

P-05-63

Supplement 1

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Forsmark site investigation

Difference flow logging in borehole KFM07A

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Description

In the present supplement all groundwater head calculations have been redone on revised borehole elevation data (Z-coordinates).

Borehole coordinates that formed the basis for this revision of groundwater head data were retrieved from Sicada 2007-06-26 (#SICADA_07_263) /SKB 2007/.

Specifically the following appendices are revised and included in this supplement:

Revised appendix	Appendix number
Table of transmissivity and head of 5 m sections	Appendix 5
Plotted head and transmissivity of 5 m sections	Appendix 6.2
Transmissivity and natural head of detected fractures	Appendix 7
Plotted transmissivity and head of detected fractures	Appendix 8
Comparison between section transmissivity and fracture transmissivity	Appendix 9
Head distribution in the borehole during flow logging	Appendix 10.1
Groundwater recovery after pumping	Appendix 10.4

Reference

SKB, 2007. Compilation of borehole deviation measurements in Forsmark (Nilsson, G. and Nissen, J.). SKB P-07-28, Svensk Kärnbränslehantering AB.

Table of transmissivity and head of 5 m sections

Borehole ID	Secup L(m)	Seclow L(m)	Lw (m)	Q0 (m ³ /s)	dh0 (m)	Q1 (m ³ /s)	dh1 (m)	TD (m ² /s)	hi (m)	Q-lower limit P (mL/h)	TD-measILT (m ² /s)	TD-measILP (m ² /s)	TD-measIU (m ² /s)	ECw0 (S/m)	Tew0 (°C)	ECw1 (S/m)	Tew1 (°C)	Comments
KFM07A	988.81	993.81	5	–	13.01	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.48	15.52	–	–	
KFM07A	983.80	988.80	5	–	12.92	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.84	15.49	–	–	
KFM07A	978.78	983.78	5	–	12.86	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.45	–	–	
KFM07A	973.77	978.77	5	–	12.81	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.40	–	–	
KFM07A	968.76	973.76	5	–3.22E–07	12.70	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.34	–	–	
KFM07A	963.75	968.75	5	–	12.65	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.31	–	–	
KFM07A	958.73	963.73	5	–	12.57	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.25	–	–	
KFM07A	953.72	958.72	5	–	12.47	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.21	–	–	
KFM07A	948.71	953.71	5	–	12.42	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.14	–	–	
KFM07A	943.70	948.70	5	–	12.37	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.84	15.11	–	–	
KFM07A	938.68	943.68	5	–	12.31	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	15.04	–	–	
KFM07A	933.67	938.67	5	–	12.21	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	14.98	–	–	
KFM07A	928.66	933.66	5	–	12.14	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	14.93	–	–	
KFM07A	923.65	928.65	5	–	12.07	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	14.90	–	–	
KFM07A	918.64	923.64	5	–	11.96	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.84	14.83	–	–	
KFM07A	913.62	918.62	5	–2.00E–07	11.88	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	14.77	–	–	
KFM07A	908.61	913.61	5	–	11.82	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.84	14.71	–	–	
KFM07A	903.60	908.60	5	–	11.73	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.84	14.68	–	–	
KFM07A	898.59	903.59	5	–	11.67	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.90	14.61	–	–	
KFM07A	893.57	898.57	5	–	11.59	–	–	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	14.57	–	–	
KFM07A	888.15	893.15	5	–	11.50	–	5.11	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.96	14.57	3.58	15.03	
KFM07A	883.14	888.14	5	–	11.40	–	5.03	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.83	14.47	3.62	15.15	
KFM07A	878.13	883.13	5	–	11.35	–	4.93	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.98	14.40	3.59	14.92	
KFM07A	873.12	878.12	5	–	11.27	–	4.79	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.83	14.36	3.62	15.02	
KFM07A	868.11	873.11	5	–	11.20	–	4.71	–	–	800	1.3E–09	3.4E–08	1.3E–05	4.07	14.44	3.77	14.82	
KFM07A	863.10	868.10	5	–	11.13	–	4.64	–	–	800	1.3E–09	3.4E–08	1.3E–05	4.12	14.42	3.58	14.75	
KFM07A	858.09	863.09	5	–	11.05	–	4.61	–	–	800	1.3E–09	3.4E–08	1.3E–05	4.15	14.22	3.40	14.74	

