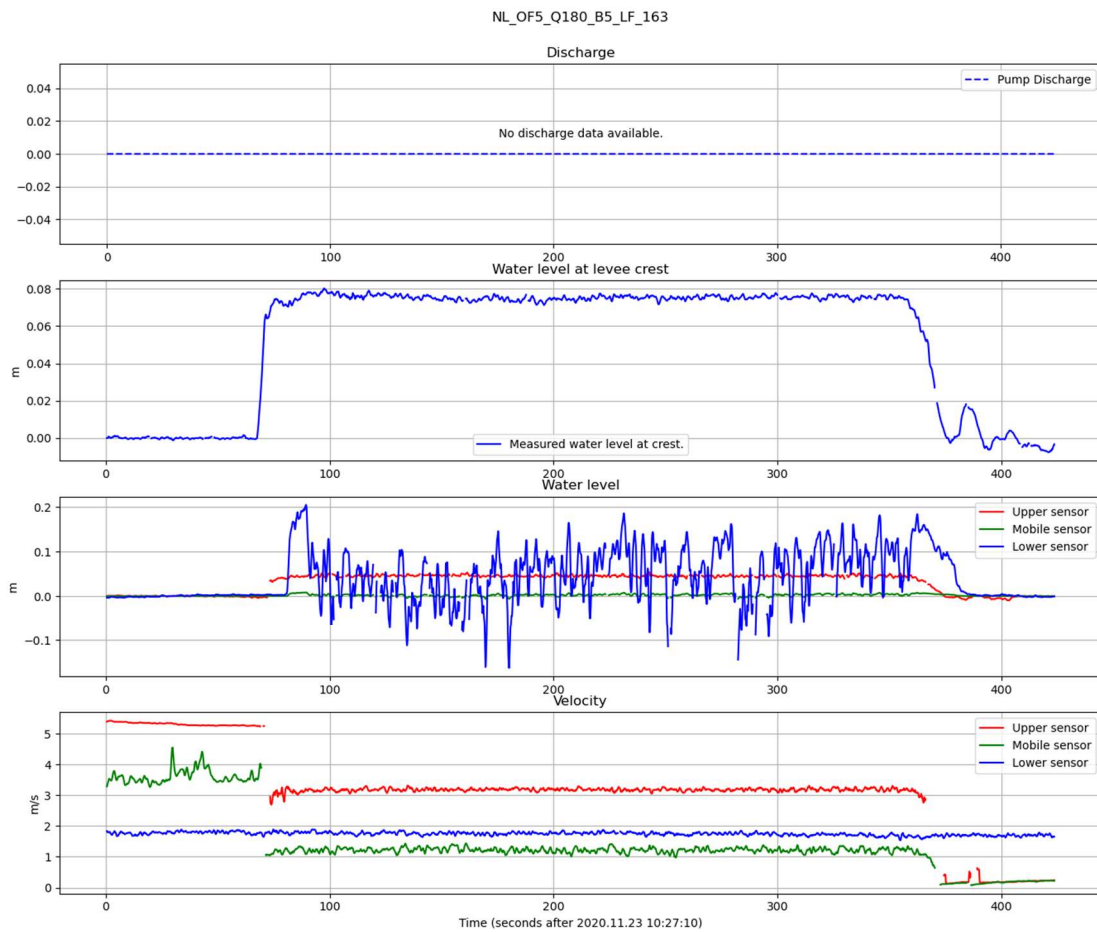
E.4 N-OF05 Block 4

Start	23/11/2020 11:15				
Stop	23/11/2020 11:20				
Duration	5 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See block 1.				
Statistics	Statistics calculated from 84 until 365 s (n=2811).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,059	0,077	0,073	0,002	m
WH_UPPER	0,032	0,051	0,042	0,002	m
WH_MOBILE	-0,001	0,009	0,006	0,002	m
WH_LOWER	-0,041	0,210	0,146	0,040	m
VXY_UPPER	2,81	3,34	3,15	0,06	m/s
VXY_MOBILE	1,10	1,46	1,31	0,06	m/s
VXY_LOWER	1,74	2,01	1,88	0,04	m/s



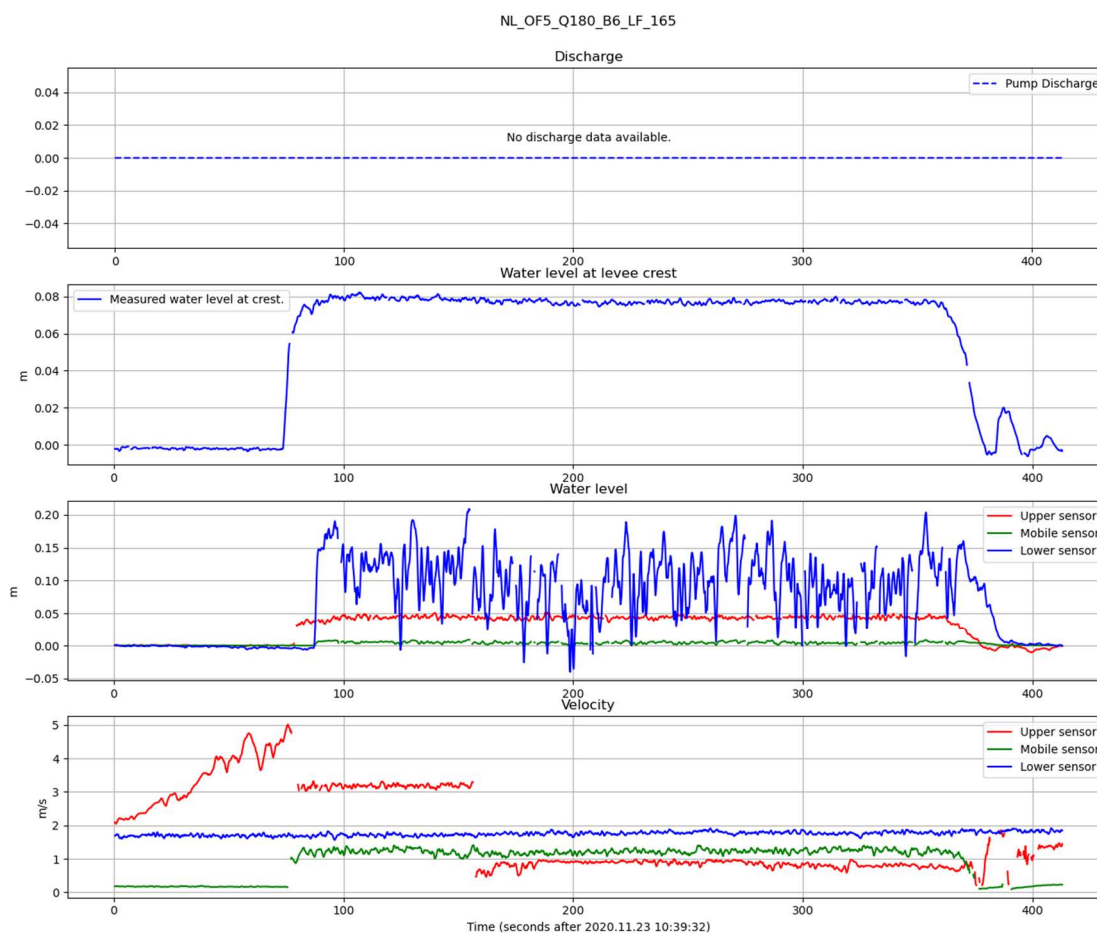
E.5 N-OF05 Block 5

Start	23/11/2020 11:27				
Stop	23/11/2020 11:33				
Duration	6 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See notes block 1.				
Statistics	Statistics calculated from 79 until 361 s (n=2823).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,069	0,080	0,075	0,001	m
WH_UPPER	0,038	0,055	0,045	0,002	m
WH_MOBILE	-0,006	0,009	0,002	0,003	m
WH_LOWER	-0,163	0,205	0,055	0,062	m
VXY_UPPER	2,79	3,32	3,18	0,05	m/s
VXY_MOBILE	0,98	1,44	1,22	0,08	m/s
VXY_LOWER	1,54	1,89	1,75	0,05	m/s



