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Oskarshamn site investigation

Hydraulic injection tests in borehole KLX18A

Subarea Laxemar

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October 2006

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Keywords: Site/project, Hydrogeology, Hydraulic tests, Injection test, Hydraulic parameters, Transmissivity, Constant head.

This report concerns a study which was conducted for SKB. The conclusions and viewpoints presented in the report are those of the authors and do not necessarily coincide with those of the client.

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Abstract

Hydraulic injection tests have been performed in Borehole KLX18A at the Laxemar area, Oskarshamn. The tests are part of the general program for site investigations and specifically for the Laxemar sub-area. The hydraulic testing programme has the aim to characterise the rock with respect to its hydraulic properties of the fractured zones and rock mass between them. Data is subsequently delivered for the site descriptive model.

This report describes the results and primary data evaluation of the hydraulic injection tests in borehole KLX18A performed between 13th of August and 26th of August 2006.

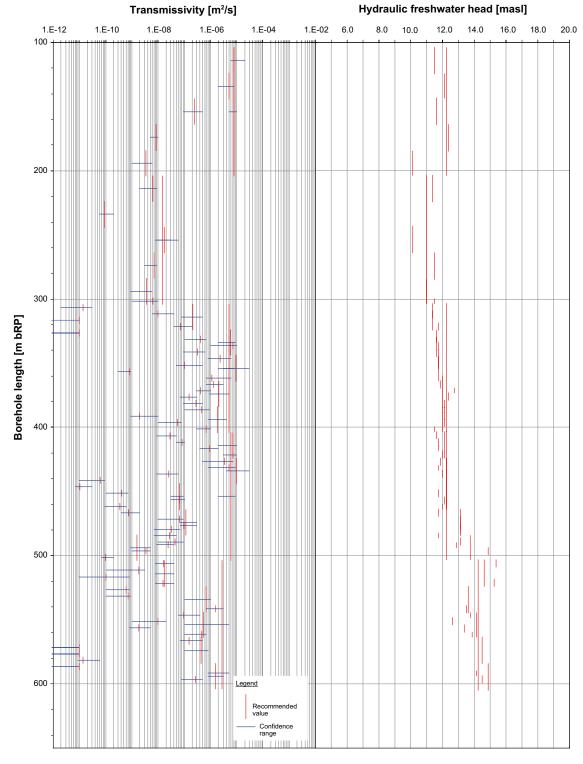
The objective of the hydrotests was to describe the rock around the borehole with respect of hydraulic parameters, mainly transmissivity (T) and hydraulic conductivity (K) at different measurement scales of 100 m, 20 m and 5 m sections. Transient evaluation during flow and recovery period provided additional information such as flow regimes, hydraulic boundaries and cross-over flows. Constant pressure injection tests were conducted between 104.00–604.00 m below ToC. The results of the test interpretation are presented as transmissivity, hydraulic conductivity and hydraulic freshwater head.

Sammanfattning

Injektionstester har utförts i borrhål KLX18A i delområde Laxemar, Oskarshamn. Testerna är en del av SKB:s platsundersökningar. Hydraultestprogrammet där injektionstesterna ingår har som mål att karakterisera berget med avseende på dess hydrauliska egenskaper av sprickzoner och mellanliggande bergmassa. Data från testerna används vid den platsbeskrivande modelleringen av området.

Denna rapport redovisar resultaten och utvärderingar av primärdata de hydrauliska injektionstesterna i borrhål KLX18A. Testerna utfördes mellan den 13 augusti till den 26 augusti 2006.

Syftet med hydraultesterna var framförallt att beskriva bergets hydrauliska egenskaper runt borrhålet med avseende på hydrauliska parametrar, i huvudsak transmissvitet (T) och hydraulisk konduktivitet (K) vid olika mätskalor av 100 m, 20 m och 5 m sektioner. Transient utvärdering under injektions- och återhämntningsfasen gav ytterligare information avseende flödesgeometri, hydrauliska gränser och sprickläckage. Injektionstester utfördes mellan 104,00–604,00 m borrhålslängd. Resultaten av testutvärderingen presenteras som transmissivitet, hydraulisk konduktivitet och grundvattennivå uttryckt i ekvivalent sötvattenpelare (freshwater head).



Borehole KLX18A – Summary of results.

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1 Introduction

A general program for site investigations presenting survey methods has been prepared /SKB 2001/, as well as a site-specific program for the investigations in the Simpevarp area /SKB 2006/. The hydraulic injection tests form part of the site characterization program under item 1.1.5.8 in the work breakdown structure of the execution programme /SKB 2002/.

Measurements were carried out in borehole KLX18A during 13th of August and 26th of August 2006 following the methodology described in SKB MD 323.001 and in the activity plan AP PS 400-06-93 (SKB internal controlling documents). Data and results were delivered to the SKB site characterization database SICADA and are traceable by the activity plan number.

The hydraulic testing programme has the aim to characterise the rock with respect to its hydraulic properties of the fractured zones and rock mass between them. This report describes the results and primary data evaluation of the hydraulic injection tests in borehole KLX18A. The commission was conducted by Golder Associates AB and Golder Associates GmbH.

Borehole KLX18A is situated in the Laxemar area approximately 2 km west of the nuclear power plant of Simpevarp, Figure 1-1. The borehole was drilled from February 2006 to May 2006 at 611.28 m length with an inner diameter of 76 mm and an inclination of –82.04°. The upper 11.83 m is cased with large diameter telescopic casing ranging from diameter (outer diameter) 208–323 mm.

The work was carried out in accordance with activity plan AP PS 400-06-93. In Table 1-1 controlling documents for performing this activity are listed. Both activity plan and method descriptions are SKB's internal controlling documents. Measurements were conducted utilising SKB's custom made testing equipment PSS.

Table 1-1. SKB internal controlling documents for the performance of the activity.

Activity plan	Number	Version
Hydraulic injection tests in borehole KLX18A	AP PS 400-06-93	1.0
Method descriptions	Number	Version
Hydraulic injection tests	SKB MD 323.001	1.0
Instruktion för rengöring av borrhålsutrustning och viss mark- baserad utrustning	SKB MD 600.004	1.0
Instruktion för längdkalibrering vid undersökningar i kärnborrhål	SKB MD 620.010	1.0
Allmänna ordning-, skydds- och miljöregler för plats- undersökningar Oskarshamn	SKB SDPO-003	1.0
Miljökontrollprogram Platsundersökningar	SKB SDP-301	1.0
Hantering av primärdata vid platsundersökningar	SKB SDP-508	1.0
Mätssystembeskrivning PSS	SKB MD 345.101-123	1.0

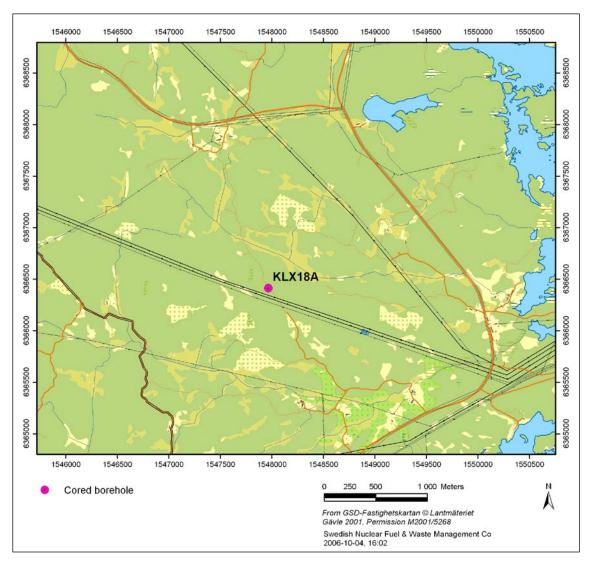


Figure 1-1. The investigation area Laxemar, Oskarshamn with location of borehole KLX18A.

2 Objective

The objective of the hydrotests in borehole KLX18A is to describe the rock around the borehole with respect to hydraulic parameters, mainly transmissivity (T) and hydraulic conductivity (K). This is done at different measurement scales of 100 m, 20 m and 5 m sections. Among these parameters transient evaluation during the flow and recovery period provides additional information such as flow regimes, hydraulic boundaries and cross-over flows.

3 Scope of work

The scope of work consisted of preparation of the PSS tool which included cleaning of the down-hole tools, calibration and functional checks, injection tests of 100 m, 20 m and 5 m test sections, analyses and reporting.

Preparation for testing was done according to the Quality plan. This step mainly consists of functions checks of the equipment to be used, the PSS tool. Calibration checks and function checks were documented in the daily log and/or relevant documents.

The following hydraulic injection tests were performed between 15th August and 26th August 2006.

3.1 Borehole

The borehole is telescope drilled with specifications on its construction according to Table 3-2. The reference point of the borehole is the centre of top of casing (ToC), given as elevation in table below. The Swedish National coordinate system (RT90) is used in the x-y direction and RHB70 in the z-direction. Northing and Easting refer to the top of the boreholes at the ground surface. The borehole diameter in Table 3-2 refers to the final diameter of the drill bit after drilling to full depth.

3.2 Injection tests

Injection tests were conducted according to the Activity Plan AP PS 400-06-093 and the method description for hydraulic injection tests, SKB MD 323.001 (SKB internal documents). Tests were done in 100 m test sections between 104.00–604.00 m below ToC, in 20 m test sections between 104.00–604.00 m below ToC and in 5 m test sections between 299.00–599.00 m below ToC (see Table 3-3). The initial criteria for performing injection tests in 20 m and 5 m test sections was a measurable flow of Q > 0.001 L/min in the previous measured 100 m tests covering the smaller test sections (see Figure 3-1). The measurements were performed with SKB's custom made equipment for hydraulic testing called PSS.

No other additional measurements except the actual hydraulic tests and related measurements of packer position and water level in annulus of borehole KLX18A were conducted.

Table 3-1. Performed injection tests at borehole KLX18A.

No. of injection tests	Interval	Positions	Time/test	Total test time
5	100 m	104.00–604.00 m	125 min	10.4 hrs
25	20 m	104.00-604.00 m	90 min	37.5 hrs
61	5 m	299.00-599.00 m	90 min	91.5
Total:				139.4 hrs

Table 3-2. Information about KLX18A (from SICADA 2006-07-13).

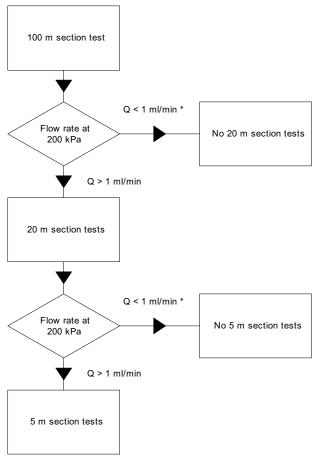
Title	Value				
Borehole length (m): Reference level:	611.280 TOC				
Drilling period(s):	From date 2006-02-15 2006-03-29	To date 2006-02-21 2006-05-02	Secup (m) 0.300 99.930	Seclow (m) 99.930 611.280	Drilling type Percussion drilling Core drilling
Starting point coordinate: (centerpoint of TOC)	Length (m) 0.000 3.000	Northing (m) 6366413.390 6366413.400	Easting (m) 1547966.345 1547965.930	Elevation (masl) 21.010 18.038	Coord system RT90-RHB70 RT90-RHB70
Angles:	Length (m) 0.000	Bearing 271.402	Inclination (– = –82.040	down)	RT90-RHB70
Borehole diameter:	Secup (m) 0.300 9.300 11.830 99.830 99.930 101.350	Seclow (m) 9.300 11.830 99.830 99.930 101.350 611.280	Hole diam (m) 0.340 0.254 0.198 0.163 0.086 0.076		
Core diameter:	Secup (m) 99.930 100.800	Seclow (m) 100.800 611.280	Core diam (m) 0.072 0.050		
Casing diameter:	Secup (m) 0.000 0.000	Seclow (m) 11.800 8.900	Case in (m) 0.200 0.310	Case out (m) 0.208 0.323	
Cone dimensions:	Secup (m) 96.530	Seclow (m) 101.350	Cone in (m)	Cone out (m)	
Grove milling:	Length (m) 110.000 150.000 200.000 250.000 300.000 400.000 450.000 500.000 602.000	Trace detectable YES	ole		

Table 3-3. Tests performed.

Bh ID	Test section (m bToC)	Test type ¹	Test no	Test start Date, time	Test stop Date, time
KLX18A	104.00–204.00	3	1	060815 10:44	060815 12:10
KLX18A	204.00-304.00	3	1	060815 14:05	060815 16:10
KLX18A	304.00-404.00	3	1	060815 17:25	060815 19:19
KLX18A	404.00-504.00	3	1	060815 21:08	060815 23:01
KLX18A	504.00-604.00	3	1	060816 07:34	060816 09:40
KLX18A	104.00-124.00	3	1	060816 19:58	060816 21:22
KLX18A	124.00-144.00	3	1	060816 22:02	060816 23:27
KLX18A	144.00-164.00	3	1	060816 23:59	060817 01:27
KLX18A	164.00-184.00	3	1	060817 06:38	060817 08:23
KLX18A	184.00-204.00	3	1	060817 09:06	060817 10:48
KLX18A	204.00-224.00	3	1	060817 11:27	060817 13:32
KLX18A	224.00-244.00	4B	1	060817 14:08	060817 16:08
KLX18A	244.00–264.00	3	1	060817 16:43	060817 18:16
KLX18A	264.00-284.00	3	1	060817 18:46	060817 20:28
KLX18A	284.00-304.00	3	1	060817 21:22	060817 23:01
KLX18A	304.00-324.00	3	1	060817 23:30	060818 00:54
KLX18A	324.00-344.00	3	1	060818 01:24	060818 02:47
KLX18A	344.00–364.00	3	1	060818 06:29	060818 08:03
KLX18A	364.00–384.00	3	1	060818 08:34	060818 10:01
KLX18A	384.00–404.00	3	1	060818 10:38	060818 12:07
KLX18A	404.00–424.00	3	1	060818 13:16	060818 14:45
KLX18A	424.00–444.00	3	1	060818 15:16	060818 16:46
KLX18A	444.00–464.00	3	1	060818 17:20	060818 18:44
KLX18A	464.00–484.00	3	1	060818 19:19	060818 20:35
KLX18A	484.00–504.00	3	1	060818 21:19	060818 21:55
KLX18A	484.00–504.00	3	2	060818 22:51	060819 00:27
KLX18A	484.00–504.00	3	3	060819 00:45	060819 04:09
KLX18A	504.00-524.00	3	1	060819 06:24	060819 08:12
KLX18A	524.00-544.00	3	1	060819 08:45	060819 10:16
KLX18A	544.00-564.00	3	1	060819 10:56	060819 12:36
KLX18A	564.00-584.00		1	060819 13:29	060819 12:56
KLX18A		3			
	584.00-604.00	3	1	060819 15:30	060819 16:51
KLX18A	299.00–304.00	3	1	060820 08:53	060820 10:28
KLX18A	304.00–309.00	4B	1	060820 10:58	060820 12:56
KLX18A	309.00–314.00	3	1	060820 13:33	060820 15:04
KLX18A	314.00–319.00	4B	1	060820 15:29	060820 16:27
KLX18A	319.00–324.00	3	1	060820 16:52	060820 18:12
KLX18A	324.00–329.00	4B	1	060820 18:35	060820 19:31
KLX18A	329.00–334.00	3	1	060820 19:53	060820 21:14
KLX18A	334.00–339.00	3	1	060820 21:58	060820 23:46
KLX18A	339.00–344.00	3	1	060821 00:08	060821 01:31
KLX18A	344.00–349.00	3	1	060821 01:55	060821 03:24
KLX18A	349.00–354.00	3	1	060821 06:23	060821 08:08
KLX18A	354.00–359.00	4B	1	060821 08:44	060821 10:08
KLX18A	359.00–364.00	3	1	060821 10:37	060821 12:02
KLX18A	364.00-369.00	3	1	060821 13:02	060821 14:22
KLX18A	369.00-374.00	3	1	060821 15:02	060821 16:20

Bh ID	Test section (m bToC)	Test type¹	Test no	Test start Date, time	Test stop Date, time
KLX18A	374.00–379.00	3	1	060821 16:42	060821 18:05
KLX18A	379.00–384.00	3	1	060821 18:28	060821 19:48
KLX18A	384.00-389.00	3	1	060821 20:20	060821 21:41
KLX18A	389.00-394.00	3	1	060821 22:03	060821 23:33
KLX18A	394.00-399.00	3	1	060821 23:59	060822 01:29
KLX18A	399.00-404.00	3	1	060822 06:19	060822 07:37
KLX18A	404.00-409.00	3	1	060822 08:10	060822 09:32
KLX18A	409.00-414.00	3	1	060822 10:09	060822 11:36
KLX18A	414.00-419.00	3	1	060822 12:56	060822 14:04
KLX18A	414.00-419.00	3	2	060822 14:07	060822 15:25
KLX18A	419.00-424.00	3	1	060822 15:59	060822 17:19
KLX18A	424.00-429.00	3	1	060822 17:42	060822 19:08
KLX18A	429.00-434.00	3	1	060822 19:32	060822 20:54
KLX18A	434.00-439.00	3	1	060822 21:24	060822 22:46
KLX18A	439.00-444.00	4B	1	060822 23:10	060823 00:35
KLX18A	444.00-449.00	4B	1	060823 01:02	060823 03:40
KLX18A	449.00-454.00	3	1	060823 06:23	060823 08:04
KLX18A	454.00-459.00	3	1	060823 08:37	060823 10:04
KLX18A	459.00-464.00	3	1	060823 10:41	060823 12:04
KLX18A	464.00-469.00	3	1	060823 13:31	060823 15:05
KLX18A	469.00-474.00	3	1	060823 16:36	060823 17:54
KLX18A	474.00-479.00	3	1	060823 18:19	060823 19:37
KLX18A	477.00-482.00	3	1	060823 20:08	060823 21:32
KLX18A	482.00-487.00	3	1	060823 21:55	060823 23:32
KLX18A	487.00-492.00	3	1	060823 23:55	060823 01:21
KLX18A	389.00-494.00	3	1	060824 06:23	060824 07:59
KLX18A	494.00-499.00	3	1	060824 08:48	060824 10:28
KLX18A	499.00-504.00	4B	1	060824 11:04	060824 12:08
KLX18A	504.00-509.00	3	1	060824 14:09	060824 16:21
KLX18A	509.00-514.00	4B	1	060824 16:44	060824 17:40
KLX18A	514.00-519.00	3	1	060824 18:02	060824 18:57
KLX18A	519.00-524.00	3	1	060824 19:21	060824 20:43
KLX18A	524.00-529.00	4B	1	060824 21:09	060824 22:14
KLX18A	529.00-534.00	4B	1	060824 22:37	060824 23:43
KLX18A	534.00-539.00	3	1	060825 00:07	060825 01:32
KLX18A	539.00-544.00	3	1	060825 06:09	060825 07:44
KLX18A	544.00-549.00	3	1	060825 08:29	060825 09:59
KLX18A	549.00-554.00	3	1	060825 10:32	060825 12:27
KLX18A	554.00-559.00	3	1	060825 13:24	060825 15:03
KLX18A	559.00-564.00	3	1	060825 15:36	060825 16:54
KLX18A	564.00-569.00	3	1	060825 17:19	060825 18:40
KLX18A	569.00-574.00	4B	1	060825 19:04	060825 21:13
KLX18A	574.00-579.00	3	1	060825 21:36	060825 22:15
KLX18A	579.00-584.00	4B	1	060825 22:38	060825 23:58
KLX18A	584.00-589.00	3	1	060826 00:20	060826 01:08
KLX18A	589.00-594.00	3	1	060826 06:16	060826 07:46
KLX18A	594.00-599.00	3	1	060826 08:29	060826 09:53

¹⁾ 3: Injection test; 4B Pulse injection test.



^{*} eventually tests performed after specific discussion with SKB

Figure 3-1. Flow chart for test sections.

3.3 Control of equipment

Control of equipment was mainly performed according to Golder's Quality plan. The basis for equipment handling is described in the "Mätssystembeskrivning" SKB MD 345.101–123 which is composed of two parts 1) management description, 2) drawings and technical documents of the modified PSS tool.

Function checks were performed before and during the tests. Among these pressure sensors were checked at ground level and while running in the hole calculated to the static head. Temperature was checked at ground level and while running in. Leakage checks at joints in the pipe string were done at least every 100 m of running in.

Any malfunction was recorded, and measures were taken accordingly for proper operation. Approval was made according to SKB site manager, or Quality plan and the "Mätssystembeskrivning".

4 Equipment

4.1 Description of equipment

The equipment called PSS (Pipe String System 2) is a highly integrated tool for testing boreholes at great depth (see conceptual drawing in the next figure). The system is built inside a container suitable for testing at any weather. Briefly, the components consists of a hydraulic rig, down-hole equipment including packers, pressure gauges, shut-in tool and level indicator, racks for pump, gauge carriers, breakpins, etc. shelfs and drawers for tools and spare parts.

There are three spools for a multi-signal cable, a test valve hose and a packer inflation hose. There is a water tank for injection purposes, pressure vessels for injection of packers, to open test valve and for low flow injection. The PSS has been upgraded with a computerized flow regulation system. The office part of the container consists of a computer, regulation valves for the nitrogen system, a 24 V back-up system in case of power shut-offs and a flow regulation board.

PSS is documented in photographs 1–6.

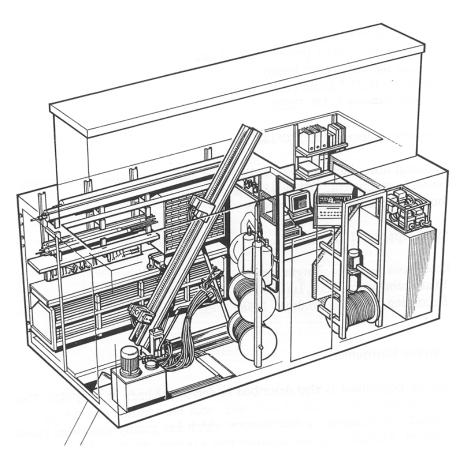


Figure 4-1. A view of the layout and equipment of PSS.



Photo 1. Hydraulic rig.



Photo 2. Rack for pump, down-hole equipment, workbench and drawers for tools.

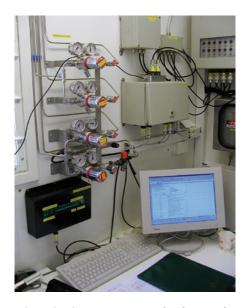


Photo 3. Computer room, displays and gas regulators.



Photo 4. Pressure vessels for test valve, packers and injection.



Photo 5. Positioner, bottom end of down-in-hole string.



Photo 6. Packer and gauge carrier.

The down-hole equipment consists from bottom to top of the following equipment:

- Level indicator SS 630 mm pipe with OD 73 mm with 3 plastic wheels connected to a Hallswitch.
- Gauge carrier SS 1.5 m carrying bottom section pressure transducer and connections from positioner.
- Lower packer SS and PUR 1,5 m with OD 72 mm, stiff ends, tightening length 1,0 m, maximum pressure 6.5 MPa, working pressure 1.6 MPa.
- Gauge carrier with breakpin SS 1.75 m carrying test section pressure transducer, temperature sensor and connections for sensors below. Breakpin with maximum load of 47.3 (± 1.0) kN. The gauge carrier is covered by split pipes and connected to a stone catcher on the top.
- Pop joint SS 1.0 or 0.5 m with OD 33 mm and ID 21 mm, double O-ring fittings, trapezoid thread, friction loss of 3kPa/m at 50 L/min.
- Pipe string SS 3.0 m with OD 33 mm and ID 21 mm, double O-ring fittings, trapezoid thread, friction loss of 3kPa/m at 50 L/min.
- Contact carrier SS 1,0 m carrying connections for sensors below and,
- Upper packer SS and PUR 1.5 m with OD 72 mm, fixed ends, seal length 1.0 m, maximum pressure 6.5 MPa, working pressure 1.6 MPa
- Breakpin SS 250 mm with OD 33.7 mm. Maximum load of 47.3 (\pm 1.0) kN.
- Gauge carrier SS 1.5 m carrying top section pressure transducer, connections from sensors below. Flow pipe is double bent at both ends to give room for sensor equipment. The pipe gauge carrier is covered by split pipes.
- Shut-in tool (test valve) SS 1.0 m with a OD of 48 mm, Teflon coated valve piston, friction loss of 11 kPa at 10 L/min (260 kPa-50 L/min). Working pressure 2.8–4.0 MPa. Breakpipe with maximum load of 47.3 (± 1.0) kN. The shut-in tool is covered by split pipes and connected to a stone catcher on the top.

The tool scheme is presented in Figure 4-2.

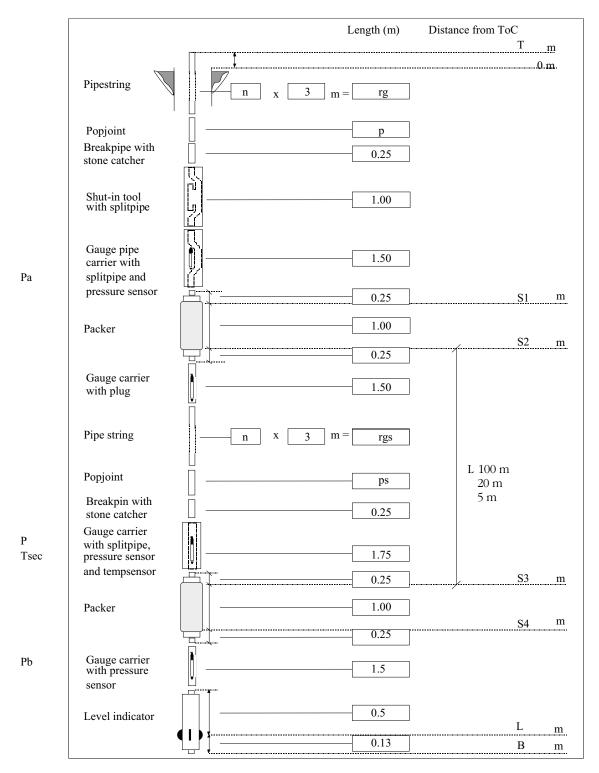


Figure 4-2. Schematic drawing of the down-hole equipment in the PSS system.

4.1 Sensors

Table 4-1. Technical specifications of sensors.

Keyword	Sensor	Name	Value/Range	Unit	Comments
P _{sec,a,b}	Pressure	Druck PTX 162-1464abs	9–30 4–20 0–13,5 ± 0,1	VDC mA MPa % of FS	
$T_{\text{sec,surf,air}}$	Temperature	BGI	18–24 4–20 0–32 ± 0,1	VDC A °C °C	
\mathbf{Q}_{big}	Flow	Micro motion Elite sensor	0–100 ± 0,1	kg/min %	Massflow
$\mathbf{Q}_{\text{small}}$	Flow	Micro motion Elite sensor	0–1,8 ± 0,1	kg/min %	Massflow
P _{air}	Pressure	Druck PTX 630	9–30 4–20 0–120 ± 0,1	VDC mA KPa % of FS	
p_{pack}	Pressure	Druck PTX 630	9–30 4–20 0–4 ± 0,1	VDC mA MPa % of FS	
$p_{\text{in,out}}$	Pressure	Druck PTX 1400	9–28 4–20 0–2,5 ± 0,15	VDC mA MPa % of FS	
L	Level Indicator				Length correction

Table 4-2. Sensor positions and wellbore storage (WBS) controlling factors.

Borehole ID	information Test section (m)	Volume in test section (m³)	Sensor Type	rs Position (m fr ToC)	Equipment Position	t affecting WBS Function	Coefficient Outer diameter (mm)
KLX18A	104.00-204.00	0.454	p_{a}	102.11	Test	Signal cable	9.1
			p T	203.37 203.20	section	Pump string	33
			p _b L	206.01 206.25		Packer line	6
KLX18A	104.00-124.00	0.091	p_{a}	102.11	Test	Signal cable	9.1
		p 123.37 section T 123.20		Pump string	33		
			p _b L	126.01 126.25		Packer line	6
KLX18A	299.00-304.00	0.023	p_{a}	297.11	Test	Signal cable	9.1
			p T	303.37 303.20	section	Pump string	33
			p _b	306.25 306.25		Packer line	6

4.4 Data acquisition system

The data acquisition system in the PSS container contains a stationary PC with the software Orchestrator, pump- and injection test parameters such as pressure, temperature and flow are monitored and sensor data collected. A second laptop PC is connected to the stationary PC through a network containing evaluation software, Flowdim. While testing, data from previously tested section is converted with IPPlot and entered in Flowdim for evaluation.

The data acquisition system starts and stops the test automatically or can be disengaged for manual operation of magnetic and regulation valves within the injection/pumping system. The flow regulation board is used for differential pressure and valve settings prior testing and for monitoring valves during actual test. An outline of the data acquisition system is outlined in Figure 4-3.

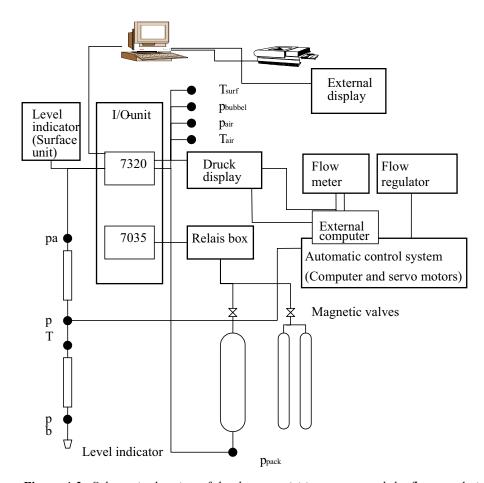


Figure 4-3. Schematic drawing of the data acquisition system and the flow regulation control system in PSS.

5 Execution

5.1 Preparations

Following preparation work and functional checks were conducted prior to starting test activities:

- Place pallets and container, lifting rig up, installing fence on top of container, lifting tent on container.
- Clean and desinfect of Multikabel and hoses for packer and test valve. Clean the tubings with hot steam.
- Filling injection tank with water out of the borehole HLX14.
- Filling buffer tank with water and tracer it with Uranin; take water sample.
- · Filling vessels.
- Filling the hoses for test valve and packer.
- Entering calibration constants to system and regulation unit.
- · Synchronize clocks on all computers.
- Function check of shut-in tool both ends, overpressure by 900 kPa for 5 min (OK).
- Check pressure gauges against atmospheric pressure and than on test depth against column of water.
- Translate all protocols into English (where necessary).
- Filling packers with water and de-air.
- Measure and assemble test tool.

5.2 Length correction

By running in with the test tool, a level indicator is incorporated at the bottom of the tool. The level indicator is able to record groves milled into the borehole wall. The depths of this groves are given by SKB in the activity plan (see Table 3-2) and the measured depth is counter checked against the number/length of the tubes build in. The achieved correction value, based on linear interpolation between the reference marks, is used to adjust the location of the packers for the testsections to avoid wrong placements and minimize elongation effects of the test string.

5.3 Execution of tests/measurements

5.3.1 Test principle

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a shut-in pressure recovery (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

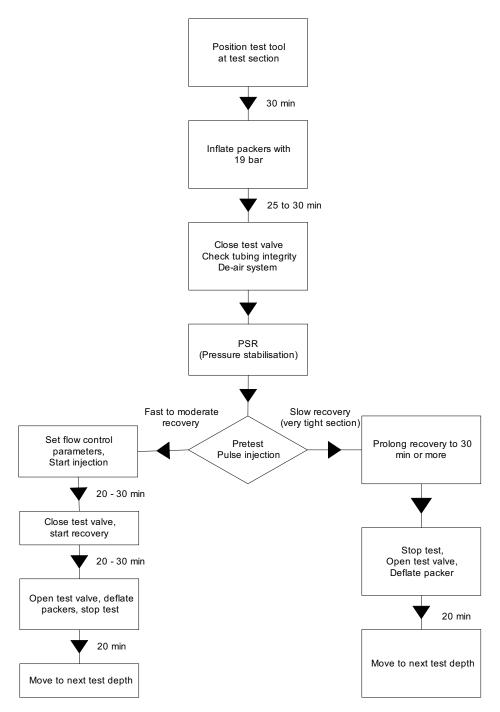


Figure 5-1. Flow chart for test performance.

5.3.2 Test procedure

A typical test cycle includes the following phases: 1) Transfer of down-hole equipment to the next section. 2) Packer inflation. 3) Pressure stabilisation. 4) Preliminary Pulse injection. 5) Constant head injection. 6) Pressure recovery. 7) Packer deflation.

The preliminary pulse injection (Step 4) derives the first estimations of the formation transmissivity. It is conducted by applying a pressure difference of approx. 200 kPa to the static formation pressure. If the pulse recovery indicates a very low transmissivity (flow probably below 1 ml/min) the pulse recovery is prolonged and no constant head injection test is performed. The

decision to continue the pulse or to conduct an injection tests is based on the pressure response of the pulse recovery. A pressure recovery less than 50% during the first ten minutes of the pulse indicates a low transmissivity. In such a case no injection test will be conducted.

The pressure static recovery (PSR) after packer inflation and before the pulse gives a direct measure of the magnitude of the packer compliance. A steep PSR indicates extremely low test section transmissivity. In such a case the packer compliance would influence the subsequent pulse test too much and introduce very large uncertainties. Therfore tests with this behaviour would be stopped after PSR phase.

If the preliminary pulse injection test indicates a formation transmissivity with a flow above 1 ml/min a constant head injection test (Step 5 and 6) is carried out. It is applied with a constant injection pressure of approx. 200 kPa (20 m water column) above the static formation pressure in the test section. Before start of the injection tests, approximately stable pressure conditions prevailed in the test section. After the injection period, the pressure recovery in the section is measured. In cases, where small flow rates were expected, the automatic regulation unit was switched off and the test was performed manually (determined by the preliminary pulse injection). In those cases, the constant difference pressure was usually unequal to 200 kPa.

In cases when the derived transmissivity of a test section influences the subsequent test program the constant head injection was conducted even if the preliminary pulse indicates a very tight section (e.g. flow below 1 ml/min). The injection phase is then performed to verify the results of the pulse.

The duration for each phase is presented in Table 5-1.

5.4 Data handling

The data handling followed several stages. The data acquisition software (Orchestrator) produced an ASCII raw data file (*.ht2) which contains the data in voltage and milliampere format plus calibration coefficients. The *.ht2 files were processed to *.dat files using the SKB program called IPPlot. These files contain the time, pressure, flow rate and temperature data.

Table 5-1. Durations for packer inflation, pressure stabilisation, injection and recovery phase and packer deflation.

Step	Phase	Time
1	Position test tool to new test section (correct position using the borehole markers)	Approx. 30 min.
2	Inflate packers with appr. 1,900 kPa	25 min.
3	Close test valve	10 min.
	Check tubing integrity with appr. 800 kPa	5 min.
	De-air system	2 min.
4	• Pretest, pulse injection (duration depends on the formation transmissivity)	
5*	Set automatic flow control parameters or setting for manual test	5 min.
	Start injection	20 to 45 min.
6*	Close test valve, start recovery	20 min. or more
	Open test valve	10 min.
7	Deflate packers	25 min.
	Move to next test depth	

^{*} Step 5 and 6 conducted if the preliminary pulse indicates a formation transmissivity with a sufficient flow.

The *.dat files were synthesised in Excel to a *.xls file for plotting purposes. Finally, the test data to be delivered to SKB were exported from Excel in *.csv format. These files were also used for the subsequent analysis (field and final) of the injection phase (CHi). The synthesised data of the recovery phase (CHir) was used for the field analysis and to receive preliminary results for concistency reviews.

5.5 Analyses and interpretation

5.5.1 Analysis software

The tests were analysed using a type curve matching method. The analysis was performed using Golder's test analysis program FlowDim. FlowDim is an interactive analysis environment allowing the user to interpret constant pressure, constant rate and slug/pulse tests in source as well as observation boreholes. The program allows the calculation of type-curves for homogeneous, dual porosity and composite flow models in variable flow geometries from linear to spherical.

5.5.2 Analysis approach

Constant pressure tests are analysed using a rate inverse approach. The method initially known as the Jacob-Lohman method was further improved for the use of type curve derivatives and for different flow models /Jacob and Lohman 1952/.

Constant pressure recovery tests are analysed using the method described by /Gringarten 1986/ and /Bourdet et al. 1989/ by using type curve derivatives calculated for different flow models.

5.5.3 Analysis methodology

Each of the relevant test phases is subsequently analyzed using the following steps:

Injection tests

- Identification of the flow model by evaluation of the derivative on the log-log diagnostic plot. Initial estimates of the model parameters are obtained by conventional straight-line analysis.
- Superposition type curve matching in log-log coordinates. A non-linear regression algorithm is used to provide optimized model parameters in the latter stages.
- Non-linear regression in semi-log coordinates (superposition HORNER plot; /Horner 1951/. In this stage of the analysis, the static formation pressure is selected for regression.

The test analysis methodology is best explained in /Horne 1990/.

Pre-test for the injection tests

The test cycle alway starts with a pulse injection phase with the aim of deriving a first estimation of the formation transmissivity. In cases when the pulse recovery is low (indicating low transmissivity) the pulse phase is extended and analysed as the main phase of the test.

The transmissivity derived from a pulse test is strongly influenced by the wellbore storage coefficient used as an input in the analysis. The wellbore storage coefficient is calculated as C = dV/dP where dV is the volume difference injected during the brief flow period of the pulse and dP is the initial pressure difference of the pulse. dV is directly measured either by using the flowmeter readings or water level measurements in the injection vessel.

It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity. Figure 5-2 below show an example of a typical pressure versus time evolution for such a tight section.

• Flow model identification and type curve analysis in the deconvolution Peres Plot /Peres et al. 1989, Chakrabarty and Enachescu 1997/. A non-linear regression algorithm is used to provide optimized model parameters in the later stages. An example of type curves is presented in Figure 5-3.

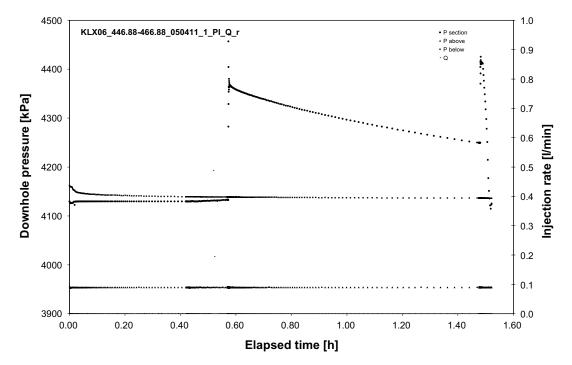


Figure 5-2. Typical pressure versus time plot of a Pulse injection test.

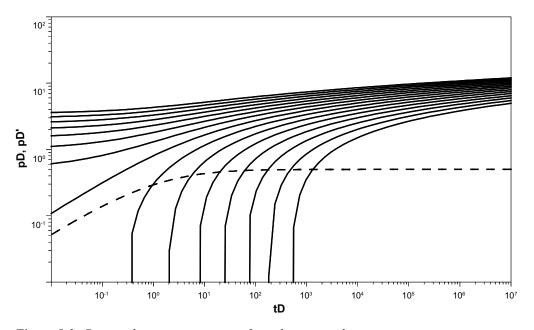


Figure 5-3. Deconvolution type curve set for pulse test analysis.

5.5.4 Correlation between storativity and skin factor

For the analysis of the conducted hydraulic tests below 100 m depth a storativity of $1 \cdot 10^{-6}$ is assumed (SKB MD 320.004e). Based on this assumption the skin will be calculated. In the following the correlation between storativity and skin for the relevant test phases will be explained in greater detail.

Injection phase (CHi)/Pulse tests (Pi)

Due to the fact that the early time data of the CHi and Pi phases, respectively, is not available or too noisy (attributed to the automatic regulation system) the storativity and the skin factor become correlated. Consequently they cannot be solved independently any more. In this case as a result of the analysis one determines the correlation group e^{2s}/S . This means that in such cases the skin factor can only be calculated when assuming the storativity as known.

Recovery phase (CHir)

The wellbore storage coefficient (C) is determined by matching the early time data with the corresponding type curve. The derived C-value is introduced in the equation of the type curve parameter:

$$(C_D e^{2s})_M = \frac{C \rho g}{2\pi r_w^2 S} e^{2s}$$

The equation above has two unknowns, the storativity (S) and the skin factor (s) which expresses the fact that for the case of constant rate and pressure recovery tests the storativity and the skin factor are 100% correlated. Therefore, the equation can only be either solved for skin by assuming that the storativity is known or solved for storativity by assuming the skin as known.

5.5.5 Determination of the ri-index and calculation of the radius of influence (ri)

The analysis provides also the radius of influence and the ri-index, which describes the late time behaviour of the derivative.

Ri-index

The determination of the ri-index is based on the shape of the derivative plotted in log-log coordinates and describes the behaviour of the derivative after the time t_2 , representing the end of the near wellbore response. The ri-index also describes the flow regime at the end of the test. Following ri-indices can be assigned:

- Ri-index = 0: The middle and late time derivative shows a horizontal stabilization. This pressure response indicates that the size of the hydraulic feature is greater than the radius of influence. The calculated radius of influence is based on the entire test time t_P.
- Ri-index = 1: The derivative shows an upward trend at late times, indicating a decrease of transmissivity or a barrier boundary at some distance from the borehole. The size of the hydraulic feature near the borehole is estimated as the radius of influence based on t₂.
- Ri-index = -1: The derivative shows a downward trend at late times, indicating an increase of transmissivity or a constant head boundary at some distance from the borehole. The size of the hydraulic feature near the borehole is estimated as the radius of influence based on t₂.

Figure 5-4 presents the relationship between the shape of derivative and the ri-index.

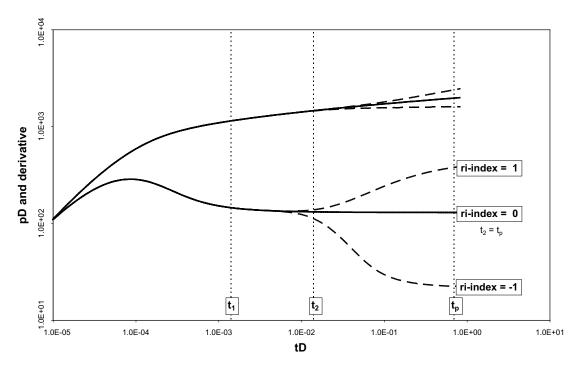


Figure 5-4. Schematic plot of the assignments for the ri-indices.

If no radial flow stabilization can be observed the ri-index is based on the flow regime at the end of the test: i.e. ri-index = 1 for tests with a derivative showing an upward trend at the end and a ri-index = -1 for tests with a derivative showing a downward trend. In such cases the calculated radius of influence is based on the entire test time t_p .

The assignment of the ri-index is based on /Rhen 2005/.

Calculation of the radius of influence

The radius of influence (ri) is calculated as follows:

$$ri = 1.89 * \sqrt{\frac{T_T}{S_T} * t_2}$$
 [m]

T_T recommended inner zone transmissivity [m²/s]

t₂ time when hydraulic formation properties changes (see previous chapter) [s]

 S_T for the calculation of the ri the storage coefficient (S) is estimated from the transmissivity /Rhén et al. 2006/:

$$S_T = 0.0007 * T_T^{0.5} [-]$$

5.5.6 Flow models used for analysis

The flow models used in analysis were derived from the shape of the pressure derivative calculated with respect to log time and plotted in log-log coordinates.

In several cases the pressure derivative suggests a change of transmissivity with the distance from the borehole. In such cases a composite flow model was used in the analysis.

If there were different flow models matching the data in comparable quality, the simplest model was preferred.

The flow dimension displayed by the test can be diagnosed from the slope of the pressure derivative. A slope of 0.5 indicates linear flow, a slope of 0 (horizontal derivative) indicates radial flow and a slope of -0.5 indicates spherical flow. The flow dimension diagnosis was commented for each of the tests. At tests where a flow regime could not clearly identified from the test data, we assume in general a radial flow regime as the most simple flow model available. The value of p* was then calculated according to this assumption.

In cases when the infinite acting radial flow (IARF) phase was not supported by the data the derivative was extrapolated using the most conservative assumption, which is that the derivative would stabilise short time after test end. In such cases the additional uncertainty was accounted for in the estimation of the transmissivity confidence ranges.

5.5.7 Calculation of the static formation pressure and equivalent freshwater head

The static formation pressure (p*) measured at transducer depth, was derived from the pressure recovery (CHir) following the constant pressure injection phase by using:

- 1 Straight line extrapolation in cases infinite acting radial flow (IARF) occurred,
- 2 type curve extrapolation in cases infinite acting radial flow (IARF) is unclear or was not reached.

The equivalent freshwater head (expressed in meters above sea level) was calculated from the extrapolated static formation pressure (p*), corrected for athmospheric pressure measured by the surface gauge and corrected for the vertical depth considering the inclination of the drillhole, by assuming a water density of 1,000 kg/m³ (freshwater). The equivalent freshwater head is the static water level an individual test interval would show if isolated and connected to the surface by tubing full of freshwater. Figure 5-5 shows the methodology schematically.

The freshwater head in meters above sea level is calculated as following:

$$head = \frac{(p * - p_{atm})}{\rho \cdot g}$$

which is the p* value expressed in a water column of freshwater.

With consideration of the elevation of the reference point (RP) and the gauge depth (Gd), the freshwater head h_{iwf} is:

$$h_{iwf} = RP_{elev} - Gd + \frac{(p*-p_{atm})}{\rho \cdot g}.$$

5.5.8 Derivation of the recommended transmissivity and the confidence range

In most of the cases more than one analysis was conducted on a specific test. Typically both test phases were analysed (CHi and CHir) and in some cases the CHi or the CHir phase was analysed using two different flow models. The parameter sets (i.e. transmissivities) derived from the individual analyses of a specific test usually differ. In the case when the differences are small (which is typically the case) the recommended transmissivity value is chosen from the test phase that shows the best data and derivative quality.

In cases when the difference in results of the individual analyses was large (more than half order of magnitude) the test phases were compared and the phase showing the best derivative quality was selected.

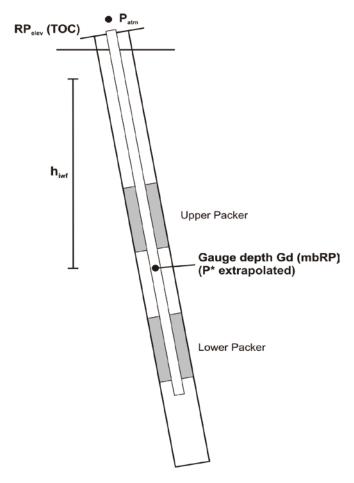


Figure 5-5. Schematic methodologies for calculation of the freshwater head.

The confidence range of the transmissivity was derived using expert judgement. Factors considered were the range of transmissivities derived from the individual analyses of the test as well as additional sources of uncertainty such as noise in the flow rate measurement, numeric effects in the calculation of the derivative or possible errors in the measurement of the wellbore storage coefficient. No statistical calculations were performed to derive the confidence range of transmissivity.

In cases when changing transmissivity with distance from the borehole (composite model) was diagnosted, the transmissivity of the zone, which was showing the better derivative quality was recommended.

In cases when the infinite acting radial flow (IARF) phase was not supported by the data the additional uncertainty was accounted for in the estimation of the transmissivity confidence ranges.

5.6 Nonconformities

No nonconformities have been observed or reported.

6 Results

In the following, results of all tests are presented and analysed. Chapter 6.1 presents the 100 m tests, 6.2 the 20 m tests and 6.3 the 5 m tests. The results are given as general comments to test pereformance, the identified flow regimes and calculated parameters and finally the parameters which are considered as most representative are chosen and justification is given. All results are also summarised in Table 7-1 and 7-2 of the Synthesis chapter.

6.1 100 m single-hole injection tests

In the following, the 100 m section tests conducted in borehole KLX18A are presented and analysed.

6.1.1 Section 104.00-204.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The relative fast recovery of the pulse test indicated a relative high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 16.4 L/min at start of the CHi phase to 8.5 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a horizontal derivative at early times followed by a downward trend at middle times and a new stabilization at late times. This behaviour is indicative for an increase in transmissivity at some distance from the borehole. The response of the CHir phase is consistent to the response of the CHi phase. A two shell composite radial flow model was used for the analyses of both phases. The analysis is presented in Appendix 2-1.

Selected representative parameters

The recommended transmissivity of $7.8 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-6}$ m²/s to $1.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 1,983.6 kPa.

The analysis of the CHi and CHir phases shows good consistency. No further analysis is recommended.

6.1.2 Section 204.00-304.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 200 mL/min at start of the CHi phase to 80 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivatives of both phases show a downward trend at late times indicating a change in transmissivity at some distance from the borehole. Both phases were matched using a two shell composite radial flow model with increasing transmissivity away from the test section. The analysis is presented in Appendix 2-2.

Selected representative parameters

The recommended transmissivity of $1.5 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-9}$ m²/s to $3.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2.938.0 kPa.

The analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.1.3 Section 304.00–404.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The fast recovery of the pulse test indicated a relatively high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 4.4 L/min at start of the CHi phase to 3.4 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). The Chi phase shows no problems and is adequate for quantitative analysis. The CHir phase recovers relatively fast but is still amenable for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a relative flat derivative, which is indicative for radial flow (n=2). A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times,

indicating a large positive skin and a horizontal stabilization at late times. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-3.

Selected representative parameters

The recommended transmissivity of $5.1 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-6}$ m²/s to $8.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3.915.6 kPa.

The analysis of the CHi and CHir phases shows little inconsistency in the derived transmissivity from the two test phases. No further analysis is recommended.

6.1.4 Section 404.00–504.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The fast recovery of the pulse test indicated a relatively high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. During the CHi phase the automatic regulation system functioned well. However, the recorded data is a little bit noisy. The injection rate decreased from 7.0 L/min at start of the CHi phase to 3.9 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The CHir phase recovers relatively fast. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase (although noisy) is relatively flat, indicating a flow dimension of 2 (radial flow). A homogeneous radial flow model was used for the analysis of the CHi phase. The CHir phase shows a flat derivative at late times and was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-4.

Selected representative parameters

The recommended transmissivity of $6.1\cdot10^{-6}$ m²/s was derived from the analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $2.0\cdot10^{-6}$ m²/s to $9.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,880.5 kPa.

The analysis of the CHi and CHir phases shows little inconsistency in the derived transmissivity from the two test phases. No further analysis is recommended.

6.1.5 Section 504.00–604.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The relatively fast recovery of the pulse test indicated a moderate to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 4.5 L/min at start of the CHi phase to 2.6 L/min at the end, indicating a moderate interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a slight indication of horizontal stabilization at early times and a downward trend at middle times, followed by a new stabilization at late times, which is indicative for a transition to a zone of higher transmissivity at some distance from the borehole. The derivative of the CHir phase shows a kind of stabilization at middle times and a continuous downward trend at middle times. A radial two shell composite flow model was chosen for the analysis of both phases. The analysis is presented in Appendix 2-5.

Selected representative parameters

The recommended transmissivity of $2.7\cdot10^{-6}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0\cdot10^{-7}$ m²/s to $5.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.864.1 kPa.

The analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.2 20 m single-hole injection tests

In the following, the 20 m section tests conducted in borehole KLX18A are presented and analysed.

6.2.1 Section 104.00-124.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The fast recovery of the pulse test indicated a relatively high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. The pressure in the bottom zone rose by approx. 15 kPa during injection, indicating a connection to the interval. The injection rate decreased from 13.0 L/min at start of the CHi phase to 9.5 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a horizontal stabilization at early times followed by a downward trend at middle times and a slight stabilization at late times. The response of the CHir phase is similar to the response of the CHi phase. A radial two shell composite radial flow model with increasing transmissivity was chosen for the analyses of both phases. The analysis is presented in Appendix 2-6.

Selected representative parameters

The recommended transmissivity of $8.1 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the best derivative stabilization. The confidence range for the interval transmissivity is estimated to be $6.0 \cdot 10^{-6}$ m²/s to $2.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 1,203.3 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.2.2 Section 124.00-144.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The fast recovery of the pulse test indicated high to medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. A slight reaction in the annulus was observed during the injection, indicating a connection to the interval. During the CHi phase the automatic regulation system functioned well. However, the recorded data is a little bit noisy. The injection rate decreased from 3.3 L/min at start of the CHi phase to 2.8 L/min at the end, indicating a relative high interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relatively fast recovery. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative, which is indicative for radial flow (n=2). A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times, indicating a large positive skin and a horizontal stabilization at late times. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-7.

Selected representative parameters

The recommended transmissivity of $5.1\cdot10^{-6}$ m²/s was derived from the analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $2.0\cdot10^{-6}$ m²/s to $8.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 1,402.9 kPa.

The analysis of the CHi and CHir phases shows little inconsistency in the derived transmissivity from the two test phases. No further analysis is recommended.

6.2.3 Section 144.00-164.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent intervals was observed. The injection rate decreased from 880 mL/min at start of the CHi phase to 398 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery at early times, which adds uncertainty to the early time data. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a flat derivative at early and middle times followed by a downward trend at late times. This is indicative for either a change in flow dimension or a transition to a zone of higher transmissivity at some distance to the borehole. The response of the CHir phase shows a flat derivative at middle times and a downward trend at late times, too. Both phases were analysed using a radial two shell composite flow model. The analysis is presented in Appendix 2-8.

Selected representative parameters

The recommended transmissivity of $2.5 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the best derivative stabilization. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-8}$ m²/s to $5.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 1.590.5 kPa.

The analyses of the CHi and CHir phases show consistencies. No further analysis is recommended.

6.2.4 Section 164.00-184.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 210 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 5 kPa. The injection rate decreased from 30 mL/min at start of the CHi phase to 11 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Because of the low flow rate at the end the recorded late time data of the flow rate is noisy. The CHir shows no problems. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a relative flat derivative at early and middle times indicating a flow dimension of 2 (radial flow). The following late time derivative may show a slight upward trend, which is attributed to the noise in the recorded data. However, a homogeneous flow model was chosen for the analysis of the CHi phase. The CHir phase shows a downward trend at late times, which is typical for a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-9.

Selected representative parameters

The recommended transmissivity of $8.2 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase, because of its better data quality. The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-9}$ m²/s to $1.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 1.792.0 kPa.

The analyses of the CHi and CHir phases show consistencies. No further analysis is recommended.

6.2.5 Section 184.00–204.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 202 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 13 mL/min at start of the CHi phase to 5 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy, and adds uncertainties to the analysis of the CHi phase. The CHir shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is too noisy to allow flow model identification. However, a homogeneous flow model was chosen for the analysis of the

CHi phase. The CHir phase shows a downward trend at late times, which is typical for a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-10.

Selected representative parameters

The recommended transmissivity of $3.4 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase, because of its better data quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-9}$ m²/s to $6.0 \cdot 10^{-9}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 1.963.3 kPa.

The analyses of the CHi and CHir phases show consistencies. No further analysis is recommended.

6.2.6 Section 204.00-224.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 215 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 2 kPa. The injection rate decreased from 12 mL/min at start of the CHi phase to 4 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy, and adds uncertainties to the analysis of the CHi phase. The recovery of the CHir phase was measured 0.8 h. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is too noisy to allow flow model identification. However, a homogeneous flow model was chosen for the analysis of the CHi phase. The CHir phase shows a downward trend at late times, which is typical for a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-11.

Selected representative parameters

The recommended transmissivity of $6.4 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase, because of its better data quality. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-9}$ m²/s to $9.0 \cdot 10^{-9}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,168.7 kPa.

The analyses of the CHi and CHir phases show little inconsistency in the derived transmissivities from the two test phases, which is attributed to poor data quality of the CHi phase. No further analysis is recommended.

6.2.7 Section 224.00–244.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The very slow recovery of the pulse test indicated a very low formation transmissivity. Based on this result no constant pressure injection test was performed. Instead, the recovery of the pulse injection test was analysed.

During the brief injection phase of the pulse injection a total volume of about 19 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 239 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to 7.9·10⁻¹¹ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows a continuing upward trend which can be interpreted to the fact that the dimensionless test time is to small and semi-logarithmic asymptotic solution was not achieved (due to the very small transmissivity). The PI phase was analysed using a radial homogeneous flow model. The analysis is presented in Appendix 2-12.

Selected representative parameters

The recommended transmissivity of $9.3 \cdot 10^{-11}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $6.0 \cdot 10^{-11}$ to $2.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.8 Section 244.00-264.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 175 mL/min at start of the CHi phase to 70 ml/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a horizontal stabilization at middle times followed by a downward trend at late times. This is indicative for an increase of transmissivity at some distance from the test section. A two shell composite flow model was used for the analysis of the CHi phase. The response of CHir phase is not consistent with the response of the CHi phase; The CHir phase shows an upward trend at late

times indicating a decrease of transmissivity at some distance from the borehole. A two shell composite flow model was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-13.

Selected representative parameters

The recommended transmissivity of $1.8 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-9}$ m²/s to $6.0 \cdot 10^{-8}$ m²/s (this range encompasses the inner zone transmissivity of the CHir phase). The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,543.4 kPa.

The analysis of the CHi and CHir phases shows consistency as far as the derived transmissivities are concerned. Regarding the chosen flow models the two test phases show inconsistency. This inconsistency is poorly understood. In case further analysis is planned, a total test simulation should attempt to clarify the inconsistency between the two phases.

6.2.9 Section 264.00-284.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 217 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 5 kPa. The injection rate decreased from 29 mL/min at start of the CHi phase to 6 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy, and adds uncertainties to the analysis of the CHi phase. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle times followed by a kind of stabilization at late times. The derivative of the CHir phase shows a continuing upward trend at middle and late times. Both phases were matched using a two shell composite flow model with decreasing transmissivity away from the borehole. The analysis is presented in Appendix 2-14.

Selected representative parameters

The recommended transmissivity of $6.9 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase (inner zone), because of its better data quality. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-9}$ m²/s to $9.0 \cdot 10^{-9}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,750.4 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.2.10 Section 284.00-304.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 223 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 2 kPa. The injection rate decreased from 12 mL/min at start of the CHi phase to 4 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy, and adds uncertainties to the analysis of the CHi phase. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is too noisy to allow flow model identification. However, a homogeneous flow model was chosen for the analysis of the CHi phase. The CHir phase shows a downward trend at late times, which is typical for a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-15.

Selected representative parameters

The recommended transmissivity of $3.7\cdot10^{-9}$ m²/s was derived from the analysis of the CHir phase, because of its better data quality. The confidence range for the interval transmissivity is estimated to be $9.0\cdot10^{-10}$ m²/s to $6.0\cdot10^{-9}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2.938.4 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.2.11 Section 304.00-324.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however noisy. The injection rate decreased from 64 mL/min at start of the CHi phase to 40 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase recovers relatively fast but is still adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative, which is indicative for radial flow (n=2). A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times, indicating a large positive skin and a horizontal stabilization at late times. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-16.

Selected representative parameters

The recommended transmissivity of $2.1\cdot10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-8}$ m²/s to $5.0\cdot10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,135.0 kPa.

The analysis of the CHi and CHir phases shows consistency with the exception of the very high skin derived from the CHir phase, which may be caused by non-Darcy flow effects in the formation. No further analysis is recommended.

6.2.12 Section 324.00-344.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however noisy, which adds uncertainty to the CHi analysis. The injection rate decreased from 1.3 L/min at start of the CHi phase to 1.1 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is noisy and does not allow for accurate flow model identification. However, a homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a downward trend at middle times followed by a horizontal stabilization at late times. The CHir phase was matched using a two shell composite radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-17.

Selected representative parameters

The recommended transmissivity of $5.7 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase (outer zone), which shows the best derivative stabilization. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-6}$ m²/s to $9.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,330.2 kPa.

The analysis of the CHi and CHir phases shows inconsistency regarding the derived flow models from the two test phases, which is attributed to the noise in the derivative of the CHi phase. No further analysis is recommended.

6.2.13 Section 344.00-364.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well, with the exception of some disturbance in the flow rate at early times. The recorded data is however noisy. The injection rate decreased from 2.0 L/min at start of the CHi phase to 1.8 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase is very noisy and does not allow for flow model identification. However, a homogenous flow model was used for the analysis of the CHi phase. Due to the fast recovery of the CHir phase the early and middle time response is not well known. The late time derivative shows a horizontal stabilization, indicating radial flow. The CHir phase was matched using a homogeneous flow model. The analysis is presented in Appendix 2-18.

Selected representative parameters

The recommended transmissivity of $9.3 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase, which shows the slight better data and a horizontal stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-6}$ m²/s to $3.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,524.4 kPa.

The analysis of the CHi and CHir phases shows inconsistency in the derived transmissivities from the two test phases. This may be attributed to the fast recovery of the CHir phase and the poor data quality of the CHi phase. The very high skin derived from the CHir phase may be caused by non-Darcy flow effects in the formation. No further analysis is recommended.

6.2.14 Section 364.00-384.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked

well, with the exception of some oscillations at the start of the injection caused by manual settings of the shunt valve. The recorded data is however a little bit noisy. The CHi phase is still adequate for quantitative analysis. The injection rate decreased from 1.3 L/min at start of the CHi phase to 0.6 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery but is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative, which is indicative for radial flow. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at middle times indicating a relative high skin. The late time derivative shows a horizontal stabilization. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-19.

Selected representative parameters

The recommended transmissivity of $2.1 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-7}$ m²/s to $5.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,720.6 kPa.

The analysis of the CHi and CHir phases shows good consistency. No further analysis is recommended.

6.2.15 Section 384.00-404.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however noisy. The injection rate decreased from 1.1 L/min at start of the CHi phase to 0.5 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is noisy, but it is relative flat at early and middle times. A homogenous flow model was used for the analysis of the CHi phase. CHir phase shows a horizontal derivative stabilization at late times, indicating a flow dimension of 2 (radial flow). A homogeneous flow model was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-20.

Selected representative parameters

The recommended transmissivity of $1.9 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase, which shows the slight better data and a horizontal stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-7}$ m²/s to $4.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,913.3 kPa.

The analysis of the CHi and CHir phases shows consistency. No further analysis is recommended.

6.2.16 Section 404.00-424.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. The pressure in the bottom zone rose approx. 6 kPa indicating connection to the test interval. The automatic regulation system worked well. The recorded data is however noisy, which adds some uncertainty to the CHi analysis. The injection rate decreased from 3.4 L/min at start of the CHi phase to 2.2 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase (although noisy) shows a relative flat derivative. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a downward trend at middle times followed by a horizontal stabilization at late times. The CHir phase was matched using a two shell composite radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-21.

Selected representative parameters

The recommended transmissivity of $7.3 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase (outer zone), which shows the better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-6}$ m²/s to $1.0 \cdot 10^{-5}$ m²/s (this range includes the inner zone transmissivity of the CHir phase). The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,107.1 kPa.

The analysis of the CHi and CHir phases shows inconsistency regarding the derived flow models from the two test phases, which is attributed to the noise in the derivative of the CHi phase. No further analysis is recommended.

6.2.17 Section 424.00-444.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated

high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however a little bit noisy. The CHi phase is still adequate for quantitative analysis. The injection rate decreased from 4.3 L/min at start of the CHi phase to 2.6 L/min at the end, indicating a relative high interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery but is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative, which is indicative for radial flow. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at middle times indicating a relative high skin. The late time derivative shows a horizontal stabilization. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-22.

Selected representative parameters

The recommended transmissivity of $9.9 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase, which shows the better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $4.0 \cdot 10^{-6}$ m²/s to $3.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,300.9 kPa.

The analysis of the CHi and CHir phases shows consistency. No further analysis is recommended.

6.2.18 Section 444.00-464.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 225 mL/min at start of the CHi phase to 88 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a flat derivative, which is indicative for radial flow. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a horizontal stabilization at late times. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-23.

Selected representative parameters

The recommended transmissivity of $6.5\cdot10^{-8}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $3.0\cdot10^{-8}$ m²/s to $9.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,494.7 kPa.

The analysis of the CHi and CHir phases shows relative good consistency. No further analysis is recommended.

6.2.19 Section 464.00-484.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however a little bit noisy. The injection rate decreased from 200 mL/min at start of the CHi phase to 76 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a flat derivative, which is indicative for radial flow. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a horizontal stabilization at late times. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-24.

Selected representative parameters

The recommended transmissivity of $1.1 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-8}$ m²/s to $3.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,695.3 kPa.

The analysis of the CHi and CHir phases shows consistency. No further analysis is recommended.

6.2.20 Section 484.00-504.00 m, test no. 1-3, injection

Comments to test

Test no. 1 was repeated due to a leakage in the pipe string system. After replacing the leaking pipe a second test was conducted. During the constant pressure injection phase the pressure difference in the section increased. Therefore the injection was skipped and a third test was conducted

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. At the start of the injection some oscillations occurred, caused by the adjustment of the automatic regulation system. The injection rate decreased from 90 mL/min at start of the CHi phase to 28 mL/min at the end, indicating a relative low interval transmissivity (consistent with the pulse recovery). Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase was matched using a homogenous flow model. No clear flow stabilization was reached during the CHir phase and the data is still influenced by near wellbore effects like wellbore storage and skin. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-25.

Selected representative parameters

The recommended transmissivity of $1.6 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-10}$ m²/s to $5.0 \cdot 10^{-9}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,895.4 kPa.

The analysis of the CHi and CHir phases shows consistency. No further analysis is recommended.

6.2.21 Section 504.00-524.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The CHi phase shows no problems with the exception of some oscillations at start of the injection. The injection rate decreased from 67 mL/min at start of the CHi phase to 28 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a flat derivative at middle and late times indicating for radial flow. A homogenous flow model was used for the analysis of the

CHi phase. The response of the CHir phase shows the transition from wellbore storage and skin dominated flow to pure formation flow. Because the formation flow stabilization was not reached a homogeneous radial flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-26.

Selected representative parameters

The recommended transmissivity of $1.7 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-9}$ m²/s to $4.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,096.4 kPa.

The analysis of the CHi and CHir phases shows consistency. No further analysis is recommended.

6.2.22 Section 524.00-544.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well, with the exception of some oscillations at the start of the injection caused by manual settings of the shunt valve. The recorded data is however a little bit noisy. The CHi phase is still adequate for quantitative analysis. The injection rate decreased from 0.7 L/min at start of the CHi phase to 0.3 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery but is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative, which is indicative for radial flow. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at middle times indicating a relative high skin. The late time derivative shows a horizontal stabilization. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-27.

Selected representative parameters

The recommended transmissivity of $6.8 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase, which shows the slight better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-7}$ m²/s to $1.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,279.7 kPa.

The analysis of the CHi and CHir phases shows consistency. No further analysis is recommended.

6.2.23 Section 544.00-564.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however a little bit noisy. The CHi phase is still adequate for quantitative analysis. The injection rate decreased from 1.6 L/min at start of the CHi phase to 0.7 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery).

Flow regime and calculated parameters

The flow dimension is interpreted the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative on middle times, followed by a downward trend at late times. This behaviour indicates a change in transmissivity at some distance from the borehole. The response of the CHir phase is consistent to the CHi response. Both phases were matched using a two shell composite flow model with increasing transmissivity at some distance from the borehole. The analysis is presented in Appendix 2-28.

Selected representative parameters

The recommended transmissivity of $5.5\cdot10^{-7}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0\cdot10^{-7}$ m²/s to $9.0\cdot10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,477.6 kPa.

The analysis of the CHi and CHir phases shows good consistency. No further analysis is recommended.

6.2.24 Section 564.00-584.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however noisy. The injection rate decreased from 98 mL/min at start of the CHi phase to 86 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase recovers very fast but is still adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is very noisy and does not allow for flow model identification. However, a homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times, indicating a large positive skin and a horizontal stabilization at late times. The CHir phase was matched using a homogeneous radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-29.

Selected representative parameters

The recommended transmissivity of $4.4 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows a derivative stabilization at late times. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-7}$ m²/s to $8.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,673.7 kPa.

The analysis of the CHi and CHir phases shows consistency with the exception of the very high skin derived from the CHir phase, which may be caused by non-Darcy flow effects in the formation. No further analysis is recommended.

6.2.25 Section 584.00-604.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The fast recovery of the pulse test indicated high to medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. A slight reaction in the bottom zone was observed during the injection. During the CHi phase the automatic regulation system functioned well. However, the recorded data is noisy. The injection rate decreased from 1.6 L/min at start of the CHi phase to 1.5 L/min at the end, indicating a relative high interval transmissivity (consistent with the pulse recovery). Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative, which is indicative for radial flow (n=2). A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a stabilization at middle times followed by an downward trend at late times indicating a change in transmissivity at some distance from the test section. The CHir phase was matched using a two shell composite radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-30.

Selected representative parameters

The recommended transmissivity of $1.6 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows a derivative stabilization at middle times. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-7}$ m²/s to $3.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.869.7 kPa.

The analysis of the CHi and CHir phases shows inconsistency regarding the chosen flow models. This inconsistency can be attributed to the noise in the CHi phase. However regarding the derived transmissivity the two test phases show consistency. No further analysis is recommended.

6.3 5 m single-hole injection tests

In the following, the 5 m section tests conducted in borehole KLX18A are presented and analysed.

6.3.1 Section 299.00-304.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 225 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 4 kPa. The injection rate decreased from 3 mL/min at start of the CHi phase to 2 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is very noisy, and adds uncertainties to the analysis of the CHi phase. The CHir phase shows a relative fast recovery, compared to the observation during the injection phase and expected low transmissivity. The CHir phase is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is very noisy and does not allow for flow model identification. However, a homogenous radial flow model was chosen for the analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at middle and late times, which is indicative for a high positive skin. The analysis is presented in Appendix 2-31.

Selected representative parameters

The recommended transmissivity of $6.5 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase, because of its better data quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-9}$ m²/s to $1.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,942.8 kPa.

The analyses of the CHi and CHir phases show some inconsistency, caused by the poor data quality of the CHi phase. The high positive skin derived from the CHir phase may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.2 Section 304.00–309.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The very slow recovery of the pulse test indicated a very low formation transmissivity. Based on this result no constant pressure injection test was performed. Instead, the recovery of the pulse injection test was analysed.

During the brief injection phase of the pulse injection a total volume of about 3 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 228 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.5 \cdot 10^{-11}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows a continuing upward trend, indicating a decrease of transmissivity at some distance from the borehole. The PI phase was analysed using a two shell composite flow model. The analysis is presented in Appendix 2-32.

Selected representative parameters

The recommended transmissivity of $1.3 \cdot 10^{-11}$ m²/s was derived from the analysis of the Pi phase (inner zone). The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-12}$ to $3.0 \cdot 10^{-11}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.3 Section 309.00-314.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 231 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. However, the pressure decreased during the injection by only 1 kPa. The injection rate decreased from 4 mL/min at start of the CHi phase to 2 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is very noisy, and adds uncertainties to the analysis of the CHi phase. The CHir phase shows a relative fast recovery, compared to the observation during the injection phase and expected low transmissivity. The CHir phase is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is very noisy and does not allow for flow model identification. However, a homogenous radial flow model was chosen for

the analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at middle and late times, which is indicative for a high positive skin. The analysis is presented in Appendix 2-33.

Selected representative parameters

The recommended transmissivity of $9.7 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $6.0 \cdot 10^{-9}$ m²/s to $4.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3.037.7 kPa.

The analyses of the CHi and CHir phases show some inconsistency, caused by the poor data quality of the CHi phase. The high positive skin derived from the CHir phase may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.4 Section 314.00-319.00 m, test no. 1, pulse injection

Comments to test

The intention was to design the test as a constant pressure injection test phase (CHi), followed by a pressure recovery phase (CHir). However, after inflating the packers and opening/closing the test valve for conducting the preliminary pulse injection, the pulse recovered very slowly. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). The pulse injection phase is also still influenced by the packer expansion. None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-34.

Selected representative parameters

Based on the test response the interval transmissivity is lower than $1.0 \cdot 10^{-11}$ m²/s.

No further analysis recommended.

6.3.5 Section 319.00–324.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system functioned well. However, the recorded data is a little bit noisy. The injection rate decreased from 40 mL/min at start of the CHi phase to 36 ml/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows horizontal stabilization at late times. A homogeneous flow model with wellbore and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-35.

Selected representative parameters

The recommended transmissivity of $7.3\cdot10^{-8}$ m²/s was derived from the analysis of the CHir phase, which shows the clearest derivative stabilization. The confidence range for the interval transmissivity is estimated to be $4.0\cdot10^{-8}$ m²/s to $2.0\cdot10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,138.9 kPa.

The analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.3.6 Section 324.00-329.00 m, test no. 1, pulse injection

Comments to test

The intention was to design the test as a constant pressure injection test phase (CHi), followed by a pressure recovery phase (CHir). However, after inflating the packers and opening/closing the test valve for conducting the preliminary pulse injection, the pulse recovered very slowly. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). The pulse injection phase is also still influenced by the packer expansion. None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-36.

Selected representative parameters

Based on the test response the interval transmissivity is lower than $1.0 \cdot 10^{-11}$ m²/s.

No further analysis recommended.

6.3.7 Section 329.00-334.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The fast recovery of the pulse test indicated high to medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic injection between the interval and the adjacent zones was observed. The injection rate decreased from approx. 0.5 L/min at start of the CHi phase to 0.3 L/min at the end, indicating a medium transmissivity (consistent with the pulse recovery). Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a flat derivative, which is indicative for radial flow (n=2). A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows stabilization at middle times followed by a downward trend at late times. This is indicative for a change in transmissivity at some distance from the test section. The CHir phase was matched using a two shell composite radial flow model with wellbore storage and skin. The analysis is presented in Appendix 2-37.

Selected representative parameters

The recommended transmissivity of $4.1 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase, which shows better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-7}$ m²/s to $7.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,234.0 kPa.

The analysis of the CHi and CHir phases shows inconsistency regarding the chosen flow models. This inconsistency is poorly understood. If further analysis is planned a total test simulation should help resolving this inconsistency.

6.3.8 Section 334.00–339.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however noisy. The injection rate decreased from 0.6 L/min at start of the CHi phase to 0.5 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery. The noise in the data of the CHi phase and the fast recovery of the CHir phase adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is very noisy and does not allow for flow model identification. However, a homogenous flow model was used for the analysis of the CHi phase. Due to the fast recovery of the CHir phase the early and middle time response is not well known. The late time response shows a horizontal derivative stabilization. The CHir phase was matched using a composite flow model with wellbore storage and skin. The analysis is presented in Appendix 2-38.

Selected representative parameters

The recommended transmissivity of $7.0 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase (outer zone), which shows a horizontal stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-6}$ m²/s to $1.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,283.3 kPa.

The analysis of the CHi and CHir phases shows some inconsistency regarding the chosen flow model. This inconsistency is attributed to the noise in the CHi phase and the fast recovery of the CHir phase. However, due to the poor data quality, no further analysis is recommended.

6.3.9 Section 339.00–344.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated

a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 0.3 L/min at start of the CHi phase to 0.2 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a very fast recovery and the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle times followed by a kind of stabilization at late times. A two shell composite flow model with decreasing transmissivity at some distance from the borehole was used for the analysis of the CHi phase. Due to the very fast recovery of the CHir phase the derivative is not very conclusive. However, a homogeneous radial flow model was chosen for the analysis. The analysis is presented in Appendix 2-39.

Selected representative parameters

The recommended transmissivity of $3.2 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase (outer zone), which shows a slight horizontal stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-8}$ m²/s to $6.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,332.1 kPa.

The analysis of the CHi and CHir phases shows some inconsistency regarding the chosen flow model. This inconsistency is attributed to the very fast recovery of the CHir phase. However, due to the poor data quality of the CHir phase, no further analysis is recommended.

6.3.10 Section 344.00-349.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. The recorded data is however a little bit noisy. The injection rate decreased from 1.4 L/min at start of the CHi phase to 1.3 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery, which adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase (although noisy) shows a relative flat derivative which is indicative for radial flow. A homogenous flow model was used for the analysis of the CHi phase. Due to the fast recovery of the CHir phase the early and middle time

response is not well known. The late time response shows a horizontal derivative stabilization. The CHir phase was matched using a composite flow model with wellbore storage and skin. The analysis is presented in Appendix 2-40.

Selected representative parameters

The recommended transmissivity of $2.3 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHi phase, because it shows a better quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-7}$ m²/s to $6.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,380.4 kPa.

No further analysis is recommended.

6.3.11 Section 349.00-354.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 173 kPa. No hydraulic connection to the adjacent zones was observed. No suitable adjustments for the automatic regulation unit were found to perform an injection with stable pressure condition in this test section and therefore the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 13 kPa. The injection rate decreased from approx. 27 mL/min at start of the CHi phase to approx. 26 ml/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Due to oscillation during the CHi phase the results should be regarded as order of magnitude only. The CHir phase shows a fast recovery, but is amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the early and middle time derivative of the CHi phase is of poor quality. Only the late time derivative of the CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times and a horizontal stabilization at late times. This behaviour is indicative for a high positive skin. The analysis is presented in Appendix 2-41.

Selected representative parameters

The recommended transmissivity of $1.0 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, because of its derivative stabilization at late times. The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-8}$ m²/s to $5.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,428.1 kPa.

The analyses of the CHi and CHir phases show some inconsistency in the derived transmissivities, caused by the poor data quality of the CHi phase. The high positive skin derived from the CHir phase may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.12 Section 354.00-359.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The very slow recovery of the pulse test indicated a very low formation transmissivity. Based on this result no constant pressure injection test was performed. Instead, the recovery of the pulse injection test was analysed.

During the brief injection phase of the pulse injection a total volume of about 70 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 218 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $3.1\cdot10^{-10}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative was matched using a two shell composite flow model with decreasing transmissivity away from the borehole. The analysis is presented in Appendix 2-42.

Selected representative parameters

The recommended transmissivity of $7.9 \cdot 10^{-10}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-10}$ to $9.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.13 Section 359.00-364.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is a little bit noisy. The injection rate decreased from 0.7 L/min at start of the CHi phase to 0.5 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery which adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase (although noisy) shows a relative flat derivative. A homogenous radial flow model was chosen for the analysis of the CHi phase. Due to the fast recovery the early and middle time response of the CHir phase is not well known. The late time response shows a flat derivative indicating radial flow. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-43.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-7}$ m²/s to $4.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,527.2 kPa.

The analyses of the CHi and CHir phases show good consistency, with the exception of the high positive skin derived from the CHir phase. This high positive skin may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.14 Section 364.00-369.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium to high formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is a little bit noisy. The injection rate decreased from 0.6 L/min at start of the CHi phase to 0.5 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery, but is still adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is noisy, which adds some uncertainties to the analysis. However, a homogenous radial flow model was chosen for the analysis of the CHi phase. The late time response of the CHir phase shows a flat derivative indicating radial flow. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-44.

Selected representative parameters

The recommended transmissivity of $1.3\cdot10^{-6}$ m²/s was derived from the analysis of the CHir phase, which shows a horizontal derivative stabilization. The confidence range for the interval transmissivity is estimated to be $7.0\cdot10^{-7}$ m²/s to $3.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3.573.6 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.3.15 Section 369.00-374.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 0.22 L/min at start of the CHi phase to 0.21 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Due to the small changes in the flow rate the recorded data is noisy and not very conclusive. The CHir phase shows a fast recovery. The noise in the data of the CHi phase and the fast recovery of the CHir phase adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is very noisy and does not allow for flow model identification. However, a homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a horizontal stabilization of the derivative at late times, which is indicative for radial flow. The CHir phase was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-45.

Selected representative parameters

The recommended transmissivity of $7.8 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows a horizontal stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-7}$ m²/s to $1.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,630.7 kPa.

No further analysis is recommended.

6.3.16 Section 374.00-379.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 0.2 L/min at start of the CHi phase to 0.1 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle times followed by a kind of stabilization at late times. A two shell composite flow model with decreasing transmissivity at some distance from the borehole was used for the analysis of the CHi phase. Due to the very fast recovery of the CHir phase the derivative is not very conclusive, but it shows a horizontal stabilization at late times. A homogeneous radial flow model was chosen for the analysis. The analysis is presented in Appendix 2-46.

Selected representative parameters

The recommended transmissivity of $1.5 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase (outer zone), which shows a better data quality and a slight horizontal stabilization of the

derivative. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-8}$ m²/s to $3.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,675.2 kPa.

The analysis of the CHi and CHir phases shows some inconsistency as far as the flow model concerned. This may be attributed to the very fast recovery of the CHir phase. No further analysis is recommended.

6.3.17 Section 379.00-384.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No hydraulic connection to the adjacent zones was observed. The automatic injection system functioned well. However, the recorded data is a little bit noisy. The injection rate decreased from 90 mL/min at start of the CHi phase to 77 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times, indicating a large positive skin. The late time response shows a horizontal stabilization of the derivative. The analysis is presented in Appendix 2-47.

Selected representative parameters

The recommended transmissivity of $2.9 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows a better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-8}$ m²/s to $5.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3.721.3 kPa.

The analyses of the CHi and CHir phases show consistency. The high positive skin derived from the CHir phase may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.18 Section 384.00-389.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No hydraulic connection to the adjacent zones was observed. The automatic injection system functioned well. However,

the recorded data is a little bit noisy. The injection rate decreased from 141 mL/min at start of the CHi phase to 120 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times, indicating a large positive skin. The late time response is a little bit noisy but it shows a horizontal stabilization of the derivative. The analysis is presented in Appendix 2-48.

Selected representative parameters

The recommended transmissivity of $4.5 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows a better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-7}$ m²/s to $9.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,769.1 kPa.

The analyses of the CHi and CHir phases show consistency. The high positive skin derived from the CHir phase may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.19 Section 389.00-394.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 232 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of the poor pressure control during the injection the pressure rose by 4 kPa. The injection rate decreased from 8 mL/min at start of the CHi phase to 3 ml/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is very noisy, and adds uncertainties to the analysis of the CHi phase. The CHir phase shows a relative fast recovery, compared to the observation during the injection phase and expected low transmissivity.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle and late times, which is indicative for a change of transmissivity at some distance form the borehole. A two shell composite radial flow model was chosen for the analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at late times, which is typical for a transition from wellbore storage and skin dominated flow to pure formation flow. In addition, this behaviour indicates a large positive skin. A homogeneous flow model with wellbore storage and skin was used. The analysis is presented in Appendix 2-49.

Selected representative parameters

The recommended transmissivity of $2.0 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows a slight better derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-10}$ m²/s to $1.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,817.3 kPa.

The analyses of the CHi and CHir phases show some inconsistency in the chosen flow models and the high skin derived from the CHir phase. This can be attributed to the poor the poor data quality of the CHi phase and the fast recovery of the CHir phase. No further analysis is recommended.

6.3.20 Section 394.00-399.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is very noisy. The injection rate decreased from 18 mL/min at start of the CHi phase to 15 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery, but is amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is of poor quality. However, the CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times and a kind of horizontal stabilization at late times. This behaviour is indicative for a high positive skin. The analysis is presented in Appendix 2-50.

Selected representative parameters

The recommended transmissivity of $5.5 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHir phase, because of the slight stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-8}$ m²/s to $8.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,865.8 kPa.

The analyses of the CHi and CHir phases show consistency, with the exception of the relative high positive skin derived from the CHir phase. No further analysis is recommended.

6.3.21 Section 399.00-404.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 0.5 L/min at start of the CHi phase to 0.4 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHi phase shows no problems and is amenable for qualitative analysis. The CHir phase shows a fast recovery, which adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a flat derivative at early times followed by an upward trend at middle times and a kind of horizontal stabilization at late times. This is consistent with a decrease of transmissivity at some distance from the borehole. A two shell composite flow model was used for the analysis of the CHi phase. Due to the fast recovery of the CHir phase the early and middle time response is not well known. The late time response shows a horizontal derivative stabilization. The CHir phase was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-51.

Selected representative parameters

The recommended transmissivity of $7.0 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase (inner zone), because it shows a better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-7}$ m²/s to $1.0 \cdot 10^{-6}$ m²/s (this range includes the inner zone transmissivity of the CHi phase). The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,908.0 kPa.

The analyses of the CHi and CHir phases show inconsistency regarding the chosen flow models of the two test phases and the relative high positive skin derived from the CHir phase, which may be attributed to the fast recovery of the CHir phase. However, due to the poor data quality of the CHir phase, no further analysis is recommended.

6.3.22 Section 404.00-409.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 223 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 12 kPa. The injection rate decreased from 50 mL/min at start of the CHi phase to 30 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a flat derivative at early times followed by an upward trend at middle times. This is consistent with a decrease of transmissivity at some distance from the borehole. A two shell composite flow model was used for the

analysis of the CHi phase. The derivative of the CHir phase shows a steep downward trend at middle and late times, which is indicative for a high positive skin. The analysis is presented in Appendix 2-52.

Selected representative parameters

The recommended transmissivity of $2.9 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (inner zone), because of its better data quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-9}$ m²/s to $5.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 3,957.7 kPa.

The analyses of the CHi and CHir phases show some inconsistency, caused probably by the fast recovery of the CHir phase. The high positive skin derived from the CHir phase may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.23 Section 409.00-414.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No connection between the test interval and the adjacent zones was observed. The injection rate decreased from 0.5 mL/min at start of the CHi phase to 0.4 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHi phase shows no problems and is adequate for qualitative analysis. The CHir phase shows a fast recovery, which adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows an upward trend at middle times indicating a decrease of transmissivity at some distance from the borehole. A two shell composite flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows unit slope upward trend at middle times, indicating a large positive skin, followed by a horizontal stabilization. The CHir phase was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-53.

Selected representative parameters

The recommended transmissivity of $8.0 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (inner zone), because it shows a better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-8}$ m²/s to $1.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,006.8 kPa.

The analyses of the CHi and CHir phases show inconsistency regarding the chosen flow models of the two test phases and the relative high positive skin derived from the CHir phase, which may be attributed to the fast recovery of the CHir phase. No further analysis is recommended.

6.3.24 Section 414.00-419.00 m, test no. 1 and 2, injection

Comments to test

The first test in this section was repeated, because of a failure in the main power supply of the PSS. The second test was performed without technical problems.

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 0.3 L/min at start of the CHi phase to 0.2 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a noisy but relative flat derivative. A homogenous radial flow model was chosen for the analysis of the CHi phase. Due to the fast recovery the early and middle time response of the CHir phase is not very conclusive. The late time response shows a flat derivative indicating radial flow. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-54.

Selected representative parameters

The recommended transmissivity of $8.8 \cdot 10^{-7}$ m²/s was derived from the analysis of the CHir phase, which shows the better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $4.0 \cdot 10^{-7}$ m²/s to $2.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,055.8 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.3.25 Section 419.00-424.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. During injection the pressure in the bottom zone rose by 6 kPa. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 2.2 L/min at start of the CHi phase to 2.0 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a noisy but relative flat derivative. A homogenous radial flow model was chosen for the analysis of the CHi phase. The late time response of the CHir phase shows a flat derivative indicating radial flow. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-55.

Selected representative parameters

The recommended transmissivity of $7.2 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase, which shows the better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-6}$ m²/s to $1.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,105.4 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.3.26 Section 424.00-429.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 1.6 L/min at start of the CHi phase to 1.4 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery. The noise in the recorded data of the CHi phase and the fast recovery of the CHir phase, adds some uncertainty to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a two shell composite flow model with decreasing transmissivity away from the borehole. Due to the fast recovery of the CHir phase the derivative is not very conclusive. However, a homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-56.

Selected representative parameters

The recommended transmissivity of $3.4 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the slight better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-7}$ m²/s to $7.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,153.3 kPa.

The analyses of the CHi and CHir phases show inconsistency as far as the flow model concerned. However, due to the poor data quality, no further analysis is recommended.

6.3.27 Section 429.00-434.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 1.6 L/min at start of the CHi phase to 1.4 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a homogeneous radial flow model. The early and middle time response of the derivative is not well known, but it shows relative clear formation flow stabilization at late times. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-57.

Selected representative parameters

The recommended transmissivity of $5.2 \cdot 10^{-6}$ m²/s was derived from the analysis of the CHir phase, because of its horizontal derivative stabilization at late times. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-7}$ m²/s to $9.0 \cdot 10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,200.4 kPa.

No further analysis is recommended.

6.3.28 Section 434.00-439.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 45 mL/min at start of the CHi phase to 39 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a downward trend

at middle times followed by a kind of stabilization at late times. This behaviour indicates an increase of transmissivity at some distance from the borehole. A two shell composite flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-58.

Selected representative parameters

The recommended transmissivity of $2.6 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-9}$ m²/s to $6.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4.250.3 kPa.

The analyses of the CHi and CHir phases show inconsistency as far as the flow model concerned. This can be attributed to the noise in CHi phase. No further analysis is recommended.

6.3.29 Section 439.00-444.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The very slow recovery of the pulse test indicated a very low formation transmissivity. Based on this result no constant pressure injection test was performed. Instead, the recovery of the pulse injection test was analysed.

During the brief injection phase of the pulse injection a total volume of about 4 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 211 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.9 \cdot 10^{-11}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative was matched using a two shell composite flow model with decreasing transmissivity away from the borehole. The analysis is presented in Appendix 2-59.

Selected representative parameters

The recommended transmissivity of $6.2 \cdot 10^{-11}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-11}$ to $9.0 \cdot 10^{-11}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.30 Section 444.00-449.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The very slow recovery of the pulse test indicated a very low formation transmissivity. Based on this result no constant pressure injection test was performed. Instead, the recovery of the pulse injection test was analysed.

During the brief injection phase of the pulse injection a total volume of about 2 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 202 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to 9.9·10⁻¹² m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative was matched using a homogeneous radial flow model. The analysis is presented in Appendix 2-60.

Selected representative parameters

The recommended transmissivity of $1.0 \cdot 10^{-11}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-12}$ to $3.0 \cdot 10^{-11}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.31 Section 449.00-454.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 217 kPa. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 3 kPa. The injection rate decreased from 5 mL/min at start of the CHi phase to 2 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test both phases were matched using a homogeneous radial flow model. The analysis is presented in Appendix 2-61.

Selected representative parameters

The recommended transmissivity of $4.2 \cdot 10^{-10}$ m²/s was derived from the analysis of the CHir phase, because of its better data quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-10}$ m²/s to $7.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,393.1 kPa.

The analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.3.32 Section 454.00-459.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 112 mL/min at start of the CHi phase to 90 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows a horizontal stabilization at early times followed by a downward trend at middle times, indicating an increase in transmissivity at some distance from the borehole. The response of the CHir phase is consistent to the response of the CHi phase. Both phases were matched using a two shell composite flow model. The analysis is presented in Appendix 2-62.

Selected representative parameters

The recommended transmissivity of $6.5 \cdot 10^{-08}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-08}$ m²/s to $1.0 \cdot 10^{-07}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4.445.1 kPa.

The analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.3.33 Section 459.00-464.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 222 kPa. No hydraulic connection to the adjacent zones was observed. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. However, no pressure loss occurred during the injection. The injection rate decreased from 4 mL/min at start of the CHi phase to 1 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is not very conclusive due to the noise in the recorded data. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The CHir shows a downward trend at late times. This behaviour indicates a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-63.

Selected representative parameters

The recommended transmissivity of $3.5 \cdot 10^{-10}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-11}$ m²/s to $6.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,492.0 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.3.34 Section 464.00-469.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 254 kPa. No hydraulic connection to the adjacent zones was observed. No hydraulic connection to the adjacent zones was observed. Due to the expected small injection rate, the CHi phase was conducted without the automatic regulation, directly from the injection vessel with N_2 backpressure. Because of this, the pressure decreased during the injection by approx. 2 kPa. The injection rate decreased from 4 mL/min at start of the CHi phase to 2 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is not very conclusive due to the noise in the recorded data. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The CHir shows a downward trend at late times. This behaviour indicates a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-64.

Selected representative parameters

The recommended transmissivity of $7.6 \cdot 10^{-10}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $4.0 \cdot 10^{-10}$ m²/s to $2.0 \cdot 10^{-09}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,538.1 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.3.35 Section 469.00-474.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 21 mL/min at start of the CHi phase to 18 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase recovers relatively fast, but is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is noisy, which adds some uncertainties to the analysis. The CHi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times (indicative for a high positive skin) followed by a horizontal stabilization at late times. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-65.

Selected representative parameters

The recommended transmissivity of $6.4 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHir phase, which shows a horizontal stabilization of the derivative. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-8}$ m²/s to $9.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,599.8 kPa.

The analyses of the CHi and CHir phases show consistency, with the exception of the relative high skin derived from the CHir phase. No further analysis is recommended.

6.3.36 Section 474.00-479.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 199 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The injection rate decreased from 136 mL/min at start of the CHi phase to 80 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a flat derivative at middle and late times, indicating a flow dimension of 2 (radial flow). The response of the CHir phase is similar to CHi response. Both phases were matched using a homogeneous radial flow model. The analysis is presented in Appendix 2-66.

Selected representative parameters

The recommended transmissivity of $9.9 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase, which shows a slight better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-8}$ m²/s to $3.0 \cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,647.4 kPa.

The analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.3.37 Section 477.00-482.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is very noisy. The injection rate decreased from 13 mL/min at start of the CHi phase to 11 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is noisy and not very conclusive. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a horizontal stabilization at late times. The CHir phase was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-67.

Selected representative parameters

The recommended transmissivity of $3.2 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-9}$ m²/s to $7.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,676.0 kPa.

No further analysis is recommended.

6.3.38 Section 482.00-487.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 198 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The injection rate decreased from 115 mL/min at start of the CHi phase to 56 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The Chi phase shows no problems, with the exceptions of some oscillations at beginning of the injection. The CHir phase shows no problems. Both phases are adequate for quantitative analyse.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle times and a horizontal stabilization at late times. This behaviour indicates a decrease of transmissivity at some distance from the borehole. A composite radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a continuous upward trend and middle and late times. The CHir phase was matched using a composite flow model with wellbore storage and skin was. The analysis is presented in Appendix 2-68.

Selected representative parameters

The recommended transmissivity of $2.6 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (outer zone), which shows the better data and derivative stabilization. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-9}$ m²/s to $5.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4.711.5 kPa.

No further analysis is recommended.

6.3.39 Section 487.00-492.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy and shows some oscillations. The injection rate decreased from 54 mL/min at start of the CHi phase to 33 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery which adds some uncertainties to the analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle and late times. A two shell composite radial flow model was chosen for the analysis of the CHi phase. The derivative of CHir phase shows a unit slope downward trend indicating a high positive skin followed by a horizontal stabilization. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-69.

Selected representative parameters

The recommended transmissivity of $4.4 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-8}$ m²/s to $9.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4.772.5 kPa.

The analyses of the CHi and CHir phases show inconsistency regarding the chosen flow models, which may be attributed to the fast recovery of the CHir phase. No further analysis is recommended.

6.3.40 Section 489.00-494.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The relative fast recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 71 mL/min at start of the CHi phase to 44 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a horizontal derivative at early times followed by a downward trend at middle times and a new stabilization at late times. This behaviour is indicative for an increase in transmissivity at some distance from the borehole. The response of the CHir phase is consistent to the response of the CHi phase. A two shell composite radial flow model was used for the analyses of both phases. The analysis is presented in Appendix 2-70.

Selected representative parameters

The recommended transmissivity of $2.5\cdot10^{-8}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0\cdot10^{-9}$ m²/s to $4.0\cdot10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4.790.3 kPa.

The analysis of the CHi and CHir phases shows good consistency. No further analysis is recommended.