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Borehole ID	Secup L(m)	Seclow L(m)	Lw (m)	Q0 (m ³ /s)	dh0 (m)	Q1 (m ³ /s)	dh1 (m)	TD (m ² /s)	hi (m)	Q-lower limit P (mL/h)	TD-measLT (m ² /s)	TD-measLP (m ² /s)	TD-measLU (m ² /s)	ECw0 (S/m)	Tew0 (°C)	ECw1 (S/m)	Tew1 (°C)	Comments
KFM07A	852.69	857.69	5	–	10.95	–	4.52	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.70	15.56	3.50	14.68	
KFM07A	847.68	852.68	5	–	10.88	–	4.34	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.71	15.35	3.78	14.63	
KFM07A	842.67	847.67	5	–	10.76	–	4.23	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.73	15.07	3.79	14.69	
KFM07A	837.67	842.67	5	–	10.70	–	4.14	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.77	14.52	3.80	14.51	
KFM07A	832.67	837.67	5	–	10.26	–	4.09	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.74	14.90	3.79	14.64	
KFM07A	827.66	832.66	5	–	10.19	–	4.04	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.73	14.96	3.78	14.41	
KFM07A	822.66	827.66	5	–	10.11	–	3.97	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.78	14.35	3.79	14.35	
KFM07A	817.65	822.65	5	–	10.03	–	3.87	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.73	14.88	3.79	14.29	
KFM07A	812.65	817.65	5	–	9.96	–	3.81	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.73	14.61	3.81	14.25	
KFM07A	807.64	812.64	5	–	9.87	–	3.74	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.71	14.65	3.89	14.18	
KFM07A	802.64	807.64	5	–	9.79	–	3.76	–	–	100	1.4E–09	4.6E–09	1.4E–05	3.74	14.41	3.87	14.12	
KFM07A	797.63	802.63	5	–	9.71	–	3.70	–	–	100	1.4E–09	4.6E–09	1.4E–05	3.74	14.12	3.77	14.09	
KFM07A	792.63	797.63	5	–	9.64	–	3.63	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.75	14.01	3.78	14.01	
KFM07A	787.63	792.63	5	–	9.55	–	3.57	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.75	13.96	3.76	13.95	
KFM07A	782.62	787.62	5	–	9.46	–	3.48	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.76	13.91	3.79	13.90	
KFM07A	777.62	782.62	5	–	9.37	–	3.39	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.75	13.85	3.79	13.85	
KFM07A	772.61	777.61	5	–	9.33	–	3.31	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.74	13.81	3.77	13.78	
KFM07A	767.61	772.61	5	–	9.23	–	3.22	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.74	13.75	3.76	13.74	
KFM07A	762.60	767.60	5	–	9.13	–	3.13	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.74	13.69	3.75	13.70	
KFM07A	757.59	762.59	5	–	9.06	–	3.04	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.74	13.63	3.75	13.66	
KFM07A	752.59	757.59	5	–	8.96	–	2.95	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.73	13.58	3.76	13.61	
KFM07A	747.58	752.58	5	–	8.91	–	2.87	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.74	13.53	3.76	13.56	
KFM07A	742.58	747.58	5	–	8.81	–	2.79	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.73	13.47	3.76	13.49	
KFM07A	737.57	742.57	5	–	8.73	–	2.70	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.73	13.41	3.75	13.55	
KFM07A	732.57	737.57	5	–	8.62	–	2.62	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.73	13.35	3.77	13.37	
KFM07A	727.57	732.57	5	–	8.55	–	2.52	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.70	13.29	3.74	13.32	
KFM07A	722.56	727.56	5	–	8.46	–	2.43	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.71	13.25	3.74	13.44	
KFM07A	717.56	722.56	5	–	8.38	–	2.33	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.71	13.19	3.74	13.33	
KFM07A	712.55	717.55	5	–	8.33	–	2.25	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.71	13.14	3.76	13.16	
KFM07A	707.55	712.55	5	–	8.22	–	2.16	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.71	13.08	3.75	13.11	
KFM07A	702.54	707.54	5	–	8.11	–	2.10	–	–	800	1.4E–09	3.7E–08	1.4E–05	3.71	13.02	3.67	13.10	

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Borehole ID	Secup L(m)	Seclow L(m)	Lw (m)	Q0 (m ³ /s)	dh0 (m)	Q1 (m ³ /s)	dh1 (m)	TD (m ² /s)	hi (m)	Q-lower limit P (mL/h)	TD-measILT (m ² /s)	TD-measILP (m ² /s)	TD-measIU (m ² /s)	ECw0 (S/m)	Tew0 (°C)	ECw1 (S/m)	Tew1 (°C)	Comments
KFM07A	697.53	702.53	5	–	8.04	–	1.94	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.71	12.97	3.63	13.37	
KFM07A	692.53	697.53	5	–	7.97	–	1.83	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.70	12.91	3.63	12.94	
KFM07A	687.52	692.52	5	–	7.89	–	1.73	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.71	12.86	3.65	12.91	
KFM07A	682.52	687.52	5	–	7.78	–	1.66	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.70	12.80	3.61	13.10	
KFM07A	677.52	682.52	5	–	7.70	–	1.55	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.71	12.74	3.58	12.83	
KFM07A	672.51	677.51	5	–	7.64	–	1.50	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.72	12.68	3.60	12.74	
KFM07A	667.51	672.51	5	–	7.56	–	1.39	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.70	12.63	3.58	12.90	
KFM07A	662.50	667.50	5	–	7.46	–	1.30	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.70	12.58	3.58	12.63	
KFM07A	657.50	662.50	5	–	7.36	–	1.23	–	–	800	1.4E–09	3.6E–08	1.4E–05	3.71	12.52	3.57	12.58	
KFM07A	652.49	657.49	5	–	7.28	–	1.14	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.69	12.47	3.56	12.59	
KFM07A	647.49	652.49	5	–	7.22	–	1.04	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.71	12.42	3.53	12.49	
KFM07A	642.48	647.48	5	–	7.11	–	0.91	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.70	12.37	3.54	12.57	
KFM07A	637.48	642.48	5	–	7.01	–	0.83	–	–	800	1.3E–09	3.6E–08	1.3E–05	3.71	12.32	3.52	12.36	
KFM07A	632.47	637.47	5	–	6.94	–	0.73	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.73	12.27	3.54	12.31	
KFM07A	627.47	632.47	5	–	6.87	–	0.66	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	12.21	3.54	12.26	
KFM07A	622.46	627.46	5	–	6.79	–	0.57	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	12.16	3.47	12.23	
KFM07A	617.46	622.46	5	–	6.69	–	0.48	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.72	12.11	3.48	12.30	
KFM07A	612.45	617.45	5	–	6.59	–	0.36	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	12.06	3.53	12.11	
KFM07A	607.45	612.45	5	–	6.50	–	0.27	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	12.01	3.48	12.07	
KFM07A	602.44	607.44	5	–	6.43	–	0.19	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	11.96	3.47	12.04	
KFM07A	597.44	602.44	5	–	6.35	–	0.10	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	11.91	3.43	11.94	
KFM07A	592.43	597.43	5	–	6.25	–	0.01	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	11.86	3.46	11.89	
KFM07A	587.43	592.43	5	–	6.17	–	–0.07	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.68	11.81	3.40	11.85	
KFM07A	582.43	587.43	5	–	6.09	–	–0.16	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.68	11.76	3.49	11.80	
KFM07A	577.42	582.42	5	–	6.04	–	–0.24	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.69	11.71	3.46	11.76	
KFM07A	572.42	577.42	5	–	5.94	–	–0.33	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.68	11.65	3.45	11.72	
KFM07A	567.41	572.41	5	–	5.88	–	–0.43	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.67	11.60	3.43	11.66	
KFM07A	562.41	567.41	5	–	5.73	–	–0.55	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.67	11.54	3.40	11.68	
KFM07A	557.41	562.41	5	–	5.67	–	–0.64	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.67	11.49	3.37	11.55	
KFM07A	552.40	557.40	5	–	5.58	–	–0.73	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	11.44	3.39	11.50	
KFM07A	547.40	552.40	5	–	5.50	–	–0.82	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	11.39	3.41	11.45	