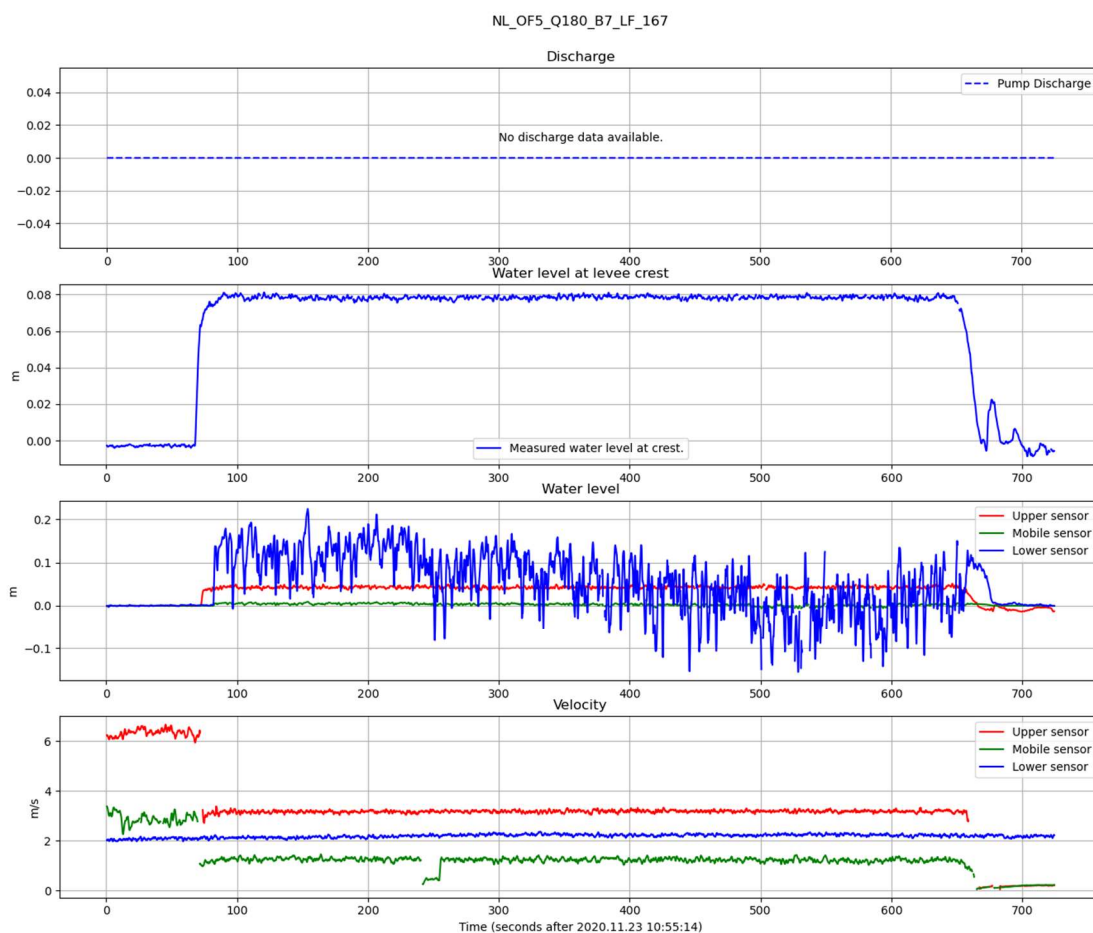
E.6 N-OF05 Block 6

Start	23/11/2020 11:40				
Stop	23/11/2020 11:45				
Duration	5 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See notes block 1.				
Statistics	Statistics calculated from 81 until 362 s (n=2810).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,069	0,082	0,077	0,002	m
WH_UPPER	0,033	0,052	0,044	0,003	m
WH_MOBILE	-0,001	0,009	0,004	0,002	m
WH_LOWER	-0,040	0,209	0,101	0,046	m
VXY_UPPER	0,46	3,32	1,46	1,03	m/s
VXY_MOBILE	1,00	1,41	1,22	0,07	m/s
VXY_LOWER	1,56	1,91	1,76	0,05	m/s



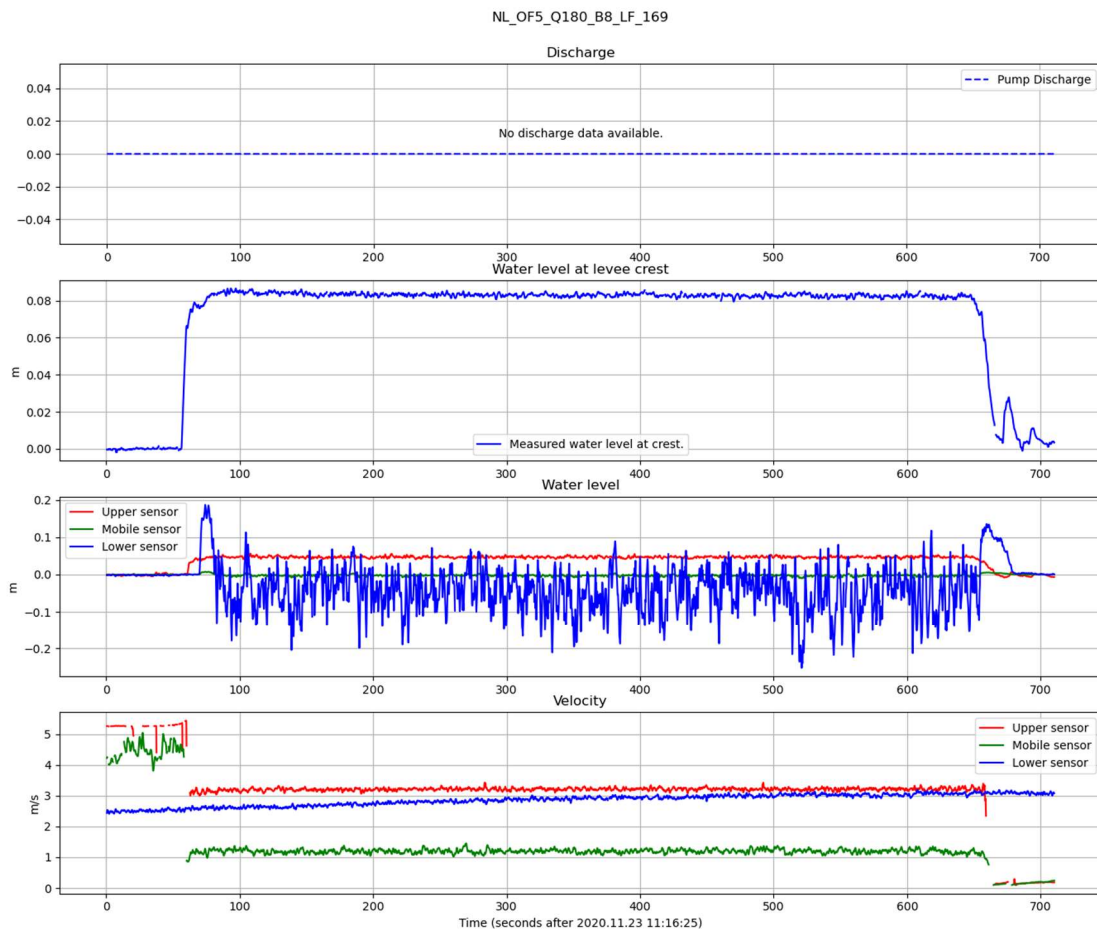
E.7 N-OF05 Block 7

Start	23/11/2020 11:55				
Stop	23/11/2020 12:05				
Duration	10 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See notes block 1.				
Statistics	Statistics calculated from 77 until 648 s (n=5710).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,073	0,081	0,078	0,001	m
WH_UPPER	0,033	0,051	0,043	0,002	m
WH_MOBILE	-0,006	0,009	0,003	0,003	m
WH_LOWER	-0,154	0,224	0,060	0,070	m
VXY_UPPER	2,98	3,39	3,18	0,05	m/s
VXY_MOBILE	0,27	1,46	1,23	0,14	m/s
VXY_LOWER	2,01	2,37	2,21	0,06	m/s



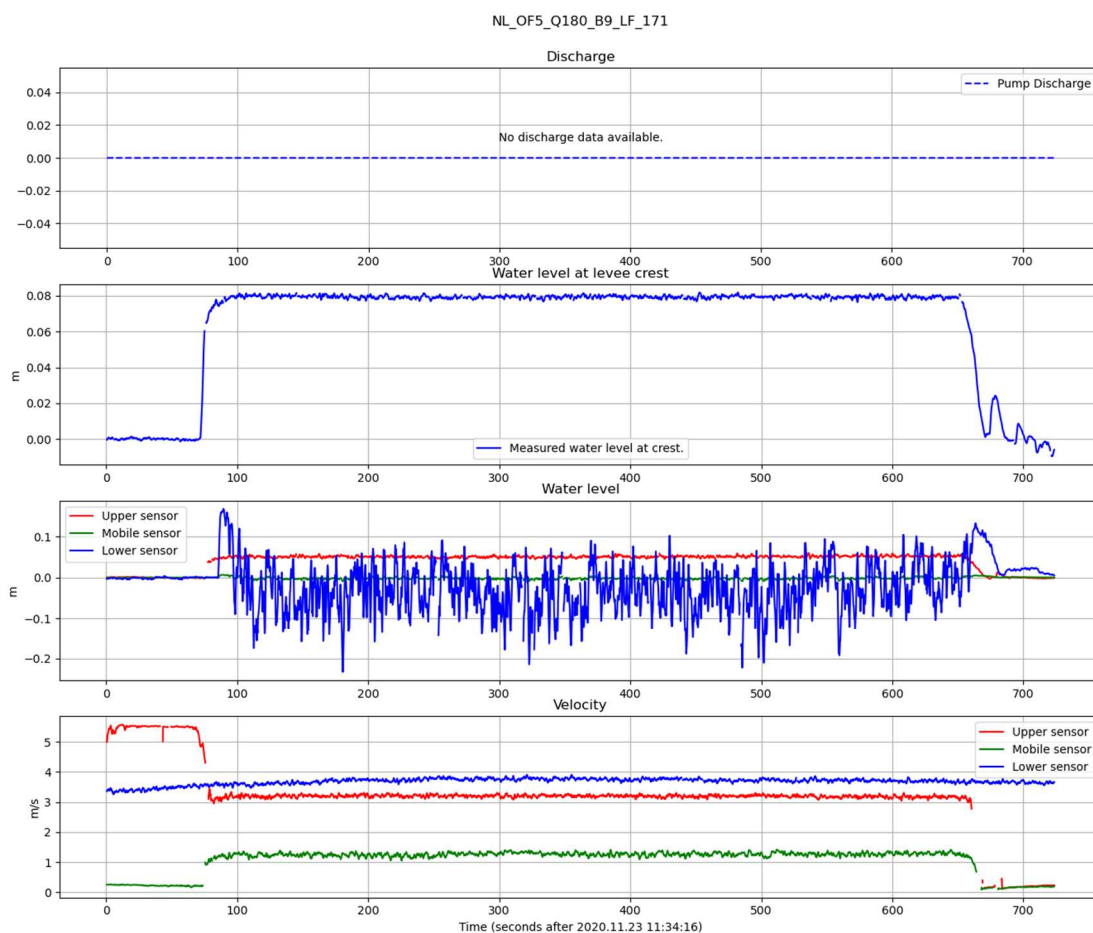
E.8 N-OF05 Block 8

Start	23/11/2020 12:17				
Stop	23/11/2020 12:27				
Duration	10 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See notes block 1.				
Statistics	Statistics calculated from 66 until 646 s (n=5806).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,076	0,087	0,083	0,001	m
WH_UPPER	0,037	0,056	0,047	0,002	m
WH_MOBILE	-0,010	0,008	-0,002	0,002	m
WH_LOWER	-0,253	0,187	-0,044	0,061	m
VXY_UPPER	3,00	3,42	3,21	0,05	m/s
VXY_MOBILE	0,98	1,45	1,20	0,07	m/s
VXY_LOWER	2,52	3,20	2,87	0,15	m/s