6.3.41 Section 494.00-499.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 9 mL/min at start of the CHi phase to 4 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Due to the low flow rate the recorded data of the flow rate is noisy. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase is not very conclusive due to the noise in the recorded data. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The CHir shows a downward trend at late times. This behaviour indicates a transition from wellbore storage and skin dominated flow to pure formation flow. A homogeneous radial flow model was matched using a homogeneous flow model with wellbore storage and skin. The analysis is presented in Appendix 2-71.

Selected representative parameters

The recommended transmissivity of $3.5 \cdot 10^{-09}$ m²/s was derived from the analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-09}$ m²/s to $5.0 \cdot 10^{-09}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,857.9 kPa.

The analyses of the CHi and CHir phases show consistency. No further analysis is recommended.

6.3.42 Section 499.00-504.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted.

During the CHi phase the flow rate dropped below 1 mL/min. Because of this the injection was stopped and no CHir phase was conducted. Instead, the recovery of the preliminary pulse injection test was analysed.

During the brief injection phase of the pulse injection a of less than 1 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 253 kPa.

Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to 1.8·10⁻¹² m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows a horizontal stabilization, which is indicative for a flow dimension of 2 (radial flow). The analysis is presented in Appendix 2-72.

Selected representative parameters

The recommended transmissivity of $9.9 \cdot 10^{-11}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-11}$ to $2.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.43 Section 504.00-509.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 202 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The injection rate decreased from 40 mL/min at start of the CHi phase to 22 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analyse.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase shows an upward trend at middle times and a kind of horizontal stabilization at late times. This behaviour indicates a decrease of transmissivity at some distance from the borehole. A composite radial flow model was used for the analysis of the CHi phase. The response of the CHir derivative is similar to the response of the CHi derivative. The CHir phase was matched using a composite flow model with wellbore storage and skin was. The analysis is presented in Appendix 2-73.

Selected representative parameters

The recommended transmissivity of $1.6 \cdot 10^{-8}$ m²/s was derived from the analysis of the CHi phase (inner zone). The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-9}$ m²/s to $4.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 4,959.6 kPa.

The analysis of the CHi and CHir phase show consistency. No further analysis is recommended.

6.3.44 Section 509.00-514.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted.

During the CHi phase the flow rate dropped below 1 mL/min. Because of this the injection was stopped and no CHir phase was conducted. Instead, the recovery of the preliminary pulse injection test was analysed.

During the brief injection phase of the pulse injection of about 29 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 213 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $2.1 \cdot 10^{-11}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows a horizontal stabilization, which is indicative for a flow dimension of 2 (radial flow). The unknown initial formation pressure, adds some uncertainties to the analysis and the late time derivative. The analysis is presented in Appendix 2-74.

Selected representative parameters

The recommended transmissivity of $1.9\cdot 10^{-09}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $1.0\cdot 10^{-10}$ to $3.0\cdot 10^{-09}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.45 Section 514.00-519.00 m, test no. 1, injection

Comments to test

The intention was to conduct the test as a constant pressure injection test phase (CHi), followed by a pressure recovery phase (CHir). However, during the injection the flowrate dropped below 1 mL/min (measurement limit), indicating a very low formation transmissivity.

The measured data is presented in Appendix 2-75.

Selected representative parameters

Based on the test response the interval transmissivity is assumed to be $1.0 \cdot 10^{-10}$ m²/s.

No further analysis recommended.

6.3.46 Section 519.00-524.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The relative fast recovery of the pulse

test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system functioned well. However, the recorded data is noisy. The injection rate decreased from 12 mL/min at start of the CHi phase to 7 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows an upward trend. This behaviour is indicative for a decrease in transmissivity at some distance from the borehole. Due to the noise in the recorded data the CHi phase is not conclusive. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a slight horizontal stabilization at middle times (inflexion) followed by an upward trend at late times, which is consistent with a decrease in transmissivity at some distance from the borehole. A two shell composite radial flow model with wellbore storage and skin was used for the analyses of the CHir phase. The analysis is presented in Appendix 2-76.

Selected representative parameters

The recommended transmissivity of $1.5\cdot10^{-8}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-9}$ m²/s to $4.0\cdot10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.102.5 kPa.

The analysis of the CHi and CHir phases shows good consistency. No further analysis is recommended.

6.3.47 Section 524.00-529.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted.

During the CHi phase the flow rate dropped below 1 mL/min. Because of this the injection was stopped and no CHir phase was conducted. Instead, the recovery of the preliminary pulse injection test was analysed.

During the brief injection phase of the pulse injection of about 3 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 207 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.6 \cdot 10^{-11}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows a horizontal stabilization at early and middle

times, which is indicative for a flow dimension of 2 (radial flow). The unknown initial formation pressure, adds some uncertainties to the analysis and the late time derivative. The analysis is presented in Appendix 2-77.

Selected representative parameters

The recommended transmissivity of $6.1 \cdot 10^{-10}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-10}$ to $8.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.48 Section 529.00-534.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted.

During the CHi phase the flow rate dropped below 1 mL/min. Because of this the injection was stopped and no CHir phase was conducted. Instead, the recovery of the preliminary pulse injection test was analysed.

During the brief injection phase of the pulse injection of about 4 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 209 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.9 \cdot 10^{-11}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows a horizontal stabilization at early and middle times, which is indicative for a flow dimension of 2 (radial flow). A homogeneous radial flow model was used for the analysis. The analysis is presented in Appendix 2-78.

Selected representative parameters

The recommended transmissivity of $7.2 \cdot 10^{-10}$ m²/s was derived from the analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-10}$ to $9.0 \cdot 10^{-10}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.49 Section 534.00-539.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system functioned well. However, the recorded data is noisy. The injection rate decreased from 11 mL/min at start of the CHi phase to 9 ml/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase is very noisy does not allow for flow model identification. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a downward trend at late times, indicating an increase of transmissivity at some distance from the borehole. A two shell composite flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-79.

Selected representative parameters

The recommended transmissivity of $8.8 \cdot 10^{-9}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $4.0 \cdot 10^{-9}$ m²/s to $3.0 \cdot 10^{-8}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,227.9 kPa.

The analyses of the CHi and CHir phases show some inconsistency as far as the flow model concerned. This is attributed to the poor data quality in the CHi phase. No further analysis is recommended.

6.3.50 Section 539.00-544.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection between the test interval and the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 0.5 L/min at start of the CHi phase to 0.4 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a homogeneous radial flow model. The early and middle time response of the derivative is not well known, but it shows formation flow stabilization at late times. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-80.

Selected representative parameters

The recommended transmissivity of $1.6\cdot10^{-6}$ m²/s was derived from the analysis of the CHir phase, because of its horizontal derivative stabilization at late times. The confidence range for the interval transmissivity is estimated to be $7.0\cdot10^{-7}$ m²/s to $3.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.278.3 kPa.

No further analysis is recommended.

6.3.51 Section 544.00-549.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system functioned well, with the exception of some oscillations at the start. However, the recorded data is a little bit noisy at middle and late times. The injection rate decreased from 100 mL/min at start of the CHi phase to 70 ml/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase shows a noisy but relative flat derivative. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a downward trend at late times, indicating an increase of transmissivity at some distance from the borehole. A two shell composite flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-81.

Selected representative parameters

The recommended transmissivity of $9.1\cdot10^{-8}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $6.0\cdot10^{-8}$ m²/s to $4.0\cdot10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,329.3 kPa.

The analyses of the CHi and CHir phases show some inconsistency as far as the flow model concerned. This may attributed to the noise in the recorded data of the CHi phase. No further analysis is recommended.

6.3.52 Section 549.00-554.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure

injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. No hydraulic connection to the adjacent zones was observed. The automatic injection system functioned well. However, the recorded data is noisy. The injection rate decreased from 21 mL/min at start of the CHi phase to 12 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a homogeneous radial flow. The derivative of the CHir phase shows a downward trend at late times. A two shell composite radial flow model with increasing transmissivity away from the borehole was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-82.

Selected representative parameters

The recommended transmissivity of $9.8 \cdot 10^{-09}$ m²/s was derived from the analysis of the CHir phase (outer phase). The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-09}$ m²/s to $2.0 \cdot 10^{-08}$ m²/s (this range includes the inner zone transmissivity of the CHir phase). The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,365.8 kPa.

The analyses of the CHi and CHir phases show consistency regarding the transmissivity. The inconsistency regarding the flow models may be attributed to the noise in the data of the CHi phase. No further analysis is recommended.

6.3.53 Section 554.00-559.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 196 kPa. No hydraulic connection to the adjacent zones was observed. The CHi phase is not analysable, because the automatic regulation system was switching between two valves during the injection phase and no stable pressure condition in the section occurred. The arithmetic flow rate during the CHi phase was approx. 5 mL/min. The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the CHi phase is not analysable, due to poor pressure control during the injection. The CHir shows an upward trend at middle times, followed by a slight stabilization at late times. This is consistent with a change of transmissivity at some distance from the borehole. A two shell composite radial flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-83.

Selected representative parameters

The recommended transmissivity of $1.9 \cdot 10^{-09}$ m²/s was derived from the analysis of the CHir phase (outer phase). The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-10}$ m²/s to $5.0 \cdot 10^{-09}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,421.4 kPa.

No further analysis is recommended.

6.3.54 Section 559.00-564.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 202 kPa. No hydraulic connection to the adjacent zones was observed. The automatic injection system functioned well. However, the recorded data is noisy. The injection rate decreased from 1.3 L/min at start of the CHi phase to 0.8 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a homogeneous radial flow. The derivative of the CHir phase shows a horizontal stabilization at middle times, followed by a downward trend at late times, which is indicative with an increase of transmissivity at some distance from the borehole. A two shell composite radial flow model with increasing transmissivity away from the borehole was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-84.

Selected representative parameters

The recommended transmissivity of $4.6 \cdot 10^{-07}$ m²/s was derived from the analysis of the CHir phase (inner phase), which shows the clearest derivative stabilization. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-07}$ m²/s to $7.0 \cdot 10^{-07}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.474.5 kPa.

The analyses of the CHi and CHir phases show consistency regarding the transmissivity. The inconsistency regarding the flow models may be attributed to the noise in the data of the CHi phase. No further analysis is recommended.

6.3.55 Section 564.00-569.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant

pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked well. However, the recorded data is a little bit noisy. The injection rate decreased from 117 mL/min at start of the CHi phase to 103 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery. Both phases are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase (although noisy) shows a relative flat derivative. A homogenous radial flow model was chosen for the analysis of the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times, indicating a high positive skin, followed by a kind of horizontal stabilization. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-85.

Selected representative parameters

The recommended transmissivity of $1.5\cdot 10^{-7}$ m²/s was derived from the analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0\cdot 10^{-8}$ m²/s to $5.0\cdot 10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5,529.0 kPa.

The analyses of the CHi and CHir phases show good consistency, with the exception of the high positive skin derived from the CHir phase. This high positive skin may be attributed to non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.56 Section 569.00-574.00 m, test no. 1, pulse injection

Comments to test

The intention was to design the test as a constant pressure injection test phase (CHi), followed by a pressure recovery phase (CHir). However, after inflating the packers and opening/closing the test valve for conducting the preliminary pulse injection, the pulse recovered very slowly. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). The pulse injection phase is also still influenced by the packer expansion. None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-86.

Selected representative parameters

Based on the test response the interval transmissivity is lower than $1.0 \cdot 10^{-11}$ m²/s.

No further analysis recommended.

6.3.57 Section 574.00-579.00 m, test no. 1, injection

Comments to test

The intention was to conduct the test as a constant pressure injection test phase (CHi), followed by a pressure recovery phase (CHir). However, after inflating the packers and closing the test

valve, the pressure kept rising by approx. 350 kPa in 10 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than 1E–11 m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-87.

Selected representative parameters

Based on the test response (prolonged packer compliance) the interval transmissivity is lower than $1.0 \cdot 10^{-11}$ m²/s.

No further analysis recommended.

6.3.58 Section 579.00-584.00 m, test no. 1, pulse injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a low formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted.

During the CHi phase the flow rate dropped below 1 mL/min. Because of this the injection was stopped and no CHir phase was conducted. Instead, the recovery of the preliminary pulse injection test was analysed.

During the brief injection phase of the pulse injection of less than 1 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of approx. 220 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.8 \cdot 10^{-12}$ m³/Pa. It should be noted though that there is large uncertainty connected with the determination of the wellbore storage coefficient (probably one order of magnitude), which will implicitly translate into uncertainty in the derived transmissivity.

Flow regime and calculated parameters

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative shows an upward trend, which is indicative for a decrease of transmissivity at some distance from the borehole. A two shell composite flow model was used for the analysis. The analysis is presented in Appendix 2-88.

Selected representative parameters

The recommended transmissivity of $1.4\cdot10^{-11}$ m²/s was derived from the analysis of the Pi phase (outer zone). The confidence range for the interval transmissivity is estimated to be $9.0\cdot10^{-12}$ to $6.0\cdot10^{-11}$ m²/s. The flow dimension displayed during the test is 2. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.59 Section 584.00-589.00 m, test no. 1, injection

Comments to test

The intention was to conduct the test as a constant pressure injection test phase (CHi), followed by a pressure recovery phase (CHir). However, after inflating the packers and closing the test valve, the pressure kept rising by approx. 200 kPa in 20 minutes. This phenomenon is caused by

prolonged packer expansion in a very tight section (T probably smaller than $1E-11 \text{ m}^2/\text{s}$). None of the test phases is analysable.

The measured data is presented in Appendix 2-89.

Selected representative parameters

Based on the test response (prolonged packer compliance) the interval transmissivity is lower than $1.0 \cdot 10^{-11}$ m²/s.

No further analysis recommended.

6.3.60 Section 589.00-594.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 200 kPa. The pressure in the bottom zone rose by approx. 30 kPa, indicating a connection to the test section. The automatic regulation system worked well. However, the recorded data is a noisy. The injection rate decreased from 1.5 L/min at start (some oscillations occurred until the system find the right settings) of the CHi phase to 1.4 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows no problems and is adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi was matched using a homogenous radial flow model. The derivative of the CHir phase shows a slight stabilization at middle times, followed by downward trend at late times. This is consistent with an increase of transmissivity at some distance from the borehole. A two shell composite flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-90.

Selected representative parameters

The recommended transmissivity of $1.6\cdot10^{-6}$ m²/s was derived from the analysis of the CHir phase (inner zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-7}$ m²/s to $5.0\cdot10^{-6}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.766.7 kPa.

The analyses of the CHi and CHir phases show consistency regarding the transmissivity. The inconsistency regarding the flow models may be attributed to the noise in the data of the CHi phase. No further analysis is recommended.

6.3.61 Section 594.00-599.00 m, test no. 1, injection

Comments to test

The test design consisted of a preliminary pulse injection test conducted with the goal of deriving a first estimate of the formation transmissivity. The recovery of the pulse test indicated a medium formation transmissivity. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. Only the CHi and CHir phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 201 kPa. A slight reaction in the bottom zone was observed during the injection. The automatic regulation system worked well. However, the recorded data is noisy. The injection rate decreased from 200 mL/min at start of the CHi phase to 170 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test the derivative of the CHi phase was matched using a homogeneous radial flow model. The early and middle time response of the derivative is not very conclusive, but it shows formation flow stabilization at late times. A homogeneous flow model with wellbore storage and skin was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-91.

Selected representative parameters

The recommended transmissivity of $2.6\cdot10^{-7}$ m²/s was derived from the analysis of the CHi phase, because of its horizontal derivative stabilization at late times. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-8}$ m²/s to $5.0\cdot10^{-7}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 5.817.6 kPa.

The analysis of the CHi and CHir phase shows consistency. No further analysis is recommended.

7 Synthesis

The synthesis chapter summarizes the basic test parameters and analysis results. In addition, the correlation between steady state and transient transmissivities as well as between the matched and the theoretical wellbore storage (WBS) coefficient are presented and discussed.

The Figures 7-1 to 7-3 present the transmissivity, conductivity and hydraulic freshwater head profiles.

7.1 Summary of results

Table 7-1. General test data from hydraulic tests in KLX18A.

Borehole secup	Borehole seclow	Date and time for test, start	Date and time for test, stop	\mathbf{Q}_{p}	\mathbf{Q}_{m}	t _p	t _F	p_0	\mathbf{p}_{i}	\mathbf{p}_{p}	p _F	Te _w	Test phases measured Analysed test phases
(m)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m³/s)	(m³/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(°C)	marked bold
104.00	204.00	060815 10:44	060815 12:10	1.42E-04	1.53E-04	1,800	1,800	1,978	1,978	2,178	1,987	9.7	CHi/CHir
204.00	304.00	060815 14:05	060815 16:10	1.32E-06	1.57E-06	1,800	1,800	2,954	2,950	3,150	2,954	11.3	CHi/CHir
304.00	404.00	060815 17:25	060815 19:19	5.63E-05	6.00E-05	1,800	1,800	3,923	3,915	4,114	3,915	12.8	CHi/CHir
404.00	504.00	060815 21:08	060815 23:01	6.48E-05	6.93E-05	1,800	1,800	4,895	4,881	5,081	4,883	14.5	CHi/CHir
504.00	604.00	060816 07:34	060816 09:40	4.25E-05	1.67E-04	1,800	1,800	5,886	5,864	6,065	5,867	16.0	CHi/CHir
104.00	124.00	060816 19:58	060816 21:22	1.58E-04	1.67E-04	1,200	1,200	1,202	1,204	1,404	1,206	8.6	CHi/CHir
124.00	144.00	060816 22:02	060816 23:27	4.65E-05	4.82E-05	1,200	1,200	1,395	1,400	1,601	1,404	8.8	CHi/CHir
144.00	164.00	060816 23:59	060817 01:27	6.63E-06	7.48E-06	1,200	1,200	1,590	1,592	1,792	1,592	9.1	CHi/CHir
164.00	184.00	060817 06:38	060817 08:23	1.83E-07	2.15E-07	1,200	1,200	1,779	1,788	1,994	1,807	9.4	CHi/CHir
184.00	204.00	060817 09:06	060817 10:48	8.27E-08	1.10E-07	1,200	1,200	1,975	1,984	2,186	1,993	9.7	CHi/CHir
204.00	224.00	060817 11:27	060817 13:32	7.00E-08	9.03E-08	1,500	3,060	2,172	2,172	2,387	2,179	10.0	CHi/CHir
224.00	244.00	060817 14:08	060817 16:08	#NV	#NV	10	3,721	2,367	2,366	2,605	2,401	10.4	Pi
244.00	264.00	060817 16:43	060817 18:16	1.17E-06	1.40E-06	1,200	1,200	2,562	2,559	2,758	2,565	10.7	CHi/CHir
264.00	284.00	060817 18:46	060817 20:28	1.00E-07	1.33E-07	1,200	1,200	2,756	2,766	2,983	2,813	11.0	CHi/CHir
284.00	304.00	060817 21:22	060817 23:01	6.67E-08	8.33E-08	1,200	1,200	2,967	2,974	3,197	2,982	11.3	CHi/CHir
304.00	324.00	060817 23:30	060818 00:54	6.67E-07	7.17E-07	1,200	1,200	3,144	3,137	3,337	3,136	11.6	CHi/CHir
324.00	344.00	060818 01:24	060818 02:47	1.90E-05	1.98E-05	1,200	1,200	3,337	3,331	3,531	3,331	11.9	CHi/CHir
344.00	364.00	060818 06:29	060818 08:03	2.93E-05	1.67E-04	1,200	1,200	3,529	3,524	3,724	3,525	12.2	CHi/CHir
364.00	384.00	060818 08:34	060818 10:01	9.22E-06	9.52E-06	1,200	1,200	3,725	3,720	3,921	3,721	12.5	CHi/CHir
384.00	404.00	060818 10:38	060818 12:07	8.30E-06	8.85E-06	1,200	1,200	3,921	3,913	4,114	3,914	12.8	CHi/CHir
404.00	424.00	060818 13:16	060818 14:45	3.71E-05	3.83E-05	1,200	1,200	4,119	4,107	4,307	4,108	13.1	CHi/CHir
424.00	444.00	060818 15:16	060818 16:46	4.43E-05	4.65E-05	1,200	1,200	4,313	4,301	4,501	4,302	13.5	CHi/CHir
444.00	464.00	060818 17:20	060818 18:44	1.47E-06	1.55E-06	1,200	1,200	4,509	4,507	4,706	4,507	13.8	CHi/CHir
464.00	484.00	060818 19:19	060818 20:35	1.27E-06	1.37E-06	1,200	1,200	4,703	4,700	4,899	4,701	14.1	CHi/CHir
484.00	504.00	060819 00:45	060819 04:09	4.73E-07	9.24E-07	1,200	7,200	4,895	4,915	5,116	4,927	14.5	CHi/CHir

Borehole secup	Borehole seclow	Date and time for test, start	Date and time for test, stop	Q _p	Q _m	t _p	t _F	p ₀	p _i	p _p	p _F	Te _w	Test phases measured Analysed test phases
(m)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m³/s)	(m³/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(°C)	marked bold
504.00	524.00	060819 06:24	060819 08:12	4.70E-07	6.61E-07	1,200	1,200	5,086	5,092	5,292	5,127	14.8	CHi/CHir
524.00	544.00	060819 08:45	060819 10:16	5.53E-06	5.68E-06	1,200	1,200	5,280	5,279	5,480	5,280	15.0	CHi/CHir
544.00	564.00	060819 10:56	060819 12:36	1.19E-05	1.27E-05	1,200	1,200	5,477	5,479	5,679	5,480	15.4	CHi/CHir
564.00	584.00	060819 13:29	060819 14:56	1.43E-06	1.49E-06	1,200	1,200	5,676	5,674	5,874	5,674	15.7	CHi/CHir
584.00	604.00	060819 15:30	060819 16:51	2.33E-05	2.39E-05	1,200	1,200	5,872	5,869	6,069	5,870	16.0	CHi/CHir
299.00	304.00	060820 08:53	060820 10:28	2.50E-08	2.53E-08	1,200	1,200	2,947	2,945	3,170	2,946	11.2	CHi/CHir
304.00	309.00	060820 10:58	060820 12:56	#NV	#NV	10	4,140	2,996	3,006	3,234	3,195	11.3	Pi
309.00	314.00	060820 13:33	060820 15:04	3.33E-08	3.77E-08	1,200	1,200	3,046	3,042	3,273	3,043	11.4	CHi/CHir
314.00	319.00	060820 15:29	060820 16:27	#NV	#NV	#NV	#NV	3,096	#NV	#NV	#NV	11.5	Pi
319.00	324.00	060820 16:52	060820 18:12	6.00E-07	6.17E-07	1,200	1,200	3,145	3,140	3,339	3,139	11.6	CHi/CHir
324.00	329.00	060820 18:35	060820 19:31	#NV	#NV	#NV	#NV	3,194	#NV	#NV	#NV	11.7	#NV
329.00	334.00	060820 19:53	060820 21:14	5.00E-06	5.28E-06	1,200	1,200	3,242	3,236	3,437	3,236	11.8	CHi/CHir
334.00	339.00	060820 21:58	060820 23:46	9.33E-06	9.62E-06	1,200	1,200	3,290	3,284	3,484	3,282	11.9	CHi/CHir
339.00	344.00	060821 00:08	060821 01:31	4.33E-06	4.67E-06	1,200	1,200	3,338	3,332	3,533	3,332	11.9	CHi/CHir
344.00	349.00	060821 01:55	060821 03:24	2.21E-05	2.28E-05	1,200	1,200	3,386	3,381	3,581	3,381	12.0	CHi/CHir
349.00	354.00	060821 06:23	060821 08:08	4.32E-07	4.33E-07	1,200	1,200	3,433	3,428	3,601	3,428	12.1	CHi/CHir
354.00	359.00	060821 08:44	060821 10:08	#NV	#NV	10	2,714	3,491	3,489	3,707	3,538	12.2	Pi
359.00	364.00	060821 10:37	060821 12:02	7.98E-06	8.23E-06	1,200	1,200	3,531	3,527	3,728	3,527	12.2	CHi/CHir
364.00	369.00	060821 13:02	060821 14:22	7.75E-06	7.88E-06	1,200	1,200	3,581	3,574	3,775	3,575	12.3	CHi/CHir
369.00	374.00	060821 15:02	060821 16:20	3.50E-06	3.58E-06	1,200	1,200	3,629	3,630	3,831	3,630	12.4	CHi/CHir
374.00	379.00	060821 16:42	060821 18:05	2.33E-06	2.50E-06	1,200	1,200	3,679	3,675	3,875	3,675	12.5	CHi/CHir
379.00	384.00	060821 18:28	060821 19:48	1.28E-06	1.35E-06	1,200	1,200	3,727	3,723	3,922	3,723	12.6	CHi/CHir
384.00	389.00	060821 20:20	060821 21:41	2.00E-06	2.12E-06	1,200	1,200	3,776	3,772	3,971	3,768	12.6	CHi/CHir
389.00	394.00	060821 22:03	060821 23:33	5.67E-08	7.50E-08	1,200	1,200	3,823	3,820	4,052	3,818	12.7	CHi/CHir
394.00	399.00	060821 23:59	060822 01:29	2.50E-07	2.71E-07	1,200	1,200	3,870	3,868	4,068	3,867	12.8	CHi/CHir
399.00	404.00	060822 06:19	060822 07:37	6.28E-06	6.66E-06	1,200	1,200	3,918	3,909	4,109	3,908	12.8	CHi/CHir
404.00	409.00	060822 08:10	060822 09:32	4.55E-07	5.15E-07	1,200	1,200	3,970	3,958	4,181	3,958	12.9	CHi/CHir
409.00	414.00	060822 10:09	060822 11:36	6.50E-07	7.12E-07	1,200	1,200	4,016	4,008	4,209	4,008	13.0	CHi/CHir

Borehole secup	Borehole seclow	Date and time for test, start	Date and time for test, stop	\mathbf{Q}_{p}	Q _m	t _p	t _F	p ₀	p _i	p _p	p _F	Te _w	Test phases measured Analysed test phases
(m)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m³/s)	(m³/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(°C)	marked bold
414.00	419.00	060822 14:07	060822 15:25	4.12E-06	4.21E-06	1,200	1,200	4,069	4,057	4,257	4,057	13.1	CHi/CHir
419.00	424.00	060822 15:59	060822 17:19	3.32E-05	3.38E-05	1,200	1,200	4,115	4,105	4,306	4,106	13.1	CHi/CHir
424.00	429.00	060822 17:42	060822 19:08	2.37E-05	2.50E-05	1,200	1,200	4,165	4,153	4,353	4,153	13.2	CHi/CHir
429.00	434.00	060822 19:32	060822 20:54	2.35E-05	2.40E-05	1,200	1,200	4,214	4,202	4,402	4,202	13.3	CHi/CHir
434.00	439.00	060822 21:24	060822 22:46	6.50E-07	6.83E-07	1,200	1,200	4,262	4,256	4,455	4,254	13.4	CHi/CHir
439.00	444.00	060822 23:10	060823 00:35	#NV	#NV	10	2,697	4,308	4,330	4,541	4,445	13.5	Pi
444.00	449.00	060823 01:02	060823 03:40	#NV	#NV	10	7,234	4,356	4,371	4,573	4,416	13.6	Pi
449.00	454.00	060823 06:23	060823 08:04	2.63E-08	3.36E-08	1,200	1,200	4,403	4,413	4,630	4,439	13.7	CHi/CHir
454.00	459.00	060823 08:37	060823 10:04	1.51E-06	1.61E-06	1,200	1,200	4,453	4,451	4,652	4,454	13.7	CHi/CHir
459.00	464.00	060823 10:41	060823 12:04	1.67E-08	2.10E-08	1,200	1,200	4,507	4,541	4,763	4,545	13.8	CHi/CHir
464.00	469.00	060823 13:31	060823 15:05	2.67E-06	3.10E-08	1,200	1,200	4,553	4,558	4,812	4,564	13.9	CHi/CHir
469.00	474.00	060823 16:36	060823 17:54	3.00E-07	3.08E-07	1,200	1,200	4,602	4,602	4,802	4,601	14.0	CHi/CHir
474.00	479.00	060823 18:19	060823 19:37	1.33E-06	1.45E-06	1,200	1,200	4,652	4,652	4,851	4,651	14.1	CHi/CHir
477.00	482.00	060823 20:08	060823 21:32	1.83E-07	2.00E-07	1,200	1,200	4,680	4,679	4,880	4,679	14.1	CHi/CHir
482.00	487.00	060823 21:55	060823 23:32	9.33E-07	1.12E-06	1,200	1,200	4,728	4,733	4,931	4,679	14.2	CHi/CHir
487.00	492.00	060823 23:55	060824 01:21	5.47E-07	6.22E-07	1,200	1,200	4,774	4,773	4,974	4,772	14.3	CHi/CHir
489.00	494.00	060824 06:23	060824 07:59	7.32E-07	7.87E-07	1,200	1,200	4,791	4,792	4,992	4,794	14.3	CHi/CHir
494.00	499.00	060824 08:48	060824 10:28	7.17E-08	8.93E-08	1,200	1,200	4,841	4,851	5,052	4,878	14.4	CHi/CHir
499.00	504.00	060824 11:04	060824 12:08	#NV	#NV	10	678	4,893	4,899	5,153	4,898	14.5	Pi
504.00	509.00	060824 14:09	060824 16:21	3.67E-07	4.37E-07	1,200	1,200	4,967	4,966	5,168	4,998	14.5	CHi/CHir
509.00	514.00	060824 16:44	060824 17:40	#NV	#NV	10	696	4,995	5,027	5,240	5,030	14.6	Pi
514.00	519.00	060824 18:02	060824 18:57	#NV	#NV	#NV	#NV	5,043	#NV	#NV	#NV	14.7	#NV
519.00	524.00	060824 19:21	060824 20:43	1.17E-07	1.43E-07	1,200	1,200	5,092	5,098	5,298	5,125	14.8	CHi/CHir
524.00	529.00	060824 21:09	060824 22:14	#NV	#NV	10	1,262	5,138	5,149	5,356	5,152	14.8	Pi
529.00	534.00	060824 22:37	060824 23:43	#NV	#NV	10	1,272	5,185	5,192	5,401	5,194	14.9	Pi
534.00	539.00	060825 00:07	060825 01:32	1.62E-07	1.80E-07	1,200	1,200	5,232	5,233	5,434	5,232	15.0	CHi/CHir
539.00	544.00	060825 06:09	060825 07:44	7.20E-06	7.37E-06	1,200	1,200	5,286	5,278	5,478	5,278	15.1	CHi/CHir
544.00	549.00	060825 08:29	060825 09:59	1.13E-06	1.17E-06	1,200	1,200	5,328	5,329	5,530	5,330	15.1	CHi/CHir

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Borehole secup	Borehole seclow	Date and time for test, start	Date and time for test, stop	\mathbf{Q}_{p}	\mathbf{Q}_{m}	\mathbf{t}_{p}	t _F	\mathbf{p}_0	\mathbf{p}_{i}	\mathbf{p}_{p}	$p_{\scriptscriptstyle F}$	Te _w	Test phases measured Analysed test phases
(m)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m³/s)	(m³/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(°C)	marked bold
549.00	554.00	060825 10:32	060825 12:27	2.00E-07	2.53E-07	1,200	1,200	5,380	5,388	5,589	5,398	15.2	CHi/CHir
554.00	559.00	060825 13:24	060825 15:03	7.50E-08	8.33E-08	1,200	1,200	5,447	5,437	5,633	5,438	15.3	CHi/ CHir
559.00	564.00	060825 15:36	060825 16:54	1.27E-05	1.32E-05	1,200	1,200	5,490	5,481	5,683	5,482	15.3	CHi/CHir
564.00	569.00	060825 17:19	060825 18:40	1.72E-06	1.78E-06	1,200	1,200	5,531	5,530	5,730	5,528	15.4	CHi/CHir
569.00	574.00	060825 19:04	060825 21:13	#NV	#NV	#NV	#NV	5,581	#NV	#NV	#NV	15.5	#NV
574.00	579.00	060825 21:36	060825 22:15	#NV	#NV	#NV	#NV	5,627	#NV	#NV	#NV	15.6	#NV
579.00	584.00	060825 22:38	060825 23:58	#NV	#NV	10	2,025	5,673	5,737	5,894	5,688	15.6	Pi
584.00	589.00	060826 00:20	060826 01:08	#NV	#NV	#NV	#NV	5,719	#NV	#NV	#NV	15.7	#NV
589.00	594.00	060826 06:16	060826 07:46	2.35E-05	2.43E-05	1,200	1,200	5,776	5,766	5,966	5,767	15.7	CHi/CHir
594.00	599.00	060826 08:29	060826 09:53	2.80E-06	2.95E-06	1,200	1,200	5,822	5,818	6,019	5,818	15.9	CHi/CHir

Nomenclature

Q_p	Flow in test section immediately before stop of flow [m³/s]
Q_m	Arithmetical mean flow during perturbation phase [m³/s]
t_{p}	Duration of perturbation phase [s]
t_{f}	Duration of recovery phase [s]
p_0	Pressure in borehole before packer inflation [kPa]
p _i	Pressure in test section before start of flowing [kPa]
p _p	Pressure in test section before stop of flowing [kPa]
p _F	Pressure in test section at the end of the recovery [kPa]
Te _w	Temperature in test section
Test phases #NV	CHi: Constant Head injection phase CHir: Recovery phase following the constant head injection phase Pi: Pulse injection phase not analysed/no values
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Table 7-2. Results from analysis of hydraulic tests in KLX18A.

Interval	position	Stationary parameter		Transie Flow reg	nt analysis gime	Formatio	n paramet	ers									Static co	onditions
up m btoc	low m btoc	Q/s m²/s	T _M m²/s		Recovery Phase		T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	C m³/Pa	ξ -	dt₁ min	dt ₂ min	p* kPa	h _{wif} masl
104.00	204.00	6.98E-06	9.09E-06	22	WBS2	7.8E-06	1.2E-05	6.0E-06	1.1E-05	7.8E-06	5.0E-06	1.0E-05	4.8E-09	-1.3	0.90	3.00	1,983.6	12.22
204.00	304.00	6.62E-08	8.61E-08	22	WBS22	1.5E-08	5.0E-08	1.7E-08	6.7E-08	1.5E-08	8.0E-09	3.0E-08	1.5E-10	-3.8	6.00	18.00	2,938.0	10.99
304.00	404.00	2.78E-06	3.62E-06	2	WBS2	5.1E-06	#NV	1.5E-05	#NV	5.1E-06	2.0E-06	8.0E-06	9.6E-10	3.1	0.60	18.00	3,915.6	12.26
404.00	504.00	3.18E-06	4.12E-06	2	WBS2	6.1E-06	#NV	1.2E-05	#NV	6.1E-06	2.0E-06	9.0E-06	2.1E-09	3.7	1.80	18.00	4,880.5	12.28
504.00	604.00	2.07E-06	2.70E-06	22	WBS22	1.9E-06	4.6E-06	2.7E-06	8.97E-06	2.7E-06	9.0E-07	5.0E-06	1.6E-09	0.9	0.33	1.80	5,864.1	14.30
104.00	124.00	7.75E-06	8.11E-06	22	WBS22	8.1E-06	1.6E-05	1.0E-05	2.1E-05	8.1E-06	6.0E-06	2.0E-05	5.3E-09	-1.3	0.36	2.10	1,203.3	11.55
124.00	144.00	2.27E-06	2.37E-06	2	WBS2	5.1E-06	#NV	1.0E-05	#NV	5.1E-06	2.0E-06	8.0E-06	1.6E-09	5.8	0.33	18.00	1,402.9	12.17
144.00	164.00	3.25E-07	3.40E-07	22	WBS2	2.5E-07	3.1E-07	6.3E-07	1.05E-06	2.5E-07	9.0E-08	5.0E-07	3.9E-11	-1.8	0.39	5.40	1,590.5	11.58
164.00	184.00	8.73E-09	9.13E-09	2	WBS2	5.8E-09	#NV	8.2E-09	#NV	8.2E-09	5.0E-09	1.0E-08	5.6E-11	0.3	1.80	9.00	1,792.0	12.40
184.00	204.00	4.01E-09	4.20E-09	2	WBS2	2.3E-09	#NV	3.4E-09	#NV	3.4E-09	1.0E-09	6.0E-09	8.2E-11	0.1	5.40	12.00	1,963.3	10.15
204.00	224.00	3.19E-09	3.34E-09	2	WBS2	1.9E-09	#NV	6.4E-09	#NV	6.4E-09	2.0E-09	9.0E-09	6.8E-11	4.8	5.40	15.00	2,168.7	11.37
224.00	244.00	#NV	#NV	#NV	WBS2	#NV	#NV	9.3E-11	#NV	9.3E-11	6.0E-11	2.0E-10	7.9E-11	-2.4	0.54	33.00	#NV	#NV
244.00	264.00	5.75E-08	6.02E-08	22	WBS22	1.8E-08	5.5E-08	4.3E-08	1.9E-08	1.8E-08	9.0E-09	6.0E-08	6.6E-12	-3.2	0.28	2.40	2,543.4	10.16
264.00	284.00	4.52E-09	4.73E-09	22	WBS22	4.9E-09	1.7E-09	6.9E-09	9.1E-10	6.9E-09	3.0E-09	9.0E-09	6.0E-11	-0.9	0.24	1.20	2,750.4	11.56
284.00	304.00	2.93E-09	3.07E-09	2	WBS2	1.6E-09	#NV	3.7E-09	#NV	3.7E-09	9.0E-10	6.0E-09	6.4E-11	2.5	1.50	9.00	2,938.4	11.03
304.00	324.00	8.17E-06	8.54E-06	2	WBS2	7.5E-08	#NV	2.1E-07	#NV	2.1E-07	8.0E-08	5.0E-07	5.2E-11	32.5	1.20	7.20	3,135.0	11.39
324.00	344.00	9.32E-07	9.75E-07	2	WBS2	1.7E-06	#NV	1.7E-06	5.7E-06	5.7E-06	2.0E-06	9.0E-06	1.9E-10	2.0	0.60	9.00	3,330.2	11.62
344.00	364.00	1.44E-06	1.51E-06	2	WBS2	3.4E-06	#NV	9.3E-06	#NV	9.3E-06	3.0E-06	3.0E-05	1.7E-10	7.7	0.15	9.00	3,524.4	11.73
364.00	384.00	4.50E-07	4.71E-07	2	WBS2	1.1E-06	#NV	2.1E-06	#NV	2.1E-06	9.0E-07	5.0E-06	2.2E-10	20.3	0.60	9.00	3,720.6	12.06
384.00	404.00	4.05E-07	4.24E-07	2	WBS2	1.0E-06	#NV	1.9E-06	#NV	1.9E-06	8.0E-07	4.0E-06	1.2E-10	20.6	0.36	9.00	3,913.3	12.03
404.00	424.00	1.82E-06	1.90E-06	2	WBS22	4.4E-06	#NV	2.2E-06	7.3E-06	7.3E-06	2.0E-06	1.0E-05	5.4E-10	1.2	0.78	9.00	4,107.1	12.12
424.00	444.00	2.17E-06	2.27E-06	2	WBS2	4.4E-06	#NV	9.9E-06	#NV	9.9E-06	4.0E-06	3.0E-05	4.4E-10	19.9	0.30	9.00	4,300.9	12.21
444.00	464.00	7.23E-08	7.56E-08	2	WBS2	1.1E-07	#NV	6.5E-08	#NV	6.5E-08	3.0E-08	9.0E-08	1.3E-10	-0.2	1.50	7.20	4,494.7	12.28
464.00	484.00	6.24E-08	6.53E-08	2	WBS2	7.3E-08	#NV	1.1E-07	#NV	1.1E-07	7.0E-08	3.0E-07	6.6E-11	4.8	1.02	9.00	4,695.3	13.07
484.00	504.00	2.31E-08	2.41E-08	2	WBS2	1.2E-09	#NV	1.6E-09	#NV	1.6E-09	9.0E-10	5.0E-09	1.6E-09	-4.3	33.00	108.00	4,895.4	13.80
504.00	524.00	2.31E-08	2.41E-08	2	WBS2	9.9E-09	#NV	1.7E-08	#NV	1.7E-08	8.0E-09	4.0E-08	4.8E-10	-2.0	3.30	10.20	5,096.4	14.63

Interval	position	Stationary		Transie	nt analysis nime	Formation	n paramete	ers									Static co	onditions
up m btoc	low m btoc	Q/s m²/s	T _M m²/s	•	Recovery Phase		T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m ² /s	T _{TMAX} m²/s	C m³/Pa	ξ -	dt₁ min	dt ₂ min	p* kPa	h _{wif} masl
524.00	544.00	2.70E-07	2.83E-07	2	WBS2	6.8E-07	#NV	1.3E-06	#NV	6.8E-07	1.0E-07	1.0E-06	6.4E-11	8.4	0.57	18.00	5,279.7	13.66
544.00	564.00	5.85E-07	6.11E-07	22	WBS22	3.8E-07	1.9E-06	5.5E-07	2.7E-06	5.5E-07	1.0E-07	9.0E-07	1.0E-09	-2.2	0.27	3.30	5,477.6	14.18
564.00	584.00	7.02E-08	7.35E-08	2	WBS2	1.2E-07	#NV	4.4E-07	#NV	4.4E-07	1.0E-07	8.0E-07	8.8E-11	32.3	1.02	7.80	5,673.7	14.53
584.00	604.00	1.14E-06	1.20E-06	2	WBS2	2.0E-06	#NV	1.6E-06	1.1E-05	1.6E-06	8.0E-07	3.0E-06	3.4E-10	3.8	0.18	1.02	5,869.7	14.87
299.00	304.00	1.09E-09	9.00E-10	2	WBS2	8.0E-10	#NV	6.5E-09	#NV	6.5E-09	1.0E-09	1.0E-08	1.0E-11	33.3	6.00	9.00	2,942.8	11.48
304.00	309.00	#NV	#NV	#NV	#NV	#NV	#NV	1.3E-11	9.1E-13	1.3E-11	2.0E-12	3.0E-11	1.5E-11	-0.95	0.70	10.20	#NV	#NV
309.00	314.00	1.42E-09	1.17E-09	2	WBS2	1.0E-09	#NV	9.7E-09	#NV	9.7E-09	6.0E-09	4.0E-08	1.3E-11	33.2	3.00	9.00	3,037.7	11.31
314.00	319.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	1.0E-11	1.0E-13	1.0E-11	#NV	#NV	#NV	#NV	#NV	#NV
319.00	324.00	2.96E-08	2.44E-08	2	WBS2	7.8E-08	#NV	7.3E-08	#NV	7.3E-08	4.0E-08	2.0E-07	2.1E-11	9.7	0.90	9.00	3,138.9	11.79
324.00	329.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	1.0E-11	1.0E-13	1.0E-11	#NV	#NV	#NV	#NV	#NV	#NV
329.00	334.00	2.44E-07	2.01E-07	2	WBS2	4.1E-07	#NV	1.6E-06	1.1E-05	4.1E-07	1.0E-07	7.0E-07	3.2E-10	3.6	0.40	18.00	3,234.0	11.65
334.00	339.00	4.58E-07	3.78E-07	2	WBS22	1.5E-06	#NV	1.4E-06	7.0E-06	7.0E-06	1.0E-06	1.0E-05	3.8E-11	15.4	0.12	9.00	3,283.3	11.75
339.00	344.00	2.11E-07	1.75E-07	2	WBS2	6.6E-07	3.2E-07	1.0E-06	#NV	3.2E-07	9.0E-08	6.0E-07	5.7E-11	11.3	4.20	18.00	3,332.1	11.80
344.00	349.00	1.08E-06	8.93E-07	2	WBS2	2.3E-06	#NV	5.1E-06	#NV	2.3E-06	8.0E-07	6.0E-06	1.3E-10	5.7	0.40	18.00	3,380.4	11.81
349.00	354.00	2.5E-08	2.0E-08	2	WBS2	2.9E-08	#NV	1.0E-07	#NV	1.0E-07	5.0E-08	5.0E-07	1.5E-11	1.91	0.60	9.00	3,428.1	11.76
354.00	359.00	#NV	#NV	#NV	WBS22	#NV	#NV	2.0E-09	7.9E-10	7.9E-10	3.0E-10	9.0E-10	#NV	-0.12	1.80	33.00	#NV	#NV
359.00	364.00	3.9E-07	3.2E-07	2	WBS2	1.2E-06	#NV	2.6E-06	#NV	1.2E-06	7.0E-07	6.0E-06	2.9E-11	32.8	0.70	15.00	3,527.2	12.01
364.00	369.00	3.8E-07	3.1E-07	2	WBS2	9.2E-07	#NV	1.3E-06	#NV	1.3E-06	7.0E-07	3.0E-06	5.8E-11	8.2	0.20	9.00	3,573.6	11.83
369.00	374.00	1.7E-07	1.4E-07	2	WBS2	4.2E-07	#NV	7.8E-07	#NV	4.2E-07	3.0E-07	1.0E-06	3.7E-11	9.1	0.20	9.00	3,630.7	12.73
374.00	379.00	1.1E-07	9.5E-08	2	WBS2	2.9E-07	1.5E-07	5.3E-07	#NV	1.5E-07	7.0E-08	3.0E-07	1.6E-11	8.5	7.20	18.00	3,675.2	12.38
379.00	384.00	6.33E-08	5.22E-08	2	WBS2	1.4E-07	#NV	2.9E-07	#NV	2.9E-07	9.0E-08	5.0E-07	2.2E-11	21.4	0.40	9.00	3,721.3	12.13
384.00	389.00	9.9E-08	8.1E-08	2	WBS2	1.6E-07	#NV	4.5E-07	#NV	4.5E-07	1.0E-07	9.0E-07	2.7E-11	21.3	0.40	9.00	3,769.1	12.09
389.00	394.00	2.40E-09	1.98E-09	22	WBS22	2.0E-09	8.6E-10	1.3E-08	#NV	1.97E-09	9.0E-10	1.0E-08	1.46E-11	-0.1	0.18	1.80	3,817.3	12.08
394.00	399.00	1.23E-08	1.01E-08	22	WBS2	8.67E-09	#NV	5.5E-08	#NV	5.5E-08	1.0E-08	8.0E-08	2.0E-11	21.5	1.80	9.00	3,865.8	12.10
399.00	404.00	3.1E-07	2.5E-07	22	WBS2	7.0E-07	3.5E-07	1.4E-06	#NV	7.0E-07	3.0E-07	1.0E-06	3.1E-11	6.6	0.30	2.40	3,908.0	11.49
404.00	409.00	2.0E-08	1.7E-08	22	WBS2	2.9E-08	1.4E-08	1.4E-07	#NV	2.9E-08	9.0E-09	5.0E-08	2.8E-11	2.6	0.30	1.80	3,957.7	11.64
409.00	414.00	3.17E-08	2.62E-08	22	WBS2	8.03E-08	3.2E-08	1.5E-07	#NV	8.03E-08	5.0E-08	1.0E-07	1.1E-11	8.2	0.20	1.80	4,006.8	11.73

Interval	position	Stationary parameter		Transie	nt analysis gime	Formatio	n paramet	ers									Static co	onditions
up m btoc	low m btoc	Q/s m²/s	T _M m²/s	Perturb. Phase	Recovery Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T_T m ² /s	T _{TMIN} m²/s	T _{TMAX} m²/s	C m³/Pa	ξ -	dt₁ min	dt ₂ min	p* kPa	h _{wif} masl
414.00	419.00	2.0E-07	1.7E-07	2	WBS2	5.7E-07	#NV	8.8E-07	#NV	8.8E-07	4.0E-07	2.0E-06	5.6E-11	21.0	0.50	9.00	4,055.8	11.80
419.00	424.00	1.6E-06	1.3E-06	2	WBS2	4.0E-06	#NV	7.2E-06	#NV	7.2E-06	3.0E-06	1.0E-05	6.1E-10	19.8	0.50	9.00	4,105.4	11.94
424.00	429.00	1.2E-06	9.6E-07	22	WBS2	3.4E-06	1.7E-06	7.6E-06	#NV	3.39E-06	5.0E-07	7.0E-06	1.9E-10	9.7	0.40	2.40	4,153.3	11.91
429.00	434.00	1.2E-06	9.5E-07	2	WBS2	2.1E-06	#NV	5.2E-06	#NV	5.2E-06	8.0E-07	9.0E-06	3.2E-10	20.1	0.60	9.00	4,200.4	11.79
434.00	439.00	3.2E-08	2.6E-08	2	WBS22	5.8E-08	#NV	2.6E-08	8.5E-08	2.6E-08	9.0E-09	6.0E-08	1.9E-11	8.0	0.30	0.90	4,250.3	11.96
439.00	444.00	#NV	#NV	#NV	WBS22	#NV	#NV	6.2E-11	1.03E-11	6.16E-11	1.0E-11	9.0E-11	1.8E-11	5.1	0.30	1.80	#NV	#NV
444.00	449.00	#NV	#NV	#NV	WBS2	#NV	#NV	1.0E-11	#NV	1.0E-11	7.0E-12	3.0E-11	9.9E-12	0.2	0.10	42.00	#NV	#NV
449.00	454.00	1.2E-09	9.8E-10	2	WBS2	3.7E-10	#NV	4.2E-10	#NV	4.2E-10	1.0E-10	7.0E-10	1.5E-11	-1.4	0.60	9.00	4,393.1	11.77
454.00	459.00	7.4E-08	6.1E-08	22	WBS2	8.9E-08	1.3E-07	6.5E-08	9.2E-08	6.5E-08	3.0E-08	1.0E-07	9.8E-11	0.0	0.40	1.80	4,445.1	12.15
459.00	464.00	7.4E-10	6.1E-10	2	WBS2	9.0E-11	#NV	3.5E-10	#NV	3.5E-10	9.0E-11	6.0E-10	1.5E-11	-0.2	0.50	9.00	4,492.0	12.01
464.00	469.00	1.03E-09	8.50E-10	2	WBS2	7.3E-10	#NV	7.6E-10	#NV	7.6E-10	4.0E-10	2.0E-09	9.1E-12	1.2	1.80	9.00	4,538.1	11.79
469.00	474.00	1.5E-08	1.2E-08	2	WBS2	2.2E-08	#NV	6.4E-08	#NV	6.4E-08	1.0E-08	9.0E-08	1.4E-11	21.7	1.20	9.00	4,599.8	13.17
474.00	479.00	6.57E-08	5.43E-08	2	WBS2	9.9E-08	#NV	1.8E-07	#NV	9.9E-08	7.0E-08	3.0E-07	2.8E-11	3.1	0.48	18.00	4,647.4	13.10
477.00	482.00	8.95E-09	7.39E-09	2	WBS2	1.5E-08	#NV	3.2E-08	#NV	3.2E-08	7.0E-09	7.0E-08	1.8E-11	15.8	1.80	9.00	4,676.0	13.07
482.00	487.00	4.6E-08	3.8E-08	22	WBS22	4.0E-08	2.6E-08	9.6E-09	5.4E-09	2.6E-08	7.0E-09	5.0E-08	7.7E-10	-0.9	4.20	18.00	4,711.5	11.77
487.00	492.00	2.7E-08	2.2E-08	22	WBS2	4.4E-08	2.0E-08	1.3E-07	#NV	4.4E-08	1.0E-08	9.0E-08	1.3E-11	3.7	0.40	1.80	4,772.5	13.07
489.00	494.00	3.6E-08	3.0E-08	22	WBS22	2.9E-08	5.7E-08	2.5E-08	6.2E-08	2.5E-08	9.0E-09	4.0E-08	4.5E-11	-0.8	0.50	2.40	4,790.3	12.92
494.00	499.00	3.5E-09	2.9E-09	2	WBS2	1.5E-09	#NV	3.5E-09	#NV	3.5E-09	1.0E-09	5.0E-09	4.2E-11	0.4	2.40	9.00	4,857.9	14.89
499.00	504.00	#NV	#NV	#NV	#NV	#NV	#NV	9.93E-11	I #NV	9.9E-11	7.0E-11	2.0E-10	1.8E-12	1.8	0.20	10.20	#NV	#NV
504.00	509.00	1.78E-08	1.47E-08	22	WBS22	1.6E-08	9.9E-09	1.3E-08	6.3E-09	1.6E-08	8.0E-09	4.0E-08	1.8E-10	-0.1	0.60	2.40	4,959.5	15.41
509.00	514.00	#NV	#NV	#NV	#NV	#NV	#NV	1.89E-09	#NV	1.9E-09	1.0E-10	3.0E-09	2.1E-11	2.1	0.20	9.00	#NV	#NV
514.00	519.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	1.0E-10	1.0E-11	8.0E-10	#NV	#NV	#NV	#NV	#NV	#NV
519.00	524.00	5.72E-09	4.72E-09	2	WBS22	1.1E-08	2.7E-09	1.5E-08	3.0E-09	1.5E-08	8.0E-09	4.0E-08	1.7E-11	5.5	0.90	3.00	5,102.5	15.25
524.00	529.00	#NV	#NV	#NV	#NV	#NV	#NV	6.11E-10	#NV	6.1E-10	1.0E-10	8.0E-10	1.6E-11	3.2	0.20	9.00	#NV	#NV
529.00	534.00	#NV	#NV	#NV	#NV	#NV	#NV	7.24E-10	#NV	7.2E-10	1.0E-10	9.0E-10	1.9E-11	3.4	0.10	18.00	#NV	#NV
534.00	539.00	7.89E-09	6.51E-09	2	WBS22	6.6E-09	#NV	8.8E-09	2.9E-08	8.8E-09	4.0E-09	3.0E-08	1.5E-11	2.06	0.60	2.40	5,227.9	13.29
539.00	544.00	3.53E-07	2.92E-07	2	WBS2	9.0E-07	#NV	1.6E-06	#NV	1.6E-06	7.0E-07	3.0E-06	6.0E-11	20.9	0.20	9.00	5,278.3	13.52
544.00	549.00	5.53E-08	4.57E-08	2	WBS22	1.3E-07	#NV	9.1E-08	3.6E-07	9.1E-08	6.0E-08	4.0E-07	4.0E-11	5.0	0.30	1.20	5,329.3	13.80

Interval	position	Stationary		Transie	nt analysis		n paramet	ers									Static co	onditions
up m btoc	low m btoc	Q/s m²/s	T _M m²/s	Perturb. Phase	Recovery Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	C m³/Pa	ξ -	dt₁ min	dt ₂ min	p* kPa	h _{wif} masl
549.00	554.00	9.8E-09	8.1E-09	2	WBS22	5.2E-09	#NV	2.0E-09	9.8E-09	9.8E-09	1.0E-09	2.0E-08	9.4E-11	-2.9	6.00	9.00	5,365.8	12.61
554.00	559.00	3.8E-09	3.1E-09	#NV	WBS22	#NV	#NV	1.2E-08	1.9E-09	1.9E-09	8.0E-10	5.0E-09	4.3E-12	2.7	0.90	3.60	5,421.4	13.36
559.00	564.00	6.15E-07	5.08E-07	22	WBS2	5.9E-07	#NV	4.6E-07	1.4E-06	4.6E-07	1.0E-07	7.0E-07	2.7E-10	-1.7	0.20	2.40	5,474.5	13.87
564.00	569.00	8.42E-08	6.95E-08	2	WBS2	1.5E-07	#NV	5.4E-07	#NV	1.5E-07	7.0E-08	5.0E-07	5.3E-11	5.1	0.50	18.00	5,529.0	14.51
569.00	574.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	1.0E-11	1.0E-13	1.0E-11	#NV	#NV	#NV	#NV	#NV	#NV
574.00	579.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	1.0E-11	1.0E-13	1.0E-11	#NV	#NV	#NV	#NV	#NV	#NV
579.00	584.00	#NV	#NV	#NV	#NV	#NV	#NV	3.92E-11	1.41E-11	1.4E-11	9.0E-12	6.0E-11	1.8E-12	2.6	4.20	18.00	#NV	#NV
584.00	589.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	1.0E-11	1.0E-13	1.0E-11	#NV	#NV	#NV	#NV	#NV	#NV
589.00	594.00	1.2E-06	9.5E-07	2	WBS22	2.9E-06	#NV	1.6E-06	7.8E-06	1.6E-06	8.0E-07	5.0E-06	3.3E-10	1.7	0.20	0.70	5,766.7	14.18
594.00	599.00	1.4E-07	1.1E-07	2	WBS2	2.6E-07	#NV	6.1E-07	#NV	2.6E-07	8.0E-08	5.0E-07	3.3E-11	5.7	0.70	15.00	5,817.6	14.46

Nomenclature

p*

Q/s Specific capacity

T_M Transmissivity according to /Moye 1967/

Flow regime The flow regime description refers to the recommended model used in the transient analysis. WBS denotes wellbore storage and skin and is followed by a set of numbers describing the flow dimension used in the analysis (1 = linear flow, 2 = radial flow, 3 = spherical flow). If only one number is used (e.g. WBS2 or 2) a homogeneous flow

model (1 composite zone) was used in the analysis, if two numbers are given (WBS22 or 22) a 2 zones composite model was used.

Transmissivity derived from the analysis of the perturbation phase (CHi). In case a homogeneous flow model was used only one T_f value is reported, in case a two zone

composite flow model was used both T_{f1} (inner zone) and T_{f2} (outer zone) are given.

Transmissivity derived from the analysis of the recovery phase (CHir or Pi). In case a homogeneous flow model was used only one T_s value is reported, in case a two zone

composite flow model was used both T_{s1} (inner zone) and T_{s2} (outer zone) are given.

 $\begin{array}{ll} T_T & Recommended \ transmissivity \\ T_{TMIN} & Confidence \ range \ lower \ limit \\ T_{TMAX} & Confidence \ range \ upper \ limit \\ C & Wellbore \ storage \ coefficient \end{array}$

Skin factor (calculated based on a Storativity of 1·10⁻⁶)

dt₁ Estimated start time of evaluation
 dt₂ Estimated stop time of evaluation

The parameter p* denoted the static formation pressure (measured at transducer depth) and was derived from the HORNER plot of the CHir phase using straight line or

type-curve extrapolation

 h_{wif} Freshwater head (based on transducer depth and p*)

#NV Not analysed/no values

Table 7-3. Results from the ri-index calculation of hydraulic tests in KLX18A (see Section 5.5.5 for details and nomenclature).

Borehole	Borehole	Recommended	Time t ₂ for radius of	ri-index	Radius of
secup (m)	seclow (m)	transmissivity T _⊤ (m²/s)	influence calculation (s)	(-)	influence (m)
104.00	204.00	7.80E-06	180	-1	50.65
204.00	304.00	1.49E-08	1,080	– 1	25.94
304.00	404.00	5.09E-06	1,800	0	143.96
404.00	504.00	6.14E-06	1,800	0	150.87
504.00	604.00	2.69E-06	108	– 1	30.07
104.00	124.00	8.12E-06	126	– 1	42.80
124.00	144.00	5.05E-06	1,200	0	117.31
144.00	164.00	2.49E-07	324	– 1	28.72
164.00	184.00	8.16E-09	1,200	0	23.52
184.00	204.00	3.43E-09	1,200	0	18.94
204.00	224.00	6.35E-09	3,060	0	35.27
224.00	244.00	9.29E-11	3,721	0	13.53
244.00	264.00	1.76E-08	144	0	9.87
264.00	284.00	6.89E-09	72	1	5.52
284.00	304.00	3.65E-09	1,200	– 1	19.23
304.00	324.00	2.12E-07	1,200	0	53.10
324.00	344.00	5.67E-06	36	0	15.54
344.00	364.00	9.34E-06	1,200	0	136.80
364.00	384.00	2.06E-06	1,200	0	93.75
384.00	404.00	1.87E-06	1,200	0	91.51
404.00	424.00	7.31E-06	46.8	0	18.88
424.00	444.00	9.86E-06	1,200	0	138.67
444.00	464.00	6.48E-08	1,200	0	39.48
464.00	484.00	1.12E-07	1,200	0	45.27
484.00	504.00	1.61E-09	7,200	1	38.40
		1.69E-08	1,200	-1	28.21
504.00	524.00	6.75E-07	•		70.93
524.00	544.00		1,200	0	
544.00	564.00	5.46E-07	198	–1	27.32
564.00	584.00	4.43E-07	1,200	0	63.84
584.00	604.00	1.55E-06	61.2	0	19.72
299.00	304.00	6.46E-09	1,200	–1	22.19
304.00	309.00	1.34E-11	612	1	3.38
309.00	314.00	9.72E-09	1,200	–1	24.57
314.00	319.00	1.00E-11	#NV	#NV	#NV
319.00	324.00	7.25E-08	1,200	0	40.61
324.00	329.00	1.00E-11	#NV	#NV	#NV
329.00	334.00	4.08E-07	1,200	0	62.54
334.00	339.00	7.00E-06	7.2	0	6.59
339.00	344.00	3.15E-07	252	0	32.31
344.00	349.00	2.27E-06	1,200	0	96.05
349.00	354.00	1.02E-07	1,200	0	44.22
354.00	359.00	7.88E-10	108	–1	4.95
359.00	364.00	1.16E-06	1,200	0	81.21
364.00	369.00	1.34E-06	1,200	0	84.19
369.00	374.00	4.21E-07	1,200	0	63.03
374.00	379.00	1.55E-07	432	1	34.40

Borehole secup	Borehole seclow	Recommended transmissivity T _T	Time t₂ for radius of influence calculation	ri-index	Radius of influence
(m)	(m)	(m²/s)	(s)	(-)	(m)
379.00	384.00	2.88E-07	1,200	0	57.33
384.00	389.00	4.51E-07	1,200	0	64.13
389.00	394.00	1.97E-09	108	1	4.95
394.00	399.00	5.45E-08	1,200	0	37.81
399.00	404.00	7.03E-07	144	1	24.82
404.00	409.00	2.88E-08	108	1	9.67
409.00	414.00	8.03E-08	108	1	12.50
414.00	419.00	8.8E-07	1,200	0	75.79
419.00	424.00	7.15E-06	1,200	0	127.96
424.00	429.00	3.39E-06	144	1	36.78
429.00	434.00	5.16E-06	1,200	0	117.94
434.00	439.00	2.56E-08	54	-1	6.64
439.00	444.00	6.16E-11	108	1	2.08
444.00	449.00	1.04E-11	2,520	1	6.44
449.00	454.00	4.2E-10	1,200	0	11.20
454.00	459.00	6.52E-08	108	–1	11.86
459.00	464.00	3.47E-10	1,200	– 1	10.68
464.00	469.00	7.59E-10	1,200	– 1	12.99
469.00	474.00	6.43E-08	1,200	0	39.41
474.00	479.00	9.88E-08	1,200	0	43.87
477.00	482.00	3.17E-08	1,200	0	33.02
482.00	487.00	2.64E-08	252	0	16.00
487.00	492.00	4.42E-08	108	1	10.76
489.00	494.00	2.46E-08	144	– 1	10.74
494.00	499.00	3.47E-09	1,200	– 1	18.99
499.00	504.00	9.93E-11	678	0	5.87
504.00	509.00	1.59E-08	144	1	9.63
509.00	514.00	1.89E-09	696	0	12.43
514.00	519.00	1E-10	#NV	#NV	#NV
519.00	524.00	1.52E-08	180	1	10.64
524.00	529.00	6.11E-10	1,262	0	12.62
529.00	534.00	7.24E-10	1,273	0	13.22
534.00	539.00	8.81E-09	144	– 1	8.30
539.00	544.00	1.56E-06	1,200	0	87.45
544.00	549.00	9.05E-08	72	-1	10.51
549.00	554.00	9.75E-09	360	- 1	9.01
554.00	559.00	1.86E-09	54	– 1	5.46
559.00	564.00	4.64E-07	144	-1	22.37
564.00	569.00	1.49E-07	1,200	0	48.62
569.00	574.00	1.00E-11	#NV	#NV	#NV
574.00	579.00	1.00E-11	#NV	#NV	#NV
579.00	584.00	1.41E-11	252	0	2.84
584.00	589.00	1.00E-11	#NV	#NV	#NV
589.00	594.00	1.55E-06	43.2	–1	16.57
594.00	599.00	2.64E-07	1,200	0	56.09

#NV not analysed/no value

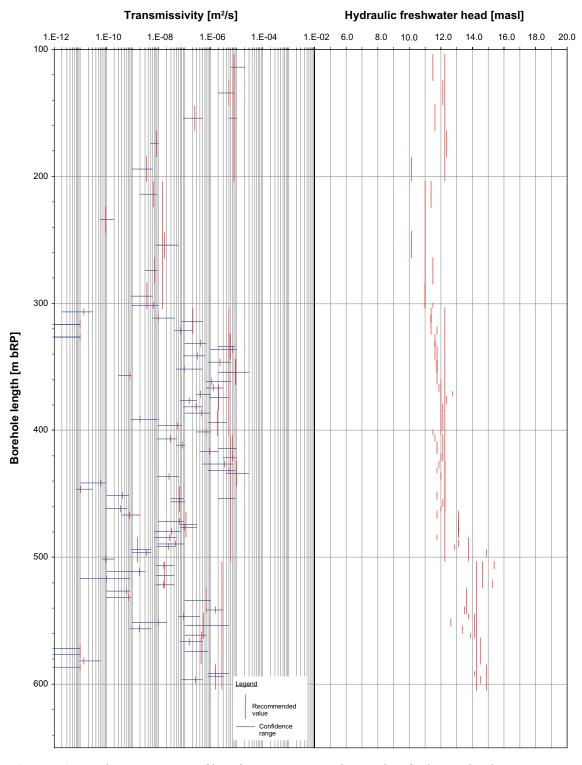


Figure 7-1. Results summary – profiles of transmissivity and equivalent freshwater head, transmissivities derived from injectiontests, freshwater head extrapolated.

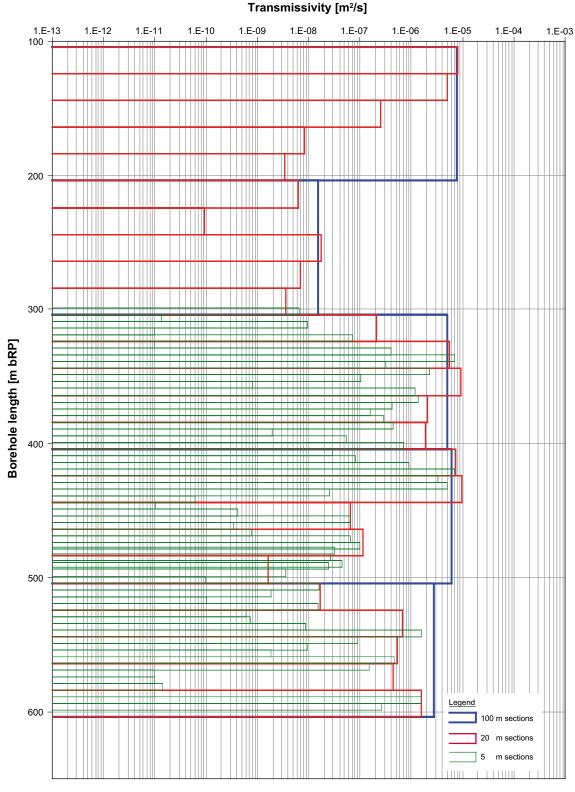


Figure 7-2. Results summary – profile of transmissivity.

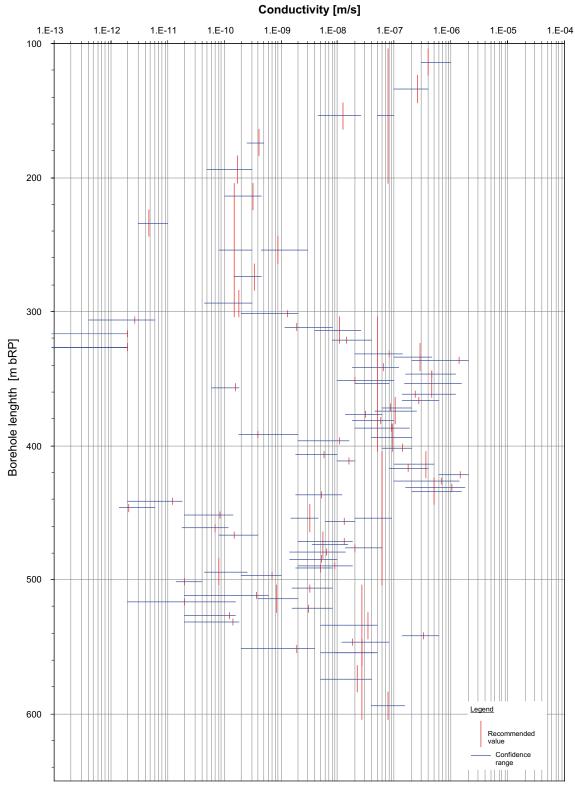


Figure 7-3. Results summary – profile of hydraulic conductivity.

7.2 Correlation analysis

A correlation analysis was used with the aim of examining the consistency of results and deriving general conclusion regarding the testing and analysis methods used.

7.2.1 Comparison of steady state and transient analysis results

The steady state derived transmissivities (T_M) and specific capacities (Q/s) were compared in a cross-plot with the recommended transmissivity values derived from the transient analysis (see Figure 7-4).

The correlation analysis shows that most of the steady state derived transmissivities differ by less than one order of magnitude from the transmissivities derived from the transient analysis.

7.2.2 Comparison between the matched and theoretical wellbore storage coefficient

The wellbore storage coefficient describes the capacity of the test interval to store fluid as result to an unit pressure change in the interval. For a closed system (i.e. closed downhole valve) the theoretical value of the wellbore storage coefficient is given by the product between the interval volume and the test zone compressibility. The interval volume is calculated from the borehole radius and interval length. There are uncertainties concerning the interval volume calculation. Cavities or high transmissivity fractures intersecting the interval may enlarge the effective volume of the interval.

The test zone compressibility is given by the sum of compressibilities of the individual components present in the interval (water, packer elements, other test tool components, and the borehole wall). The water compressibility depends on the temperature and salinity. However, for temperature and salinity values as encountered at the Oskarshamn site the water compressibility varies only slightly between $4.5 \cdot 10^{-10}$ and $5.0 \cdot 10^{-10}$ 1/Pa.

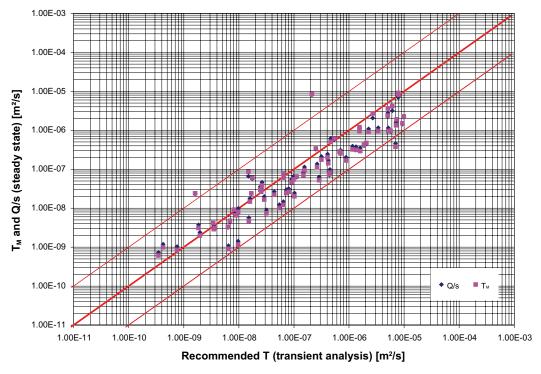


Figure 7-4. Correlation analysis of transmissivities derived by steady state and transient methods.

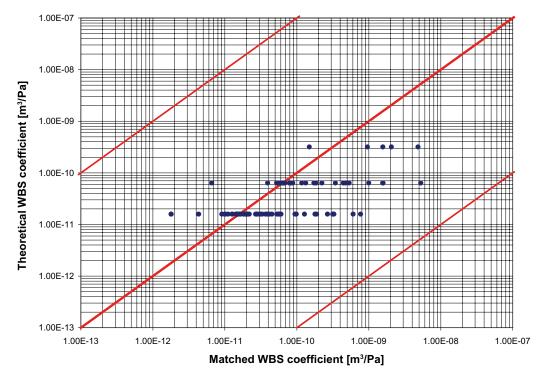


Figure 7-5. Correlation analysis of theoretical and matched wellbore storage coefficients.

A water compressibility of $5 \cdot 10^{-10}$ 1/Pa and a rock compressibility of $1 \cdot 10^{-10}$ 1/Pa was assumed for the analysis. In addition, the test zone compressibility is influenced by the test tool (packer compliance). The test tool compressibility was calculated as follows:

$$c = \frac{\Delta V}{\Delta p} * \frac{1}{V} [1/Pa]$$

 ΔV Volume change of 2 packers (The volume change was estimated at $7 \cdot 10^{-7}$ m³/100 kPa based on the results of laboratory tests conducted by GEOSIGMA) [m³]

 Δp Pressure change in test section (usually $2 \cdot 10^5 \, \text{Pa}$) [Pa]

V Volume in test section [m³]

The following table presents the calculated compressibilities for each relevant section length. The average value for the test tool compressibility based on different section length is $1 \cdot 10^{-10}$ 1/Pa.

The sum of the compressibilities (water, rock, test tool) leads to a test zone compressibility with a value of $7 \cdot 10^{-10}$ 1/Pa. This value is used for the calculation of the theoretical wellbore storage coefficient.

Table 7-4. Test tool compressibility values based on packer displacement.

Length of test section [m]	Volume in test section [m³]	Compressibility [1/Pa]
5	0.023	3.10-10
20	0.091	8·10 ⁻¹¹
100	0.454	2·10 ⁻¹¹
Average compressibility	:	1.10-10

The matched wellbore storage coefficient is derived from the transient type curve analysis by matching the unit slope early times derivative plotted in log-log coordinates.

The following figure presents a cross-plot of the matched and theoretical wellbore storage coefficients.

It can be seen that the matched wellbore storage coefficients are up to two orders of magnitude larger than the theoretical. This phenomenon was already observed at the previous boreholes. A two or three orders of magnitude increase is difficult to explain by volume uncertainty. Even if large fractures are connected to the interval, a volume increase by two orders of magnitude does not seem probable. This discrepancy is not fully understood, but following hypotheses may be formulated:

- increased compressibility of the packer system,
- as shown by previous work conducted at site, the phenomenon of increased wellbore storage coefficients can be explained by turbulent flow induced by the test in the vicinity of the borehole. Considering the fact that deviations concerning the wellbore storage rather occur in test sections with a higher transmissivity (which can lead to turbulent flow) seems to rest upon this hypthesis.

8 Conclusions

8.1 Transmissivity

Figure 7-1 presents a profile of transmissivity, including the confidence ranges derived from the transient analysis. The method used for deriving the recommended transmissivity and its confidence range is described in Section 5.5.8.

Whenever possible, the transmissivities derived are representative for the "undisturbed formation" further away from the borehole. The borehole vicinity was typically described by using a skin effect.

In few cases the tests were not analysable because the compliance phase following the packer inflation was to long or because the conducted preliminary pulse did not recover. Both responses are indicative for a very low interval transmissivity and a transmissivity value of $1 \cdot 10^{-11}$ m²/s was recommended (regarded as the upper limit of the confidence range).

If the conducted preliminary pulse injection (PI) showed a slow recovery the pulse test was prolonged and no further injection test was performed. The pulse test was used for a quantitative analysis. The recommended transmissivities of the pulse tests range between $1.0 \cdot 10^{-11}$ m²/s and $1.9 \cdot 10^{-09}$ m²/s.

The recommended transmissivities derived from the conducted injection tests (CHi and CHir) range between $3.5 \cdot 10^{-10}$ m²/s and $9.9 \cdot 10^{-6}$ m²/s.

A few 20 m and 5 m sections show larger transmissivities than the appropriate longer interval. The most of the differences are relatively small and are covered by the confidence range. This can be explained by crossflow and connections to the adjacent zones.

8.2 Equivalent freshwater head

Figure 7-1 presents a profile of the derived equivalent freshwater head expressed in meters above sea level. The method used for deriving the equivalent freshwater head is described in Section 5.5.7.

The head profile shows the the freshwater head ranges from 10.2 m to 15.4 m. The highest freshwater heads are measured between 500 m and 600 m.

The uncertainty related to the derived freshwater heads is dependent on the test section transmissivity. Due to the relatively short pressure recovery phase, the static pressure extrapolation becomes increasingly uncertain at lower transmissivities.

8.3 Flow regimes encountered

The flow models used in analysis were derived from the shape of the pressure derivative calculated with respect to log time and plotted in log-log coordinates.

In several cases the pressure derivative suggests a change of transmissivity with the distance from the borehole. In such cases a composite flow model was used in the analysis.

If there were different flow models matching the data in comparable quality, the simplest model was preferred.

In some cases very large skins has been observed. This is unusual and should be further examined. There are several possible explanations to this behaviour:

- If the behaviour is to be completely attributed to changes of transmissivity in the formation, this indicates the presence of larger transmissivity zones in the borehole vicinity, which could be caused by steep fractures that do not intersect the test interval, but are connected to the interval by lower transmissivity fractures. The fact that in many cases the test derivatives of adjacent test sections converge at late times seems to support this hypothesis.
- A further possibility is that the large skins are caused by turbulent flow taking place in the tool or in fractures connected to the test interval. This hypothesis is more difficult to examine. However, considering the fact that some high skins were observed in sections with transmissivities as low as $1 \cdot 10^{-8}$ m²/s (which imply low flow rates) seems to speak against this hypothesis.

The flow dimension displayed by the test can be diagnosed from the slope of the pressure derivative. A slope of 0.5 indicates linear flow, a slope of 0 (horizontal derivative) indicates radial flow and a slope of -0.5 indicates spherical flow. The flow dimension diagnosis was commented for each of the tests. In all of the cases it was possible to get a good match quality by using radial flow geometry. In no cases an alternative analysis with a flow dimension unequal to two was performed. Those analyses are presented in Appendix 2.

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APPENDIX 1

File Description Table

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated: 2006-06-27						
Teststart	Interval boundaries		es	Namo	e of Datafiles	Testtype	Copied to	Plotted	Sign.		
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2006-08-15	14:05	204.00	304.00	KLX18A_0204.00_200608151405.ht2	KLX18A_204.00-304.00_060815_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-15			
2006-08-15	17:25	304.00	404.00	KLX18A_0304.00_200608151725.ht2	KLX18A_304.00-404.00_060815_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-15			
2006-08-15	21:08	404.00	504.00	KLX18A_0404.00_200608152108.ht2	KLX18A_404.00-504.00_060815_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-16			
2006-08-16	07:34	504.00	604.00	KLX18A_0504.00_200608160734.ht2	KLX18A_504.00-604.00_060816_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-16			
2006-08-16	19:58	104.00	124.00	KLX18A_0104.00_200608161958.ht2	KLX18A_104.00-124.00_060816_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-16			
2006-08-16	22:02	124.00	144.00	KLX18A_0124.00_200608162202.ht2	KLX18A_124.00-144.00_060816_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-16			
2006-08-16	23:59	144.00	164.00	KLX18A_0144.00_200608162359.ht2	KLX18A_144.00-164.00_060816_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	06:38	164.00	184.00	KLX18A_0164.00_200608170638.ht2	KLX18A_164.00-184.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	09:06	184.00	204.00	KLX18A_0184.00_200608170906.ht2	KLX18A_184.00-204.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	11:27	204.00	224.00	KLX18A_0204.00_200608171127.ht2	KLX18A_204.00-224.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	12:13	204.00	224.00	KLX18A_0204.00_200608171213.ht2	KLX18A_204.00-224.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	14:08	224.00	244.00	KLX18A_0224.00_200608171408.ht2	KLX18A_224.00-244.00_060817_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-17			
2006-08-17	16:43	244.00	264.00	KLX18A_0244.00_200608171643.ht2	KLX18A_244.00-264.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	18:46	264.00	284.00	KLX18A_0264.00_200608171846.ht2	KLX18A_264.00-284.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			
2006-08-17	21:22	284.00	304.00	KLX18A_0284.00_200608172122.ht2	KLX18A_284.00-304.00_060817_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-17			

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
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Teststart	Teststart Interval boundaries		es	Name	e of Datafiles	Testtype	Copied to	Plotted	Sign.		
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2006-08-18	01:24	324.00	344.00	KLX18A_0324.00_200608180124.ht2	KLX18A_324.00-344.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	06:29	344.00	364.00	KLX18A_0344.00_200608180629.ht2	KLX18A_344.00-364.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	08:34	364.00	384.00	KLX18A_0364.00_200608180834.ht2	KLX18A_364.00-384.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	10:38	384.00	404.00	KLX18A_0384.00_200608181038.ht2	KLX18A_384.00-404.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	13:16	404.00	424.00	KLX18A_0404.00_200608181316.ht2	KLX18A_404.00-424.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	15:16	424.00	444.00	KLX18A_0424.00_200608181516.ht2	KLX18A_424.00-444.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	17:20	444.00	464.00	KLX18A_0444.00_200608181720.ht2	KLX18A_444.00-464.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-18	19:13	464.00	484.00	KLX18A_0464.00_200608181913.ht2	KLX18A_464.00-484.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-18			
2006-08-19	00:45	484.00	504.00	KLX18A_0484.00_200608190045.ht2	KLX18A_484.00-504.00_060818_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-19			
2006-08-19	06:24	504.00	524.00	KLX18A_0504.00_200608190624.ht2	KLX18A_504.00-524.00_060819_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-19			
2006-08-19	08:45	524.00	544.00	KLX18A_0524.00_200608190845.ht2	KLX18A_524.00-544.00_060819_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-19			
2006-08-19	10:56	544.00	564.00	KLX18A_0544.00_200608191056.ht2	KLX18A_544.00-564.00_060819_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-19			
2006-08-19	13:29	564.00	584.00	KLX18A_0564.00_200608191329.ht2	KLX18A_564.00-584.00_060819_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-19			
2006-08-19	15:30	584.00	604.00	KLX18A_0584.00_200608191530.ht2	KLX18A_584.00-604.00_060819_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-20			
2006-08-20	08:53	299.00	304.00	KLX18A_0299.00_200608200853.ht2	KLX18A_299.00-304.00_060820_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-20			

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated : 2006-06-27						
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2006-08-20	13:33	309.00	314.00	KLX18A_0309.00_200608201333.ht2	KLX18A_309.00-314.00_060820_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-20			
2006-08-20	15:29	314.00	319.00	KLX18A_0314.00_200608201528.ht2	KLX18A_314.00-319.00_060820_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-20			
2006-08-20	16:52	319.00	324.00	KLX18A_0319.00_200608201652.ht2	KLX18A_319.00-324.00_060820_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-20			
2006-08-20	18:35	324.00	329.00	KLX18A_0324.00_200608201835.ht2	KLX18A_324.00-329.00_060820_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-20			
2006-08-20	19:53	329.00	334.00	KLX18A_0329.00_200608201953.ht2	KLX18A_329.00-334.00_060820_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-20			
2006-08-20	21:58	334.00	339.00	KLX18A_0334.00_200608202158.ht2	KLX18A_334.00-339.00_060820_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-20			
2006-08-21	00:08	339.00	344.00	KLX18A_0339.00_200608210008.ht2	KLX18A_339.00-344.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	01:55	344.00	349.00	KLX18A_0344.00_200608210155.ht2	KLX18A_344.00-349.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	06:23	349.00	354.00	KLX18A_0349.00_200608210623.ht2	KLX18A_349.00-354.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	08:44	354.00	359.00	KLX18A_0354.00_200608210844.ht2	KLX18A_354.00-359.00_060821_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-21			
2006-08-21	10:37	359.00	364.00	KLX18A_0359.00_200608211037.ht2	KLX18A_359.00-364.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	13:02	364.00	369.00	KLX18A_0364.00_200608211302.ht2	KLX18A_364.00-369.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	15:02	369.00	374.00	KLX18A_0369.00_200608211502.ht2	KLX18A_369.00-374.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	16:42	374.00	379.00	KLX18A_0374.00_200608211642.ht2	KLX18A_374.00-379.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
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Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)			
2006-08-21	18:28	379.00	384.00	KLX18A_0379.00_200608211828.ht2	KLX18A_379.00-384.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	20:20	384.00	389.00	KLX18A_0384.00_200608212020.ht2	KLX18A_384.00-389.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	22:03	389.00	394.00	KLX18A_0389.00_200608212203.ht2	KLX18A_389.00-394.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-21			
2006-08-21	23:58	394.00	399.00	KLX18A_0394.00_200608212358.ht2	KLX18A_394.00-399.00_060821_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	06:19	399.00	404.00	KLX18A_0399.00_200608220619.ht2	KLX18A_399.00-404.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	08:10	404.00	409.00	KLX18A_0404.00_200608220810.ht2	KLX18A_404.00-409.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	10:09	409.00	414.00	KLX18A_0409.00_200608221009.ht2	KLX18A_409.00-414.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	14:07	414.00	419.00	KLX18A_0414.00_200608221407.ht2	KLX18A_414.00-419.00_060822_2_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	15:59	419.00	424.00	KLX18A_0419.00_200608221559.ht2	KLX18A_419.00-424.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	17:42	424.00	429.00	KLX18A_0424.00_200608221742.ht2	KLX18A_424.00-429.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	19:32	429.00	434.00	KLX18A_0429.00_200608221932.ht2	KLX18A_429.00-434.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	21:24	434.00	439.00	KLX18A_0434.00_200608222124.ht2	KLX18A_434.00-439.00_060822_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-22			
2006-08-22	23:10	439.00	444.00	KLX18A_0439.00_200608222310.ht2	KLX18A_439.00-444.00_060822_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-23			
2006-08-23	01:02	444.00	449.00	KLX18A_0444.00_200608230102.ht2	KLX18A_444.00-449.00_060823_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-23			
2006-08-23	06:23	449.00	454.00	KLX18A_0449.00_200608230623.ht2	KLX18A_449.00-454.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated : 2006-06-27						
Teststart Interval boundarie				of Datafiles	Testtype	Copied to	Plotted	Sign.			
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)			
2006-08-23	08:37	454.00	459.00	KLX18A_0454.00_200608230837.ht2	KLX18A_454.00-459.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	10:41	459.00	464.00	KLX18A_0459.00_200608231041.ht2	KLX18A_459.00-464.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	13:31	464.00	469.00	KLX18A_0464.00_200608231331.ht2	KLX18A_464.00-469.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	15:40	469.00	474.00	KLX18A_0469.00_200608231636.ht2	KLX18A_469.00-474.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	18:19	474.00	479.00	KLX18A_0474.00_200608231819.ht2	KLX18A_474.00-479.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	20:08	477.00	482.00	KLX18A_0477.00_200608232008.ht2	KLX18A_477.00-482.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	21:55	482.00	487.00	KLX18A_0482.00_200608232155edit.ht2	KLX18A_482.00-487.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-23			
2006-08-23	23:55	487.00	492.00	KLX18A_0487.00_200608232355.ht2	KLX18A_487.00-492.00_060823_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	06:23	489.00	494.00	KLX18A_0489.00_200608240623.ht2	KLX18A_489.00-494.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	08:48	494.00	499.00	KLX18A_0494.00_200608240848.ht2	KLX18A_494.00-499.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	11:04	499.00	504.00	KLX18A_0499.00_200608241104.ht2	KLX18A_499.00-504.00_060824_1_CHir_Q_r.csv	Pi	2006-08-27	2006-08-24			
2006-08-24	14:09	504.00	509.00	KLX18A_0504.00_200608241409.ht2	KLX18A_504.00-509.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	16:44	509.00	514.00	KLX18A_0509.00_200608241644.ht2	KLX18A_509.00-514.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	18:02	514.00	519.00	KLX18A_0514.00_200608241802.ht2	KLX18A_514.00-519.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	19:21	519.00	524.00	KLX18A_0519.00_200608241921.ht2	KLX18A_519.00-524.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated: 2006-06-27						
Teststart Interval boundaries		es	Name of Datafiles T		Testtype	Copied to	Plotted	Sign.			
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)			
2006-08-24	21:09	524.00	529.00	KLX18A_0524.00_200608242109.ht2	KLX18A_524.00-529.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-24	22:37	529.00	534.00	KLX18A_0529.00_200608242237.ht2	KLX18A_529.00-534.00_060824_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-24			
2006-08-25	00:07	534.00	539.00	KLX18A_0534.00_200608250007.ht2	KLX18A_534.00-539.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	06:09	539.00	544.00	KLX18A_0539.00_200608250609.ht2	KLX18A_539.00-544.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	08:29	544.00	549.00	KLX18A_0544.00_200608250829.ht2	KLX18A_544.00-549.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	10:32	549.00	554.00	KLX18A_0549.00_200608251032.ht2	KLX18A_549.00-554.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	13:24	554.00	559.00	KLX18A_0554.00_200608251324.ht2	KLX18A_554.00-559.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	15:36	559.00	564.00	KLX18A_0559.00_200608251536.ht2	KLX18A_559.00-564.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	17:19	564.00	569.00	KLX18A_0564.00_200608251719.ht2	KLX18A_564.00-569.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	19:03	569.00	574.00	KLX18A_0569.00_200608251903.ht2	KLX18A_569.00-574.00_060825_1_Pi_Q_r.csv	Pi	2006-08-27	2006-08-25			
2006-08-25	21:36	574.00	579.00	KLX18A_0574.00_200608252136.ht2	KLX18A_574.00-579.00_060825_1_CHir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-25	22:38	579.00	584.00	KLX18A_0579.00_200608252238.ht2	KLX18A_579.00-584.00_060825_1_Chir_Q_r.csv	Chir	2006-08-27	2006-08-25			
2006-08-26	00:20	584.00	589.00	KLX18A_0584.00_200608260020.ht2	KLX18A_584.00-589.00_060826_1_Chir_Q_r.csv	Chir	2006-08-27	2006-08-26			
2006-08-26	06:16	589.00	594.00	KLX18A_0589.00_200608260616.ht2	KLX18A_589.00-594.00_060826_1_Chir_Q_r.csv	Chir	2006-08-27	2006-08-26			
2006-08-26	08:29	594.00	599.00	KLX18A_0594.00_200608260829.ht2	KLX18A_594.00-599.00_060826_1_Chir_Q_r.csv	Chir	2006-08-27	2006-08-26			

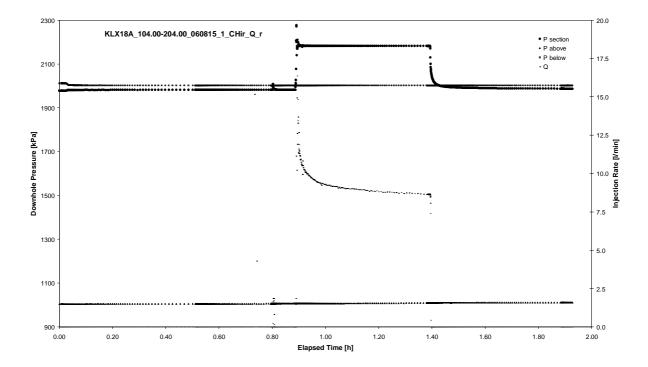
APPENDIX 2

Test: 104.00 – 204.00 m

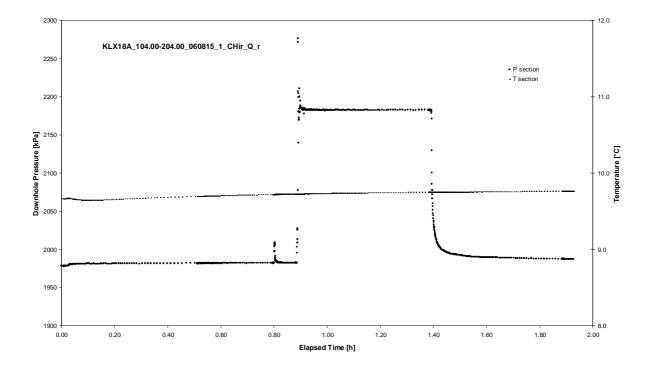
APPENDIX 2-1

Test 104.00 – 204.00 m

Test: 104.00 – 204.00 m

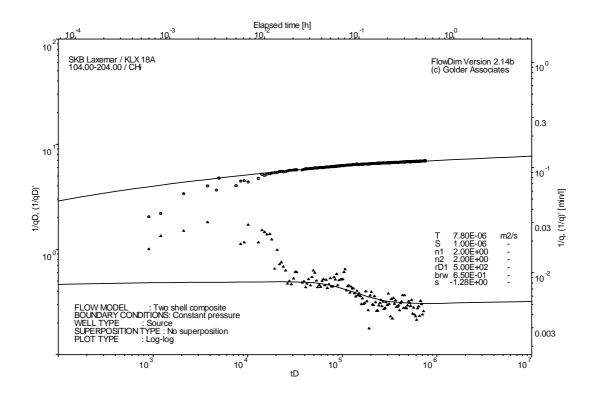


Pressure and flow rate vs. time; cartesian plot



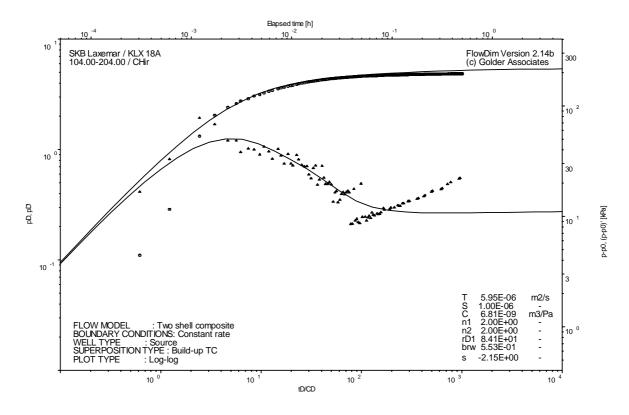
Interval pressure and temperature vs. time; cartesian plot

Test: 104.00 – 204.00 m

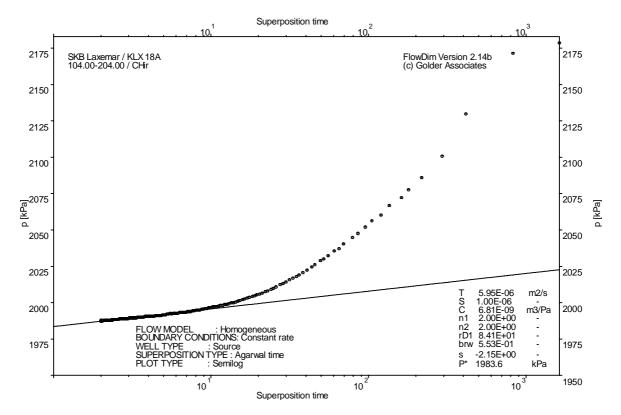


CHI phase; log-log match

Test: 104.00 – 204.00 m



CHIR phase; log-log match



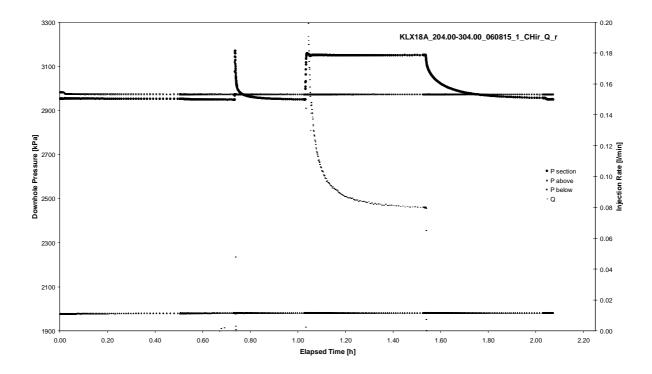
CHIR phase; HORNER match

Test: 204.00 – 304.00 m

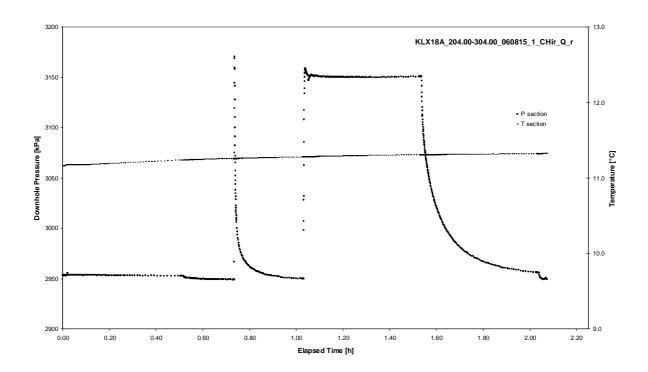
APPENDIX 2-2

Test 204.00 – 304.00 m

Test: 204.00 – 304.00 m

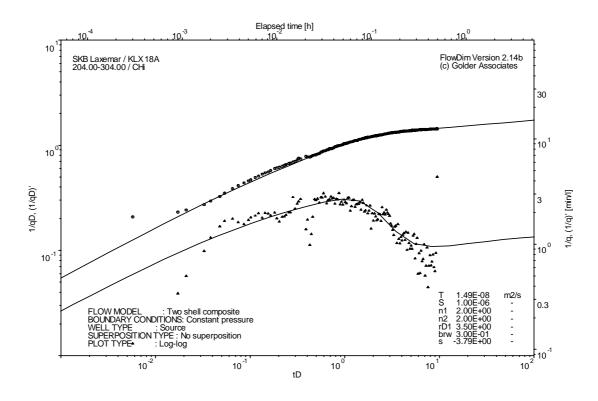


Pressure and flow rate vs. time; cartesian plot



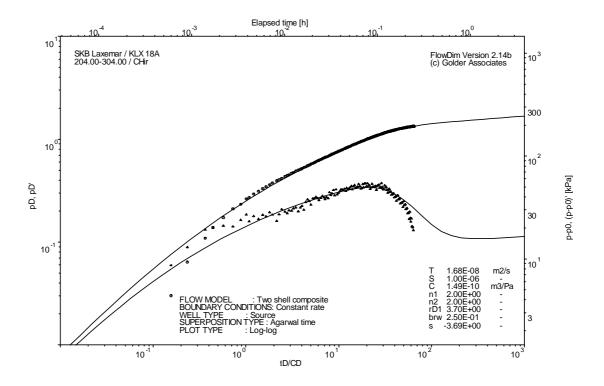
Interval pressure and temperature vs. time; cartesian plot