Borehole ID	Secup L(m)	Seclow L(m)	Lw (m)	Q0 (m³/s)	dh0 (m)	Q1 (m³/s)	dh1 (m)	TD (m²/s)	hi (m)	Q-lower limit P (mL/h)	TD-measLT (m²/s)	TD-measLP (m²/s)	TD-measLU (m²/s)	ECw0 (S/m)	Tew0 (°C)	ECw1 (S/m)	Tew1 (°C)	Comments
KFM07A	542.39	547.39	5	–	5.43	–	–0.90	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.68	11.33	3.38	11.44	
KFM07A	537.39	542.39	5	–	5.33	–	–1.00	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.68	11.29	3.33	11.34	
KFM07A	532.38	537.38	5	–	5.24	–	–1.07	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.58	11.24	3.21	11.35	
KFM07A	527.37	532.37	5	–	5.16	–	–1.16	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	11.19	3.29	11.27	
KFM07A	522.36	527.36	5	–	5.09	–	–1.25	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.68	11.14	3.18	11.35	
KFM07A	517.35	522.35	5	–	5.00	–	–1.34	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.69	11.09	3.27	11.24	
KFM07A	512.34	517.34	5	–	4.89	–	–1.40	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	11.04	3.24	11.21	
KFM07A	507.34	512.34	5	–	4.82	–	–1.49	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.65	10.98	3.14	11.05	
KFM07A	502.32	507.32	5	–	4.75	–	–1.59	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	10.94	3.20	11.25	
KFM07A	497.32	502.32	5	–	4.69	–	–1.66	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.69	10.89	3.21	11.08	
KFM07A	492.32	497.32	5	–	4.59	–	–1.76	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.72	10.84	3.21	11.09	
KFM07A	487.32	492.32	5	–	4.49	–	–1.84	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.69	10.78	3.09	10.86	
KFM07A	482.33	487.33	5	–	4.42	–	–1.93	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	10.74	3.15	10.81	
KFM07A	477.33	482.33	5	–	4.35	–	–2.02	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.72	10.69	3.21	10.77	
KFM07A	472.33	477.33	5	–	4.26	–	–2.11	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.73	10.63	3.06	10.73	
KFM07A	467.33	472.33	5	–	4.17	–	–2.18	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.72	10.59	3.20	10.70	
KFM07A	462.33	467.33	5	–	4.12	–	–2.25	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	10.54	3.15	10.67	
KFM07A	457.33	462.33	5	–	4.02	–	–2.34	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	10.49	3.18	10.58	
KFM07A	452.34	457.34	5	–	3.94	–	–2.43	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	10.44	3.15	10.54	
KFM07A	447.34	452.34	5	–	3.85	–	–2.51	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.73	10.40	3.13	10.49	
KFM07A	442.34	447.34	5	–	3.77	–	–2.60	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.72	10.35	3.02	10.66	
KFM07A	437.34	442.34	5	–	3.68	–	–2.69	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.71	10.31	3.12	10.39	
KFM07A	432.34	437.34	5	–	3.61	–	–2.77	–	–	800	1.3E–09	3.5E–08	1.3E–05	3.70	10.26	3.09	10.56	
KFM07A	427.33	432.33	5	–	3.52	–	–2.88	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.67	10.22	3.04	10.57	
KFM07A	422.33	427.33	5	–	3.44	–	–2.96	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.68	10.18	3.03	10.41	
KFM07A	417.33	422.33	5	–	3.35	–	–3.05	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.64	10.13	3.07	10.40	
KFM07A	412.32	417.32	5	–	3.24	–	–3.16	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.61	10.09	3.05	10.17	
KFM07A	407.32	412.32	5	–	3.16	–	–3.24	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.60	10.04	2.99	10.36	
KFM07A	402.32	407.32	5	–	3.09	–	–3.33	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.60	10.04	3.07	10.19	
KFM07A	397.31	402.31	5	–	3.02	–	–3.42	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.50	9.94	3.02	10.06	
KFM07A	392.31	397.31	5	–	2.92	–	–3.49	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.44	9.89	2.99	9.99	