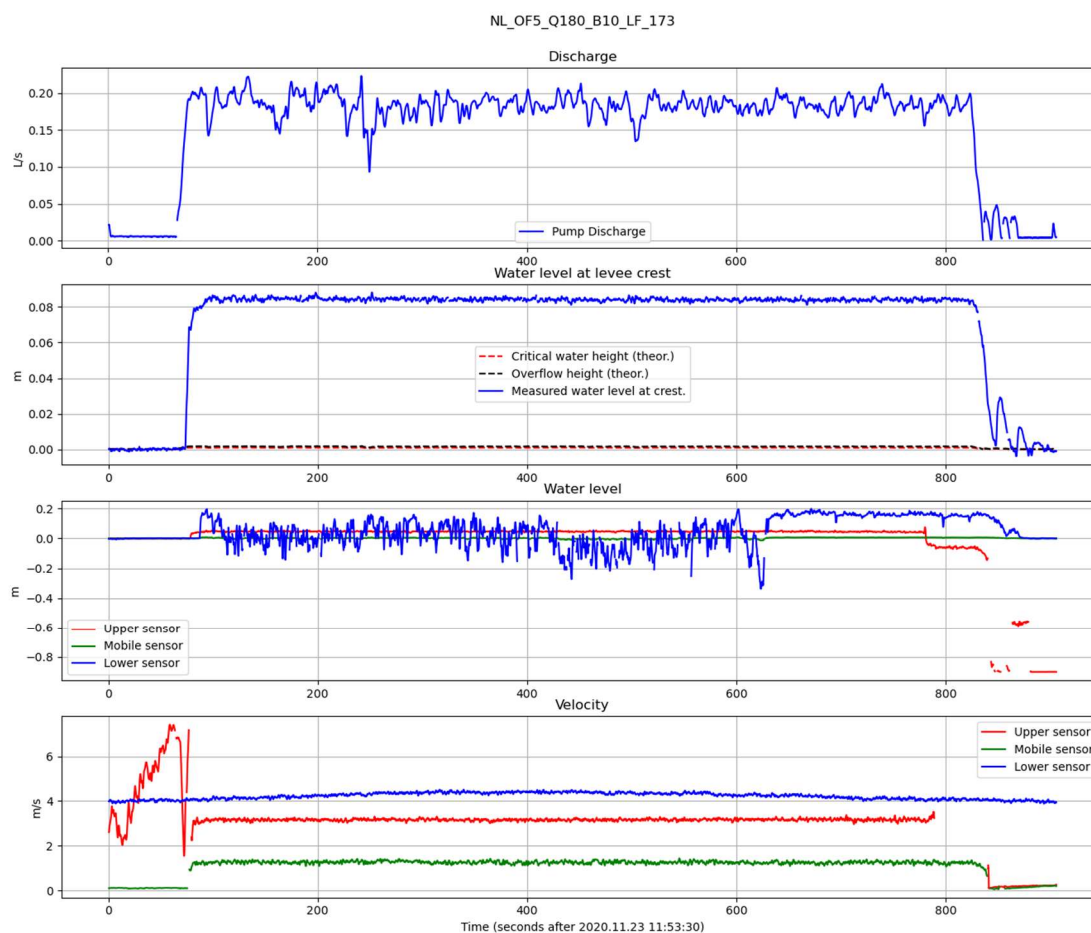
E.9 N-OF05 Block 9

Start	23/11/2020 12:34				
Stop	23/11/2020 12:45				
Duration	11 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See notes block 1.				
Statistics	Statistics calculated from 79 until 651 s (n=5711).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,071	0,082	0,079	0,001	m
WH_UPPER	0,039	0,061	0,051	0,002	m
WH_MOBILE	-0,009	0,007	-0,001	0,002	m
WH_LOWER	-0,233	0,169	-0,029	0,060	m
VXY_UPPER	2,95	3,33	3,19	0,04	m/s
VXY_MOBILE	1,04	1,42	1,26	0,06	m/s
VXY_LOWER	3,47	3,91	3,72	0,07	m/s



E.10 N-OF05 Block 10

Start	23/11/2020 12:53				
Stop	23/11/2020 1307				
Duration	10 minutes				
Pump and pump power	Twin parallel Hidrostral F10K-HD				
Discharge	180				
Notes	See notes block 1.				
Statistics	Statistics calculated from 85 until 774 s (n=6892).				
series	Min	max	mean	std	Unit
DISCHARGE	0,093	0,223	0,184	0,014	m ³ /s
WH_CREST	0,078	0,088	0,084	0,001	m
WH_UPPER	0,037	0,054	0,046	0,003	m
WH_MOBILE	-0,014	0,008	0,002	0,004	m
WH_LOWER	-0,338	0,199	0,045	0,099	m
VXY_UPPER	2,96	3,37	3,16	0,05	m/s
VXY_MOBILE	1,09	1,44	1,26	0,06	m/s
VXY_LOWER	3,97	4,51	4,28	0,11	m/s



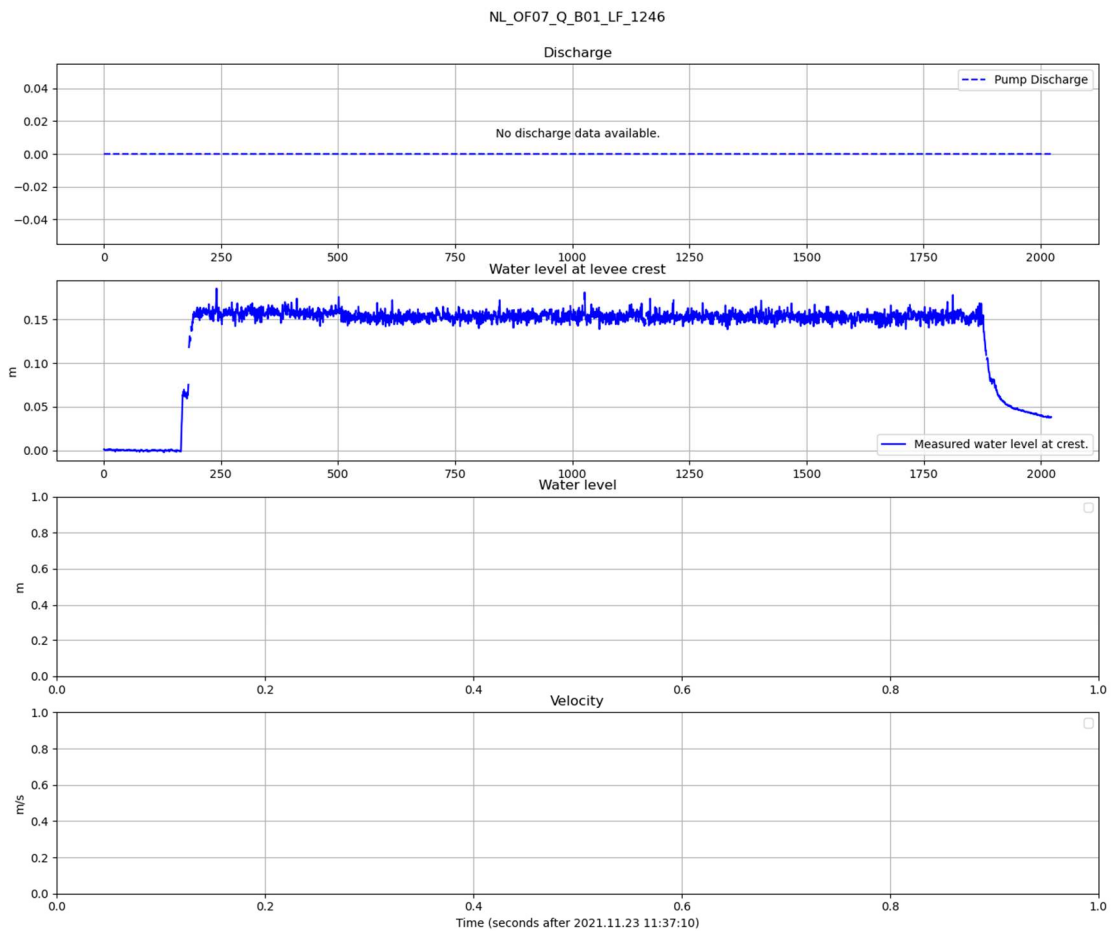
Annex F - N-OF07 timeseries

The following timeseries details are reproduced in this section:

J.1	N-OF09 Block 1	89
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F.1 N-OF07 Block 1

Start	23/11/2021 12:38
Stop	23/11/2021 13:09
Duration	31 minutes
Pump and pump power	BA pump
Discharge	11 m ³ /min
Notes	Only camera 1 + 2 active; only ultrasonic WH_CREST. No other equipment
Statistics	



Annex G - N-OF08 timeseries

The N-OF08 test is under embargo (see main report).