Test: 204.00 – 304.00 m

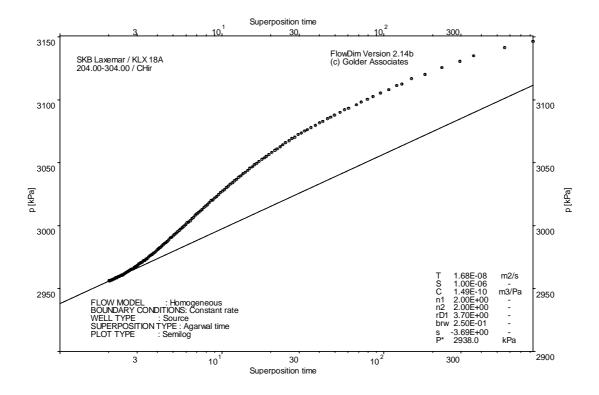


CHI phase; log-log match

Test: 204.00 – 304.00 m



CHIR phase; log-log match



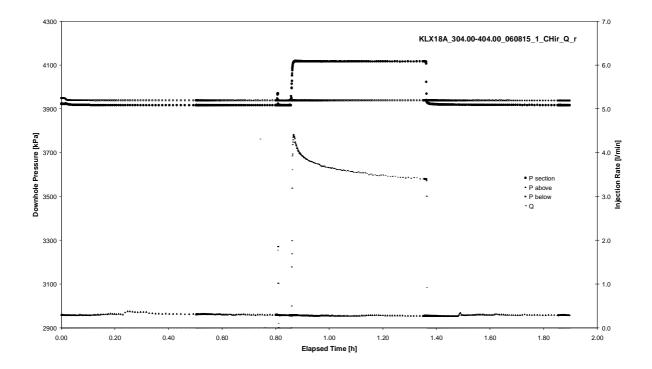
CHIR phase; HORNER match

Test: 304.00 – 404.00 m

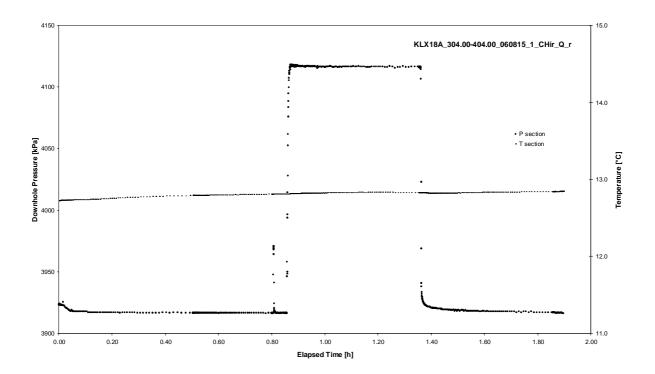
APPENDIX 2-3

Test 304.00 – 404.00 m

Test: 304.00 – 404.00 m

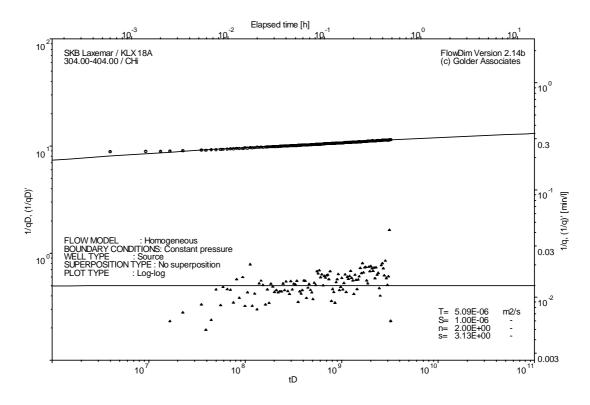


Pressure and flow rate vs. time; cartesian plot



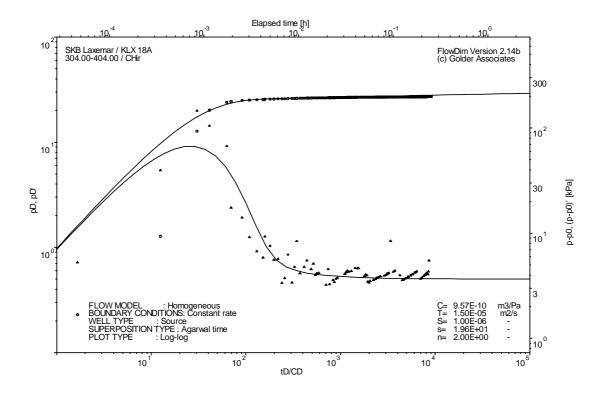
Interval pressure and temperature vs. time; cartesian plot

Test: 304.00 – 404.00 m

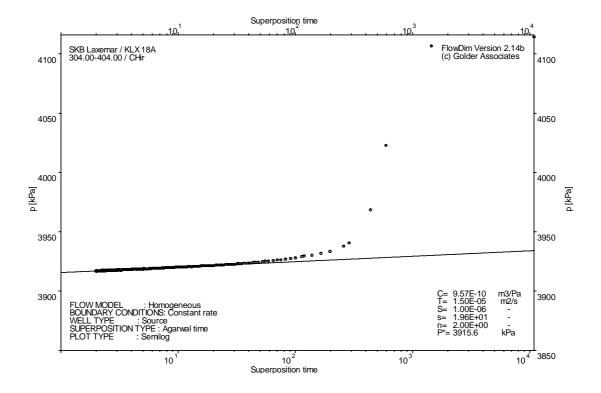


CHI phase; log-log match

Test: 304.00 – 404.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 404.00 – 504.00 m

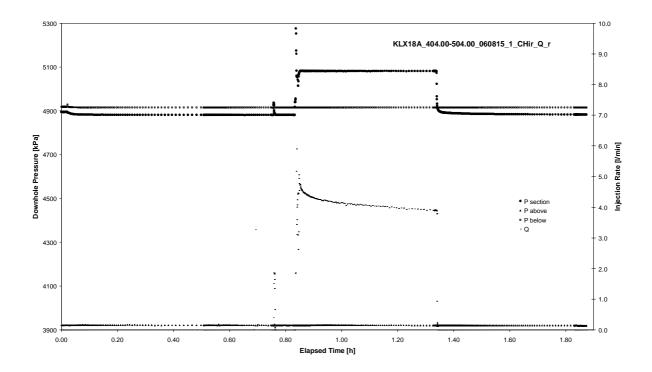
APPENDIX 2-4

Test 404.00 – 504.00 m

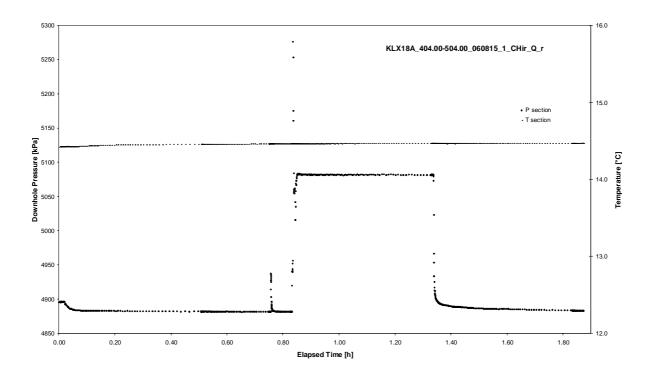
Page 2-4/2

Borehole: KLX18A

Test: 404.00 – 504.00 m

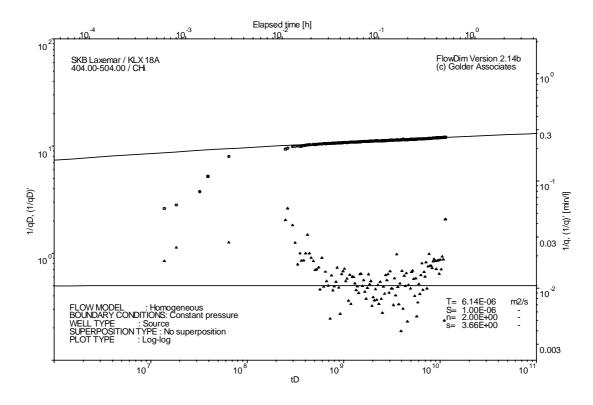


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 404.00 – 504.00 m

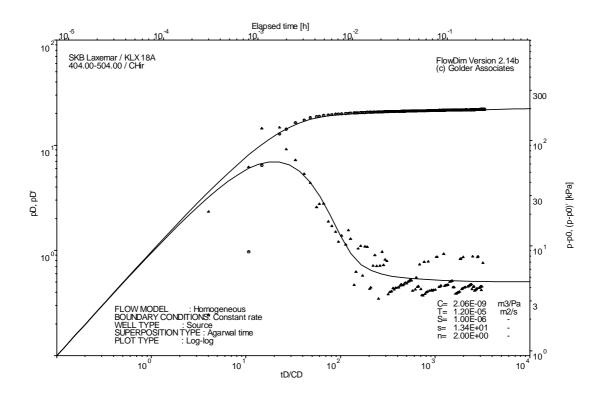


CHI phase; log-log match

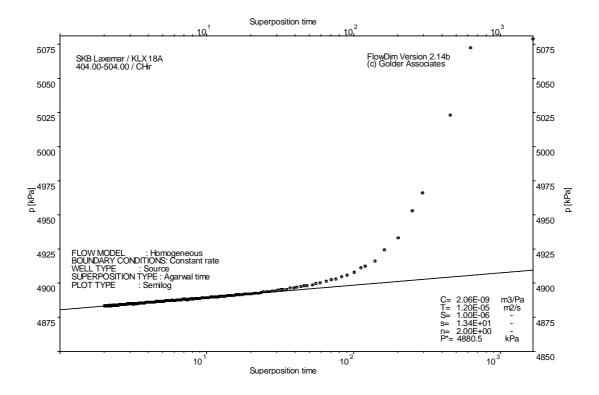
Page 2-4/4

Borehole: KLX18A

Test: 404.00 - 504.00 m



CHIR phase; log-log match



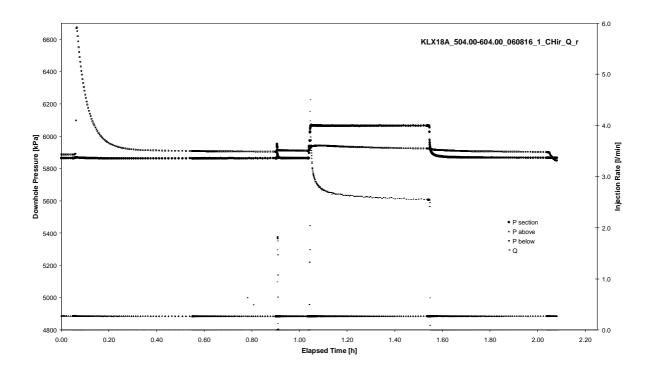
CHIR phase; HORNER match

Test: 504.00 – 604.00 m

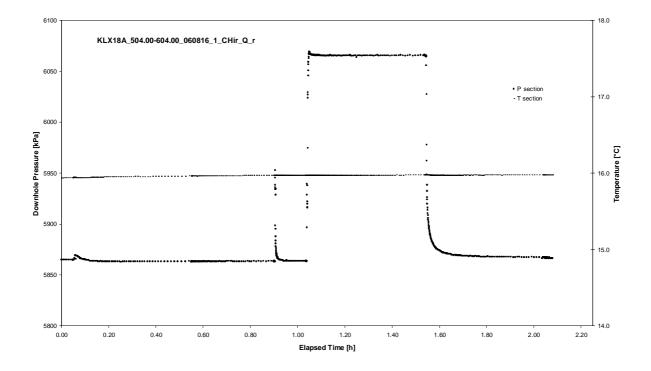
APPENDIX 2-5

Test 504.00 – 604.00 m

Test: 504.00 – 604.00 m

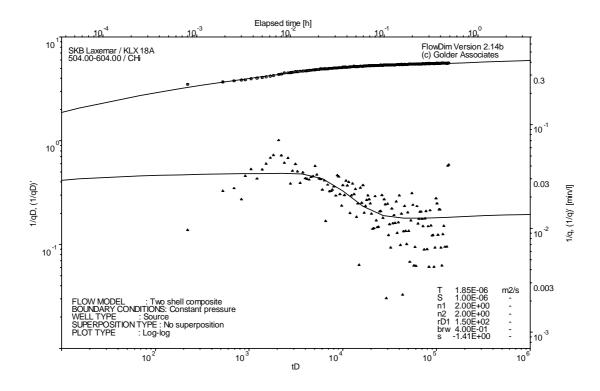


Pressure and flow rate vs. time; cartesian plot



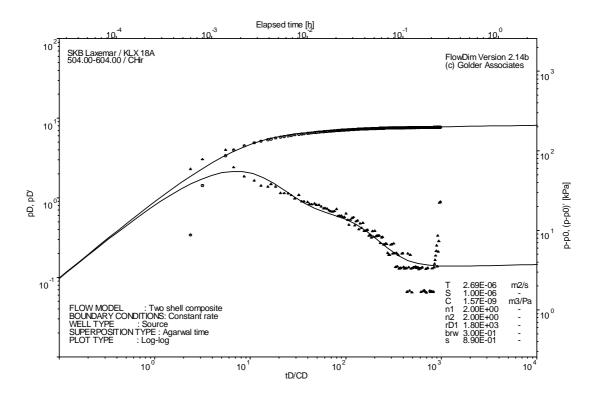
Interval pressure and temperature vs. time; cartesian plot

Test: 504.00 – 604.00 m

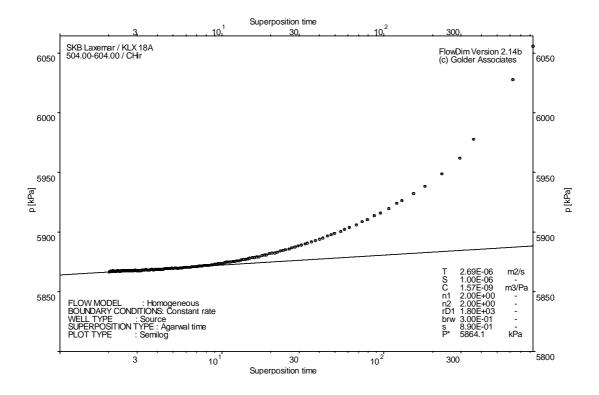


CHI phase; log-log match

Test: 504.00 – 604.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 104.00 – 124.00 m

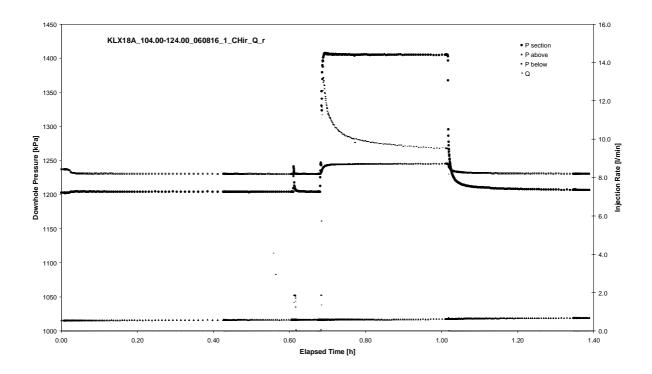
APPENDIX 2-6

Test 104.00 – 124.00 m

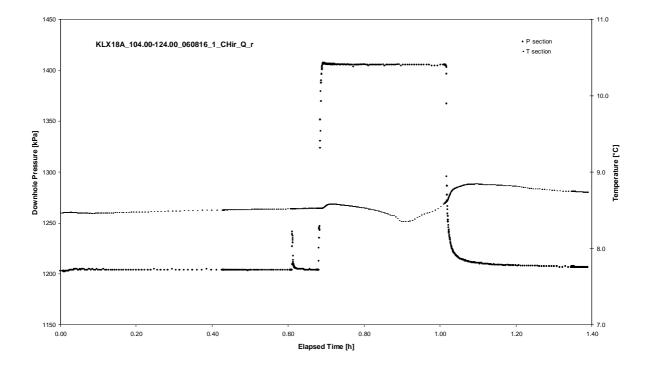
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Borehole: KLX18A

Test: 104.00 – 124.00 m

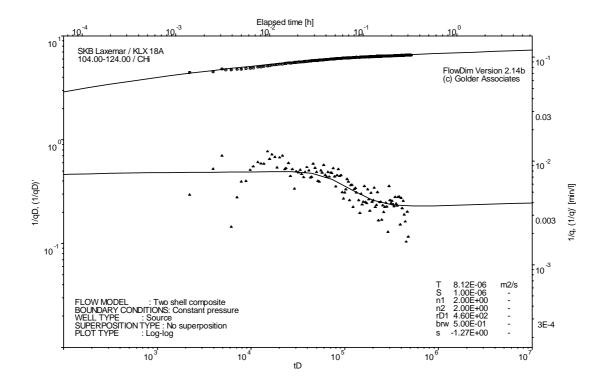


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 104.00 – 124.00 m

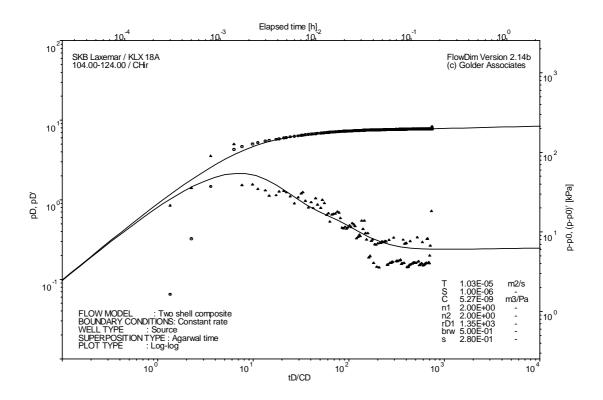


CHI phase; log-log match

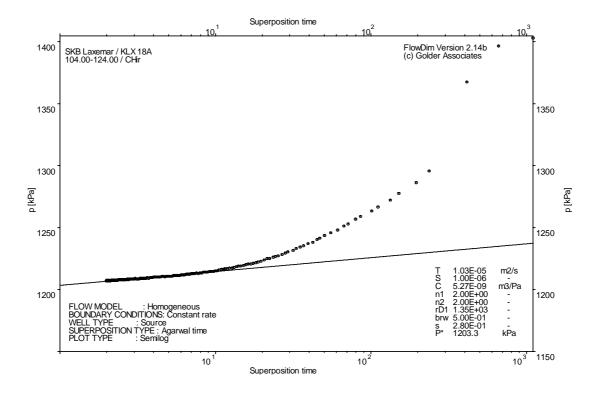
Page 2-6/4

Borehole: KLX18A

Test: 104.00 – 124.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 124.00 – 144.00 m

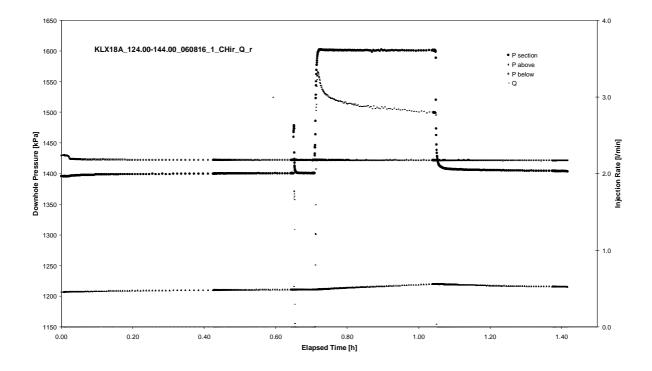
APPENDIX 2-7

Test 124.00 – 144.00 m

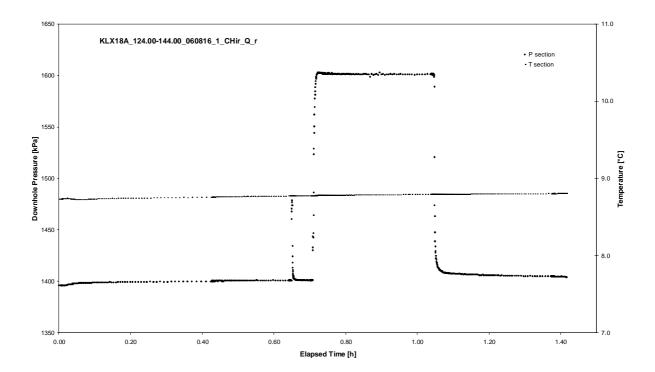
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Borehole: KLX18A

124.00 - 144.00 m Test:



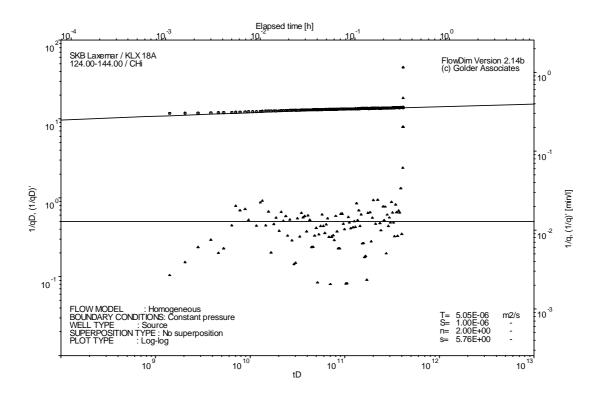
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-7/3

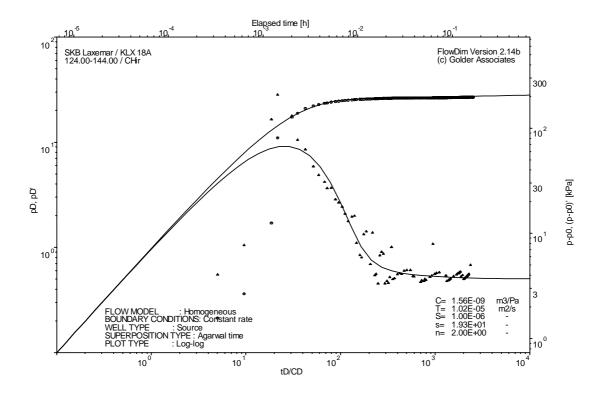
Test: 124.00 – 144.00 m



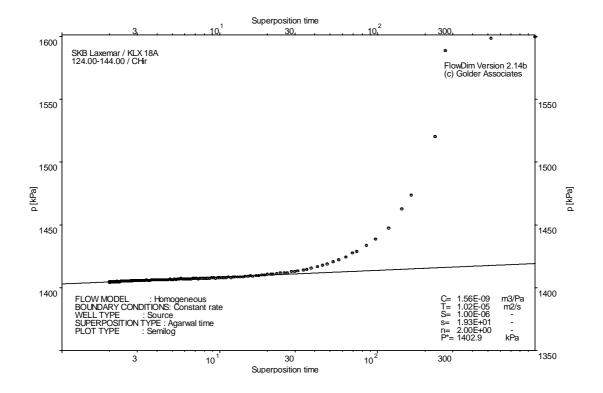
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Borehole: KLX18A

Test: 124.00 – 144.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-8/1

Test: 144.00 – 164.00 m

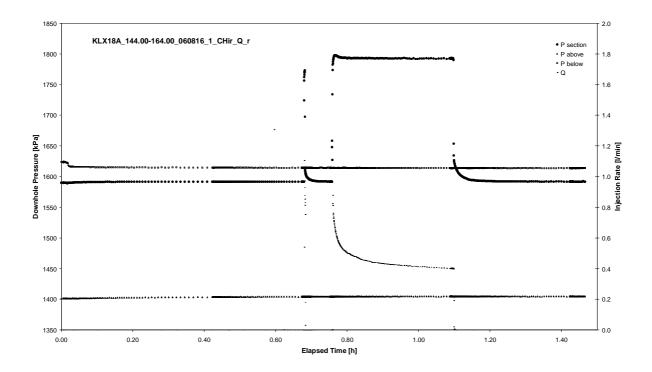
APPENDIX 2-8

Test 144.00 – 164.00 m

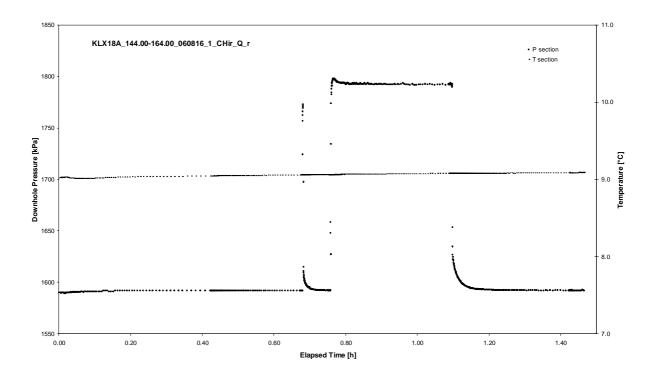
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Borehole: KLX18A

Test: 144.00 – 164.00 m



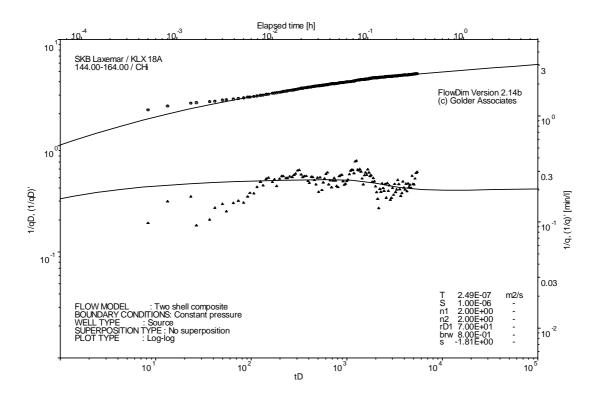
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

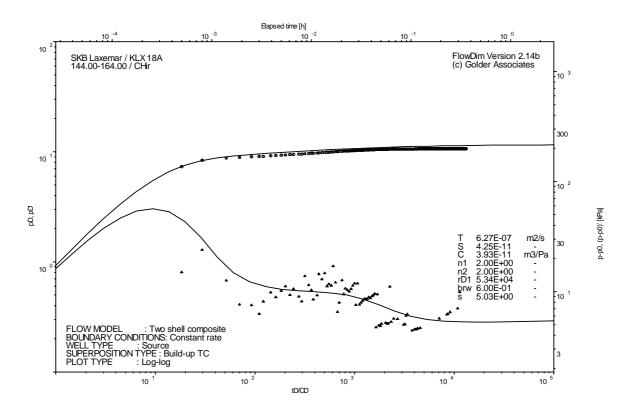
Borehole: KLX18A Page 2-8/3

Test: 144.00 – 164.00 m

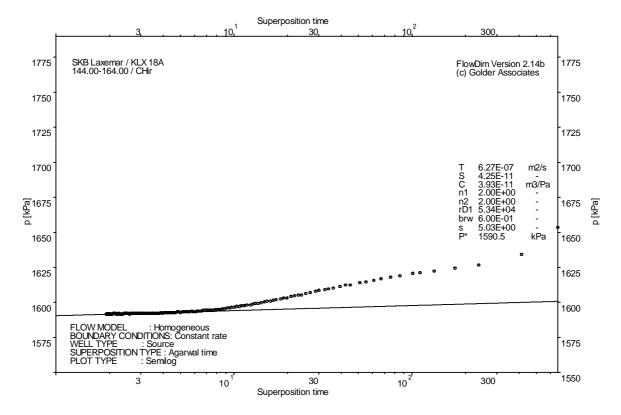


Borehole: KLX18A Page 2-8/4

Test: 144.00 – 164.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-9/1

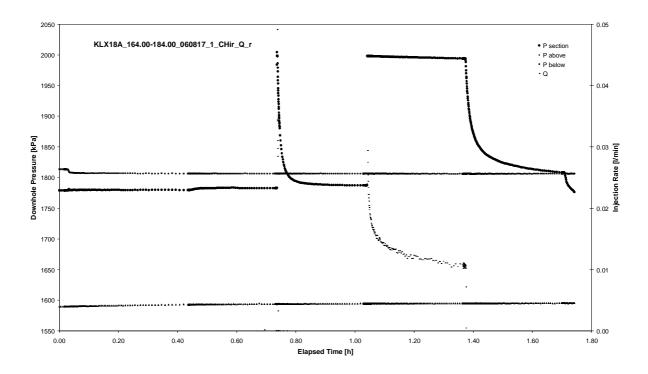
Test: 164.00 – 184.00 m

APPENDIX 2-9

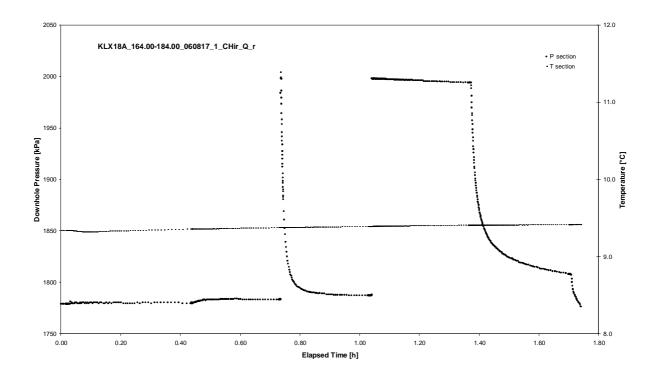
Test 164.00 – 184.00 m

Borehole: KLX18A Page 2-9/2

Test: 164.00 – 184.00 m



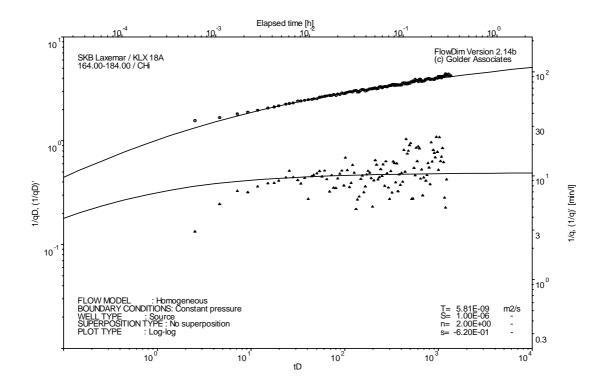
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-9/3

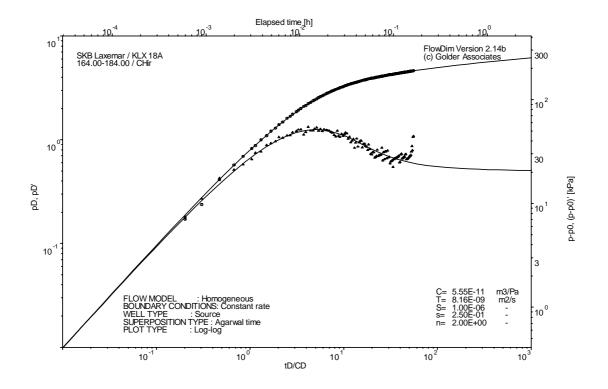
Test: 164.00 – 184.00 m



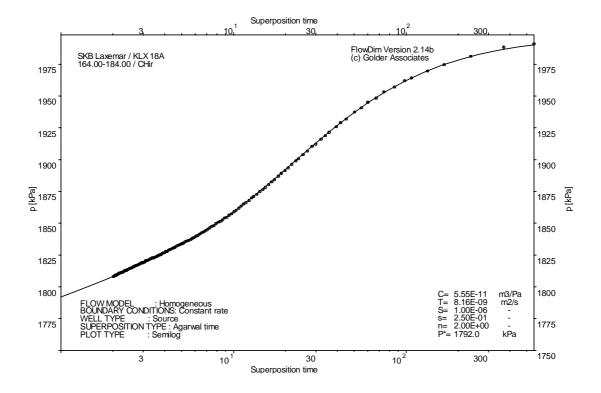
Page 2-9/4

Borehole: KLX18A

Test: 164.00 – 184.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-10/1

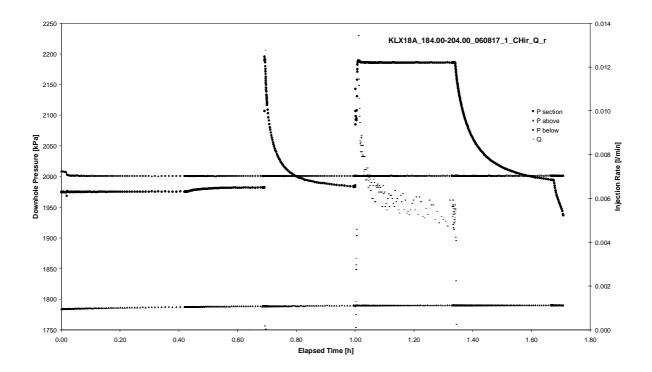
Test: 184.00 – 204.00 m

APPENDIX 2-10

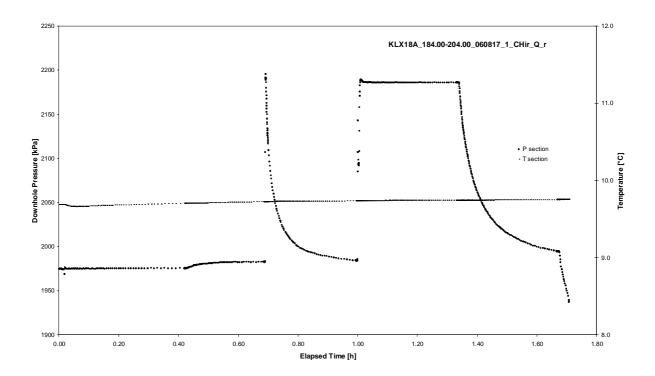
Test 184.00 – 204.00 m

Borehole: KLX18A Page 2-10/2

Test: 184.00 – 204.00 m



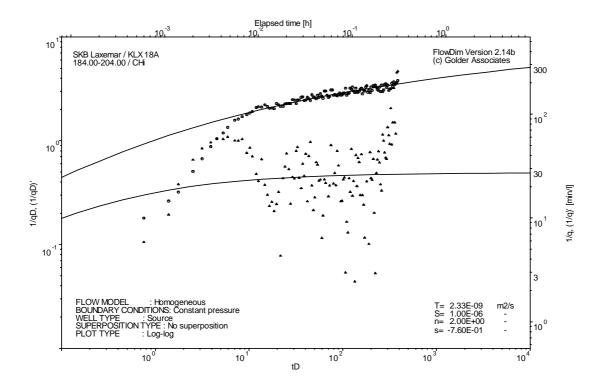
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

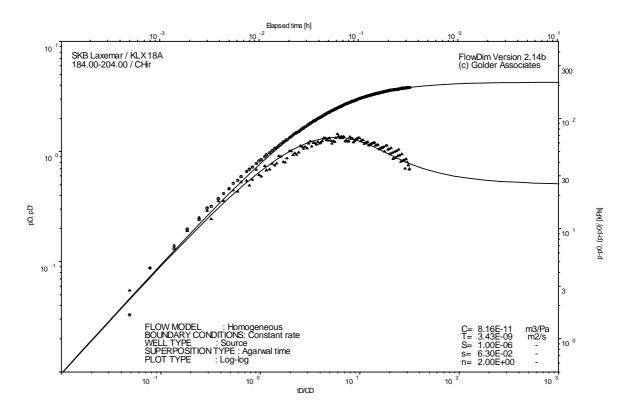
Borehole: KLX18A Page 2-10/3

Test: 184.00 – 204.00 m

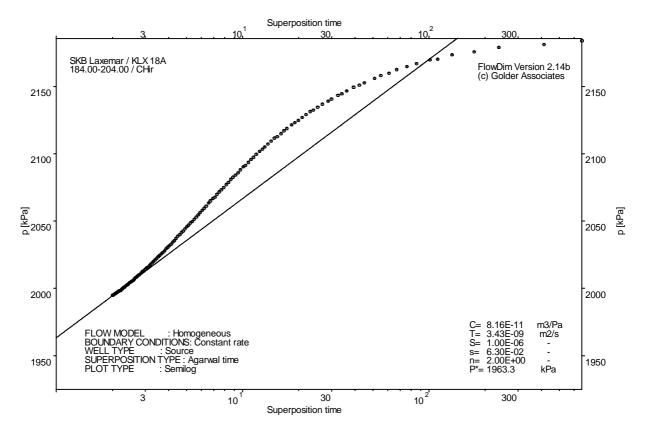


Borehole: KLX18A

Test: 184.00 - 204.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-11/1

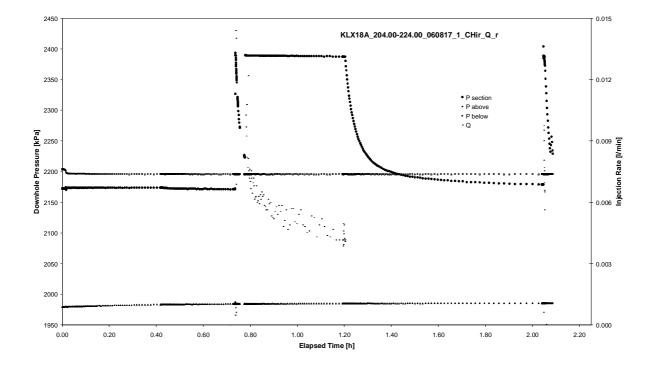
Test: 204.00 – 224.00 m

APPENDIX 2-11

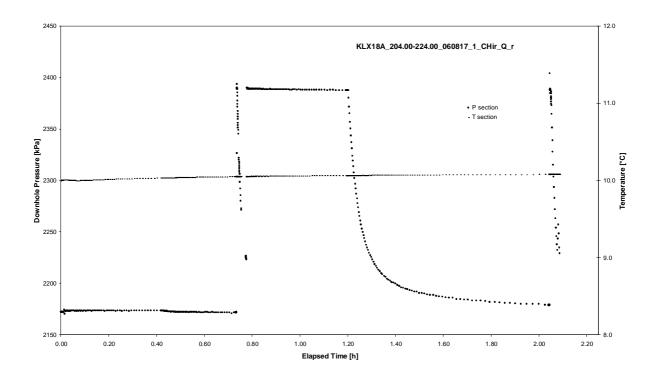
Test 204.00 – 224.00 m

Borehole: KLX18A Page 2-11/2

Test: 204.00 – 224.00 m



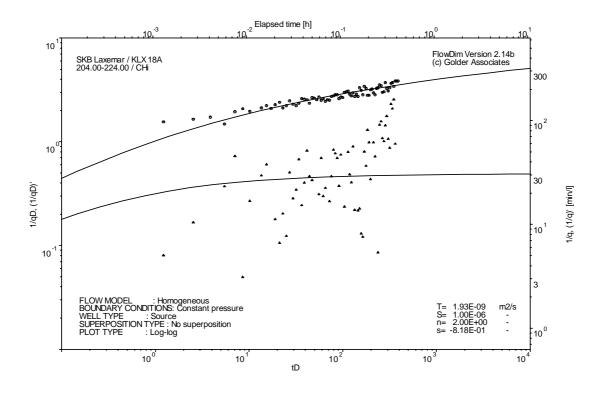
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

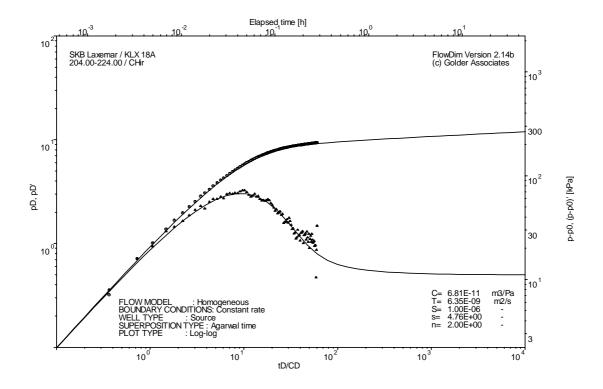
Borehole: KLX18A Page 2-11/3

Test: 204.00 – 224.00 m

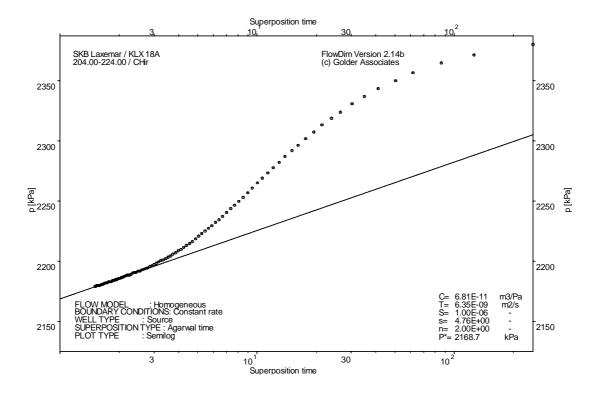


Borehole: KLX18A

Test: 204.00 - 224.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-12/1

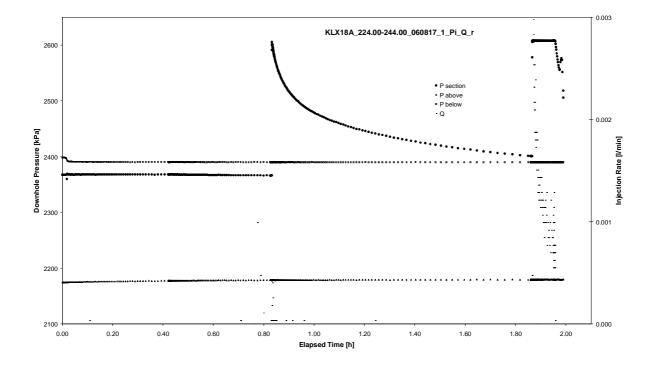
Test: 224.00 – 244.00 m

APPENDIX 2-12

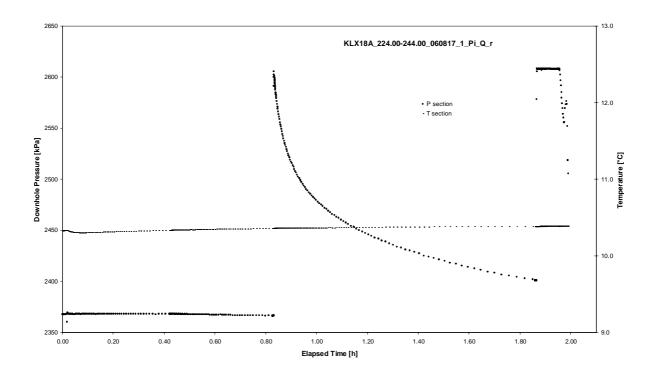
Test 224.00 – 244.00 m

Borehole: KLX18A Page 2-12/2

Test: 224.00 – 244.00 m



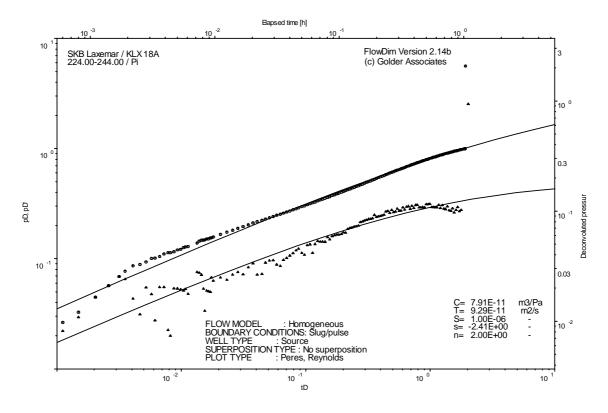
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-12/3

Test: 224.00 – 244.00 m



Pulse injection; deconvolution match

Borehole: KLX18A Page 2-13/1

Test: 244.00 – 264.00 m

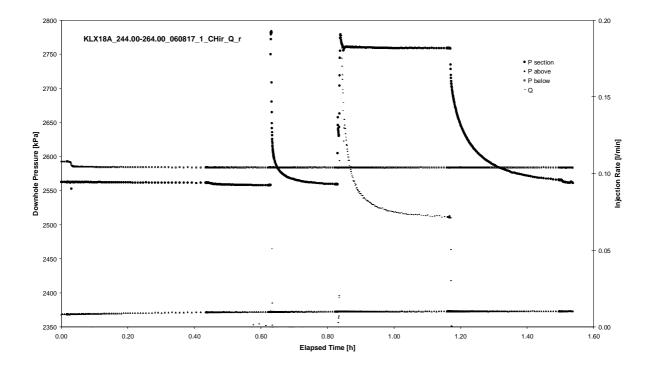
APPENDIX 2-13

Test 244.00 – 264.00 m

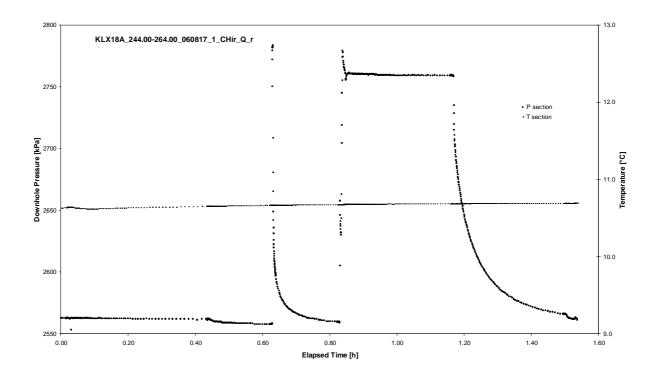
Page 2-13/2

244.00 - 264.00 mTest:

Borehole: KLX18A



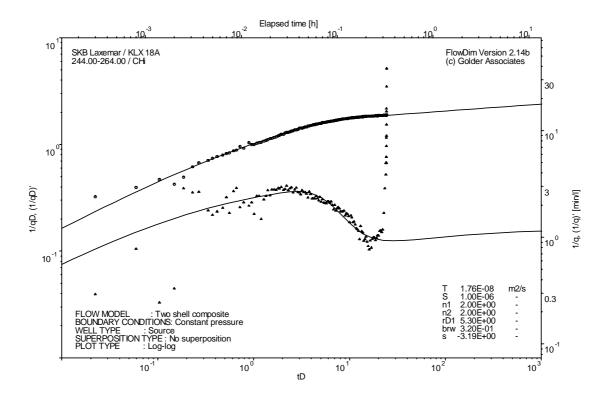
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

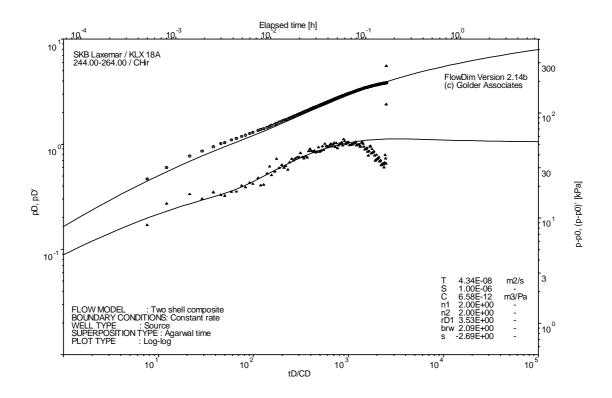
Borehole: KLX18A Page 2-13/3

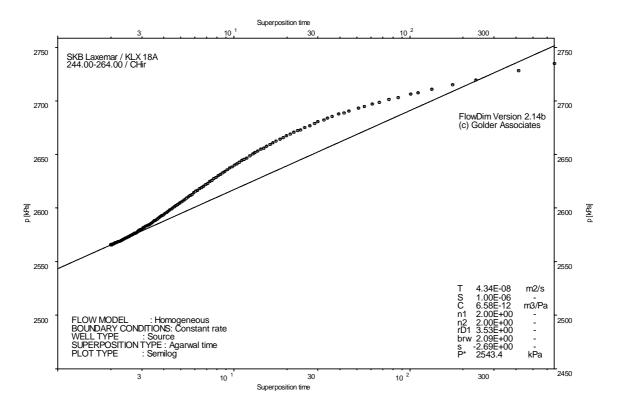
Test: 244.00 – 264.00 m



Borehole: KLX18A

Test: 244.00 – 264.00 m





CHIR phase; HORNER match

Borehole: KLX18A Page 2-14/1

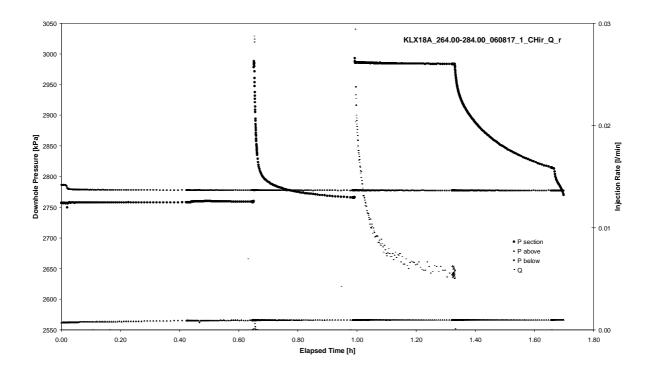
Test: 264.00 – 284.00 m

APPENDIX 2-14

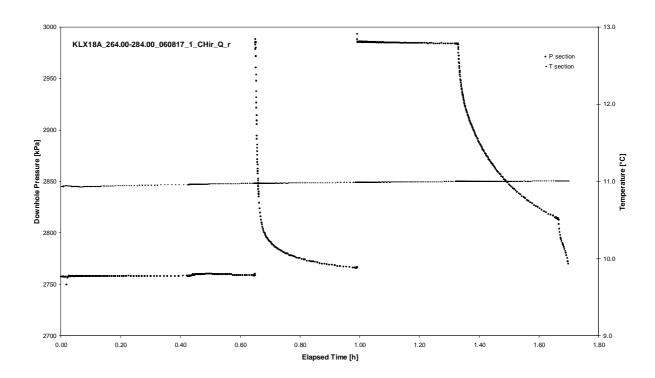
Test 264.00 – 284.00 m

Borehole: KLX18A Page 2-14/2

Test: 264.00 – 284.00 m



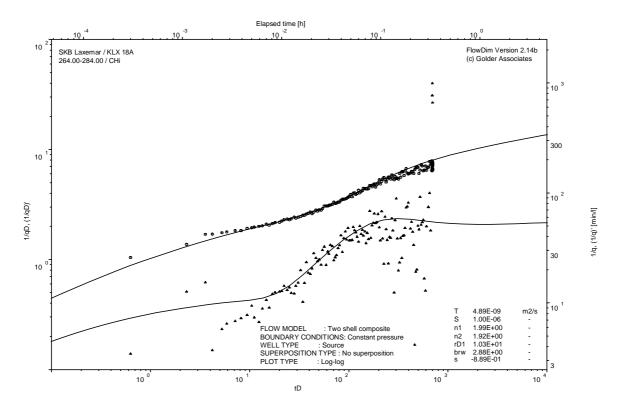
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-14/3

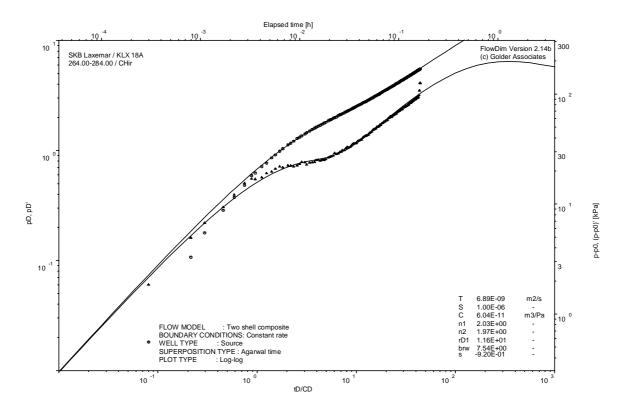
Test: 264.00 – 284.00 m



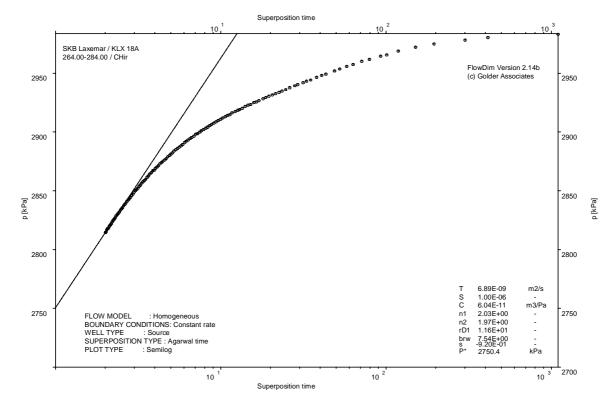
Page 2-14/4

Borehole: KLX18A

Test: 264.00 – 284.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-15/1

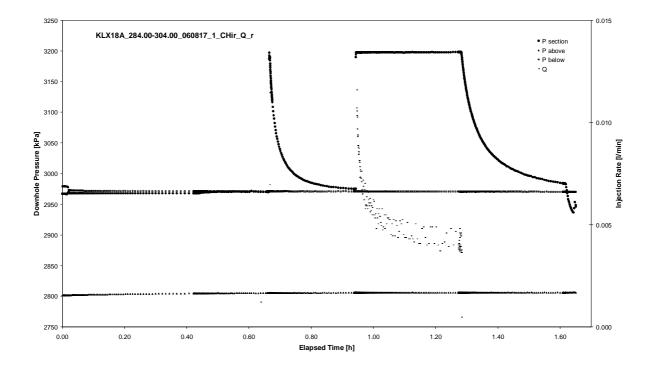
Test: 284.00 – 304.00 m

APPENDIX 2-15

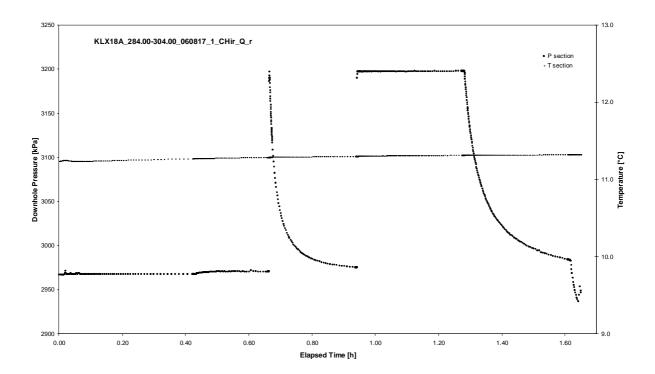
Test 284.00 – 304.00 m

Borehole: KLX18A Page 2-15/2

Test: 284.00 – 304.00 m



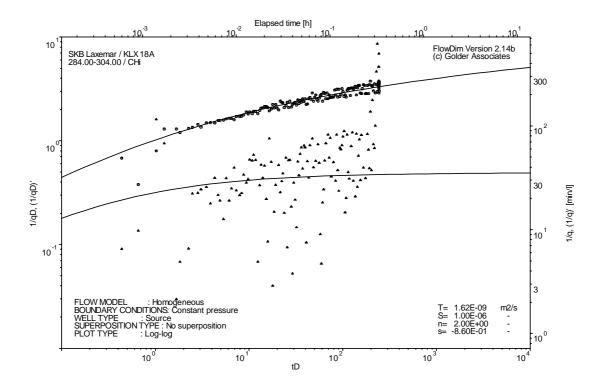
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

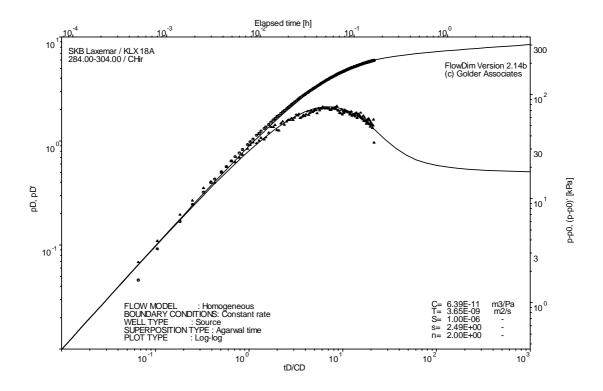
Borehole: KLX18A Page 2-15/3

Test: 284.00 – 304.00 m

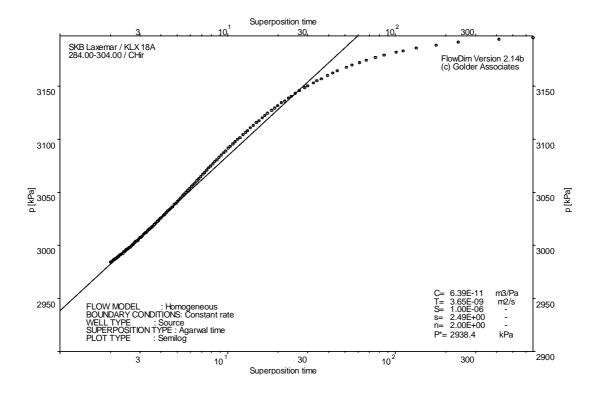


Borehole: KLX18A

Test: 284.00 – 304.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-16/1

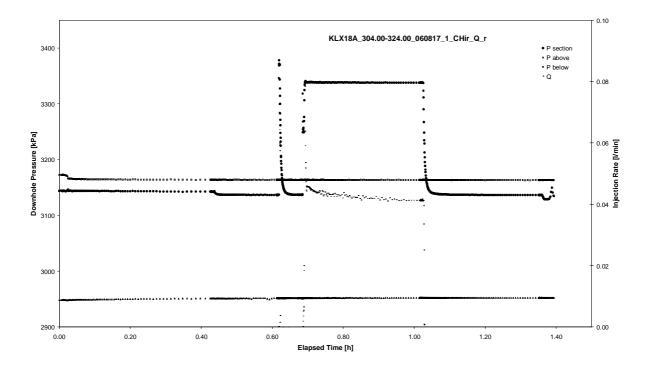
Test: 304.00 – 324.00 m

APPENDIX 2-16

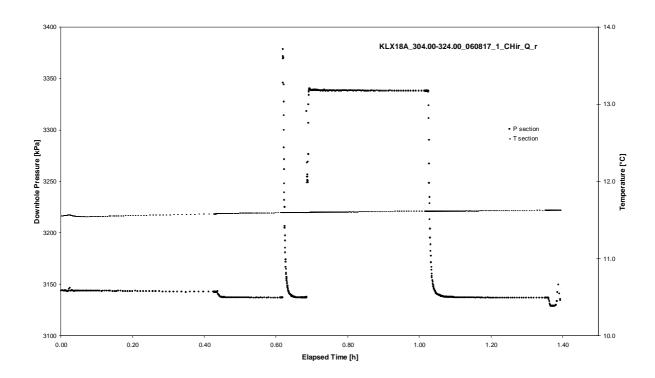
Test 304.00 – 324.00 m

Borehole: KLX18A Page 2-16/2

Test: 304.00 – 324.00 m



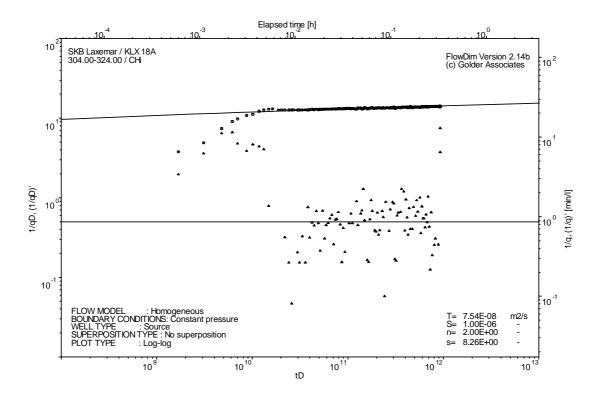
Pressure and flow rate vs. time; cartesian plot



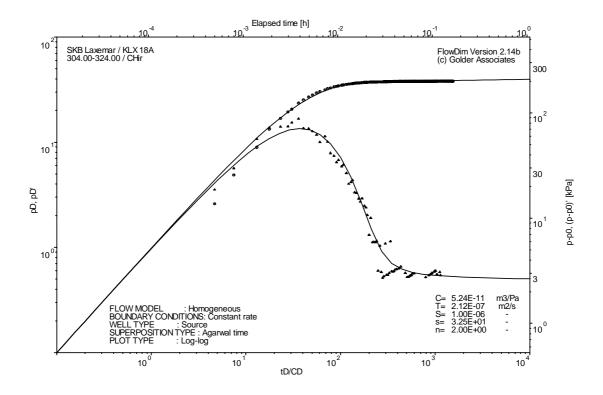
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-16/3

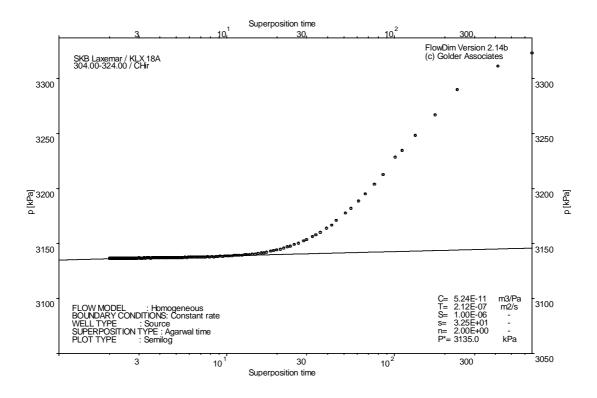
Test: 304.00 – 324.00 m



Test: 304.00 – 324.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-17/1

Test: 324.00 – 344.00 m

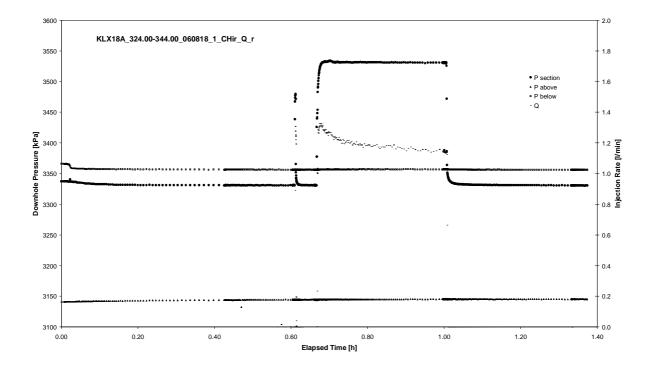
APPENDIX 2-17

Test 324.00 – 344.00 m

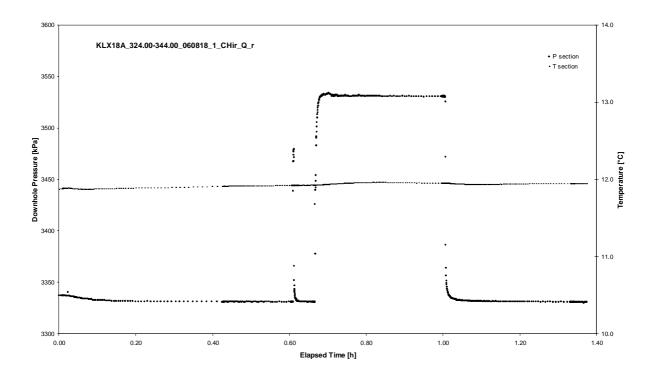
Page 2-17/2

Borehole: KLX18A

324.00 - 344.00 m Test:



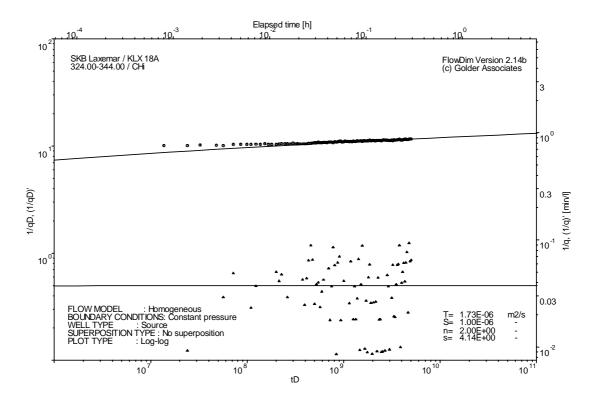
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-17/3

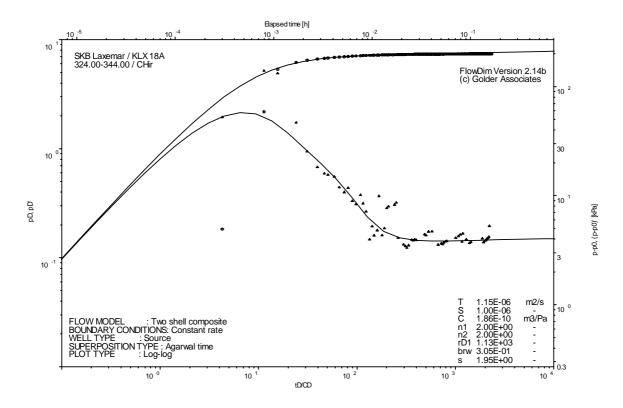
Test: 324.00 – 344.00 m



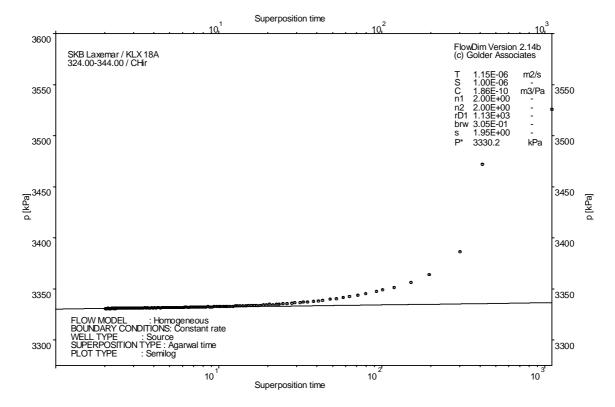
Page 2-17/4

Borehole: KLX18A

Test: 324.00 – 344.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-18/1

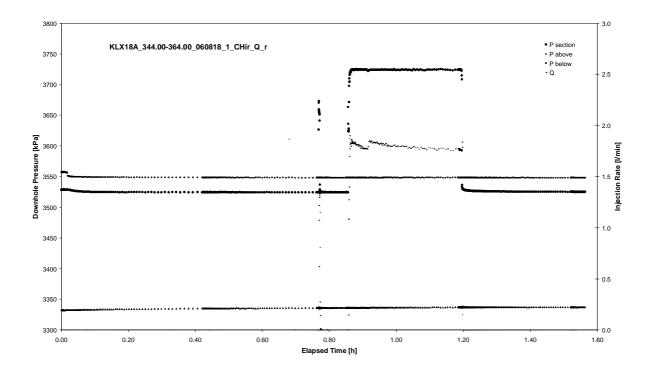
Test: 344.00 – 364.00 m

APPENDIX 2-18

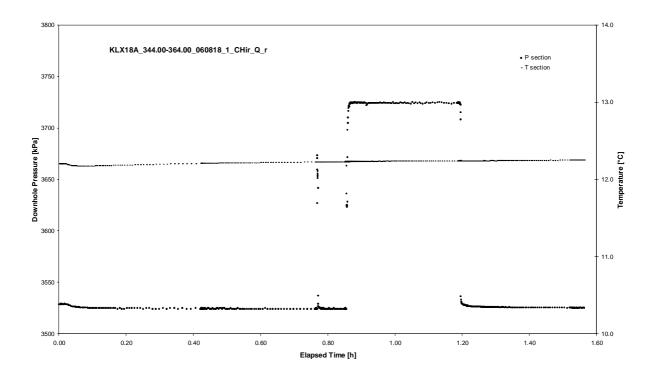
Test 344.00 – 364.00 m

Borehole: KLX18A Page 2-18/2

Test: 344.00 – 364.00 m



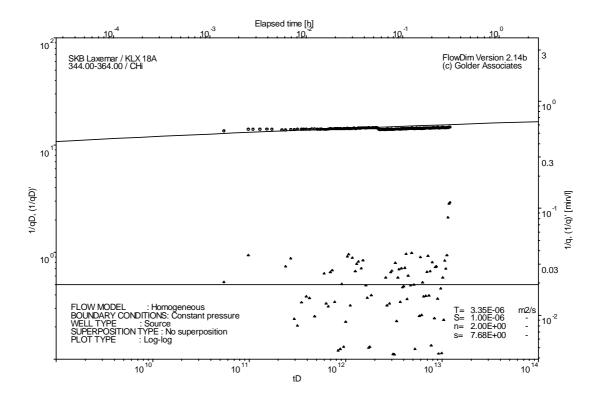
Pressure and flow rate vs. time; cartesian plot



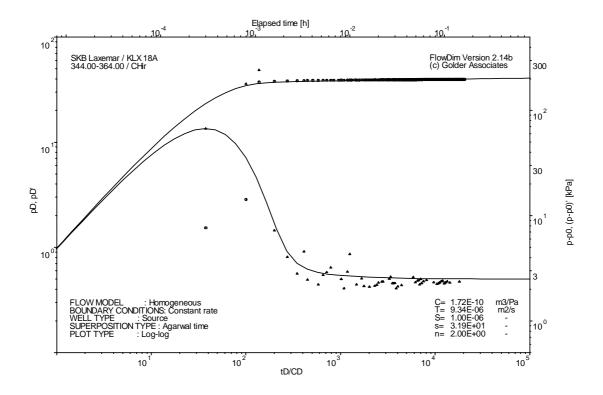
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-18/3

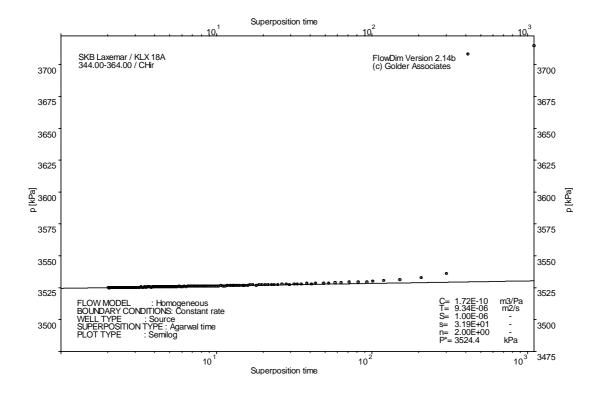
Test: 344.00 – 364.00 m



Test: 344.00 – 364.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-19/1

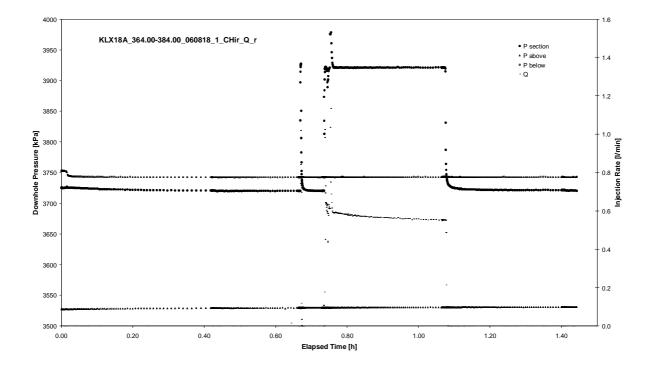
Test: 364.00 – 384.00 m

APPENDIX 2-19

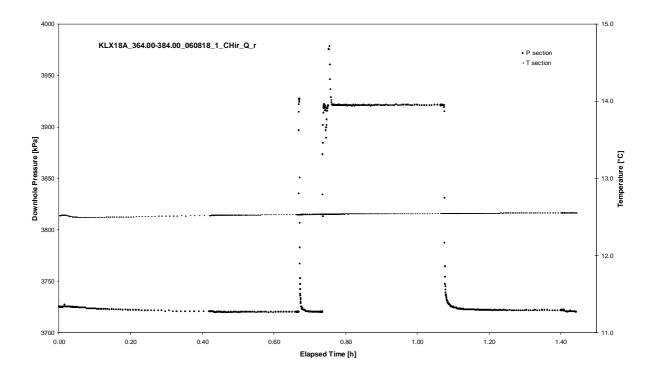
Test 364.00 – 384.00 m

Borehole: KLX18A Page 2-19/2

Test: 364.00 – 384.00 m



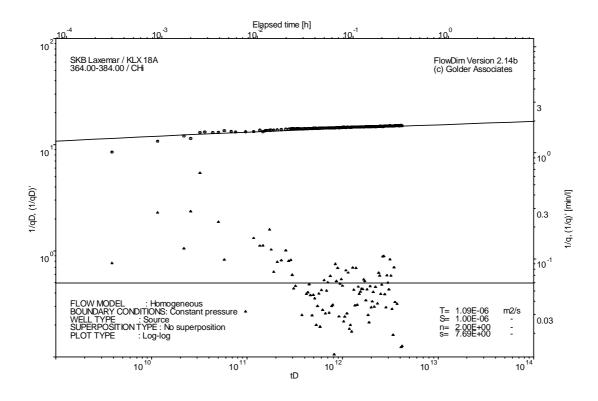
Pressure and flow rate vs. time; cartesian plot



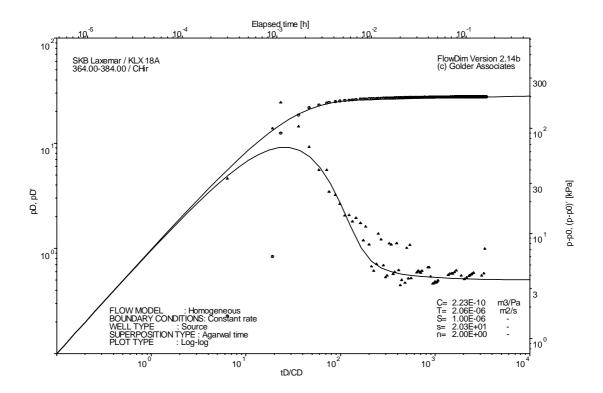
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-19/3

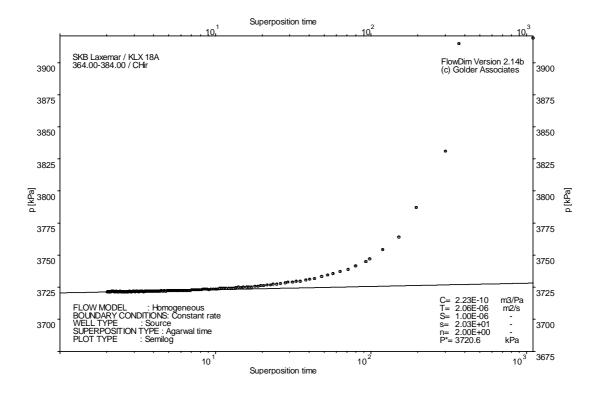
Test: 364.00 – 384.00 m



Test: 364.00 – 384.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-20/1

Test: 384.00 – 404.00 m

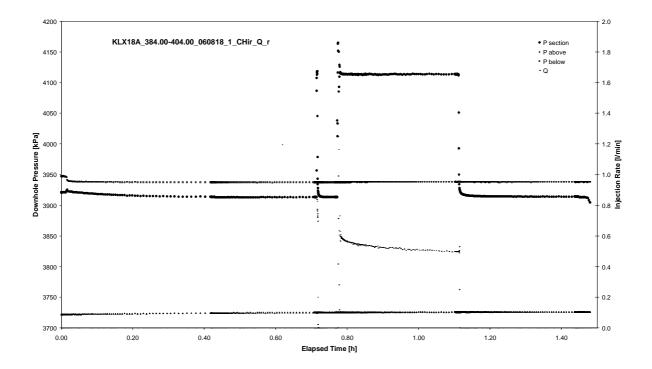
APPENDIX 2-20

Test 384.00 – 404.00 m

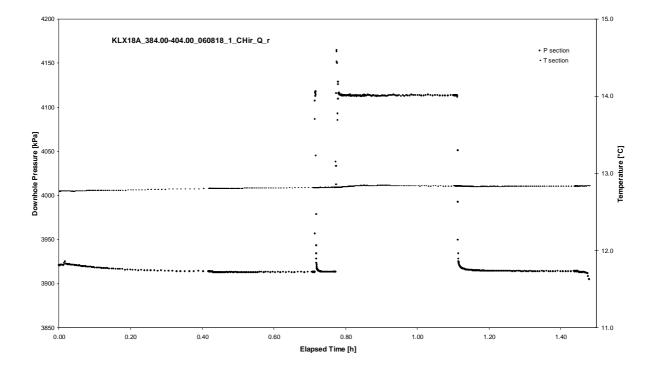
Page 2-20/2

Borehole: KLX18A

Test: 384.00 – 404.00 m



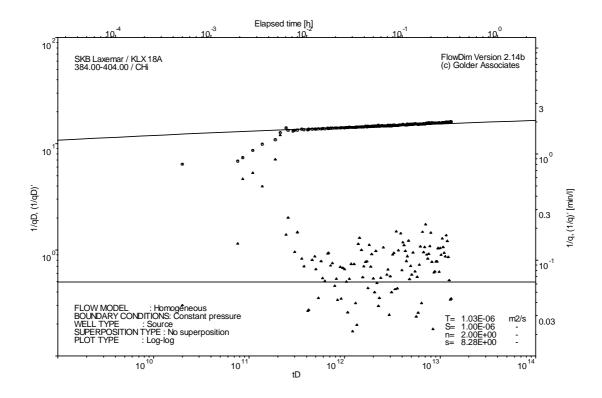
Pressure and flow rate vs. time; cartesian plot



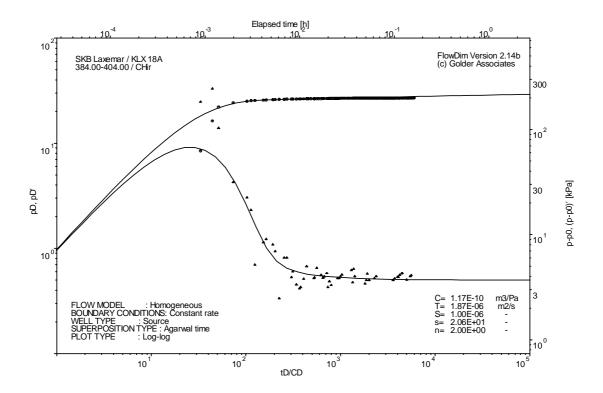
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-20/3

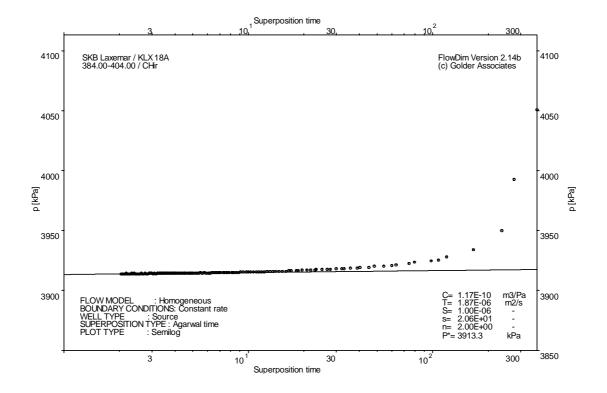
Test: 384.00 – 404.00 m



Test: 384.00 – 404.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-21/1

Test: 404.00 – 424.00 m

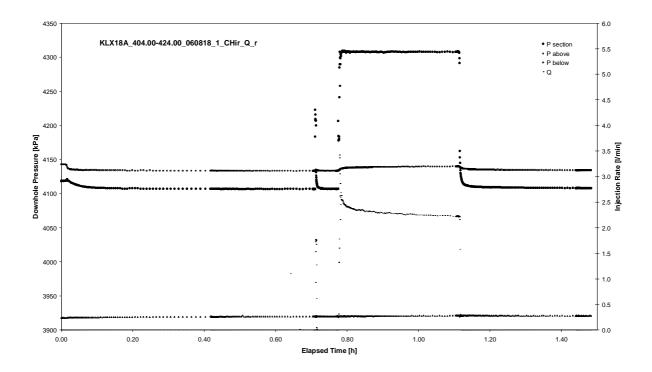
APPENDIX 2-21

Test 404.00 – 424.00 m

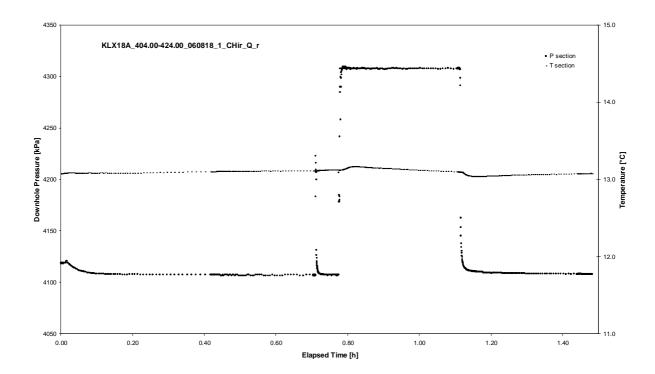
Page 2-21/2

Borehole: KLX18A

Test: 404.00 – 424.00 m



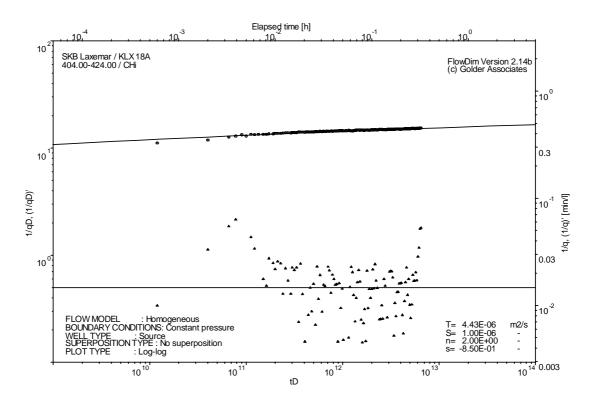
Pressure and flow rate vs. time; cartesian plot



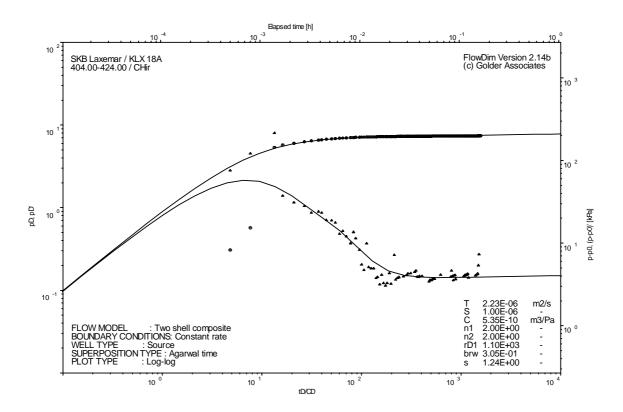
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-21/3

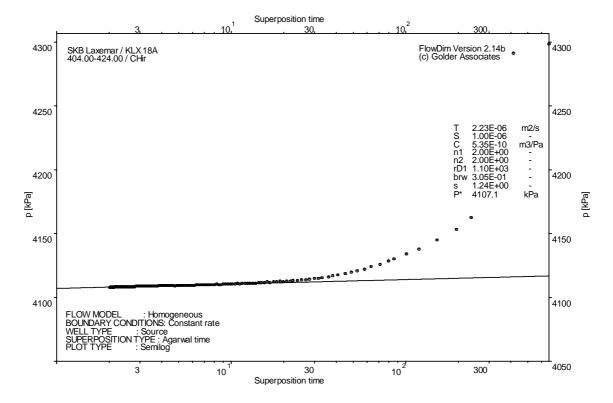
Test: 404.00 – 424.00 m



Test: 404.00 – 424.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-22/1

Test: 424.00 – 444.00 m

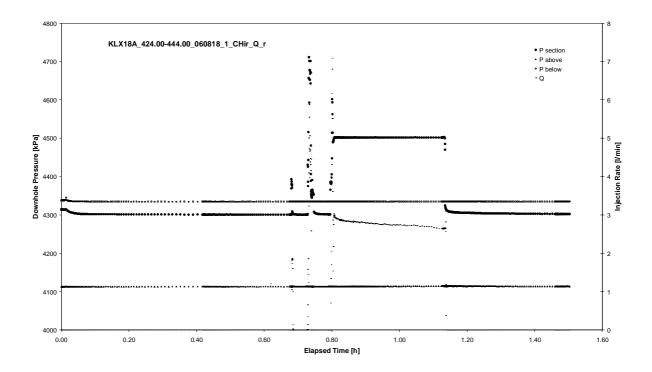
APPENDIX 2-22

Test 424.00 – 444.00 m

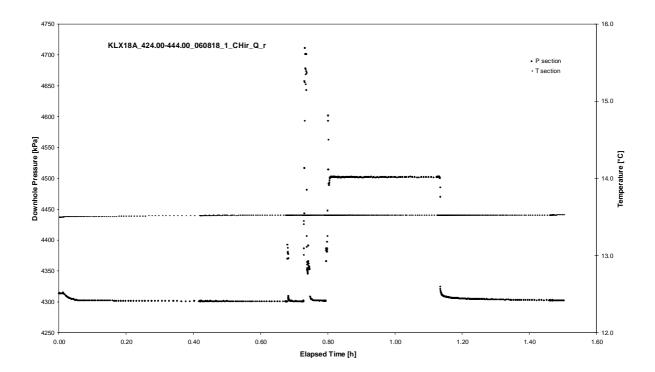
Page 2-22/2

Borehole: KLX18A

Test: 424.00 – 444.00 m



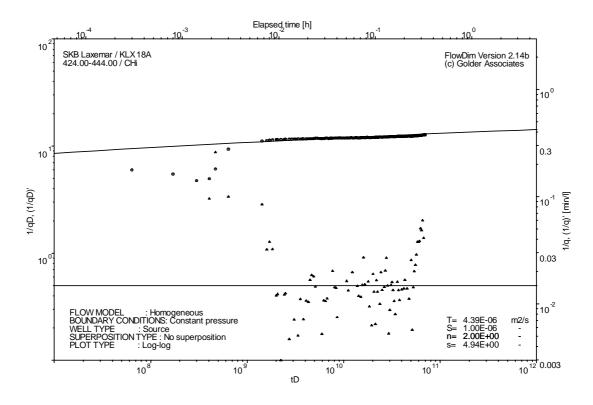
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-22/3

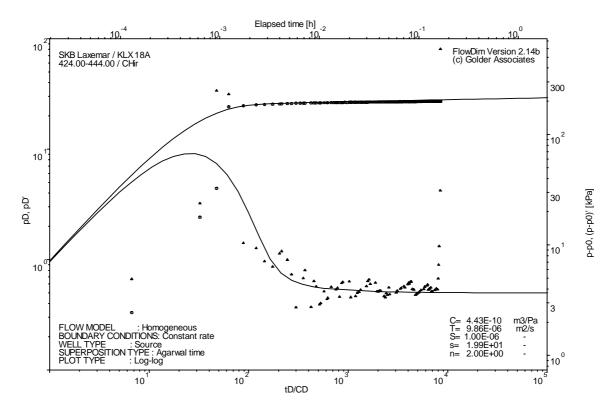
Test: 424.00 – 444.00 m



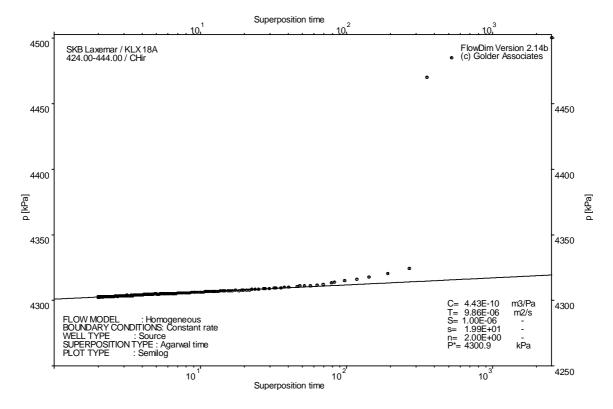
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Borehole: KLX18A

Test: 424.00 – 444.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-23/1

Test: 444.00 – 464.00 m

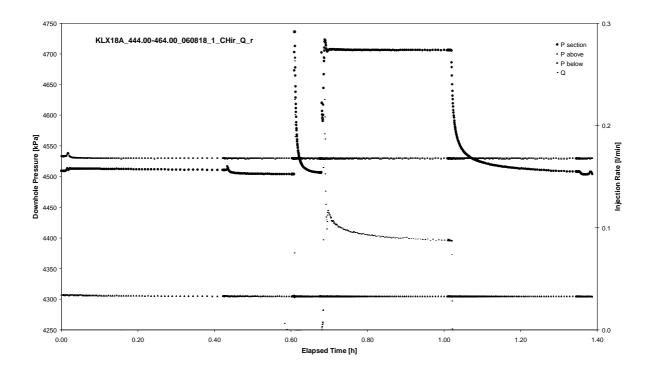
APPENDIX 2-23

Test 444.00 – 464.00 m

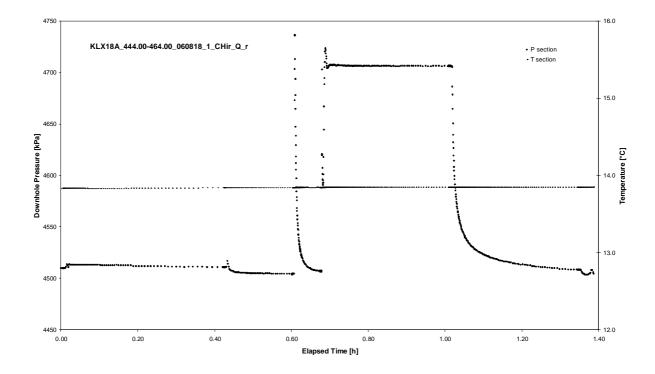
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Borehole: KLX18A

Test: 444.00 – 464.00 m



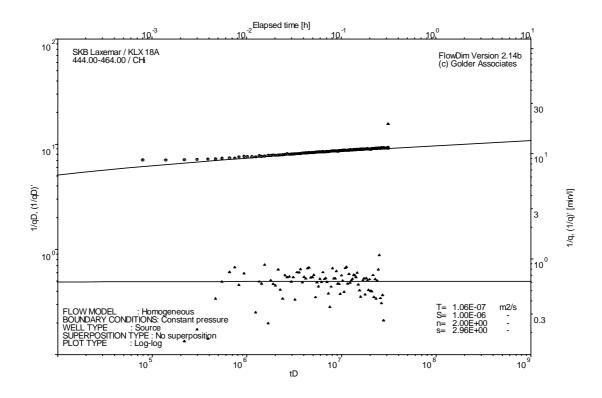
Pressure and flow rate vs. time; cartesian plot



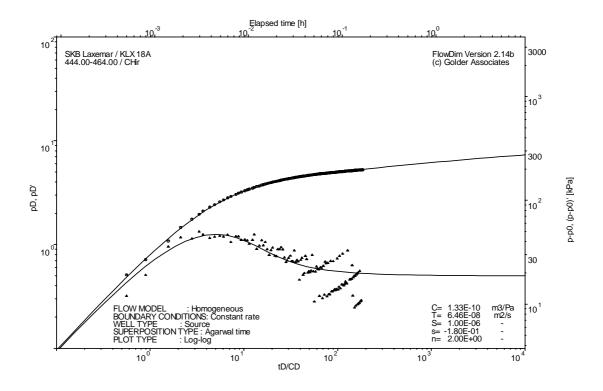
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-23/3

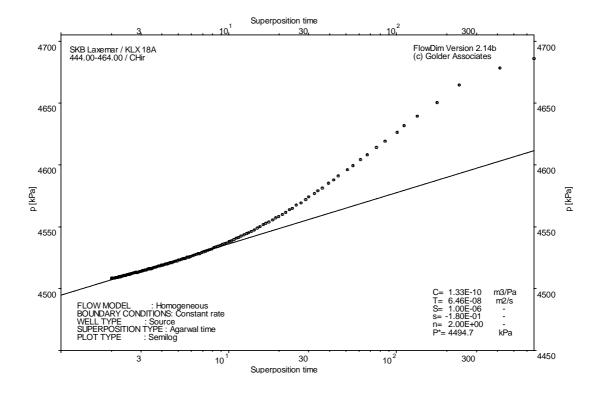
Test: 444.00 – 464.00 m



Test: 444.00 – 464.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-24/1

Test: 464.00 – 484.00 m

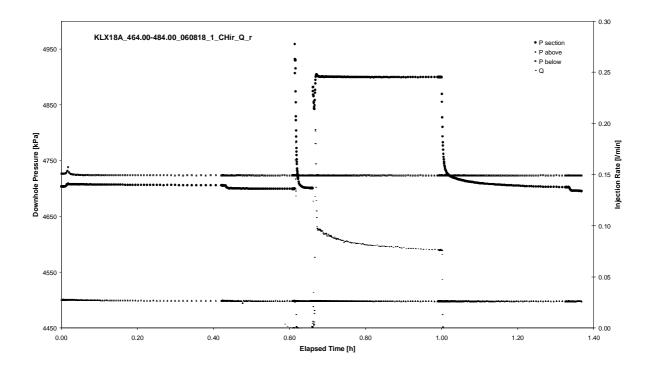
APPENDIX 2-24

Test 464.00 – 484.00 m

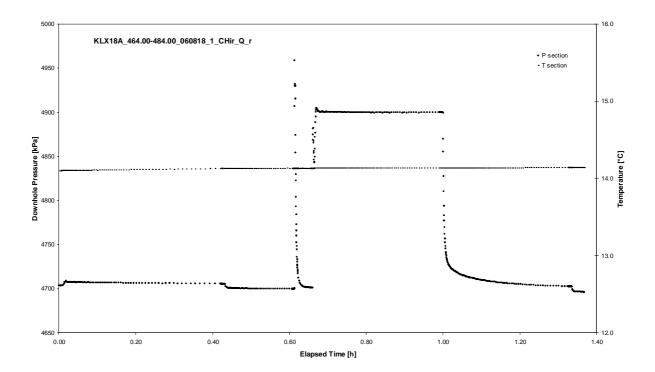
Page 2-24/2

Borehole: KLX18A

Test: 464.00 – 484.00 m



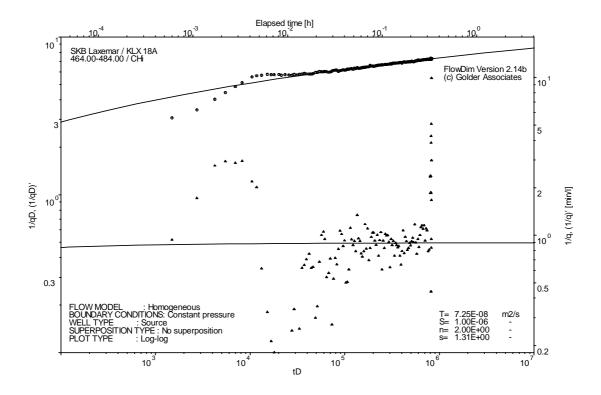
Pressure and flow rate vs. time; cartesian plot