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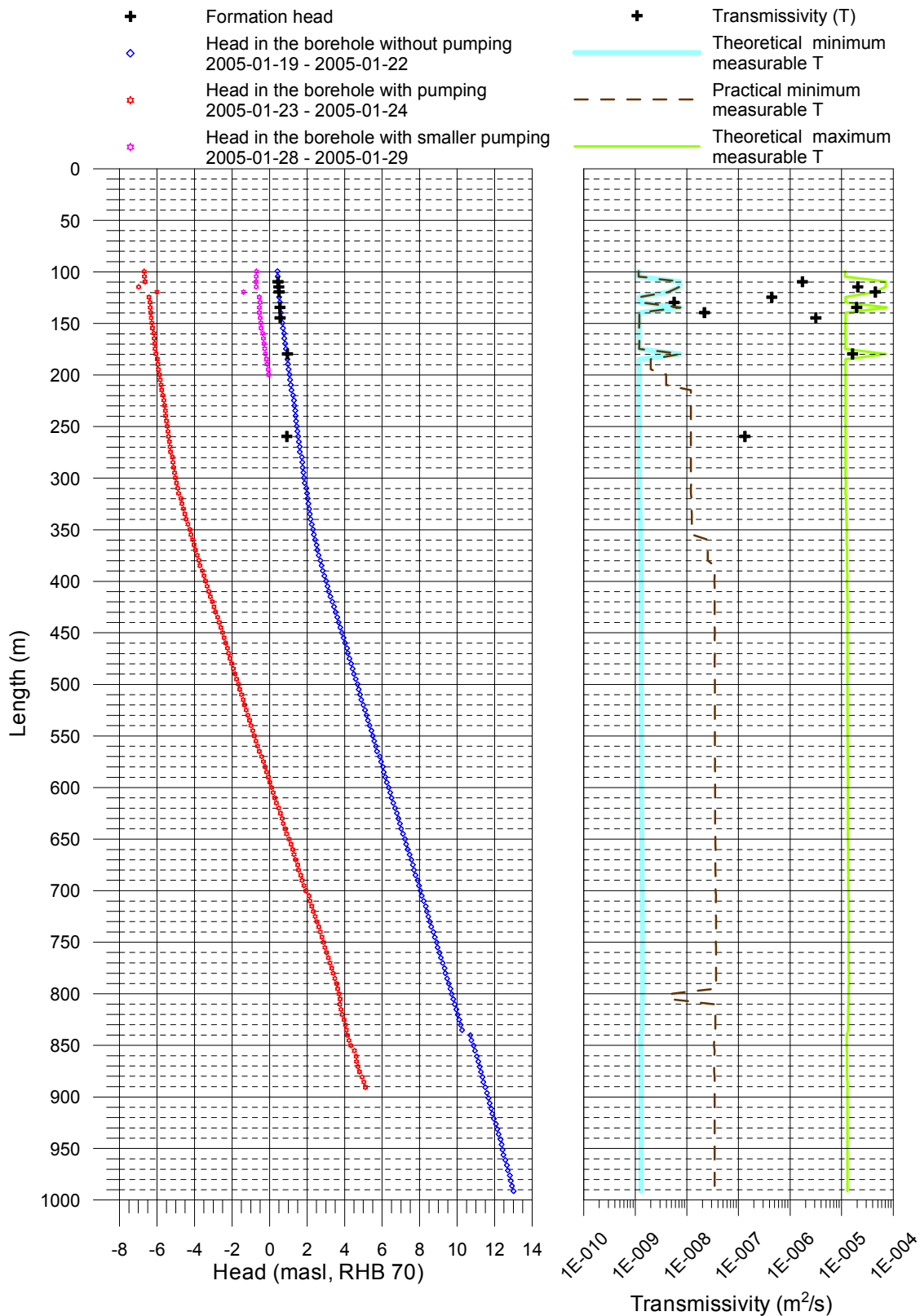
Borehole ID	Secup L(m)	Seclow L(m)	Lw (m)	Q0 (m³/s)	dh0 (m)	Q1 (m³/s)	dh1 (m)	TD (m²/s)	hi (m)	Q-lower limit P (mL/h)	TD-measILT (m²/s)	TD-measILP (m²/s)	TD-measIU (m²/s)	ECw0 (S/m)	Tew0 (°C)	ECw1 (S/m)	Tew1 (°C)	Comments
KFM07A	387.30	392.30	5	–	2.84	–	–3.58	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.34	9.83	3.03	9.95	
KFM07A	382.30	387.30	5	–	2.77	–	–3.71	–	–	800	1.3E–09	3.4E–08	1.3E–05	3.24	9.78	3.07	10.20	
KFM07A	377.30	382.30	5	–	2.71	–	–3.77	–	–	600	1.3E–09	2.5E–08	1.3E–05	3.19	9.73	2.97	10.10	
KFM07A	372.29	377.29	5	–	2.62	–	–3.86	–	–	600	1.3E–09	2.5E–08	1.3E–05	3.08	9.69	3.01	10.15	
KFM07A	367.29	372.29	5	–	2.55	–	–3.95	–	–	600	1.3E–09	2.5E–08	1.3E–05	2.95	9.63	2.91	10.13	
KFM07A	362.28	367.28	5	–	2.50	–	–4.03	–	–	600	1.3E–09	2.5E–08	1.3E–05	2.80	9.58	2.90	9.74	
KFM07A	357.28	362.28	5	–	2.42	–	–4.10	–	–	600	1.3E–09	2.5E–08	1.3E–05	2.65	9.54	2.87	10.02	
KFM07A	352.27	357.27	5	–	2.36	–	–4.19	–	–	300	1.3E–09	1.3E–08	1.3E–05	2.47	9.49	2.80	10.01	
KFM07A	347.27	352.27	5	–	2.31	–	–4.25	–	–	300	1.3E–09	1.3E–08	1.3E–05	2.29	9.44	2.77	9.60	
KFM07A	342.28	347.28	5	–	2.24	–	–4.35	–	–	300	1.3E–09	1.3E–08	1.3E–05	2.11	9.40	2.82	9.56	
KFM07A	337.28	342.28	5	–	2.18	–	–4.45	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.95	9.35	2.72	9.69	
KFM07A	332.27	337.27	5	–	2.15	–	–4.52	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.80	9.29	2.66	9.47	
KFM07A	327.26	332.26	5	–	2.11	–	–4.60	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.71	9.24	2.60	9.79	
KFM07A	322.25	327.25	5	–	2.07	–	–4.67	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.62	9.19	2.44	9.54	
KFM07A	317.24	322.24	5	–	2.03	–	–4.73	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.56	9.14	2.43	9.60	
KFM07A	312.23	317.23	5	–	2.00	–	–4.85	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.51	9.11	2.41	9.28	
KFM07A	307.22	312.22	5	–	1.96	–	–4.90	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.48	9.06	2.29	9.24	
KFM07A	302.21	307.21	5	–	1.87	–	–4.96	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.47	9.01	2.17	9.20	
KFM07A	297.20	302.20	5	–	1.84	–	–5.02	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.47	8.96	1.98	9.13	
KFM07A	292.19	297.19	5	–	1.80	–	–5.07	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.45	8.92	1.94	9.20	
KFM07A	287.18	292.18	5	–	1.76	–	–5.11	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.46	8.86	1.79	9.45	
KFM07A	282.17	287.17	5	–	1.75	–	–5.15	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.45	8.82	1.80	9.00	
KFM07A	277.17	282.17	5	–	1.72	–	–5.18	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.45	8.77	1.70	9.00	
KFM07A	272.16	277.16	5	–	1.61	–	–5.28	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.45	8.72	1.62	9.21	
KFM07A	267.15	272.15	5	–	1.60	–	–5.31	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.44	8.67	1.61	9.11	
KFM07A	262.14	267.14	5	–	1.56	–	–5.34	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.44	8.63	1.57	8.86	
KFM07A	257.13	262.13	5	–8.08E–08	1.52	8.47E–07	–5.39	1.3E–07	0.9	300	1.2E–09	1.2E–08	1.2E–05	1.44	8.58	1.48	8.76	
KFM07A	252.13	257.13	5	–	1.49	–	–5.42	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.44	8.53	1.61	8.80	
KFM07A	247.13	252.13	5	–	1.45	–	–5.46	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.44	8.48	1.60	8.67	
KFM07A	242.12	247.12	5	–	1.41	–	–5.49	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.44	1.59	8.63	
KFM07A	237.12	242.12	5	–	1.38	–	–5.54	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.39	1.56	8.73	