Annex H - N-OF09 timeseries

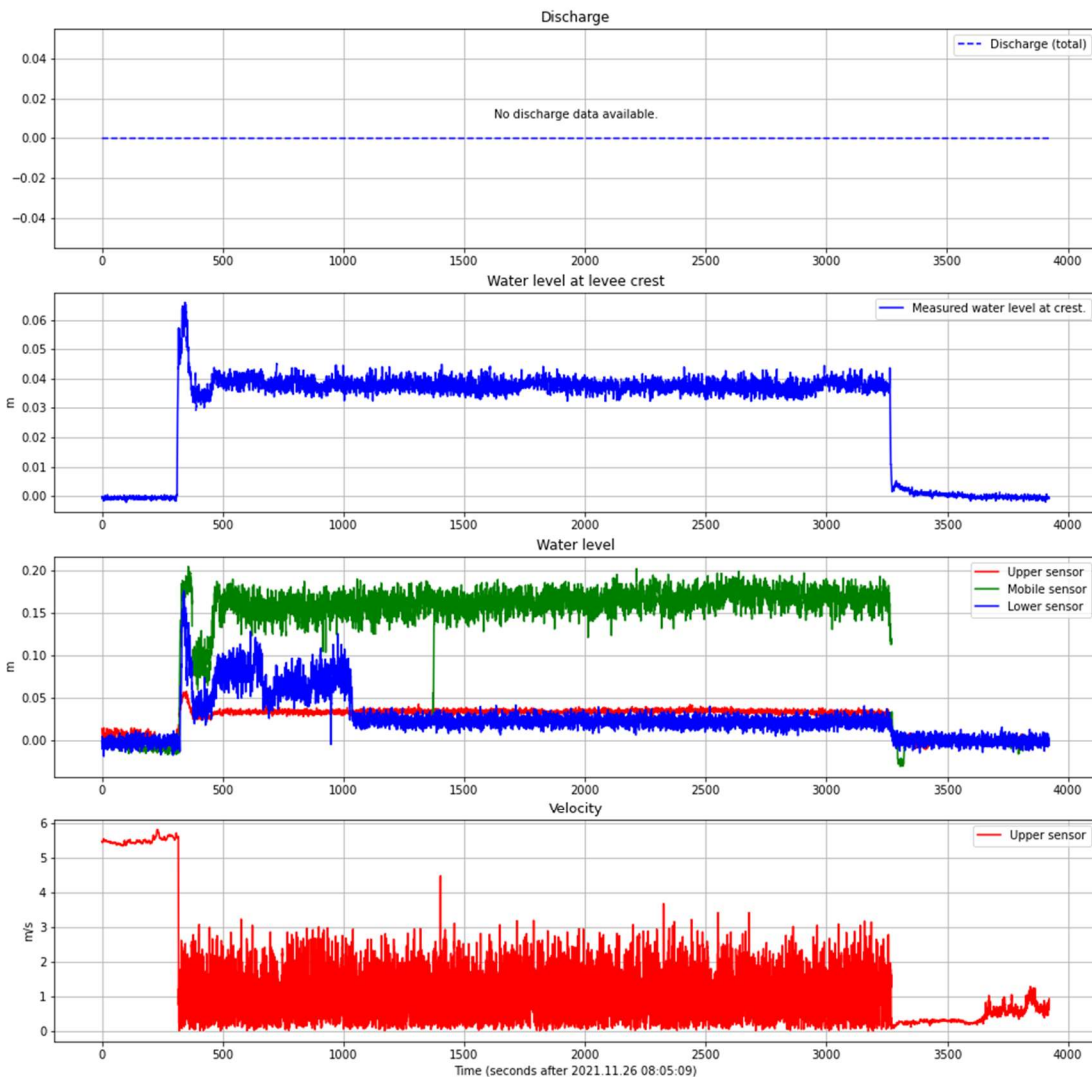
The following timeseries details are reproduced in this section:

H.1	N-OF09 Block 2	92
H.2	N-OF09 Block 3	93
H.3	N-OF09 Block 3 bis	94
H.4	N-OF09 Block 5	95
H.5	N-OF09 Block 6	96
H.6	N-OF09 Block 7	97
H.7	N-OF09 Block 8	98
H.8	N-OF09 Block 9	99
H.9	N-OF09 Block 9 bis (= 10)	100
H.10	N-OF09 Block 9 tris (=11)	101

H.1 N-OF09 Block 2

Start	26/11/2021 9:10				
Stop	26/11/2021				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	5.6 m ³ /min				
Notes	See notes block 1				
Statistics	Statistics calculated from 390 until 3228 s (n=28385).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,030	0,045	0,038	0,002	m
WH_UPPER	0,024	0,043	0,034	0,002	m
WH_MOBILE	0,024	0,202	0,163	0,016	m
WH_LOWER	-0,005	0,129	0,033	0,022	m
VXY_UPPER	0,00	4,49	1,12	0,57	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

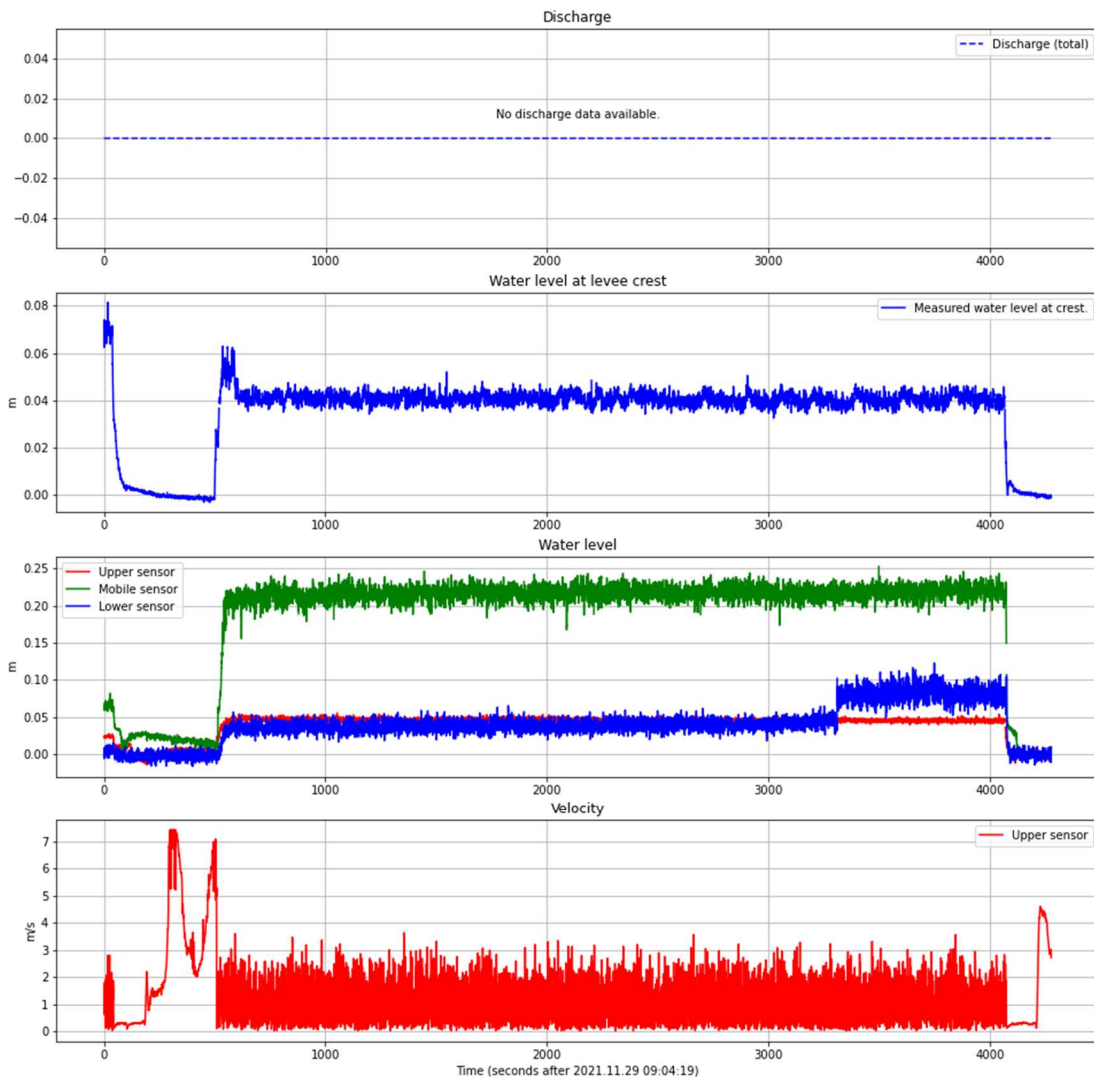
NL_OF09_Q_B02_LF_1270



H.2 N-OF09 Block 3

Start	26/11/2021				
Stop	26/11/2021 11:12				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	5.8 m ³ /min				
Notes	See notes block 1				
Statistics	Statistics calculated from 617 until 4000 s (n=33829).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,033	0,052	0,041	0,002	m
WH_UPPER	0,040	0,055	0,046	0,002	m
WH_MOBILE	0,156	0,253	0,217	0,009	m
WH_LOWER	0,017	0,123	0,047	0,019	m
VXY_UPPER	0,01	3,62	1,13	0,57	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