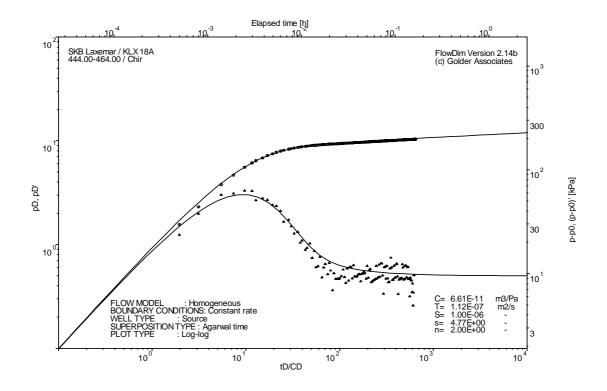
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-24/3

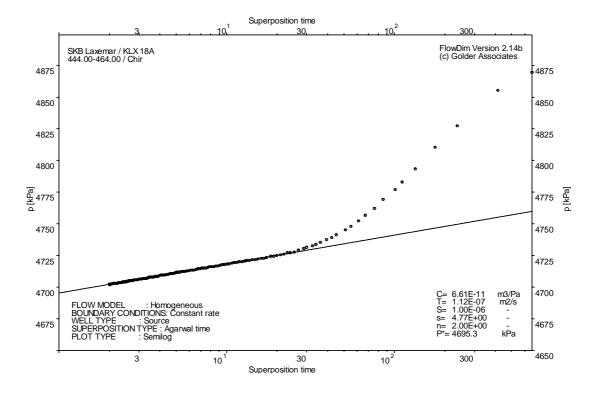
Test: 464.00 – 484.00 m



Test: 464.00 – 484.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

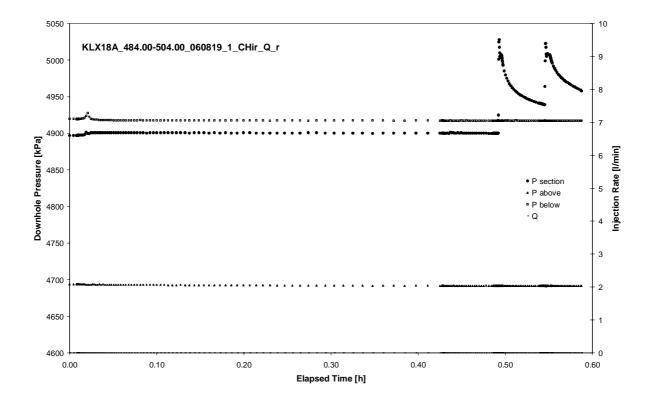
Borehole: KLX18A Page 2-25/1

Test: 484.00 – 504.00 m

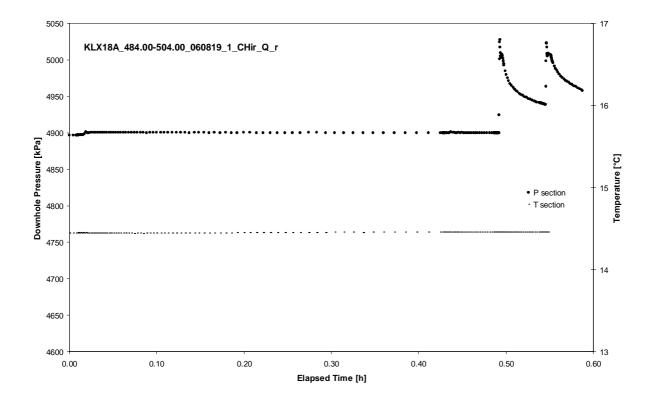
APPENDIX 2-25

Test 484.00 – 504.00 m

Test: 484.00 - 504.00 m



Pressure and flow rate vs. time; cartesian plot (test repeated)

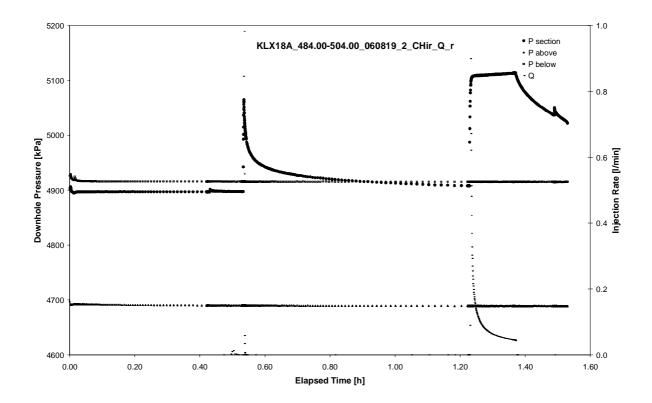


Interval pressure and temperature vs. time; cartesian plot (test repeated)

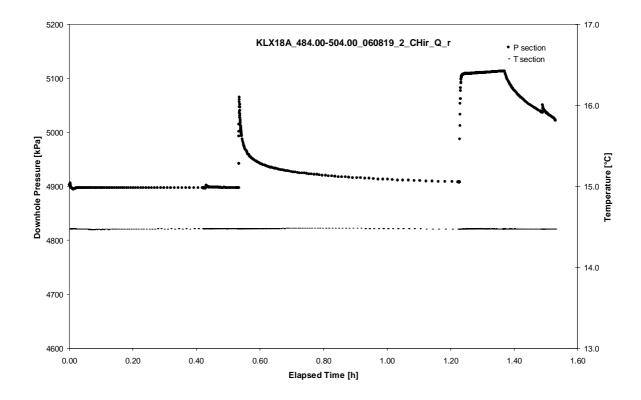
Page 2-25/3

Borehole: KLX18A

Test: 484.00 – 504.00 m

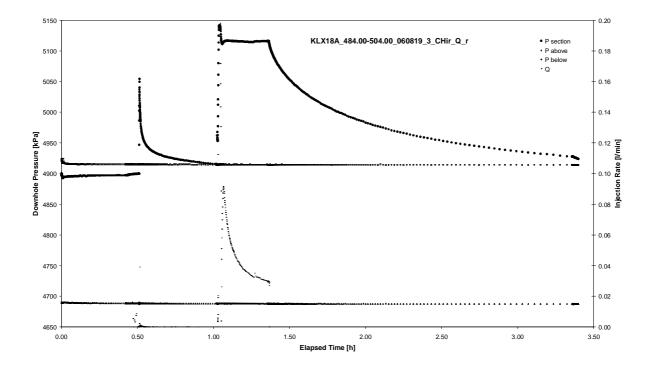


Pressure and flow rate vs. time; cartesian plot (test repeated)

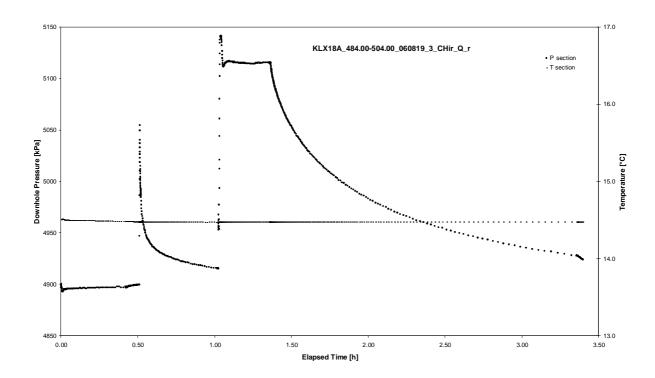


Interval pressure and temperature vs. time; cartesian plot (test repeated)

Test: 484.00 – 504.00 m

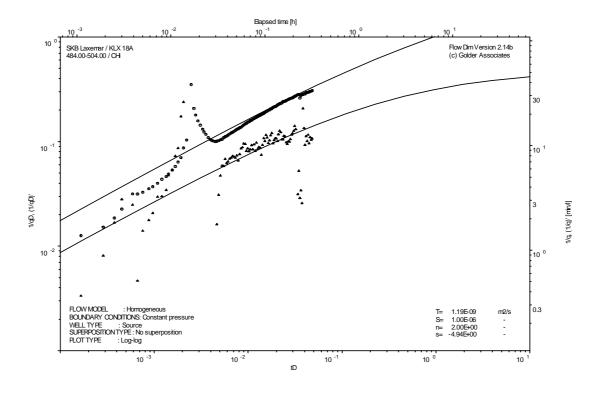


Pressure and flow rate vs. time; cartesian plot



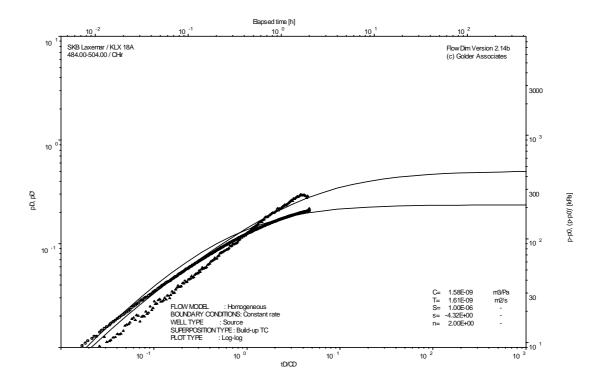
Interval pressure and temperature vs. time; cartesian plot

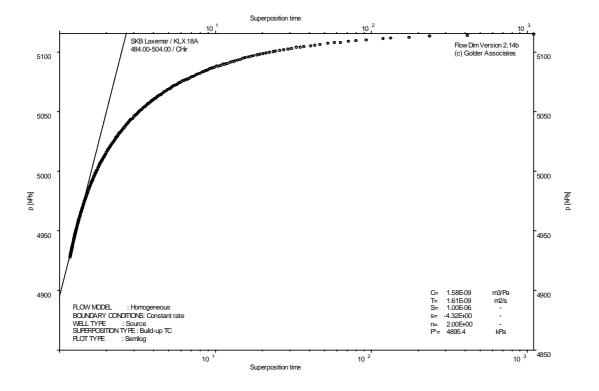
Test: 484.00 – 504.00 m



Borehole: KLX18A

Test: 484.00 – 504.00 m





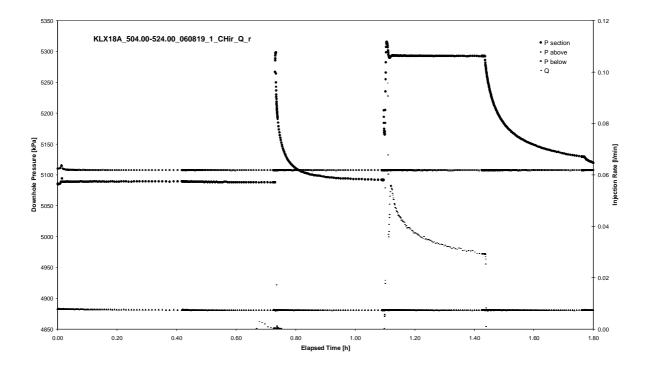
CHIR phase; HORNER match

Test: 504.00 – 524.00 m

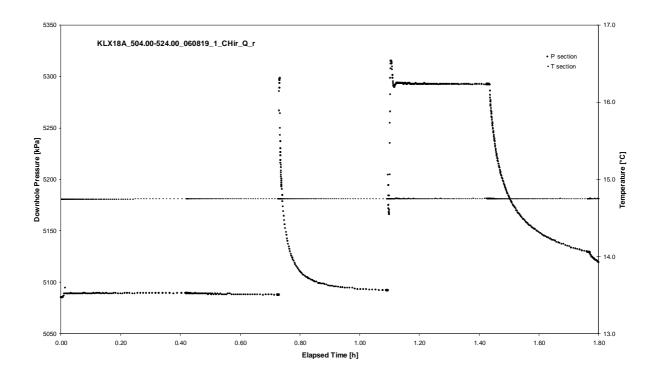
APPENDIX 2-26

Test 504.00 – 524.00 m

Test: 504.00 – 524.00 m

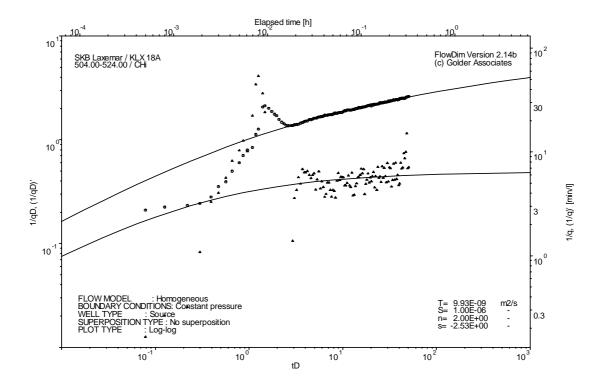


Pressure and flow rate vs. time; cartesian plot



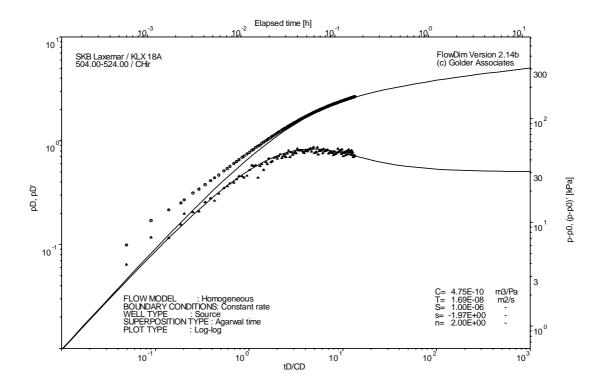
Interval pressure and temperature vs. time; cartesian plot

Test: 504.00 – 524.00 m

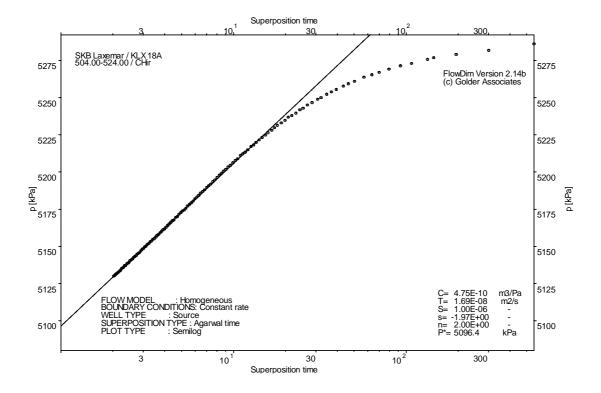


Borehole: KLX18A

Test: 504.00 – 524.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 524.00 – 544.00 m

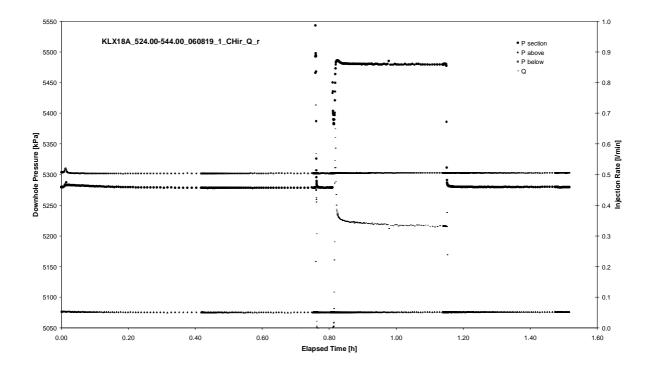
APPENDIX 2-27

Test 524.00 – 544.00 m

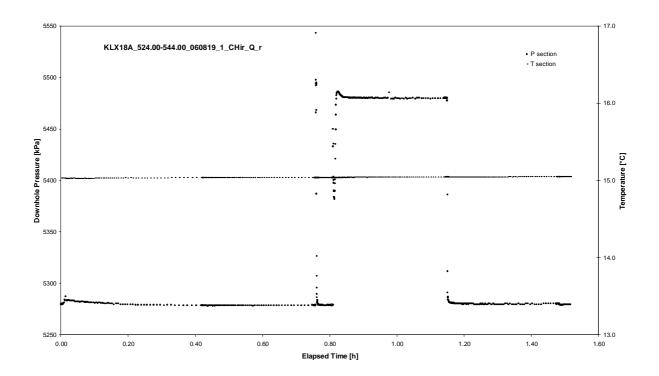
Page 2-27/2

Test: 524.00 – 544.00 m

Borehole: KLX18A

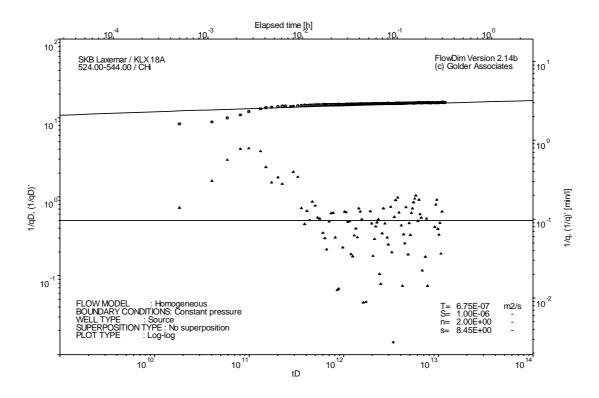


Pressure and flow rate vs. time; cartesian plot



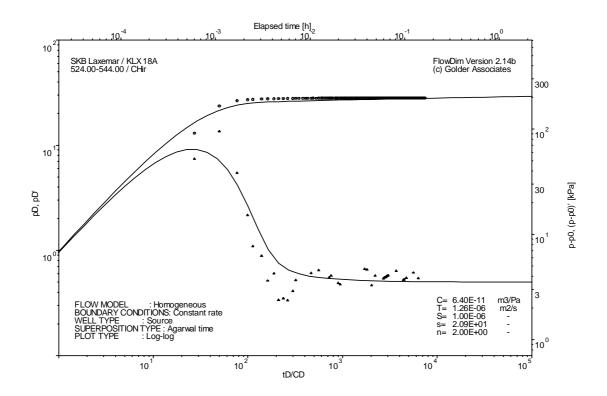
Interval pressure and temperature vs. time; cartesian plot

Test: 524.00 – 544.00 m

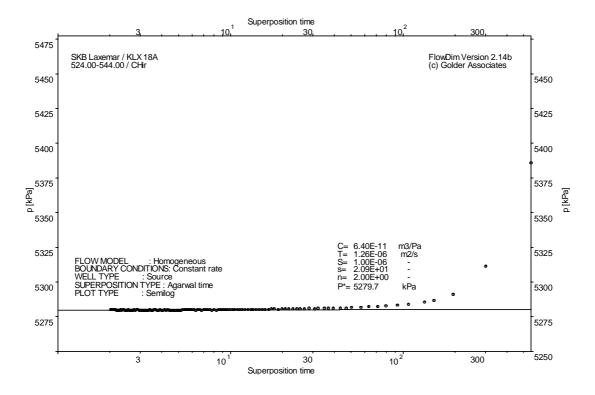


Borehole: KLX18A

Test: 524.00 – 544.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 544.00 – 564.00 m

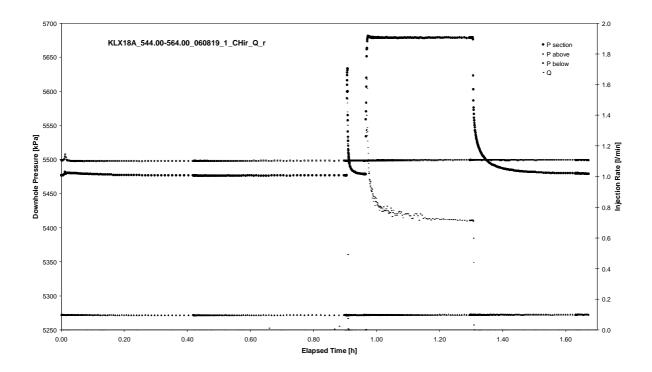
APPENDIX 2-28

Test 544.00 – 564.00 m

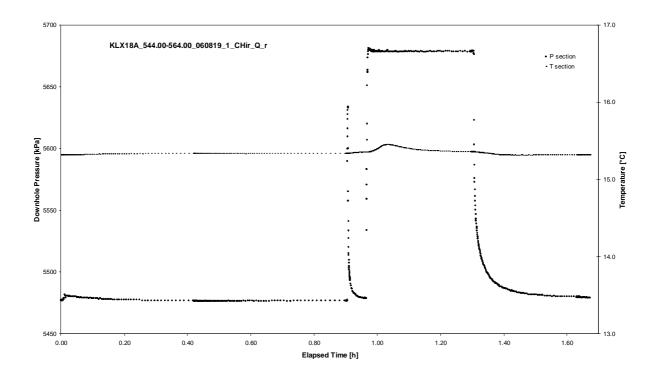
Page 2-28/2

Borehole: KLX18A

Test: 544.00 – 564.00 m

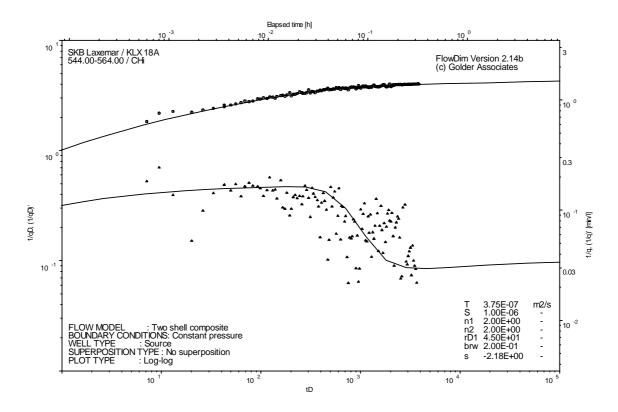


Pressure and flow rate vs. time; cartesian plot



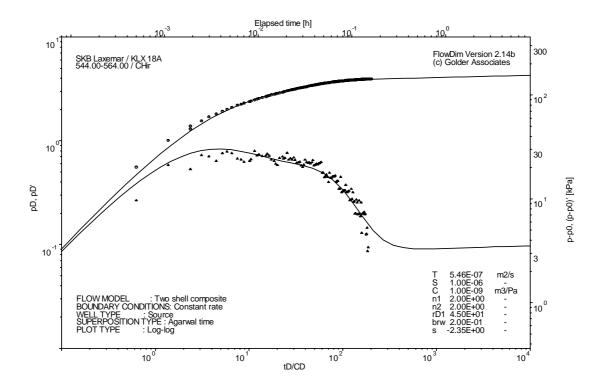
Interval pressure and temperature vs. time; cartesian plot

Test: 544.00 – 564.00 m

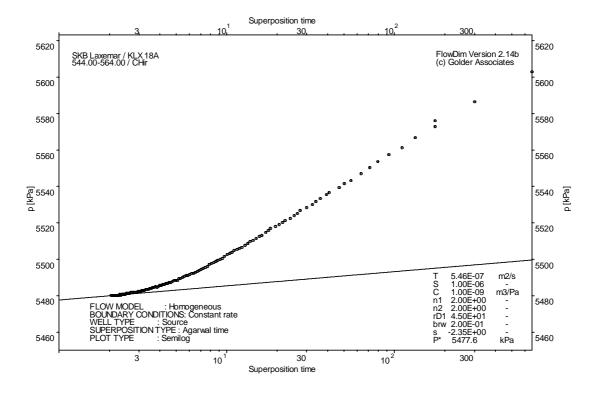


Borehole: KLX18A

Test: 544.00 – 564.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 564.00 – 584.00 m

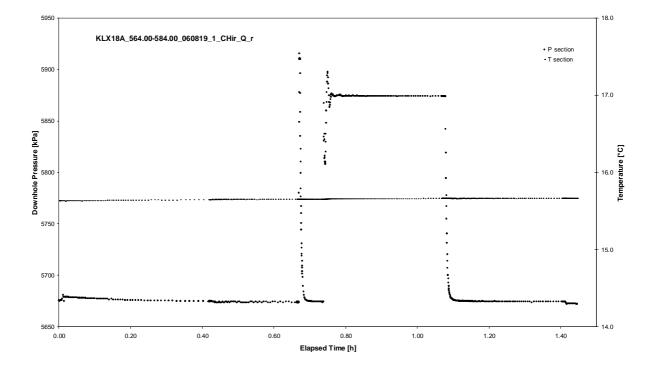
APPENDIX 2-29

Test 564.00 – 584.00 m

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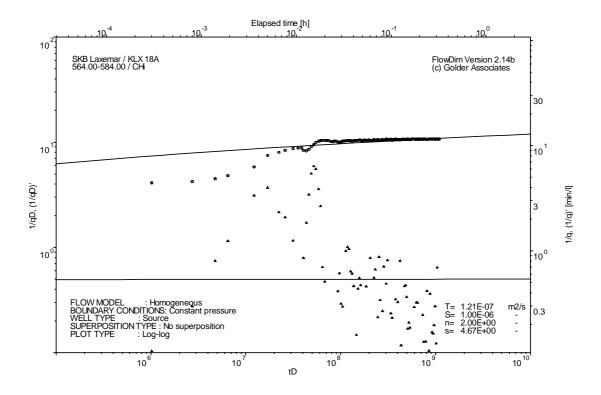
Borehole: KLX18A Test: 564.00 – 584.00 m

Pressure and flow rate vs. time; cartesian plot



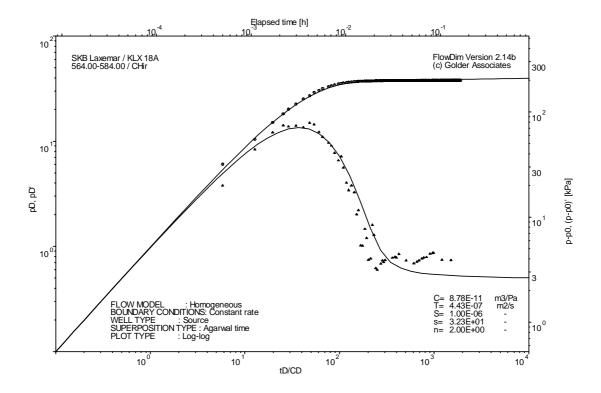
Interval pressure and temperature vs. time; cartesian plot

Test: 564.00 – 584.00 m

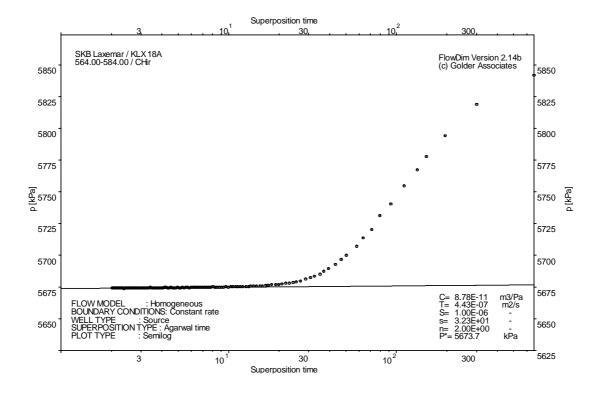


Borehole: KLX18A

Test: 564.00 – 584.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 584.00 – 604.00 m

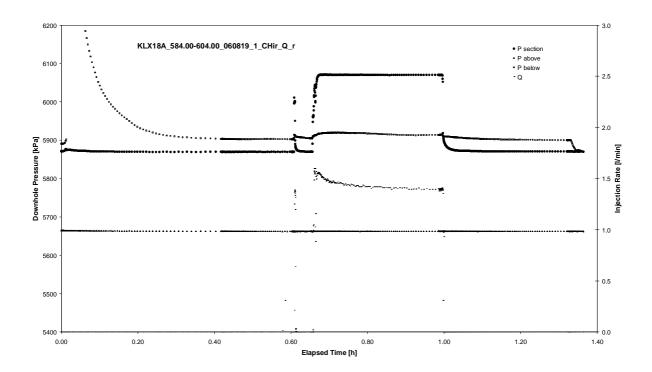
APPENDIX 2-30

Test 584.00 – 604.00 m

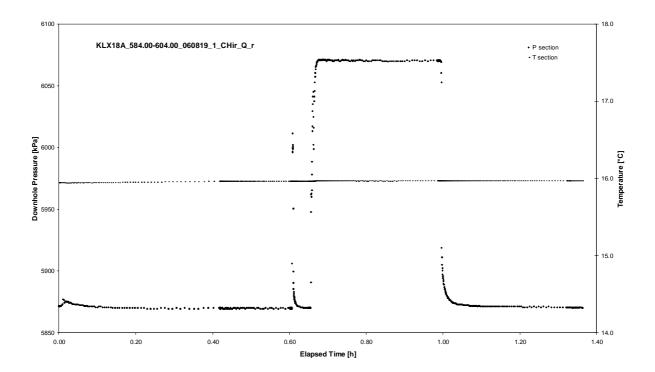
Page 2-30/2

Borehole: KLX18A

Test: 584.00 – 604.00 m

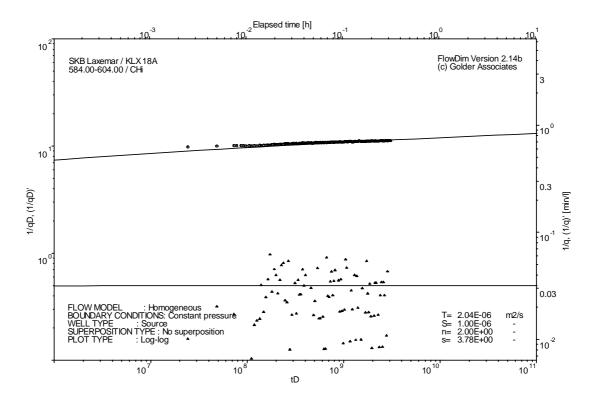


Pressure and flow rate vs. time; cartesian plot



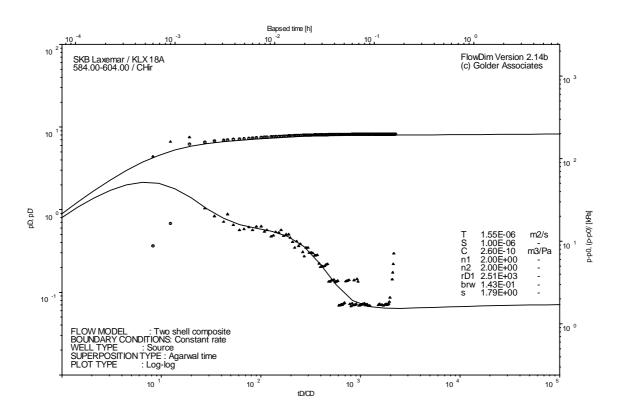
Interval pressure and temperature vs. time; cartesian plot

Test: 584.00 – 604.00 m

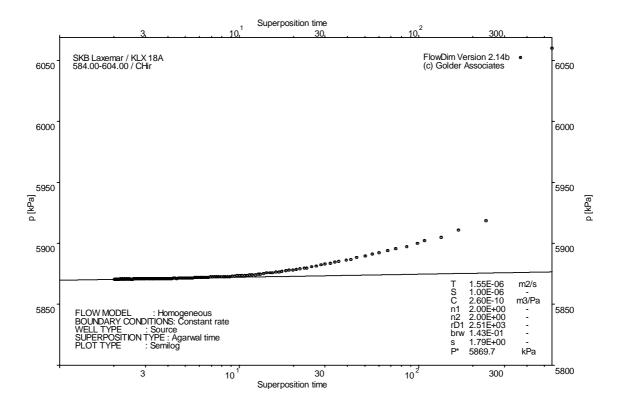


Borehole: KLX18A

Test: 584.00 – 604.00 m



CHIR phase; log-log match



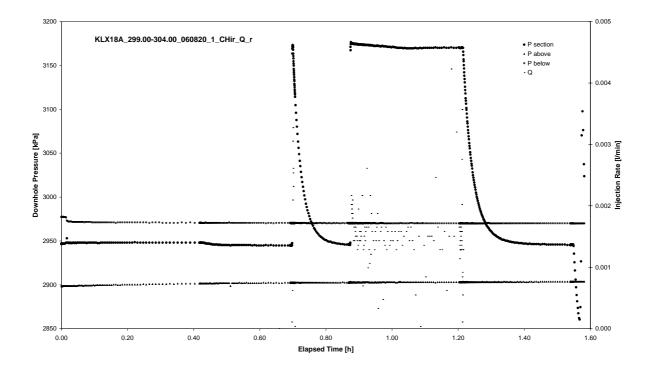
CHIR phase; HORNER match

Test: 299.00 – 304.00 m

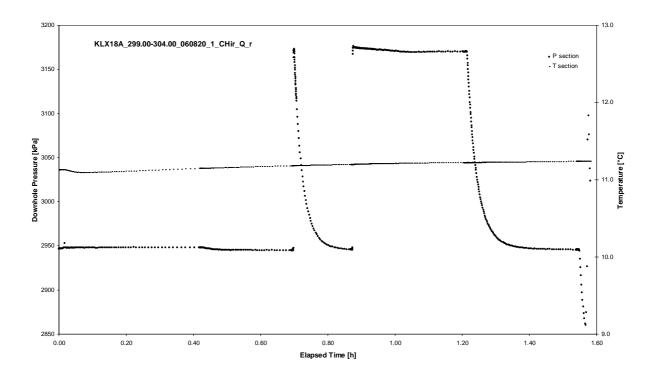
APPENDIX 2-31

Test 299.00 – 304.00 m

Test: 299.00 – 304.00 m

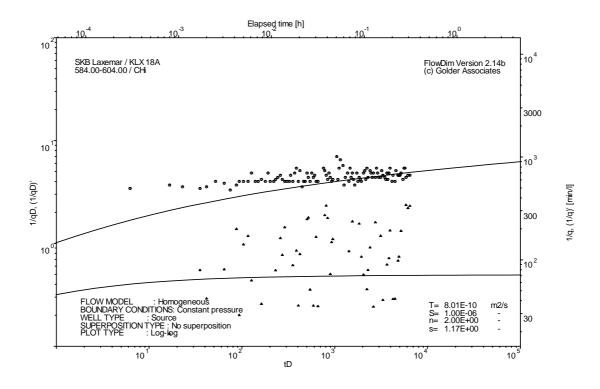


Pressure and flow rate vs. time; cartesian plot

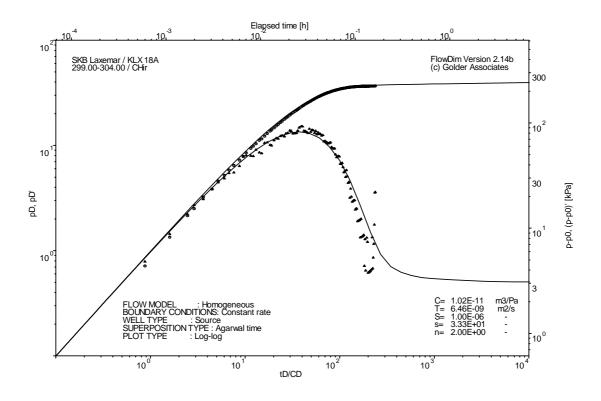


Interval pressure and temperature vs. time; cartesian plot

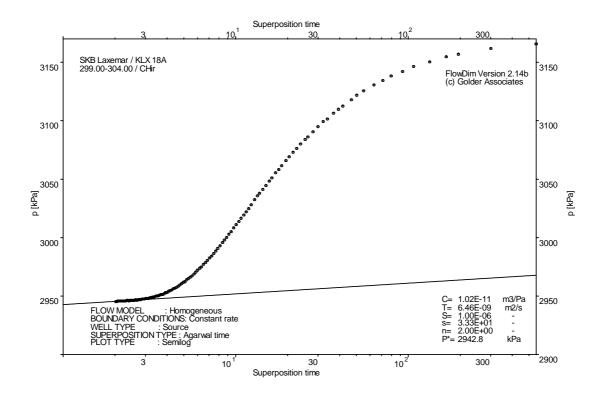
Test: 299.00 – 304.00 m



Test: 299.00 – 304.00 m



CHIR phase; log-log match



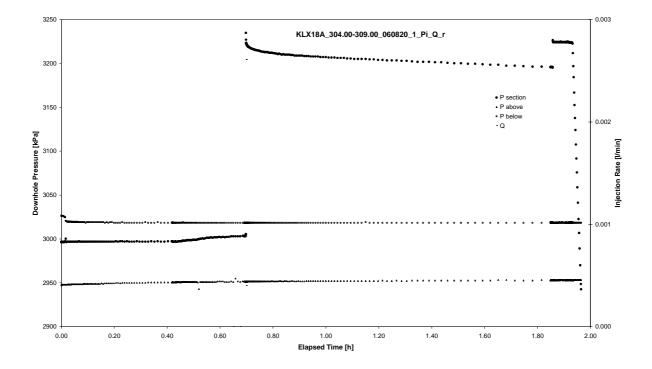
CHIR phase; HORNER match

Test: 304.00 – 309.00 m

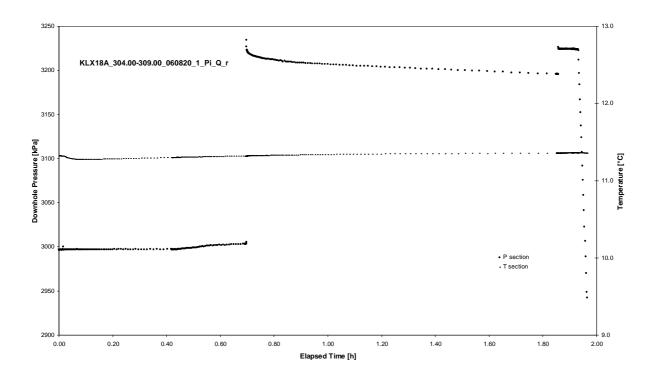
APPENDIX 2-32

Test 304.00 – 309.00 m

Test: 304.00 – 309.00 m

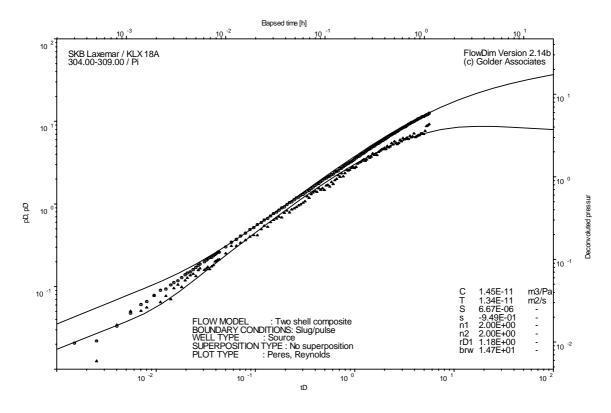


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 304.00 – 309.00 m



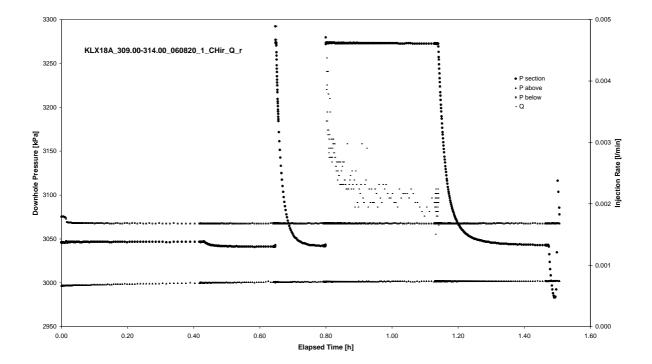
Pulse injection; deconvolution match

Test: 309.00 – 314.00 m

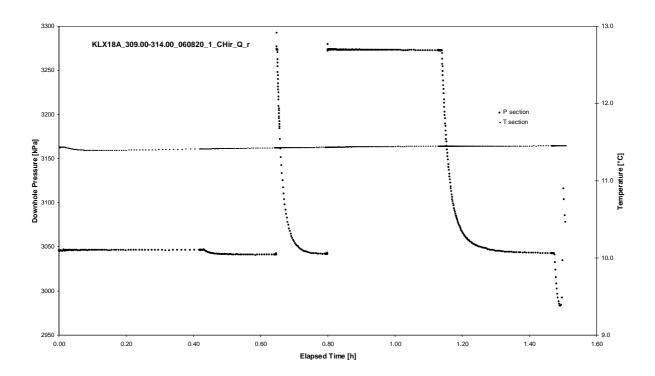
APPENDIX 2-33

Test 309.00 – 314.00 m

Test: 309.00 – 314.00 m

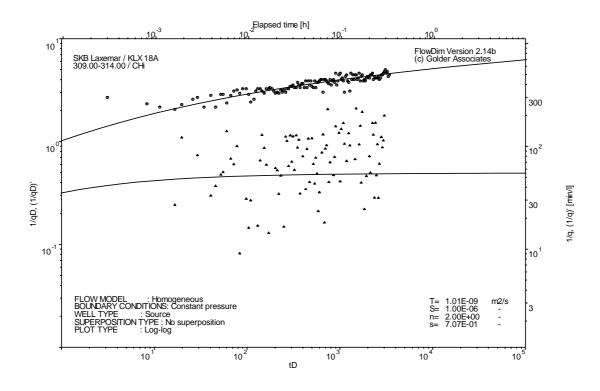


Pressure and flow rate vs. time; cartesian plot

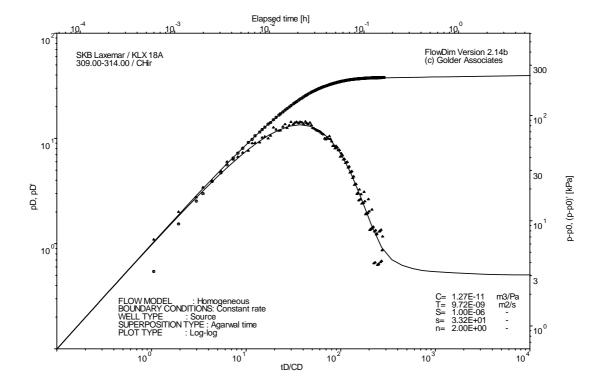


Interval pressure and temperature vs. time; cartesian plot

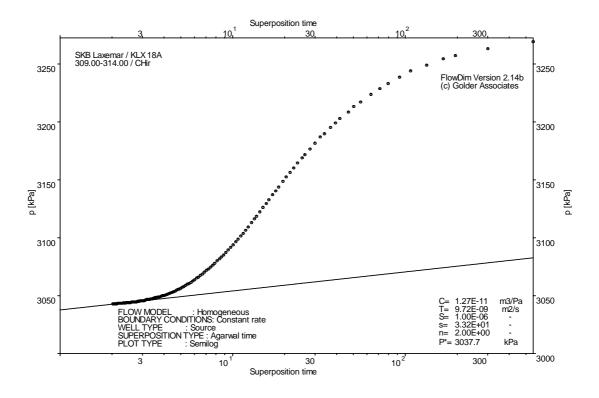
Test: 309.00 – 314.00 m



Test: 309.00 – 314.00 m



CHIR phase; log-log match



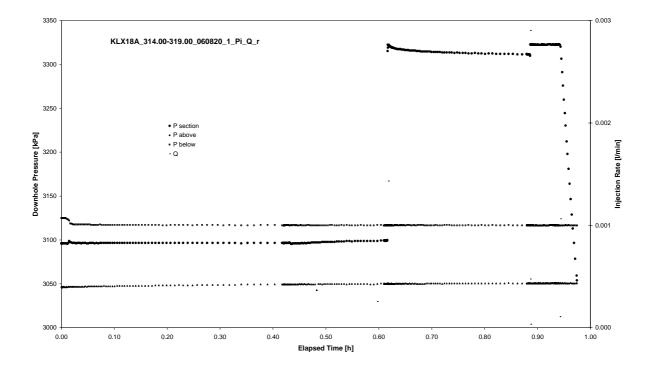
CHIR phase; HORNER match

Test: 314.00 – 319.00 m

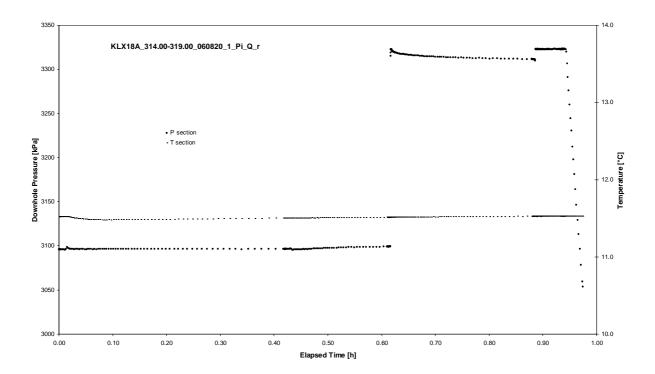
APPENDIX 2-34

Test 314.00 – 319.00 m

Test: 314.00 – 319.00 m



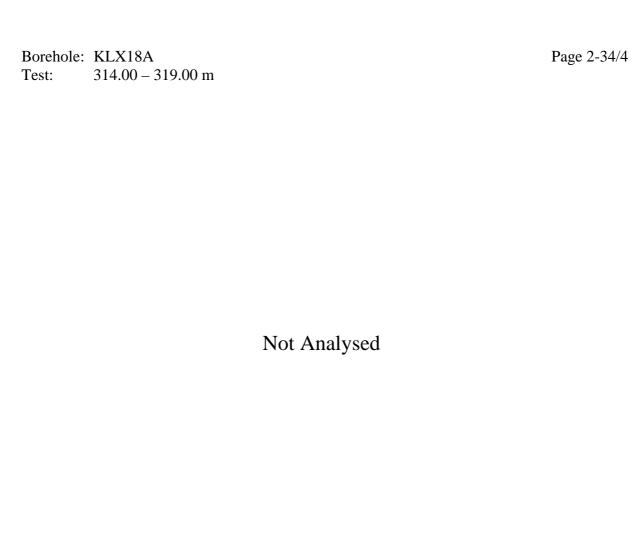
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 314.00 – 319.00 m

Not Analysed



CHIR phase; log-log match

Not Analysed

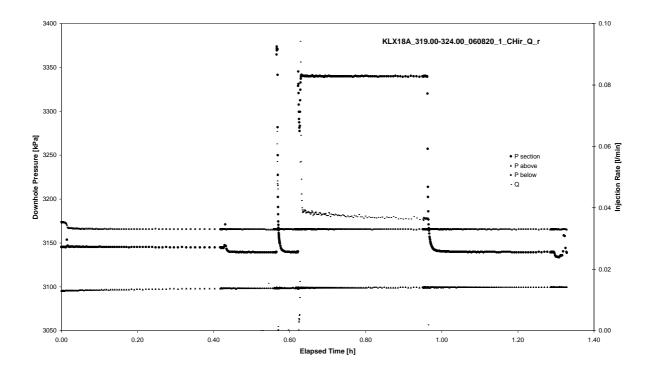
CHIR phase; HORNER match

Test: 319.00 – 324.00 m

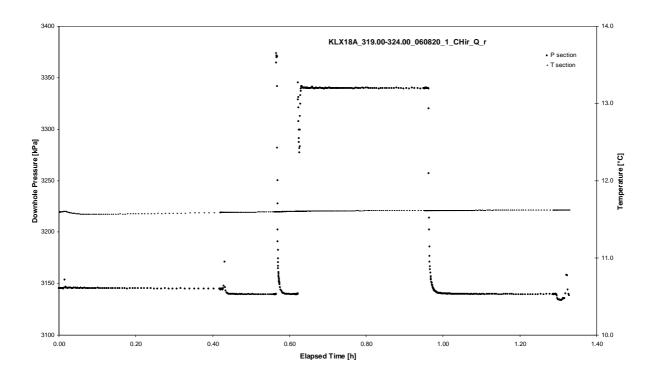
APPENDIX 2-35

Test 319.00 – 324.00 m

Test: 319.00 – 324.00 m

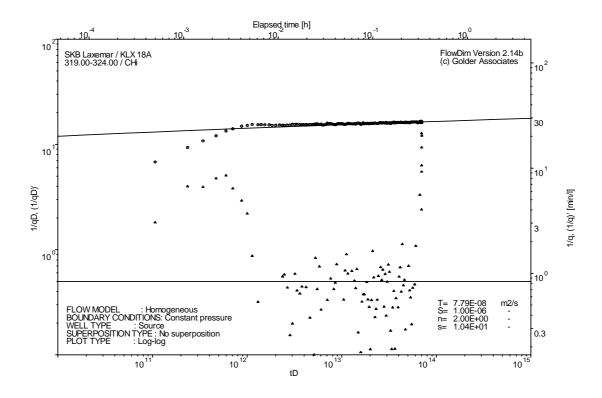


Pressure and flow rate vs. time; cartesian plot

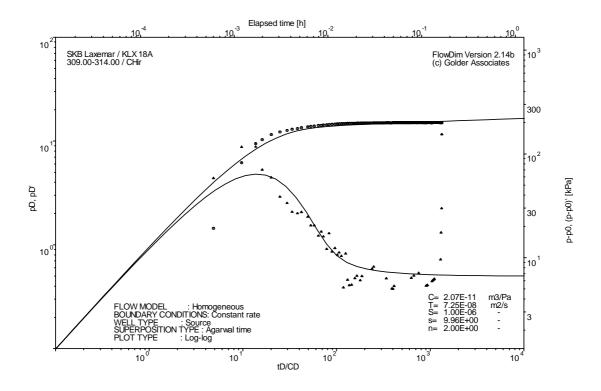


Interval pressure and temperature vs. time; cartesian plot

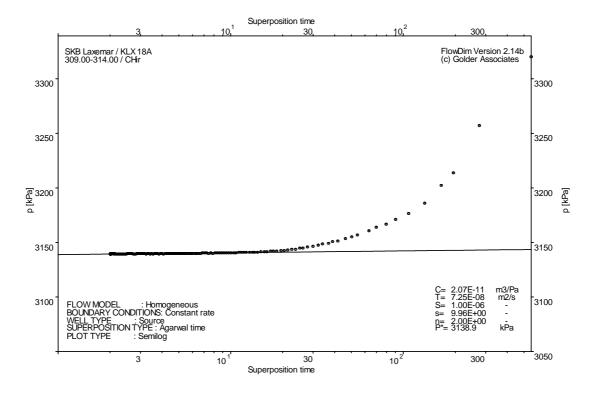
Test: 319.00 – 324.00 m



Test: 319.00 – 324.00 m



CHIR phase; log-log match



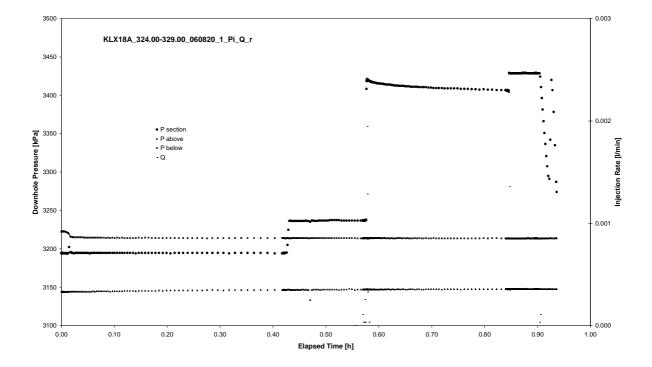
CHIR phase; HORNER match

Test: 324.00 – 329.00 m

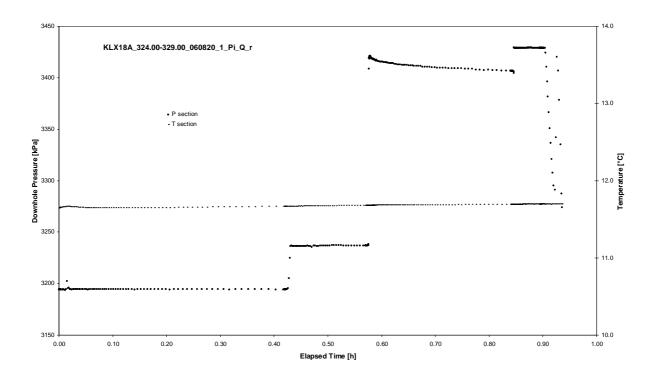
APPENDIX 2-36

Test 324.00 – 329.00 m

Test: 324.00 – 329.00 m



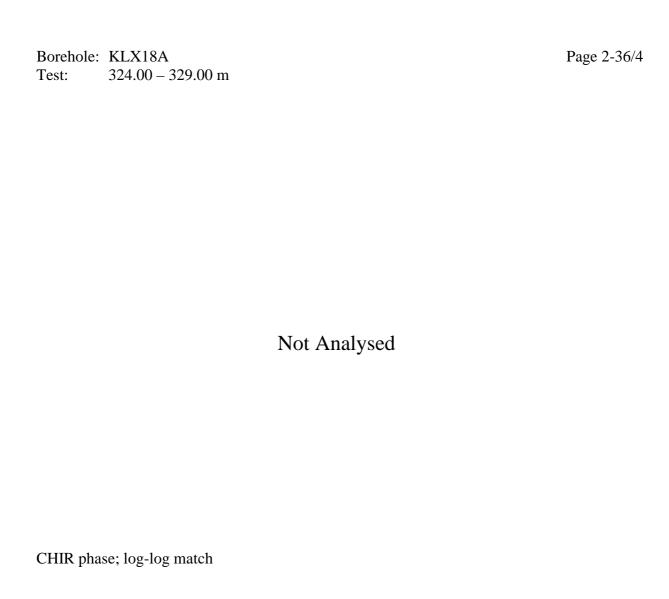
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 324.00 – 329.00 m

Not Analysed



Not Analysed

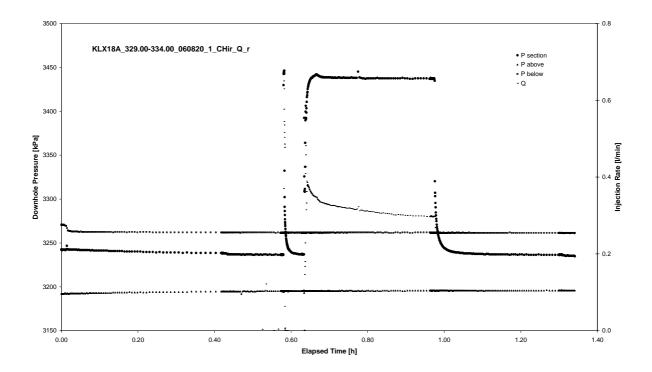
CHIR phase; HORNER match

Test: 329.00 – 334.00 m

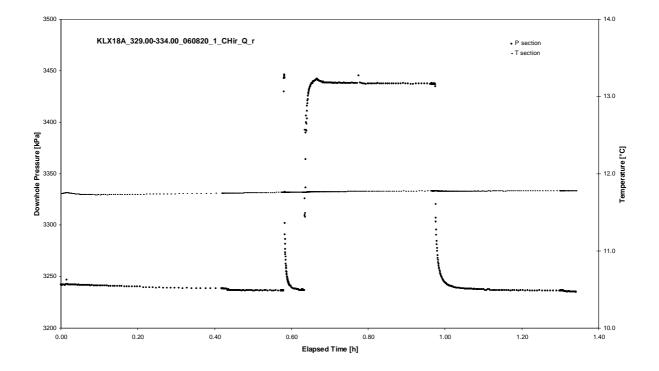
APPENDIX 2-37

Test 329.00 – 334.00 m

Test: 329.00 – 334.00 m

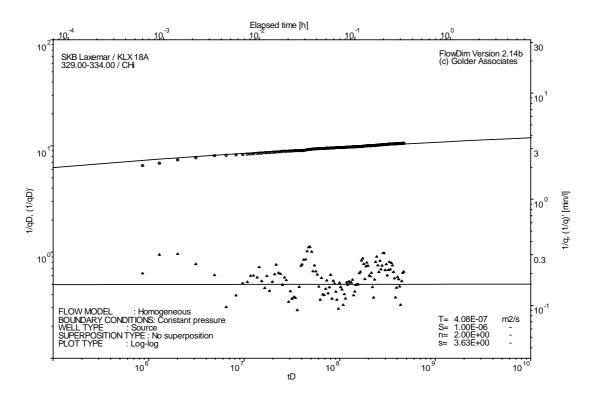


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

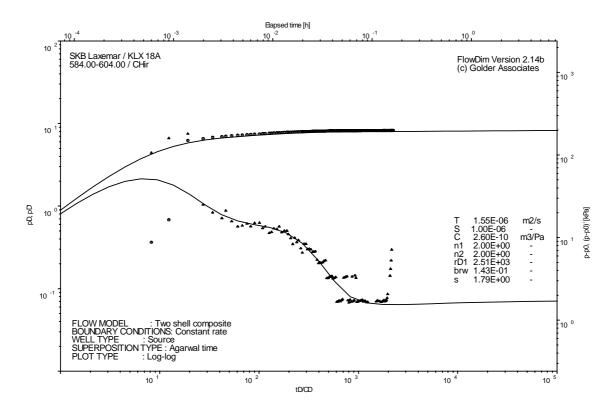
Test: 329.00 – 334.00 m



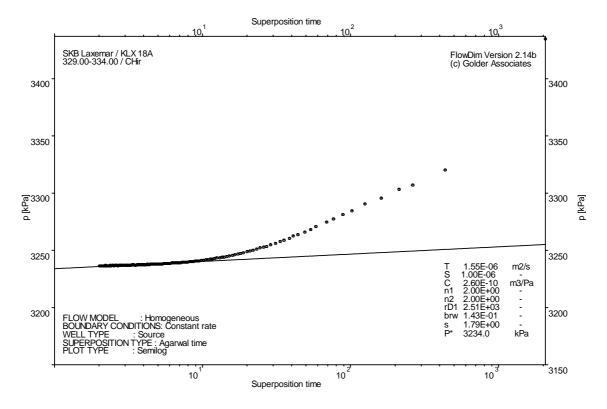
Page 2-37/4

Borehole: KLX18A

Test: 329.00 – 334.00 m



CHIR phase; log-log match



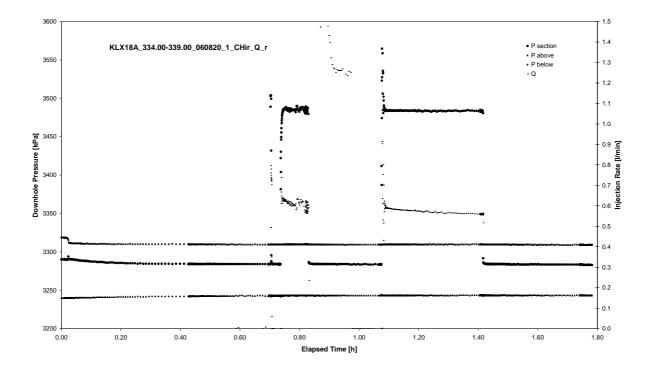
CHIR phase; HORNER match

Test: 334.00 – 339.00 m

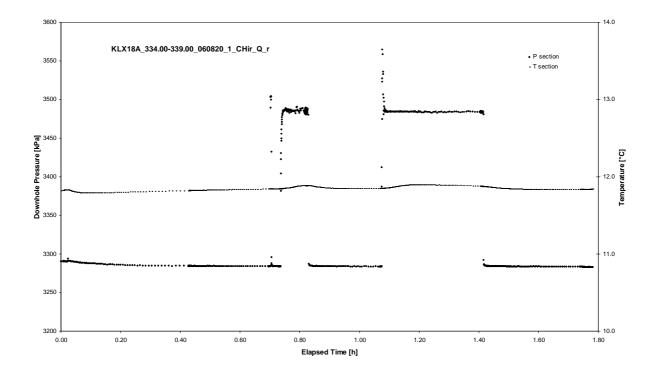
APPENDIX 2-38

Test 334.00 – 339.00 m

Test: 334.00 – 339.00 m

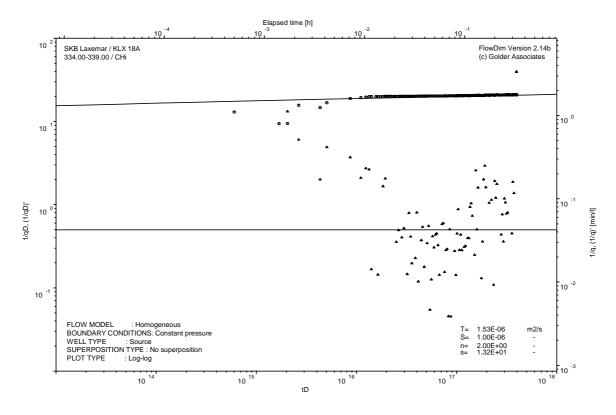


Pressure and flow rate vs. time; cartesian plot



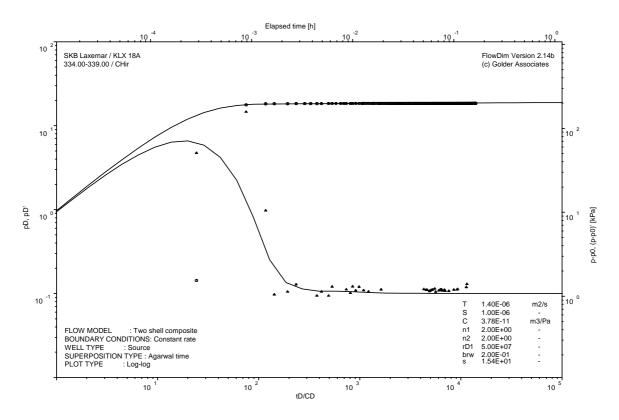
Interval pressure and temperature vs. time; cartesian plot

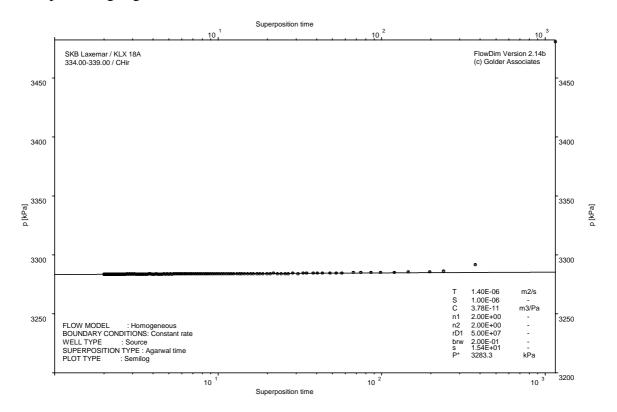
Test: 334.00 – 339.00 m



Borehole: KLX18A

Test: 334.00 – 339.00 m





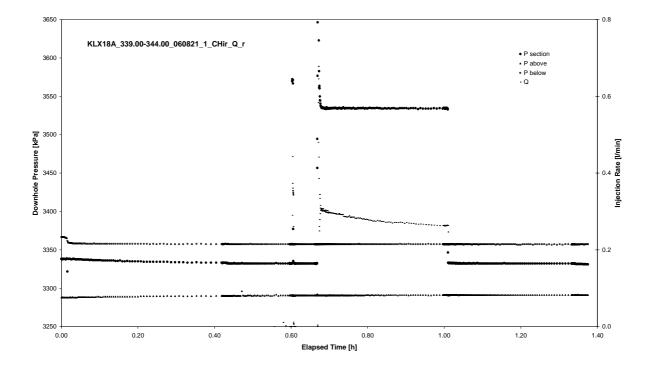
CHIR phase; HORNER match

Test: 339.00 – 344.00 m

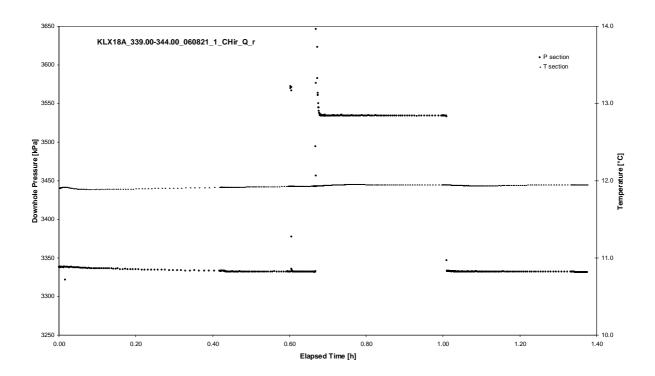
APPENDIX 2-39

Test 339.00 – 344.00 m

Test: 339.00 – 344.00 m

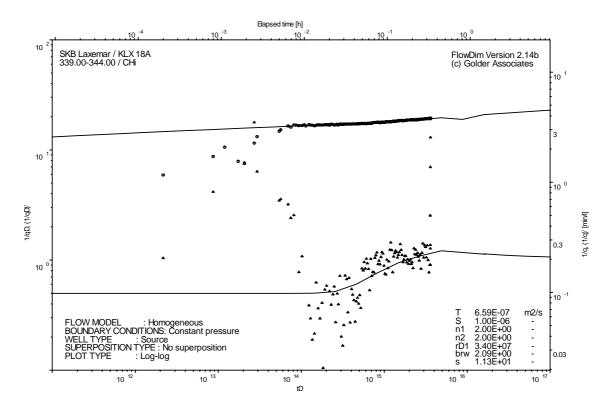


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

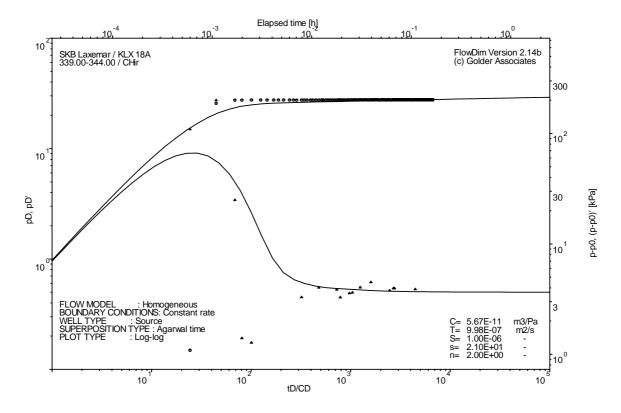
Test: 339.00 – 344.00 m



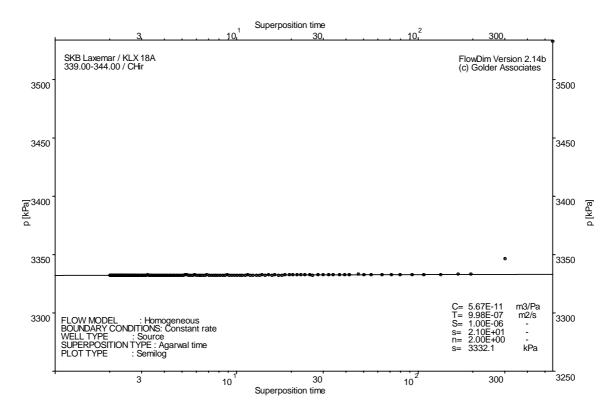
Page 2-39/4

Borehole: KLX18A

Test: 339.00 - 344.00 m



CHIR phase; log-log match



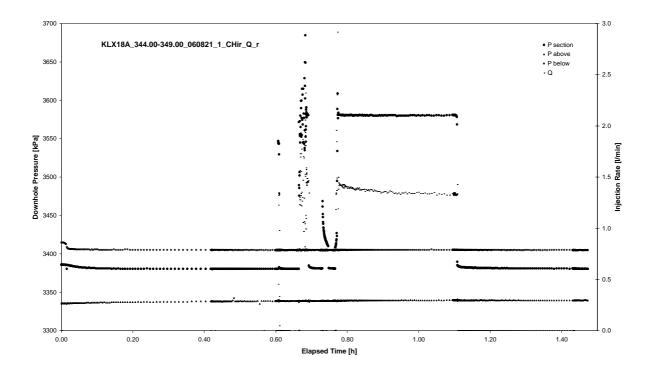
CHIR phase; HORNER match

Test: 344.00 – 349.00 m

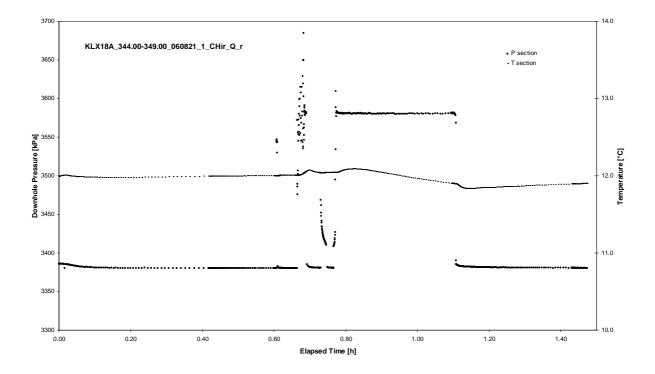
APPENDIX 2-40

Test 344.00 – 349.00 m

Test: 344.00 – 349.00 m

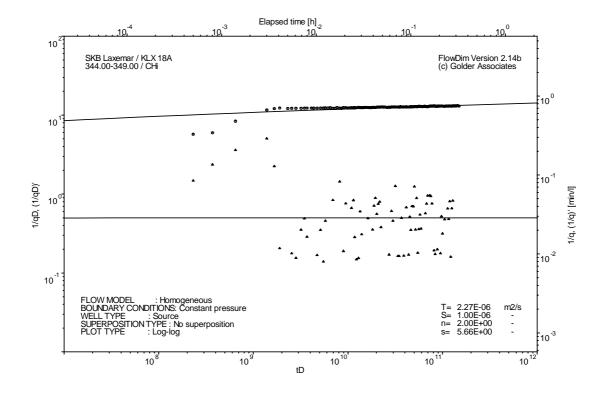


Pressure and flow rate vs. time; cartesian plot



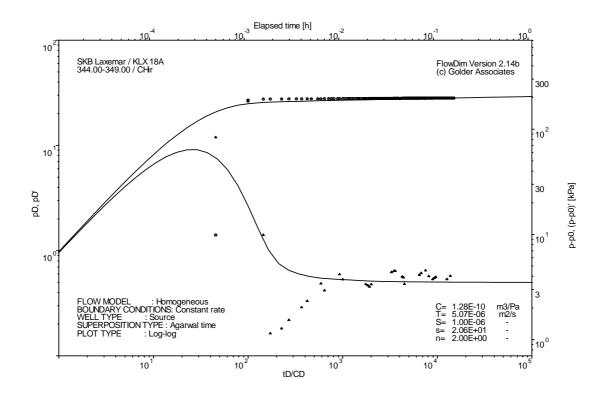
Interval pressure and temperature vs. time; cartesian plot

Test: 344.00 – 349.00 m

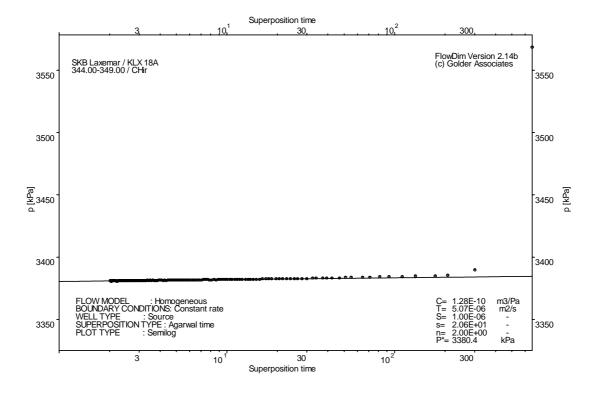


Borehole: KLX18A

Test: 344.00 – 349.00 m



CHIR phase; log-log match



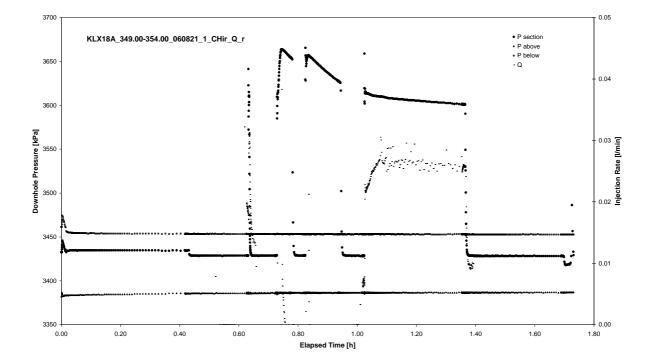
CHIR phase; HORNER match

Test: 349.00 – 354.00 m

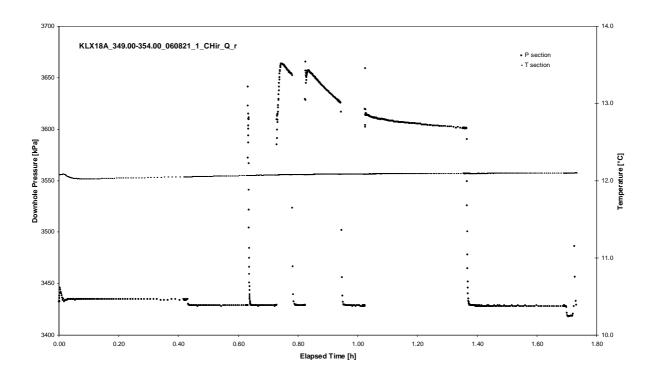
APPENDIX 2-41

Test 349.00 – 354.00 m

Test: 349.00 – 354.00 m

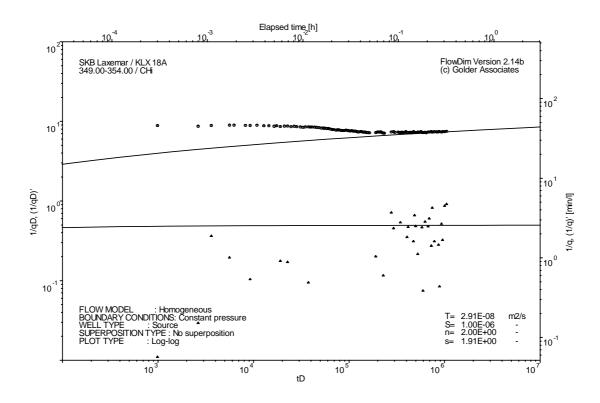


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

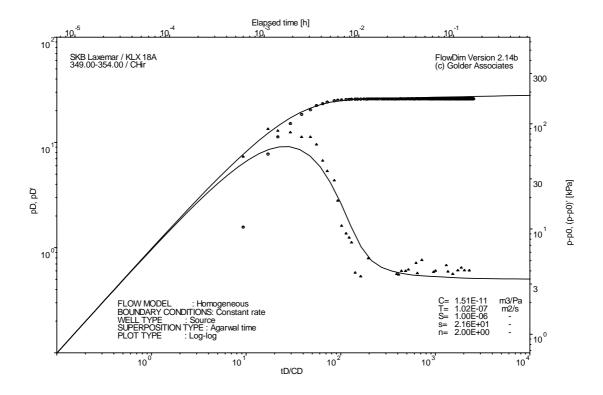
Test: 349.00 – 354.00 m



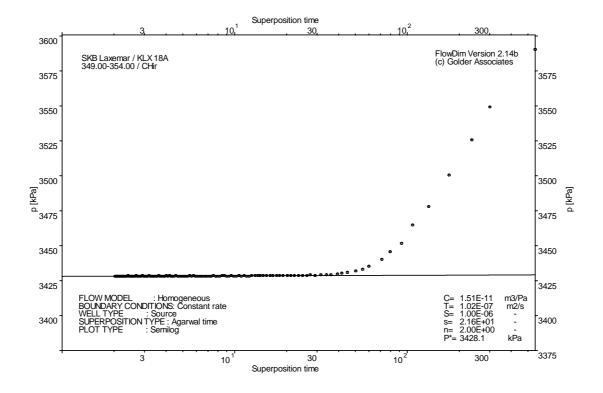
Page 2-41/4

Borehole: KLX18A

Test: 349.00 – 354.00 m



CHIR phase; log-log match



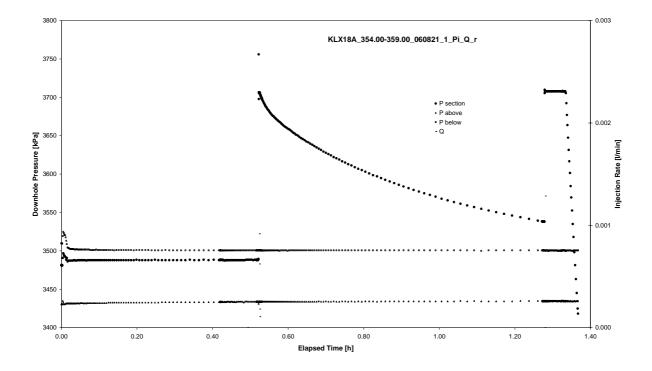
CHIR phase; HORNER match

Test: 354.00 – 359.00 m

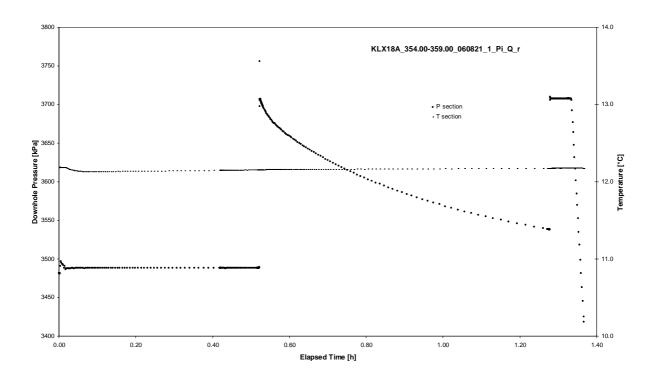
APPENDIX 2-42

Test 354.00 – 359.00 m

Test: 354.00 – 359.00 m

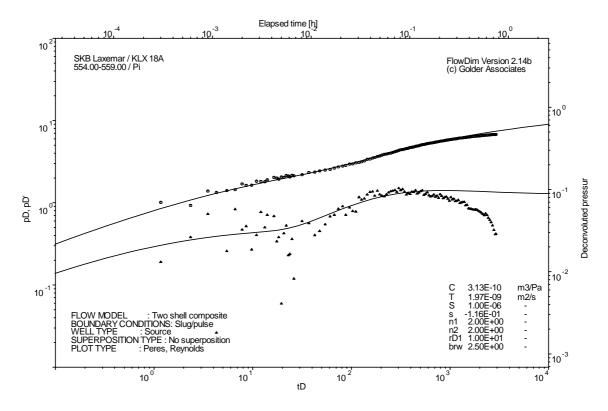


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 354.00 – 359.00 m



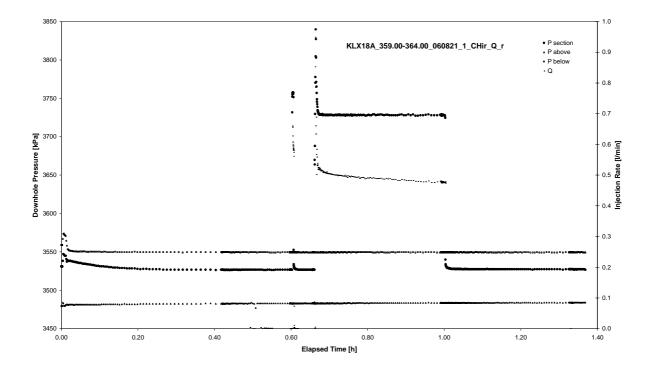
Pulse injection; deconvolution match

Test: 359.00 – 364.00 m

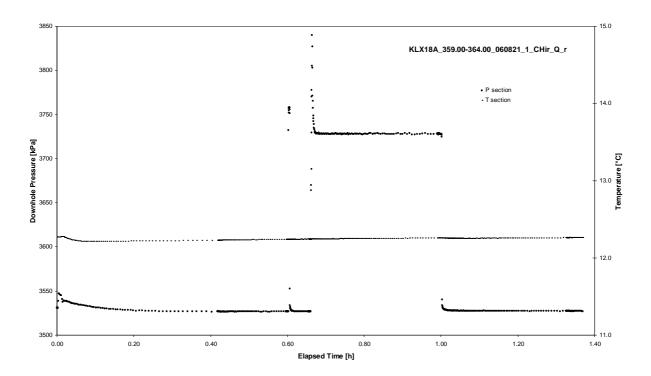
APPENDIX 2-43

Test 359.00 – 364.00 m

Test: 359.00 – 364.00 m

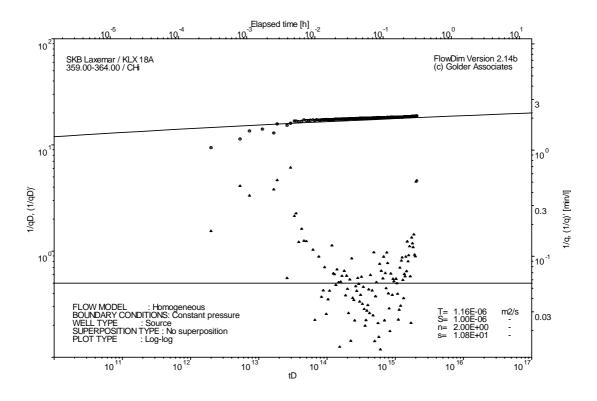


Pressure and flow rate vs. time; cartesian plot



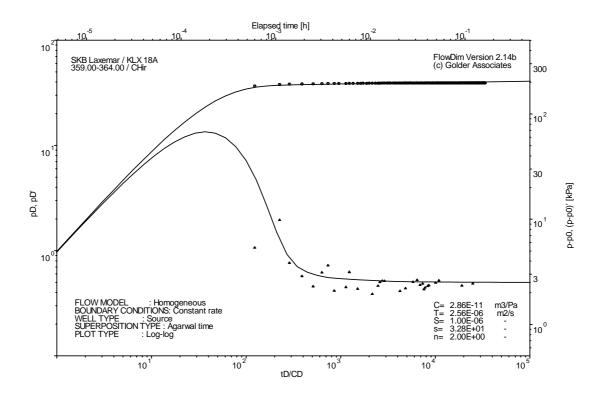
Interval pressure and temperature vs. time; cartesian plot

Test: 359.00 – 364.00 m

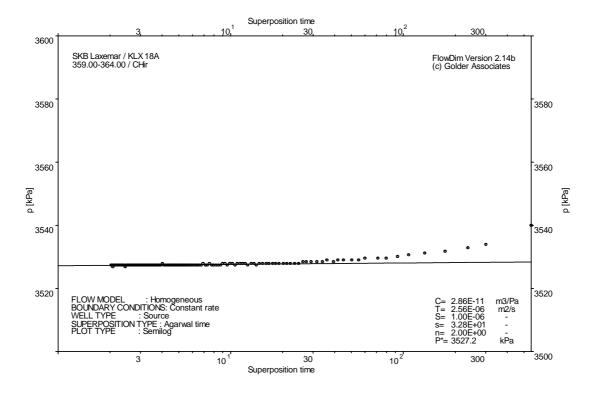


Borehole: KLX18A

Test: 359.00 – 364.00 m



CHIR phase; log-log match



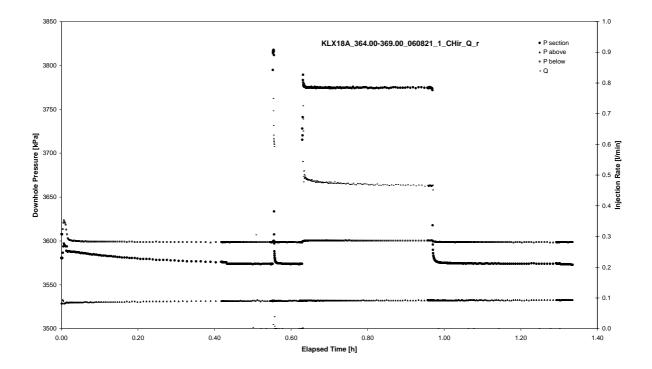
CHIR phase; HORNER match

Test: 364.00 – 369.00 m

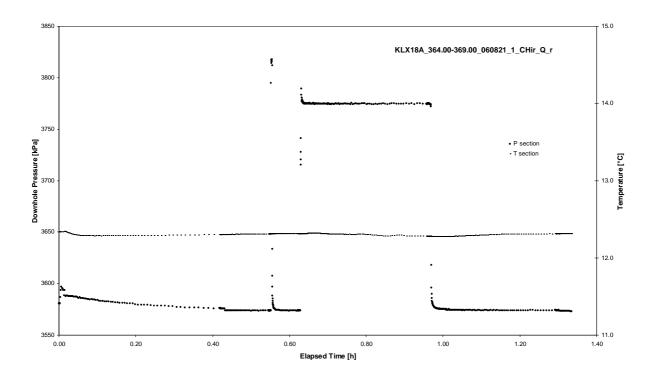
APPENDIX 2-44

Test 364.00 – 369.00 m

Test: 364.00 – 369.00 m

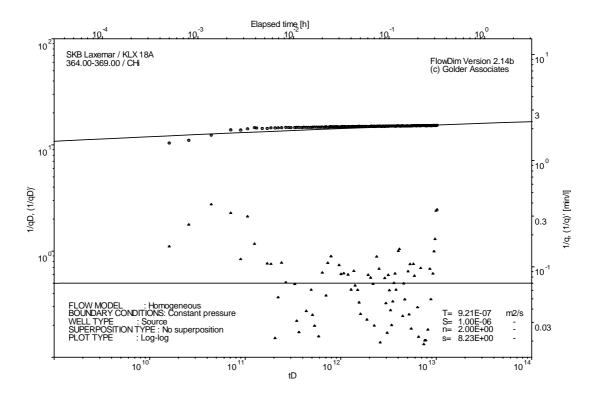


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

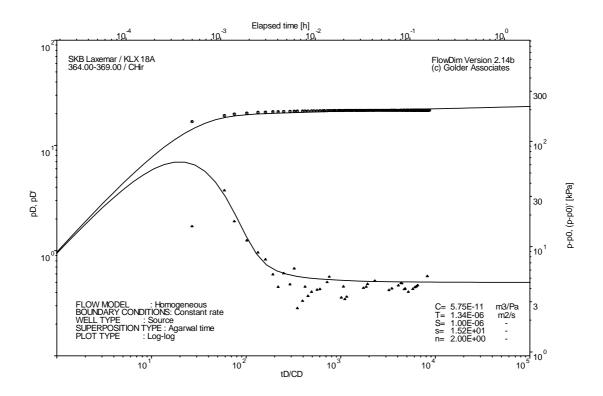
Test: 364.00 – 369.00 m



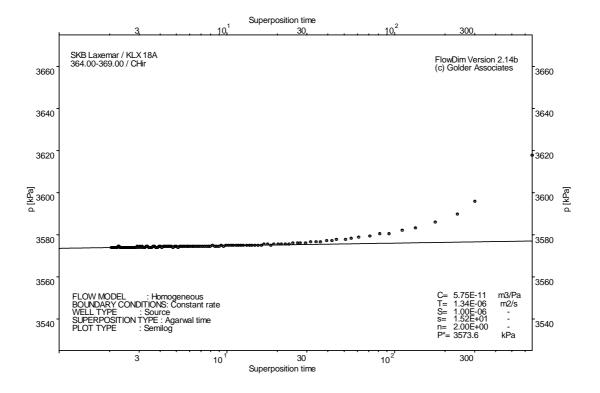
Page 2-44/4

Borehole: KLX18A

Test: 364.00 – 369.00 m



CHIR phase; log-log match



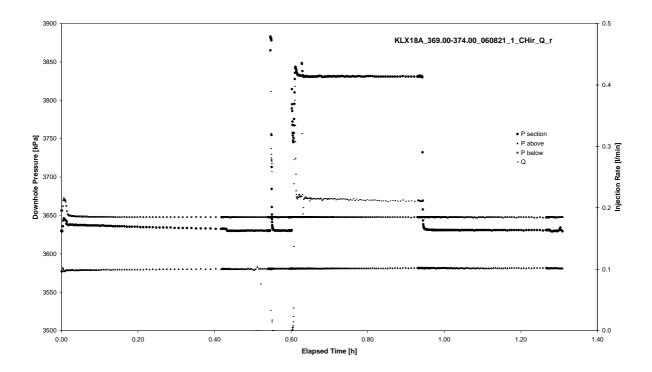
CHIR phase; HORNER match

Test: 369.00 – 374.00 m

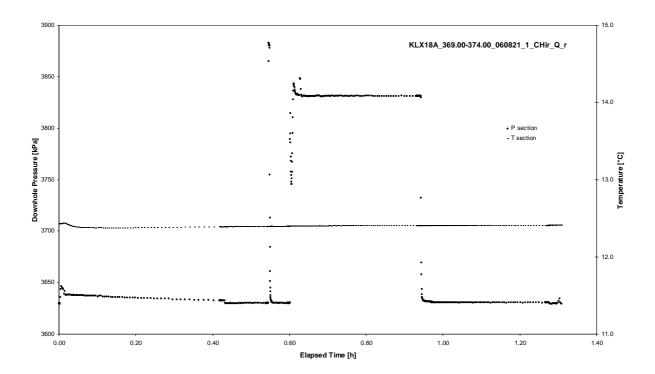
APPENDIX 2-45

Test 369.00 – 374.00 m

Test: 369.00 – 374.00 m

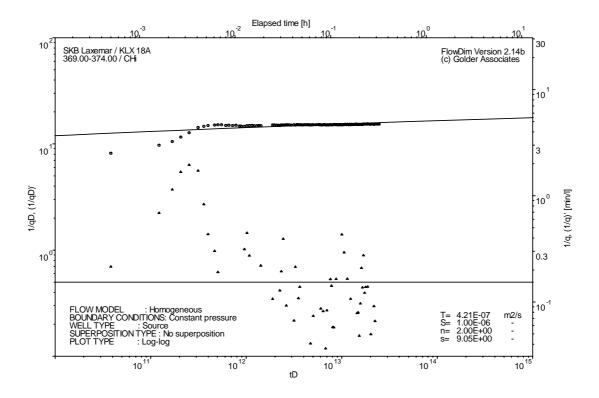


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

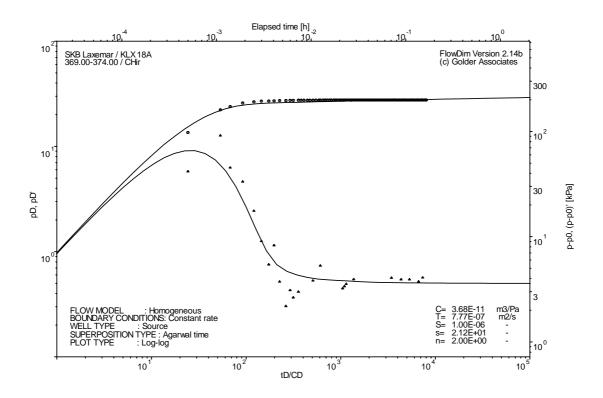
Test: 369.00 – 374.00 m



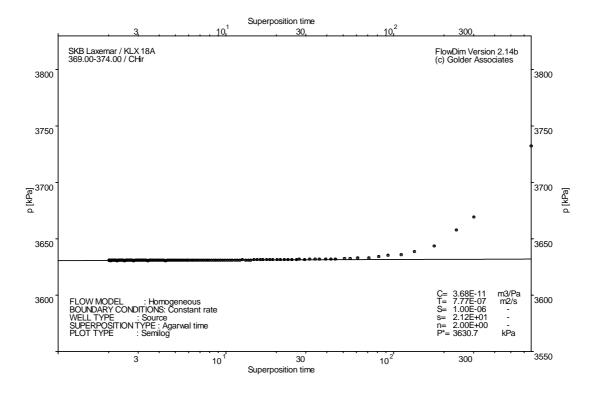
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Borehole: KLX18A

Test: 369.00 – 374.00 m



CHIR phase; log-log match



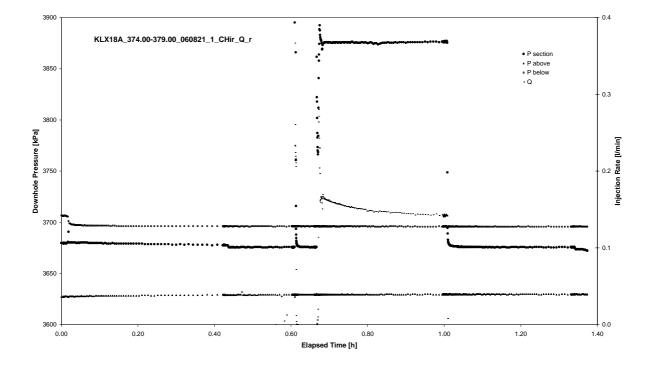
CHIR phase; HORNER match

Test: 374.00 – 379.00 m

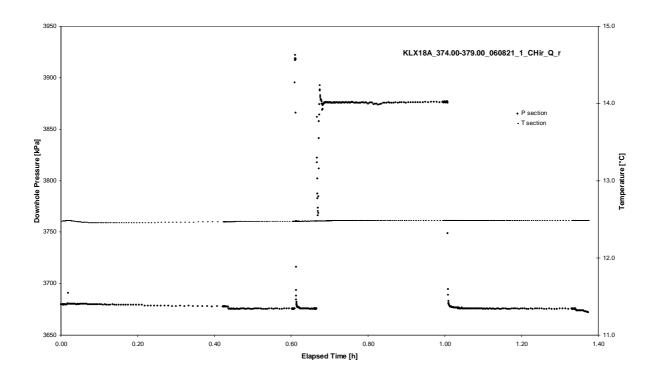
APPENDIX 2-46

Test 374.00 – 379.00 m

Test: 374.00 – 379.00 m

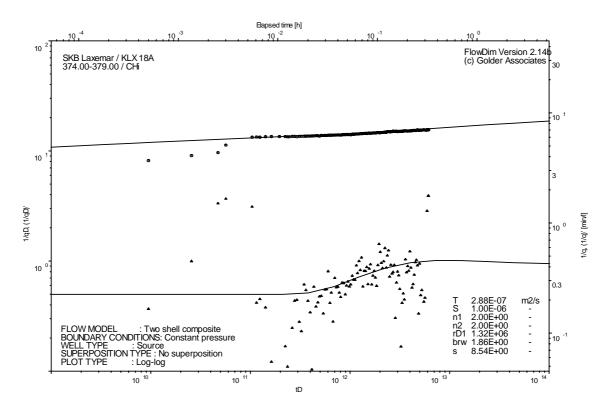


Pressure and flow rate vs. time; cartesian plot



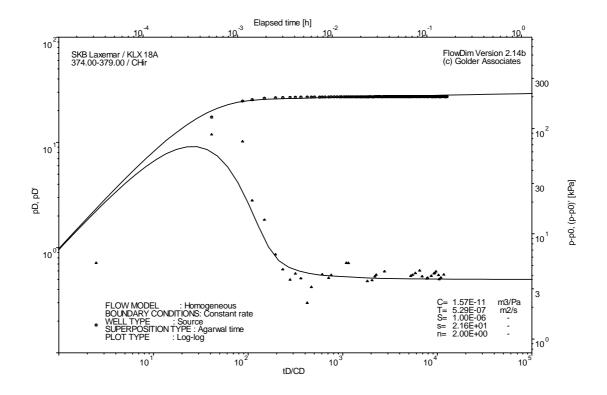
Interval pressure and temperature vs. time; cartesian plot