Borehole ID	Secup L(m)	Seclow L(m)	Lw (m)	Q0 (m ³ /s)	dh0 (m)	Q1 (m ³ /s)	dh1 (m)	TD (m ² /s)	hi (m)	Q-lower limit P (mL/h)	TD-measLT (m ² /s)	TD-measLP (m ² /s)	TD-measLU (m ² /s)	ECw0 (S/m)	Tew0 (°C)	ECw1 (S/m)	Tew1 (°C)	Comments
KFM07A	232.12	237.12	5	–	1.37	–	–5.56	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.35	1.54	8.55	
KFM07A	227.11	232.11	5	–	1.32	–	–5.60	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.30	1.53	8.55	
KFM07A	222.11	227.11	5	–	1.29	–	–5.64	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.26	1.52	8.44	
KFM07A	217.11	222.11	5	–	1.25	–	–5.69	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.21	1.50	8.72	
KFM07A	212.11	217.11	5	–	1.17	–	–5.75	–	–	300	1.2E–09	1.2E–08	1.2E–05	1.43	8.16	1.50	8.72	
KFM07A	207.11	212.11	5	–	1.13	–	–5.79	–	–	100	1.2E–09	4.0E–09	1.2E–05	1.43	8.12	1.49	8.55	
KFM07A	202.11	207.11	5	–	1.09	–	–5.83	–	–	100	1.2E–09	4.0E–09	1.2E–05	1.43	8.07	1.49	8.38	
KFM07A	197.11	202.11	5	–	1.06	–	–5.87	–	–	100	1.2E–09	4.0E–09	1.2E–05	1.43	8.03	1.49	8.21	
KFM07A	192.11	197.11	5	–	1.01	–	–5.92	–	–	50	1.2E–09	2.0E–09	1.2E–05	1.42	8.00	1.49	8.18	
KFM07A	187.11	192.11	5	–	0.98	–	–5.96	–	–	50	1.2E–09	2.0E–09	1.2E–05	1.42	7.98	1.49	8.14	
KFM07A	182.11	187.11	5	–	0.95	–	–5.99	–	–	50	1.2E–09	2.0E–09	1.2E–05	1.43	7.99	1.49	8.11	
KFM07A	177.11	182.11	5	1.57E–06	0.90	2.00E–05	–0.22	1.6E–05	1.0	30	7.4E–09	7.4E–09	7.2E–05	1.06	7.96	1.48	8.11	*
KFM07A	172.11	177.11	5	–	0.87	–	–6.10	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.40	7.91	1.46	8.35	
KFM07A	167.11	172.11	5	–	0.83	–	–6.11	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.39	7.82	1.45	8.07	
KFM07A	162.11	167.11	5	–	0.79	–	–6.15	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.39	7.76	1.47	8.20	
KFM07A	157.09	162.09	5	–	0.77	–	–6.17	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.39	7.68	1.47	8.11	
KFM07A	152.08	157.08	5	–	0.71	–	–6.25	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.38	7.63	1.47	8.10	
KFM07A	147.07	152.07	5	–	0.68	–	–6.27	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.39	7.58	1.45	8.13	
KFM07A	142.06	147.06	5	–2.08E–07	0.63	2.19E–05	–6.31	3.2E–06	0.6	30	1.2E–09	1.2E–09	1.2E–05	1.38	7.54	1.19	8.02	
KFM07A	137.05	142.05	5	–	0.60	1.53E–07	–6.34	2.2E–08	–	30	1.2E–09	1.2E–09	1.2E–05	1.38	7.49	1.40	8.13	
KFM07A	132.04	137.04	5	–5.78E–07	0.56	2.14E–05	–0.55	2.0E–05	0.5	30	7.4E–09	7.4E–09	7.5E–05	1.38	7.46	1.20	7.76	*
KFM07A	127.03	132.03	5	–	0.55	3.94E–08	–6.38	5.6E–09	–	30	1.2E–09	1.2E–09	1.2E–05	1.38	7.38	1.36	7.85	
KFM07A	122.02	127.02	5	–	0.51	3.11E–06	–6.43	4.4E–07	–	30	1.2E–09	1.2E–09	1.2E–05	1.36	7.32	1.03	7.66	
KFM07A	117.01	122.01	5	4.92E–07	0.49	8.61E–05	–1.39	4.5E–05	0.5	30	4.4E–09	4.4E–09	4.4E–05	1.15	7.23	0.86	7.47	*
KFM07A	112.00	117.00	5	5.94E–07	0.43	2.42E–05	–0.71	2.1E–05	0.5	30	7.2E–09	7.2E–09	7.2E–05	0.98	7.17	0.73	7.38	*
KFM07A	107.00	112.00	5	4.78E–08	0.42	2.06E–06	–0.72	1.7E–06	0.5	30	7.2E–09	7.2E–09	7.2E–05	1.03	7.16	0.89	7.47	*
KFM07A	101.99	106.99	5	–	0.43	–	–6.67	–	–	30	1.2E–09	1.2E–09	1.2E–05	1.02	7.13	0.90	7.44	
KFM07A	96.99	101.99	5	–	0.42	–	–6.69	–	–	30	1.2E–09	1.2E–09	1.2E–05	0.93	7.14	0.9	7.47	

* Values from the measurement with smaller pumping (original pumped flow over measurement limit).