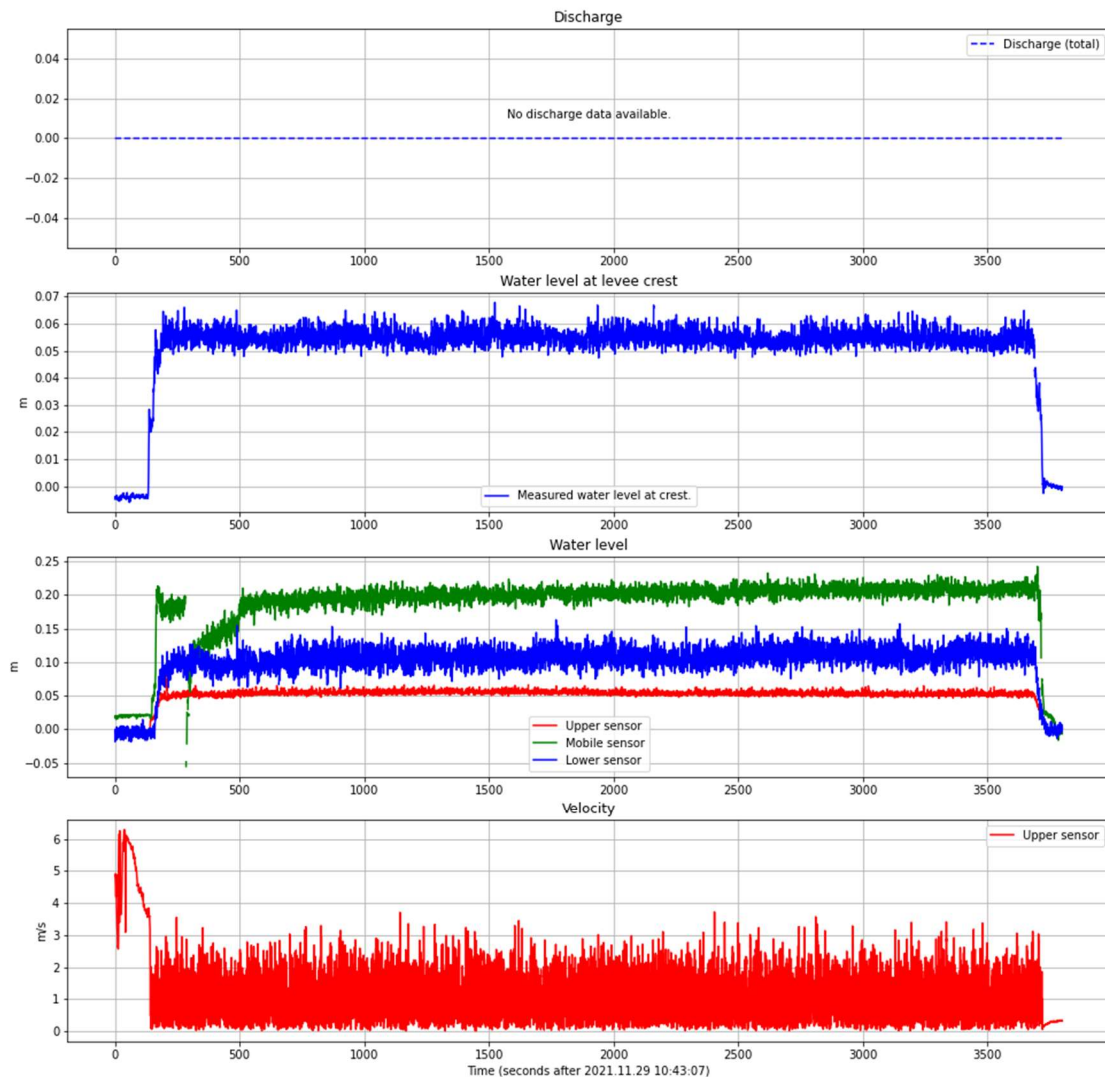
NL_OF09_Q000_B03_LF_1273



H.3 N-OF09 Block 3 bis

Start	26/11/2021 11:44				
Stop	26/11/2021 12:44				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	9.0 m³/min				
Notes	See notes block 1				
Statistics	Statistics calculated from 222 until 3657 s (n=34342).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST	0,047	0,068	0,055	0,003	m
WH_UPPER	0,045	0,066	0,054	0,003	m
WH_MOBILE	-0,055	0,233	0,198	0,019	m
WH_LOWER	0,062	0,163	0,108	0,012	m
VXY_UPPER	0,01	3,72	1,13	0,58	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

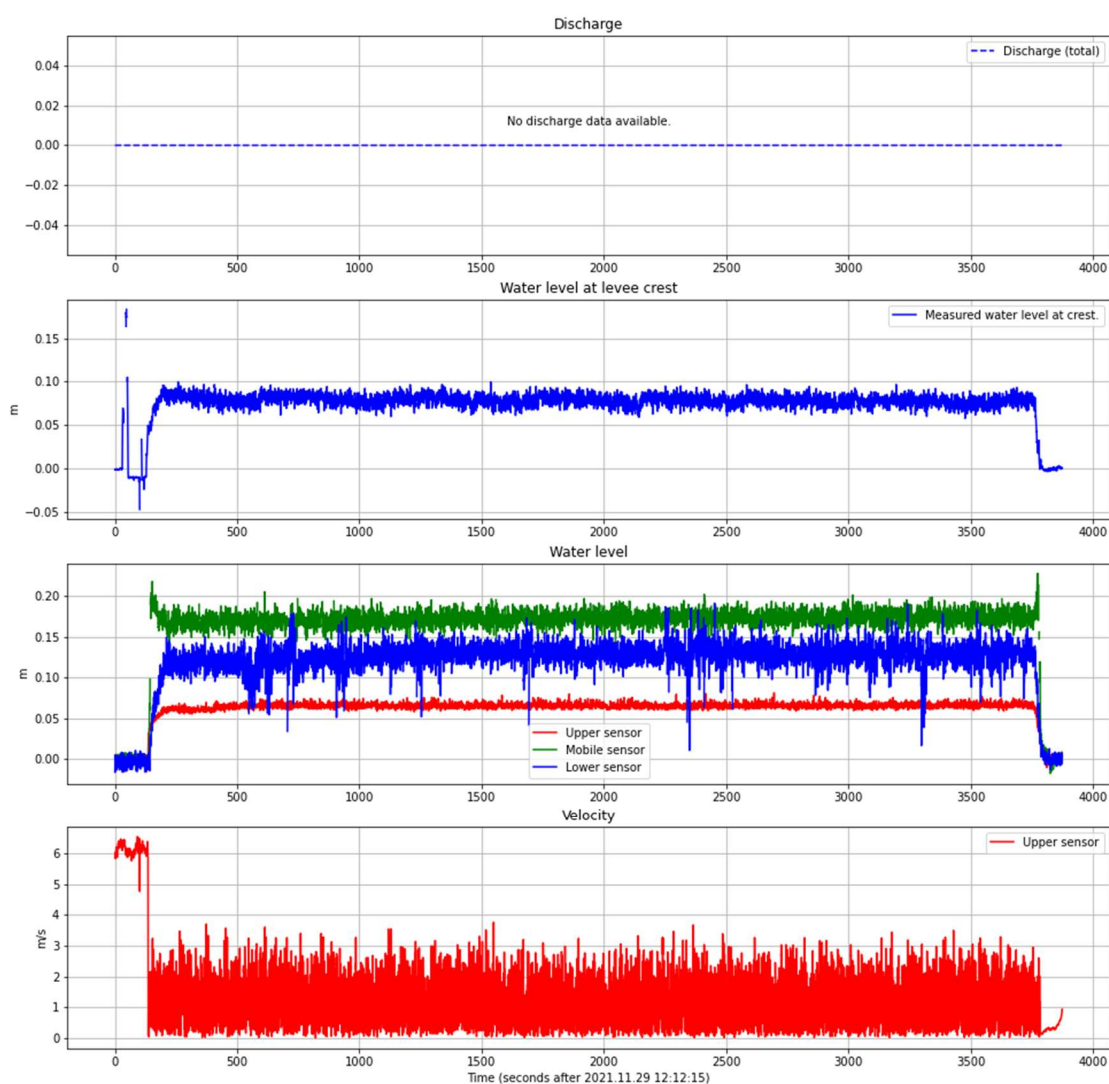
NL_OF09_Q000_B03_LF_1275



H.4 N-OF09 Block 5

Start	23/11/2020 13:14				
Stop	23/11/2020 14:14				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	12 m ³ /min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 227 until 3713 s (n=34858).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,058	0,100	0,079	0,006	m
WH_UPPER	0,055	0,081	0,065	0,003	m
WH_MOBILE	0,118	0,206	0,173	0,008	m
WH_LOWER	0,011	0,192	0,127	0,014	m
VXY_UPPER	0,01	3,76	1,24	0,62	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