Test: 374.00 – 379.00 m

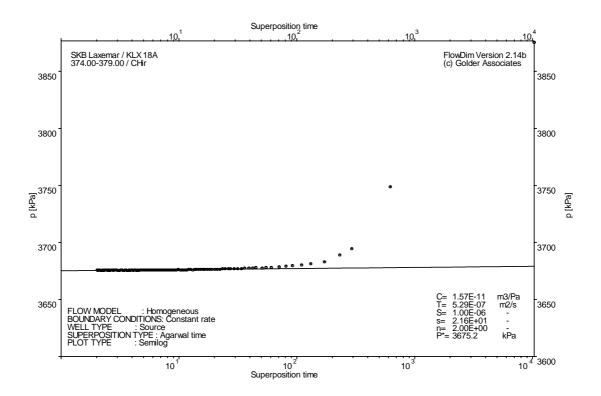


Borehole: KLX18A

Test: 374.00 – 379.00 m



CHIR phase; log-log match



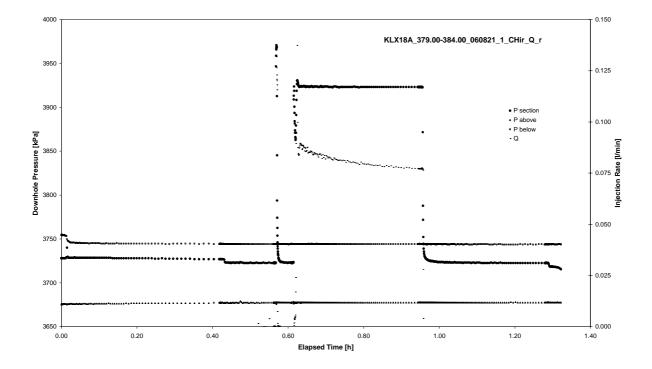
CHIR phase; HORNER match

Test: 379.00 – 384.00 m

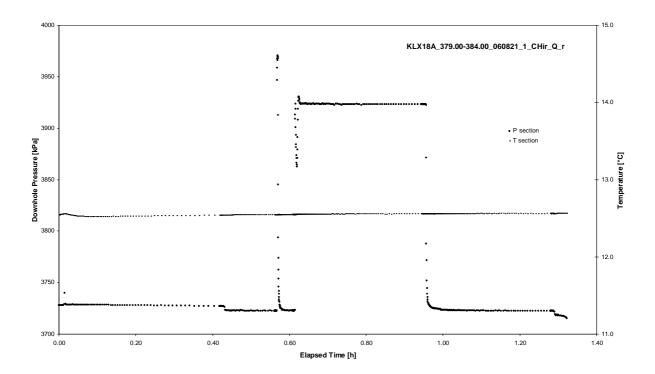
APPENDIX 2-47

Test 379.00 – 384.00 m

Test: 379.00 – 384.00 m

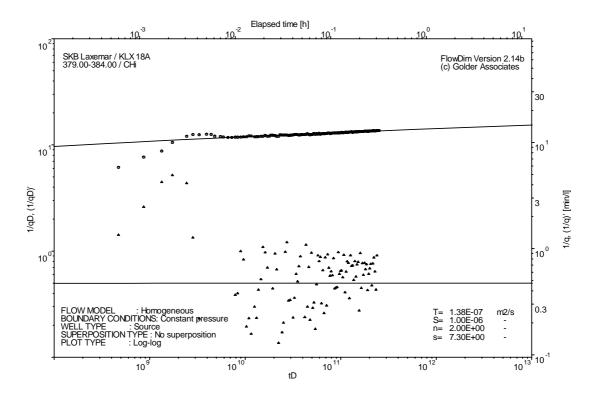


Pressure and flow rate vs. time; cartesian plot



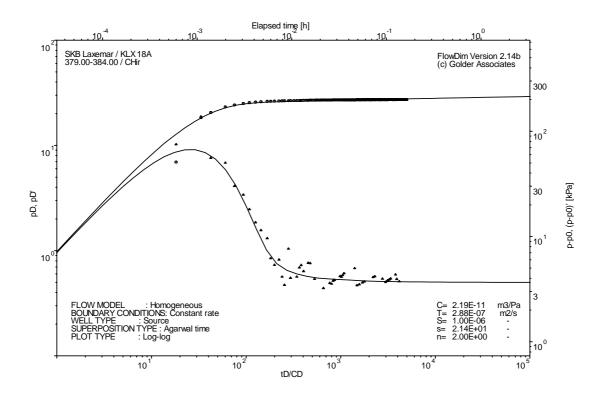
Interval pressure and temperature vs. time; cartesian plot

Test: 379.00 – 384.00 m

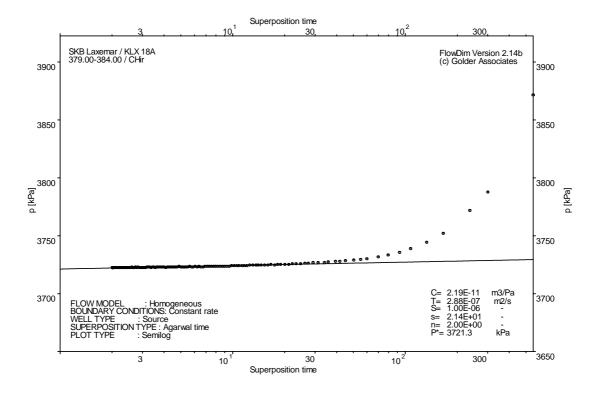


Borehole: KLX18A

Test: 379.00 – 384.00 m



CHIR phase; log-log match



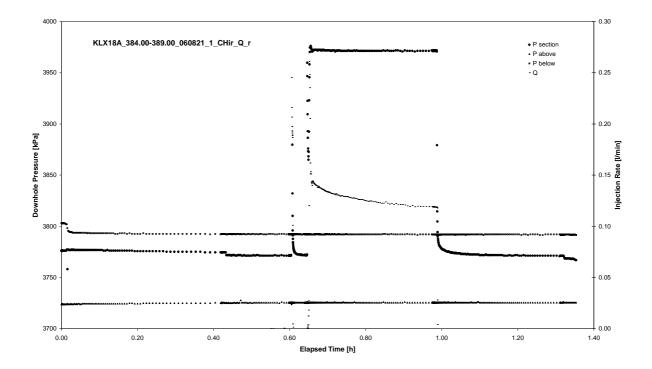
CHIR phase; HORNER match

Test: 384.00 – 389.00 m

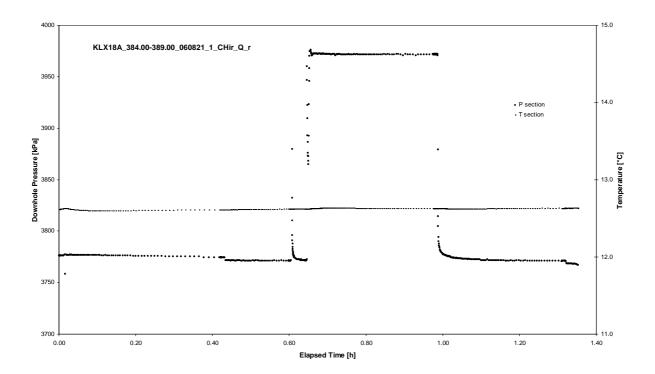
APPENDIX 2-48

Test 384.00 – 389.00 m

Test: 384.00 – 389.00 m

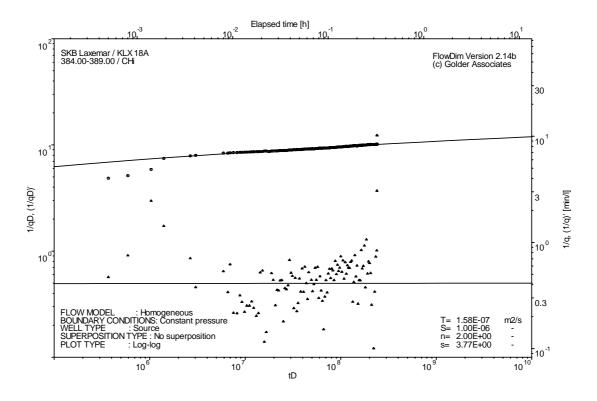


Pressure and flow rate vs. time; cartesian plot



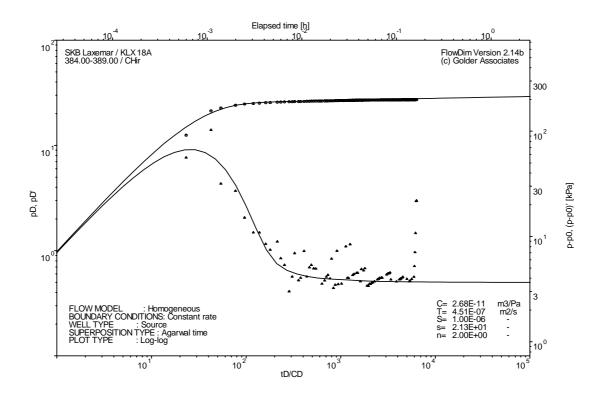
Interval pressure and temperature vs. time; cartesian plot

Test: 384.00 – 389.00 m

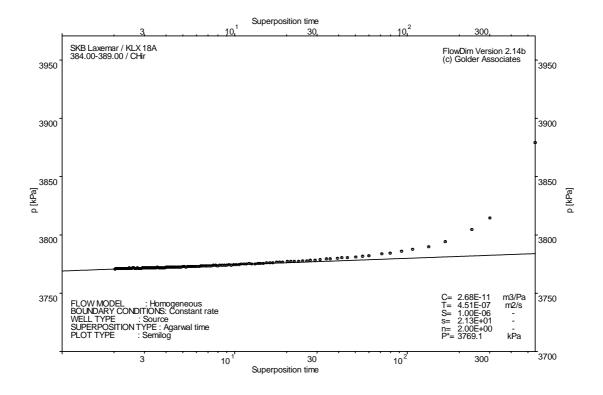


Borehole: KLX18A

Test: 384.00 – 389.00 m



CHIR phase; log-log match



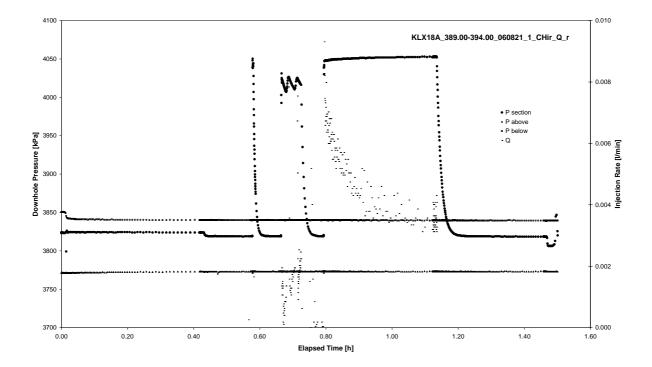
CHIR phase; HORNER match

Test: 389.00 – 394.00 m

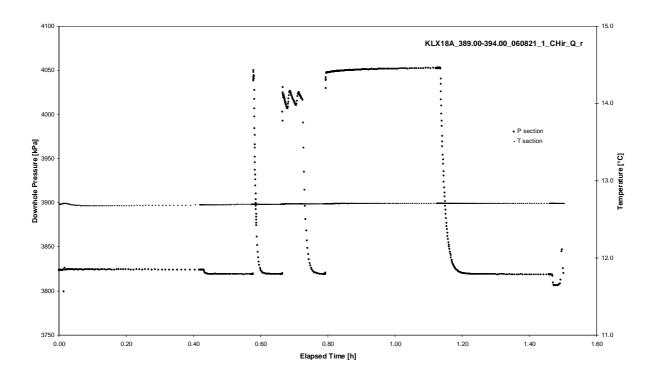
APPENDIX 2-49

Test 389.00 – 394.00 m

Test: 389.00 – 394.00 m

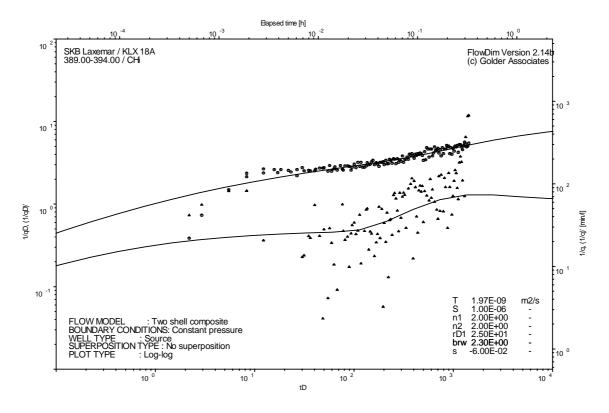


Pressure and flow rate vs. time; cartesian plot

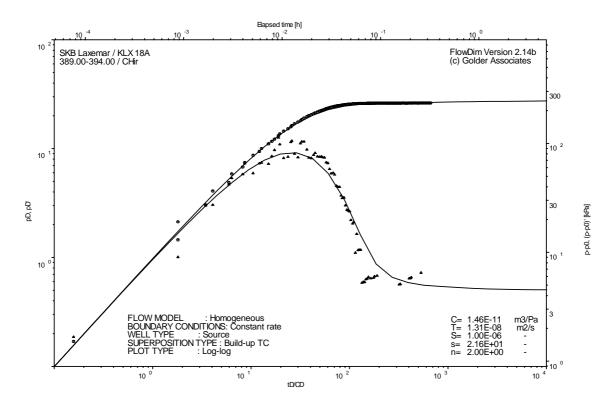


Interval pressure and temperature vs. time; cartesian plot

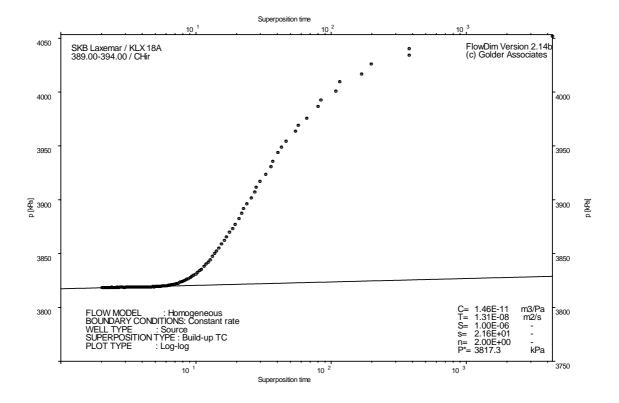
Test: 389.00 – 394.00 m



Test: 389.00 – 394.00 m



CHIR phase; log-log match



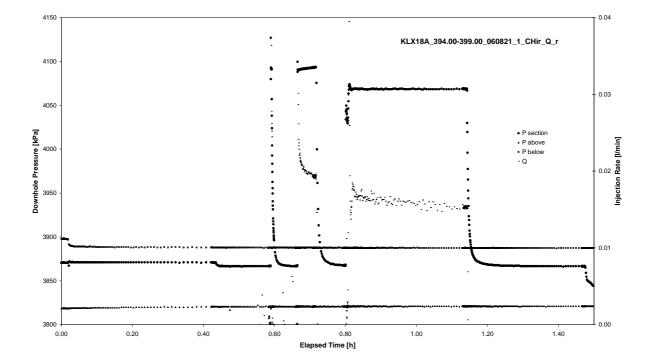
CHIR phase; HORNER match

Test: 394.00 – 399.00 m

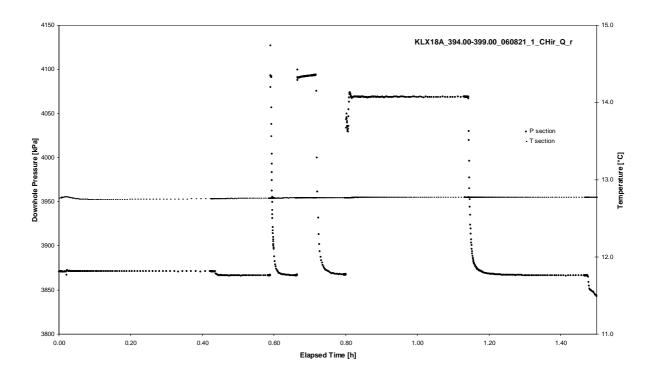
APPENDIX 2-50

Test 394.00 – 399.00 m

Test: 394.00 – 399.00 m

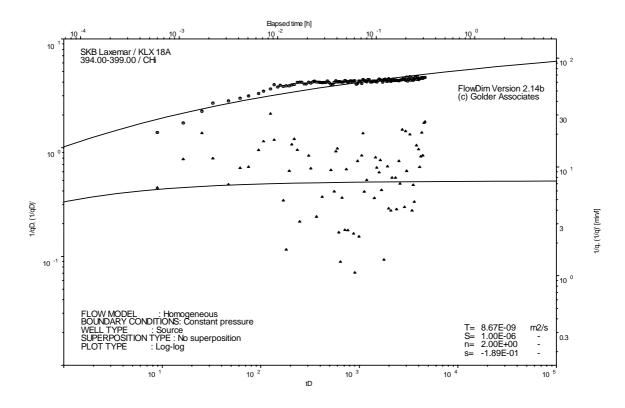


Pressure and flow rate vs. time; cartesian plot

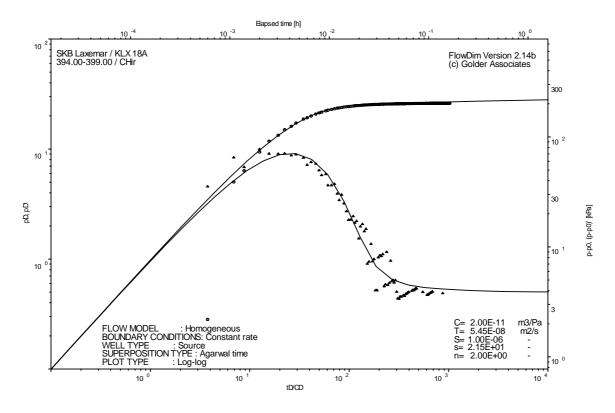


Interval pressure and temperature vs. time; cartesian plot

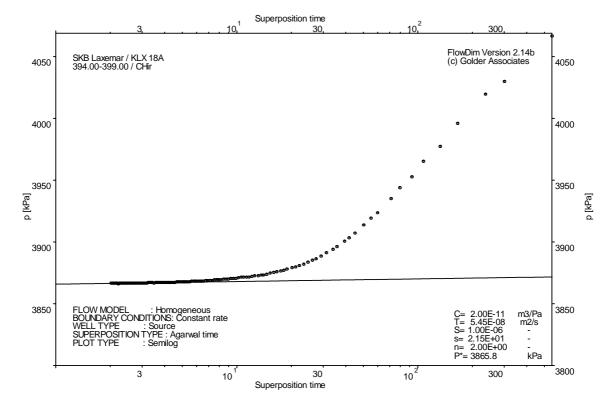
Test: 394.00 – 399.00 m



Test: 394.00 – 399.00 m



CHIR phase; log-log match



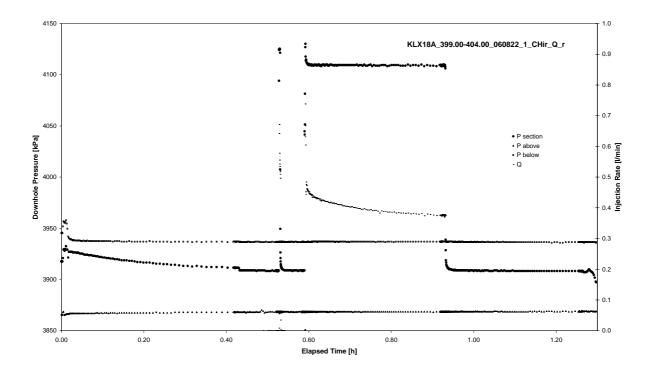
CHIR phase; HORNER match

Test: 399.00 – 404.00 m

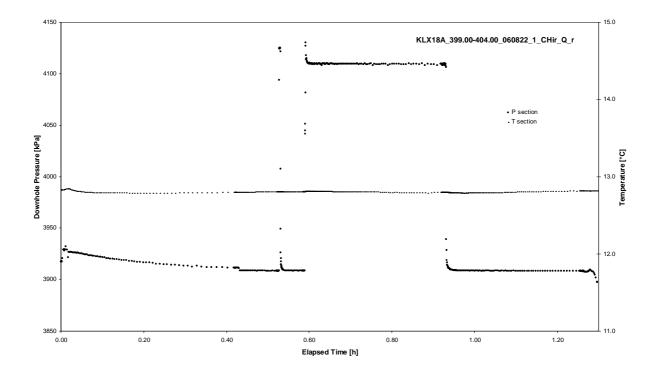
APPENDIX 2-51

Test 399.00 – 404.00 m

Test: 399.00 – 404.00 m

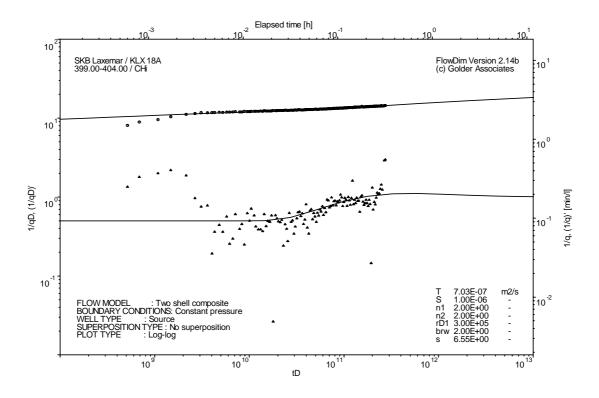


Pressure and flow rate vs. time; cartesian plot



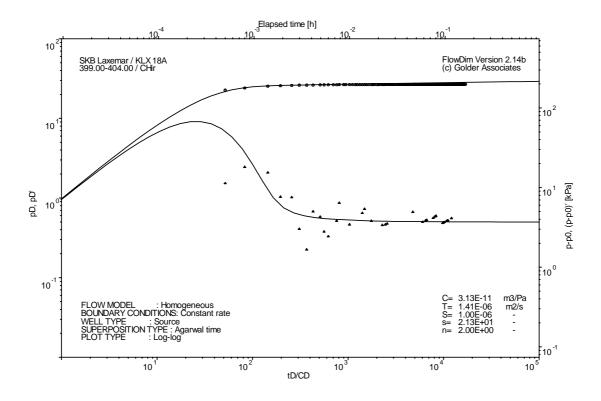
Interval pressure and temperature vs. time; cartesian plot

Test: 399.00 – 404.00 m

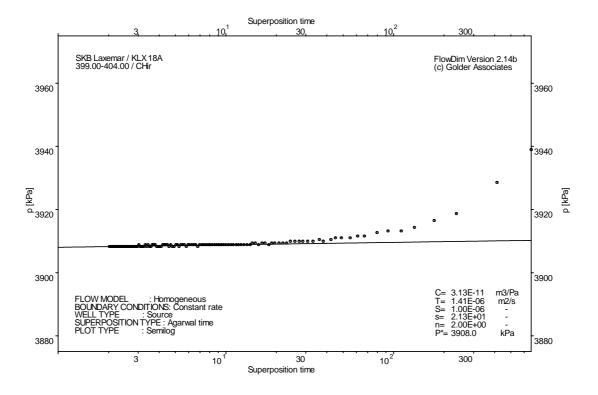


Borehole: KLX18A

Test: 399.00 – 404.00 m



CHIR phase; log-log match



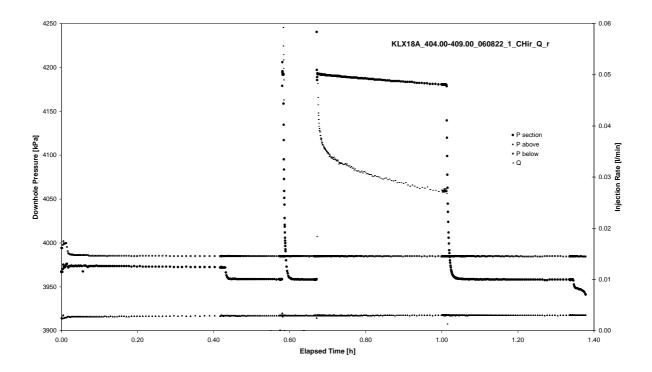
CHIR phase; HORNER match

Test: 404.00 – 409.00 m

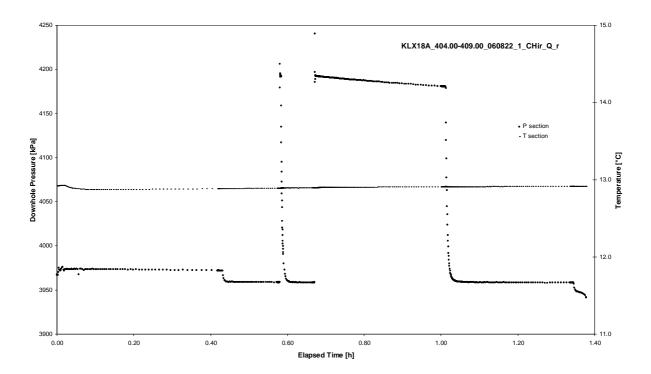
APPENDIX 2-52

Test 404.00 – 409.00 m

Test: 404.00 – 409.00 m

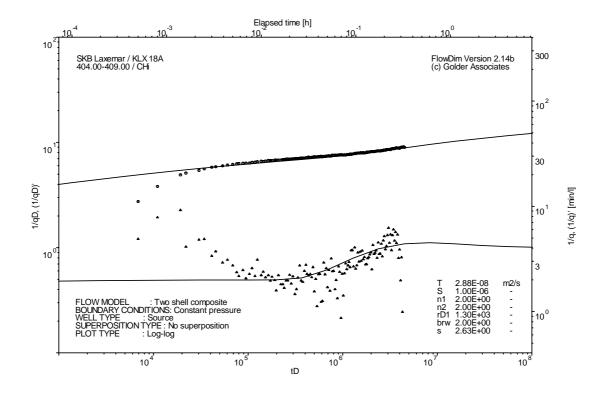


Pressure and flow rate vs. time; cartesian plot



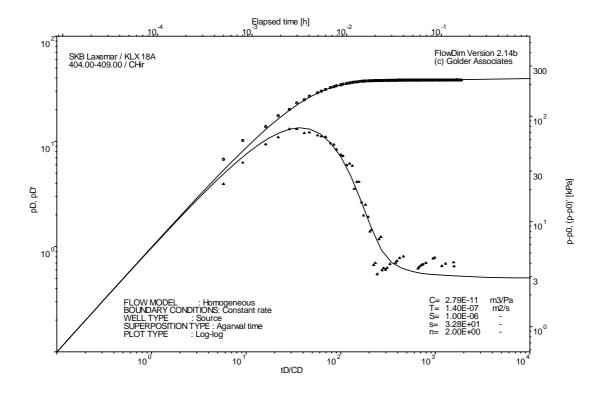
Interval pressure and temperature vs. time; cartesian plot

Test: 404.00 – 409.00 m

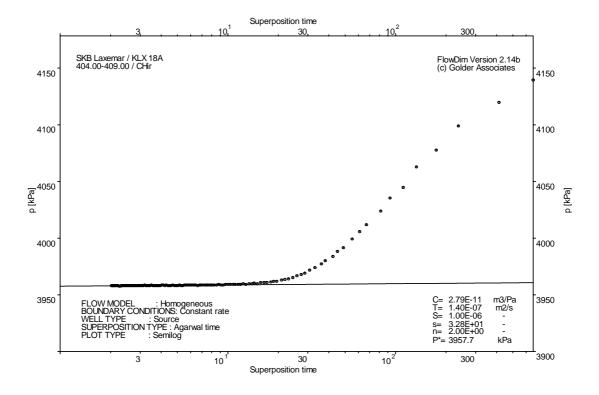


Borehole: KLX18A

Test: 404.00 – 409.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 409.00 – 414.00 m

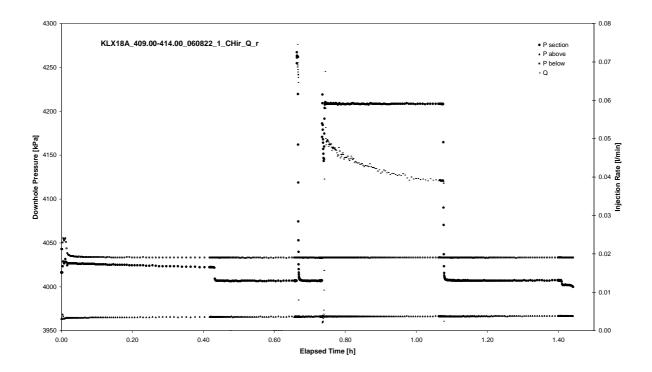
APPENDIX 2-53

Test 409.00 – 414.00 m

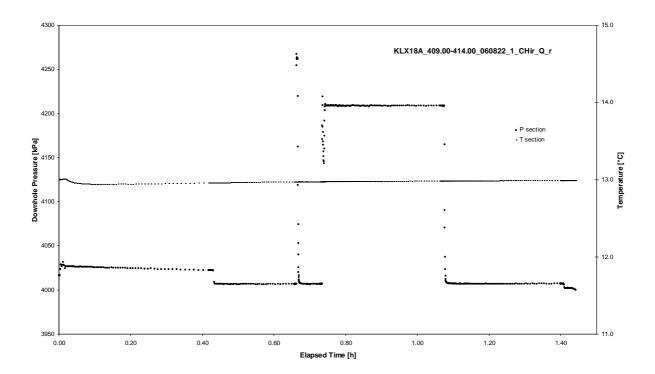
Page 2-53/2

Borehole: KLX18A

Test: 409.00 – 414.00 m

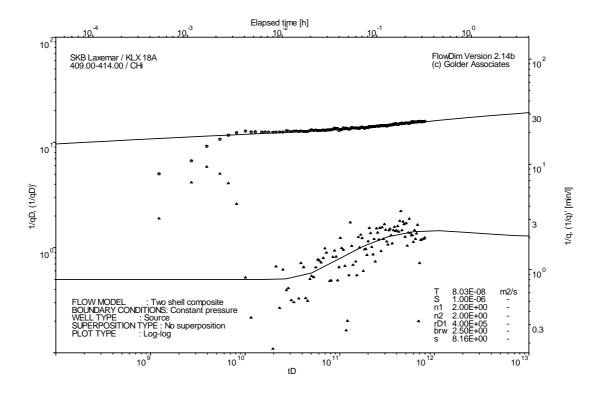


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

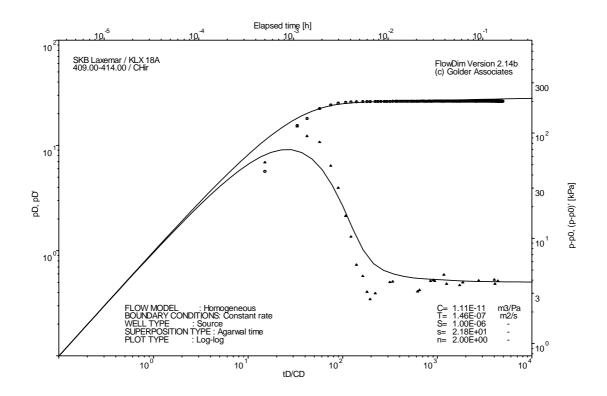
Test: 409.00 – 414.00 m



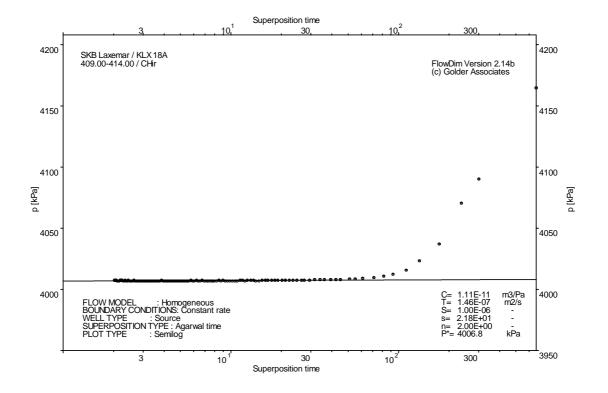
CHI phase; log-log match

Borehole: KLX18A

Test: 409.00 – 414.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

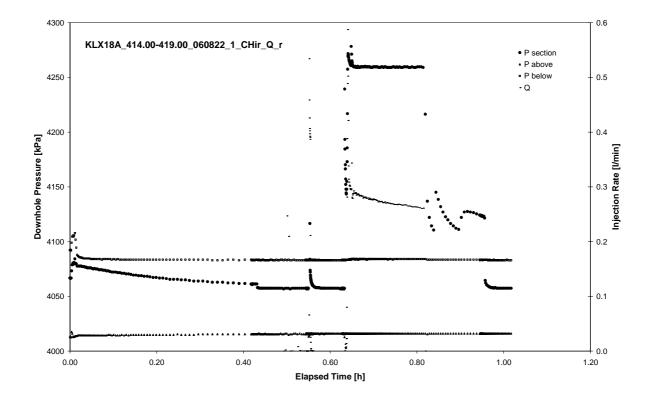
Test: 414.00 – 419.00 m

APPENDIX 2-54

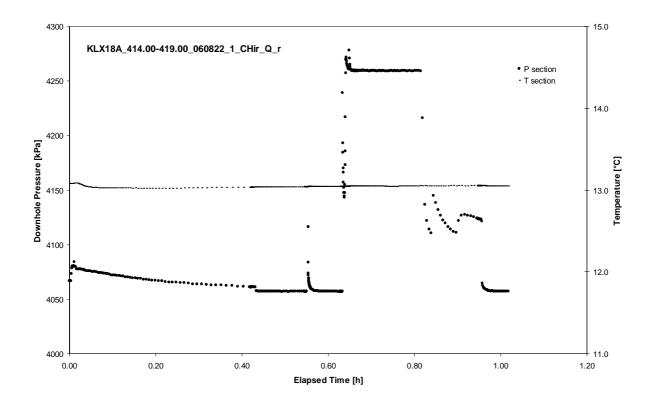
Test 414.00 – 419.00 m

Borehole: KLX18A

Test: 414.00 – 419.00 m



Pressure and flow rate vs. time; cartesian plot (test repeated)

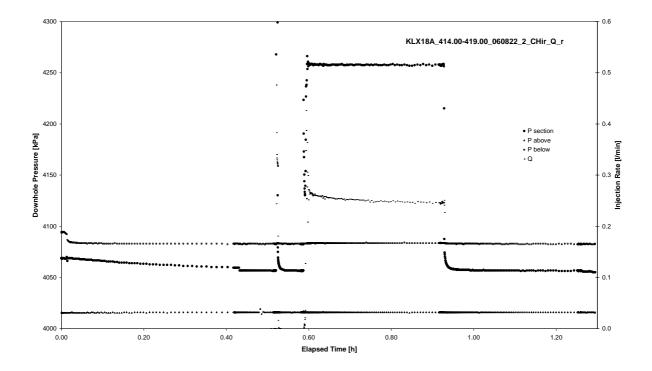


Interval pressure and temperature vs. time; cartesian plot (test repeated)

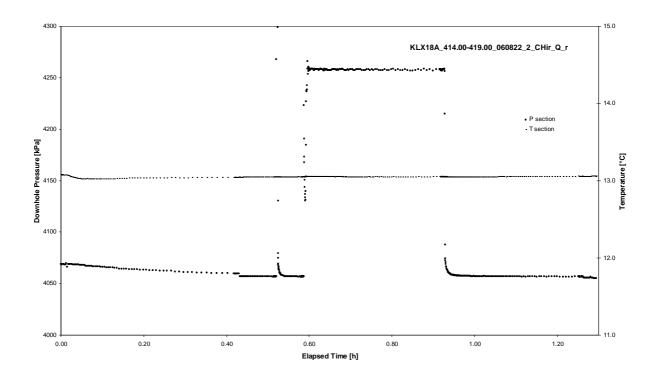
Page 2-54/3

Borehole: KLX18A

414.00 - 419.00 m Test:

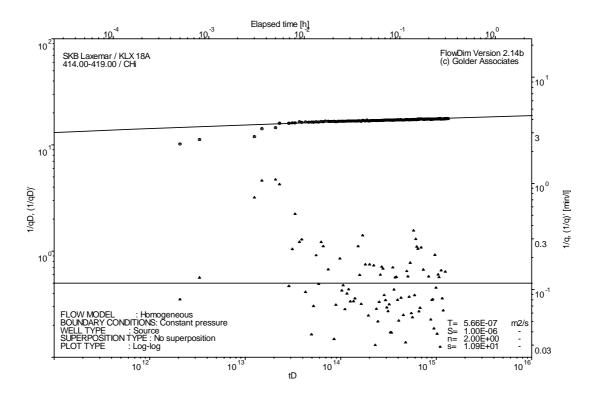


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

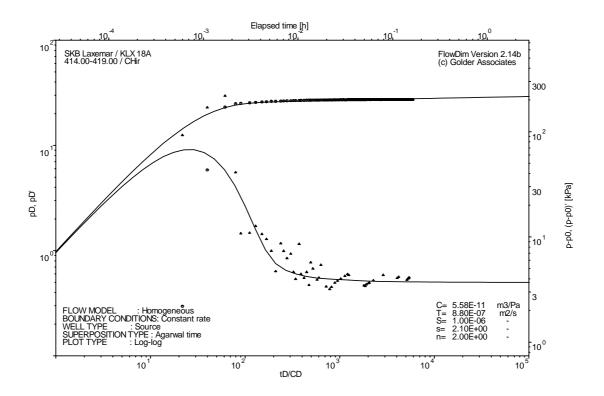
Test: 414.00 – 419.00 m



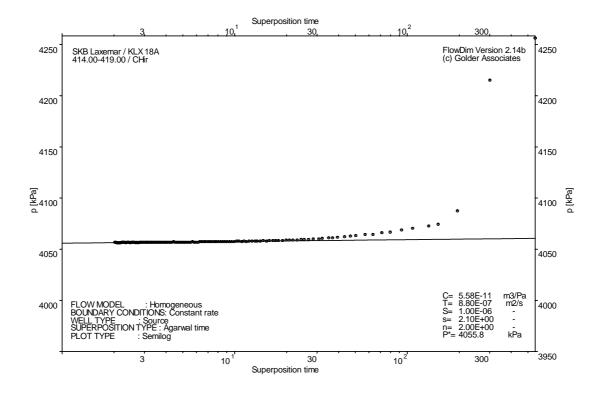
CHI phase; log-log match

Borehole: KLX18A

Test: 414.00 – 419.00 m



CHIR phase; log-log match



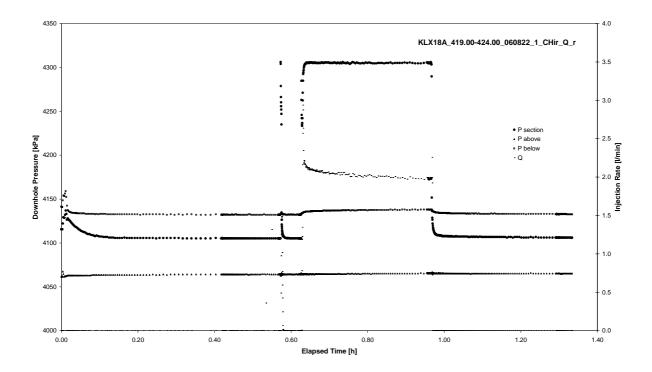
CHIR phase; HORNER match

Test: 419.00 – 424.00 m

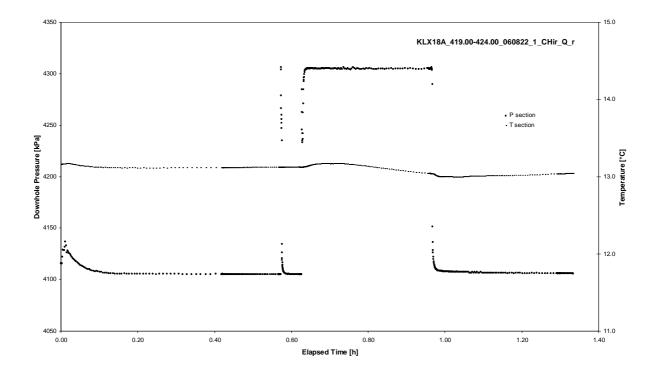
APPENDIX 2-55

Test 419.00 – 424.00 m

Test: 419.00 – 424.00 m

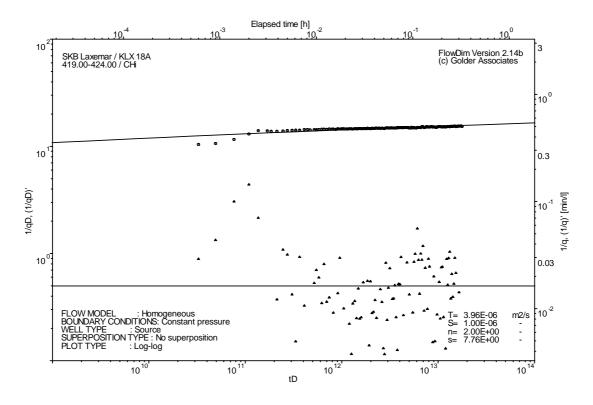


Pressure and flow rate vs. time; cartesian plot



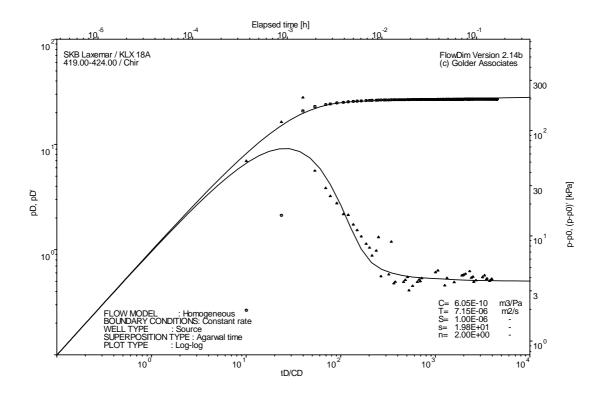
Interval pressure and temperature vs. time; cartesian plot

Test: 419.00 – 424.00 m

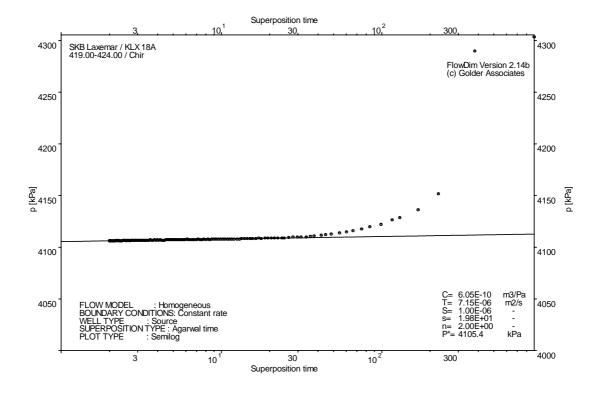


CHI phase; log-log match

Test: 419.00 – 424.00 m



CHIR phase; log-log match



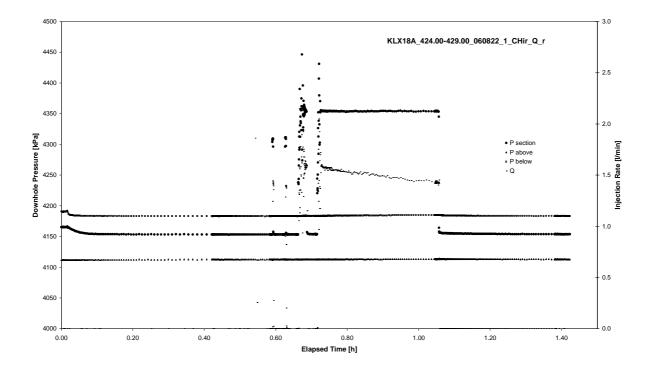
CHIR phase; HORNER match

Test: 424.00 – 429.00 m

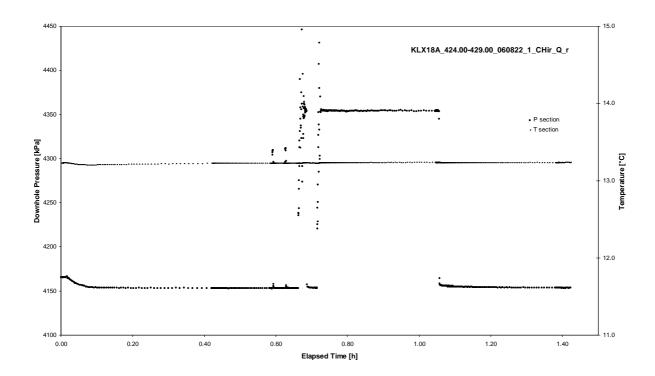
APPENDIX 2-56

Test 424.00 – 429.00 m

Test: 424.00 – 429.00 m

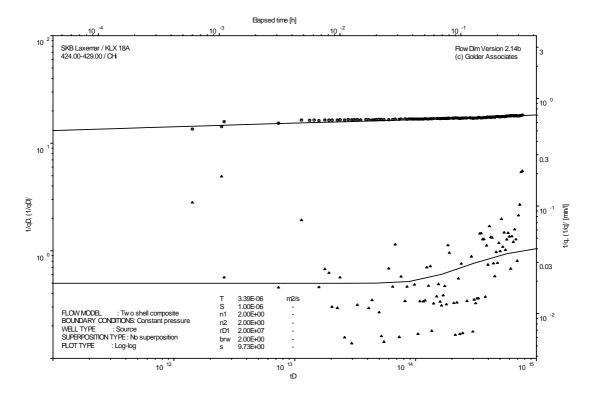


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 424.00 – 429.00 m

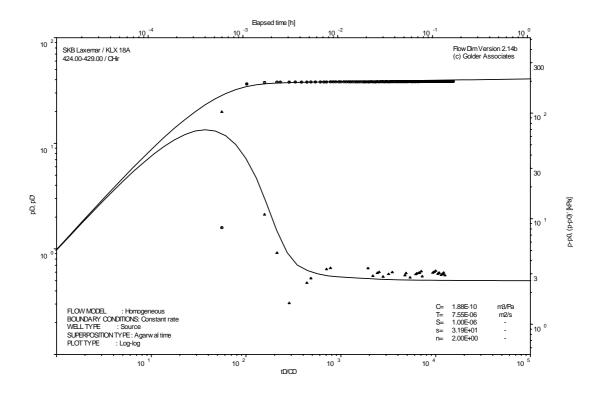


CHI phase; log-log match

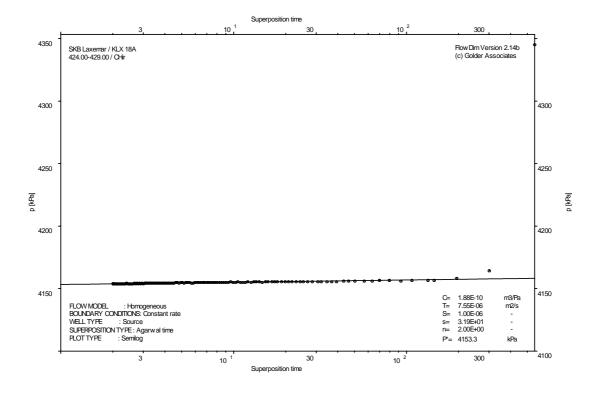
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Borehole: KLX18A

Test: 424.00 – 429.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 429.00 – 434.00 m

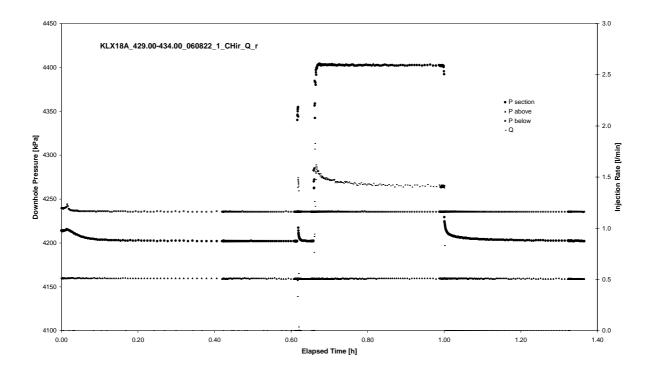
APPENDIX 2-57

Test 429.00 – 434.00 m

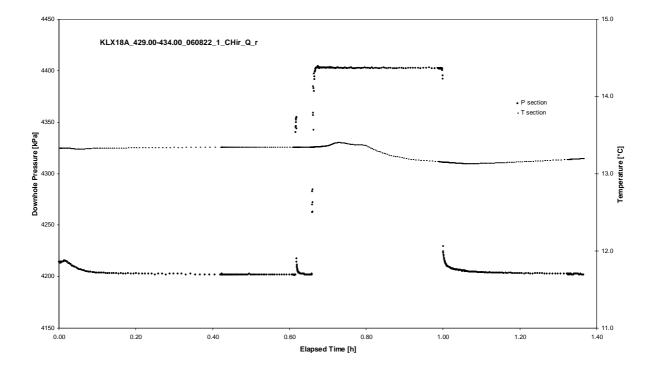
Page 2-57/2

Borehole: KLX18A

Test: 429.00 – 434.00 m

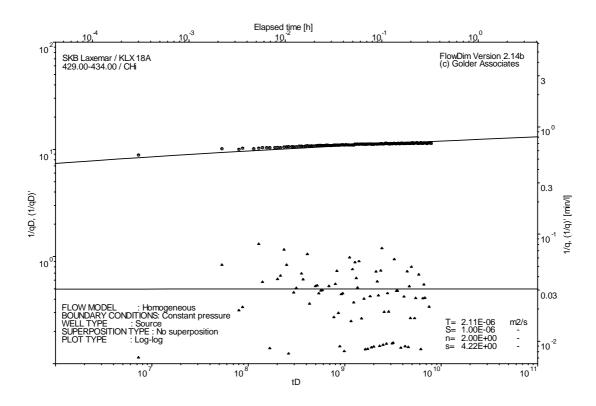


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 429.00 – 434.00 m

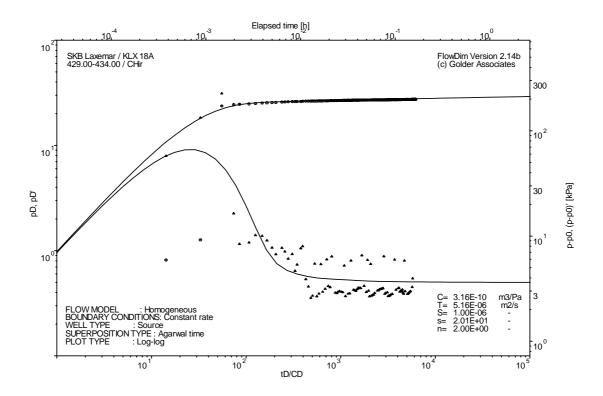


CHI phase; log-log match

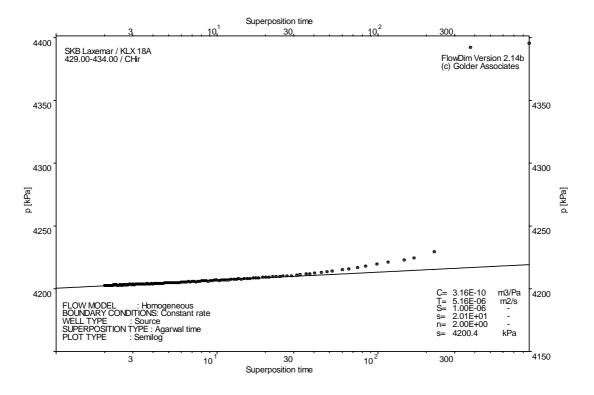
Page 2-57/4

Borehole: KLX18A

Test: 429.00 – 434.00 m



CHIR phase; log-log match



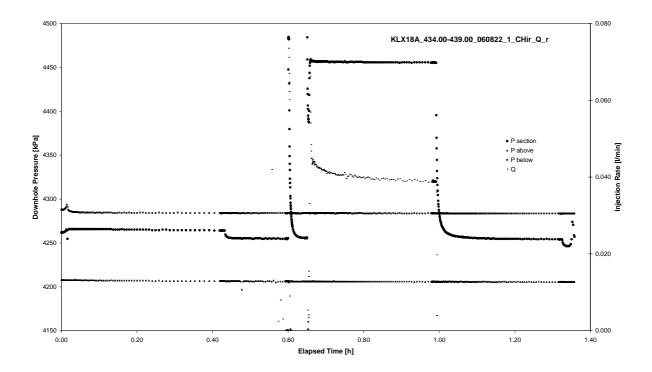
CHIR phase; HORNER match

Test: 434.00 – 439.00 m

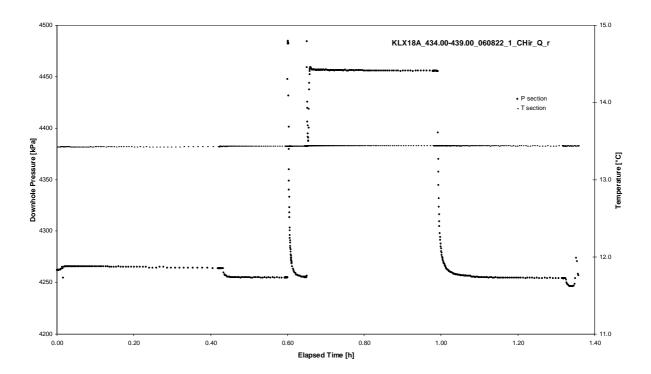
APPENDIX 2-58

Test 434.00 – 439.00 m

Test: 434.00 – 439.00 m

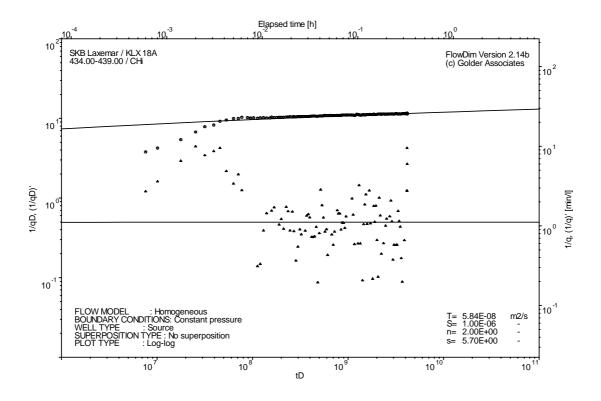


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

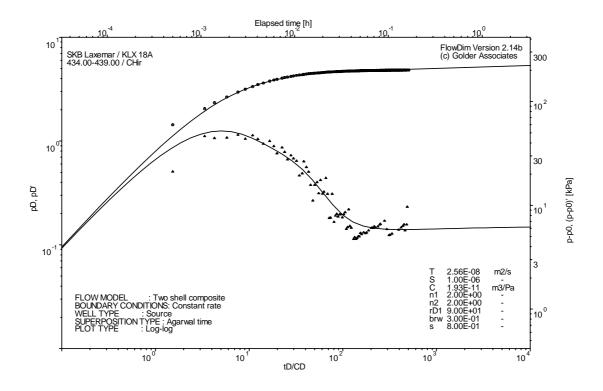
Test: 434.00 – 439.00 m



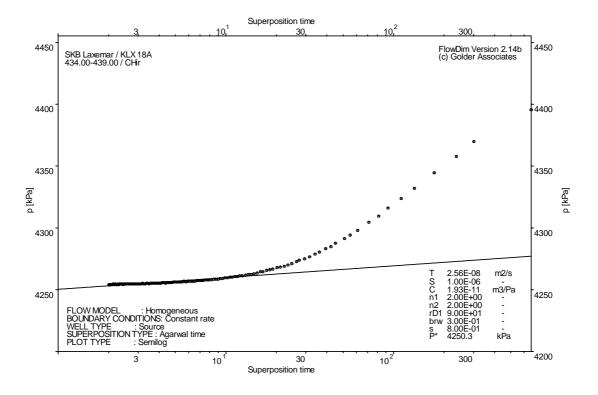
CHI phase; log-log match

Borehole: KLX18A

Test: 434.00 – 439.00 m



CHIR phase; log-log match



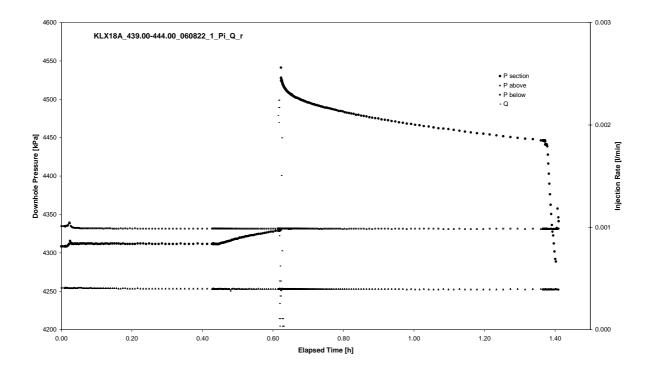
CHIR phase; HORNER match

Test: 439.00 – 444.00 m

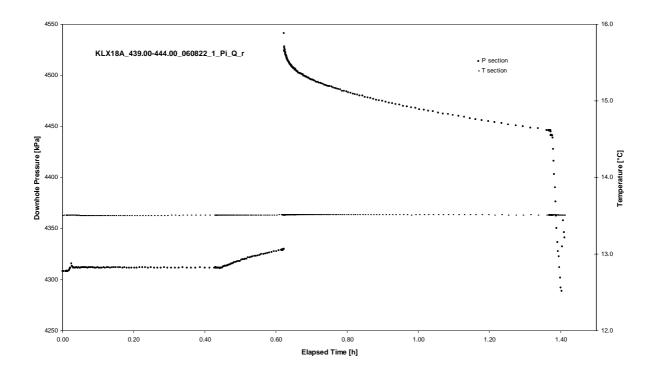
APPENDIX 2-59

Test 439.00 – 444.00 m

Test: 439.00 – 444.00 m

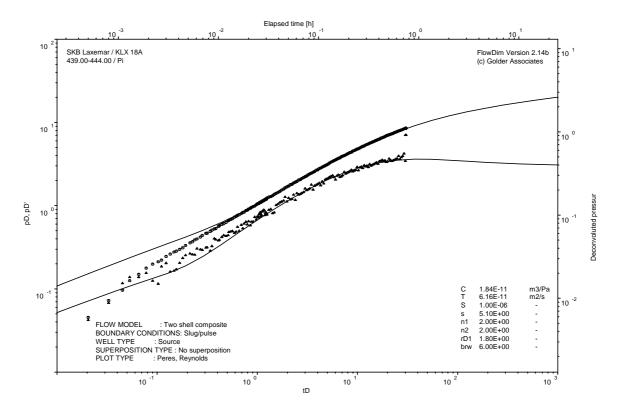


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 439.00 – 444.00 m



Pulse injection; deconvolution match

Test: 444.00 – 449.00 m

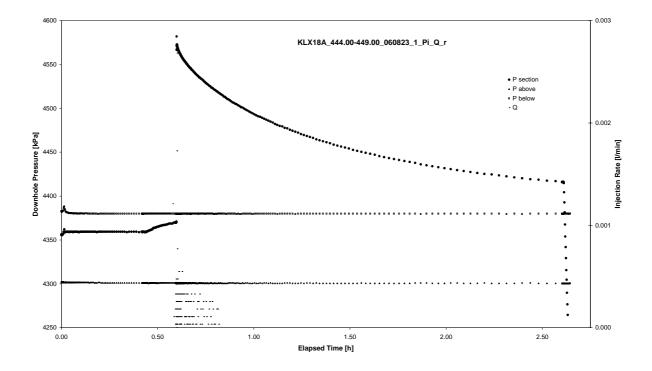
APPENDIX 2-60

Test 444.00 – 449.00 m

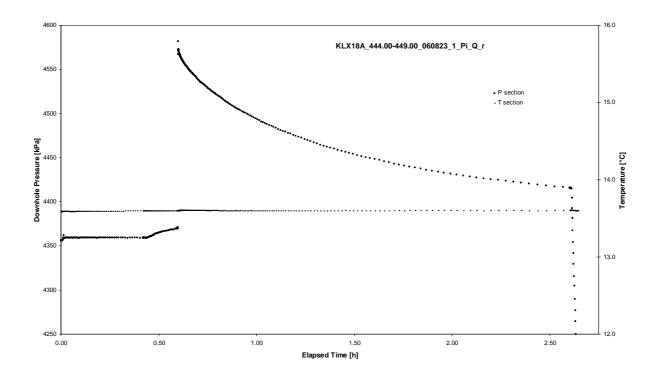
Page 2-60/2

Borehole: KLX18A

Test: 444.00 – 449.00 m

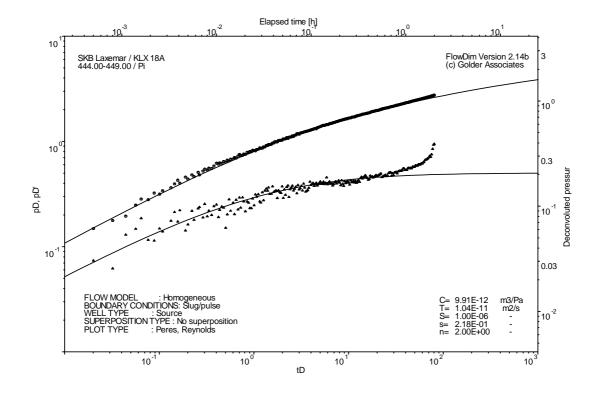


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 444.00 – 449.00 m



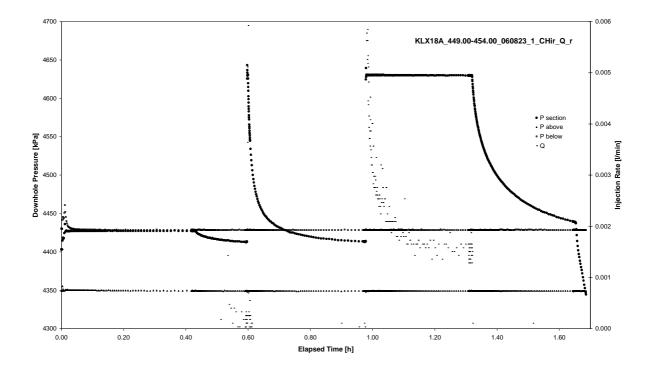
Pulse injection; deconvolution match

Test: 449.00 – 454.00 m

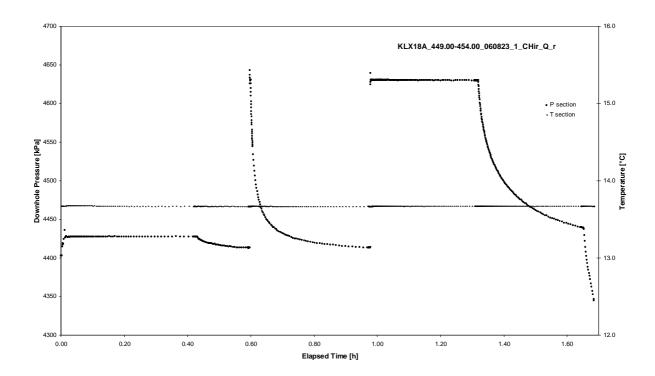
APPENDIX 2-61

Test 449.00 – 454.00 m

Test: 449.00 – 454.00 m

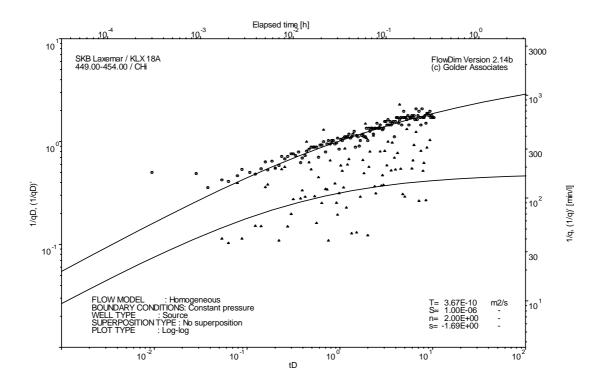


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

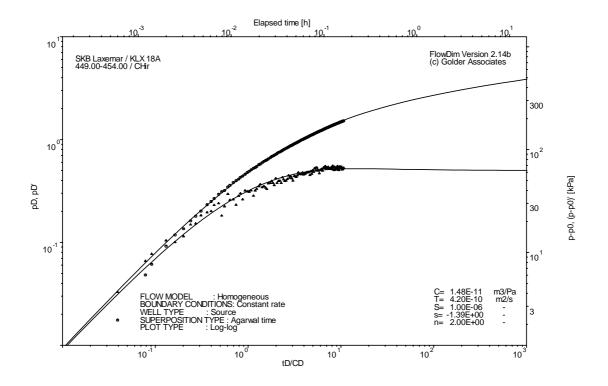
Test: 449.00 – 454.00 m



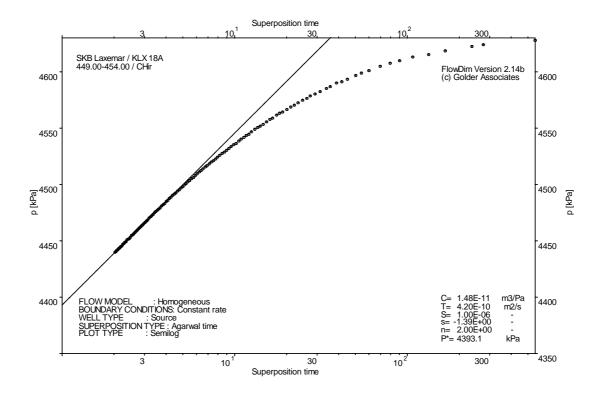
CHI phase; log-log match

Borehole: KLX18A

Test: 449.00 – 454.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-62/1

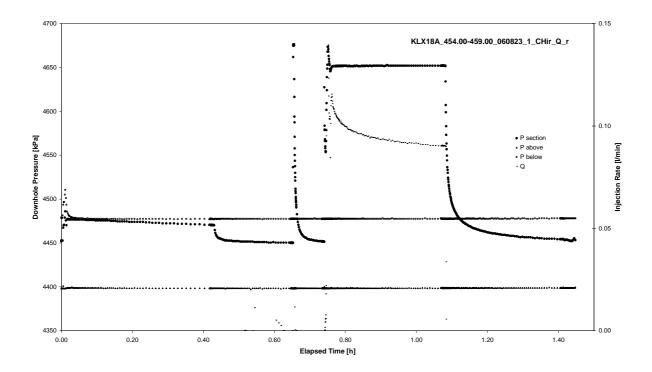
Test: 454.00 – 459.00 m

APPENDIX 2-62

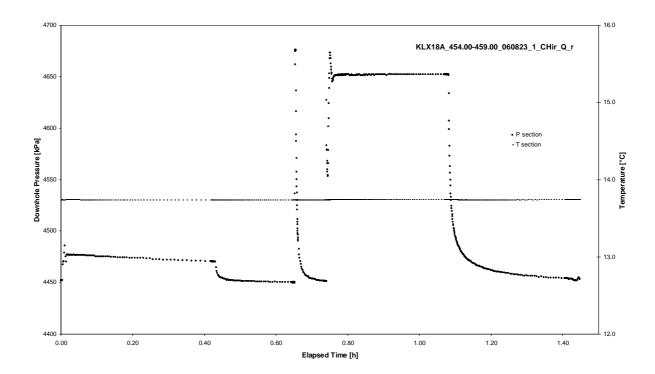
Test 454.00 – 459.00 m

Borehole: KLX18A Page 2-62/2

Test: 454.00 – 459.00 m



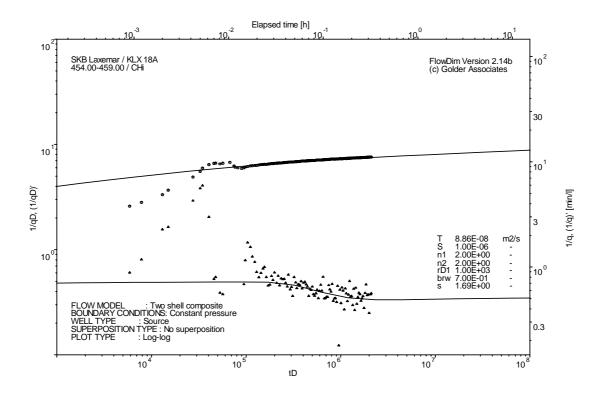
Pressure and flow rate vs. time; cartesian plot



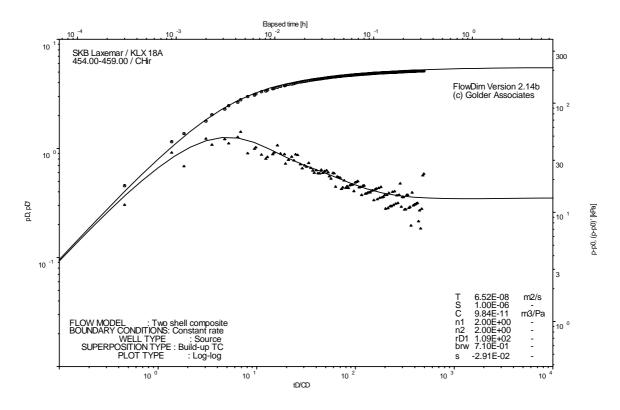
Interval pressure and temperature vs. time; cartesian plot

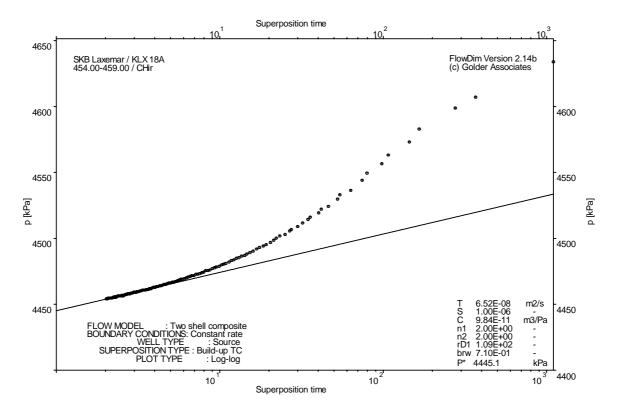
Borehole: KLX18A Page 2-62/3

Test: 454.00 – 459.00 m



Test: 454.00 – 459.00 m





CHIR phase; HORNER match

Borehole: KLX18A Page 2-63/1

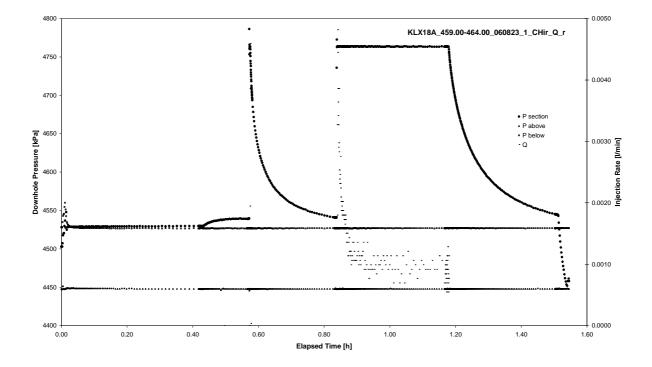
Test: 459.00 – 464.00 m

APPENDIX 2-63

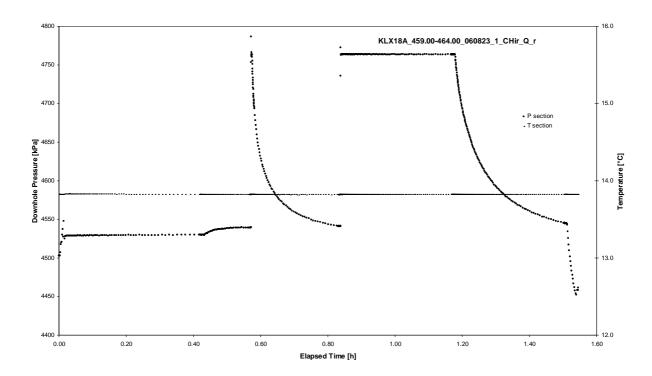
Test 459.00 – 464.00 m

Borehole: KLX18A Page 2-63/2

Test: 459.00 – 464.00 m



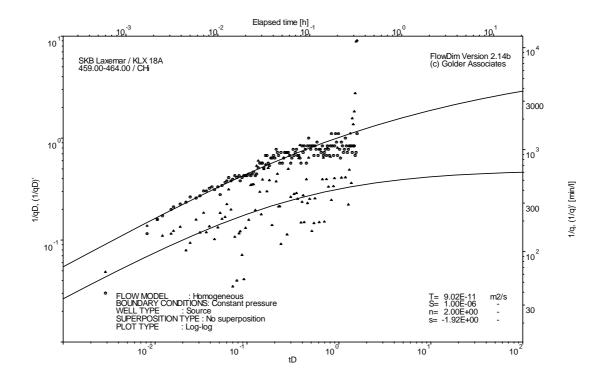
Pressure and flow rate vs. time; cartesian plot



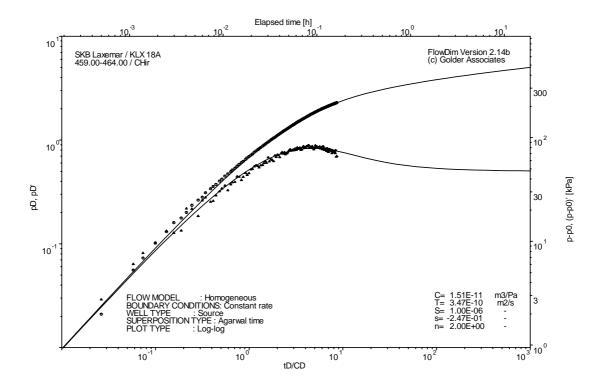
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-63/3

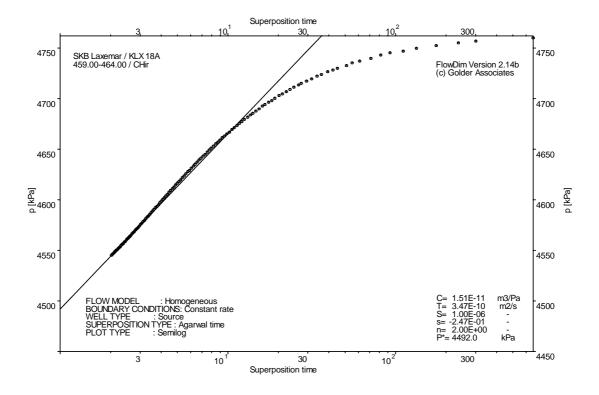
Test: 459.00 – 464.00 m



Test: 459.00 – 464.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-64/1

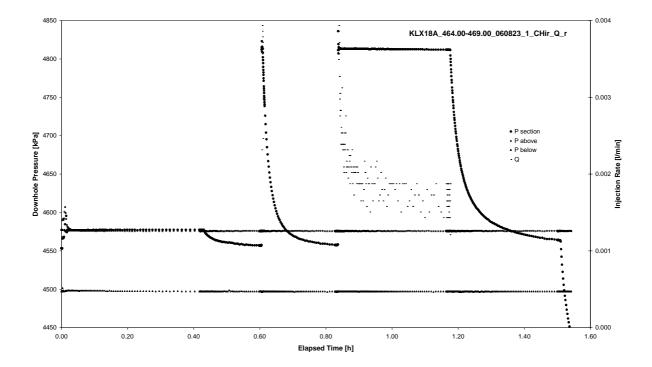
Test: 464.00 – 469.00 m

APPENDIX 2-64

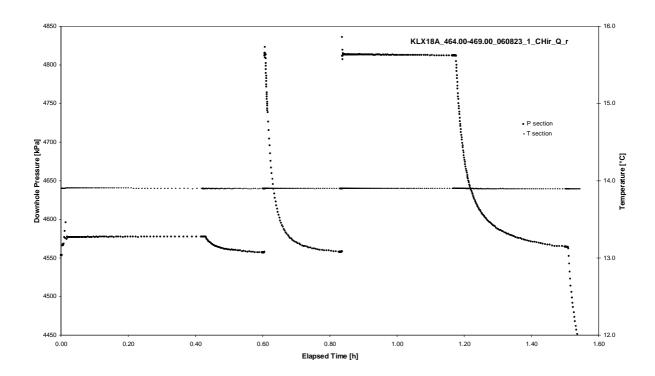
Test 464.00 – 469.00 m

Borehole: KLX18A Page 2-64/2

Test: 464.00 – 469.00 m



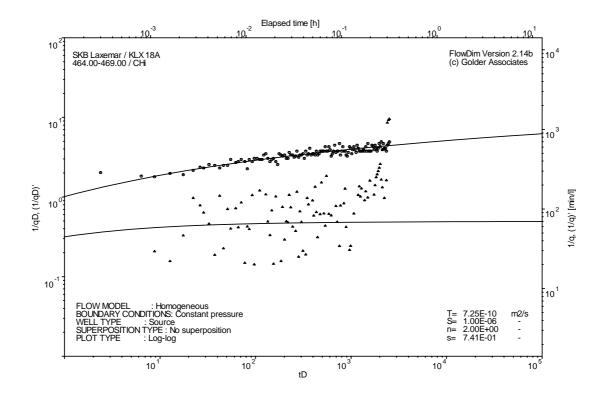
Pressure and flow rate vs. time; cartesian plot



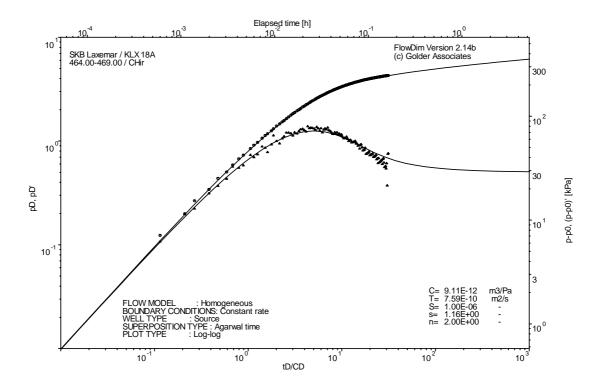
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-64/3

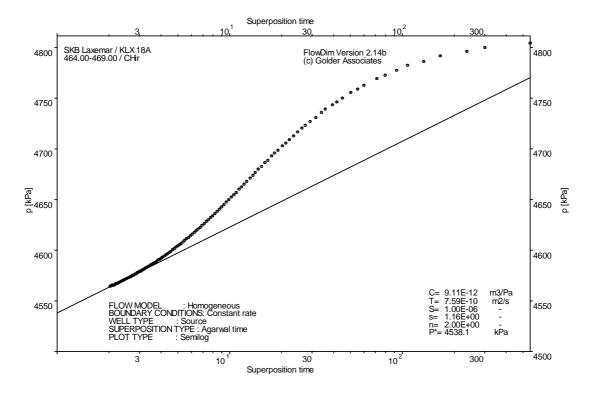
Test: 464.00 – 469.00 m



Test: 464.00 – 469.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-65/1

Test: 469.00 – 474.00 m

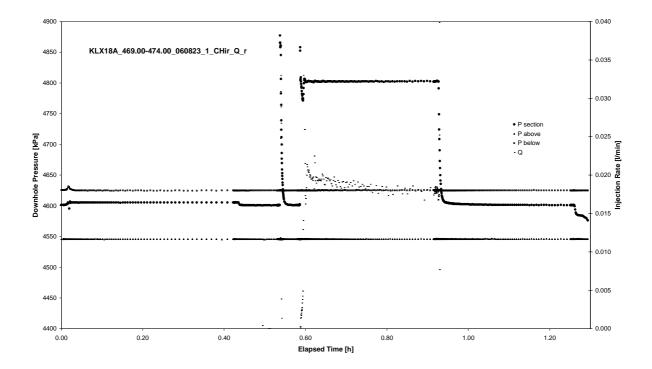
APPENDIX 2-65

Test 469.00 – 474.00 m

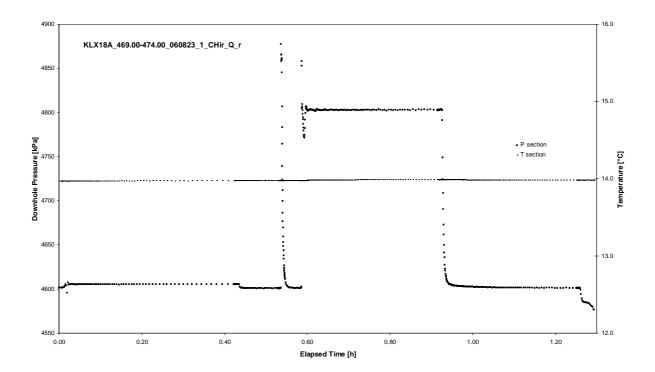
Page 2-65/2

Borehole: KLX18A

Test: 469.00 – 474.00 m



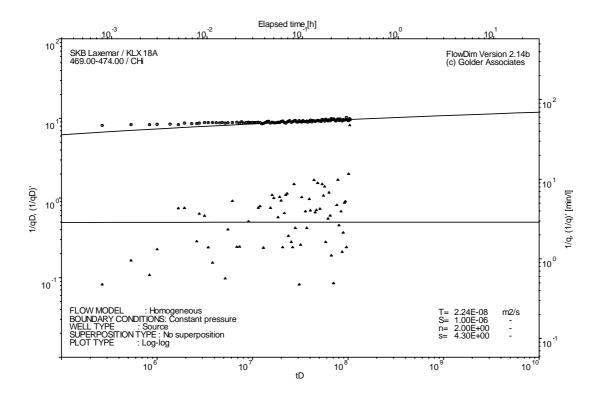
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-65/3

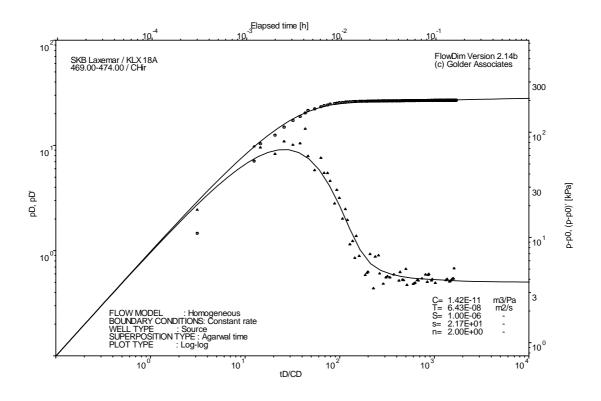
Test: 469.00 – 474.00 m



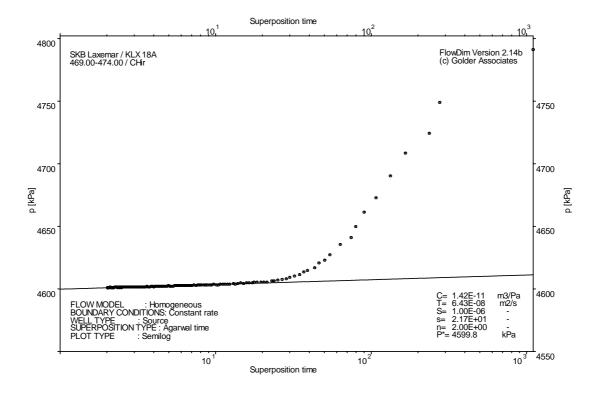
Page 2-65/4

Borehole: KLX18A

Test: 469.00 – 474.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-66/1

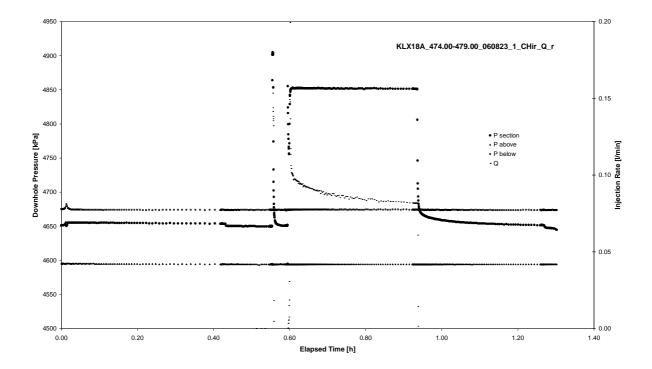
Test: 474.00 – 479.00 m

APPENDIX 2-66

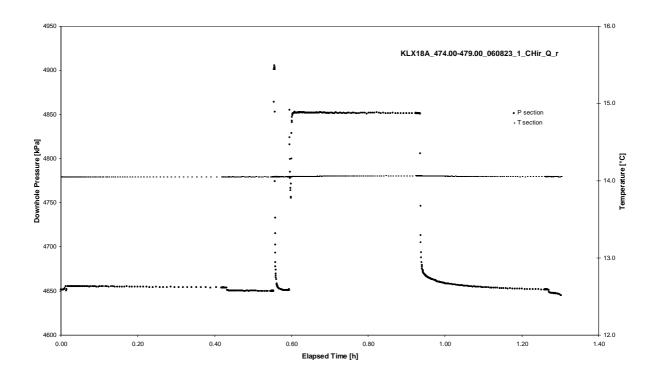
Test 474.00 – 479.00 m

Borehole: KLX18A Page 2-66/2

Test: 474.00 – 479.00 m



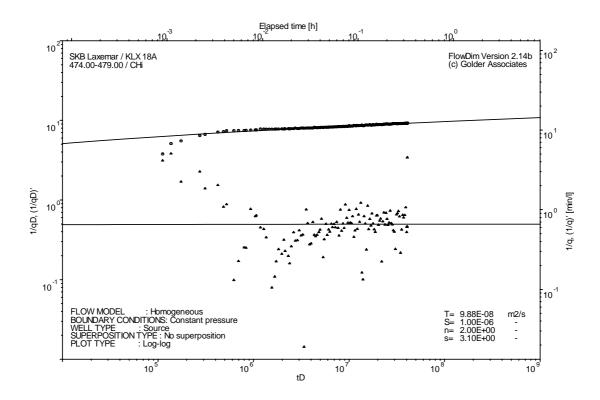
Pressure and flow rate vs. time; cartesian plot



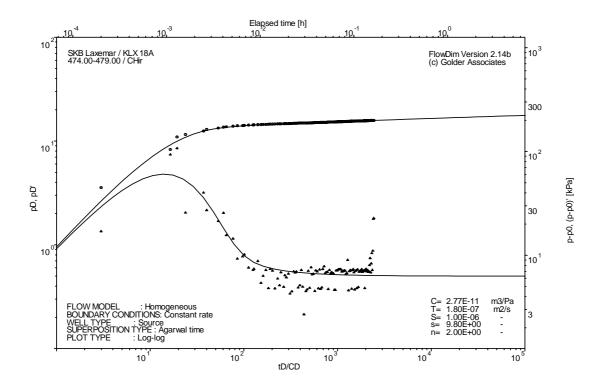
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-66/3

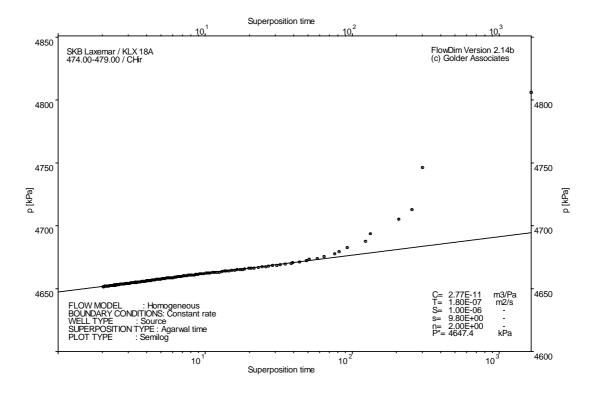
Test: 474.00 – 479.00 m



Test: 474.00 – 479.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-67/1

Test: 477.00 – 482.00 m

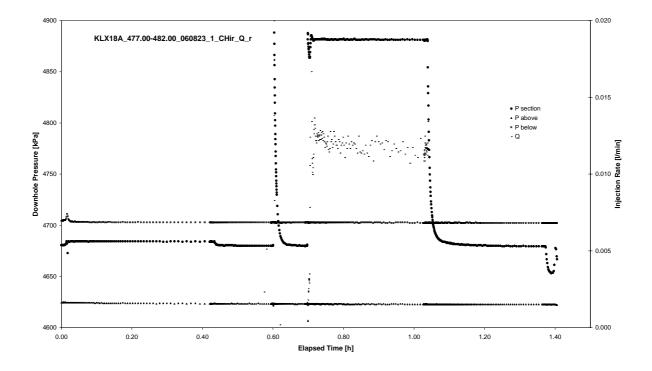
APPENDIX 2-67

Test 477.00 – 482.00 m

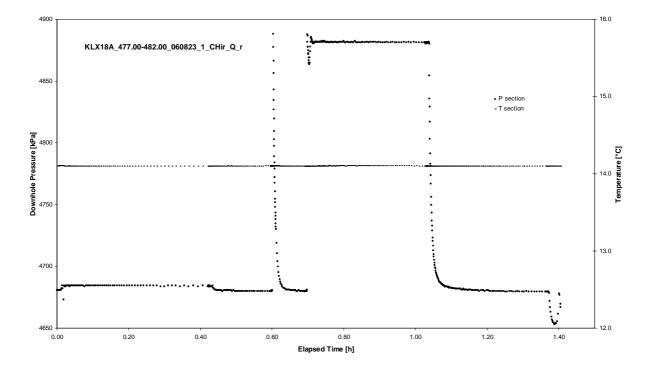
Page 2-67/2

Borehole: KLX18A

Test: 477.00 – 482.00 m



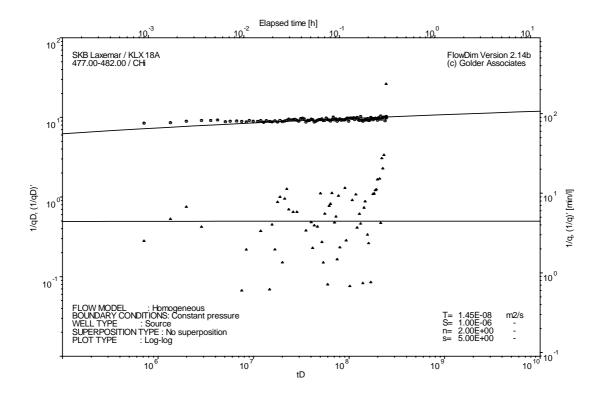
Pressure and flow rate vs. time; cartesian plot



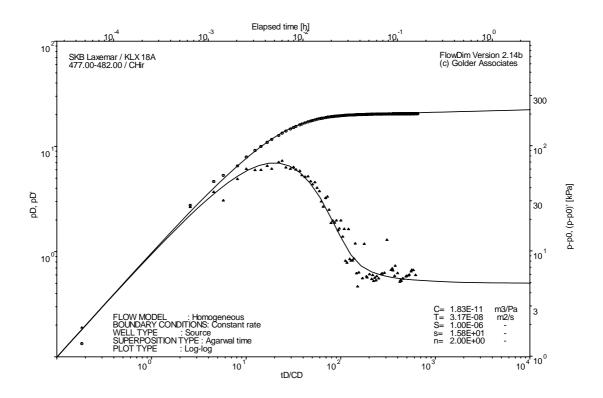
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-67/3

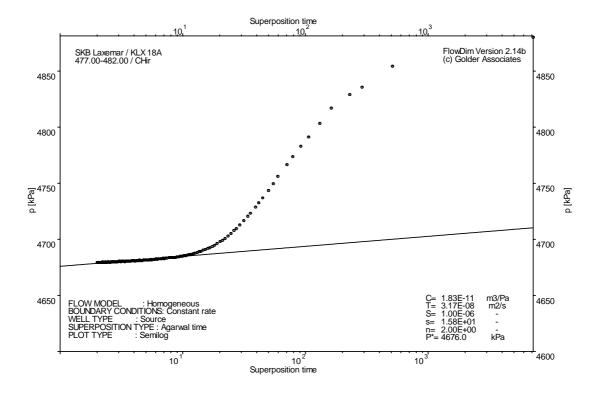
Test: 477.00 – 482.00 m



Test: 477.00 – 482.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-68/1

Test: 482.00 – 487.00 m

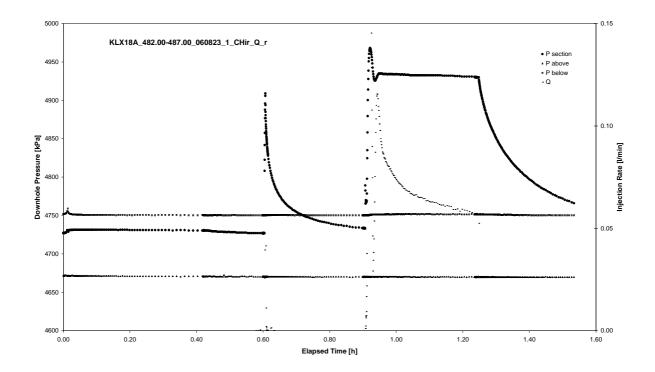
APPENDIX 2-68

Test 482.00 – 487.00 m

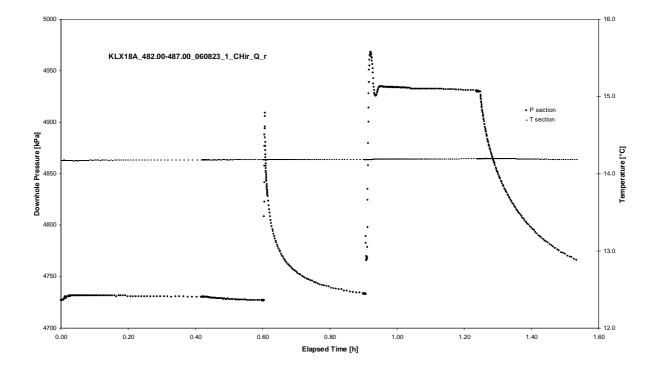
Page 2-68/2

Borehole: KLX18A

Test: 482.00 – 487.00 m



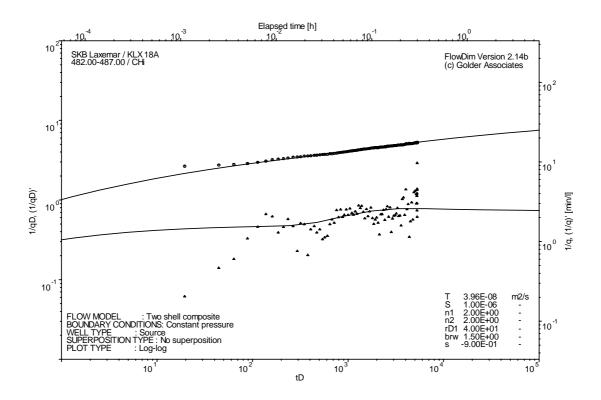
Pressure and flow rate vs. time; cartesian plot



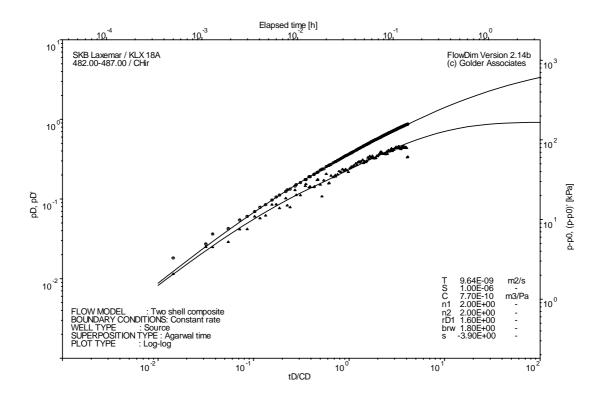
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-68/3