Transmissivity and head of 5 m sections

Forsmark, borehole KFM07A
Transmissivity and head of 5 m sections



Appendix 7

Table of transmissivity and head of detected fractures

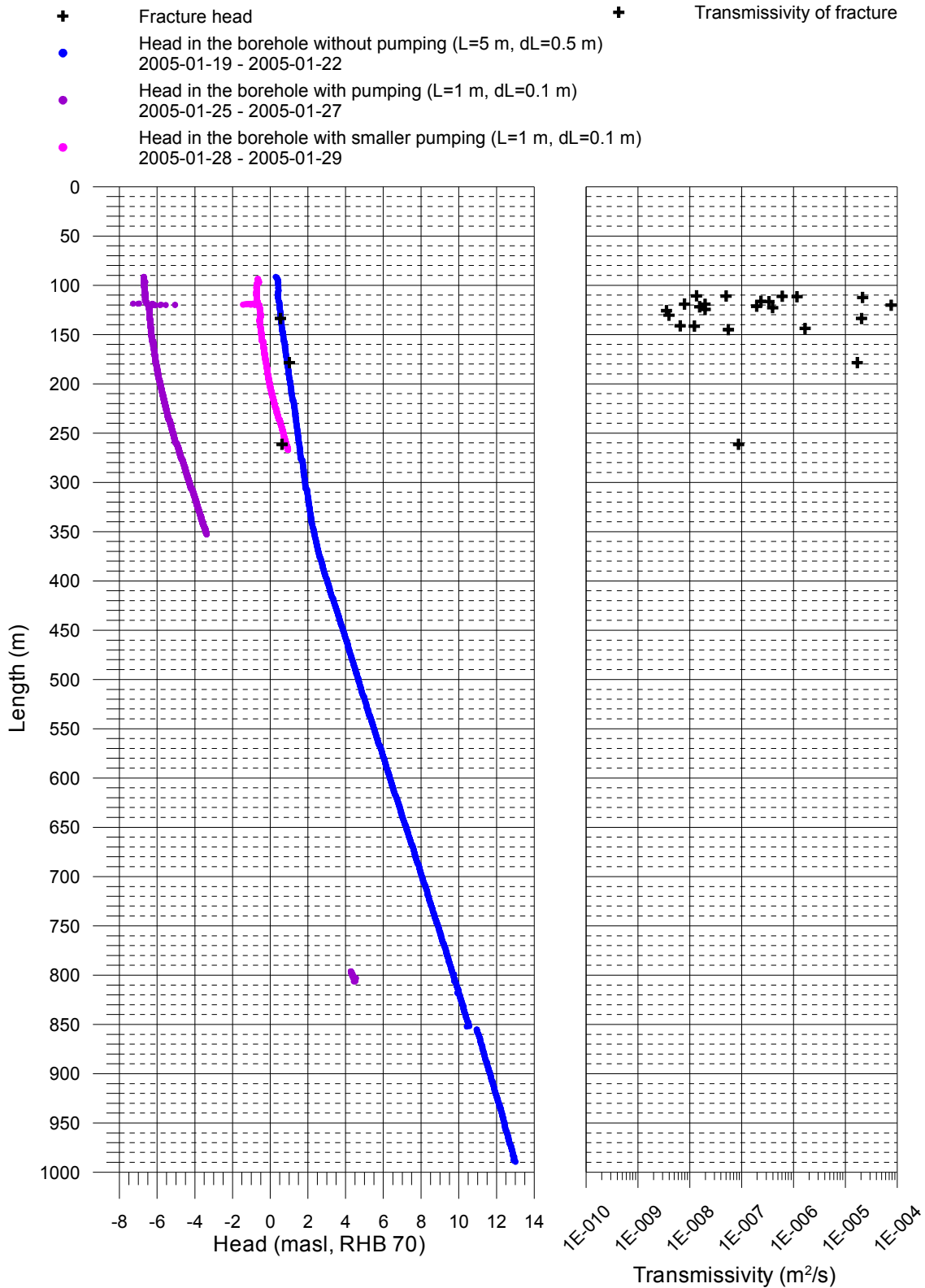
Borehole ID	Length to flow anom. L (m)	Lw (m)	dL (m)	Q0 (m ³ /s)	dh0 (m)	Q1 (m ³ /s)	dh1 (m)	TD (m ² /s)	hi (m)	Comments
KFM07A	110.8	1	0.1	–	0.42	1.56E–08	–0.72	1.4E–08	–	*, **
KFM07A	111.0	1	0.1	–	0.42	5.83E–08	–0.73	5.0E–08	–	**
KFM07A	111.3	1	0.1	–	0.42	6.94E–07	–0.71	6.1E–07	–	**
KFM07A	111.6	1	0.1	–	0.42	1.33E–06	–0.71	1.2E–06	–	**
KFM07A	112.4	1	0.1	–	0.42	2.47E–05	–0.71	2.2E–05	–	**
KFM07A	116.3	1	0.1	–	0.43	2.72E–07	–0.71	2.4E–07	–	*, **
KFM07A	116.6	1	0.1	–	0.44	3.89E–07	–0.70	3.4E–07	–	**
KFM07A	119.1	1	0.1	–	0.49	1.36E–08	–1.21	7.9E–09	–	*, **
KFM07A	119.3	1	0.1	–	0.49	3.61E–08	–1.32	2.0E–08	–	**
KFM07A	120.2	1	0.1	–	0.48	8.61E–05	–0.63	7.7E–05	–	**
KFM07A	121.3	1	0.1	–	0.50	2.11E–07	–0.57	2.0E–07	–	**
KFM07A	121.8	1	0.1	–	0.49	1.67E–08	–0.57	1.6E–08	–	*, **
KFM07A	122.8	1	0.1	–	0.50	2.78E–06	–6.43	4.0E–07	–	
KFM07A	124.5	1	0.1	–	0.51	1.39E–07	–6.43	2.0E–08	–	
KFM07A	125.8	1	0.1	–	0.52	2.50E–08	–6.43	3.6E–09	–	
KFM07A	130.4	1	0.1	–	0.55	2.78E–08	–6.38	4.0E–09	–	
KFM07A	133.7	1	0.1	–5.83E–07	0.57	2.28E–05	–0.55	2.1E–05	0.5	**
KFM07A	141.2	1	0.1	–	0.60	4.58E–08	–6.32	6.6E–09	–	*
KFM07A	141.5	1	0.1	–	0.61	8.61E–08	–6.32	1.2E–08	–	
KFM07A	143.8	1	0.1	–	0.61	1.17E–05	–6.31	1.7E–06	–	
KFM07A	145.1	1	0.1	–	0.62	3.89E–07	–6.31	5.6E–08	–	
KFM07A	178.5	1	0.1	2.00E–06	0.90	2.14E–05	–0.23	1.7E–05	1.0	**
KFM07A	261.4	1	0.1	–8.06E–08	1.54	5.28E–07	–5.37	8.7E–08	0.6	
KFM07A	916.3	1	0.1	–	11.88	–	–	–	–	*
KFM07A	917.2	1	0.1	–	11.90	–	–	–	–	*
KFM07A	970.0	1	0.1	–3.61E–07	12.68	–	–	–	–	