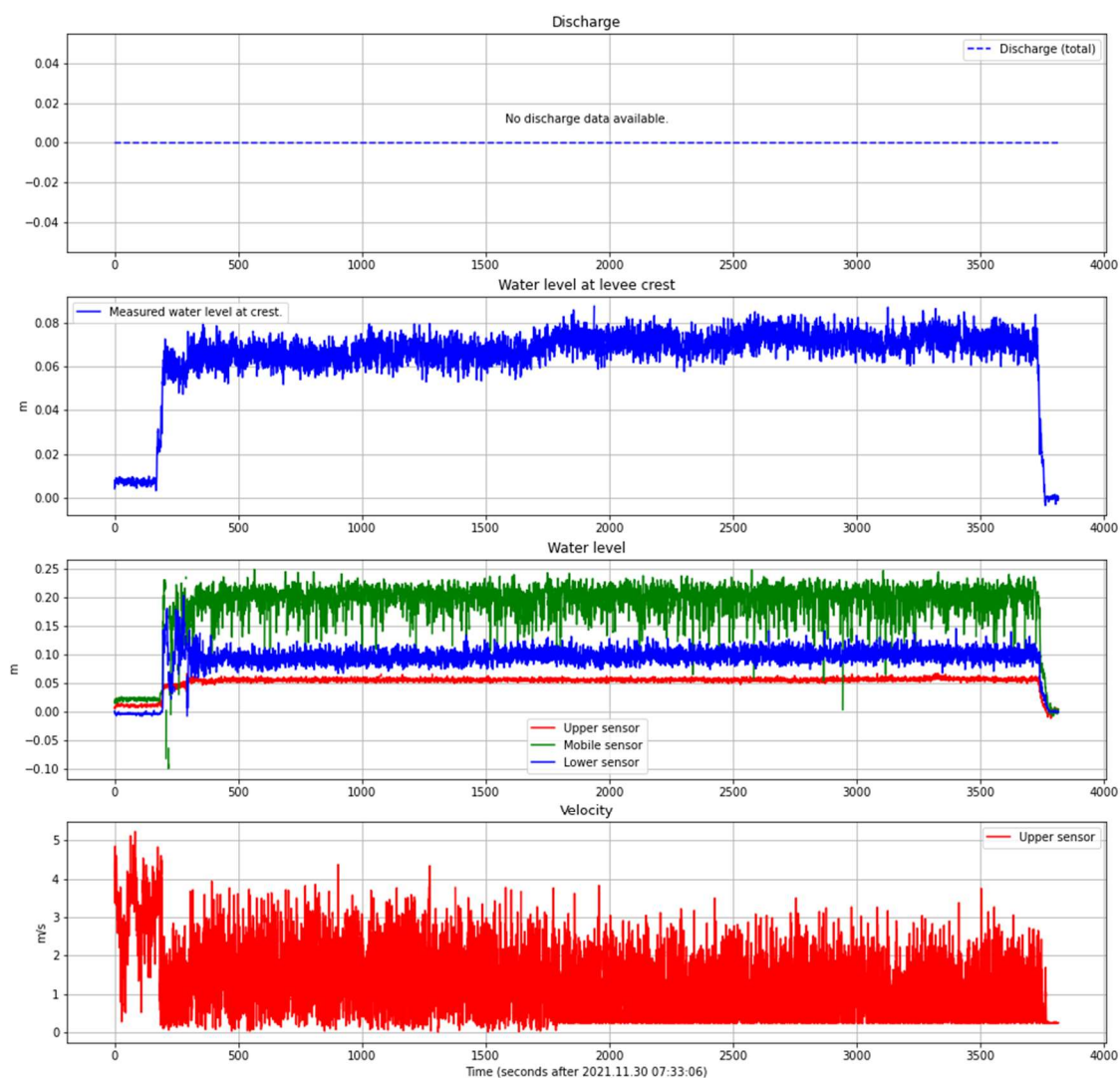
NL_OF09_Q000_B05_LF_1277



H.5 N-OF09 Block 6

Start	30/11/2021 8:35				
Stop	30/11/2021 9:35				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	12 m³/min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 342 until 3682 s (n=33409).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST	0,052	0,087	0,070	0,005	m
WH_UPPER	0,046	0,067	0,056	0,002	m
WH_MOBILE	0,004	0,249	0,199	0,019	m
WH_LOWER	0,061	0,145	0,097	0,010	m
VXY_UPPER	0,01	4,37	1,24	0,72	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

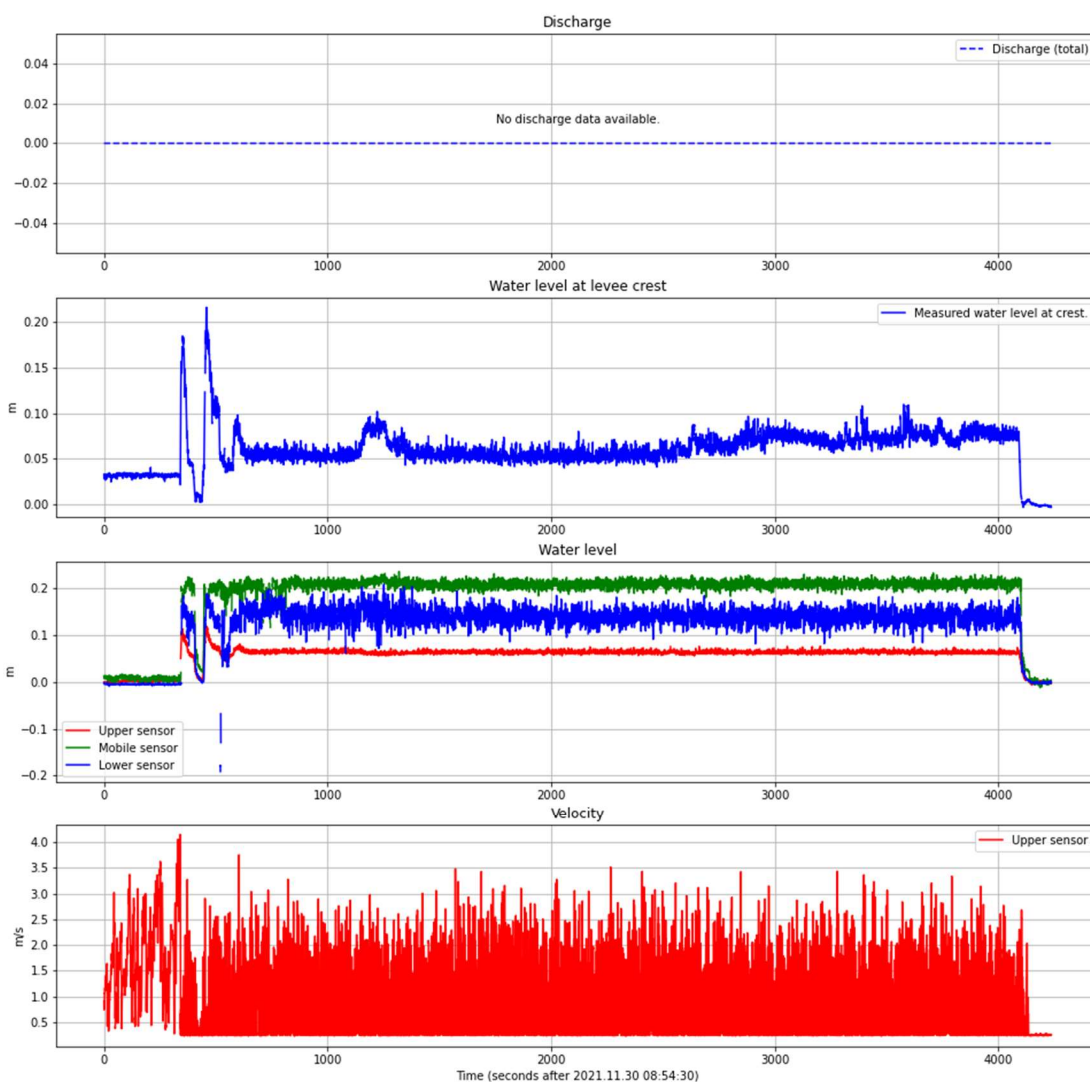
NL_OF09_Q000_B06_LF_1279a



H.6 N-OF09 Block 7

Start	23/11/2020 9:55				
Stop	23/11/2020 11:03				
Duration	1 hour 8 minutes				
Pump and pump power	BA500				
Discharge	17.2 m ³ /min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 624 until 4053 s (n=34294).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	0,040	0,109	0,063	0,012	m
WH_UPPER	0,056	0,077	0,064	0,003	m
WH_MOBILE	0,117	0,236	0,209	0,007	m
WH_LOWER	0,062	0,208	0,141	0,015	m
VXY_UPPER	0,23	3,51	0,95	0,60	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

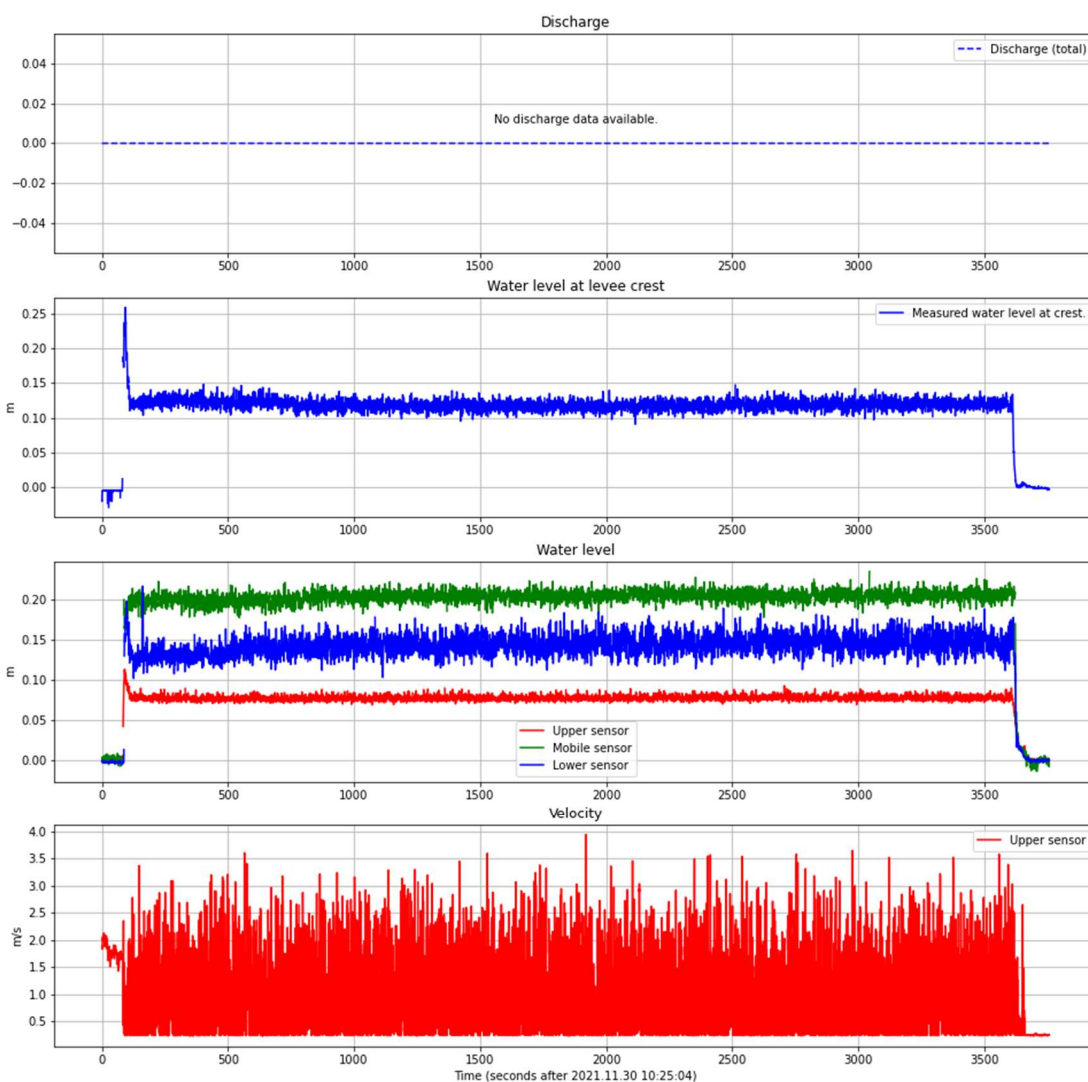
NL_OF09_Q000_B07_LF_1281



H.7 N-OF09 Block 8

Start	30/11/2021 11:26				
Stop	30/11/2021 12:26				
Duration	1 hour				
Pump and pump power	BA500				
Discharge	22.6 m³/min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 141 until 3568 s (n=34274).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST	0,091	0,148	0,119	0,006	m
WH_UPPER	0,069	0,093	0,077	0,003	m
WH_MOBILE	0,177	0,235	0,204	0,006	m
WH_LOWER	0,103	0,216	0,143	0,011	m
VXY_UPPER	0,23	3,94	1,07	0,66	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