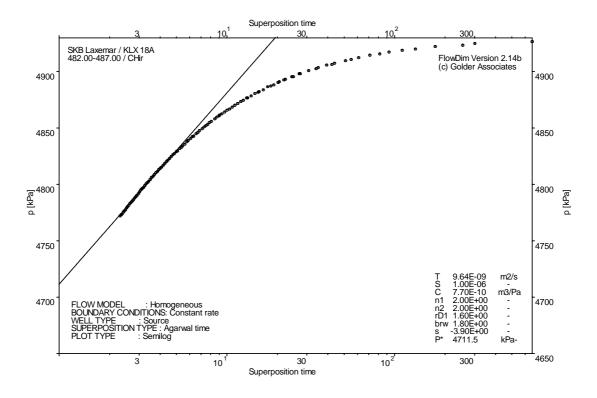
Test: 482.00 – 487.00 m



Test: 482.00 – 487.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-69/1

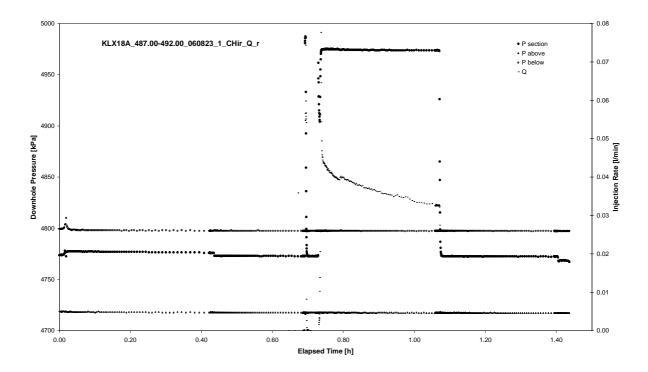
Test: 487.00 – 492.00 m

APPENDIX 2-69

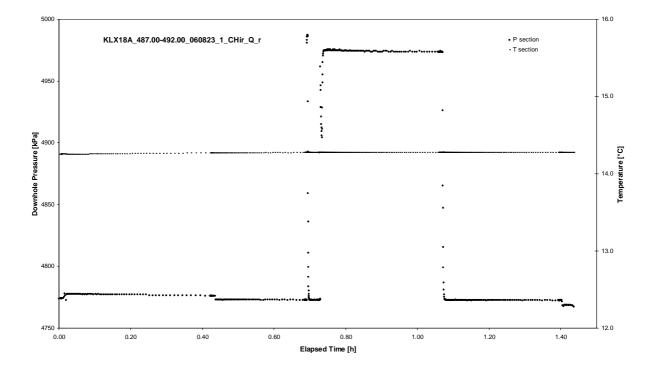
Test 487.00 – 492.00 m

Borehole: KLX18A Page 2-69/2

Test: 487.00 – 492.00 m



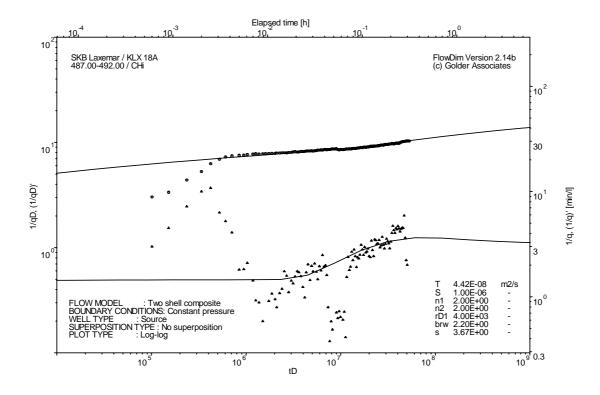
Pressure and flow rate vs. time; cartesian plot



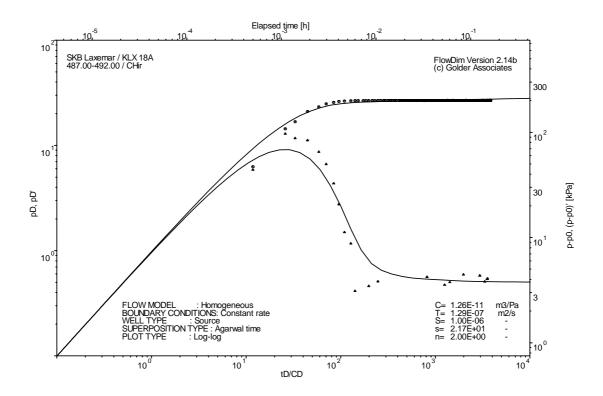
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-69/3

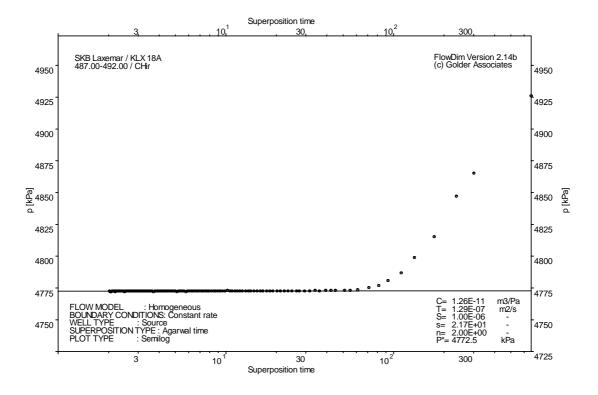
Test: 487.00 – 492.00 m



Test: 487.00 – 492.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A Page 2-70/1

Test: 489.00 – 494.00 m

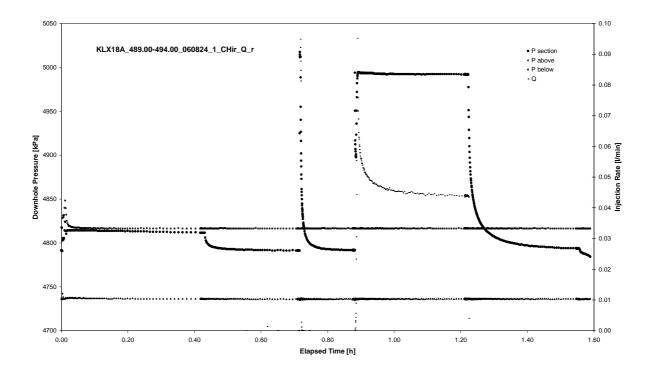
APPENDIX 2-70

Test 489.00 – 494.00 m

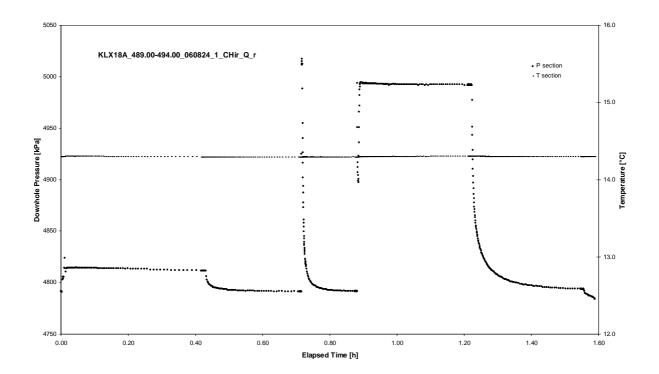
Page 2-70/2

Borehole: KLX18A

Test: 489.00 – 494.00 m



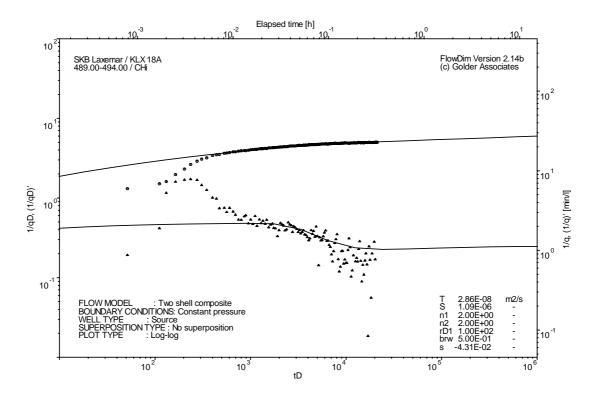
Pressure and flow rate vs. time; cartesian plot



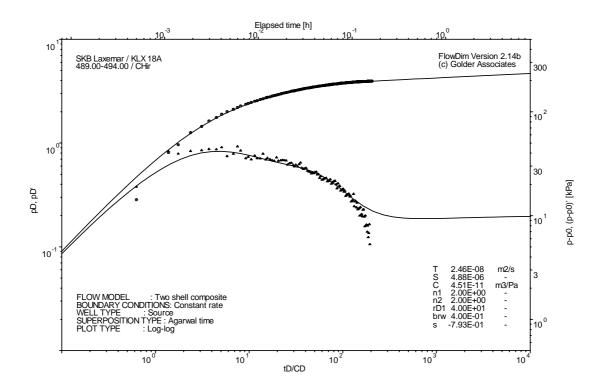
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX18A Page 2-70/3

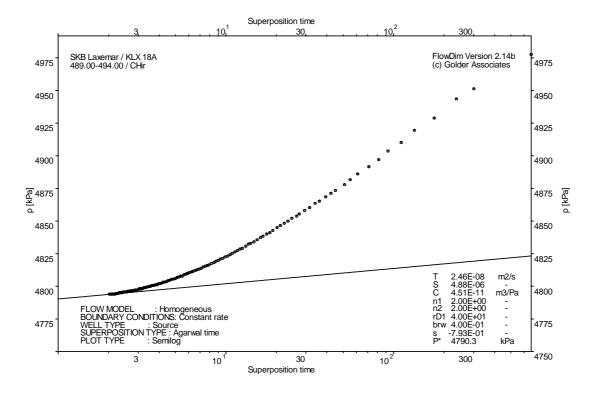
Test: 489.00 – 494.00 m



Test: 489.00 – 494.00 m



CHIR phase; log-log match



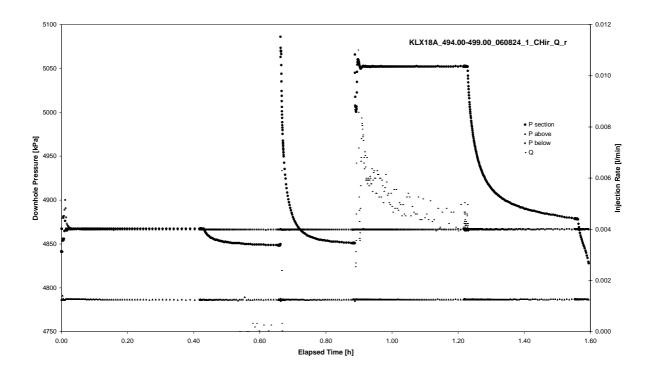
CHIR phase; HORNER match

Test: 494.00 – 499.00 m

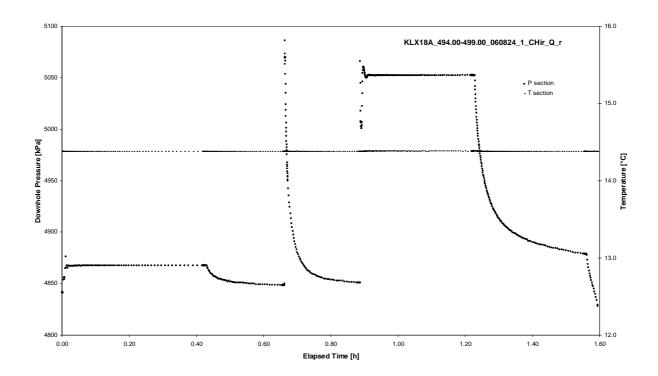
APPENDIX 2-71

Test 494.00 – 499.00 m

Test: 494.00 – 499.00 m

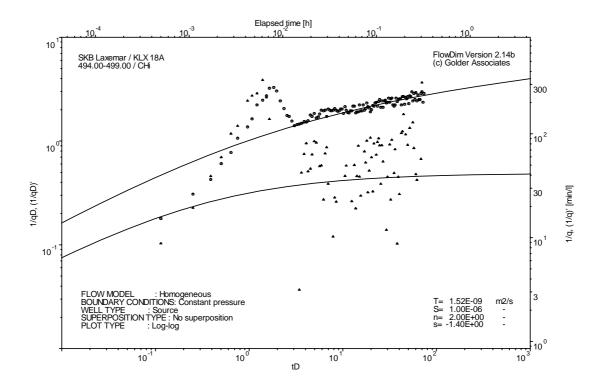


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

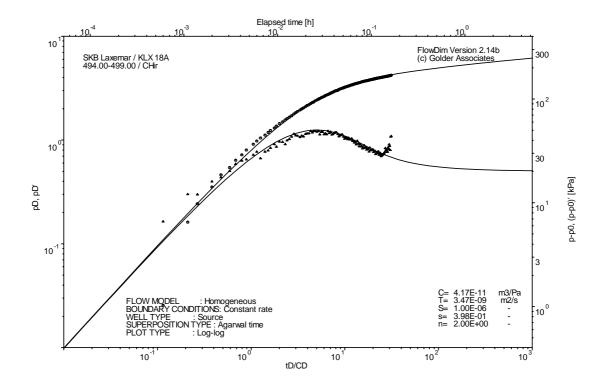
Test: 494.00 – 499.00 m



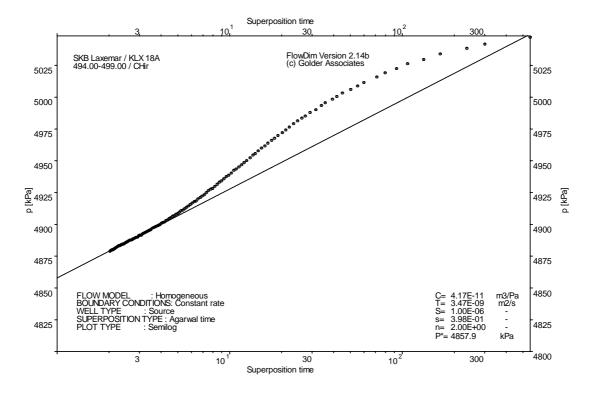
CHI phase; log-log match

Borehole: KLX18A

Test: 494.00 – 499.00 m



CHIR phase; log-log match



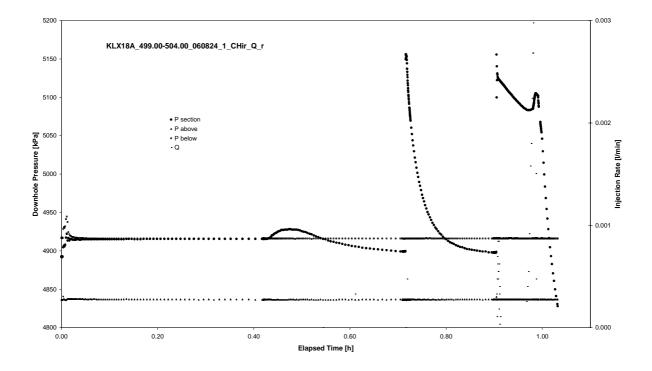
CHIR phase; HORNER match

Test: 499.00 – 504.00 m

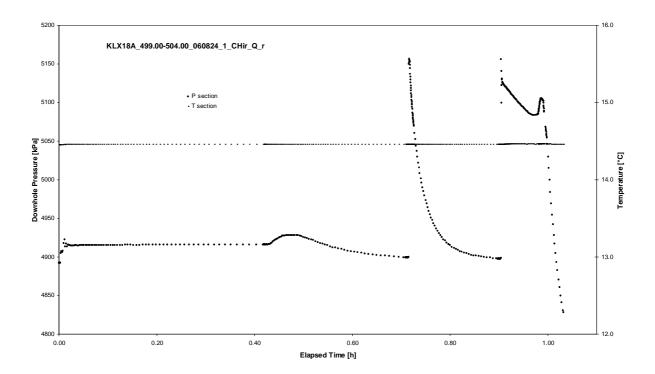
APPENDIX 2-72

Test 499.00 – 504.00 m

Test: 499.00 – 504.00 m

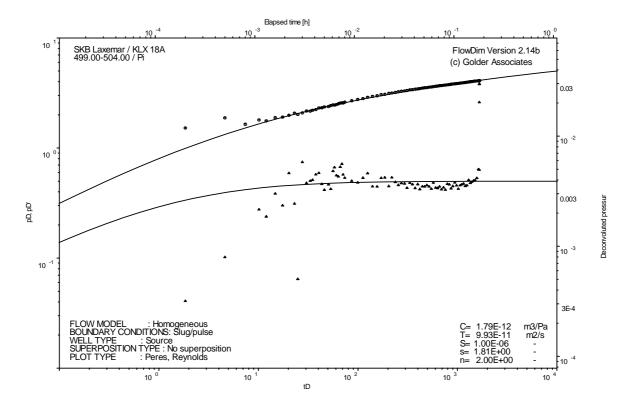


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 499.00 – 504.00 m



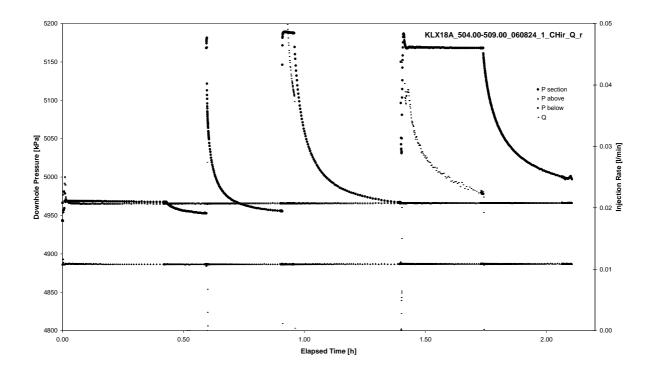
Pulse injection; deconvolution match

Test: 504.00 – 509.00 m

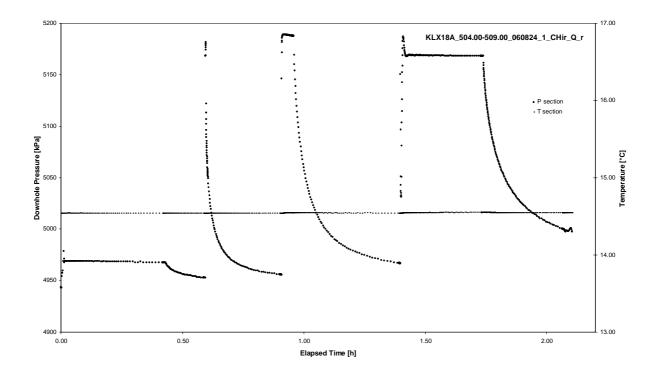
APPENDIX 2-73

Test 504.00 – 509.00 m

Test: 504.00 – 509.00 m

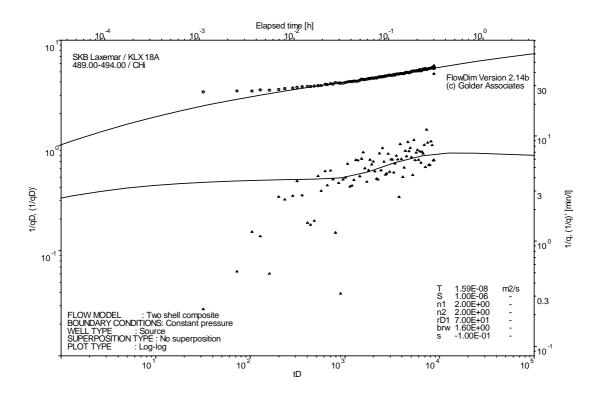


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 504.00 – 509.00 m

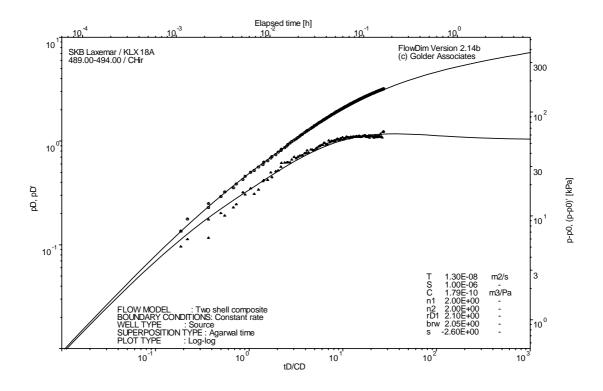


CHI phase; log-log match

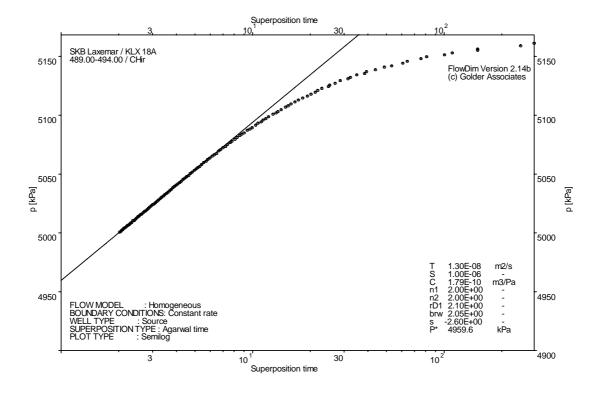
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Borehole: KLX18A

Test: 504.00 – 509.00 m



CHIR phase; log-log match



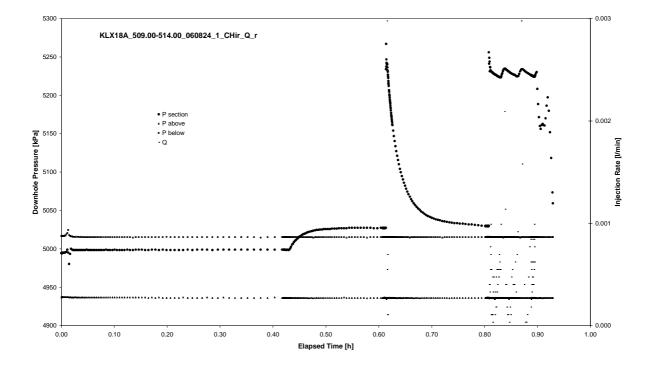
CHIR phase; HORNER match

Test: 509.00 – 514.00 m

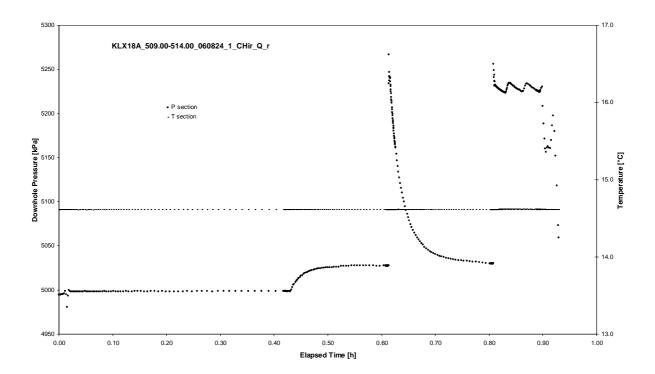
APPENDIX 2-74

Test 509.00 – 514.00 m

Test: 509.00 – 514.00 m

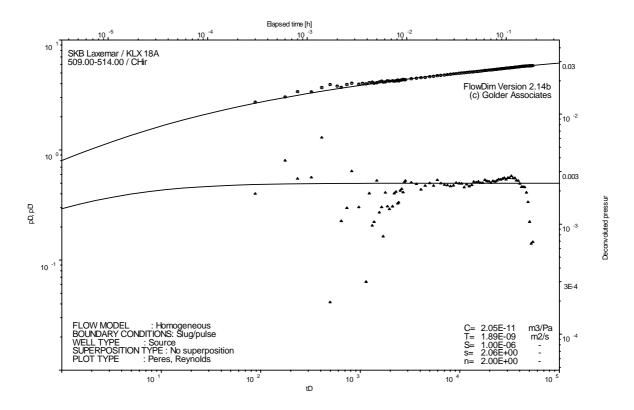


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 509.00 – 514.00 m



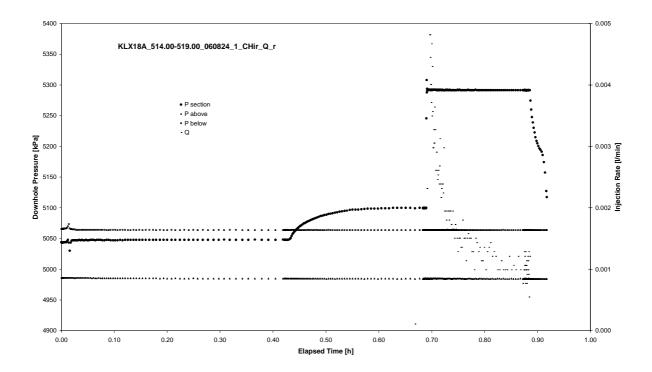
Pulse injection; deconvolution match

Test: 514.00 – 519.00 m

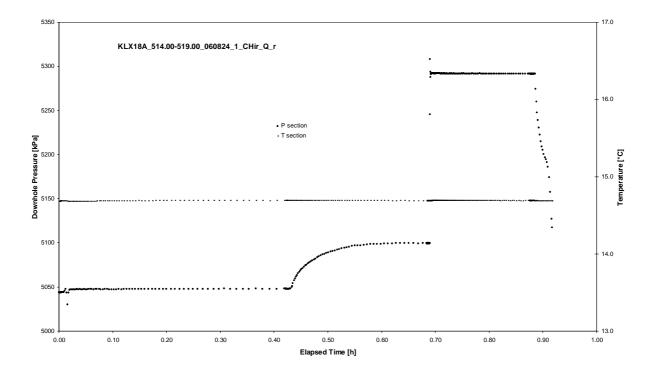
APPENDIX 2-75

Test 514.00 – 519.00 m

Test: 514.00 – 519.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 514.00 – 519.00 m

Not Analysed

CHI phase; log-log match



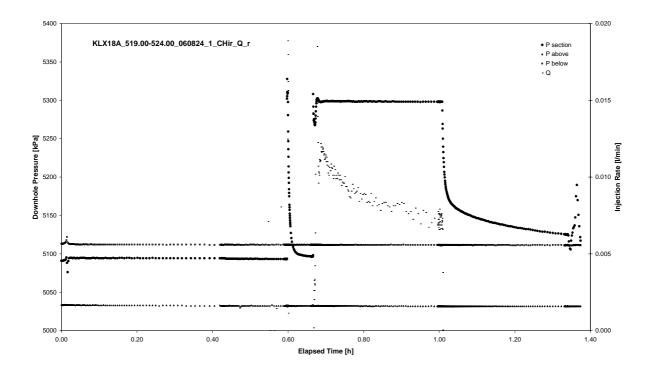
CHIR phase; HORNER match

Test: 519.00 – 524.00 m

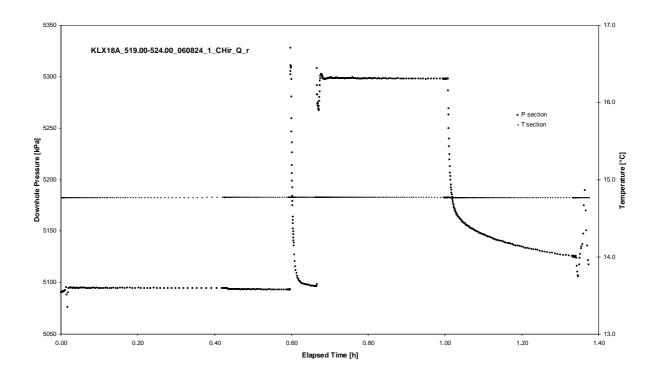
APPENDIX 2-76

Test 519.00 – 524.00 m

Test: 519.00 – 524.00 m

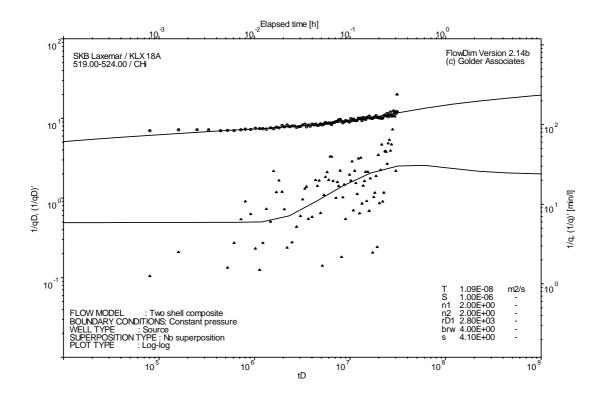


Pressure and flow rate vs. time; cartesian plot



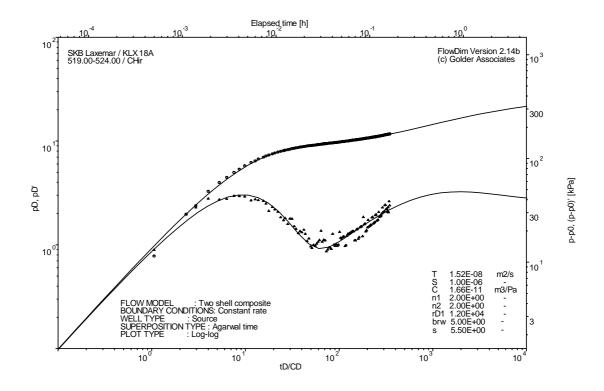
Interval pressure and temperature vs. time; cartesian plot

Test: 519.00 – 524.00 m

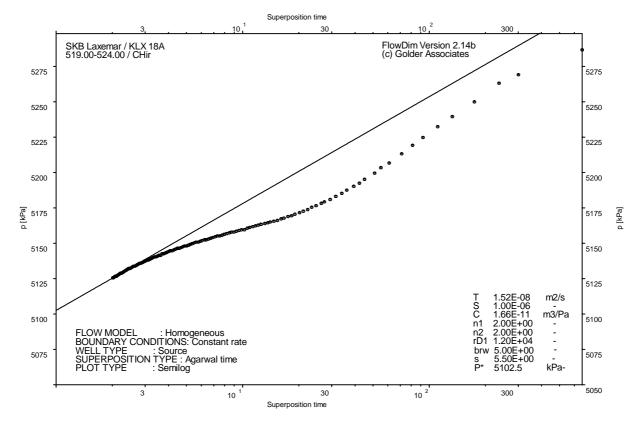


CHI phase; log-log match

Test: 519.00 – 524.00 m



CHIR phase; log-log match



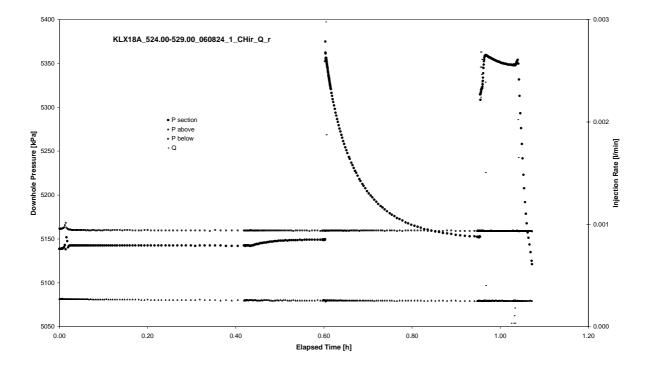
CHIR phase; HORNER match

Test: 524.00 – 529.00 m

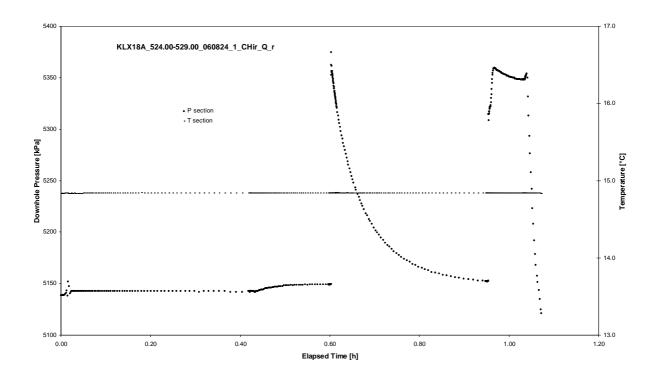
APPENDIX 2-77

Test 524.00 – 529.00 m

Test: 524.00 - 529.00 m

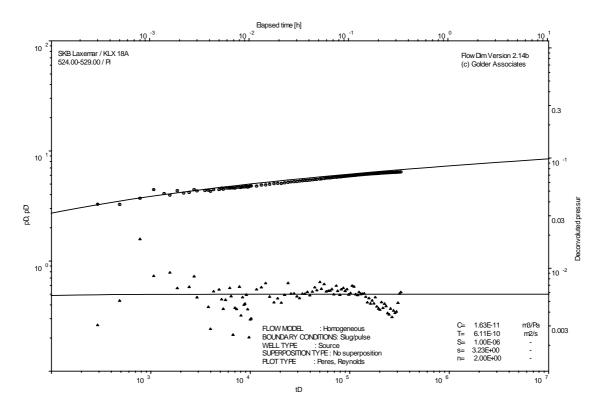


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 524.00 – 529.00 m



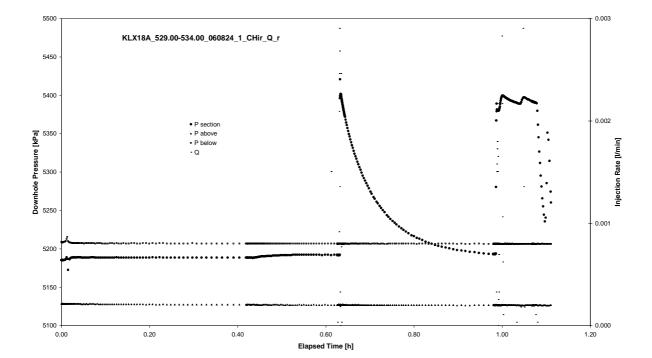
Pulse Injection; deconvolution match

Test: 529.00 – 534.00 m

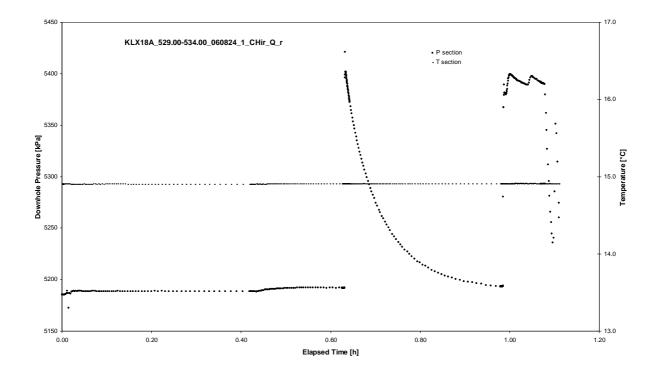
APPENDIX 2-78

Test 529.00 – 534.00 m

Test: 529.00 - 534.00 m

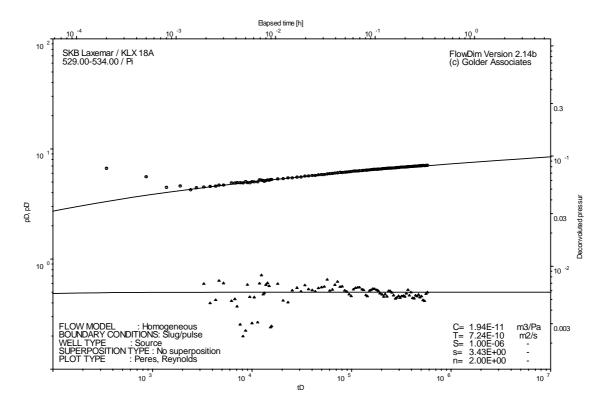


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 529.00 – 534.00 m



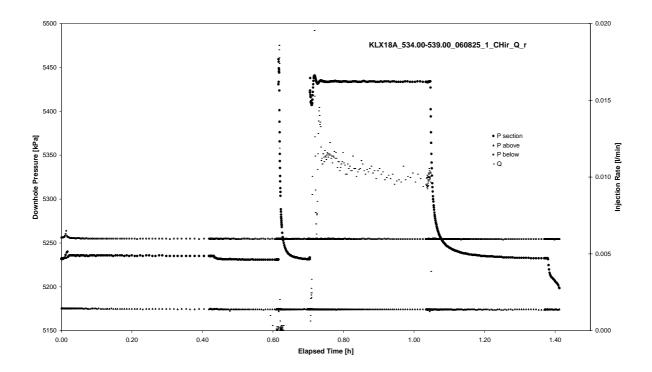
Pulse Injection; deconvolution match

Test: 534.00 – 539.00 m

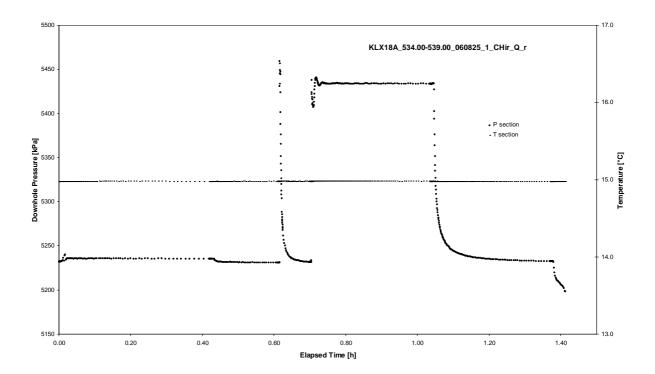
APPENDIX 2-79

Test 534.00 – 539.00 m

Test: 534.00 – 539.00 m

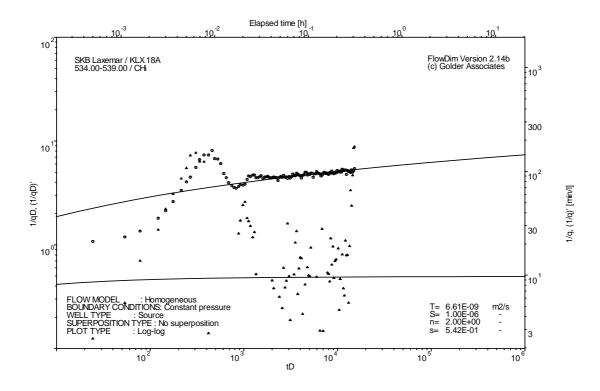


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

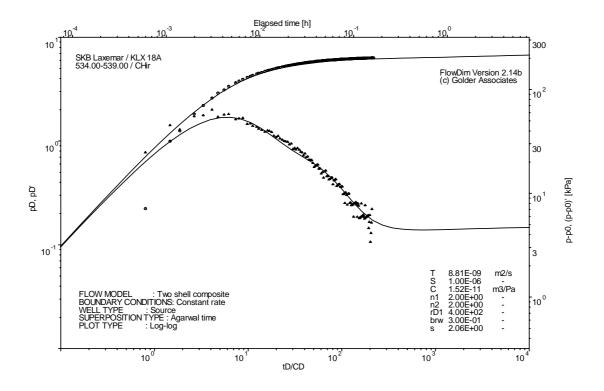
Test: 534.00 – 539.00 m



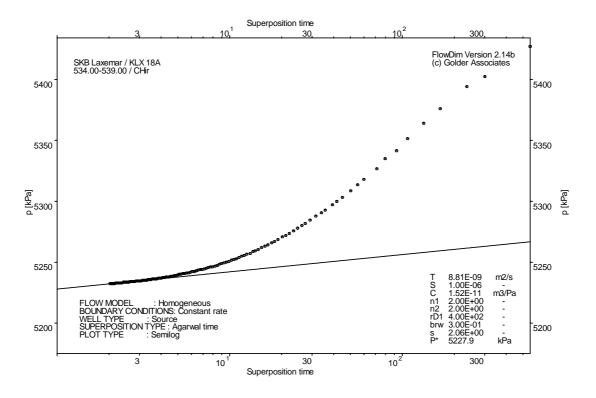
CHI phase; log-log match

Borehole: KLX18A

Test: 534.00 – 539.00 m



CHIR phase; log-log match



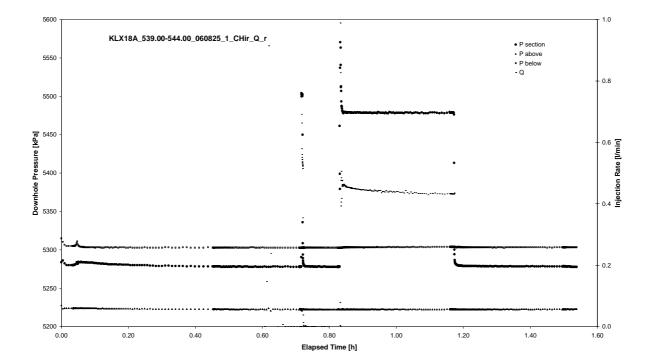
CHIR phase; HORNER match

Test: 539.00 – 544.00 m

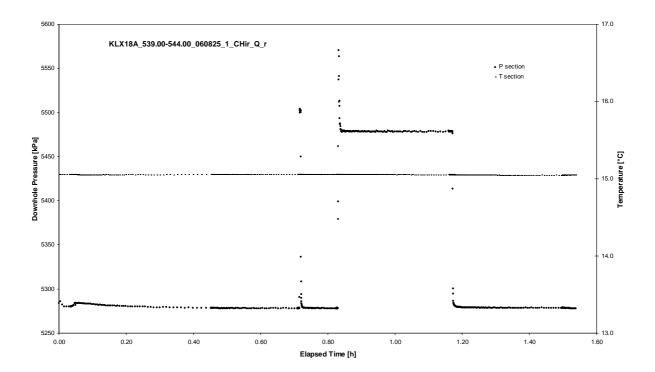
APPENDIX 2-80

Test 539.00 – 544.00 m

Test: 539.00 – 544.00 m

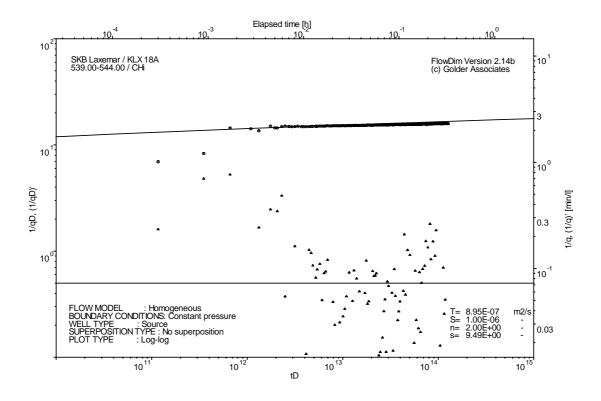


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

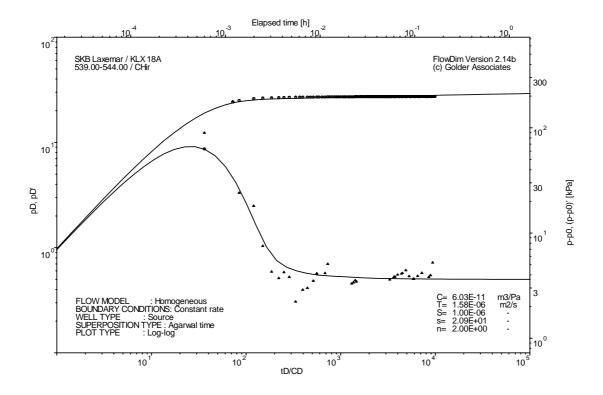
Test: 539.00 – 544.00 m



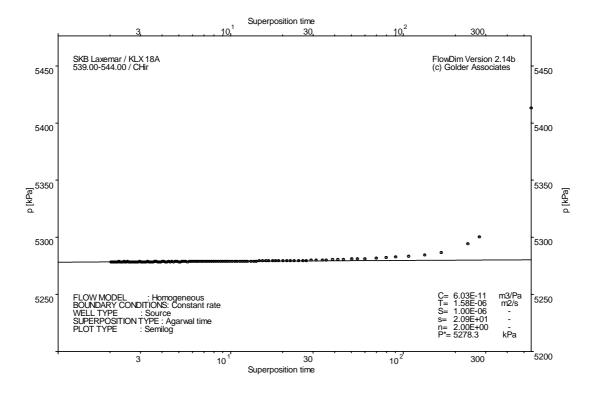
CHI phase; log-log match

Borehole: KLX18A

Test: 539.00 – 544.00 m



CHIR phase; log-log match



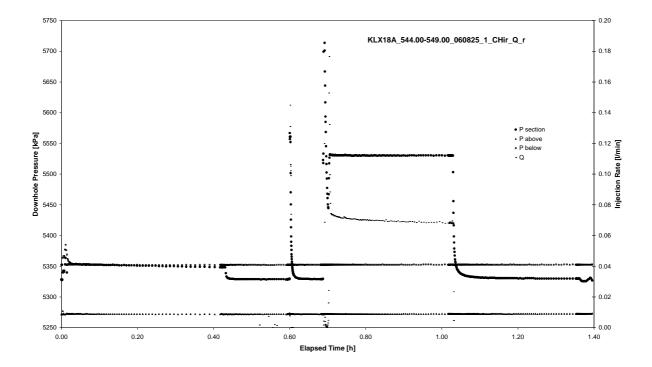
CHIR phase; HORNER match

Test: 544.00 – 549.00 m

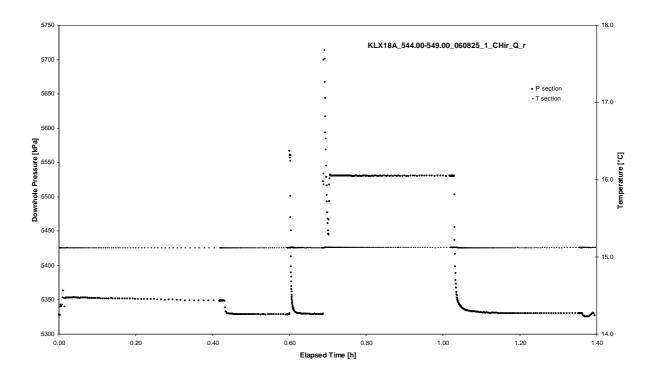
APPENDIX 2-81

Test 544.00 – 549.00 m

Test: 544.00 – 549.00 m

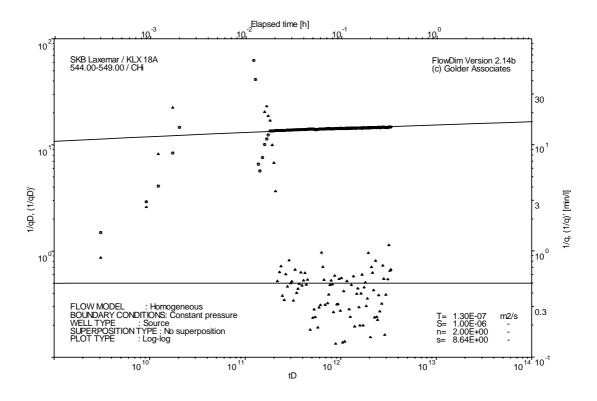


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

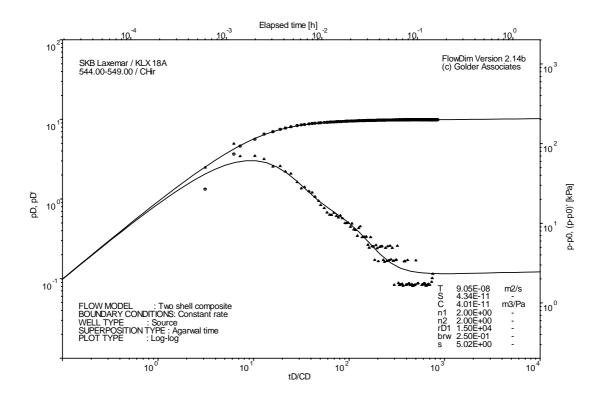
Test: 544.00 – 549.00 m



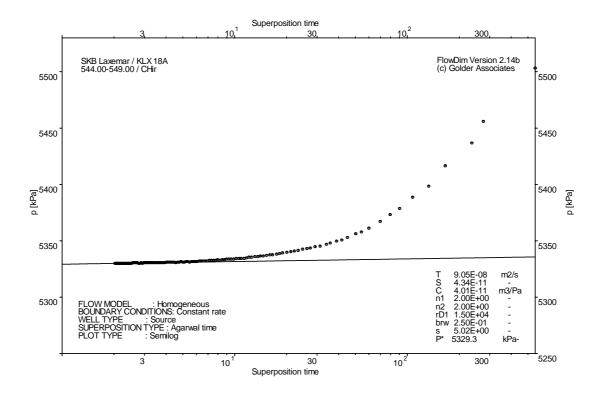
CHI phase; log-log match

Borehole: KLX18A

Test: 544.00 - 549.00 m



CHIR phase; log-log match



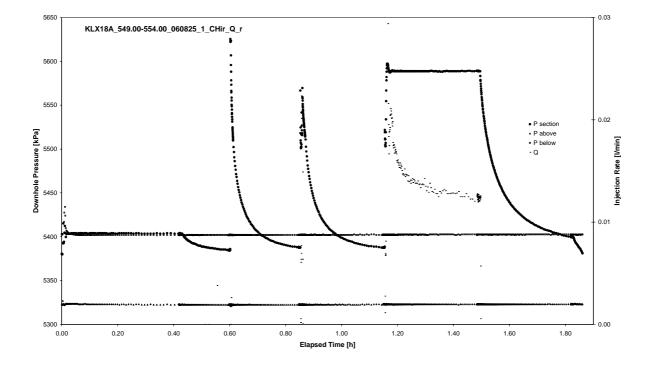
CHIR phase; HORNER match

Test: 549.00 – 554.00 m

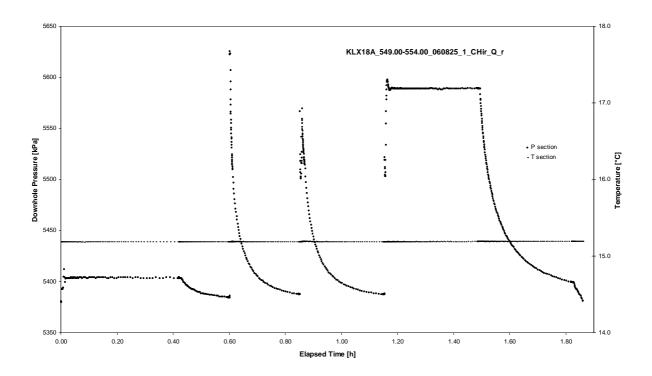
APPENDIX 2-82

Test 549.00 – 554.00 m

Test: 549.00 – 554.00 m

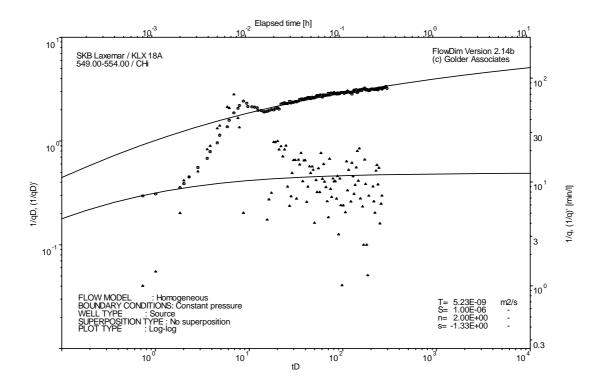


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

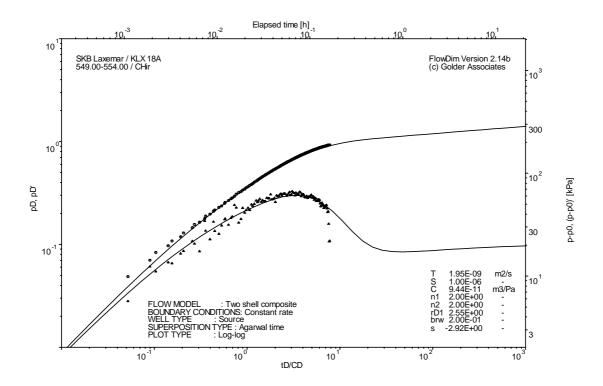
Test: 549.00 – 554.00 m



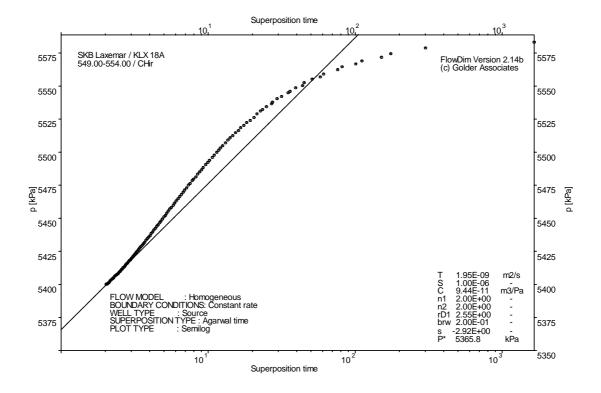
CHI phase; log-log match

Borehole: KLX18A

Test: 549.00 – 554.00 m



CHIR phase; log-log match



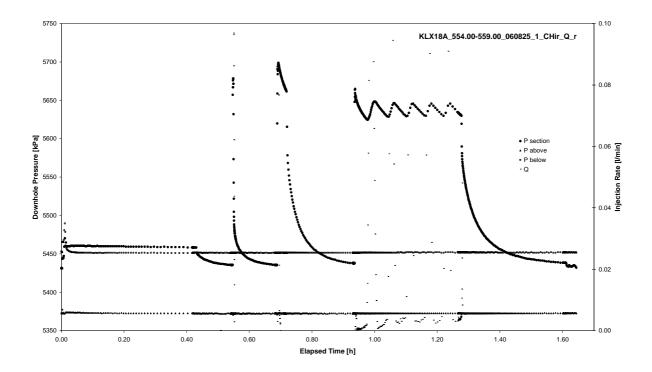
CHIR phase; HORNER match

Test: 554.00 – 559.00 m

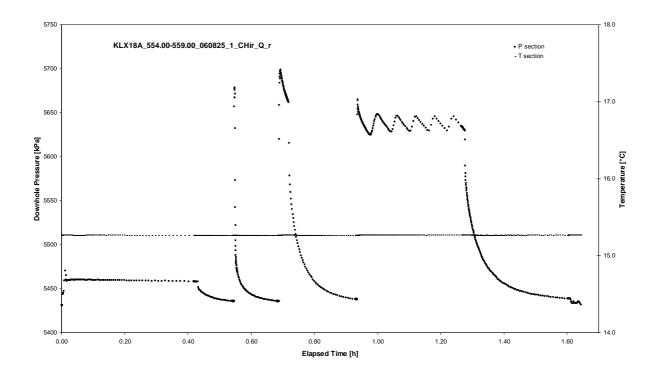
APPENDIX 2-83

Test 554.00 – 559.00 m

Test: 554.00 – 559.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 554.00 – 559.00 m

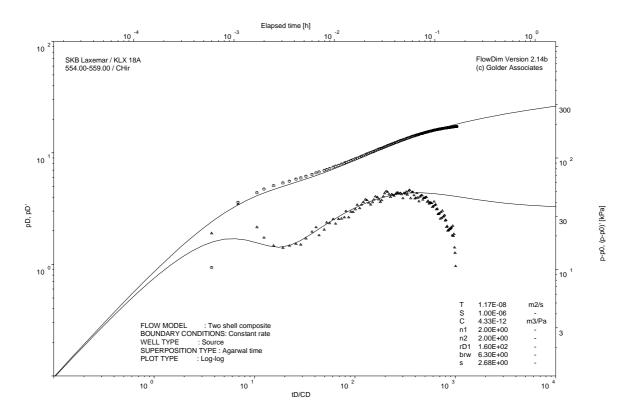
Not Analysed

CHI phase; log-log match

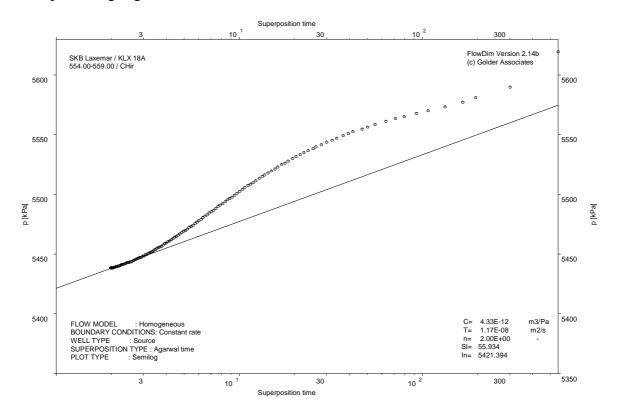
Page 2-83/4

Borehole: KLX18A

Test: 554.00 - 559.00 m



CHIR phase; log-log match



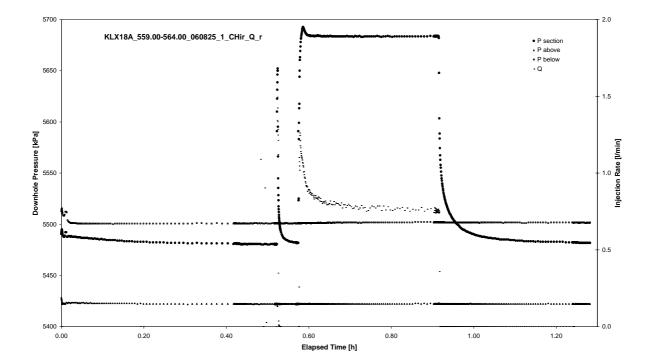
CHIR phase; HORNER match

Test: 559.00 – 564.00 m

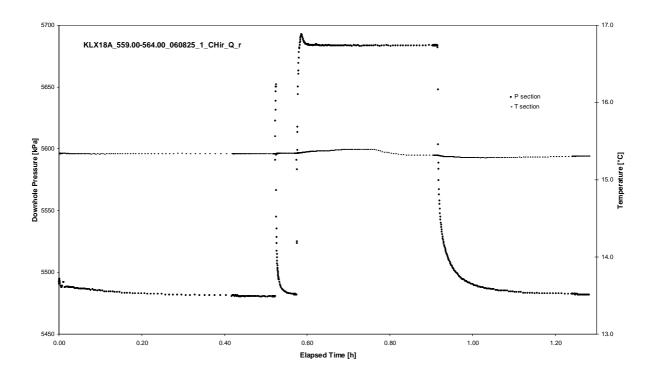
APPENDIX 2-84

Test 559.00 – 564.00 m

Test: 559.00 - 564.00 m

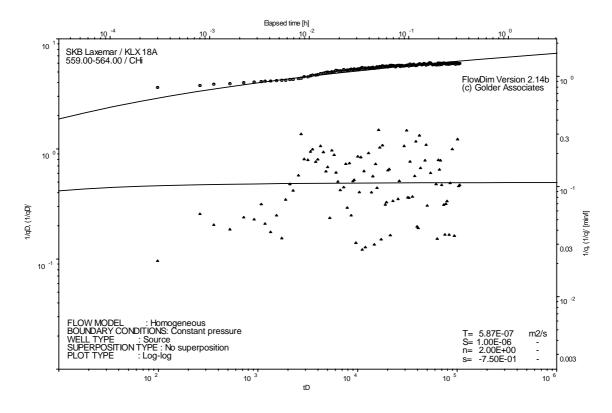


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

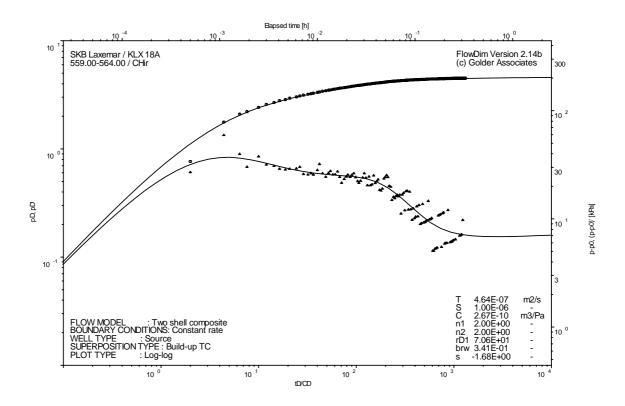
Test: 559.00 – 564.00 m



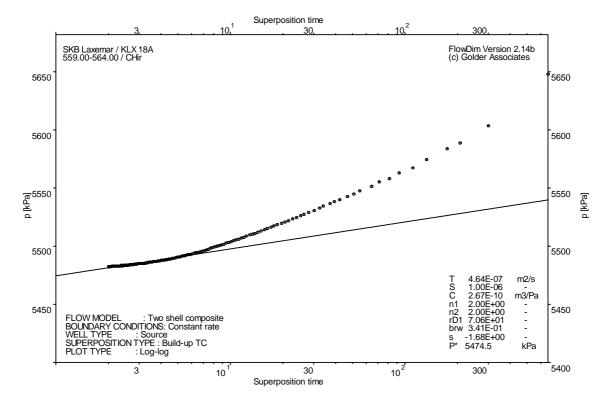
CHI phase; log-log match

Borehole: KLX18A

Test: 559.00 - 564.00 m



CHIR phase; log-log match



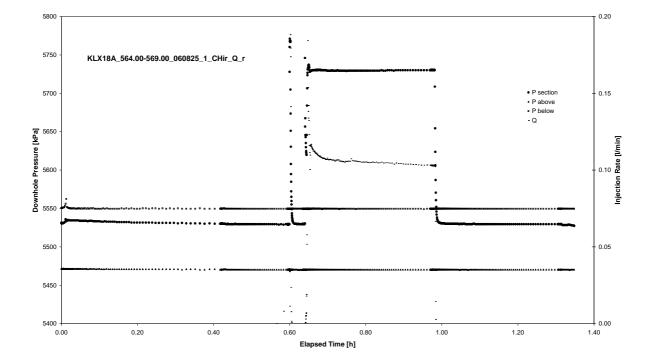
CHIR phase; HORNER match

Test: 564.00 – 569.00 m

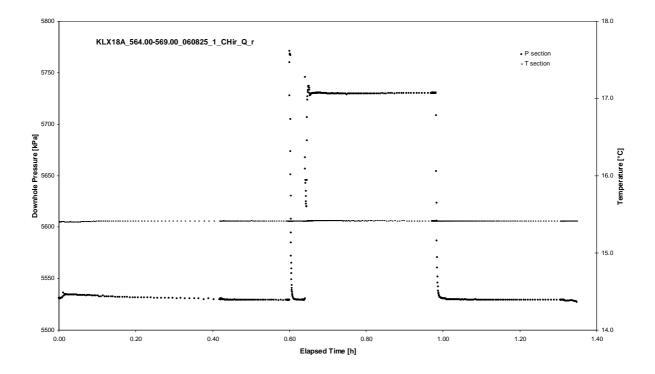
APPENDIX 2-85

Test 564.00 – 569.00 m

Test: 564.00 – 569.00 m

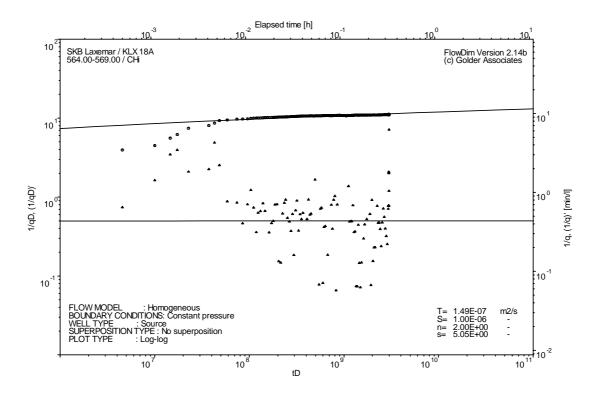


Pressure and flow rate vs. time; cartesian plot



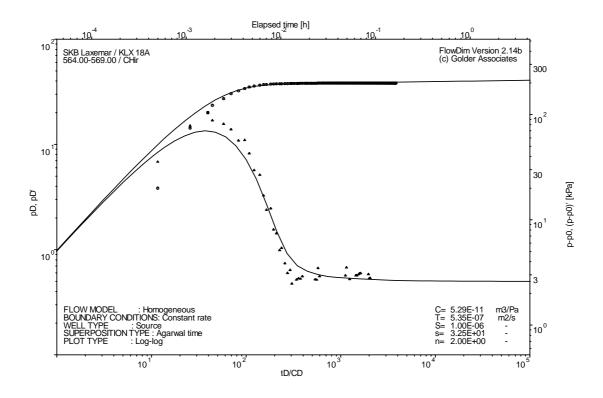
Interval pressure and temperature vs. time; cartesian plot

Test: 564.00 – 569.00 m

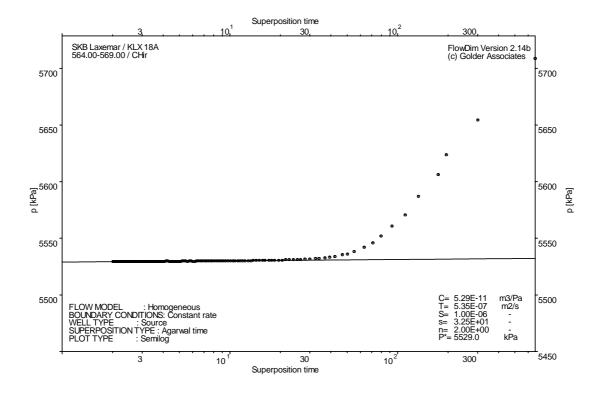


CHI phase; log-log match

Test: 564.00 – 569.00 m



CHIR phase; log-log match



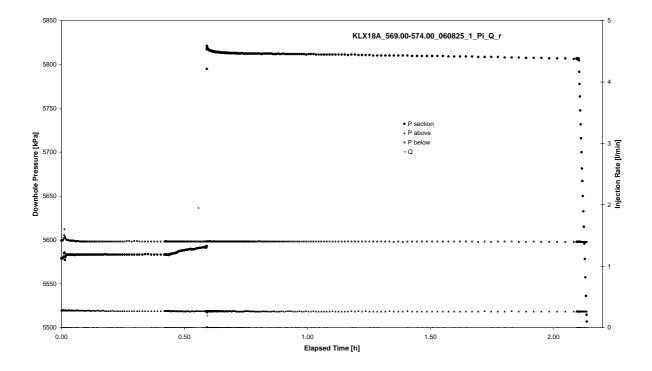
CHIR phase; HORNER match

Test: 569.00 – 574.00 m

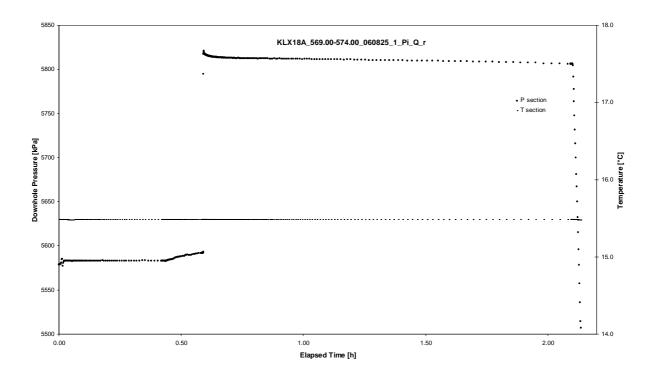
APPENDIX 2-86

Test 569.00 – 574.00 m

Test: 569.00 - 574.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 569.00 – 574.00 m

Not Analysed

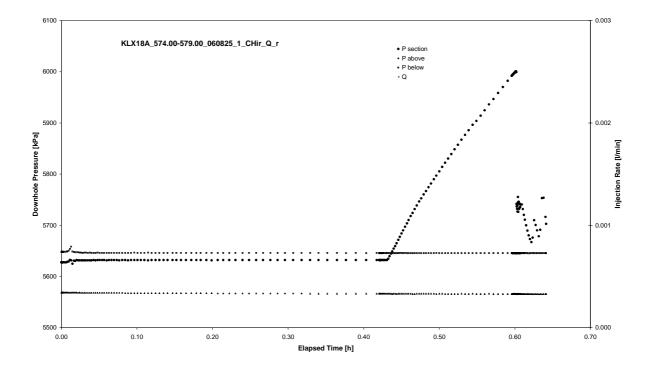
Pulse injection; deconvolution match

Test: 574.00 – 579.00 m

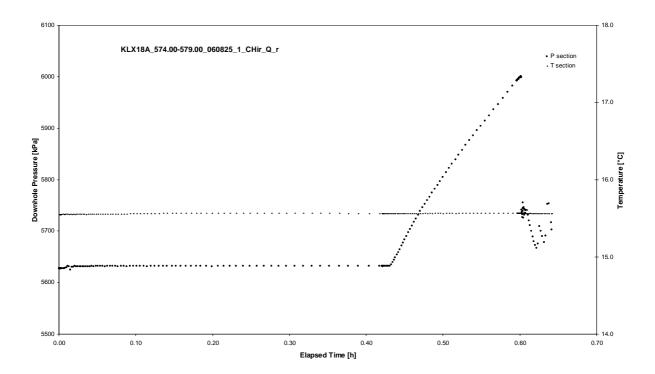
APPENDIX 2-87

Test 574.00 – 579.00 m

Test: 574.00 – 579.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 574.00 – 579.00 m

Not Analysed

CHI phase; log-log match



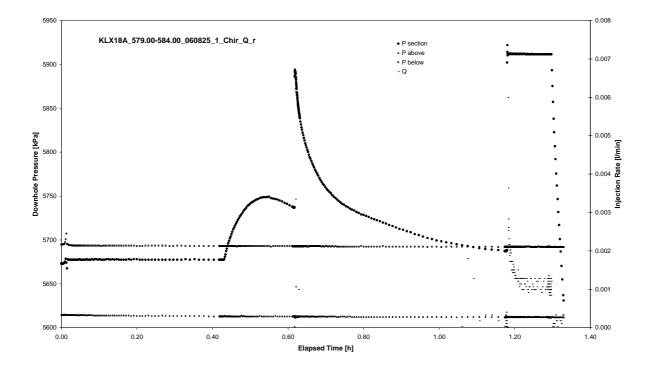
CHIR phase; HORNER match

Test: 579.00 – 584.00 m

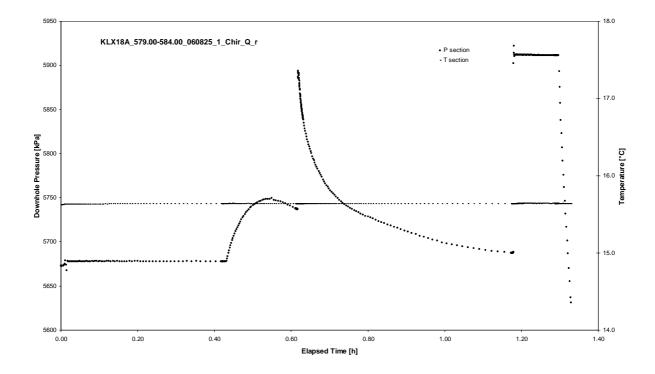
APPENDIX 2-88

Test 579.00 – 584.00 m

Test: 579.00 – 584.00 m

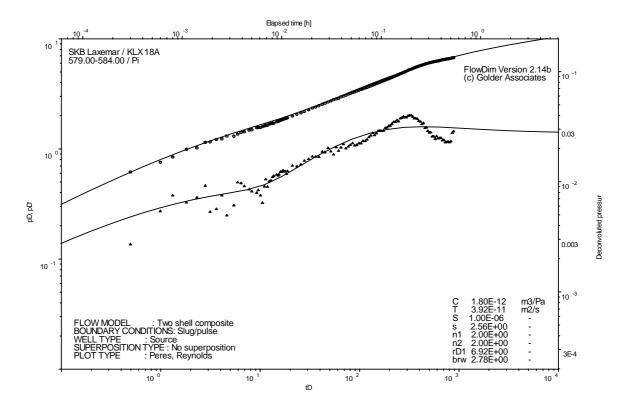


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 579.00 – 584.00 m



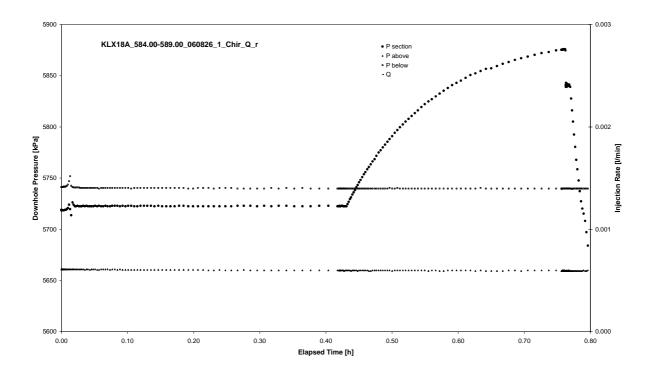
PI phase; deconvolution match

Test: 584.00 – 589.00 m

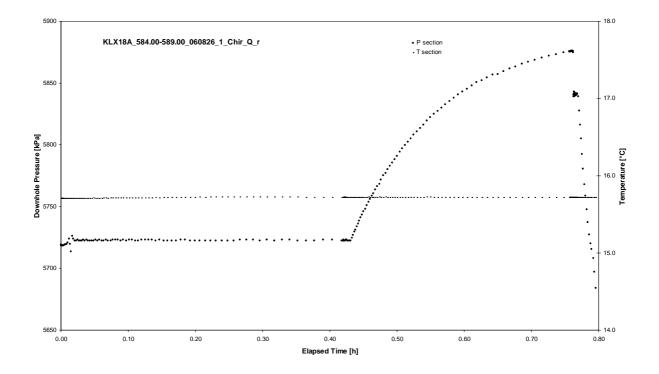
APPENDIX 2-89

Test 584.00 – 589.00 m

Test: 584.00 – 589.00 m



Pressure and flow rate vs. time; cartesian plot

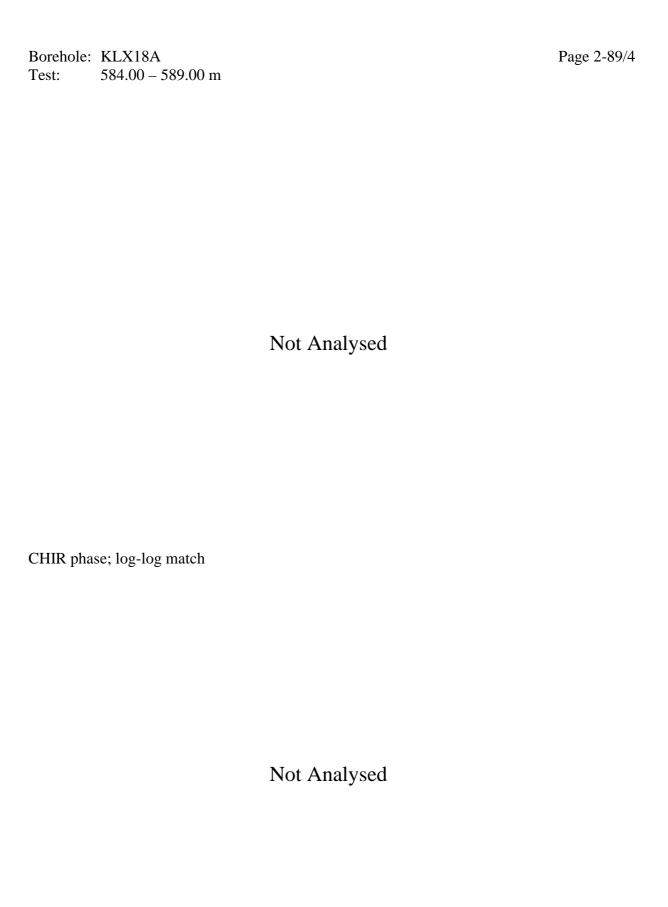


Interval pressure and temperature vs. time; cartesian plot

Test: 584.00 – 589.00 m

Not Analysed

CHI phase; log-log match



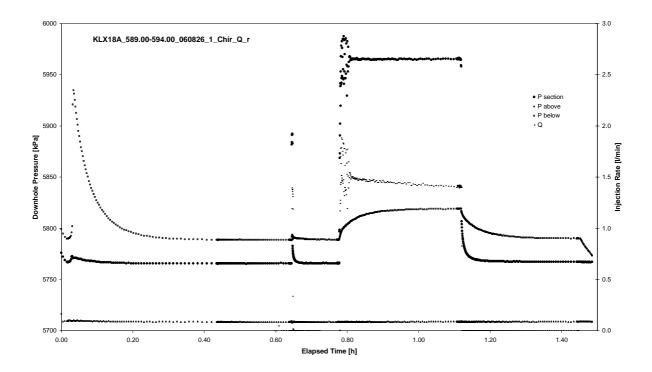
CHIR phase; HORNER match

Test: 589.00 – 594.00 m

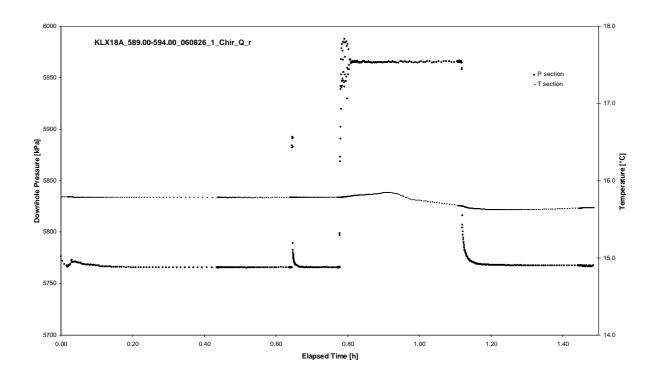
APPENDIX 2-90

Test 589.00 – 594.00 m

Test: 589.00 – 594.00 m

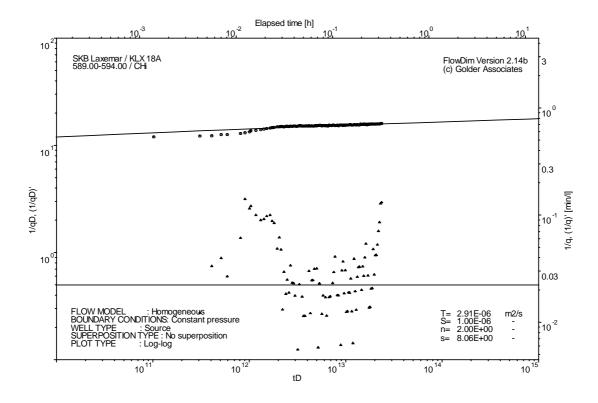


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

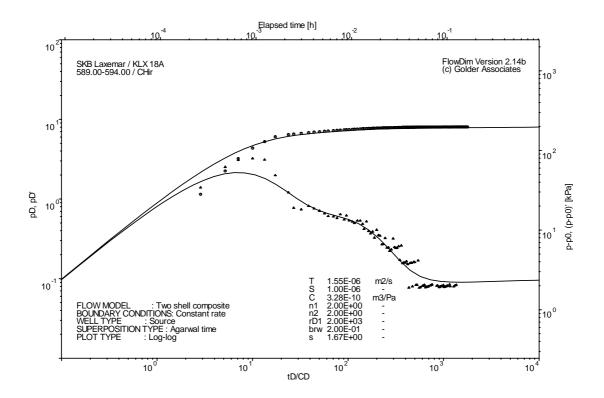
Test: 589.00 – 594.00 m



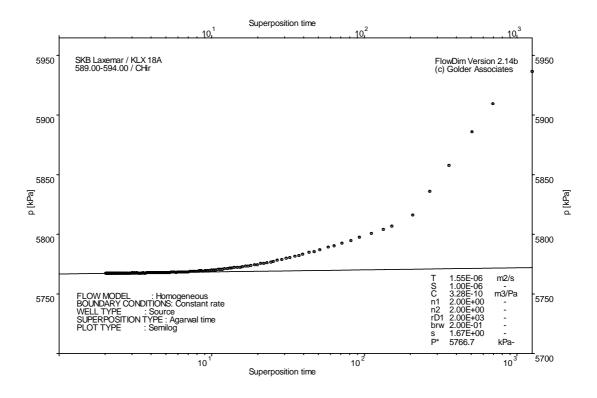
CHI phase; log-log match

Borehole: KLX18A

Test: 589.00 – 594.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

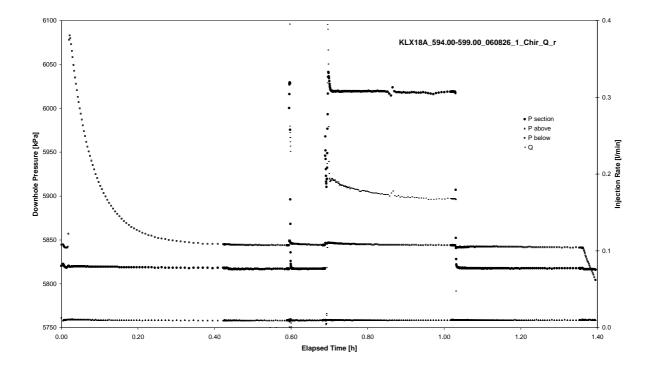
Test: 594.00 – 599.00 m

APPENDIX 2-91

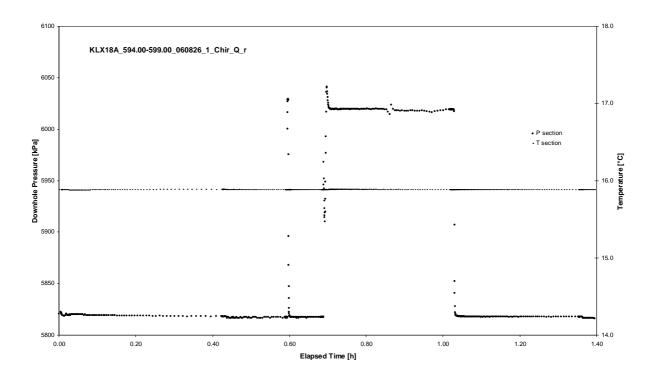
Test 594.00 – 599.00 m

Analysis diagrams

Test: 594.00 – 599.00 m

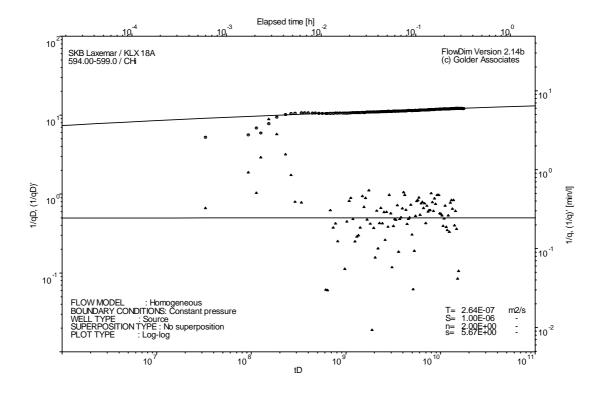


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 594.00 – 599.00 m

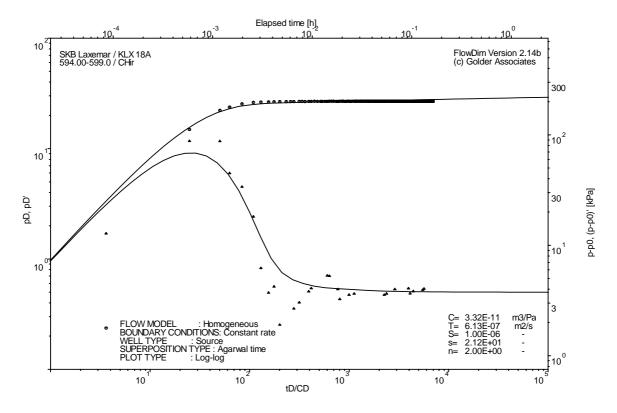


CHI phase; log-log match

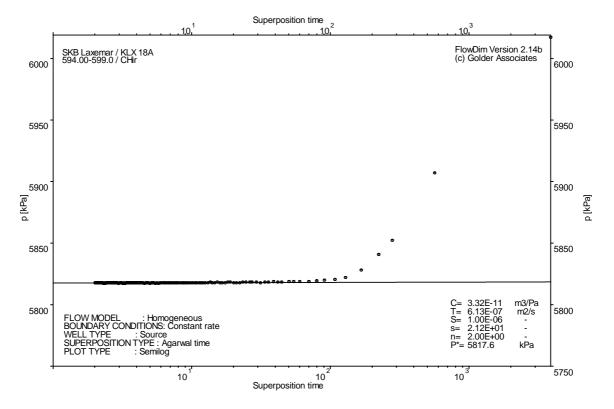
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Borehole: KLX18A

Test: 594.00 – 599.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX18A

APPENDIX 3

Test Summary Sheets

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio				CHi
Area:	Laxema	r Test no:			1
Borehole ID:	KLX18	A Test start:		060815 1	
Test section from - to (m):	104.00.204.00 r	n Responsible for		Poinde	er van der Wal
rest section from - to (m).	104.00-204.00 1	test execution:		Remue	Philipp Wol
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	an Enachescu
		test evaluation:		;=====================================	
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	_
KLX18A_104.00-204.00_060815_1_CHir_Q_r	• P section	p ₀ (kPa) =	1978		
2100 -	• Pabove • Pbelow 17.5 • Q	p _i (kPa) =	1978		
	15.0	$p_p(kPa) =$		p _F (kPa) =	198
1900 -		$Q_p (m^3/s) =$	1.42E-04		
हिं है 1700 -	12.5	tp (s) =		t_F (s) =	1800
(e) 2 1700 -	100 8 6	. ,	1.00E-06	S el S [*] (-)=	1.00E-0
90 (H 1500 -	0 5 2 7.5	$EC_w (mS/m)=$			
1300 -		Temp _w (gr C)=	9.7		
	5.0	Derivative fact.=	0.12	Derivative fact.=	0.0
1100 -	- 2.5				
900 0.00 0.20 0.40 0.60 0.80 1.00 Elapsed T		Results		Results	
		$Q/s (m^2/s) =$	7.0E-06		ſ
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$	9.1E-06		
Log Log plot mon derivates in	on period	Flow regime:	transient	Flow regime:	transient
Elapsed time	[h]	$dt_1 \text{ (min)} =$		dt ₁ (min) =	3.00
10		$dt_2 (min) =$		dt_1 (min) =	6.00
1	10°			$T (m^2/s) =$	6.0E-06
1		$T (m^2/s) =$	1.0E-06	, ,	1.0E-06
	0.3	S (-) =			
101	10 ⁻¹	$K_s (m/s) =$		$K_s (m/s) =$	6.0E-08
		S _s (1/m) =		$S_s (1/m) =$	1.0E-08
	0.03	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	6.8E-09
100	•	C _D (-) =	NA	C_D (-) =	7.5E-0
***	102	ξ (-) =	-1.28	ξ(-) =	-2.1
	0.003	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ³ 10 ⁴	10 ⁵ 10 ⁶ 10 ⁷	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.	
		dt_1 (min) =	0.90	$C (m^3/Pa) =$	6.8E-09
Elapsed time (h)	10, ⁻¹ 10, ⁰	$dt_2 (min) =$	3.00	,	7.5E-0 ⁻
	300	$T_T (m^2/s) =$	7.8E-06		-1.28
Lake of the state	10 2	S (-) =	1.0E-06		
//	100	K_s (m/s) =	7.8E-08		
10 °	30	$S_s(1/m) =$	1.0E-08		
<i></i>	Signer	Comments:			
•	10 '	<u></u>	ranemiceivity of	7 8F-6 m2/s was deri	ved from the
				7.8E-6 m2/s was deri e), which shows the b	
10 -1	3			nge for the interval to	
		estimated to be 5E-6	to 1E-5 m2/s. T	he flow dimension di	splayed during
	10 °			ured at transducer de	
10 ° 10 ¹ tbicb	10 ² 10 ³ 10 ⁴	derived from the CH Horner plot to a valu			ion in the

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxema	r Test no:			
Borehole ID:	KI X184	Test start:			060815 14:05
Test section from - to (m):	204.00-304.00 m	Responsible for test execution:		Reinde	er van der Wal
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	Philipp Wol
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3300	KLX18A_204.00-304.00_060815_1_CHir_Q_r	p_0 (kPa) =	2954		
3100	- 0.18	p _i (kPa) =	2950		
3100	0.16	$p_p(kPa) =$	3150	p _F (kPa) =	295
2900	- 0.14	$Q_p (m^3/s) =$	1.32E-06		
	0.12 Graph	tp (s) =	1800	t_F (s) =	180
2700	P section P above 0.10 &	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2500 -	• P below 9	EC _w (mS/m)=		()	
		Temp _w (gr C)=	11.3		
2300	0.06	Derivative fact.=	0.05	Derivative fact.=	0.0
2100 -	0.04				
1900	-0.02				
0.00 0.20 0.40 0.60 0.80 1.00	1.20 1.40 1.60 1.80 2.00 2.20 Time [h]	Results		Results	
		Q/s $(m^2/s)=$	6.5E-08		
Log-Log plot incl. derivates- f	ow period	$T_{\rm M} (m^2/s) =$	8.4E-08		
		Flow regime:	transient	Flow regime:	transient
Elapsed tir	10,10,10,10,10,10,10,10,10,10,10,10,10,1	$dt_1 \text{ (min)} =$	6.00	$dt_1 (min) =$	1.2
10 '		$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	3.6
	30	$T (m^2/s) =$		$T (m^2/s) =$	1.7E-0
		S (-) =	1.0E-06	\ /	1.0E-0
10 9	101	$K_s (m/s) =$		$K_s (m/s) =$	1.7E-1
and the same of th		$S_s (1/m) =$		$S_s (1/m) =$	1.0E-0
ميره معمسمرون	3 }		NA		1.5E-1
المنبعة المنافذ المناف		$C (m^3/Pa) =$		$C (m^3/Pa) =$	
10-1	100	$C_D(-) =$	NA 0.70	$C_D(-) =$	1.6E-0
:		ξ (-) =	-3.79	ξ (-) =	-3.6
	0.3	- , 2, ,	NA	- , 2, ,	NA
• • • • • • • • • • • • • • • • • • • •	10 ⁶ 10 ⁷ 10 ²	$T_{GRF}(m^2/s) =$	NA NA	$T_{GRF}(m^2/s) =$	NA
10 ⁻² 10 ⁻¹ t	10 ⁰ 10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe		_	1 4
4 a Elapsed tign	ı (h)	dt ₁ (min) =	6.00	σ (m / m α) =	1.5E-1
10 ⁻¹ 10 ⁻⁴ 10 ⁻³ 10 ⁻³		$dt_2 (min) =$		C _D (-) =	1.6E-0
	103	$T_T (m^2/s) =$	1.5E-08		-3.7
	300	S (-) =	1.0E-06		
400		$K_s (m/s) =$	3.0E-09		
100	10 ²	$S_s (1/m) =$	2.0E-07		
ga La Lande Commanda de la Commanda	A CONTRACT OF THE PARTY OF THE	Comments:			
فيحاف فموا	30	5	•	1.5E-8 m2/s was deriv	
بمبعث نزربم	2			e), which shows the b	
101	L 1		ne contidence rai	nge for the interval tr	ansmissivity is
104	101	derivative quality. The estimated to be 8F-9			on dienlayed
101		estimated to be 8E-9	m2/s to 3E-8 m2	2/s. The flow dimensi	
101 100 100	10 ¹ 3	estimated to be 8E-9 during the test is 2.	m2/s to 3E-8 m2 The static pressur		icer depth, was

	Test Sı	ımr	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lax	emar	Test no:			1
Borehole ID:	KIN	√1ΩΛ	Test start:			060815 17:25
Borenole ID.						000013 17.20
Test section from - to (m):	304.00-404.	00 m	Responsible for		Reinde	er van der Wal
Section diameter, 2-r _w (m):	(0.076	test execution: Responsible for		Crist	Philipp Wol
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4300		7.0	p_0 (kPa) =	3923		
4100 -	KLX18A_304.00-404.00_060815_1_CHir_Q_r		p _i (kPa) =	3915		
100	•	100	$p_p(kPa) =$	4114	p _F (kPa) =	3915
3500	•	- 5.0	$Q_p (m^3/s) =$	5.63E-05		
· 1		- 4.0 M)	tp (s) =	1800	t_F (s) =	1800
3700	• P section	4.0 M/l gate/	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	P above P below Q	3.0	EC _w (mS/m)=		(//	
	4	-	Temp _w (gr C)=	12.8		
3300 -		2.0	Derivative fact.=	0.07	Derivative fact.=	0.0
3100		1.0				
	1.00 1.20 1.40 1.60 1.90 ed Time [h]	2.00	Results		Results	
			Q/s $(m^2/s)=$	2.8E-06		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	3.6E-06		
			Flow regime:	transient	Flow regime:	transient
Elapsed tin	ne [h] 10, ⁻¹ 10, ⁰ 10, ¹	_	$dt_1 (min) =$	0.60	$dt_1 (min) =$	0.36
102		-	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	12.00
		10 ⁰	$T (m^2/s) =$		$T (m^2/s) =$	1.5E-0
			S (-) =	1.0E-06	\ /	1.0E-0
10 1		0.3	$K_s (m/s) =$		$K_s (m/s) =$	1.5E-0
			$S_s (1/m) =$		$S_s (1/m) =$	1.0E-0
		10 ⁻¹ [viw]	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	9.6E-10
	•	/q. (1/q)	$C_D(-) =$	NA	a ()	1.1E-0
10 °	ميم ميريون در وهستروري و ميريو	0.03		3.13	5 ()	19.60
**************************************		10 ⁻²	ξ (-) =	3.13	ξ (-) =	13.00
	•		T (2)	NA	- (2)	NA
<u> </u>	10 ⁹ 10 ¹⁰ 10 ¹	0.003	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁷ 10 ⁸ t	10 ⁹ 10 ¹⁰ 10 ¹			NA	$S_{GRF}(-) =$	NA
Log-Log plot incl. derivatives	roccuent nation		D _{GRF} (-) =		D _{GRF} (-) =	INA
Log-Log plot incl. derivatives	- recovery period		Selected represe		_	0.05.40
4 a Elapsed tim	e [h]		$dt_1 (min) =$	0.60	σ (m / m α) =	9.6E-10
	2 10 10		$dt_2 (min) =$		$C_D(-) =$	1.1E-0
102			$T_T (m^2/s) =$	5.1E-06	ξ (-) =	3.13
102		300	a / \			
10		300	S (-) =	1.0E-06		
107		300 10 ²	K_s (m/s) =	1.0E-06		
10			$K_s (m/s) = S_s (1/m) =$			
10			$K_s (m/s) = S_s (1/m) = Comments:$	1.0E-06 2.0E-07		
10 7 10 10		10 ²	$K_s (m/s) = S_s (1/m) = $ Comments: The recommended tr	1.0E-06 2.0E-07	5.1•10-6 m2/s was de	
10		10²	K _s (m/s) = S _s (1/m) = Comments: The recommended tranalysis of the CHi p	1.0E-06 2.0E-07 cansmissivity of 5 bhase, which sho	5.1•10-6 m2/s was de ws the better data and	derivative
and the state of t		10 ²	K _s (m/s) = S _s (1/m) = Comments: The recommended tr analysis of the CHi p quality. The confider	1.0E-06 2.0E-07 cansmissivity of 5 chase, which sho nce range for the	5.1•10-6 m2/s was de ws the better data and interval transmissivi	l derivative ty is estimated to
and the state of t		10 ²	K _s (m/s) = S _s (1/m) = Comments: The recommended tr analysis of the CHi p quality. The confider be 2E-6 m2/s to 8E-6 is 2. The static pressi	1.0E-06 2.0E-07 ransmissivity of 5 phase, which sho nce range for the 6 m2/s. The flow ure measured at 0	5.1•10-6 m2/s was de ws the better data and interval transmissivi dimension displayed transducer depth, was	I derivative by is estimated to during the test derived from
in the state of th	· · · · · · · · · · · · · · · · · · ·	10 ²	K _s (m/s) = S _s (1/m) = Comments: The recommended tr analysis of the CHi p quality. The confider be 2E-6 m2/s to 8E-6 is 2. The static pressi	1.0E-06 2.0E-07 ransmissivity of 5 phase, which sho nce range for the 6 m2/s. The flow ure measured at 0 g straight line ext	5.1•10-6 m2/s was de ws the better data and interval transmissivit dimension displayed	I derivative by is estimated to during the test derived from