* Uncertain = The flow rate is less than 30 mL/h or the flow anomalies are overlapping or they are unclear because of noise.

** Values from the measurement with smaller pumping (original pumped flow over measurement limit or anomaly unclear because of noise).

Transmissivity and head of detected fractures

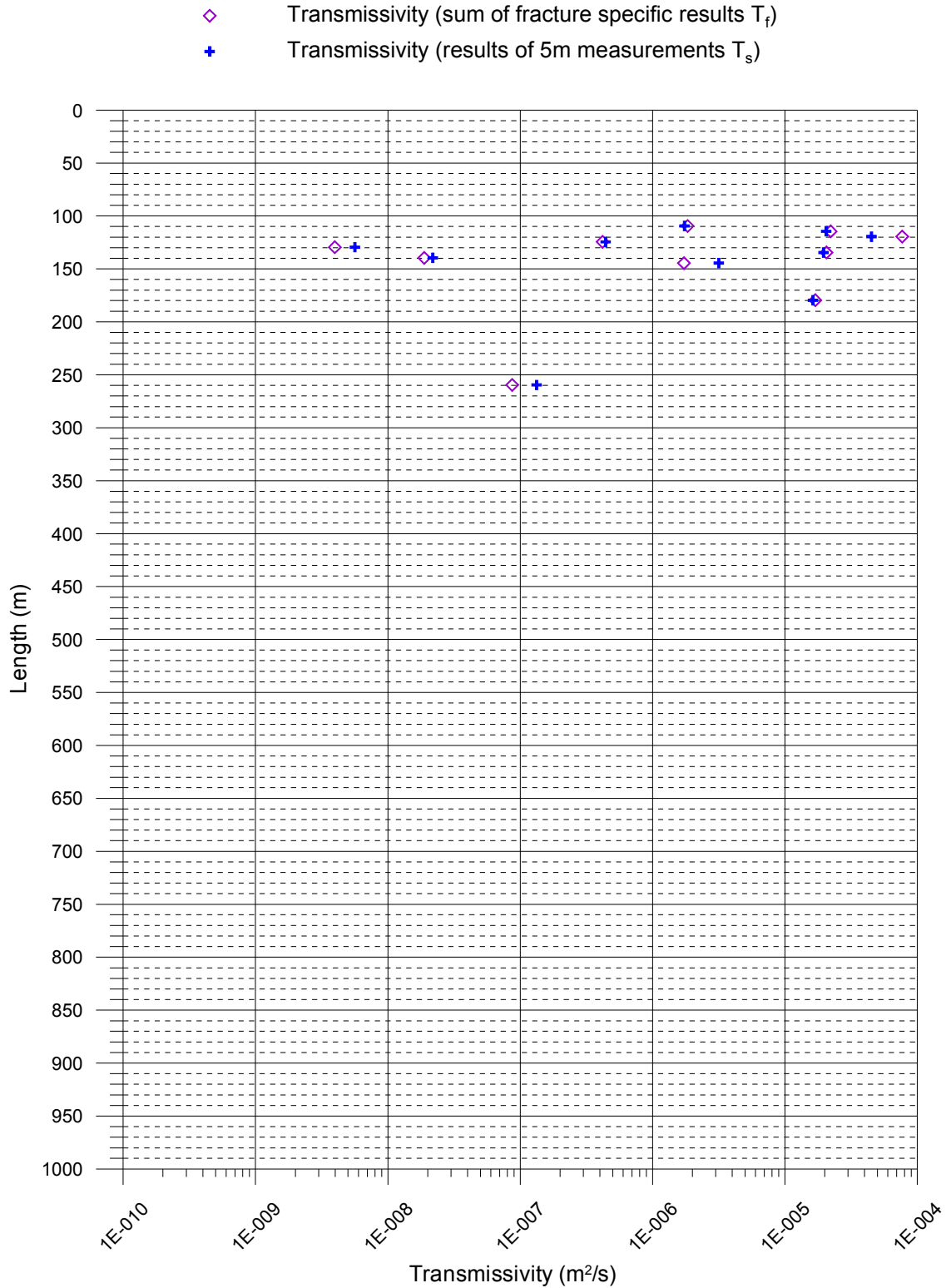
Forsmark, borehole KFM07A
 Transmissivity and head of detected fractures