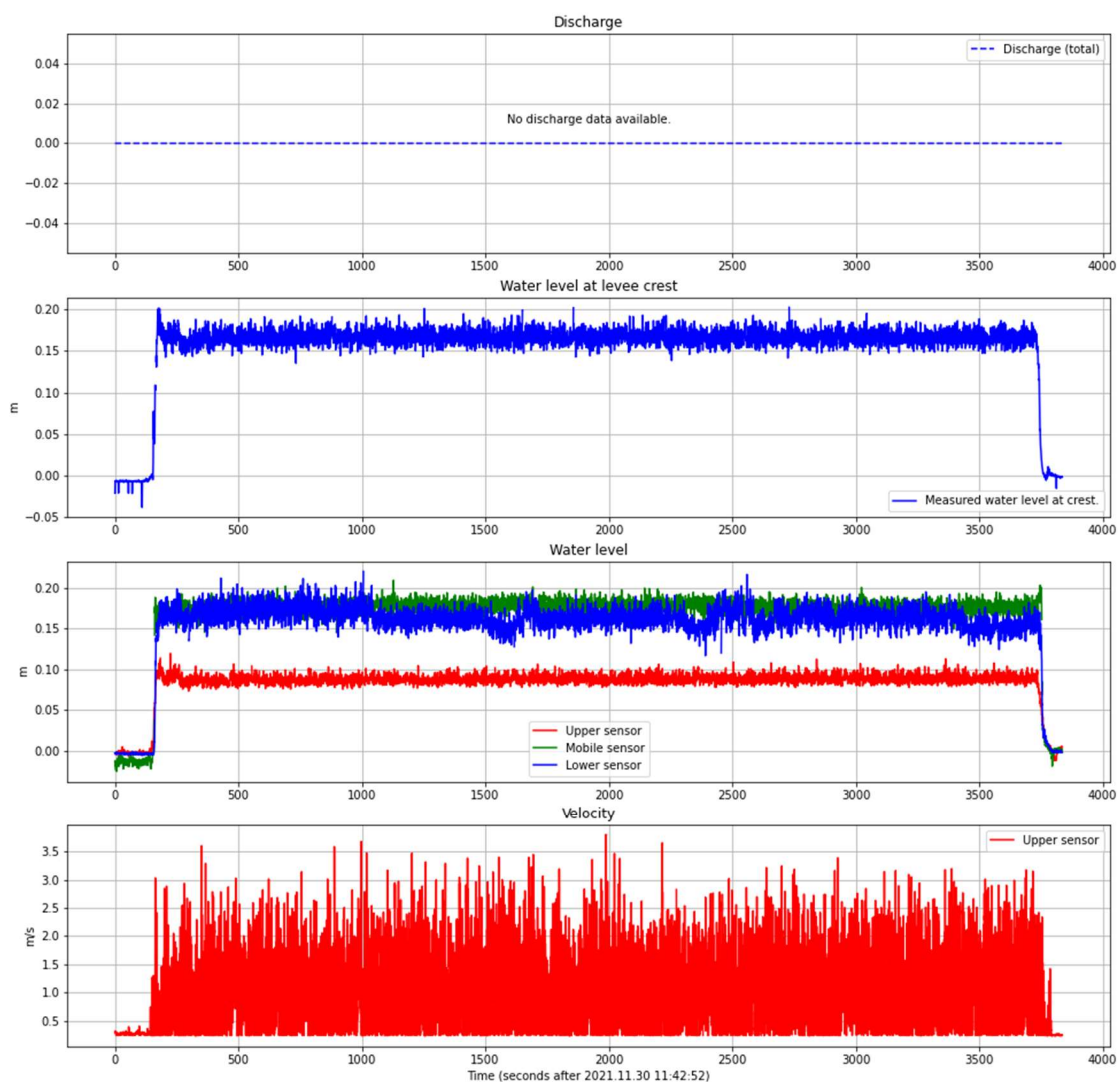
NL_OF09_Q000_B08_LF_1283



H.8 N-OF09 Block 9

Start	30/11/2021 12:44				
Stop	30/11/2021 13:47				
Duration	1 hour 03 minutes				
Pump and pump power	BA500				
Discharge	31 m³/min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 192 until 3713 s (n=35213).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST	0,135	0,203	0,167	0,008	m
WH_UPPER	0,073	0,120	0,088	0,005	m
WH_MOBILE	0,145	0,209	0,177	0,007	m
WH_LOWER	0,117	0,220	0,164	0,011	m
VXY_UPPER	0,23	3,80	1,13	0,64	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

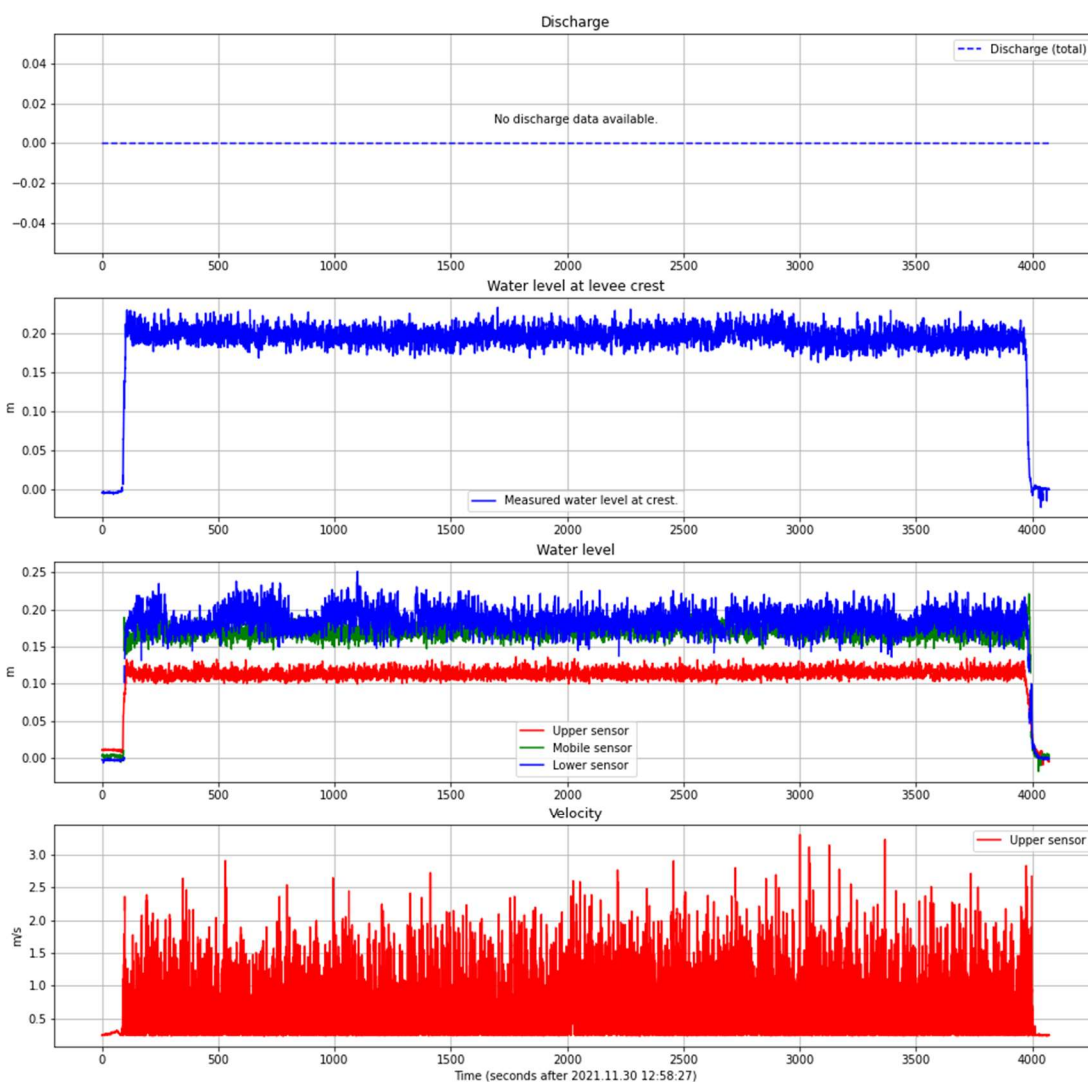
NL_OF09_Q000_B09_LF_1285



H.9 N-OF09 Block 9 bis (= 10)

Start	30/11/2021 13:59				
Stop	30/11/2021 15:04				
Duration	1 hour 5 minutes				
Pump and pump power	BA500				
Discharge	41 m³/min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 147 until 3926 s (n=37789).				
series	Min	max	mean	std	Unit
DISCHARGE					m³/s
WH_CREST	0,163	0,233	0,197	0,009	m
WH_UPPER	0,099	0,136	0,114	0,005	m
WH_MOBILE	0,146	0,199	0,171	0,007	m
WH_LOWER	0,132	0,251	0,185	0,013	m
VXY_UPPER	0,23	3,31	0,72	0,45	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