	PARARA	ary Sheet				
Oskarshamn site investiga	ation <u>T</u>	est type:[1]			CHi	
Laxe	mar T	est no:				
KLX	(18A T	est start:		060815 2		
404.00-504.0				Reinde	er van der Wal Philipp Wol	
0.	.076 R	Responsible for		Crist	an Enachesc	
	01010					
			4005		I	
KLX18A_404.00-504.00_060815_1_CHiir_Q_r						
				(1.5.)	100	
:					488	
					180	
-	-5.0 gg S		1.00E-06	S el S [*] (-)=	1.00E-0	
P section P above P holow						
- Q	_ _{3.0} T	emp _w (gr C)=	14.5			
	D	erivative fact.=	0.06	Derivative fact.=	0.0	
	- 1.0					
1.00 1.20 1.40 1.50 1.80	l	Pesults		Results		
	<u> </u>		3.2F-06		<u> </u>	
ow period						
- Periou					transient	
e[h]				_	1.2	
	i 📙				15.0	
	10°				1.2E-0	
		,		\ /	1.2E-0 1.0E-0	
	0.3	7.7		` '		
	_				1.2E-0	
	- E				1.0E-0	
	. 5			a ()	2.1E-0	
المنفيذ مندنية	_				2.3E-0	
	ξ 10 ⁻²	(-) =	3.66	ξ(-) =	13.4	
		2		2		
					NA	
10 ^s 10 ¹⁰ 10 ¹¹	_				NA	
					NA	
recovery period	0.000			_		
s flat		,		σ (m / m α) =	2.1E-0	
10,2 10,1	_				2.3E-0	
					3.6	
30	_					
5-11	0 ²					
•	S	$S_s(1/m) =$	2.0E-07			
30	C R Bal	comments:				
·.	Ŝ T		•			
10						
Mary Park						
]3	is	2. The static press	ure measured at t	ransducer deptn, was	derived from	
10 ² 10 ³ 10 ² 10	th	 The static press CHir phase using 		ransducer depth, was rapolation in the Hor		
	KLXINA.494.09-594.00 660815.1, CHr. Q. r	KLX18A T 404.00-504.00 m F to 0.076 F to 100	$\begin{array}{c} p_{\rho}(KPA) = \\ p_{\rho}(KPA) = \\ q_{\rho}(m^3/s) = \\ tp(s) = \\ SelS(-) = \\ EC_{w}(mS/m) = \\ Temp_{\mathsf{w}}(grC) = \\ Derivative \; fact. = \\ Results \\ Q/s \; (m^2/s) = \\ Town \; regime : \\ dt_1 \; (min) = \\ dt_2 \; (min) = \\ T \; (m^2/s) = \\ S \; (-) = \\ K_s \; (m/s) = \\ S \; (-) = \\ K_s \; (m/s) = \\ S \; (-) = \\ K_s \; (m/s) = \\ Sgrf(-) = \\ Dgrf(-) = \\ Dgrf(-) = \\ Selected represe \; dt_1 \; (min) = \\ dt_2 \; (min) = \\ Tr \; (m^2/s) = \\ Sgrf(-) = \\ Dgrf(-) = \\ Selected represe \; dt_1 \; (min) = \\ dt_2 \; (min) = \\ Tr \; (m^2/s) = \\ Sgrf(-) = \\ Tr \; (m^2/s) = \\ Tr \; ($	KLX18A Test start: 404.00-504.00 m Responsible for test execution: 0.076 Responsible for test evaluation: Flow period Indata P_0 (kPa) = 4895 P_0 (kPa) = 5081 P_0 (kPa) = 100E-06 P_0 (Residence Reindence Reindence Reindence Reindence Reindence Reindence Reindence Recovery period Recovery period Indata Inda	

			mary Sheet			
Project:	Oskarshamn site investig	gatior	Test type:[1]			CHi
Area:	Lax	cema	r Test no:			1
Borehole ID:	KI	X18/	Test start:	060816.0		060816 07:34
Test section from - to (m):	504.00-604	.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for		Crist	ian Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	•
6600	KLX18A_504.00-604.00_060816_1_CHir_Q_r	6.0	$p_0 (kPa) =$	5886		
6400		5.0	p _i (kPa) =	5864		
6200			$p_p(kPa) =$		p _F (kPa) =	586
-		4.0	$Q_p (m^3/s)=$	4.25E-05		
g 6000		Rate [/min]	tp (s) =		t _F (s) =	180
5500	•	on Rate [S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5600 ·	-	Injectiv	EC _w (mS/m)=			
5400	P section P above P below	2.0	Temp _w (gr C)=	16.0		
5200	٠٥	1.0	Derivative fact.=	0.05	Derivative fact.=	0.0
5000	÷	1.0				
4800		2.20	Results		Results	
			Q/s $(m^2/s)=$	2.1E-06		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	2.7E-06		
Log-Log plot ilici. delivates- ili	ow periou		Flow regime:	transient	Flow regime:	transient
4 3 Elapsed time	[h] 10.1 10.0		dt ₁ (min) =		dt ₁ (min) =	0.3
101		1	` ′			1.8
0 00 00 00 00 00 00 00 00 00 00 00 00 0		0.3				2.7E-0
			$T (m^2/s) =$		$T (m^2/s) =$	1.0E-0
10 7		10-1	S (-) =	1.0E-06	` '	
	٠		$K_s (m/s) =$		$K_s (m/s) =$	2.7E-0
		0.03	$S_s (1/m) =$		$S_s(1/m) =$	1.0E-0
•		10-2	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.6E-0
10-1	A A A A A A A A A A A A A A A A A A A	" ;	$C_D(-) =$	NA	$C_D(-) =$	1.7E-0
		0.003	ξ (-) =	-1.41	ξ (-) =	0.8
	•	•	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ² 10 ³	10 ⁴ 10 ⁵ 10 ⁶	10 ⁻³	$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA	$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA
tD			$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives-	rocovery period		Selected represe			INA
Log-Log plot incl. derivatives-	recovery periou					1 65 0
Elapsed time	a[h]			0.33	$C (m^3/Pa) =$	1.6E-0
10	u , , , , , , 10, , , , , , , 10,	7	$dt_2 (min) =$		$C_D(-) =$	1.7E-0
		10 ³	$T_T (m^2/s) =$	2.7E-06		0.8
101			S (-) =	1.0E-06		
in the second se		102	$K_s (m/s) =$	5.4E-07		
		,	$S_s(1/m) =$	2.0E-07		
10"		9	Comments:		NATE & 2/	1.6
	The state of the s	101 8			2.7E-6 m2/s was derive), which shows the l	
		+ '			e), which shows the tage for the interval tra	
10-1	n. 4,4			m2/s to 5E-6 m2	2/s. The flow dimensi	on displayed
1						
		10°	during the test is 2.			
10 ³ 10 ⁷ 10.00	102 103 1	100		ir phase using st	re measured at transd raight line extrapolati	

	Test Sumi	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxema	Test no:			1
Borehole ID:	KLX18A	Test start:			060816 19:58
Test section from - to (m):	104.00-124.00 m	Responsible for		Reinde	er van der Wal
Tool oodion from to (m).	10 1.00 12 1.00 11	test execution:		rtomac	Philipp Wol
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachescı
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Linear plot & and p		Indata		Indata	
		p ₀ (kPa) =	1202	inuata	1
KLX18A_104.00-124.00_060816_1_CHir_Q_r	• P section	$p_0 (kPa) = p_i (kPa) =$			
1400 -	P pabove P pelow 14.0		1204	n (IsDa)	120
1350	120	$p_p(kPa) =$		p _F (kPa) =	120
1300		$Q_p (m^3/s) =$	1.58E-04		
0 1220 -	[Main]	tp (s) =		t _F (s) =	120
1200	80 88 0 80 8	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
200 1200	13 g L	EC _w (mS/m)=			
1150 -		Temp _w (gr C)=	8.6		
1100	14.0	Derivative fact.=	0.05	Derivative fact.=	0.0
1050	2.0				
0.00 0.20 0.40 0.80 Elapsed	0.80 1.00 1.20 1.40 Time [h]	Results		Results	
		Q/s $(m^2/s)=$	7.7E-06		
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$	8.1E-06		
<u> </u>	•	Flow regime:	transient	Flow regime:	transient
10. ⁴ 10. ³ Elapsed time	• [h]	$dt_1 \text{ (min)} =$		$dt_1 (min) =$	0.30
101	10*1	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	1.50
A - 0 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		$T (m^2/s) =$		$T (m^2/s) =$	1.0E-0
	0.03	S (-) =	1.0E-06	, ,	1.0E-0
100		$K_s (m/s) =$		$K_s (m/s) =$	5.2E-0
	10°2	$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0
(Art)			0.0L-00		5.3E-0
	0.003	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.8E-0
10-1		$C_D(-) =$		$C_D(-) =$	0.2
	10 ⁻³	ξ (-) =	-1.27	ξ (-) =	0.2
	3E-4	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ³ 10 ⁴	10 ⁵ 10 ⁶ 10 ⁷	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran	neters.	
		dt_1 (min) =	0.36	$C (m^3/Pa) =$	5.3E-0
Elapsed tin	ne [h] ₂	dt_2 (min) =	2.10	C _D (-) =	5.8E-0
10	10 ³	$T_T (m^2/s) =$	8.1E-06		-1.2
	[10	S (-) =	1.0E-06		
101		$K_s (m/s) =$	1.6E-06		
٠ ١٠٠٠٠	102	$S_s(1/m) =$	2.0E-07		
	Ç., , ,	Comments:			<u> </u>
100			ansmissivity of 8	3.1E-6 m2/s was deriv	ved from the
	101 8	analysis of the CHi p	hase (inner zone), which shows the b	est derivative
10-1	1.00			or the interval transm	
•	10°			2/s. The flow dimensi	
				e measured at transdoraight line extrapolati	
10 ^d 10 ^d	10 ² 10 ³ 10 ⁴	plot to a value of 1,2			die Horne
		•			

	Test S	umi	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			CHi
Area:	Lax	ema	Test no:			1
Borehole ID:	KI	X184	Test start:			060816 22:02
Test section from - to (m):	124.00-144.	.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for		Cristi	ian Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
1650		4.0	p_0 (kPa) =	1395		
1600 - KLX18A_124.00-144.00_060816_1_CHir_Q_r	P section P above		p _i (kPa) =	1400		
1550 -	• P below • Q	3.0	$p_p(kPa) =$	1601	p _F (kPa) =	1404
1500	Market State of the State of th	3.0	$Q_p (m^3/s) =$	4.65E-05		
(4) 1450 e.m.	:	Ē	tp (s) =		t_F (s) =	1200
1400		- 20 W	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
80 8 1350 -		Injectio	$EC_w (mS/m)=$			
1300			Temp _w (gr C)=	8.8		
1250 -		- 1.0	Derivative fact.=	0.04	Derivative fact.=	0.02
1200						
1150						
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 1.40 Time (h)	4.0	Results	I	Results	
			$Q/s (m^2/s) =$	2.3E-06		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	2.4E-06		
<u> </u>	•		Flow regime:	transient	Flow regime:	transient
10. ⁻⁴	(h) 10. ⁻¹ 10.0		$dt_1 \text{ (min)} =$		$dt_1 (min) =$	0.90
102		1	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.00
	•	10 ⁰	2		2	1.0E-05
101	<u>.</u>	-	$T (m^2/s) = S (-) =$	1.0E-06	\ /	1.0E-06
10	•	10-1	$K_s (m/s) =$		$K_s (m/s) =$	5.1E-07
	•	10	$S_s (1/m) =$		$S_s(1/m) =$	5.0E-08
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 ** <u>*</u> *		,			1.6E-09
	an a an a san a sa	10 ⁻²	$C (m^3/Pa) =$	NA NA	$C (m^3/Pa) =$	
		1	$C_D(-) =$	NA 5.70	$C_D(-) =$	1.7E-0
10 ⁻¹	* * * *		ξ (-) =	5.76	ξ (-) =	2.00
		10 ⁻³	T (2/)	NA	T (21)	NA
			$T_{GRF}(m^2/s) =$	NA NA	$T_{GRF}(m^2/s) =$	NA NA
10 ⁹ 10 ¹⁰ tD	10 ¹¹ 10 ¹² 10		$S_{GRF}(-) =$		$S_{GRF}(-) =$	
			D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe		_	4050
,5 ,4 Elapsed time	ſħl -		$dt_1 \text{ (min)} =$	0.33	0 (III /I u) =	1.6E-09
10 ² 10, 5 Eagsed time]	$dt_2 (min) =$		C _D (-) =	1.7E-0
		300	$T_T (m^2/s) =$	5.1E-06		5.76
٠.	3.6.8 MO 100 MO	1	S (-) =	1.0E-06		
,		10 ²	$K_s (m/s) =$	1.0E-06		
10	`		$S_s (1/m) =$	2.0E-07		
	:4	30	Comments:			
<u> </u>	*	10 ¹			5.1E-6 m2/s was deriv	
· ·		טרן (analysis of the CHi r	hase, which sho	ws the better data and	
10 "	, , ,					erio ocalii - 1 ·
	and the second	3	quality. The confider	nce range for the	interval transmissivit	
	A STATE OF THE STA	3	quality. The confidence be 2E-6 m2/s to 8E-6	nce range for the 5 m2/s. The flow	interval transmissivit dimension displayed	during the test
10 0 .	102 103 10	3 10 ⁰	quality. The confider be 2E-6 m2/s to 8E-6 is 2. The static press	nce range for the 6 m2/s. The flow ure measured at the granght line ext	interval transmissivit	during the test derived from

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio	n Test type:[1]			CHi
Area:	Laxema	ar Test no:			1
Borehole ID:	KI X18	A Test start:			060816 23:59
Test section from - to (m):	144.00-164.00 r	n Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata	1500	Indata	
KLX18A_144.00-164.00_060816_1_CHir_Q_r	● P section 2.0	$p_0 (kPa) =$ $p_i (kPa) =$	1590 1592		
1800 -	• P above • 1.8 • P below • Q	$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	159
1750 -	1.6		6.63E-06		139
1700	. 14	$Q_{p} (m^{3}/s) = $ $tp (s) =$		t _F (s) =	120
(E) 1650	12 2			S el S [*] (-)=	1.00E-0
1600	1.0	S el S (-)= EC _w (mS/m)=	1.00E-00	S el S (-)=	1.00L-0
1550	0.8	Temp _w (gr C)=	9.1		
1500 -	as as	Derivative fact.=		Derivative fact.=	0.0
1450 -	- 0.4	Donvativo laot.	0.03	Donvativo laot.	0.0
1400	0.2				
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 1.40 Time [h]	Results		Results	
		Q/s $(m^2/s)=$	3.3E-07		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	3.4E-07		
0 01	•	Flow regime:	transient	Flow regime:	transient
10. ⁻⁴ 10. ⁻³ Elapsed tim	e [h]	$dt_1 (min) =$	0.39	$dt_1 \text{ (min)} =$	0.1
10'	3	$dt_2 (min) =$		$dt_2 \text{ (min)} =$	2.1
		$T (m^2/s) =$	2.5E-07	$T (m^2/s) =$	6.3E-0
	10°	S (-) =	1.0E-06	, ,	1.0E-0
100		K_s (m/s) =	1.2E-08	$K_s (m/s) =$	3.1E-0
	0.3	$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-0
ē	101	ੁੱ C (m³/Pa) =	NA	$C (m^3/Pa) =$	3.9E-1
10 ⁴		² / ₂ C ^D (-) =	NA	C_D (-) =	4.3E-0
10	0.03	ξ (-) =	-1.81	ξ (-) =	5.0
	10-2	2	NIA.	2	N 1 A
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹ 10 ² tt	10 ³ 10 ⁴ 10 ⁵	$S_{GRF}(-) =$	NA NA	$S_{GRF}(-) =$	NA
Log-Log plot incl. derivatives-	rocovery period	D _{GRF} (-) = Selected represe		D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	dt ₁ (min) =	0.39		3.9E-1
Elapsed time (h)	10 ⁻¹	$dt_1 \text{ (min)} = $ $dt_2 \text{ (min)} = $		$C (m^3/Pa) = C_D (-) =$	4.3E-0
10 2	74, 74,	$T_T (m^2/s) =$	2.5E-07		-1.8
	10 3	S(-) =	1.0E-06		-1.0
	300	$K_s (m/s) =$	5.0E-08		-
10 ¹		$S_s(1/m) =$	2.0E-07		
	10 ²	Comments:	2.02 07	<u> </u>	
		<u>B</u>	ransmissivity of 3	2.5E-7 m2/s was deri	ved from the
10.0	30	d	•	e), which shows the b	
	10 1	stabilization. The co	nfidence range fo	or the interval transm	issivity is
• • • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·			2/s. The flow dimens	
	3			re measured at transd raight line extrapolati	
10 ¹ 10 ²	10 3 10 4 10 5	plot to a value of 1,5		charapoint	and Horne

	Test	t Sumn	nary Sheet			
Project:	Oskarshamn site inve	estigation	Test type:[1]			CHi
Area:		Laxemar	Test no:			
Borehole ID:		KI X18A	Test start:			060817 06:38
Test section from - to (m):	164.00-1	184.00 m	Responsible for test execution:		Reinde	er van der Wa Philipp Wol
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	an Enachesc
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata	1770	Indata	ı
		0.05 section	p ₀ (kPa) = p _i (kPa) =	1779 1788		
2000 -	P P		$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	180
1960 -		+ 0.04	•	1.83E-07		100
1900	/		$Q_p (m^3/s) = $ $tp (s) =$		t _F (s) =	120
1850 -		Me [Vmin]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
1800		Injection R	EC _w (mS/m)=	1.002 00	3 el 3 (-)=	1.002
1750 -	\\	+0.02 €	Temp _w (gr C)=	9.4		
1700 -	Market Market Street Control of the	0.01	Derivative fact.=		Derivative fact.=	0.0
1600 -		- 0.01				
0.00 0.20 0.40 0.60 0.80	1,00 1,20 1,40 1,50	0.00				
Elapsed	Time [h]		Results		Results	ı
			Q/s $(m^2/s)=$	8.7E-09		
og-Log plot incl. derivates- fl	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	9.1E-09		
Elapsed time	[r] e		Flow regime:	transient	Flow regime:	transient
101	19.2		$dt_1 (min) =$		$dt_1 (min) =$	1.8 9.0
	· · · · · · · · · · · · · · · · · · ·	10 ²	$dt_2 (min) =$		$dt_2 (min) =$	8.2E-0
المعمد معمد عدوره	and the state of t		T (m2/s) = S (-) =	1.0E-06	T (m2/s) = S (-) =	1.0E-0
100	24.2	30	$K_s (m/s) =$		$K_s (m/s) =$	4.1E-1
		101	$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0
		() [min/l]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.6E-1
•		3 1/4, (1/6	$C_D(-) =$	NA	$C_D(-) =$	6.1E-0
1011			ξ (-) =	-0.62		0.2
		10°				
		0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁰ 10 ¹	10 ² 10 ³	104	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
og-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	_	
			dt_1 (min) =	1.80	0 (III /I u) =	5.6E-1
_	- 0-1					6.1E-0
10 10 10 Elapsed time	e ₂ [h] 10, ⁻¹ 10, ⁰	<u> </u>	$dt_2 (min) =$		C_D (-) =	
	则 10 ⁻¹ 10 ⁰	300	$T_T (m^2/s) =$	8.2E-09	ξ (-) =	
	3FN 10. ⁴ 10.0	300	$T_T (m^2/s) = S (-) =$	8.2E-09 1.0E-06	ξ (-) =	
10 10 10 10	. 10		$T_T (m^2/s) = S (-) = K_s (m/s) =$	8.2E-09 1.0E-06 1.6E-09	ξ (-) =	
	EN 10 ⁻¹ 10 ⁰		$T_T (m^2/s) = S (-1) = K_s (m/s) = S_s (1/m) = S_s ($	8.2E-09 1.0E-06	ξ (-) =	
10 10 10	. 10	10 ²	$T_T (m^2/s) = S (-) = K_S (m/s) = S_S (1/m) = Comments:$	8.2E-09 1.0E-06 1.6E-09 2.0E-07	ξ (-) =	0.2
10 10 10 10		10 ²	$T_T (m^2/s) =$ $S (\cdot) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended tr	8.2E-09 1.0E-06 1.6E-09 2.0E-07	ξ (-) = 3.2E-9 m2/s was deriv	0.2
10 10 10		10 ²	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended translysis of the CHir confidence range for	8.2E-09 1.0E-06 1.6E-09 2.0E-07 ansmissivity of 8 phase, because of the interval trans	ξ (-) = 3.2E-9 m2/s was derive f its better data quality smissivity is estimate	ved from the ty. The d to be 5E-9
10 10 10		30 [ea/0.004] (Odd	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended translysis of the CHir confidence range for m2/s to 1E-8 m2/s. The m2/s.	8.2E-09 1.0E-06 1.6E-09 2.0E-07 ansmissivity of 8 phase, because of the interval transfire flow dimensi	ξ (-) = 3.2E-9 m2/s was derive f its better data qualismissivity is estimate on displayed during t	ved from the ty. The d to be 5E-9 he test is 2. The
10 10 10		90 [ed] (004d)	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended translysis of the CHir confidence range for m2/s to 1E-8 m2/s. To static pressure measurements.	8.2E-09 1.0E-06 1.6E-09 2.0E-07 ansmissivity of 8 phase, because of the interval transfer flow dimensioned at transducer	ξ (-) = 3.2E-9 m2/s was derive f its better data quality smissivity is estimate	ved from the ty. The d to be 5E-9 he test is 2. The from the CHir

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site invest	igation	Test type:[1]			CHi
Area:	La	xemar	Test no:			
Doroholo ID:	1/2	I V40A	Took oko wh			000047.00.00
Borehole ID:	K	LXT8A	Test start:			060817 09:06
Test section from - to (m):	184.00-20	4.00 m	Responsible for		Reinde	er van der Wal
Section diameter, 2-r _w (m):		0.076	test execution: Responsible for		Crist	Philipp Wol
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
2250		0.014	p_0 (kPa) =	1975		
2200	KLX18A_184.00-204.00_060817_1_CHir_Q_r		p _i (kPa) =	1984		
2150 -		0.012	$p_p(kPa) =$	2186	p _F (kPa) =	199
2100	P section	0.010	$Q_p (m^3/s) =$	8.27E-08		
₹ 2050 ·	P above P below Q	- 0.008 [wiw]	tp (s) =	1200	t _F (s) =	120
2000		Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
1950		0.000 up	$EC_w (mS/m) =$		3 3. 3 ()	
1900	1300		Temp _w (gr C)=	9.7		
	:	0.004	Derivative fact.=	0.15	Derivative fact.=	0.0
1800		0.002				
1750		0.000				
0.00 0.20 0.40 0.60 0.80 Elapsed	1.00 1.20 1.40 1.60 I Time [h]	1.80	Results	•	Results	•
			Q/s $(m^2/s)=$	4.0E-09		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	4.2E-09		
			Flow regime:	transient	Flow regime:	transient
Elapsed tim	ie [h]		$dt_1 (min) =$	0.54	dt_1 (min) =	5.4
10 1	_	300	$dt_2 (min) =$	12.00	dt_2 (min) =	12.0
1		300	$T (m^2/s) =$	2.3E-09	$T (m^2/s) =$	3.4E-0
no or		10 ²	S (-) =	1.0E-06	` /	1.0E-0
10°			$K_s (m/s) =$		$K_s (m/s) =$	1.7E-1
:	A A A A A A A A A A A A A A A A A A A	30	$S_s(1/m) =$		$S_s (1/m) =$	5.0E-0
		, [min/l	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	8.2E-1
		101 0/1	$C_D(-) =$	NA	C_D (-) =	9.0E-0
10-1	•		ξ(-) =	-0.76		2.0
	• •	3	5 ()		7()	
		10 ⁰	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ^d 10 ¹	10 ² 10 ³	10 ⁴	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
)					NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	
	- recovery period		OIII ()		GIG ()	
Log-Log plot incl. derivatives-	- recovery period		D _{GRF} (-) = Selected represe dt ₁ (min) =		eters.	8.2E-1
		10.1	Selected represe dt ₁ (min) =	entative paran 5.40	neters. C (m³/Pa) =	
Log-Log plot incl. derivatives-		10,1	Selected represe dt ₁ (min) = dt ₂ (min) =	entative param 5.40 12.00	neters. $C (m^3/Pa) = C_D (-) =$	9.0E-0
Log-Log plot incl. derivatives-		300	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$	5.40 12.00 3.4E-09	c (m ³ /Pa) = C_D (-) = ξ (-) =	9.0E-0
Log-Log plot incl. derivatives-		300	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$ S (-) =	5.40 12.00 3.4E-09 1.0E-06	C (m³/Pa) = C _D (-) = ξ (-)	9.0E-0
Log-Log plot incl. derivatives-		7	Selected represe dt_1 (min) = dt_2 (min) = T_T (m ² /s) = S (-) = K_s (m/s) =	5.40 12.00 3.4E-09 1.0E-06 6.9E-10	C (m³/Pa) = C _D (-) = ξ (-)	9.0E-0
Log-Log plot incl. derivatives-		7	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$ S (-) = $K_s \text{ (m/s)} =$ $S_s \text{ (1/m)} =$	5.40 12.00 3.4E-09 1.0E-06	C (m³/Pa) = C _D (-) = ξ (-)	8.2E-1 9.0E-0 2.00
Log-Log plot incl. derivatives-		10 ²	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$ S (-) = $K_s \text{ (m/s)} =$ $S_s \text{ (1/m)} =$ Comments:	5.40 12.00 3.4E-09 1.0E-06 6.9E-10 2.0E-07	C (m³/Pa) = C _D (-) = ξ (-) =	9.0E-0 2.0
Log-Log plot incl. derivatives-		7	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$ S (-) = $K_s \text{ (m/s)} =$ $S_s \text{ (1/m)} =$ Comments: The recommended of	5.40 12.00 3.4E-09 1.0E-06 6.9E-10 2.0E-07	Deters. C (m ³ /Pa) = C _D (-) = ξ (-) =	9.0E-0 2.0 erived from the
Log-Log plot incl. derivatives-		10 ²	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$ S (-) = $K_s \text{ (m/s)} =$ $S_s \text{ (1/m)} =$ Comments: The recommended analysis of the CHin	5.40 12.00 3.4E-09 1.0E-06 6.9E-10 2.0E-07	Deters. C (m³/Pa) = C _D (-) = ξ (-) = ξ 3.4E-9 m2/s was do of its better data qu	9.0E-0 2.0 erived from the ality. The
Log-Log plot incl. derivatives-		10 ²	Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/\text{s)} =$ S (-) = $K_s \text{ (m/s)} =$ $S_s \text{ (1/m)} =$ Comments: The recommended to analysis of the CHinconfidence range for	5.40 12.00 3.4E-09 1.0E-06 6.9E-10 2.0E-07 transmissivity of phase, because or the interval tra	Deters. C (m³/Pa) = C _D (-) = ξ (-) = ξ 3.4E-9 m2/s was do of its better data quansmissivity is estimated.	9.0E-0 2.0 erived from the ality. The ated to be 1E-9
Log-Log plot incl. derivatives-		10 ²	Selected represe dt_1 (min) = dt_2 (min) = T_T (m²/s) = $S(-)$ = K_s (m/s) = S_s (1/m) =	5.40 12.00 3.4E-09 1.0E-06 6.9E-10 2.0E-07 transmissivity of phase, because or the interval tra	Deters. C (m³/Pa) = C _D (-) = ξ (-) = ξ 3.4E-9 m2/s was do of its better data qu	9.0E-0 2.0 2.0 erived from the ality. The ated to be 1E-9 g the test is 2.
Log-Log plot incl. derivatives-	[5] 19 °	30 (64) (10°) (64) (10°) (10	Selected represedu dt_1 (min) = dt_2 (min) = T_T (m²/s) = S (-) = K_s (m/s) = S_s (1/m)	5.40 12.00 3.4E-09 1.0E-06 6.9E-10 2.0E-07 transmissivity of phase, because or the interval transmissivity of the phase of the interval transmissivity of t	Deters. C (m ³ /Pa) = C _D (-) = ξ (-) = ξ 3.4E-9 m2/s was do of its better data quansmissivity is estimation displayed durin	9.0E-0: 2.00 2.00 erived from the ality. The ated to be 1E-9 g the test is 2. erived from the

	Test St	umn	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lax	emar	Test no:			,
Borehole ID:	KL	X18A	Test start:			060817 11:27
Test section from - to (m):	204.00-224.	00 m	Responsible for test execution:		Reinde	er van der Wa Philipp Wol
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	an Enachesc
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot Q and p			Indata		Indata	
			p ₀ (kPa) =	2172	iliuata	
2450	KLX18A_204.00-224.00_060817_1_CHir_Q_r	0.015				
2400 -	-		$p_i(kPa) =$	2172	n (IsDa)	215
2350	P section	0.012	$p_p(kPa) =$		p _F (kPa) =	217
2300	Pabove P below - Q		$Q_p (m^3/s) =$	7.00E-08		
2250 -		- 0.009 E	tp (s) =		t _F (s) =	306
2200		ion Rate	S el S (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2150		0.006	EC _w (mS/m)=			
2100	4.		Temp _w (gr C)=	10		
2050 -		- 0.003	Derivative fact.=	0.12	Derivative fact.=	0.0
2000						
0.00 0.20 0.40 0.60 0.80 1.00 Elapsed	1.20 1.40 1.60 1.80 2.00 2.21 Time [h]	0.000	Results		Results	
			Q/s $(m^2/s)=$	3.2E-09		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	3.3E-09		
	-		Flow regime:	transient	Flow regime:	transient
10, ⁻³ 10, ⁻² Elapsed tim	e [h]	1	$dt_1 (min) =$	0.90	$dt_1 \text{ (min)} =$	5.4
101			$dt_2 (min) =$		$dt_2 (min) =$	15.0
	The state of the s	300	$T (m^2/s) =$		$T (m^2/s) =$	6.4E-0
• • • • • • • • • • • • • • • • • • • •		- 2	S (-) =	1.0E-06	, ,	1.0E-0
10°		10 ²	$K_s (m/s) =$		$K_s (m/s) =$	3.2E-1
• : :		30	$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0
		. Ivim	- '	3.0L-08		6.8E-1
		101 (0/L)	$C (m^3/Pa) =$		$C (m^3/Pa) =$	
1011	•	¥	$C_D(-) =$	NA	$C_D(-) =$	7.5E-0
		3	ξ (-) =	-0.82	ξ(-) =	4.7
		10°	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
100 101	10 ² 10 ³ 10 ⁴		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tC tC			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran		
5 51 11 11 11 11 11 11	* F * * ***		dt_1 (min) =	5.40	_	6.8E-1
Elapsed time	[h] 10.1		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	7.5E-0
102	, and the second		2	6.4E-09		4.7
	1	10 ³	$T_T (m^2/s) =$ $S (-) =$	1.0E-06	- , ,	-r. <i>1</i>
			$K_s (m/s) =$	1.3E-09		
101		800	$S_s (1/m) =$	2.0E-07		
		10 ² क्र		2.0E-07		
A STATE OF THE STA		p0)'[kP	Comments:			
		PD0.			6.4E-9 m2/s was de	
100	12				of its better data quansmissivity is estima	
	•	01			sion displayed durin	
					sducer depth, was d	
100 101	10 ² 10 ³ 10 ⁴	3	CHir phase using st	raight line extra	polation in the Horn	er plot to a

	Test S	umi	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			P
Area:	Lax	emai	Test no:			1
Doroholo ID:	IZI :	V40A	Test start:			000047.44.00
Borehole ID:	KL.	X18P	i est start:			060817 14:08
Test section from - to (m):	224.00-244.	.00 m	Responsible for		Reinde	er van der Wal
Section diameter, 2-r _w (m):		0.076	test execution: Responsible for		Crist	Philipp Wolian Enachescu
Costion diameter, 2 Tw ().		0.01	test evaluation:		01100	an Endonoso
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
		0.003	p ₀ (kPa) =	2367		
2600 -	LX18A_224.00-244.00_060817_1_Pi_Q_r		p _i (kPa) =	2366		
	• P section		$p_p(kPa) =$	2605	p _F (kPa) =	240
2500	Pabove P below Q	- 0.002	$Q_p (m^3/s) =$	NA		
led x			tp (s) =	10	t _F (s) =	3720
1 de de la constant d		njection Rate [Wmin]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
• • • • • • • • • • • • • • • • • • •	 - 	njection	EC _w (mS/m)=		()	
2200		0.001	Temp _w (gr C)=	10.4		
			Derivative fact.=	NA	Derivative fact.=	0.0
2200	- -					
2100	· · · · · · · · · · · · · · · · · · ·	0.000				
0.00 0.20 0.40 0.60 0.80 1.00 Elapsed T	1.20 1.40 1.60 1.80 2.00 ime [h]		Results		Results	
			$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	NA		
			Flow regime:	transient	Flow regime:	transient
			dt_1 (min) =	NA	dt_1 (min) =	0.54
			dt_2 (min) =	NA	dt_2 (min) =	33.00
			$T (m^2/s) =$	NA	$T (m^2/s) =$	9.3E-1
			S (-) =	NA	S (-) =	1.0E-06
			$K_s (m/s) =$	NA	K_s (m/s) =	4.6E-12
			$S_s (1/m) =$	NA	$S_s (1/m) =$	5.0E-08
			$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	7.9E-1
			$C_D(-) =$	NA	C_D (-) =	8.7E-03
			ξ (-) =	NA	ξ(-) =	-2.4
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	entative paran	neters.	
			dt_1 (min) =		C (m ³ /Pa) =	7.9E-1
Elapsed time	[h]	_	$dt_2 (min) =$		C_D (-) =	8.7E-03
10	•	3	$T_T (m^2/s) =$	9.3E-11		-2.4
		710 °	S (-) =	1.0E-06		
		-	K_s (m/s) =	1.9E-11		Ī
10 °		0.3	$S_s(1/m) =$	2.0E-07		1
		-	Comments:	1		
- 0.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	The state of the s	10 -1		transmissivity of	9.3E-11 m2/s was o	derived from the
10 ·1	a rema		analysis of the Pi p	hase. The confid	ence range for the ir	nterval
		0.03			-11 to 2E-10 m2/s. T	
:: · · · · · · · · · · · · · · · · · ·		10 -2	pressure could not	be extrapolated of	lue to the very low t	ransmissivity.
10 ⁻² 10 ⁻¹ tC	10 0	10 1				

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			,
Borehole ID:	KL>	(18A	Test start:			060817 16:43
Test section from - to (m):	244.00-264.0	00 m	Responsible for		Reinde	r van der Wa
` ,			test execution:			Philipp Wol
Section diameter, 2·r _w (m):	0	0.076	Responsible for		Cristi	an Enachesc
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot & and p			Indata		Indata	
			p ₀ (kPa) =	2562	iiidata	
KLX18A_244.00-264.00_060817_1_CHir_Q_r			p _i (kPa) =	2559		
2750 -	• P section • P above		$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	256
2700	• P below Q	- 0.15			ρ _F (κρα) =	230
2550	/. 15		$Q_p (m^3/s) =$	1.17E-06	4 (-)	126
2000		[Vmin]	tp (s) =		t _F (s) =	120
2550			S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
	The state of the s	njed	EC _w (mS/m)=			
2500			Temp _w (gr C)=	10.7		
2450 -		40.06	Derivative fact.=	0.13	Derivative fact.=	0.0
2550 0.00 0.20 0.40 0.50 0.50	1.00 1.20 1.40	0.00				
Elapsed Tin			Results		Results	
			Q/s $(m^2/s)=$	5.8E-08		
og-Log plot incl. derivates- flo	w period		$T_M (m^2/s) =$	6.0E-08		
			Flow regime:	transient	Flow regime:	transient
10 ¹ 1 Elapsed time [[h]	7	dt_1 (min) =	0.28	dt_1 (min) =	0.1
	•		dt_2 (min) =	2.40	dt_2 (min) =	1.8
	•	30	$T (m^2/s) =$	1.8E-08	$T (m^2/s) =$	4.3E-0
] ,	S (-) =	1.0E-06	S (-) =	1.0E-0
10°	:	101	$K_s (m/s) =$	8.8E-10	$K_s (m/s) =$	2.2E-0
; · · · · · · · · · · · · · · · · · · ·	•		$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-0
	A STATE OF THE STA	, [min/]	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	6.6E-1
	N. Janes	10° 7	$C_D(-) =$	NA	$C_D(-) =$	7.3E-0
1011			ξ(-) =	-3.19		-2.6
		0.3			7 ()	
		10-1	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁻¹ 10 ⁰ tD	10 ¹ 10 ² 10 ³	1	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
og-Log plot incl. derivatives- r	recovery period		Selected represe	ntative paran	eters.	
			dt_1 (min) =	0.28	$C (m^3/Pa) =$	6.6E-1
Elagsed time [t	n] 		dt_2 (min) =	2.40	C _D (-) =	7.3E-0
		300	$T_T (m^2/s) =$	1.8E-08		-3.1
			S (-) =	1.0E-06		
		10 ²	K_s (m/s) =	3.5E-09		
	A		$S_s(1/m) =$	2.0E-07		
10°						
10°	The state of the s	30 30	Comments:			
10°		o): [kPal	Comments: The recommended tr	ansmissivity of 1	8E-8 m2/s was deriv	ed from the
· · · · · · · · · · · · · · · · · · ·		30 10 10 10 10 10 10 10 10 10 10 10 10 10	The recommended tr	•	.8E-8 m2/s was deriv	
10° Comment of the co		o): [kPal	The recommended tr analysis of the CHi p	ohase (inner zone		etter derivative
· · · · · · · · · · · · · · · · · · ·		10 10 10-00-00-0	The recommended tr analysis of the CHi p stabilization. The cor estimated to be 9E-9	phase (inner zone infidence range for m2/s to 6E-8 m2), which shows the borthe interval transmit 2/s (this range encom	etter derivative ssivity is passes the inner
· · · · · · · · · · · · · · · · · · ·		10 10 10-00-00-0	The recommended tr analysis of the CHi p stabilization. The cor estimated to be 9E-9 zone transmissivity of	ohase (inner zone infidence range for m2/s to 6E-8 m2 of the CHir phase), which shows the borthe interval transmit 2/s (this range encomps). The flow dimension	etter derivative ssivity is passes the inner n displayed
· · · · · · · · · · · · · · · · · · ·		. 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The recommended tr analysis of the CHi p stabilization. The cor estimated to be 9E-9 zone transmissivity of during the test is 2. T	ohase (inner zone infidence range for m2/s to 6E-8 m2 of the CHir phase The static pressur), which shows the borthe interval transmit 2/s (this range encom	etter derivative ssivity is passes the inner in displayed acer depth, was

	Test S	Sumi	mary Sheet			
Project:	Oskarshamn site investi	gatior	Test type:[1]			CHi
Area:	La	xema	Test no:			1
D 1 1 1D	120	V/40A	T			000017.10.10
Borehole ID:	KI	_X18A	Test start:			060817 18:46
Test section from - to (m):	264.00-284	1.00 m	Responsible for		Reinde	er van der Wal
Section diameter, 2·r _w (m):	 	0.076	test execution: Responsible for		Crist	Philipp Wol
Occilor diameter, 2-1 _W (iii).		0.07	test evaluation:		Onot	an Endoneso
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
3060	KLX18A_264.00-284.00_060817_1_CHir_Q_r	0.03	p_0 (kPa) =	2756		
3000	NEXTON_204.00_000017_[_CIII]_Q_1		p _i (kPa) =	2766		
2950 -	; \		$p_p(kPa) =$	2983	p _F (kPa) =	281
2900 -		0.02	$Q_p (m^3/s) =$	1.00E-07		
2850		/min]	tp (s) =		t_F (s) =	120
2800	1	njection Rate [l/min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2750	***************************************	Injectiv	EC _w (mS/m)=			
2700 -	• P section • P above	- 0.01	Temp _w (gr C)=	11		
2650 -	P section P above P below Q		Derivative fact.=	0.09	Derivative fact.=	0.
2600 -						
2550 0.00 0.20 0.40 0.60 0.80 Elapse	1.00 1.20 1.40 1.60 ed Time [h]	1.80	Results		Results	
			Q/s $(m^2/s)=$	4.5E-09		I
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	4.7E-09		
0 01			Flow regime:	transient	Flow regime:	transient
Elapsed time [h	ı] 10 -1 10 °	,	$dt_1 \text{ (min)} =$	0.18	$dt_1 (min) =$	0.2
10 1			dt ₂ (min) =	0.90	$dt_2 \text{ (min)} =$	1.2
	÷	10 3	$T (m^2/s) =$	4.9E-09	$T (m^2/s) =$	6.9E-0
			S (-) =	1.0E-06	\ /	1.0E-0
10 1		300	$K_s (m/s) =$	2.4E-10	K_s (m/s) =	3.4E-1
	Andrew Control of the	10 2	$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-0
a a se	A STATE OF THE PARTY OF THE PAR		C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	6.0E-1
10°		30	$C_D(-) =$	NA	$C_D(-) =$	6.7E-0
·			ξ (-) =	-0.89	ξ (-) =	-0.9
	•	10 '				
	•		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ° 10 ¹ tD	10 ² 10 ³ 10	ᅻ °	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives	- recovery period		Selected represe		_	
Elmoad lima	This is a second of the second		$dt_1 (min) =$	0.24	$C (m^3/Pa) =$	6.0E-1
10, 10, 3 10, 2 10, 3 10, 2 10, 3 10, 2 10, 3 10, 2 10, 3 10		300	$dt_2 (min) =$		C_D (-) =	6.7E-0
	/ :/	1,	$T_T (m^2/s) =$	6.9E-09	,	-0.92
	//	10 2	S (-) =	1.0E-06		
10 °		30	$K_s (m/s) =$	1.4E-09		
المستعنون كالم			$S_s(1/m) =$	2.0E-07		
1		10 1	Comments:	onemiceivity of	5 0E 0 m2/s was dom:	and from the
			a ine recommended ti	ansimssivity of t	5.9E-9 m2/s was deriv	
				phase (inner zon	e), because of its bett	er data quarity.
10 4		3	analysis of the CHir The confidence rang	e for the interval	transmissivity is esti	mated to be 3E-
10-1		3	analysis of the CHir The confidence rang m2/s to 9E-9 m2/s. 7	e for the interval The flow dimensi	transmissivity is esti on displayed during t	mated to be 3E- the test is 2. The
104		3	analysis of the CHir The confidence rang m2/s to 9E-9 m2/s. T static pressure measu	e for the interval The flow dimensi ared at transduce	transmissivity is esti	mated to be 3E-the test is 2. The from the CHir

	Test Su	ımr	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			1
Borehole ID:	KLX	(18A	Test start:			060817 21:22
Test section from to (m):	294.00.204.0)() m	Responsible for		Poindo	er van der Wal
Test section from - to (m):	204.00-304.0	ווו טכ	test execution:		Remue	Philipp Wol
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachesc
1: 1:0			test evaluation:		/	
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
KLX18A_284.00-304.00_060817_1_CHir_Q_r	• P section	0.015	p ₀ (kPa) =	2967		
3200	• P above • P below • O		p _i (kPa) =	2974		
3150 -			$p_p(kPa) =$		p _F (kPa) =	298
3100 -	· · · · · · · · · · · · · · · · · · ·	0.010	$Q_p (m^3/s) =$	6.67E-08		
<u>2</u> 3050 -		[Vmin]	tp (s) =		t_F (s) =	120
2000		njection Rate [I	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2960	ţ	Injectio	EC _w (mS/m)=			
2900 -		0.005	Temp _w (gr C)=	11.3		
2850 -	The state of the s		Derivative fact.=	0.11	Derivative fact.=	0.0
2800						
2750 0.00 0.20 0.40 0.60 0.80 Elapsed T	1.00 1.20 1.40 1.80 Time [h]	10.000	Results		Results	
			Q/s $(m^2/s)=$	2.9E-09		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M}$ (m ² /s)=	3.1E-09		
	•		Flow regime:	transient	Flow regime:	transient
	[h]		$dt_1 \text{ (min)} =$	0.24	$dt_1 \text{ (min)} =$	1.5
101	:		$dt_2 (min) =$		$dt_2 \text{ (min)} =$	9.0
1		300	$T (m^2/s) =$		_ , 2, ,	3.7E-0
· ·			S (-) =	1.0E-06	` /	1.0E-0
100	A A A A A A A A A A A A A A A A A A A	10 ²	$K_s (m/s) =$		$K_s (m/s) =$	1.8E-1
			$S_s(11/s) =$ $S_s(1/m) =$		$S_s(11/s) = S_s(1/m) = S_s(1/m)$	5.0E-0
		30 E		0.0L-08		6.4E-1
		10 ¹ (b)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	_
10-1	•	10 \$	$C_D(-) =$		$C_D(-) =$	7.0E-0
	-	3	ξ (-) =	-0.86	ξ (-) =	2.4
		0	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
100 101	10 ² 10 ³ 10 ⁴	10 ⁰	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
to			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran		
<u> </u>			dt_1 (min) =	1.50	_	6.4E-1
10. ⁻⁴ 10. ⁻³ Elapsed time	[h]		$dt_2 (min) =$		$C_D(-) =$	7.0E-0
10		300	$T_T (m^2/s) =$	3.7E-09		2.4
		2	S (-) =	1.0E-06		
i		10 ²	$K_s (m/s) =$	7.3E-10		
- I want			$S_s(1/m) =$	2.0E-07		
10"	.\		○s (1/111) —	2.0∟-01		
10°	·	30	Commontes			
10° printer the state of the st		30 [kPa] (0d	Comments:	anemiasivity of C	2.7E 0 m2/s wss de	and from the
10°		kPa]	The recommended tr		3.7E-9 m2/s was derive	
10° 10° 10° 10° 1		01 01 01 01 01 01 01 01	The recommended tr analysis of the CHir	phase, because o	3.7E-9 m2/s was derivent of its better data qualities smissivity is estimate	ty. The
and the state of t		10 10 10 10 10 10 10 10 10 10 10 10 10 1	The recommended translysis of the CHir confidence range for m2/s to 6E-9 m2/s. The confidence range for m2/s to 6E-9 m2/s. The commendation of the	phase, because of the interval trans The flow dimensi	f its better data quali- smissivity is estimate on displayed during t	ty. The d to be 9E-10 the test is 2. The
The state of the s		01 01 01 01 01 01 01 01	The recommended tr analysis of the CHir confidence range for m2/s to 6E-9 m2/s. T static pressure measu	phase, because o the interval tran- the flow dimensing at transduce	f its better data qualitismissivity is estimate on displayed during to depth, was derived	ty. The d to be 9E-10 the test is 2. The from the CHir
a a		10 10 10 10 10 10 10 10 10 10 10 10 10 1	The recommended tr analysis of the CHir confidence range for m2/s to 6E-9 m2/s. T static pressure measu	phase, because o the interval tran- the flow dimensing at transduce	f its better data quali- smissivity is estimate on displayed during t	ty. The d to be 9E-10 the test is 2. The from the CHir

	Test S	umi	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lax	emai	Test no:			1
Borehole ID:	KL	X18A	Test start:	060817 23:3		
Test section from - to (m):	204.00.224	00 m	Responsible for		Poindo	er van der Wal
rest section from - to (m).	304.00-324.	00 11	test execution:		Reilide	Philipp Wol
Section diameter, 2-r _w (m):	(0.076	Responsible for		Crist	ian Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	•
,	(LX18A_304.00-324.00_060817_1_CHir_Q_r	0.10	p ₀ (kPa) =	3144		
3400 -	P section P above P below		p _i (kPa) =	3137		
: /	• •	0.08	$p_p(kPa) =$	3337	p _F (kPa) =	313
3300	:		$Q_p (m^3/s) =$	6.67E-07		
-	:	- 0.06 Ti	tp (s) =		t_F (s) =	120
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		n Rate [S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
Q 3100	· ·	0.04	EC _w (mS/m)=			
- 300	•		Temp _w (gr C)=	11.6		
3000	•	- 0.02	Derivative fact.=	0.08	Derivative fact.=	0.0
2000 0.20 0.40 0.60 0.50 1.50 1.20 1.40 Blogsed Time [b]		0.00	Results		Results	
			Q/s $(m^2/s)=$	3.3E-08		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	3.4E-08		
	•		Flow regime:	transient	Flow regime:	transient
	(h)		$dt_1 (min) =$	0.84	$dt_1 \text{ (min)} =$	1.2
10		102	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	7.2
1			2		2	2.1E-0
101		1	$T (m^2/s) = $ $S (-) = $	1.0E-06	, ,	1.0E-0
	•	10 ¹	$K_s (m/s) =$		$K_s (m/s) =$	1.1E-0
			$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0
(n)		l Mim		3.0L-08		5.2E-1
		10° (8)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	
.:.		1 2	$C_D(-) =$		$C_D(-) =$	5.8E-03
10-1		10-1	ξ (-) =	8.26	ξ(-) =	32.5
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁹ 10 ¹⁰	10 ¹¹ 10 ¹² 10	13	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
			1 1			
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran 1.20		5.2E-1
10,4 10,3 Elapsed time [I		,	dt_1 (min) =	1.20	C (m ³ /Pa) =	
		300	$dt_1 (min) = $ $dt_2 (min) = $	1.20 7.20	$C (m^3/Pa) = C_D (-) =$	5.8E-0
		300	$dt_1 (min) = dt_2 (min) = T_T (m^2/s) = $	1.20 7.20 2.1E-07	$C (m^3/Pa) = C_D (-) = \xi (-) =$	5.8E-0
	h	300 10 ²	$dt_1 (min) = $ $dt_2 (min) = $ $T_T (m^2/s) = $ $S (-) = $	1.20 7.20 2.1E-07 1.0E-06	$C (m^3/Pa) = C_D (-) = \xi (-) =$	5.8E-0
	h		$dt_1 (min) = $ $dt_2 (min) = $ $T_T (m^2/s) = $ $S (-) = $ $K_s (m/s) = $	1.20 7.20 2.1E-07 1.0E-06 4.2E-08	$C (m^3/Pa) = C_D (-) = \xi (-) =$	5.8E-0
10 In a Elapsed time [h		$\begin{array}{lll} dt_1 \; (min) & = & \\ dt_2 \; (min) & = & \\ T_T \; (m^2/s) & = & \\ S \; (-) & = & \\ K_s \; (m/s) & = & \\ S_s \; (1/m) & = & \\ \end{array}$	1.20 7.20 2.1E-07 1.0E-06	$C (m^3/Pa) = C_D (-) = \xi (-) =$	5.2E-1 5.8E-0 32.50
10 2 Elapsed time ()	10 ⁻¹ 10 ⁻¹ 10 ⁻¹	10 ²	$dt_1 (min) = dt_2 (min) = T_T (m^2/s) = S (-1) = K_s (m/s) = S_s (1/m) = Comments:$	1.20 7.20 2.1E-07 1.0E-06 4.2E-08 2.0E-07	$C (m^3/Pa) = C_D (-) = \xi (-) =$	5.8E-03
10 ² 10 ³ Elapsed time ()	10 ⁻¹ 10 ⁻¹ 10 ⁻¹	10 ²	$\begin{array}{lll} dt_1 \ (\text{min}) & = \\ dt_2 \ (\text{min}) & = \\ T_T \ (\text{m}^2/\text{s}) & = \\ S \ (\text{-}) & = \\ K_s \ (\text{m/s}) & = \\ S_s \ (\text{1/m}) & = \\ \hline \textbf{Comments:} \\ \hline The \ recommended \ tr \end{array}$	1.20 7.20 2.1E-07 1.0E-06 4.2E-08 2.0E-07	$C (m^3/Pa) = C_D (-) = \xi (-) = $ 2.1E-7 m2/s was derive	5.8E-0: 32.50
10 2 Elapsed time ()	10 ⁻¹ 10 ⁻¹ 10 ⁻¹	10 ²	$\begin{array}{lll} dt_1 \ (\text{min}) &= \\ dt_2 \ (\text{min}) &= \\ T_T \ (\text{m}^2/\text{s}) &= \\ S \ (\text{-}) &= \\ K_s \ (\text{m/s}) &= \\ S_s \ (\text{1/m}) &= \\ \hline \textbf{Comments:} \\ The \ recommended \ tr \\ analysis \ of \ the \ CHir \\ \end{array}$	1.20 7.20 2.1E-07 1.0E-06 4.2E-08 2.0E-07 ansmissivity of 2 phase, which sho	$C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ 2.1E-7 m2/s was derivows the better data an	5.8E-03 32.50 ved from the d derivative
10 To	10 ⁻¹ 10 ⁻¹ 10 ⁻¹	10 ²	$\begin{array}{ll} dt_1 \ (\text{min}) &= \\ dt_2 \ (\text{min}) &= \\ T_T \ (\text{m}^2/\text{s}) &= \\ S \ (\text{-}) &= \\ K_s \ (\text{m/s}) &= \\ S_s \ (\text{1/m}) &= \\ \hline \textbf{Comments:} \\ The \ recommended \ tr \\ analysis \ of \ the \ CHir \\ quality. \ The \ confidence \\ \end{array}$	1.20 7.20 2.1E-07 1.0E-06 4.2E-08 2.0E-07 ansmissivity of 2 phase, which shorce range for the	$C (m^3/Pa) = C_D (-) = \xi (-) = $ 2.1E-7 m2/s was derive	5.8E-03 32.50 ved from the d derivative by is estimated to
10 To	N 10,2 10,1 10,2	30 [eq.]	$\begin{array}{ll} dt_1 \ (\text{min}) &= \\ dt_2 \ (\text{min}) &= \\ T_T \ (\text{m}^2/\text{s}) &= \\ S \ (\text{-}) &= \\ K_s \ (\text{m}/\text{s}) &= \\ S_s \ (\text{1/m}) &= \\ \hline \textbf{Comments:} \\ The \ recommended \ tr \\ analysis \ of \ the \ CHir \\ quality. \ The \ confider \\ be \ 8E-8 \ m2/s \ to \ 5E-is \ 2. \ The \ static \ pressi} \end{array}$	1.20 7.20 2.1E-07 1.0E-06 4.2E-08 2.0E-07 ransmissivity of 2 phase, which shore range for the 7 m2/s. The flow ure measured at the shore of the 10 m2/s. The flow ure measured at the 10 m2/s. The flow ure measured at the 10 m2/s.	C (m³/Pa) = C _D (-) = ξ (-) = 2.1E-7 m2/s was derivous the better data an interval transmissivit dimension displayed ransducer depth, was	5.8E-03 32.56 ved from the d derivative ty is estimated to during the test derived from
10 To	N 10,2 10,1 10,2	10 ²	$\begin{array}{ll} dt_1 \ (\text{min}) &= \\ dt_2 \ (\text{min}) &= \\ T_T \ (\text{m}^2/\text{s}) &= \\ S \ (\text{-}) &= \\ K_s \ (\text{m}/\text{s}) &= \\ S_s \ (\text{1/m}) &= \\ \hline \textbf{Comments:} \\ The \ recommended \ tr \\ analysis \ of \ the \ CHir \\ quality. \ The \ confider \\ be \ 8E-8 \ m2/s \ to \ 5E-is \ 2. \ The \ static \ pressi} \end{array}$	1.20 7.20 2.1E-07 1.0E-06 4.2E-08 2.0E-07 ransmissivity of 2 phase, which shore range for the 7 m2/s. The flow ure measured at 6 g straight line ext	$C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ 2.1E-7 m2/s was derivows the better data an interval transmissivit dimension displayed	5.8E-03 32.50 ved from the d derivative ty is estimated to during the test derived from

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemar	Test no:			
Borehole ID:	KLX18A	Test start:			060818 01:24
				Dalada	
Test section from - to (m):	324.00-344.00 m	test execution:		Reinde	er van der Wa Philipp Wol
Section diameter, 2-r _w (m):	0.076	Responsible for		Crist	ian Enachesc
linear wlat O and n		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata $p_0 (kPa) =$	3337	Indata	1
KLX18A_324.00-344.00_060818_1_CHir_Q_r	20	$p_0 (KPa) =$ $p_i (kPa) =$	3331		
3550	1.8 P section	$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	333
3500	P socion 1.6 P above P below				333
3450	1.4	$Q_p (m^3/s) =$	1.90E-05		120
3400	12 [1]	tp (s) =		t _F (s) =	120
3360	10.88	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5 3300 ·	- 0.8 🖺	EC _w (mS/m)=			
3250 -	. 0.6	Temp _w (gr C)=	11.9		
3200 -	- 0.4	Derivative fact.=	0.06	Derivative fact.=	0.0
3150	- 0.2				
0.00 0.20 0.40 0.60 Elapsed T	0.80 1.00 1.20 1.40 Time [h]	Results		Results	<u> </u>
		Q/s $(m^2/s)=$	9.3E-07		
og-Log plot incl. derivates- flo	ow period	$T_M (m^2/s) =$	9.7E-07		
		Flow regime:	transient	Flow regime:	transient
.10. ⁴ Elapsed time	[h]10.10.	$dt_1 (min) =$	0.42	$dt_1 (min) =$	0.6
102		$dt_2 \text{ (min)} =$		$dt_2 (min) =$	9.0
	3	$T (m^2/s) =$		$T (m^2/s) =$	5.7E-0
		S (-) =	1.0E-06	, ,	1.0E-0
10 1	10°	$K_s (m/s) =$		$K_s (m/s) =$	2.9E-0
		$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0
	0.3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.9E-1
	(b/l) by		NA	a '/)	2.1E-0
100	مسمد مشمه	$C_D(-) =$		C_D (-) =	1.9
	0.03	ξ (-) =	4.14	ξ (-) =	1.9
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
107 108	10 ⁹ 10 ¹⁰ 10 ¹¹	$S_{GRF}(-) =$	NA	$S_{GRF}(\cdot) =$	NA
tD		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran		
<u> </u>	7.1 · · · · · · ·	dt_1 (min) =	0.60	_	1.9E-1
10,3 10,3	10, 2 10, 1	$dt_2 \text{ (min)} =$		$C_D(-) =$	2.1E-0
)e-e-e-e-e-e-e-e-e-e-e-e-e-e-e-e-e-e-e-	$T_T (m^2/s) =$	5.7E-06		1.9
	10 2	S (-) =	1.0E-06		
		$K_s (m/s) =$	1.1E-06		
	30	$S_s (1/m) =$	2.0E-07		
	10 ' 🔻	Comments:	2.00 07		<u> </u>
1/.	Tool Tool		ansmissivity of 4	5.7E-6 m2/s was deriv	ved from the
1 /	9		•	e), which shows the b	
4	3 -				
	3 -	stabilization. The co			
	10°	stabilization. The co- estimated to be 2E-6	m2/s to 9E-6 m2	2/s. The flow dimensi	on displayed
	10°	stabilization. The conestimated to be 2E-6 during the test is 2. The stabilization is a stabilization of the stabilization of the stabilization of the stabilization.	m2/s to 9E-6 m2 The static pressur		on displayed acer depth, was

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	mar	Test no:			1
Develor ID.	IZI V	404	T t - t t -			000040 00:00
Borehole ID:	KLX	.18A	Test start:			060818 06:29
Test section from - to (m):	344.00-364.0	00 m	Responsible for		Reinde	er van der Wal
Section diameter, 2·r _w (m):	0	076	test execution: Responsible for		Criet	Philipp Wol
Section diameter, 2.1 _w (m).	0	.070	test evaluation:		Clist	ian Lhachesco
Linear plot Q and p			Flow period		Recovery period	l
			Indata		Indata	
3800	• P section	3.0	p ₀ (kPa) =	3529		
KLX18A_344.00-364.00_060818_1_CHir_Q_r	P above P below	- 25	p _i (kPa) =	3524	<i>a</i> = .	
3700 -	· ·		$p_p(kPa) =$		p _F (kPa) =	3525
3650	· •	- 2.0	$Q_p (m^3/s) =$	2.93E-05		
호 호 - 3600 -	Maria Caracana Caraca	[Wmin]	tp (s) =		t _F (s) =	1200
8 3550		tion Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
\$ 3500		njeci	EC _w (mS/m)=			
3450 -		1.0	Temp _w (gr C)=	12.2		
3400 -		- 0.5	Derivative fact.=	0.05	Derivative fact.=	0.0
3350						
0.00 0.20 0.40 0.60 0.		1.60	Results		Results	
Esapsed	Time [h]			1.4E-06		1
Log-Log plot incl. derivates- fl	ow period		Q/s $(m^2/s)=$	1.4E-06		
Log-Log plot incl. derivates- in	ow period		T _M (m ² /s)= Flow regime:	transient	Flow regime:	transient
10. ⁴ 10. ³ Elapsed tim	e [b] 0, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1		dt ₁ (min) =		dt ₁ (min) =	0.15
102	9	3	$dt_1 (min) = $ $dt_2 (min) = $		$dt_1 (min) = $ $dt_2 (min) = $	9.00
			2		2	9.3E-0
		10 ⁰	$T (m^2/s) = $ $S (-) = $	1.0E-06	· /	1.0E-06
10			$K_s (m/s) =$		$K_s (m/s) =$	4.7E-07
		0.3	$\frac{R_s(11/3)}{S_s(1/m)} =$		$S_s(11/s) =$ $S_s(1/m) =$	5.0E-0
	•	10 ⁻¹ U	$C_s(7/11) = C(m^3/Pa) =$	NA	$\frac{C_s(1/11)}{C(m^3/Pa)} =$	1.7E-10
	•	1/q, (1/q)	o ()	NA	$C_D(-) =$	1.9E-02
10 0	م مدين م مدين مستور مي م	0.03	ξ(-) =	7.68		31.90
•	and the second second		S (-) -	7.00	S (-) –	01.00
:	* . * .	10 ⁻²	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 10 10 10 11	1012 1013 1014		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
10			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
5 51	→ n · · · ·		dt_1 (min) =	0.15	C (m ³ /Pa) =	1.7E-10
Elapsed time	[h]10. ⁻² 10. ⁻¹		$dt_2 \text{ (min)} =$		$C_D(-) =$	1.9E-02
10		100	$T_T (m^2/s) =$	9.3E-06		31.90
	44.4.4.11111111111111111111111111111111		S (-) =	1.0E-06		
	1	02	K_s (m/s) =	1.9E-06		
10 1			S _s (1/m) =	2.0E-07		
	3	<u>교</u> 00	Comments:			
	ļ	o ¹ 00-0)	The recommended to	ransmissivity of 9	0.3E-6 m2/s was deri	ved from the
10 0		00-0			ows the slight better o	
	· · · · · · · · · · · · · · · · · · ·	3			ive. The confidence r be 3E-6 m2/s to 3E-	
		0 ⁰			s 2. The static pressur	
	T-1	0-	- I			
101 102	10 ³ 10 ⁴ 10 ⁵		transducer depth, wa		ne CHir phase using stratue of 3,524.4 kPa.	-

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investiç	gation	Test type:[1]			CHi
Area:	Lax	cemar	Test no:			1
Borehole ID:	KI	Υ18Δ	Test start:			060818 08:34
borenole ib.						000010 00.5-
Test section from - to (m):	364.00-384	.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for		Cristi	an Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
KLX18A_364.00-384.00_060818_1_CHir_Q_r	•	1.6	p ₀ (kPa) =	3725		
3950	P section P above P below	1.4	p _i (kPa) =	3720	(15)	
3900	·q	1.2	$p_p(kPa) =$		p _F (kPa) =	372
3850	·		$Q_p (m^3/s) =$	9.22E-06		100
(A) 3800 · · · · · · · · · · · · · · · · · ·	•	1.0 [uiw/l]	tp (s) =		t _F (s) =	120
3750		ction Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
3700 -		0.6	EC _w (mS/m)=	10.5		
3650 -		- 0.4	Temp _w (gr C)=	12.5	Davisatis a fact	0.0
3600 -			Derivative fact.=	0.06	Derivative fact.=	0.0
3550		. 102				
3500	0.80 1.00 1.20 1.40 ITime [h]	0.0	Results		Results	
4			Q/s $(m^2/s)=$	4.5E-07	resuits	
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	4.7E-07		
Log Log plot mon dontatoo n			Flow regime:	transient	Flow regime:	transient
10.2 Elgosed time	[h] 10. ⁻¹ 10. ⁰		$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	0.6
102		1	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.0
		-	$T (m^2/s) =$		$T (m^2/s) =$	2.1E-0
		3	S (-) =	1.0E-06	, ,	1.0E-0
101		10°	$K_s (m/s) =$		$K_s (m/s) =$	1.0E-0
			$S_s(1/m) =$		$S_s (1/m) =$	5.0E-0
		0.3 kim	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.2E-1
·		1/0.(1/	$C_D(-) =$	NA	C_D (-) =	2.5E-0
100	, A.	10-1	ξ(-) =	7.69		20.3
		-				
		0.03	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹⁰ 10 ¹¹	10 ¹² 10 ¹³ 10	14	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
	recovery period		Selected represe	ntative paran	neters.	
Log-Log plot incl. derivatives-	recovery period			falski statiski filologije projekt		2.2E-1
Log-Log plot incl. derivatives-	recovery period		dt_1 (min) =	0.60	$C (m^3/Pa) =$	
Log-Log plot incl. derivatives-		7		0.60 9.00	C_D (-) =	
]	dt_1 (min) =	0.60	C_D (-) =	2.5E-0
		300	$dt_1 \text{ (min)} = \\ dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\$	0.60 9.00	$C_D(-) = \xi(-) =$	2.5E-0
10 10 Elepsed time		300 10 ²	$dt_1 \text{ (min)} = \\ dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\ K_s \text{ (m/s)} = \\$	0.60 9.00 2.1E-06 1.0E-06 4.1E-07	$C_D(-) = \xi(-) =$	2.5E-02
		1	$dt_1 \text{ (min)} = \\ dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\$	0.60 9.00 2.1E-06 1.0E-06	$C_D(-) = \xi(-) =$	2.5E-0; 20.30
10 7 10.5 Elepsed time		1	$dt_1 \text{ (min)} = \\ dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\ K_s \text{ (m/s)} = \\ S_s \text{ (1/m)} = \\ \textbf{Comments:}$	0.60 9.00 2.1E-06 1.0E-06 4.1E-07 2.0E-07	$C_{D}(-) = \xi(-) =$	2.5E-0; 20.3(
10 ⁻⁵ 10. Elepsed time		10 ²	$\begin{array}{lll} \operatorname{dt}_1 \text{ (min)} &=& \\ \operatorname{dt}_2 \text{ (min)} &=& \\ \operatorname{T}_T \text{ (m}^2 / \mathrm{s)} &=& \\ \operatorname{S} \text{ (-)} &=& \\ \operatorname{K}_{\mathrm{S}} \text{ (m/s)} &=& \\ \operatorname{S}_{\mathrm{S}} \text{ (1/m)} &=& \\ \operatorname{\textbf{Comments:}} \end{array}$	0.60 9.00 2.1E-06 1.0E-06 4.1E-07 2.0E-07	$C_D(-) = \xi(-) = 0$ 2.1E-6 m2/s was derive	2.5E-0; 20.30
10 ⁻⁵ 10. Elepsed time		10 ²	$\begin{array}{lll} dt_1 \ (\text{min}) &=& \\ dt_2 \ (\text{min}) &=& \\ T_T \ (\text{m}^2/\text{s}) &=& \\ S \ (\text{-}) &=& \\ K_s \ (\text{m/s}) &=& \\ S_s \ (\text{1/m}) &=& \\ \textbf{Comments:} \\ \text{The recommended translysis of the CHir} \end{array}$	0.60 9.00 2.1E-06 1.0E-06 4.1E-07 2.0E-07 ansmissivity of 2	$C_D(-) = \xi(-) = 0$ 2.1E-6 m2/s was derivows the better data an	2.5E-0; 20.3d ved from the d derivative
10 T 10.5 Elepsed time		10 ²	$\begin{array}{lll} dt_1 \ (\text{min}) &=& \\ dt_2 \ (\text{min}) &=& \\ T_T \ (\text{m}^2/\text{s}) &=& \\ S \ (\text{-}) &=& \\ K_s \ (\text{m/s}) &=& \\ S_s \ (\text{1/m}) &=& \\ \textbf{Comments:} \\ \text{The recommended translysis of the CHir quality. The confider} \end{array}$	0.60 9.00 2.1E-06 1.0E-06 4.1E-07 2.0E-07 ansmissivity of 2 phase, which shorce range for the	$C_D(-) = \xi(-) = \xi(-) = 0$ 2.1E-6 m2/s was derivows the better data an interval transmissivit	2.5E-02 20.30 ved from the d derivative y is estimated to
10 T 10.5 Elepsed time		10 ²	$\begin{array}{ll} dt_1 \ (\text{min}) &=\\ dt_2 \ (\text{min}) &=\\ T_T \ (\text{m}^2/\text{s}) &=\\ S \ (\text{-}) &=\\ K_s \ (\text{m}/\text{s}) &=\\ S_s \ (\text{1/m}) &=\\ \textbf{Comments:} \\ \text{The recommended tr} \\ \text{analysis of the CHir} \\ \text{quality. The confider} \\ \text{be 9E-7 m2/s to 5E-6} \\ \text{is 2. The static pressult} \end{array}$	9.00 2.1E-06 1.0E-06 4.1E-07 2.0E-07 ransmissivity of 2 phase, which she are range for the 6 m2/s. The flow ure measured at the content of th	C _D (-) = ξ (-) = 2.1E-6 m2/s was derivows the better data an interval transmissivit dimension displayed ransducer depth, was	2.5E-02 20.30 2ed from the d derivative y is estimated to during the test derived from
10 7 10. ⁻⁶ Elepsed time		30 Family 50	$\begin{array}{ll} dt_1 \ (\text{min}) &=\\ dt_2 \ (\text{min}) &=\\ T_T \ (\text{m}^2/\text{s}) &=\\ S \ (\text{-}) &=\\ K_s \ (\text{m}/\text{s}) &=\\ S_s \ (\text{1/m}) &=\\ \textbf{Comments:} \\ \text{The recommended tr} \\ \text{analysis of the CHir} \\ \text{quality. The confider} \\ \text{be 9E-7 m2/s to 5E-6} \\ \text{is 2. The static pressult} \end{array}$	9.00 2.1E-06 1.0E-06 4.1E-07 2.0E-07 ransmissivity of 2 phase, which share range for the 6 m2/s. The flow are measured at 0 g straight line ext	C _D (-) = ξ (-) = 2.1E-6 m2/s was derivows the better data an interval transmissivit dimension displayed	2.5E-02 20.30 2ed from the d derivative y is estimated to during the test derived from

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			CHi
Area:	Lax	emar	Test no:			1
Borehole ID:	KL)	X18A	Test start:			060818 10:38
Test section from - to (m):	384 00-404	00 m	Responsible for		Reinde	er van der Wal
rest section from - to (m).	304.00-404.	.00 111	test execution:		Remak	Philipp Wol
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachescu
Linear plat O and p			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata	2021	Indata	
KLX18A_384.00-404.00_060818_1_CHir_Q_r	P section	2.0	p ₀ (kPa) =	3921		
4150 -	P above	- 1.8	p _i (kPa) =	3913	<i>a</i> =	
4100		1.6	$p_p(kPa) =$		p _F (kPa) =	391
4050 -		1.4	$Q_p (m^3/s)=$	8.30E-06		
	•	1.2	tp (s) =		t_F (s) =	120
3950		1.0 8	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
3900		~ #	EC _w (mS/m)=			
3850 -		- 0.6	Temp _w (gr C)=	12.8		
3800 -		0.4	Derivative fact.=	0.06	Derivative fact.=	0.0
3750 -	•	- 0.2				
3700 .00 0.20 0.40 0.50 Elapsed	0.80 1.00 1.20 1.40 1 Time (h)	0.0	Results		Results	
			$Q/s (m^2/s)=$	4.1E-07		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	4.2E-07		
			Flow regime:	transient	Flow regime:	transient
Elapsed time	[b] 0, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1		$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	0.30
102	<u> </u>	}	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.00
		-			2	1.9E-0
		3	T (m2/s) = S (-) =	1.0E-06	\ /	1.0E-0
101					$K_s (m/s) =$	9.4E-0
• • • • •		10°	$K_s (m/s) =$			
•		l/im	$S_s(1/m) =$		$S_s (1/m) =$	5.0E-0
•		0.3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.2E-1
10 0		10 ⁻¹	$C_D(-) =$	NA	$C_D(-) =$	1.3E-0
			ξ (-) =	8.28	ξ(-) =	20.6
		0.03	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹⁰ 10 ¹¹	10 ¹² 10 ¹³ 10 ¹	4	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD			$D_{GRF}(-) =$	NA	$D_{GRF}(-) =$	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			<u> </u>
Log-Log plot illol. delivatives-	- Period		dt ₁ (min) =	0.36		1.2E-1
43 Elapsed time	. 1 0		,		3 (iii /i u) =	1.2E-10
102 10						
		300	$T_T (m^2/s) =$	1.9E-06		20.60
1	******		S (-) =	1.0E-06		
• • • • • • • • • • • • • • • • • • • •		10 ²	$K_s (m/s) =$	3.7E-07 2.0E-07		
103		10		■ 2 NE-N7		1
101			$S_s (1/m) =$	2.0L-07		
10		30 2	Comments:			•
10		30 KPa	Comments: The recommended to	ansmissivity of 1	.9E-6 m2/s was deriv	
10 0			Comments: The recommended to analysis of the CHir	ansmissivity of 1	ows the slight better of	lata and a
artical .		30 KPa	Comments: The recommended to analysis of the CHir horizontal stabilizati	ansmissivity of 1 phase, which sho	ows the slight better of ive. The confidence r	lata and a ange for the
artical .		30 KPa	Comments: The recommended translysis of the CHir horizontal stabilizati interval transmissivi	ansmissivity of I phase, which sho on of the derivati y is estimated to	ows the slight better of	lata and a ange for the 6 m2/s. The flow
artical .	jaga sa	30 (God): Octob	Comments: The recommended translysis of the CHir horizontal stabilizati interval transmissivi dimension displayed transducer depth, wa	ansmissivity of 1 phase, which sho on of the derivati y is estimated to during the test is s derived from th	ows the slight better dive. The confidence r be 8E-7 m2/s to 4E-	lata and a ange for the 6 m2/s. The flow re measured at straight line

	Test Su	mm	ary Sheet			
Project:	Oskarshamn site investigat	tion	Test type:[1]			CHi
Area:	Laxer	mar	Test no:			1
Borehole ID:	KLX1	18A	Test start:	060818 13:1		
Test section from - to (m):	404 00-424 00	0 m F	Responsible for		Reinde	er van der Wal
root coolon from to (m).	10 1100 12 1100		est execution:		rtomac	Philipp Wol
Section diameter, 2-r _w (m):	0.0		Responsible for		Crist	an Enachescu
Linear plot Q and p			est evaluation: Flow period		Recovery period	
Linear plot & and p		30	ndata		Indata	
		L	o ₀ (kPa) =	4119		l
KLX18A_404.00-424.00_060818_1_CHir_Q_r	P section P above		o _i (kPa) =	4119		
4300	• P below				n (kBa) –	410
4250	;	45	$o_p(kPa) =$		p _F (kPa) =	410
4200 -	;		$Q_p (m^3/s) =$	3.71E-05		120
4150	;		tp (s) =		t _F (s) =	120
4100			S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
			EC _w (mS/m)=			
4050	:		Temp _w (gr C)=	13.1		
4000		1.5	Derivative fact.=	0.06	Derivative fact.=	0.0
3960		- 0.5				
3900 0.00 0.20 0.40 0.60 Figures	0.80 1.00 1.20 1.40 d Time [h]	١	Results		Results	
		<u>_</u>		1.8E-06		
Log-Log plot incl. derivates- f	low pariod		$Q/s (m^2/s) =$	1.9E-06		
Log-Log plot ilici. derivates- il	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$			transiant
Elapsed tim	ne [h]		Flow regime:	transient	Flow regime:	transient
10 ² 10, ⁴ 10, ³ Elapsed tim	10,-1	-	dt ₁ (min) =		$dt_1 (min) =$	0.7
			$dt_2 (min) =$		$dt_2 (min) =$	9.0
1	1		$\Gamma (m^2/s) =$		$T (m^2/s) =$	7.3E-0
			S (-) =	1.0E-06	` '	1.0E-0
101	0		K_s (m/s) =		K_s (m/s) =	3.7E-0
r i	1	10.1 =	$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0
•		(1/q). F	C (m³/Pa) =	NA	C (m ³ /Pa) =	5.4E-1
100		0.03 ∉ ($C_D(-) =$	NA	$C_D(-) =$	5.9E-0
• • • • • • • • • • • • • • • • • • • •		Š	£ (-) =	-0.85	ξ (-) =	1.2
•	1	10 ⁻²				
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹⁰ 10 ¹¹	10 ¹² 10 ¹³ 10 ¹⁴ 0		S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
		Ī	D _{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	~	Selected represe	ntative paran	neters.	
Log-Log plot illel. delivatives-			dt ₁ (min) =	0.78	C (m ³ /Pa) =	5.4E-10
Log-Log plot mei. denvatives-		C	· · · · · · /			5.9E-0
Elapsed time	10, ² 10, ¹ 10, ²		dt ₂ (min) =	9.00	$C_D(-) =$	J.9L-0
Elapsed tim	5 [N] 10 , ² 10 , ⁴ 10 , ⁵		$dt_2 \text{ (min)} =$	9.00 7.3E-06		
Elapsed tim	1P4	10 3	dt ₂ (min) =		ξ (-) =	
Elapsed tim	1N 19, ⁻² 10, ⁻¹ 10, ⁻²	10 3	$dt_2 \text{ (min)} = $ $T_T \text{ (m}^2/\text{s)} = $	7.3E-06	ξ (-) =	1.24
Elapsed tim		10 ³	$dt_2 \text{ (min)} = $ $T_T \text{ (m}^2/\text{s)} = $ $S \text{ (-)} = $	7.3E-06 1.0E-06	ξ (-) =	
10 ² 10 ³ 10 ³		10 ³	$dt_2 \text{ (min)} = T_T \text{ (m}^2/\text{s)} = S \text{ (-)} = G $	7.3E-06 1.0E-06 1.5E-06	ξ (-) =	
Elapsed tim	No.	10 ³ [earl 100 ⁴]	$dt_2 \text{ (min)} = T_T \text{ (m}^2/\text{s)} = S \text{ (-)} = K_S \text{ (m/s)} = S_S \text{ (1/m)} = Comments:$	7.3E-06 1.0E-06 1.5E-06 2.0E-07	ξ (-) =	1.24
10 ² 10 ³ 10 ³	No.	10 2 [egal food of a	$dt_2 \text{ (min)} = $ $T_T \text{ (m}^2/\text{s)} = $ $S(-) = $ $K_S \text{ (m/s)} = $ $S_S \text{ (1/m)} = $ Comments: The recommended translysis of the CHir	7.3E-06 1.0E-06 1.5E-06 2.0E-07 ansmissivity of 7	ξ (-) = 7.3E-6 m2/s was derive), which shows the b	1.2-
10 ² 10 ³ 10 ³	No.	10 2 [egg] Jodd 70 dd	$dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\ K_S \text{ (m/s)} = \\ S_S \text{ (1/m)} = \\ Comments: \\ The recommended translysis of the CHir stabilization. The co$	7.3E-06 1.0E-06 1.5E-06 2.0E-07 ransmissivity of 7 phase (outer zon nfidence range for	ξ (-) = 7.3E-6 m2/s was derive), which shows the borthe interval transmi	need from the petter derivative issivity is
10 ³ 10 ³ 10 ³	A Company of the Comp	10 2 [red [pod pod p	$dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\ K_S \text{ (m/s)} = \\ Comments: \\ The recommended translysis of the CHir stabilization. The coestimated to be 2E-6$	7.3E-06 1.0E-06 1.5E-06 2.0E-07 ansmissivity of 7 phase (outer zon nfidence range for m2/s to 1E-5 m2	ξ (-) = 7.3E-6 m2/s was derive), which shows the borthe interval transmit	ved from the petter derivative issivity is es the inner zone
10 ³ 10 ³ 10 ³	A Company of the Comp	Fig. 10 10 10 10 10 10 10 1	$dt_2 \text{ (min)} = \\ T_T \text{ (m}^2/\text{s)} = \\ S \text{ (-)} = \\ K_s \text{ (m/s)} = \\ S_s \text{ (1/m)} = \\ Comments: \\ The recommended translysis of the CHir stabilization. The coestimated to be 2E-6 transmissivity of the$	7.3E-06 1.0E-06 1.5E-06 2.0E-07 ansmissivity of 7 phase (outer zon nfidence range for m2/s to 1E-5 m2 CHir phase). Th	ξ (-) = 7.3E-6 m2/s was derive), which shows the borthe interval transmit 2/s (this range include e flow dimension dis	ved from the petter derivative issivity is es the inner zone played during
10 ² 10 ³ Elapsed tim	A Company of the Comp	leg bod od s	$\frac{dt_2 \text{ (min)}}{dt_2 \text{ (min)}} = \frac{1}{100}$ $\frac{dt_2 \text{ (min)}}{dt_2 \text { (min)}} = \frac{1}{100}$ $\frac{dt_2 \text { (min)}}{dt_2 \text { (min)}} = \frac{1}{100}$ $\frac{dt_2 \text { (min)}}{$	7.3E-06 1.0E-06 1.5E-06 2.0E-07 ansmissivity of 7 phase (outer zon infidence range for m2/s to 1E-5 m2 CHir phase). Th ic pressure meas	ξ (-) = 7.3E-6 m2/s was derive), which shows the borthe interval transmit	ved from the petter derivative assivity is esthe inner zone played during oth, was derived

	Test Su	mr	nary Sheet			
Project:	Oskarshamn site investiga					CHi
Area:	Laxer	mar	Test no:			1
Darrah ala ID.						000040 45:40
Borehole ID:	KLX	188	Test start:			060818 15:16
Test section from - to (m):	424.00-444.0	0 m	Responsible for		Reinde	er van der Wal
Section diameter, 2-r _w (m):	0.0	076	test execution: Responsible for		Crist	Philipp Wol
contain dameter, 2 Tw ().	•		test evaluation:		0	=
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4800		T [®]	p ₀ (kPa) =	4313		
KLX18A_424.00-444.00_060818_1_CHir_Q_r	P section P above	,	p _i (kPa) =	4301		
3	• P below • Q		$p_p(kPa) =$	4501	p _F (kPa) =	430
4600		- 6	$Q_p (m^3/s) =$	4.43E-05		
a 4500	•	5 =	tp (s) =	1200	t _F (s) =	120
8 4400	•	Rate [Vmin]	S el S [*] (-)=		S el S* (-)=	1.00E-0
e e e e e e e e e e e e e e e e e e e		ection F	EC _w (mS/m)=		0 0 0 ()=	
4300		13=	Temp _w (gr C)=	13.5		
4200		2	Derivative fact.=		Derivative fact.=	0.0
4100		1		0.05	20	0.0
4000	·					
0.00 0.20 0.40 0.60 0.8 Elapsed 1		1.60	Results		Results	
			Q/s $(m^2/s)=$	2.2E-06		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	2.3E-06		
			Flow regime:	transient	Flow regime:	transient
Elapsed time	hj		$dt_1 (min) =$	0.60	dt_1 (min) =	0.3
102			$dt_2 \text{ (min)} =$	15.00	dt_2 (min) =	9.00
	1	10°	$T (m^2/s) =$		$T (m^2/s) =$	9.9E-0
			S (-) =	1.0E-06	. ,	1.0E-0
101		0.3	$K_s (m/s) =$		$K_s (m/s) =$	4.9E-0
• • • •			$S_s(1/m) =$		$S_s (1/m) =$	5.0E-0
	1	10 ⁻¹ [<u>w</u>	$C_s(7711) = C_s(7711)$	NA	$C (m^3/Pa) =$	4.4E-1
	à	ʻ(1/a)"	$C_D(-) =$	NA	$C (m /Pa) =$ $C_D (-) =$	4.9E-0
100		0.03				19.9
** .	A A A A A A A A A A A A A A A A A A A	2	ξ(-) =	4.94	ξ (-) =	19.9
		10 2	2	.	. 3	NIA.
	1010' 1011' 1012'	0000	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁸ 10 ⁹	10 ¹⁰ 10 ¹¹ 10 ¹² (3	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
, Elapsed time [I			$dt_1 (min) =$	0.30	0 (III /I u) -	4.4E-1
10 ² Elapsed time [r	10 ⁻¹		$dt_2 (min) =$	9.00	= ()	4.9E-0
	30	n	$T_T (m^2/s) =$	9.9E-06	ξ (-) =	19.9
• • • • • • • • • • • • • • • • • • • •	30	U	S (-) =	1.0E-06		
	10	2	$K_s (m/s) =$	2.0E-06		
10 1			$S_s (1/m) =$	2.0E-07		
. ` \	• 30	2	Comments:			
		, (0.00)	3	•	0.9E-6 m2/s was deriv	
100	10	1 6			ows the better derivat	
	The state of the s				transmissivity is esti	
•	3				on displayed during t r depth, was derived	
	-10	0	-		n in the Horner plot to	
10 ¹ 10 ² tD/CD	10 ³ 10 ⁴ 10 ⁵		4,300.9 kPa.	•	•	
IDIOD						

	Test Su	ımı	mary Sheet			
Project:	Oskarshamn site investiga	atior	Test type:[1]			CHi
Area:	Laxe	ema	Test no:			1
Borehole ID:	KLX	(18 <i>P</i>	Test start:			060818 17:20
Test esstien from to (m)					Dainde	
Test section from - to (m):	444.00-464.0	וו טכ	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	an Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata	4500	Indata	I
KLX18A_444.00-464.00_060818_1_CHir_Q_r	• P section	0.3	$p_0 (kPa) =$	4509		
4700	P above P below Q		$p_i(kPa) =$	4507	n (kDa)	450
4650			$p_p(kPa) =$		p _F (kPa) =	450
4600		0.2	$Q_p (m^3/s) =$	1.47E-06		120
400		[Mmin]	tp (s) =		t _F (s) =	120
2 4500		tion Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4450 -			EC _w (mS/m)=	10 -		
4400		0.1	Temp _w (gr C)=	13.8		
4350 -			Derivative fact.=	0.08	Derivative fact.=	
4250]				
0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40 Elapsed Time [h]		1.40	Results		Results	
			Q/s $(m^2/s)=$	7.2E-08		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	7.6E-08		
			Flow regime:	transient	Flow regime:	transient
Elapsed time	[h]10 ⁻¹ 10 ⁰ 10 ¹		$dt_1 (min) =$	0.36	dt_1 (min) =	1.50
			dt_2 (min) =	18.00	dt_2 (min) =	7.20
			$T (m^2/s) =$	1.1E-07	$T (m^2/s) =$	6.5E-0
	•	30	S (-) =	1.0E-06	S (-) =	1.0E-0
101		10 ¹	$K_s (m/s) =$	5.3E-09	K_s (m/s) =	3.2E-0
			$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-0
	3	3	C (m³/Pa) =	NA	$C (m^3/Pa) =$	1.3E-1
		;	C _D (-) =	NA	C_D (-) =	1.5E-02
10	1	10 ⁰	ξ(-) =	2.96	ξ(-) =	-0.1
	•	0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁵ 10 ⁶	10 ⁷ 10 ⁸ 10 ⁹		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
D			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
			$dt_1 (min) =$	1.50		1.3E-10
Elapsed time	[h]1010.		dt ₂ (min) =	7.20	C_D (-) =	1.5E-02
10	30	000	$T_T (m^2/s) =$	6.5E-08		-0.18
	[10	3	S (-) =	1.0E-06		
	110	•	K_s (m/s) =	1.3E-08		
10	30	10	$S_s(1/m) =$	2.0E-07		
		ą	Comments:			
. Jest Comment	10)2		ansmissivity of 6	5.5E-8 m2/s was deriv	ved from the
10		9	analysis of the CHir	phase, which sho	ows the better data an	d derivative
//	AND)			interval transmissivit dimension displayed	
•			■DE ΣΕ-δ MZ/S to 9E-0	∍ m∠/s. The flow	unnension displayed	uuring the test
<i>/</i> .	.10	1				derived from
	10)1	is 2. The static press	ure measured at t	ransducer depth, was rapolation in the Hor	

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site investi	gation	Test type:[1]			CHi
Area:	La	xemar	Test no:			1
Borehole ID:	KI	X18A	Test start:	060818 19:1		
Test section from - to (m):	464.00-484	1.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):		0.076	Responsible for		Cristi	ian Enachesci
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	•
KLX18A_464.00-484.00_060818_1_CHir_Q_r	• P section	0.30	p ₀ (kPa) =	4703		
4950	Pabove Pbelow Q	0.25	p _i (kPa) =	4700	(1.5.)	470
4850	••••••••••••••••••••••••••••••••••••••		$p_p(kPa) =$		p _F (kPa) =	470
; •	:	0.20	$Q_p (m^3/s) =$	1.27E-06		120
8 4750 -		[Wmin]	tp (s) =		t _F (s) =	120
2 day		Injection Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
G 4650		0.10	EC _w (mS/m)= Temp _w (gr C)=	14.1		<u> </u>
	•	0.10	Derivative fact.=		Derivative fact.=	0.0
4550		0.05	Delivative fact.=	0.12	Derivative fact.=	0.0
		-				
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 Time [h]	1.40	Results		Results	
			Q/s $(m^2/s)=$	6.2E-08		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	6.5E-08		
			Flow regime:	transient	Flow regime:	transient
Elapsed tim	e [h]		dt_1 (min) =	0.90	dt_1 (min) =	1.0
10		7	dt_2 (min) =	15.00	dt_2 (min) =	9.0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		101	$T (m^2/s) =$	7.3E-08	$T (m^2/s) =$	1.1E-0
3	•	5	S (-) =	1.0E-06	S (-) =	1.0E-0
	;		K_s (m/s) =	3.6E-09	K_s (m/s) =	5.6E-0
	.	2 5	$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-0
10		1/0/ [mi	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	6.6E-1
•		10° 5	$C_D(-) =$	NA	$C_D(-) =$	7.3E-0
0.3		0.5	ξ (-) =	1.31	ξ(-) =	4.7
	• •	0.5				
	•	0.2	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ³ 10 ⁴ tD	10 ⁵ 10 ⁶	107	S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			0.05.4
Elapsed time [19		dt ₁ (min) =	1.02	$C (m^3/Pa) =$	6.6E-1
10 10 10 10			$dt_2 (min) =$		$C_D(-) =$	7.3E-0
		10 ³	$T_{T} (m^{2}/s) = S (-) =$	1.1E-07 1.0E-06		4.7
		300	$K_s (m/s) =$	2.2E-08		
101	-		$S_s (1/m) =$	2.0E-07		
		10 ²	Comments:	2.02 07		<u> </u>
		.00-d		ansmissivity of 1	.1E-7 m2/s was deriv	ved from the
10 7	*	30 8	analysis of the CHir	phase, which sho	ows the better data an	d derivative
	The state of the s	10 ¹			interval transmissivit	
	* * * *				dimension displayed ransducer depth, was	
					anabaacer acpui, was	
		3			rapolation in the Hor	ner plot to a

	Test Su	mm	ary Sheet			
Project:	Oskarshamn site investiga	tion <u>I</u>	Test type:[1]			CHi
Area:	Laxeı	mar T	Test no:			3
Borehole ID:	KLX18A		Test start:	060819 00:4		
Test section from - to (m):	484.00-504.0	0 m F	Responsible for		Reinde	er van der Wal
Tool oodion from to (m).	10 1.00 00 1.00		est execution:		11011140	Philipp Wol
Section diameter, 2·r _w (m):	0.4		Responsible for		Crist	ian Enachescu
Linear plat O and n			est evaluation:			
Linear plot Q and p		.101	Flow period		Recovery period	
			ndata		Indata	
5150 KIX	18A_484.00-504.00_060819_3_CHir_Q_r	<u> </u>	o ₀ (kPa) =	4895		
5100	P below • Q		o _i (kPa) =	4915		
5050			o _p (kPa) =		p _F (kPa) =	492
5000			$Q_p (m^3/s) =$	4.73E-07		
R 4950	***************************************	. o.12 [i]	p (s) =		t_F (s) =	720
4500		u Rate []	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4850 -		0.08 E	EC _w (mS/m)=			
4800		0.06 T	Temp _w (gr C)=	14.5		
4750		0.04	Derivative fact.=	0.02	Derivative fact.=	0.0
4700		0.02				
4650	2.00 2.50 3.00 3.51	0.00	Results		Results	
Copse	Time (n)			2.3E-08		Ī
Log Log plating derivates fl	low paried		$Q/s (m^2/s) =$	2.4E-08		
Log-Log plot incl. derivates- fl	low period		$\Gamma_{\rm M}$ (m ² /s)=			
Elapsed time [I	h]		low regime:	transient	Flow regime:	transient
10 0 10,3	10,0	_	dt ₁ (min) =		$dt_1 (min) =$	33.00
		_	dt ₂ (min) =		$dt_2 (min) =$	108.0
· /	30		$\Gamma(m^2/s) =$		$T (m^2/s) =$	1.6E-0
	3		S (-) =	1.0E-06	` '	1.0E-0
10 ·1	10		(m/s) =		K_s (m/s) =	8.1E-1
5			$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-0
	3	(d) [min]	C (m³/Pa) =	NA	$C (m^3/Pa) =$	1.6E-0
10.2	710 (· , į	$C_D(-) =$	NA	$C_D(-) =$	1.7E-0
			; (-) =	-4.94	ξ (-) =	-4.3
•	0.3	3				
		ī	$\Gamma_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 3 10 2 tD	10 -1 10 0 10 1		S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
		Ī	O _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	S	Selected represe	entative paran	neters.	
		c	dt ₁ (min) =	33.00	C (m³/Pa) =	1.6E-0
Elapsed time (h	10,1	c	$dt_2 \text{ (min)} =$	108.00		1.7E-0
10		_	$\Gamma_{\rm T} (m^2/s) =$	1.6E-09		-4.3
	3000		6 (-) =	1.0E-06		
1			$K_s (m/s) =$	3.2E-10		
10 °	10 3	3	$S_s(1/m) =$	2.0E-07		
		7	Comments:			<u>I</u>
	300	2		ransmissivity of 1	.6E-9 m2/s was deriv	ved from the
	- 10 ²				ows the better data an	
10 -1		q	quality. The confider	nce range for the	interval transmissivit	ty is estimated to
		1.	e 9F-10 m2/s to 5F	2-9 m2/s. The flow	w dimension displaye	d during the tes
San	130					
A. i. i. i. d. i.	30	is	s 2. The static press	ure measured at t	ransducer depth, was	
10 2 10 2 10 2 10 C	10 1 10 2 10 3	is tl	s 2. The static press	ure measured at t g straight line ext	ransducer depth, was rapolation in the Hor	

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemar	Test no:			
Borehole ID:	KLX18A	Test start:			060819 06:24
Toot coation from to (m):				Doind	or von der Me
Test section from - to (m):	504.00-524.00 m	test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachescı
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Emeai piot & and p		Indata		Indata	
5350	0.12	p ₀ (kPa) =	5086		
KLX18A_504.00-524.00_060819_1_CHir_Q_r	P section P above	p _i (kPa) =	5092		
5250	P below Q -0.10	$p_p(kPa) =$	5292	p _F (kPa) =	512
S200 -	· ·	$Q_p (m^3/s) =$	4.70E-07		
₹ 5150 •	i 10.08	tp (s) =	1200	t _F (s) =	120
(a) 5150		S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
90 qui no 0.5550 -	In b ct los	EC _w (mS/m)=		(/	
5000 -	0.04	Temp _w (gr C)=	14.8		
4860 -	***************************************	Derivative fact.=	0.06	Derivative fact.=	0.0
4600	: 10.02				
4850	1.00 1.20 1.40 1.60 1.80 ne IN	Results		Results	
Capace IIII	ne îni		2.3E-08		1
Log-Log plot incl. derivates- flo	w pariad	Q/s $(m^2/s)=$ T _M $(m^2/s)=$	2.4E-08		
Log-Log plot illel. delivates- lic	w period	Flow regime:	transient	Flow regime:	transient
Elapsed time [1	n) 10-1	$dt_1 \text{ (min)} =$		dt ₁ (min) =	3.3
10	102	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	10.2
:		$T (m^2/s) =$		$T (m^2/s) =$	1.7E-0
	30	S (-) =	1.0E-06	` '	1.0E-0
10		$K_s (m/s) =$		$K_s (m/s) =$	8.5E-1
	101	$S_s (1/m) =$		$S_s(1/m) =$	5.0E-0
	Mills 3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	4.8E-1
	1/2 (1/4	$C_D(-) =$	NA	$C_D(-) =$	5.2E-0
1011	10°	ξ(-) =	-2.35		-1.9
• •	0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁻¹ 10 ⁰ tD	10 ¹ 10 ² 10 ³	S _{GRF} (-) =	NA	S _{GRF} (-) =	NA
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- ı	recovery period	Selected represe	entative param	neters.	
		dt_1 (min) =	3.30	σ (m /i α) =	4.8E-10
10 ¹³ Elapsed time [1	n] 101	dt_2 (min) =	10.20	C_D (-) =	5.2E-0
	300	$T_T (m^2/s) =$	1.7E-08		-1.9
		S (-) =	1.0E-06		
	10 ²	K_s (m/s) =	3.4E-09		
10°		$S_s (1/m) =$	2.0E-07		
	(50 E	Comments:			
	10 ¹ 06		•	.7E-8 m2/s was deri	
10-1	å			ows the better data ar interval transmissivi	
	3			dimension displayed	
		is 2. The static press	ure measured at t	ransducer depth, was	s derived from
<u> </u>	10°	the CHir phase using value of 5,096.4 kPa		rapolation in the Hor	ner plot to a
10 ⁻¹ 10 ⁰	10 ¹ 10 ² 10 ³				