Comparison between section transmissivity and fracture transmissivity

Forsmark, borehole KFM07A

Comparison between section transmissivity and fracture transmissivity



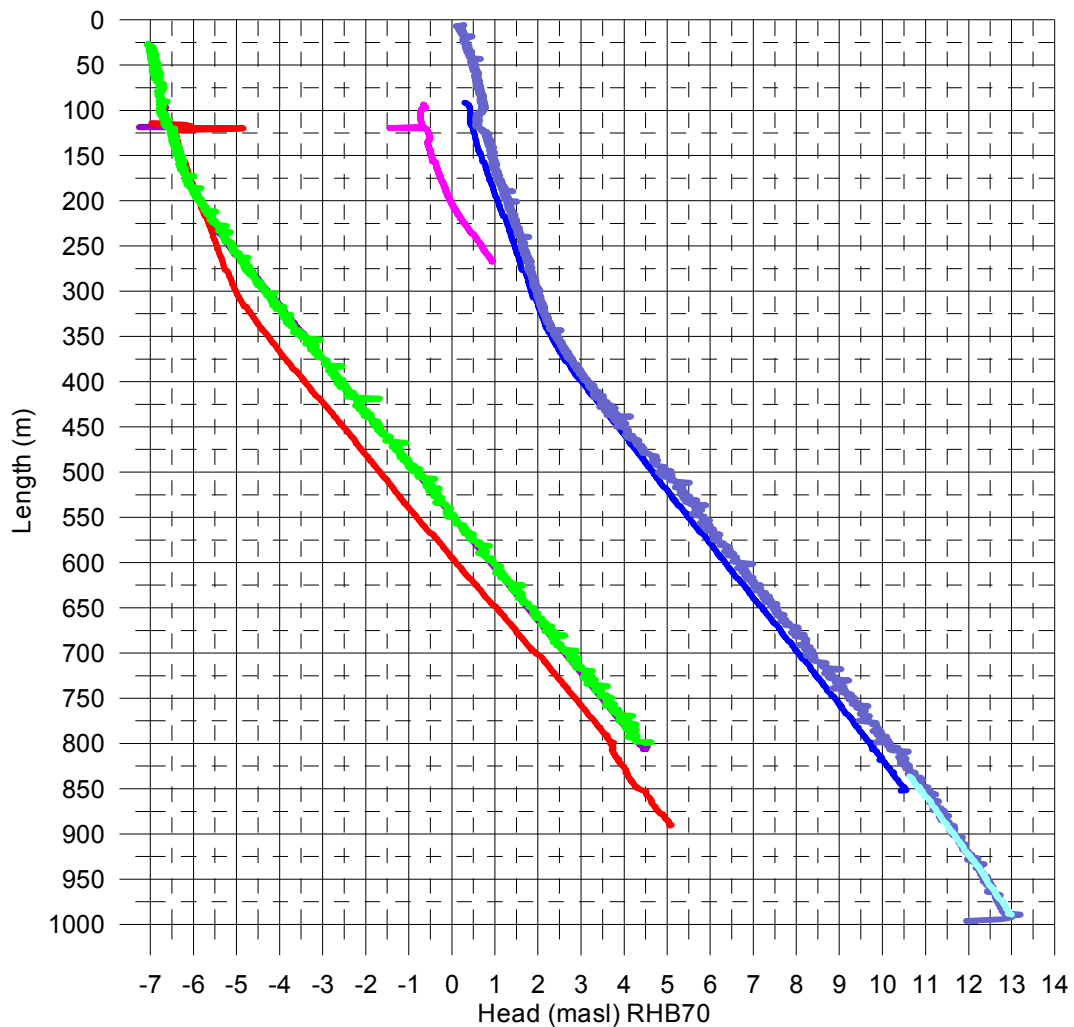
Head in the borehole during flow logging

Forsmark, borehole KFM07A

Head in the borehole during flow logging

Head(masl)= (Absolute pressure (Pa) - Airpressure (Pa) + Offset) / (1000 kg/m³ * 9.80665 m/s²) + Elevation (m)
 Offset = 2460 Pa (sensor 05) and 12600 Pa (sensor 02) (Correction for absolut pressure sensor)

- Without pumping (downwards during borehole-EC), 2005-01-19
- Without pumping, REP1 (upwards during flow logging, L=5 m, dL=0.5 m), 2005-01-19 - 2005-01-20
- Without pumping, REP2 (downwards during flow logging, L=5 m, dL=0.5 m), 2005-01-21 - 2005-01-22
- With pumping (downwards during flow logging, L=5 m, dL=0.5 m), 2005-01-23 - 2005-01-24
- With pumping (downwards during flow logging / fracture-EC, L=1 m, dL=0.1 m), 2005-01-25 - 2005-01-27
- With pumping (downwards during borehole-EC), 2005-01-27
- With smaller pumping (during extra flow logging, L=1 m, dL=0.1 m), 2005-01-28 - 2005-01-29



Groundwater recovery after pumping

Forsmark, borehole KFM07A
 Groundwater recovery after pumping

Head(masl)= (Absolute pressure (Pa) - Airpressure (Pa) + Offset) / (1000 kg/m³ * 9.80665 m/s²) + Elevation (m)
 Offset = 2460 Pa (sensor 05) and 12600 Pa (sensor 02) (Correction for absolut pressure sensor)

- Measured at the length of 11.81 m using water level pressure sensor
- Corrected pressure measured at the length of 786.35 m using absolute pressure sensor