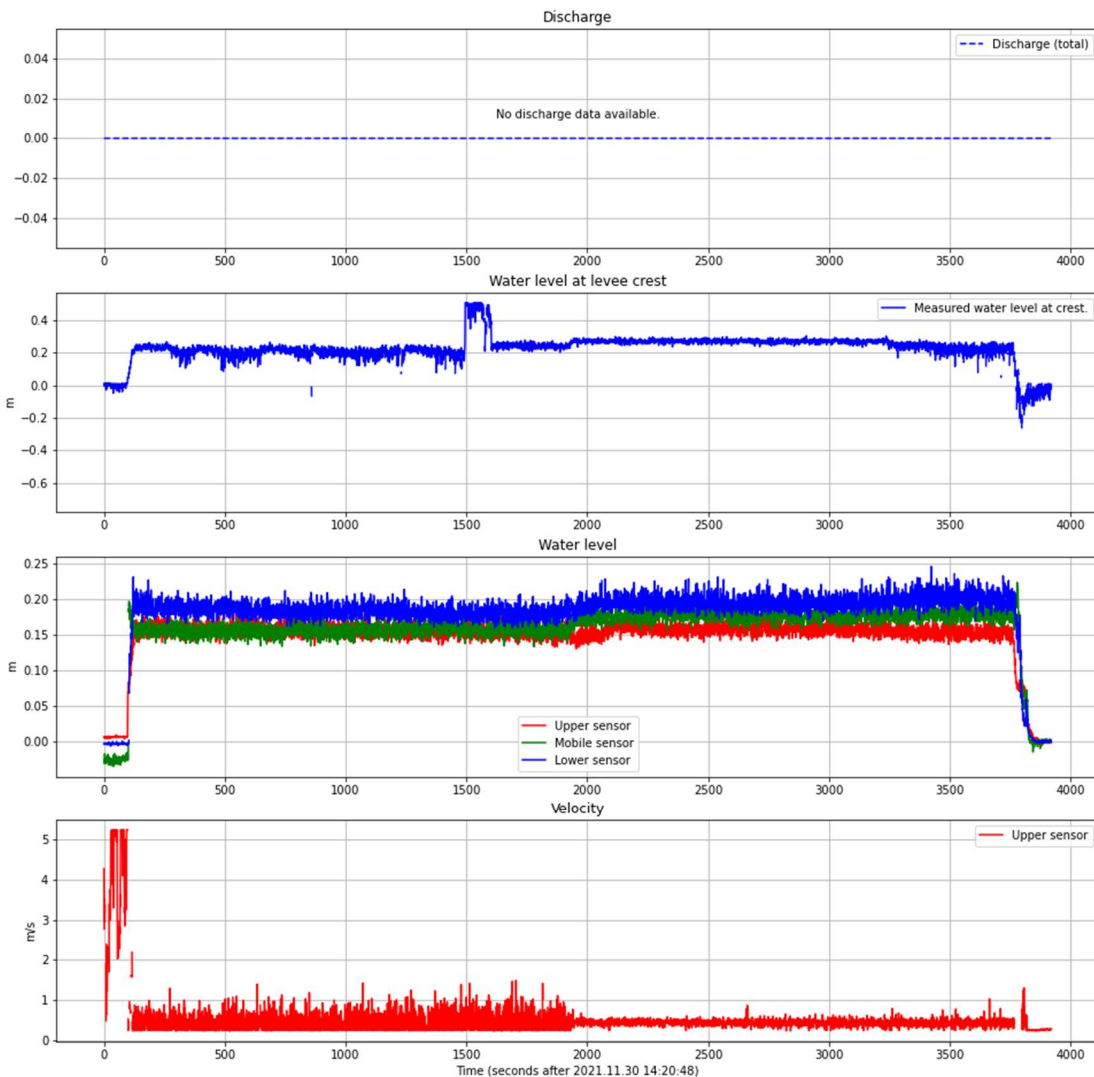
NL_OF09_Q000_B09_LF_1287



H.10 N-OF09 Block 9 tris (=11)

Start	30/11/2021 15:21				
Stop	30/11/2021 16:21				
Duration	1 hour 2 minutes				
Pump and pump power	BA500 + BA300 (full power)				
Discharge	60 m ³ /min				
Notes	See notes block 1.				
Statistics	Statistics calculated from 147 until 3739 s (n=35925).				
series	Min	max	mean	std	Unit
DISCHARGE					m ³ /s
WH_CREST	-0,719	0,510	0,245	0,051	m
WH_UPPER	0,131	0,192	0,156	0,008	m
WH_MOBILE	0,134	0,208	0,167	0,012	m
WH_LOWER	0,160	0,246	0,190	0,011	m
VXY_UPPER	0,23	1,49	0,43	0,13	m/s
VXY_MOBILE					m/s
VXY_LOWER					m/s

NL_OF09_Q000_B09_LF_1289



Annex I - N-OF10 timeseries

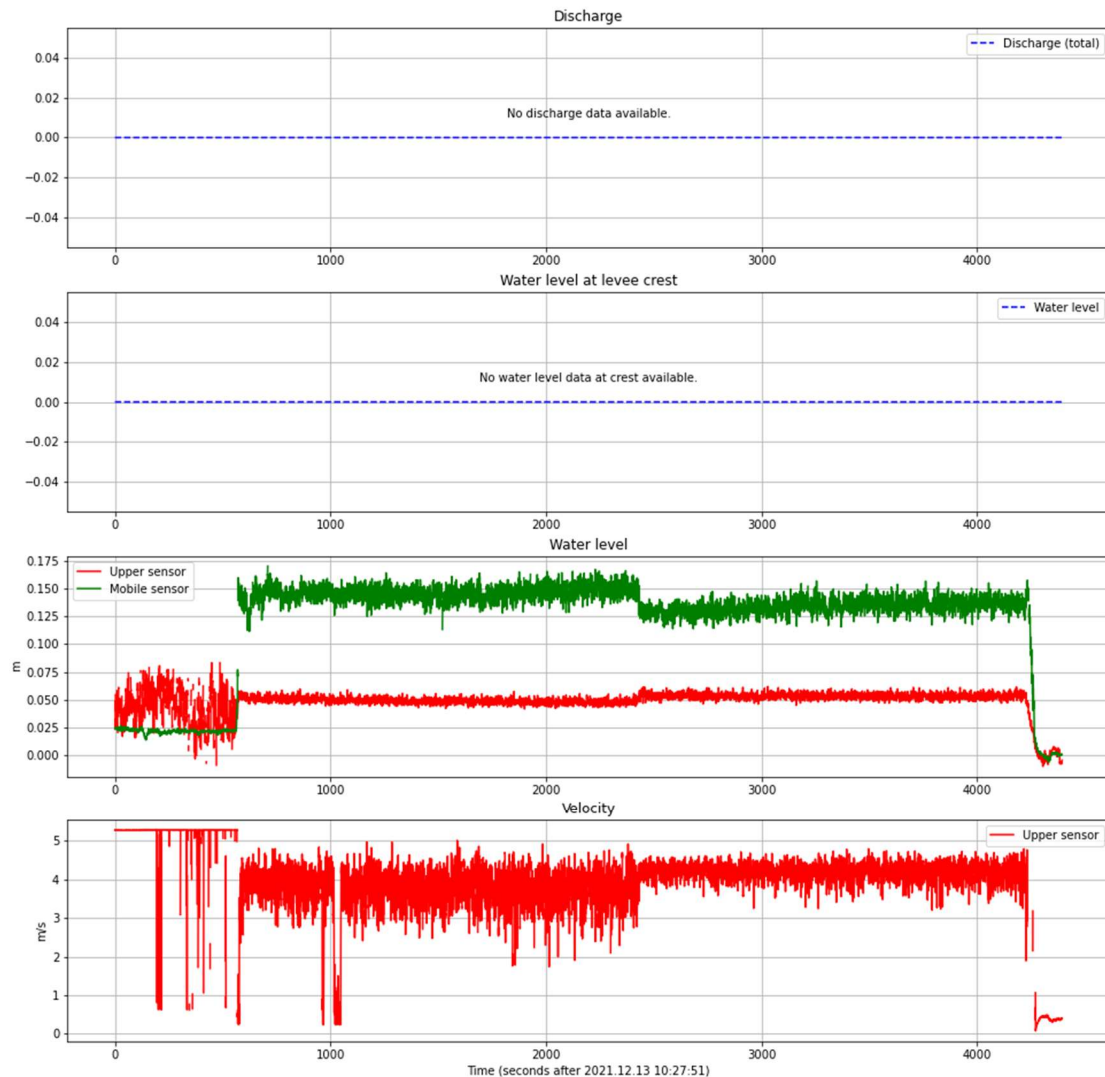
The following timeseries details are reproduced in this section:

M.1	N-OF10 Block 1	103
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I.1 N-OF10 Block 1

Start	13/12 11:38 (pump was started 11:28)				
Stop	13/12 12:39				
Duration	61 minutes				
Pump and pump power	BA500, 1200 and 1300 rpm				
Discharge	1200 - 1300 rpm (ca. 470 - 560 l/s)				
Notes	Limited sensors: only WH UPPER and MOBILE at upper and middle part of levee slope VXY_UPPER at middle part of slope				
Statistics	Calculated from 579 to 4198 seconds (n=36197).				
series	min	max	mean	std	Unit
WH_UPPER	0.042	0.062	0.051	0.003	m
WH_MOBILE	0.111	0.170	0.139	0.009	m
VXY_UPPER	0.234	5.013	3.968	0.522	m/s

NL_OF10_Q_B1_LF_1371



Annex J - N-OF11 timeseries

The following timeseries details are reproduced in this section:

N.1	N-OF11 Block 1	105
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J.1 N-OF11 Block 1

Start	13/12 13:58				
Stop	15/12 14:25				
Duration	27 minutes				
Pump and pump power	BA500, 1200 and 1300 rpm				
Discharge	1200 - 1300 rpm (ca. 470 - 560 l/s)				
Notes	Limited sensors: only WH UPPER and MOBILE at upper and middle part of levee slope VXY_UPPER at middle part of slope				
Statistics	Calculated from 181 to 1610 seconds (n=14290).				
series	min	max	mean	std	Unit
WH_UPPER	0.051	0.086	0.069	0.004	m
WH_MOBILE	0.067	0.099	0.079	0.004	m
VXY_UPPER	0.031	4.113	1.812	0.685	m/s