	Test Su	ımn	nary Sheet				
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi	
Area:	Laxe	emar	Test no:				
Borehole ID:	KLX	(18A	Test start:	060819 08:4			
T (()							
Test section from - to (m):	524.00-544.0		Responsible for test execution:		Reinde	er van der Wa Philipp Wol	
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachesc	
l !			test evaluation:		:dedeckedskindskedskedsdeckelbeds		
Linear plot Q and p			Flow period Indata		Recovery period Indata		
		L	p ₀ (kPa) =	5280	indata	1	
* KLX18A_524.00-544.00_060819_1_CHir_Q_r	• P section	L	_{P0} (кга) = p _i (kPa) =	5279			
5500	• P above • P below • Q		$p_p(kPa) = p_p(kPa)$		p _F (kPa) =	528	
5450 -	* * *		$\frac{\rho_p(\kappa r a)}{Q_p(m^3/s)} =$	5.53E-06		320	
5400 -			$\frac{Q_p (m / s) =}{tp (s)} =$		t _F (s) =	120	
G 5550	• :		S el S [*] (-)=		S el S [*] (-)=	1.00E-0	
\$ 5000			S er S (-)= EC _w (mS/m)=	1.00L-00	S el S (-)=	1.00L-0	
\$ 5250 ·			Temp _w (gr C)=	15			
5200	·		Derivative fact.=		Derivative fact.=	0.0	
5150		0.2	20	0.0 .	20	0.0	
5050	i 0 1.00 1.20 1.40	0.0					
0.00 0.20 0.40 0.60 0.8 Elapsed		1.60	Results		Results		
			$Q/s (m^2/s)=$	2.7E-07			
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	2.8E-07			
Elapsed time	a fal		Flow regime:	transient	Flow regime:	transient	
10 ² Liapsed time	10,10,10,10,10,10,10,10,10,10,10,10,10,1		dt_1 (min) =		dt_1 (min) =	0.4	
			$dt_2 (min) =$		$dt_2 (min) =$	9.0	
, 0 yes 100 mas	*************************************		$T(m^2/s) =$		$T (m^2/s) =$	1.3E-0	
101			S (-) =	1.0E-06	``	1.0E-0	
			$K_s (m/s) =$		$K_s (m/s) =$	6.3E-0	
10		5	$S_s (1/m) =$		S _s (1/m) =	5.0E-0	
		9	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	6.4E-1	
			C _D (-) =	NA	$C_D(-) =$	7.1E-0	
10 ⁻¹		10 2	ξ (-) =	8.45	ξ (-) =	20.9	
	-		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ¹⁰ 10 ¹¹	10 ¹² 10 ¹³ 10 ¹⁴		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe				
5 51	• P =		$dt_1 \text{ (min)} =$	0.57	C (m³/Pa) =	6.4E-1	
Elapsed time	ħ] ₂ β, , , , , , , , , , , , , , , , , , ,	L	$dt_2 \text{ (min)} =$		$C_D(-) =$	7.1E-0	
10 7			$T_T (m^2/s) =$	6.8E-07		8.4	
	3	300	S (-) =	1.0E-06			
\(\frac{1}{\cdot \cdot \			$K_s (m/s) =$	1.4E-07		1	
10 7		L	$S_s (1/m) =$	2.0E-07			
	-	L	Comments:	1			
·\					5.8E-7 m2/s was deriv		
10 0	1				ws the slight better da		
· · ·	******				nge for the interval tra		
	*				2/s. The flow dimensi		
			during the test is 2. I	the static pressur	e measured at transin		
10, 10	10 ³ 10 ⁴ 10 ⁵	10 ⁰	during the test is 2. I derived from the CH plot to a value of 5,2	ir phase using st	raight line extrapolati		

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investigation					CHii
Area:	Laxe	mar	Test no:			1
Borehole ID:	VIV	′10 A	Test start:			
Borenoie ID.	KLX	TOA	rest start.			060819 10:56
Test section from - to (m):	544.00-564.0		Responsible for		Reinde	er van der Wal
Section diameter, 2·r _w (m):	0.		test execution: Responsible for		Crist	Philipp Wol
e e e e e e e e e e e e e e e e e e e			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
5700		72.0	p ₀ (kPa) =	5477		
KLX18A_544.00-564.00_060819_1_CHir_Q_r	P section P above P below	1.8	p _i (kPa) =	5479		
5600 -		1.6	p _p (kPa) =	5679	p _F (kPa) =	5480
5550 •		1.4	$Q_p (m^3/s) =$	1.19E-05		
<u>z</u>			tp (s) =	1200	t_F (s) =	1200
\$ 500		Rate [W	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5460 -	A Alliente of the second		EC _w (mS/m)=		`,	
5400 -	The state of the s	-	Temp _w (gr C)=	15.4		
5350 -		0.4	Derivative fact.=	0.2	Derivative fact.=	0.0
5300 -		- 0.2				
5250						
0.00 0.20 0.40 0.60 0.80 Elapsed	1.00 1.20 1.40 1.60 1Time [h]		Results		Results	
			$Q/s (m^2/s)=$	5.8E-07		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	6.1E-07		
			Flow regime:	transient	Flow regime:	transient
10 ³ 10 ²	(h) 10,-1 10,0	า	$dt_1 (min) =$	0.15	dt_1 (min) =	0.27
10		3	$dt_2 (min) =$	2.10	dt_2 (min) =	3.30
- And the same and		10 °	$T (m^2/s) =$	3.8E-07	$T (m^2/s) =$	5.5E-0
			S (-) =	1.0E-06	S (-) =	1.0E-06
10 °		0.3	K _s (m/s) =	1.9E-08	$K_s (m/s) =$	2.7E-08
			$S_s (1/m) =$	5.0E-08	$S_s (1/m) =$	5.0E-08
		10 -1 [[Viju]]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.0E-09
•		1/9, (1/9	C _D (-) =	NA	C _D (-) =	1.1E-0 ⁻
10 -1		0.03	ξ (-) =	-2.18		-2.3
		10 -2				
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵		S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
	•	ľ	D _{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
		Ī	dt ₁ (min) =	0.27	$C (m^3/Pa) =$	1.0E-09
10 10 Elapsed time			dt ₂ (min) =	3.30	` ′	1.1E-0′
	30	100	$T_T (m^2/s) =$	5.5E-07	ξ(-) =	-2.35
			S (-) =	1.0E-06		
	F10	02				
\$1.32 x x x x x x x x x x x x x x x x x x x	11		K_s (m/s) =	1.1E-07		
10"			$K_s (m/s) = S_s (1/m) =$	1.1E-07 2.0E-07		
105	34	KPa]				
10"	34	0 C C C C C C C C C C C C C C C C C C C	S _s (1/m) = Comments:	2.0E-07	5.5E-7 m2/s was deriv	ved from the
10"	34	o & & & & & & & & & & & & & & & & & &	S _s (1/m) = Comments: The recommended tr analysis of the CHir	2.0E-07 ansmissivity of 5 phase (inner zon	e), which shows the b	etter data and
notice .	34	o o o o o	S _s (1/m) = Comments: The recommended translysis of the CHir derivative quality. The	2.0E-07 cansmissivity of 5 phase (inner zon ne confidence rai	e), which shows the bage for the interval tra	etter data and ansmissivity is
notice .	31	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	S _s (1/m) = Comments: The recommended translysis of the CHir derivative quality. The estimated to be 1E-7	2.0E-07 cansmissivity of 5 phase (inner zon ne confidence ran m2/s to 9E-7 m2	e), which shows the bage for the interval tra 2/s. The flow dimensi	netter data and ansmissivity is on displayed
notice .	31	O O O O O O O O O O O O O O O O O O O	S _s (1/m) = Comments: The recommended translysis of the CHir derivative quality. The estimated to be 1E-7 during the test is 2. The comments of the comments	2.0E-07 ansmissivity of 5 phase (inner zon ne confidence rai m2/s to 9E-7 m2 The static pressur	e), which shows the bage for the interval tra	netter data and ansmissivity is on displayed acer depth, was

	Test S	umi	mary Sheet			
Project:	Oskarshamn site investigation					CHi
Area:	Lax	cema	r Test no:			1
Borehole ID:	KLX18A		Test start:			060819 13:29
Test section from - to (m):	564.00-584	.00 m	Responsible for		Reinde	er van der Wal
0 (0.070	test execution:		Outer	Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for test evaluation:	Cristian Enaches		
Linear plot Q and p			Flow period		Recovery period	
			Indata	***************************************	Indata	**************************************
5960		0.25	p ₀ (kPa) =	5676		
KLX18A_564.00-584.00_060819_1_CHir_Q_r	P section P above P below		p _i (kPa) =	5674		
5860	· q	- 0.20	$p_p(kPa) =$	5874	p _F (kPa) =	5674
5800	•		$Q_p (m^3/s) =$	1.43E-06		
5750		- 0.15 E	tp (s) =	1200	t_F (s) =	1200
5700		on Rate [1	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5650 -		0.10	EC _w (mS/m)=			
5600 -	A CONTRACTOR OF THE PROPERTY O		Temp _w (gr C)=	15.7		
5550 -		- 0.05	Derivative fact.=	0.07	Derivative fact.=	0.0
5500						
5450	0.80 1.00 1.20 1.40	0.00				
Elapsed	Time [h]		Results	7.05.00	Results	
			Q/s (m ² /s)=	7.0E-08		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M}$ (m ² /s)=	7.3E-08		
4 .2 Elapsed ti	me_[h]		Flow regime:	transient	Flow regime:	transient
10 ² 10 ³ Elapsed ti	19. ²¹	\neg	$dt_1 (min) = dt_2 (min) =$		$dt_1 (min) = $ $dt_2 (min) = $	1.02 7.80
		İ			$dt_2 (min) = $ $T (m^2/s) = $	4.4E-0
		30	T (m2/s) = S (-) =	1.0E-06		1.0E-0
101			$K_s (m/s) =$		$K_s (m/s) =$	2.2E-0
			$S_s (1/m) =$		$S_s (1/m) =$	5.0E-08
	* *	3	$C_s(1/111) = C_s(1/111) = C_s(1/111)$	NA	$C (m^3/Pa) =$	8.8E-1
1		İ	$C_D(-) =$	NA	$C_D(-) =$	9.7E-0
100		10	ξ(-) =		ξ(-) =	32.30
			5()		7()	
		0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁶ 10 ⁷	10 ⁸ 10 ⁹	10 ¹⁰	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
	i.b		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
			dt_1 (min) =	1.02	$C (m^3/Pa) =$	8.8E-1
Elapsed time	[h]10. ⁻² 10. ⁻¹	ገ	dt_2 (min) =	7.80	C _D (-) =	9.7E-03
		300	$T_T (m^2/s) =$	4.4E-07	ξ (-) =	32.30
	p. p. b. B. see See See See See See See See See See		S (-) =	1.0E-06		
	· · ·	10 ²	$K_s (m/s) =$	8.9E-08		
10	ž	30	$S_s (1/m) =$	2.0E-07		
· //·	÷. 4	1	Comments:			
	·\.	10 ¹		•	1.4E-7 m2/s was deriv	
	<u>.</u> /				vive a daminativa etabi	uzation at late
10 9	in a series		analysis of the CHir times. The confidence			
10 %	· , , , , , , , , , , , , , , , , , , ,	3		ce range for the in	nterval transmissivity	is estimated to
10 8	· '',	3 10°	times. The confidence be 1E-7 m2/s to 8E-2 is 2. The static press	ce range for the in 7 m2/s. The flow ure measured at t	nterval transmissivity dimension displayed	is estimated to during the test derived from

	Test Sumi	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemai	Test no:			1
Borehole ID:	KI X18A	Test start:	060		060819 15:30
Test section from - to (m):	584.00-604.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	0.076	Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
6200	30	p ₀ (kPa) =	5872		
KLX18A_584.00-604.00_060819_1_CHir_Q_r	P section P above P below	p _i (kPa) =	5869		
\	- Q 25	$p_p(kPa) =$	6069	p _F (kPa) =	587
6000		$Q_{p} (m^{3}/s) =$	2.33E-05		
E 900	20	tp (s) =	1200	t _F (s) =	120
8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	15.8 Rate [Mr	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
w nhode	njection	EC _w (mS/m)=		()	
Š 5700	- 10	Temp _w (gr C)=	16		
5600 -		Derivative fact.=	0.04	Derivative fact.=	0.0
5500					
5400 0.00 0.20 0.40 0.60	0.80 1.00 1.20 1.40				
Elapsed	1.00 1.20 1.40	Results		Results	
		Q/s $(m^2/s)=$	1.1E-06		
Log-Log plot incl. derivates- fl	low period	$T_M (m^2/s) =$	1.2E-06		
		Flow regime:	transient	Flow regime:	transient
10 ² 10, 3 10, 2 Elapsed tim	e [h]	dt_1 (min) =	0.78	dt_1 (min) =	0.18
10	†				
-	<u>_</u>	dt_2 (min) =	16.20	dt_2 (min) =	1.03
	3			$dt_2 (min) = $ $T (m^2/s) = $	
	13 - 110°	2		$T (m^2/s) =$	1.6E-0
10	10°	$T (m^2/s) = S (-) =$	2.0E-06 1.0E-06	$T (m^2/s) = S (-) =$	1.6E-0
10	10°	$T (m^2/s) = S (-) = K_s (m/s) =$	2.0E-06 1.0E-06 1.0E-07	$T (m^2/s) = S (-) = K_s (m/s) =$	1.6E-0 1.0E-0 7.8E-0
10 (10 (10 (10 (10 (10 (10 (10 (10 (10 ($T (m^2/s) = S (-) = K_s (m/s) = S_s (1/m) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08	$T (m^2/s) = S (-1) = K_s (m/s) = S_s (1/m) = S_s (1/$	1.6E-00 1.0E-00 7.8E-00 5.0E-00
10 ⁻¹	0.3 putus, (o);	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10
10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.3 putus, (o);	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00
Add (1940)	0.3 putus, (o);	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$	1.6E-0 1.0E-0 7.8E-0 5.0E-0 2.6E-1 2.9E-0
Add (1940)	0.3 India (1) 10 ¹ 49	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00
Add (1940)	0.3 July (10) 10 ⁻¹ 19	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA 3.78	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00
10 ⁶	0.3 India (10) 10 10 10 10 10 10 10 10 10 10 10 10 10	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA 3.78 NA	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79 NA
10 ⁶⁰	0.3 [10 ⁴] 10 ¹⁰ 10 ¹⁰	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA 3.78 NA NA	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $S_s (-) =$ $S_{GRF} (m^2/s) =$ $S_{GRF} (-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79
10 ⁶	0.3 [10 ⁴] 10 ¹⁰ 10 ¹⁰	$\begin{array}{lll} T \; (m^2/s) \; = \; \\ S \; (\cdot) \; & = \; \\ K_s \; (m/s) \; = \; \\ S_s \; (1/m) \; = \; \\ C \; (m^3/Pa) \; = \; \\ C_D \; (\cdot) \; & = \; \\ \xi \; (\cdot) \; & = \; \\ \end{array}$ $\begin{array}{lll} T_{GRF}(m^2/s) \; = \; \\ S_{GRF}(\cdot) \; & = \; \\ D_{GRF} \; (\cdot) \; & = \; \\ \end{array}$ Selected represe	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA 3.78 NA NA NA	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF} (-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79 NA
10 ⁶⁰	0.3 log 10 10 10 10 10 10 10 10 10 10 10 10 10	$\begin{array}{lll} T \; (m^2/s) & = & \\ S \; (\text{-}) & = & \\ K_s \; (m/s) \; = & \\ S_s \; (1/m) \; = & \\ C \; (m^3/Pa) \; = & \\ C_D \; (\text{-}) & = & \\ \xi \; (\text{-}) & = & \\ & & \\ T_{GRF}(m^2/s) \; = & \\ S_{GRF}(\text{-}) & = & \\ D_{GRF} \; (\text{-}) & = & \\ & & \\ Selected \; represe \\ dt_1 \; (min) \; = & \\ \end{array}$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF} (-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79 NA NA
Log-Log plot incl. derivatives-	0.3 [0.1] 10 ¹⁰	$\begin{array}{lll} T \; (m^2/s) \; = \; \\ S \; (\cdot) \; & = \; \\ K_s \; (m/s) \; = \; \\ S_s \; (1/m) \; & = \; \\ C \; (m^3/Pa) \; = \; \\ C_D \; (\cdot) \; & = \; \\ \xi \; (\cdot) \; & = \; \\ & \\ T_{GRF}(m^2/s) \; = \; \\ S_{GRF}(\cdot) \; & = \; \\ D_{GRF} \; (\cdot) \; & = \; \\ D_{GRF} \; (\cdot) \; & = \; \\ C_{GRF}(\cdot) \; & = $	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA NA 1.02	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $S_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $S_{GRF} (-) =$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 NA NA NA 2.6E-10 2.9E-00
Log-Log plot incl. derivatives-	0.3 log 10 10 10 10 10 10 10 10 10 10 10 10 10	$\begin{array}{lll} T \ (m^2/s) & = & \\ S \ (\cdot) & = & \\ K_s \ (m/s) & = & \\ S_s \ (1/m) & = & \\ C \ (m^3/Pa) & = & \\ C_D \ (\cdot) & = & \\ \xi \ (\cdot) & = & \\ \hline T_{GRF} (m^2/s) & = & \\ S_{GRF} \ (\cdot) & = & \\ \hline D_{GRF} \ (\cdot) & = & \\ \hline dt_1 \ (min) & = & \\ dt_2 \ (min) & = & \\ \hline T_T \ (m^2/s) & = & \\ \end{array}$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA 1.02 1.6E-06	$\begin{array}{lll} T \ (m^2/s) & = & \\ S \ (\cdot) & = & \\ K_s \ (m/s) & = & \\ S_s \ (1/m) & = & \\ C_D \ (\cdot) & = & \\ \xi \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C_{GRF}(m^2/s) & = & \\ C_{GRF}(\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C \ (m^3/Pa) & = & \\ C \ (m^3/Pa) & = & \\ C_D \ (\cdot) & = & \\ \end{array}$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 NA NA NA 2.6E-10 2.9E-00
Log-Log plot incl. derivatives-	0.3 [0.1] 10 ¹⁰	$\begin{array}{lll} T \; (m^2/s) \; = \\ S \; (\text{-}) \; & = \\ K_s \; (m/s) \; = \\ S_s \; (1/m) \; = \\ C \; (m^3/Pa) \; = \\ C_D \; (\text{-}) \; & = \\ \xi \; (\text{-}) \; & = \\ \\ T_{GRF}(m^2/s) \; = \\ S_{GRF}(\text{-}) \; & = \\ \\ D_{GRF} \; (\text{-}) \; & = \\ \\ D_{GRF} \; (\text{-}) \; & = \\ \\ T_T \; (min) \; & = \\ \\ T_T \; (m^2/s) \; & = \\ S \; (\text{-}) \; & = \\ \end{array}$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA 1.02 1.6E-06 1.0E-06	$\begin{array}{lll} T \ (m^2/s) & = & \\ S \ (\cdot) & = & \\ K_s \ (m/s) & = & \\ S_s \ (1/m) & = & \\ C_D \ (\cdot) & = & \\ \xi \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C_{GRF}(m^2/s) & = & \\ C_{GRF}(\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C \ (m^3/Pa) & = & \\ C \ (m^3/Pa) & = & \\ C_D \ (\cdot) & = & \\ \end{array}$	NA
Log-Log plot incl. derivatives-	0.3 pull 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹¹ 10 ¹⁰ recovery period	$\begin{array}{lll} T \; (m^2/s) \; = \\ S \; (\text{-}) \; & = \\ K_s \; (m/s) \; = \\ S_s \; (1/m) \; = \\ C \; (m^3/Pa) \; = \\ C_D \; (\text{-}) \; & = \\ \xi \; (\text{-}) \; & = \\ \\ T_{GRF}(m^2/s) \; = \\ S_{GRF}(\text{-}) \; & = \\ \\ D_{GRF} \; (\text{-}) \; & = \\ \\ D_{GRF} \; (\text{-}) \; & = \\ \\ Selected \; represed \\ dt_1 \; (min) \; & = \\ dt_2 \; (min) \; & = \\ \\ T_T \; (m^2/s) \; & = \\ S \; (\text{-}) \; & = \\ \\ K_s \; (m/s) \; & = \\ \end{array}$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA 1.02 1.6E-06 3.1E-07	$\begin{array}{lll} T \ (m^2/s) & = & \\ S \ (\cdot) & = & \\ K_s \ (m/s) & = & \\ S_s \ (1/m) & = & \\ C_D \ (\cdot) & = & \\ \xi \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C_{GRF}(m^2/s) & = & \\ C_{GRF}(\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C \ (m^3/Pa) & = & \\ C \ (m^3/Pa) & = & \\ C_D \ (\cdot) & = & \\ \end{array}$	1.6E-06 1.0E-06 7.8E-08 5.0E-08 2.6E-10 2.9E-02 NA NA NA 2.6E-10 2.9E-02
Log-Log plot incl. derivatives-	0.3 [0.1] 10 ¹⁰	$\begin{array}{lll} T \ (m^2/s) & = \\ S \ (\cdot) & = \\ K_s \ (m/s) & = \\ S_s \ (1/m) & = \\ C_D \ (\cdot) & = \\ \xi \ (\cdot) & = \\ \\ \hline T_{GRF} (m^2/s) & = \\ S_{GRF} (\cdot) & = \\ \hline D_{GRF} \ (\cdot) & = \\ \hline Selected \ represedut_1 \ (min) & = \\ dt_2 \ (min) & = \\ \hline T_T \ (m^2/s) & = \\ S \ (\cdot) & = \\ K_s \ (m/s) & = \\ \hline S_s \ (1/m) & = \\ \end{array}$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA 1.02 1.6E-06 1.0E-06	$\begin{array}{lll} T \ (m^2/s) & = & \\ S \ (\cdot) & = & \\ K_s \ (m/s) & = & \\ S_s \ (1/m) & = & \\ C_D \ (\cdot) & = & \\ \xi \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C_{GRF}(m^2/s) & = & \\ C_{GRF}(\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ C_{GRF} \ (\cdot) & = & \\ \end{array}$ $\begin{array}{lll} C \ (m^3/Pa) & = & \\ C \ (m^3/Pa) & = & \\ C_D \ (\cdot) & = & \\ \end{array}$	1.6E-06 1.0E-06 7.8E-08 5.0E-08 2.6E-10 2.9E-02 NA NA NA 2.6E-10 2.9E-02
Log-Log plot incl. derivatives-	0.3 pull 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹¹ 10 ¹⁰ recovery period	$\begin{array}{lll} T \; (m^2/s) \; = \\ S \; (\cdot) \; & = \\ K_s \; (m/s) \; = \\ S_s \; (1/m) \; = \\ C \; (m^3/Pa) \; = \\ C_D \; (\cdot) \; & = \\ \xi \; (\cdot) \; & = \\ \\ \frac{T_{GRF}(m^2/s)}{S_{GRF}(\cdot)} \; = \\ D_{GRF} \; (\cdot) \; & = \\ \\ \frac{D_{GRF}(\cdot)}{S_{GRF}(\cdot)} \; = \\ \\ \frac{D_{GRF}(\cdot)}{S_{GRF}(\cdot)} \; = \\ \frac{D_{GRF}(\cdot)}{S_{GRF}(\cdot)} $	2.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA NA NA NA NA	$\begin{array}{lll} T \ (m^2/s) & = & \\ S \ (\cdot) & = & \\ K_s \ (m/s) & = & \\ S_s \ (1/m) & = & \\ C_D \ (\cdot) & = & \\ \xi \ (\cdot) & = & \\ & \xi \ (\cdot) & = & \\ & \frac{T_{GRF}(m^2/s)}{S_{GRF}(\cdot)} & = & \\ D_{GRF} \ (\cdot) & = & \\ & \frac{D_{GRF} \ (\cdot)}{S_{GRF}(\cdot)} & = & \\ & \frac{D_{GRF} \ $	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 NA NA NA NA 1.79 1.79 1.79
Log-Log plot incl. derivatives- 10 2 10 3 Elapsed time 10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.3 pull 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹¹ 10 ¹⁰ recovery period	$\begin{array}{lll} T \ (m^2/s) & = \\ S \ (\cdot) & = \\ K_s \ (m/s) & = \\ S_s \ (1/m) & = \\ C \ (m^3/Pa) & = \\ C_D \ (\cdot) & = \\ \xi \ (\cdot) & = \\ & \\ \frac{T_{GRF}(m^2/s)}{s} & = \\ S_{GRF} \ (\cdot) & = \\ & \\ D_{GRF} \ (\cdot) & = \\ & \\ D_{GRF} \ (\cdot) & = \\ & \\ \frac{T_T \ (m^2/s)}{s} & = \\ S \ (\cdot) & = \\ K_s \ (m/s) & = \\ S_s \ (1/m) & = \\ & \\ \hline Comments: \\ \hline The \ recommended \ tr \\ & \\ \end{array}$	2.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA NA NA NA NA	T (m ² /s) = S (-) = K _s (m/s) = S _s (1/m) = C (m ³ /Pa) = C _D (-) = ξ (-) = T _{GRF} (m ² /s) = S _{GRF} (-) = D _{GRF} (-) = teters. C (m ³ /Pa) = C _D (-) = ξ (-) =	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79 NA NA NA NA NA Ved from the
Log-Log plot incl. derivatives- 10 2 10 3 Elapsed time 10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.3 [10 ¹] 10 ¹ 10 ¹⁰ recovery period	$T (m^2/s) = S (-) = K_s (m/s) = S_s (1/m) = C (m^3/Pa) = C_D (-) = S_GRF (-)$	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA NA NA NA 1.02 1.6E-06 1.0E-07 2.0E-07	T (m ² /s) = S (-) = K _s (m/s) = S _s (1/m) = C (m ³ /Pa) = C _D (-) = ξ (-) = T _{GRF} (m ² /s) = S _{GRF} (-) = D _{GRF} (-) = ξ (-) = ξ (-) = ξ (-) = ξ (-) = ξ (-) =	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79 NA NA NA NA NA Ved from the rivative
Log-Log plot incl. derivatives- 10 2 10 3 Elapsed time 10 10 10 10 10 10 10 10 10 10 10 10 10 1	recovery period 10 ³ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹ 10	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF} (-) =$ $Selected represe$ $dt_1 (min) =$ $dt_2 (min) =$ $T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $Comments:$ The recommended translysis of the CHir stabilization at midd!	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA NA NA 1.02 1.6E-06 1.0E-06 3.1E-07 2.0E-07 cansmissivity of 1 phase (inner zon le times. The con	T (m ² /s) = S (-) = K _s (m/s) = S _s (1/m) = C (m ³ /Pa) = C _D (-) = ξ (-) = T _{GRF} (m ² /s) = S _{GRF} (-) = D _{GRF} (-) = teters. C (m ³ /Pa) = C _D (-) = ξ (-) =	1.6E-06 1.0E-06 7.8E-08 5.0E-08 2.6E-10 2.9E-02 1.78 NA NA NA NA Ved from the rivative interval
Log-Log plot incl. derivatives-	0.3 [10 ¹] 10 ¹ 10 ¹⁰ recovery period	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $S_{GRF}(-) =$ $D_{GRF} (-) =$ $Selected represe$ $dt_1 (min) =$ $dt_2 (min) =$ $T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $Comments:$ The recommended translysis of the CHir stabilization at midditransmissivity is estindimension displayed	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA 1.02 1.6E-06 1.0E-06 3.1E-07 2.0E-07 cansmissivity of 1 phase (inner zon le times. The commated to be 8E-7 during the test is	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $S_{GRF} (-) =$ $S_{$	1.6E-00 1.0E-00 7.8E-00 5.0E-00 2.6E-10 2.9E-00 1.79 NA NA NA NA Ved from the rivative interval The flow re measured at
Log-Log plot incl. derivatives-	recovery period 10 ³ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹⁰ 10 ¹ 10	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF} (-) =$ $Selected represe$ $dt_1 (min) =$ $dt_2 (min) =$ $T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $Comments:$ The recommended translysis of the CHir stabilization at midditransmissivity is estindimension displayed transducer depth, wa	2.0E-06 1.0E-06 1.0E-07 5.0E-08 NA NA NA NA NA NA NA NA NA 1.02 1.6E-06 1.0E-06 3.1E-07 2.0E-07 cansmissivity of I phase (inner zon le times. The commated to be 8E-7 during the test is sederived from the second s	$T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ $C (m^3/Pa) =$ $C_D (-) =$ $\xi (-) =$ $S_{GRF} (-) =$ $S_{$	1.6E-06 1.0E-06 7.8E-08 5.0E-08 2.6E-10 2.9E-02 1.79 NA NA NA NA Ved from the rivative interval The flow re measured at

skarshamn site investigation	mary Sheet on Test type:[1]			CHi
				.
Laxema	ar Test no:			1
KI X18	A Test start:	06		060820 08:53
299.00-304.00			Reinde	er van der Wal Philipp Wol
0.07	6 Responsible for		Crist	tian Enachescu
			Pocovory porior	
			T	
T 0.005		2947	au	
P section P shown				1
.0			р _г (kPa) =	294
0.004	· ·			274
	4 (-)			1200
0.003	e _A		` '	1.00E-0
		1.00E-06	S el S (-)=	1.00E-0
0.002				
		·		
0.001	Derivative fact.=	0.15	Derivative fact.=	0.0
				1
1.00 1.20 1.40 1.60	Results		Results	
	$O/s (m^2/s) =$	1.1E-09		1
period		9.0E-10		1
				transient
10 ⁻¹ 10 ⁰	_			6.00
				9.00
	- (, ,	6.5E-09
3000			` '	1.0E-0
•			` '	
103				1.3E-09
	8		- ()	2.0E-0
300			,	1.0E-1
				1.1E-0
102	ξ (-) =	1.17	ξ (-) =	33.30
30	_ 24 >	NIA	_	NA
10 10				NA
 				NA
overy period	100000000000000000000000000000000000000	_		
			0 (III /I u) -	1.0E-1
10,-1				1.1E-0
300				33.30
		1.0E-06		
10 ²	$K_s (m/s) =$	1.3E-09		
*	$S_s (1/m) =$	2.0E-07		
30	Comments:			
101	The recommended to	ransmissivity of 6	5.5E-9 m2/s was deri	ved from the
3				
- 0				
10°	phase using straight	line extrapolation	n in the Horner plot t	o a value of
	Period 10 10 10 10 10 10 10 10 10 1	KLX18A Test start: 299.00-304.00 m Responsible for test execution: 0.076 Responsible for test evaluation: Flow period Indata p_0 (kPa) = p_1 (kPa) = p_1 (kPa) = p_2 (kPa) = p_2 (kPa) = p_2 (kPa) = p_3 (kPa) = p_4 (kPa	KLX18A Test start: 299.00-304.00 m Responsible for test execution: 0.076 Responsible for test evaluation: Flow period Indata $p_0 (kPa) = 2947$ $p_1 (kPa) = 2945$ $p_2 (kPa) = 3170$ $q_2 (m^3/s) = 2.50E-08$ In $q_2 (mn^3/s) = 2.50E-08$ $q_3 (m^2/s) = 1.00E-06$ Flow regime: $q_4 (mn) = 1.12E-09$ $q_4 (mn^2/s) = 3.0E-10$ Flow regime: $q_4 (mn) = 1.00E-06$ $q_4 (mn^2/s) = 3.0E-10$ $q_4 (mn^$	KLX18A Test start: 299.00-304.00 m Responsible for test execution: 0.076 Responsible for test evaluation: Flow period Indata p_0 (kPa) = 2947 p_0 (kPa) = 2945 p_0 (kPa) = 3170 p_0 (kPa) = p_0 (kPa) = p_0 (kPa) = 1200 p_0 (kPa) = p_0 (kPa) = 1200 p_0 (kPa) = p_0 (kPa)

	Test Sum	mary Sheet				
Project:	Oskarshamn site investigation	on Test type:[1]			Pi	
Area:	Laxem	ar Test no:			1	
Borehole ID:	KLX18	A Test start:		060820 10:5		
Test section from - to (m):	304.00-309.00	m Responsible for		Reinde	er van der Wal	
rest section from - to (iii).	304.00-303.00	test execution:		Remak	Philipp Wolf	
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu	
		test evaluation:				
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata		
3250	0.003	p_0 (kPa) =	2996			
	18A_304.00-309.00_060820_1_Pi_Q_r	p _i (kPa) =	3006			
3200		$p_p(kPa) =$	3234	p _F (kPa) =	3195	
3150	P section P above	$Q_p (m^3/s) =$	NA	,		
<u>.</u>	P above P below Q	tn (a) -		t _F (s) =	4140	
3100	:	w[.]			1.00E-06	
96 PF 88		S el S* (-)= EC _w (mS/m)=	1.00E-06	S el S [*] (-)=	1.00E-00	
ž€ 3050 -						
3000	- 10.001	Temp _w (gr C)=	11.3			
	:	Derivative fact.=	NA	Derivative fact.=	0.08	
2950	:					
2900 0.00 0.20 0.40 0.60 0.80 Elap	1.00 1.20 1.40 1.60 1.80 2.00 osed Time [h]	Results		Results		
		Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates-	flow period	$T_{\rm M} (m^2/s) =$	NA			
	non ponou	Flow regime:	transient	Flow regime:	transient	
		$dt_1 \text{ (min)} =$	NA	dt ₁ (min) =	0.72	
		` ′	NA			
		$dt_2 (min) =$		$dt_2 (min) =$	10.20	
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.3E-11	
		S (-) =	NA	S (-) =	1.0E-06	
		$K_s (m/s) =$	NA	K_s (m/s) =	2.7E-12	
		$S_s (1/m) =$	NA	$S_s (1/m) =$	2.0E-07	
		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.5E-11	
		$C_D(-) =$	NA	$C_D(-) =$	1.6E-03	
		ξ (-) =	NA	ξ (-) =	-0.95	
		0		0		
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA	
Log-Log plot incl. derivatives	s- recovery period	Selected represe	entative paran			
		$dt_1 (min) =$	0.72	$C (m^3/Pa) =$	1.5E-11	
10 ³ 10 ²	ime (h)	dt_2 (min) =	10.20	C_D (-) =	1.6E-03	
		$T_T (m^2/s) =$	1.3E-11	ξ(-) =	-0.95	
	10 '	S (-) =	1.0E-06			
10 1	- Indiana	$K_s (m/s) =$	2.7E-12			
	The same of the sa	$S_s(1/m) =$	2.0E-07			
	10 °	Comments:			1	
10°		8.	ranemiceivity of 1	1.3E-11 m2/s was de	ived from the	
A. S.		€	•	The confidence rang		
	10 -1			2 to 3E-11 m2/s. The		
10-1		displayed during the	e test is 2. The sta	tic pressure could no		
	10 -2	due to the very low	transmissivity.			
[·····						
10 - 10 -1	tD 10 - 10 ' 10 2					
10 -3 10 -1	1D 10 0 10 1 10 2					

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CHi
Area:	Laxema	r Test no:			1
Borehole ID:	KLX18/	A Test start:			060820 13:33
Test section from - to (m):	309.00-314.00 n	n Responsible for		Reinde	er van der Wal
,		test execution:			Philipp Wol
Section diameter, 2-r _w (m):	0.07	Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Linear plot Q and p		Indata		Indata	
			2046		1
3300	0.005	$p_0 (kPa) =$	3046		
KLX18A_309.00-314.00_060820_1_CHir_Q_r		p _i (kPa) =	3042	(1.5.)	20.4
	P section P above P below	$p_p(kPa) =$		p _F (kPa) =	3043
3200	٠٥	$Q_p (m^3/s) =$	3.33E-08		
8 3150		tp (s) =		t_F (s) =	1200
- A-	:	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
0 1100 ·	0.002				
3050		Temp _w (gr C)=	11.4		
	0.001	Derivative fact.=	0.12	Derivative fact.=	0.02
3000	ţ				
2950 0.00 0.20 0.40 0.50 0.80 Elapsed Time	1.00 120 1.40 1.60	Results		Results	
		Q/s $(m^2/s)=$	1.4E-09		
Log-Log plot incl. derivates- flo	w period	$T_{\rm M} (m^2/s) =$	1.2E-09		
		Flow regime:	transient	Flow regime:	transient
Elapsed time [h]		$dt_1 \text{ (min)} =$	0.24	$dt_1 \text{ (min)} =$	3.00
10		$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.00
and the second s		$T (m^2/s) =$		$T (m^2/s) =$	9.7E-09
• • • • • • • • • • • • • • • • • • • •	300	S (-) =	1.0E-06	` '	1.0E-06
100	10 ²	$K_s (m/s) =$		$K_s (m/s) =$	1.9E-09
		$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
(CON)		2	NA		1.3E-1
• • •	•	C (m ³ /Pa) =	NA	$C (m^3/Pa) = C_{-}(a)$	1.4E-0
10"	10 ¹	$C_D(-) =$		$C_D(-) =$	
		ξ(-) =	0.71	ξ (-) =	33.20
	3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives- r	ecovery period	Selected represe	entative paran	neters.	
		dt_1 (min) =	3.00	$C (m^3/Pa) =$	1.3E-1
Elapsed time [h]		dt_2 (min) =	9.00	C _D (-) =	1.4E-03
	300	$T_T (m^2/s) =$	9.7E-09	ξ (-) =	33.20
	300	S (-) =	1.0E-06		
	10 ²	K_s (m/s) =	1.9E-09		
101	*	$S_s (1/m) =$	2.0E-07		
	30	Comments:			
10 %	10'	analysis of the CHir quality. The confider be 6E-9 m2/s to 4E-3	phase, which sho nce range for the 8 m2/s. The flow	0.7E-9 m2/s was derivows the better data an interval transmissivity dimension displayed	d derivative ty is estimated to during the test
10 ¹⁰ 10 ¹ 1DCD	10°		g straight line ext	ransducer depth, was rapolation in the Hor	

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				Р
Area:	Lavama	r Test no:			
Alea.	Laxema	rest no.			
Borehole ID:	KLX18A	Test start:	060820 15		
Test section from - to (m):	314.00-319.00 n	Responsible for test execution:		Reinde	er van der Wa Philipp Wol
Section diameter, 2-r _w (m):	0.070	Responsible for		Crist	ian Enachesc
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata	2006	Indata	1
KLX18A_314.00-319.00_060820_1_PLQ_r	0.003	$p_0 (kPa) =$	3096 NA		
3300 -		$p_i (kPa) = p_p(kPa) =$	NA NA	p _F (kPa) =	NA
3250 -	:		NA	ρ _F (κρα) =	INA
P section	0.002	$Q_p (m^3/s) =$		t (a)	NΙΛ
P above P below Q	· [mim]	tp (s) =	NA	t_F (s) =	NA
88 8 8 9 5 9 5 9 5 9 7 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8	• St. Co. Co. Co. Co. Co. Co. Co. Co. Co. Co	S el S* (-)=	NA	S el S [*] (-)=	NA
Ē 3150 ·		EC _w (mS/m)=	NA		
3100	- 0.001	Temp _w (gr C)=	11.5		110
	•	Derivative fact.=	NA	Derivative fact.=	NA
3050					
3000 0.00 0.10 0.20 0.30 0.40 0.50	0.000				
Elapsed Tir		Results		Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- flo	ow period	$T_M (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
		dt_1 (min) =	NA	dt_1 (min) =	NA
		$dt_2 (min) =$	NA	dt_2 (min) =	NA
		$T (m^2/s) =$	NA	$T (m^2/s) =$	NA
		S (-) =	NA	S (-) =	NA
		$K_s (m/s) =$	NA	$K_s (m/s) =$	NA
N 4		$S_s(1/m) =$	NA	$S_s(1/m) =$	NA
Not An	alysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
		C _D (-) =	NA	C_D (-) =	NA
		ξ (-) =	NA	ξ (-) =	NA
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe			
<u> </u>	• •	$dt_1 \text{ (min)} =$	NA	C (m ³ /Pa) =	NA
		$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ(-) =	NA
		S (-) =	NA	/	1
		$K_s (m/s) =$	NA		
		$S_s(1/m) =$	NA		
Not An	alvead	Comments:	<u> </u>	1	1
	,	Based on the test re 11 m2/s.	sponse the inter	val transmissivity is	lower than 1E-

	Test	Sumr	nary Sheet			
Project:	Oskarshamn site inves	stigation	Test type:[1]			CHi
Area:	L	_axemar	Test no:			1
Borehole ID:	!	KLX18A	Test start:	060820		060820 16:52
Test section from - to (m):	319 00-3	24 00 m	Responsible for		Reinde	er van der Wal
Tool ood and I on to (III).	010.00 0	2 1.00 111	test execution:		11011100	Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for		Crist	ian Enachescu
Linear plot O and p			test evaluation:		Recovery period	
Linear plot Q and p			Flow period Indata		Indata	
				21.45		F
3400	KLX18A_319.00-324.00_060820_1_CHir_Q_r	0.10	$p_0 (kPa) =$	3145		
3350			p _i (kPa) =	3140	(1.5.)	212
	•	- 0.08	$p_p(kPa) =$		p _F (kPa) =	3139
3300 -			$Q_p (m^3/s)=$	6.00E-07		
2 2250 -	P section	- 0.06 E	tp (s) =		t _F (s) =	120
25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	P above P below Q	Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2200 - : : : : : : : : : : : : : : : : : :	Commence of the second	- 0.04 II 40.0 +	EC _w (mS/m)=			
3150		-	Temp _w (gr C)=	11.6		
3100		- 0.02	Derivative fact.=	0.11	Derivative fact.=	0.0
3000		000				
0.00 0.20 0.40 0.60 Elapse	0.80 1.00 1.20 1 Time [h]	1.40	Results		Results	<u> </u>
			$Q/s (m^2/s) =$	3.0E-08		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	2.4E-08		
			Flow regime:	transient	Flow regime:	transient
10, ⁻⁴ 10, ⁻³ Elapsed time	»[h]		$dt_1 (min) =$	0.60	dt_1 (min) =	0.90
10 1		10 ²	$dt_2 (min) =$	16.20	dt_2 (min) =	9.00
			$T (m^2/s) =$		$T (m^2/s) =$	7.3E-0
, p = 000 000 000 000 000 000 000 000 000		30	S (-) =	1.0E-06	, ,	1.0E-06
10	i		$K_s (m/s) =$		$K_s (m/s) =$	1.5E-0
•	:	10 ¹	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
	•	lloin	$C_s(7/11) = C(m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.1E-1
•		3 (5)	- ()	NA	a '/)	2.1E-1
10 0			$C_D(-) =$		C_D (-) =	
**		10°	ξ(-) =	10.40	ξ (-) =	9.90
		0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
1011 1012	1013 1014	10 15	$S_{GRF}(-) =$	NA	$S_{GRF}(\cdot) =$	NA
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
			dt₁ (min) =	0.90	_	2.1E-1
10 ⁻⁴ Elapsed time	[h] 10 ⁻² 10 ⁻¹	100	$dt_1 (min) =$ $dt_2 (min) =$		$C (m /Pa) =$ $C_D (-) =$	2.3E-03
102		10 ³		7.3E-08		9.96
			$T_{T} (m^{2}/s) = S (-) =$	1.0E-06		5.90
		300				
101			$K_s (m/s) =$	1.5E-08		
		10 ²	$S_s(1/m) =$	2.0E-07		
	`	OV IRPai	Comments:			
//	· , , ,	30 }		•	7.3E-8 m2/s was deriv	
	λ.	هٔ ا			ows the clearest deriv	
	· · ·	10 ¹	stabilization The co-			DOLVILY 10
		101	stabilization. The co- estimated to be 4E-8			
		101	estimated to be 4E-8	m2/s to 2E-7 m2	2/s. The flow dimensi e measured at transdu	on displayed
10 0 10 10	10 10 10		estimated to be 4E-8 during the test is 2. 7	m2/s to 2E-7 m2 The static pressur ir phase using st	2/s. The flow dimensi	on displayed acer depth, was

	Test S	umr	nary Sheet				
Project:	Oskarshamn site investig					Pi	
Area:	ve l	(emar	Test no:			1	
Alca.	Lax	Ciliai	rest no.			·	
Borehole ID:	KL	X18A	Test start:		060820 18:3		
Test section from - to (m):	324.00-329	.00 m	Responsible for test execution:		Reinde	er van der Wall Philipp Wolf	
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachescu	
			test evaluation:				
Linear plot Q and p			Flow period		Recovery period		
			Indata	2104	Indata	1	
KLX18A_324.00-329.00_060820_1_Pi_Q_r		0.003	$p_0 (kPa) =$	3194	•		
3450			p _i (kPa) =	NA	- (I-D-)	NY A	
3400 -			$p_p(kPa) =$	NA	p _F (kPa) =	NA	
● P section ■ 0 shows		0.002	$Q_p (m^3/s) =$	NA		27.4	
P above P below Q	∴	[Vmin]	tp (s) =	NA	t _F (s) =	NA	
8 300 - 8 300		njection Rate [Wmin]	S el S [*] (-)=	NA	S el S [*] (-)=	NA	
O 3250 -	·	-	EC _w (mS/m)=	NA			
3200		0.001	Temp _w (gr C)=	11.7			
3.00			Derivative fact.=	NA	Derivative fact.=	NA	
3150	:						
3100	0.60 0.70 0.80 0.90	0.000					
0.00 0.10 0.20 0.30 0.40 0.50 Elapsed Ti		1.00	Results		Results		
			$Q/s (m^2/s) =$	NA			
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	NA			
			Flow regime:	transient	Flow regime:	transient	
			$dt_1 (min) =$	NA	dt_1 (min) =	NA	
			$dt_2 (min) =$	NA	dt_2 (min) =	NA	
			$T (m^2/s) =$	NA	$T (m^2/s) =$	NA	
			S (-) =	NA	S (-) =	NA	
			K_s (m/s) =	NA	$K_s (m/s) =$	NA	
			$S_s (1/m) =$	NA	$S_s (1/m) =$	NA	
Not An	alysed		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA	
			$C_D(-) =$	NA	$C_D(-) =$	NA	
			ξ (-) =	NA	ξ (-) =	NA	
			3 ()		3 ()		
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe				
5 - 5 p - 2	, , ,		$dt_1 \text{ (min)} =$	NA	C (m ³ /Pa) =	NA	
			$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	NA	
			$T_T (m^2/s) =$	NA	ξ(-) =	NA	
			S (-) =	NA	٦١/ –		
			$K_s (m/s) =$	NA			
			$S_s(11/s) = S_s(1/m) = S_s(1/m)$	NA	 	 	
** .	.1 1		Comments:		<u> </u>	I	
Not An	arysed			sponse the interva	al transmissivity is lo	wer than 1E-11	

	Test Sı	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			1
Borehole ID:	KL>	(18A	Test start:			060820 19:53
T					B : 1	
Test section from - to (m):	329.00-334.0	JU M	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	C	.076	Responsible for		Crist	an Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Lilieai piot & aliu p			Indata		Indata	
3400 -		- 08	p ₀ (kPa) =	3242	Indata	1
KLX18A_329.00-334.00_060820_1_CHir_Q_r	• Prortion		p _i (kPa) =	3236		
3450	P above P below		$p_p(kPa) =$		p _F (kPa) =	323
3400		- 0.6	•	5.00E-06		323
: *			$Q_{p} (m^{3}/s) = $ $tp (s) =$		t _F (s) =	120
<u>8</u> 3350 -		e [l/min]				1.00E-0
2300	:	egon Rat	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
1		i i	EC _w (mS/m)=	11.0		
3250		- 0.2	Temp _w (gr C)=	11.8		
3200			Derivative fact.=	0.05	Derivative fact.=	0.0
3150						
0.00 0.20 0.40 0.60 Elapsed 1	0.80 1.00 1.20 Time [h]	1.40	Results		Results	
			Q/s $(m^2/s)=$	2.4E-07		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	2.0E-07		
			Flow regime:	transient	Flow regime:	transient
10, ⁴ 10, ³ Elapsed time	[h]		dt_1 (min) =	0.39	dt_1 (min) =	0.12
102		30	dt_2 (min) =	18.00	dt_2 (min) =	9.00
		10 ¹	$T (m^2/s) =$		$T (m^2/s) =$	1.6E-0
+			S (-) =	1.0E-06	, ,	1.0E-0
10 1		3	$K_s (m/s) =$		$K_s (m/s) =$	3.1E-0
• •			$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
		10° E	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.6E-1
2		fa. (1/q)'	a /)	NA	a '/)	2.9E-0
10 ^d	a aya,	0.3	$C_D(-) =$		- 5 ()	1.79
		10 ⁻¹	ξ (-) =	3.63	ξ (-) =	1.73
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
106 107	10 ⁸ 10 ⁹ 10 ¹⁰	•	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
gg p			dt₁ (min) =	0.39	C (m³/Pa) =	2.6E-10
Elapsed time [h]		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	2.9E-0
10.2		1		4.1E-07		3.63
1		10 3	$T_T (m^2/s) = S (-) =$	1.0E-06		3.0.
10 12				8.2E-08		
• • • • • • • • • • • • • • • • • • • •		10 ²	$K_s (m/s) =$			
			$S_s(1/m) =$	2.0E-07		
100		[(Pa]	Comments:			
	÷ .	10 1 000			l.1E-7 m2/s was deriv ws better data and de	
· · · · · · · · · · · · · · · · · · ·		۵.				
· · · · · · · · · · · · · · · · · · ·	*************************************	1	The confidence range	e for the interval	transmissivity is esti-	
10.7	The said		The confidence rang m2/s to 7E-7 m2/s. T		transmissivity is esti- on displayed during t	
10.7		10°	m2/s to 7E-7 m2/s. T static pressure measu	The flow dimensioned at transduce	on displayed during t r depth, was derived	he test is 2. The from the CHir
10 1 10 2	10, 10, 10		m2/s to 7E-7 m2/s. T static pressure measu	The flow dimensioned at transduce	on displayed during t	he test is 2. The from the CHir

Oskarshamn site investigation	Test type:[1]			CHi
				0
Laxemai	Test no:			
KLX18A	Test start:			060820 21:58
334.00-339.00 m			Reinde	er van der Wa Philipp Wol
0.076	Responsible for		Crist	an Enachesc
			:dedeckedskindskedskedsdeckelbeds	
		2200	indata	1
1.5 • P section				
• P below 1.3			n (kBa) –	328
12				326.
1.0				1200
68 (Wairi				1.00E-0
0.7 to 2.0 See 1.0 See		1.00E-00	S el S (-)=	1.00E-0
0.5 E		11 0		
. 04				0.0
0.2	Benvative Taot.	0.01	Derivative last.	0.0
-0.1				
	Results		Results	
	Q/s $(m^2/s)=$	4.6E-07		
v period	$T_M (m^2/s) =$	3.8E-07		
	Flow regime:	transient	Flow regime:	transient
10,1	$dt_1 (min) =$	1.20	dt_1 (min) =	0.12
	$dt_2 (min) =$			9.00
• • • • • • • • • • • • • • • • • • • •			, ,	7.0E-0
10 °	S (-) =		` '	1.0E-0
	K_s (m/s) =			1.4E-0
10 -1		2.0E-07		2.0E-0
3	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	3.8E-1
	$C_D(-) =$		C_D (-) =	4.2E-0
10 -2	ξ (-) =	13.20	ξ (-) =	15.4
*	T (m ² /o)	NΔ	T (m ² /o)	NA
10 %				NA
				NA
covery period				
bovery period				3.8E-1
10, ⁻² 10, ⁻¹ 10, ⁰			,	4.2E-0
7				15.4
	` '			10.10
10 2				
		2.02 07		<u> </u>
10 1		ansmissivity of 7	/ 0F-6 m2/s was deriv	ved from the
<u>*</u>	stabilization of the d	erivative. The co	nfidence range for th	e interval
	transducer depth, wa	s derived from th	ie CHir bhase iising s	
	XLX18A 334.00-339.00 m 0.076 15 15 16 17 18 19 Patrion 17 18 19 Patrion 18 19 Patrion 10 Patrion 10 Patrion 10 Patrion 10 Patrion 10 Patrion 10 Patrion	$\begin{array}{c} \text{Pop}(kPa) = \\ \text{Op}(kPa) = \\ \text{Op}(kPa) = \\ \text{Op}(m^3/s) = \\ \text{tp}(s) = \\ \text{Sel S}(-) = \\ \text{ECw}(mS/m) = \\ \text{Tempw}(gr C) = \\ \text{Derivative fact.} = \\ \\ \text{Pow regime:} \\ \text{dt}_1(min) = \\ \text{dt}_2(min) = \\ \text{T}(m^2/s) = \\ \text{S}(-) = \\ \text{K_s}(m/s) = \\ \text{S}(-) = \\ \text{K_s}(m/s) = \\ \\ \text{S}(-) = \\ \\ \text{CD}(-) = \\ \\ \text{CD}(-) = \\ \\ \text{CD}(-) = \\ \\ \text{Covery period} \\ \\ \text{Selected represe} \\ \text{dt}_1(min) = \\ \\ \text{dt}_2(min) = \\ \\ \text{Tr}(m^2/s) = \\ \\ \text{SGRF}(-) = \\ \\ \text{DGRF}(-) = \\ \\ \text{DGRF}(-) = \\ \\ \text{Comments:} \\ \\ The recommended transmissivity is estinalization of the dutransmissivity is estinaliza$	KLX18A Test start: 334.00-339.00 m Responsible for test execution: 0.076 Responsible for test evaluation: Flow period Indata p_0 (kPa) = 3290 p_1 (kPa) = 3284 p_0 (kPa) = 3284 p_0 (kPa) = 3284 p_0 (kPa) = 1.00E-06 Indexing the proof of the start of the star	$KLX18A \ \text{Test start:} \\ 334.00-339.00 \ \text{m} \ \text{Responsible for test execution:} \\ \hline 0.076 \ \text{Responsible for test evaluation:} \\ \hline \text{Responsible for test evaluation:} \\ \hline \text{Flow perlod} \\ \hline & \text{Indata} \\$

	Test Sı	ımr	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			1
Borehole ID:	KI)	(18A	Test start:			060821 00:08
Test section from - to (m):	339.00-344.0	00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	C	.076	Responsible for		Crist	ian Enachesci
Linear plat O and p			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata	2220	Indata	1
**************************************		0.8	$p_0 (kPa) =$	3338		
**************************************	Patove Palow Poliow		p _i (kPa) =	3332	(1.5.)	222
3550	· Q	- 0.6	$p_p(kPa) =$		p _F (kPa) =	333
			$Q_p (m^3/s) =$	4.33E-06		
₩ 3500 · 1		[Mmin]	tp (s) =		t _F (s) =	120
55 23450		o.4 Bute	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2 3400	 .	Injecti	EC _w (mS/m)=			
4 :			Temp _w (gr C)=	11.9		
3300	•	0.2	Derivative fact.=	0.12	Derivative fact.=	0.0
3250		0.0				
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 f Time [h]	1.40	Results	•	Results	•
			$Q/s (m^2/s) =$	2.1E-07		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	1.7E-07		
			Flow regime:	transient	Flow regime:	transient
Elapsed time [i	.1] -219. 10	1	dt_1 (min) =	4.20	dt_1 (min) =	0.4
10		10 1	dt_2 (min) =	18.00	dt_2 (min) =	6.0
		10	$T (m^2/s) =$	3.2E-07	$T (m^2/s) =$	1.0E-0
	,		S (-) =	1.0E-06	, ,	1.0E-0
10 1	•	ľ	$K_s (m/s) =$		K_s (m/s) =	2.0E-0
• •	•	10 °	S _s (1/m) =		$S_s(1/m) =$	2.0E-0
,	•	Liviju	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.7E-1
	es fec ale	0.3	$C_D(-) =$	NA	$C_D(-) =$	6.2E-0
10 °		_	ξ(-) =	11.30		21.0
		10 -1	S (-) -	11.00	S (-) –	21.0
	* :	0.03	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹² 10 ¹³ 10 ¹⁴	10 ¹⁵ 10 ¹⁶ 10 ¹⁷	0.03	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
gg p			dt_1 (min) =	4.20	_	5.7E-1
10 ⁻⁴ Elapsed time	[b] 10 ⁻¹ 10 ⁰		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	6.2E-0
102				3.2E-07		11.3
		300	$T_{T} (m^{2}/s) = S (-) =$	1.0E-06		11.5
•	l l	10 ²	$K_s (m/s) =$	6.4E-08		
10"			$S_s (1/m) =$	2.0E-07		
10		_				
10		30 g	Comments:			
10 T		30 G	The recommended tr	•	3.2E-7 m2/s was deriv	
101		(p.c)	The recommended tr analysis of the CHi p	hase (outer zone	e), which shows a slig	ht horizontal
no bo		(p.c)	The recommended tr analysis of the CHi p stabilization of the d	phase (outer zone erivative. The co		tht horizontal e interval
no bo		10 ¹	The recommended tr analysis of the CHi p stabilization of the d transmissivity is esti- dimension displayed	ohase (outer zone erivative. The co mated to be 9E-8 during the test is	e), which shows a slig infidence range for th m2/s to 6E-7 m2/s. The static pressure	tht horizontal e interval The flow re measured at
n de l'action		10 ¹	The recommended tranalysis of the CHi pstabilization of the dtransmissivity is estidimension displayed transducer depth, wa	chase (outer zone erivative. The co- mated to be 9E-8 during the test is s derived from the	e), which shows a slig nfidence range for th m2/s to 6E-7 m2/s.	tht horizontal e interval The flow re measured at

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga					CHi
Area:	Laxe	emar	Test no:			1
Borehole ID:	KL>	(18A	Test start:			060821 01:55
Test section from - to (m):	344 00-349 ()() m	Responsible for		Reinde	er van der Wal
reat addition nome to (m).	044.00 040.0	JO 111	test execution:		rtomat	Philipp Wol
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachescu
Linear plat O and p			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata	2205	Indata	
**************************************	• P section	3.0	p ₀ (kPa) =	3386		
3650	• P above • P below • Q	2.5	p _i (kPa) =	3381		
3600 -	,	2.5	$p_p(kPa) =$		p _F (kPa) =	3381
3000 -		2.0	$Q_p (m^3/s) =$	2.21E-05		
₹ 3550 9	:	/min)	tp (s) =		t_F (s) =	1200
\$ 2500 -	Ś.,	- 1.5 R u	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
o o o o o o o o o o o o o o o o o o o	and the second s	Injectio	EC _w (mS/m)=			
	J	1.0	Temp _w (gr C)=	12		
3400		:	Derivative fact.=	0.04	Derivative fact.=	0.02
3350		- 0.5				
3300 0.00 0.20 0.40 0.60	0.80 1.00 1.20 1.40	0.0				
Elapsee	Time [h]		Results		Results	T
			Q/s $(m^2/s)=$	1.1E-06		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	8.9E-07		
4 3 Elapsed tim	. (6)		Flow regime:	transient	Flow regime:	transient
10 ⁻⁴ 10, ⁻³ Eapsed an	19,19,2	ŀ	$dt_1 (min) =$		dt_1 (min) =	0.36
			dt_2 (min) =	18.00	dt_2 (min) =	9.00
		10°	$T (m^2/s) =$	2.3E-06	$T (m^2/s) =$	5.1E-06
101	as as contrado de la contrado de la contrado de la contrado de la contrado de la contrado de la contrado de la		S (-) =	1.0E-06	S (-) =	1.0E-06
			$K_s (m/s) =$	4.5E-07	K_s (m/s) =	1.0E-06
· · ·		10-1	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-07
E 10 0 10 10 10 10 10 10 10 10 10 10 10 1		a). [min/	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.3E-10
20		1/0.(1/	$C_D(-) =$	NA	C_D (-) =	1.4E-02
4	a, a, a sasa sa	10 ⁻²	ξ(-) =	5.66		20.60
10 ⁻¹			5 (/		5 ()	
		10 ⁻³	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁸ 10 ⁹	10 ¹⁰ 10 ¹¹ 10 ¹²	ļ	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
ı	,		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
	-		$dt_1 \text{ (min)} =$	0.36		1.3E-10
Elapsed time	[h]10, ⁻² 10, ⁻¹ 10,0		$dt_2 \text{ (min)} =$	18.00	,	1.4E-02
102			$T_T (m^2/s) =$	2.3E-06		5.66
		300	S (-) =	1.0E-06		5.00
		10 ²	$K_s (m/s) =$	4.5E-07		
10		10	$S_s (1/m) =$	2.0E-07		
		30 2	Comments:	2.0L-07		<u> </u>
d d		-00° [kP		onomicalule - CC	2E 6 m2/2 m 1	and from 41-
. \		10 ¹ 8			2.3E-6 m2/s was derive shows a better quality	
100					smissivity is estimate	
		3			on displayed during t	
	(-					
	·		static pressure measu	ared at transduce	r depth, was derived	from the CHir
10 ¹ 10 ² 10C	103 104 105	10 ⁰	static pressure measu	ared at transduce		from the CHir

	Test Sur	mm	ary Sheet			
Project:	Oskarshamn site investigat	tion	Test type:[1]			CHi
Area:	Laxen	mar 7	Test no:			1
Borehole ID:	KLX1	18A 7	Test start:	0608		060821 06:23
Test section from - to (m):	349 00-354 00	0 m F	Responsible for		Painde	er van der Wal
rest section from - to (m).	343.00-334.00		est execution:		Remae	Philipp Wol
Section diameter, 2-r _w (m):	0.0	076 F	Responsible for		Cristi	ian Enachescu
Linear plat C and p			est evaluation:			
Linear plot Q and p		.10	Flow period		Recovery period	
			ndata	2.122	Indata	Ī
3700 KLX18A_349.00-354.00_060821_1_CHir_Q_r	• P section		o ₀ (kPa) =	3433		
3650	Patove Pbelow Q		o _i (kPa) =	3428	(1.5.)	2.12
	•		$o_p(kPa) =$		p _F (kPa) =	342
3600			$Q_p (m^3/s) =$	4.32E-07		
2 3550 -	•	¥	p (s) =		t _F (s) =	120
	1 State of the sta	on Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
E 3500 ·	• •		EC _w (mS/m)=			
3450		1	Γemp _w (gr C)=	12.1		
3400	<u> </u>	. 0.01	Derivative fact.=	0.05	Derivative fact.=	0.0
3350	1.00 1.20 1.40 1.60 1.80	0.00			_	
Elapsed Ti	me [h]	_	Results		Results	•
			$Q/s (m^2/s) =$	2.4E-08		
Log-Log plot incl. derivates- flo	ow period		$\Gamma_{\rm M}$ (m ² /s)=	2.0E-08		
			low regime:	transient	Flow regime:	transient
Elapsed time	, ^[h]	C	$dt_1 (min) =$	4.80	dt_1 (min) =	0.6
		C	$dt_2 (min) =$	18.00	dt_2 (min) =	9.0
-	11	10 ²	$\Gamma (m^2/s) =$	2.9E-08	$T (m^2/s) =$	1.0E-0
101			S (-) =	1.0E-06	S (-) =	1.0E-0
		ŀ	(m/s) =	5.8E-09	$K_s (m/s) =$	2.0E-0
	[1	101	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
10 ⁰ 5 10		1). [min/]	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	1.5E-1
•		å ($C_D(-) =$	NA	C_D (-) =	1.7E-0
10'1		100	((-) =	1.91		21.6
†	11	10-1	$\Gamma_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ³ 10 ⁴	10 10 10	5	S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
			O _{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	9,	Selected represe	entative param	neters.	
		C	dt ₁ (min) =	0.60	$C (m^3/Pa) =$	1.5E-1
Elapsed time [1, 10, 4	1]10, -2	c	$dt_2 (min) =$	9.00	C _D (-) =	1.7E-0
10 -		h	$\Gamma_{\rm T} (m^2/s) =$	1.0E-07	ξ(-) =	21.6
	300	JU	S (-) =	1.0E-06		
	10 ²		ζ_s (m/s) =	2.0E-08		
10 1	•••		$S_s(1/m) =$	2.0E-07		
	30		Comments:	2.52 07		<u> </u>
	\	6		anemiceivity of 1	.0E-7 m2/s was deriv	ved from the
	101	, o		•	f its derivative stabili	
10					nterval transmissivity	
	3	b	oe 5E-8 m2/s to 5E-	7 m2/s. The flow	dimension displayed	during the test
					ransducer depth, was	
100 101	102 103 104				rapolation in the Hor	ner plot to a
10 ³ 10 ³ tDCD	10 ² 10 ³ 10 ⁴		he CHir phase using value of 3,428.1 kPa		rapolation in the Hor	ner plot to a

	Test Si	ımr	nary Sheet				
Project:	Oskarshamn site investig					Р	
Area:	l ax	emar	Test no:			1	
, ii oa.	Edx	omai	rest no.			'	
Borehole ID:	KL	<18A	Test start:		060821 08:44		
Test section from - to (m):	354.00-359.	00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol	
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachescu	
			test evaluation:				
Linear plot Q and p			Flow period		Recovery period		
			Indata		Indata	ı	
3800	KLX18A_354.00-359.00_060821_1_Pi_Q_r	0.003	p ₀ (kPa) =	3491			
3750 -			p _i (kPa) =	3489			
3700 -	_		$p_p(kPa) =$		p _F (kPa) =	353	
	P section P above P below	0.002	$Q_p (m^3/s)=$	NA			
T 3500 -	. :	Wmin]	tp (s) =		t_F (s) =	2700	
3 3500 ·	***************************************	on Rate [Wmin]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
O 3800 -	***************************************	Injectic	EC _w (mS/m)=				
<u>,</u>		0.001	Temp _w (gr C)=	12.2			
3500			Derivative fact.=	NA	Derivative fact.=		
3450							
3400	:	0.000					
0.00 0.20 0.40 0.80 0.80 1.00 1.20 1.40 Elapsed Time (N)		1.40	Results		Results		
			$Q/s (m^2/s) =$	NA			
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	NA			
			Flow regime:	transient	Flow regime:	transient	
			dt_1 (min) =	NA	dt_1 (min) =	1.80	
			$dt_2 (min) =$	NA	dt_2 (min) =	33.00	
			$T (m^2/s) =$	NA	$T (m^2/s) =$	7.9E-10	
			S (-) =	NA	S (-) =	1.0E-06	
			K_s (m/s) =	NA	K_s (m/s) =	1.6E-10	
			$S_s(1/m) =$	NA	$S_s (1/m) =$	2.0E-07	
Not A	nalysed		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	3.1E-10	
			$C_D(-) =$	NA	$C_D(-) =$	3.4E-02	
			ξ(-) =	NA	ξ(-) =	-0.12	
			Ş() –		5() -	0.112	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
			D_{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe				
Log Log plot mon derivatives	receivery period		$dt_1 \text{ (min)} =$		C (m ³ /Pa) =	3.1E-10	
10.4 Elapsed tim	ne [b]		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	3.4E-02	
102				7.9E-10		-0.12	
			$T_T (m^2/s) =$			-0.12	
101		10°	S (-) =	1.0E-06			
			$K_s (m/s) =$	1.6E-10			
a contract to the contract of	and the same	10-1	$S_s(1/m) =$	2.0E-07			
10	The state of the s	10-2	analysis of the Pi ph transmissivity is esti	ase. The confider mated to be 3E-1	7.9E-10 m2/s was dence range for the inte 0 to 9E-10 m2/s. The tic pressure could no	rval e flow dimensior	
10 ^d 10 ^d di	10 10 10	10 ⁻³	due to the very low		de pressure could ilo	а ос ехиаронаtec	

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			
Borehole ID:	KLX	(18A	Test start:	060821 10:3		
Test section from - to (m):	359 00-364 ()() m	Responsible for		Reinde	er van der Wal
rest section from - to (iii).	339.00-304.0	JU 111	test execution:		Remae	Philipp Wol
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	an Enachescı
Linear Hat Cond o			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata	2521	Indata	ī
3850	KLX18A_359.00-364.00_060821_1_CHir_Q_r • P section	1.0	$p_0 (kPa) =$	3531		
3800	P above P below Q	0.9	p _i (kPa) =	3527	(1.5.)	252
3750 -		0.8	$p_p(kPa) =$		p _F (kPa) =	352
· •	Destruction of the second of t	0.7	$Q_p (m^3/s) =$	7.98E-06		
3700		0.6 [www.]	tp (s) =		t _F (s) =	120
38 2850 -	The state of the s	on Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
50 3600 -		0.4 <u>II</u>	EC _w (mS/m)=			
<u>.</u>		- 0.3	Temp _w (gr C)=	12.2		
3550		- 0.2	Derivative fact.=	0.05	Derivative fact.=	0.0
3500		0.1				
3450 0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 Time [h]	1.40	Results		Results	
			Q/s $(m^2/s)=$	3.9E-07		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	3.2E-07		
	<u> </u>		Flow regime:	transient	Flow regime:	transient
Elapsed time	[h] 2 10, ¹ 10, ⁰ 10, ¹		$dt_1 \text{ (min)} =$	0.72	$dt_1 (min) =$	0.1
102			$dt_2 (min) =$		$dt_2 \text{ (min)} =$	7.2
			2		2	2.6E-0
		3	$T (m^2/s) = S (-) =$	1.0E-06	, ,	1.0E-0
101		10 ⁰	$K_s (m/s) =$		$K_s (m/s) =$	5.1E-0
		10	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
1		0.3 [min/]		2.0L-07	. , ,	2.0E-0 2.9E-1
· ·	<u>.</u> .	9,(1/9)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	
10 ⁰		10 1	$C_D(-) =$		$C_D(-) =$	3.2E-0
*	- *** *** *** **** **** **** **** ****		ξ(-) =	10.80	ξ(-) =	32.8
		0.03	$T_{GRF}(m^2/s) =$	NA	T (m ² /o)	NA
10 ¹¹ 10 ¹² 10 ¹³	10 ¹⁴ 10 ¹⁵ 10 ¹⁶ 10 ¹⁷		$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA
tD to tD	10 ¹⁴ 10 ¹⁶ 10 ¹⁶ 10 ¹⁷		$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives-	rocovery period		Selected represe			I NA
Log-Log plot illol. derivatives-	recovery periou					2.9E-1
.5 .4 Elapseg time	[h] ₂ ,1		1 ()	0.72	$C (m^3/Pa) =$	3.2E-0
10 10 10 10			$dt_2 (min) =$		$C_D(-) =$	
		300	$T_T (m^2/s) =$	1.2E-06		10.8
		10 ²	S (-) =	1.0E-06		
10 1			$K_s (m/s) =$	2.3E-07		
		30	$S_s(1/m) =$	2.0E-07		
		iO)' [kPal	Comments:			
		10 ¹ 0-0		•	.2E-6 m2/s was deriv	
		٥			ws the better data and interval transmissivit	
	<u>.</u>		quality. The confider			, -0 00mmacou t
10		3			dimension displayed	during the test
10 %		3 10 ⁰	be 7E-7 m2/s to 4E-6 is 2. The static press	5 m2/s. The flow ure measured at t	dimension displayed ransducer depth, was	derived from
10 10 10 10 10 2	10 ³ 10 ⁶ 10	3 10 ⁰	be 7E-7 m2/s to 4E-6 is 2. The static press	5 m2/s. The flow ure measured at t s straight line ext	dimension displayed	derived from

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site invest	igation	Test type:[1]			CHi
Area:	La	ıxemar	Test no:			1
Borehole ID:	K	LX18A	Test start:	060821 13:0		
Test cestion from to (m):					Dainde	
Test section from - to (m):	304.00-309	9.00 m	Responsible for test execution:		Reinae	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu
1: 1:0			test evaluation:		/	
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	•
3850	LX18A_364.00-369.00_060821_1_CHir_Q_r	1.0	p ₀ (kPa) =	3581		
3800 -	P above P below	- 0.9	p _i (kPa) =	3574		
	The state of the s	- 0.8	$p_p(kPa) =$		p _F (kPa) =	357
3750		0.7	$Q_p (m^3/s) =$	7.75E-06		
2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		- 0.6 [Min.]	tp (s) =		t_F (s) =	120
Pros su	Charles and the second	n Rate [S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
0850 -	· •	0.4 E	EC _w (mS/m)=			
3600	•	- 0.3	Temp _w (gr C)=	12.3		
3550	<u> </u>	- 02	Derivative fact.=	0.03	Derivative fact.=	0.0
		- 0.1				
3500 0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 Time [h]	1.40	Results		Results	
			Q/s $(m^2/s)=$	3.8E-07		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	3.1E-07		
<u> </u>	·		Flow regime:	transient	Flow regime:	transient
10. ⁻⁴ 10. ⁻³ Elapsed time	[h] 10. ⁻¹ 10. ⁰		$dt_1 (min) =$	0.33	$dt_1 (min) =$	0.2
102		101	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.0
		-	2		2	1.3E-0
		3	$T (m^2/s) = $ $S (-) = $	1.0E-06	, ,	1.0E-0
0 0 0 00 00 00 00 00 00 00 00 00 00 00	Manage of the Control	İ	$K_s (m/s) =$		$K_s (m/s) =$	2.7E-0
		10°	$S_s (1/m) =$		$S_s(11/s) = S_s(1/m) = S_s(1/m)$	2.7E-0 2.0E-0
		Į, ig				
· ·		0.3	$C (m^3/Pa) =$	NA NA	$C (m^3/Pa) =$	5.8E-1
10 0		710 ⁻¹	$C_D(-) =$	NA	$C_D(-) =$	6.3E-0
	A AAA AAA AAA AAAA AAAA AAAAA AAAAA AAAA	10	ξ (-) =	8.23	ξ(-) =	15.2
		0.03	$T_{GRF}(m^2/s) =$	NA	T (m ² /o)	NA
1010 1011	1012 1013	10 14		NA	$T_{GRF}(m^2/s) =$	NA
10 ¹⁰ 10 ¹¹ tD	10 10	10	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) = Selected represe		D _{GRF} (-) =	INA
Log-Log plot incl. derivatives-	recovery period					F 0F 4
4 3 Elapsed time	h)		dt ₁ (min) =	0.21	$C (m^3/Pa) =$	5.8E-1
102 103	.10		$dt_2 (min) =$		$C_D(-) =$	6.3E-0
			$T_T (m^2/s) =$	1.3E-06		15.2
	mo************************************	300	S (-) =	1.0E-06		
		10 ²	$K_s (m/s) =$	2.7E-07		
10 1			$S_s (1/m) =$	2.0E-07		
		30	Comments:			
		9		•	.3E-6 m2/s was deriv	
\		101			ows a horizontal deriv	
10			ESCADULIZATION THE CO.	midence range fo	or the interval transmi	issivity is
10	The state of the s	-				on displayed
100	The state of the s	3	estimated to be 7E-7	m2/s to 3E-6 m2	2/s. The flow dimensi	
10	108 104	3 10 ⁵ 10 ⁰	estimated to be 7E-7 during the test is 2.	m2/s to 3E-6 m2 The static pressur ir phase using sta		icer depth, was

	Test Su	mı	mary Sheet			
Project:	Oskarshamn site investiga					CHii
Area:	Laxe	ma	r Test no:			1
Borehole ID:	KLX	18/	Test start:	060821 15:0		
Test section from - to (m):	260.00.274.0	0 ~	Responsible for		Poindo	er van der Wal
rest section from - to (m).	309.00-374.0	U II	test execution:		Reinde	r van der war Philipp Wol
Section diameter, 2·r _w (m):	0.	076	Responsible for		Crist	an Enachescu
			test evaluation:		;=====================================	
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	ı
3900	KLX18A_369.00-374.00_060821_1_CHir_Q_r	0.5	p ₀ (kPa) =	3629		
3850			p _i (kPa) =	3630		
3800		0.4	$p_p(kPa) =$		p _F (kPa) =	3630
			$Q_p (m^3/s)=$	3.50E-06		
ह 3750 अ	P section P above P below	- 0.3 Tri	tp (s) =		t _F (s) =	1200
3700 -	-q	on Rate [V	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
9 3600	*	- 0.2 II				
	<u> </u>		Temp _w (gr C)=	12.4		
3600		0.1	Derivative fact.=	0.03	Derivative fact.=	0.0
3550						
0,00 0.20 0.40 0.60 Elapsed T	0.80 1.00 1.20 1	0.0	Results		Results	
			$Q/s (m^2/s) =$	1.7E-07		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M}$ (m ² /s)=	1.4E-07		
	-		Flow regime:	transient	Flow regime:	transient
Elapsed time 10, ⁻³ 10, ⁻²	h]		$dt_1 \text{ (min)} =$	1.50	$dt_1 \text{ (min)} =$	0.24
10 ⁴ .	[3	10	$dt_2 \text{ (min)} =$		$dt_2 (min) =$	9.00
	F1	0 ¹	$T (m^2/s) =$		$T (m^2/s) =$	7.8E-0
			S (-) =	1.0E-06	, ,	1.0E-06
101			$K_s (m/s) =$		$K_s (m/s) =$	1.6E-0
			$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
(ndn)	1	0° 3		2.0L-07 NA		3.7E-1
db/\		2	$C (m^3/Pa) =$		$C (m^3/Pa) =$	4.1E-0
100	• •	1.3	$\overline{C}_D(-) =$	NA	$C_D(-) =$	
	***	0-1	ξ (-) =	9.05	ξ(-) =	21.20
		O	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹¹ 10 ¹²	10 ¹³ 10 ¹⁴ 10 ¹⁵		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
ti)			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran		
J 01 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	→ 1 · · · · ·		$dt_1 \text{ (min)} =$	0.24		3.7E-1
.3 Elapsed time [n) _{.2}		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	9.00	,	4.1E-03
10 2			_ , 2, ,	7.8E-07	1.1	21.20
	30	00	$T_T (m^2/s) =$ $S (-) =$	1.0E-06		21.20
				1.6E-07		
101	10) ²		2.0E-07		
	30		S _s (1/m) =	∠.UE-U/		
100	3	b ¹	The recommended tr analysis of the CHir derivative. The confi estimated to be 3E-7 during the test is 2. 7	phase, which sho dence range for m2/s to 1E-6 m2. The static pressur	7.8E-7 m2/s was derivows a horizontal stabithe interval transmiss 2/s. The flow dimensive measured at transduraight line extrapolati	lization of the ivity is on displayed acer depth, was
10 ¹ 10 ² tD/CD	10 ³ 10 ⁴ 10 ⁵) ⁻	plot to a value of 3,6		ament inic cattapoiati	on in the Horne

	Test Su	mn	nary Sheet				
Project:	Oskarshamn site investiga					CHii	
Area:	Lavor	mar	Test no:			1	
Alea.	Laxei	IIIai	restrio.			'	
Borehole ID:	KLX	18A	Test start:		060821 16:42		
Test section from - to (m):	374.00-379.0	0 m	Responsible for		Reinde	er van der Wal	
r oot oodien nem te (m).	07 1.00 07 0.00		test execution:		rtomac	Philipp Wolf	
Section diameter, 2-r _w (m):	0.0		Responsible for		Crist	ian Enachescu	
Linear plot Q and p			test evaluation: Flow period		Recovery period		
Linear plot & and p			Indata		Indata		
			p ₀ (kPa) =	3679			
KLX18A_374.00-379.00_060821_1_CHir_Q_r			$p_0(kl a) =$ $p_i(kPa) =$	3675			
3850	P section P above P below		$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	367:	
	- Q	- 0.3				307.	
3800			$Q_p (m^3/s) =$	2.33E-06		120	
\$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Æ	tp (s) =		t _F (s) =	1200	
\$ 3750 \$ 3750	•		S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
	· · · · · · · · · · · · · · · · · · ·	Inject	EC _w (mS/m)=				
3700			Temp _w (gr C)=	12.5			
3650		0.1	Derivative fact.=	0.07	Derivative fact.=	0.0	
3600	0.80 1.00 1.20 1.	0.0					
Elapsed Tirr	ne [h]		Results	4.45.07	Results	I	
			Q/s $(m^2/s)=$	1.1E-07			
Log-Log plot incl. derivates- flo	w period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	9.4E-08			
Elapsed time [h]			Flow regime:	transient	Flow regime:	transient	
10,4 10,3 10,2	10,"		$dt_1 (min) =$		$dt_1 (min) =$	0.18	
	31	10	$dt_2 (min) =$		$dt_2 (min) =$	9.00	
	ļ.,	0.1	$T (m^2/s) =$		$T (m^2/s) =$	5.3E-07	
		0	S (-) =	1.0E-06		1.0E-06	
10 1	13		K_s (m/s) =		K_s (m/s) =	1.1E-07	
	•		$S_s(1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-07	
1.1db	11	o 'q' [min/]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.6E-1	
10 °C	in in the second	1,9, (1	$C_D(-) =$	NA	$C_D(-) =$	1.7E-03	
	0.	1.3	ξ (-) =	8.54	ξ (-) =	21.60	
•	. [1	0 -1	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 10 10 11	10 12 10 13 10 14		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
_			D _{GRF} (-) =	NA	D_{GRF} (-) =	NA	
Log-Log plot incl. derivatives- r	ecovery period		Selected represe	ntative paran	neters.		
			dt_1 (min) =	7.20	$C (m^3/Pa) =$	1.6E-1′	
10. ⁴ Elapsed time [h]	.10. 2		$dt_2 (min) =$	18.00	` '	1.7E-03	
10			$T_T (m^2/s) =$	1.5E-07		8.54	
	30	00	S (-) =	1.0E-06			
	10	2	$K_s (m/s) =$	3.0E-08			
101	10		$S_s(1/m) =$	2.0E-07			
	30	. Ba	Comments:			<u> </u>	
de l		'p-p0)' [k		ansmissivity of	1.5E-7 m2/s was deriv	ved from the	
	10	1 D-D0'(e), which shows a bet		
100	The state of the s				f the derivative. The		
	3				nated to be 7E-8 m2/s		
•	10	.0			the test is 2. The startived from the CHir		
10 ¹ 10 ² 1D/CD	10 ³ 10 ⁴ 10 ⁵	'			ner plot to a value of		
שולו			_				

	Test Su	ımr	nary Sheet				
Project:	Oskarshamn site investiga					CHir	
Area:	Laxe	emar	Test no:			1	
ruoa.	Lax	Jillai	rest no.			'	
Borehole ID:	KL>	(18A	Test start:		060821 18:28		
Test section from - to (m):	379.00-384.0	00 m	Responsible for		Reinde	er van der Wal	
			test execution:			Philipp Wol	
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachescu	
Linear plot Q and p			test evaluation: Flow period		Recovery period		
Linear plot & and p			Indata		Indata		
4000		- 0.150	$p_0 (kPa) =$	3727	maata		
, .	KLX18A_379.00-384.00_060821_1_CHir_Q_r		$p_i(kPa) =$	3727			
3950		- 0.125	$p_p(kPa) =$		p _F (kPa) =	3723	
3900			$Q_{p} (m^{3}/s) =$	1.28E-06		3725	
F	P section P above P below	- 0.100	$Q_p (m/s) = $ $tp (s) = $		t _F (s) =	1200	
E 3500	the same of the sa	te [Wmin]			S el S [*] (-)=	1.00E-06	
8 2800 •		njection Rate	S el S [*] (-)= EC _w (mS/m)=	1.00E-00	S el S (-)=	1.00E-0	
Down		- 0.050	Temp _w (gr C)=	12.6			
3750	<u> </u>		Derivative fact.=		Derivative fact.=	0.02	
3700		- 0.025	Delivative lact.=	0.07	Delivative lact.=	0.02	
3650 0.00 0.20 0.40 0.60 Elapse	0.80 1.00 1.20 1	0.000	Results		Results		
			$Q/s (m^2/s) =$	6.3E-08		I	
Log-Log plot incl. derivates-	low period		$T_{\rm M} (m^2/s) =$	5.2E-08			
-og -og plot mon dontatoo	ion policu		Flow regime:	transient	Flow regime:	transient	
10, ⁻³ 10, ⁻² Elapsed tii	ne [h]		$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	0.42	
102			$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.00	
		30	$T (m^2/s) =$		$T (m^2/s) =$	2.9E-07	
		30	S (-) =	1.0E-06	, ,	1.0E-06	
101		10 ¹	$K_s (m/s) =$		$K_s (m/s) =$	5.8E-08	
* * .			$S_s (1/m) =$		$S_s (1/m) =$	2.0E-07	
G		3 Min	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	2.2E-1	
db.		, /a. (1/a)		NA	$C_D(-) =$	2.4E-03	
10		10°		7.30		21.40	
			ξ(-) =	7.50	ξ(-) =	21.40	
		0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁹ 10 ¹⁰		10-1	$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA	$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA	
10 10	D 10 10		$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA	
Log-Log plot incl. derivatives	- recovery period		Selected represe				
Log-Log plot mon derivatives	- recovery period		$dt_1 \text{ (min)} =$	0.42	C (m ³ /Pa) =	2.2E-11	
.3 Elapsed tin	nge [h]		$dt_1 (min) =$ $dt_2 (min) =$	9.00	, , , , , , , , , , , , , , , , , , ,	2.4E-0	
10-10-10-10-10-10-10-10-10-10-10-10-10-1			_ , 2, ,	2.9E-07		21.40	
		300	$T_T (m^2/s) =$ $S (-) =$	1.0E-06	¬() –	21.40	
		2	$K_s (m/s) =$	5.8E-08			
10		10 ²	$S_s (1/m) =$	2.0E-07			
		30 🚡	Comments:	2.00 07		<u> </u>	
To a		9		ansmissivity of	2.9E-7 m2/s was deriv	ved from the	
· .		10 ¹			ows a better data and		
10 10			quality. The confider	nce range for the	interval transmissivit	ty is estimated to	
•		3			w dimension display		
		40 ⁰	_		l at transducer depth, ne extrapolation in the		
10 ¹ 10 ² tD/	10 ³ 10 ⁴ 10 ⁵	10 ⁰	a value of 3,721.3 kH		ie examponation in the	- Horner plot to	
tu/			ĺ				

	Test Su	mmar	v Shee	et			
Project:	Oskarshamn site investiga						CHi
Area:	Laxe	mar Tes	t no:				1
D 1 1 1D	IZI V	40A T			000004 00		
Borehole ID:	KLX	18A Tes	t start:				060821 20:20
Test section from - to (m):	384.00-389.00		ponsible			Reind	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0.		ponsible			Cris	tian Enachescu
		test	evaluati	ion:			
Linear plot Q and p		(10101010101010101010101010101010101010	w period	d		Recovery period	ď
		Ind				Indata	
KLX18A_384.00-389.00_060821_1_CHir_Q_r			kPa) =		3776		
3960	P section P above P below		(Pa) =		3772	<i>"</i> –	
	·v		:Pa) =			p _F (kPa) =	3768
3900		0.20	$(m^3/s)=$		2.00E-06		
	•	ig tp (s) =			t_F (s) =	1200
3 2 3850			S [*] (-)=		1.00E-06	S el S [*] (-)=	1.00E-0
ownhol		Ē EC′	, (mS/m))=			
3800	•	-0.10 Ten	np _w (gr C	;)=	12.6		
			ivative f	act.=	0.03	Derivative fact.=	0.0
3750		0.05					
3700 0.00 0.20 0.40 0.60	0.80 1.00 1.20 1.4	0.00					
Elapsed Tim	ie [h]		ults		0.05.00	Results	1
			$(m^2/s)=$		9.9E-08		
Log-Log plot incl. derivates- flo	w period		$(m^2/s)=$		8.1E-08		<u> </u>
Flores of time (h			v regime	e:	transient	Flow regime:	transient
10 ² Elapsed time [h	1.10.1		(min) =	=		dt_1 (min) =	0.42
		dt ₂	(min) =	=	18.00	dt_2 (min) =	9.00
	30	[∞] T (n	$n^2/s) =$		1.6E-07	$T (m^2/s) =$	4.5E-07
		S (-) =		1.0E-06	S (-) =	1.0E-0
101	10	K _s (m/s) =		3.2E-08	$K_s (m/s) =$	9.0E-0
		_ S _s (1/m) =		2.0E-07	$S_s (1/m) =$	2.0E-0
•	3	اسان C (r	n³/Pa) =		NA	$C (m^3/Pa) =$	2.7E-1
•	.* . III	% <u>₹</u> C ^D (NA	C_D (-) =	3.0E-03
10		ξ (-)		:	3.77	ξ(-) =	21.30
	0.					3 ()	
		Top	_F (m ² /s) =		NA	$T_{GRF}(m^2/s) =$	NA
108 107	108 109 1010	o ¹ S _{GR}			NA	$S_{GRF}(-) =$	NA
tD					NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- r	ecovery period			prese	ntative paran		
	71	0101010101010	(min) =		0.42	C (m ³ /Pa) =	2.7E-1
Elapsed time [h]	10.1		(min) =		9.00	C_D (-) =	3.0E-03
10 1			$m^2/s) =$		4.5E-07		21.30
	300	∞ S (-			1.0E-06		
		1/ /	m/s) =		9.0E-08		+
101	10		1/m) =		2.0E-07		
	30		nments		2.0L-07		
	•	6			onemicsivity of	1.5E 7 m2/s was dari	ived from the
·\.	10					1.5E-7 m2/s was deri ows a better data and	
10	and the same of th					interval transmissiv	
10						dimension displayed	
10	3						
		is 2.	The static	c press	ure measured at t	ransducer depth, wa	s derived from
10 ¹ 10 ² DCD	3 10 ⁴ 10 ⁵ 10 ⁵	is 2. the 0	The static	c press	ure measured at t g straight line ext		s derived from

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemar	Test no:			1
Borehole ID:	KLX18A	Test start:	060821 22:0		
Test section from - to (m):	389.00-394.00 m	Posponsible for		Poinds	er van der Wal
rest section from - to (iii).	309.00-394.00 111	test execution:		Remue	Philipp Wol
Section diameter, 2-r _w (m):	0.076	Responsible for		Crist	an Enachescı
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	T
4100	KLX18A_389.00-394.00_060821_1_CHir_Q_r	p ₀ (kPa) =	3823		
4050		p _i (kPa) =	3820		
4000	0.008	$p_p(kPa) =$	4052	p _F (kPa) =	381
	P section P above	$Q_p (m^3/s) =$	5.67E-08		
군 3950 · 조 오	- Poelow - 0.006 = 0.006	tp (s) =		t_F (s) =	120
§ 3000 -	Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
90 3850 4	0.000 I.	EC _w (mS/m)=			
		Temp _w (gr C)=	12.7		
3800	- 0.002	Derivative fact.=	0.15	Derivative fact.=	0.0
3750					
3700 0.00 0.20 0.40 0.60 0.8 Elapsed		Results		Results	
		$Q/s (m^2/s)=$	2.4E-09		
Log-Log plot incl. derivates- fl	ow period	$T_{M} (m^{2}/s) =$	2.0E-09		
Log-Log plot ilici. delivates- il	ow period	Flow regime:	transient	Flow regime:	transient
Elapsed time	[h]	dt ₁ (min) =		dt ₁ (min) =	3.6
10 2 10, 10,		` ,			9.0
					1.3E-0
	• 10 ³	$T (m^2/s) =$	1.0E-06	$T (m^2/s) =$	1.0E-0
10 1	- Single State of the State of	S (-) =		` '	
: 3 % % %	and the state of t	$K_s (m/s) =$		$K_s (m/s) =$	2.6E-0
D 10°	10 2	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
	iii.	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.5E-1
	10 1	$C_D(-) =$	NA	$C_D(-) =$	1.6E-0
10 -1		ξ (-) =	-0.06	ξ(-) =	21.6
	10 °	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ° 10 ¹	10 ² 10 ³ 10 ⁴	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tt	D.	D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative param		
		dt_1 (min) =	0.18	$C (m^3/Pa) =$	1.5E-1
Elapsed time [h]		$dt_2 \text{ (min)} =$		$C_D(-) =$	1.6E-0
0 -		$T_T (m^2/s) =$	2.0E-09		-0.0
	300	S (-) =	1.0E-06		
· · · · · · · · · · · · · · · · · · ·		$K_s (m/s) =$	3.9E-10		
	10 ²	$S_s(1/m) =$	2.0E-07		
3/22	*	Comments:	2.02 07	<u> </u>	<u> </u>
./.	30 [R-04] [04]		ansmissivity of 3	2.0E-9 m2/s was deriv	ed from the
<u>/</u> :	10 1 2			e), which shows a slig	
	au .	derivative quality. Tl	ne confidence rar	nge for the interval tra	ansmissivity is
	3			n2/s. The flow dimen	
	1	during the test is 2. T		e measured at transd	
) j /		damirrad form of CTT		noi alat lica	on in the TT
10 ° 10 ' IDCD	10 ° 10 ° 10 °	derived from the CH plot to a value of 3,8		raight line extrapolati	on in the Horne

	Test Sun	ımary Sheet				
Project:	Oskarshamn site investigation				CHir	
Area:	l axem	ar Test no:			1	
Borehole ID:	KLX18	BA Test start:		060821 23:58		
Test section from - to (m):	394.00-399.00	m Responsible for		Reinde	er van der Wal	
	0.00	test execution:		0:.	Philipp Wolf	
Section diameter, 2-r _w (m):	0.0	76 Responsible for test evaluation:		Crist	ian Enachescu	
Linear plot Q and p		Flow period		Recovery period		
· · · · · · · · · · · · · · · · · · ·		Indata		Indata		
4150		p ₀ (kPa) =	3870			
:	KLX18A_394.00-399.00_060821_1_CHir_Q_r	p _i (kPa) =	3868			
4100		$p_p(kPa) =$	4068	p _F (kPa) =	3867	
4050	-0.00		2.50E-07			
	• P section	$\sup_{s} (m / 3) =$		t _F (s) =	1200	
¥ 4000 -	P above P below Q	S el S* (-)=		S el S [*] (-)=	1.00E-0	
हैं. इ. 3950	-0.00	EC _w (mS/m)=	1.002 00	3 el 3 (-)=	1.002 0	
		Temp _w (gr C)=	12.8	1	1	
3900	.:	Derivative fact.=		Derivative fact.=	0.02	
3850		Delivative fact.=	0.04	Denvative fact.=	0.0	
	· .					
3800 0,00 0.20 0.40 0.60 Elsosed Ti	0.80 1.00 1.20 1.40	Results		Results		
Сарасі І	(n)	Q/s $(m^2/s)=$	1.2E-08			
Log-Log plot incl. derivates- flo	w poriod	, ,	1.0E-08			
Log-Log plot illet. derivates- lic	ow period	$T_M (m^2/s) =$ Flow regime:	transient	Flow regime:	transient	
Etapsed time [h]	.1 0	dt ₁ (min) =			1.80	
10 1 10,3 10,3	10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	$dt_1 (min) =$ $dt_2 (min) =$		$dt_1 (min) = $ $dt_2 (min) = $	9.00	
	10				5.5E-08	
	30	$T(m^2/s) =$	1.0E-06	$T (m^2/s) =$	1.0E-06	
	A	S (-) =				
10	10 1	$K_s (m/s) =$		$K_s (m/s) =$	1.1E-08	
	*. *.*	S _s (1/m) =		$S_s(1/m) =$	2.0E-07	
• •	3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.0E-1	
0 -1		$\stackrel{\circ}{=} C_D(-) =$	NA 0.40	$C_D(-) =$	2.2E-03	
	10 °	ξ (-) =	-0.19	ξ (-) =	21.50	
	0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
tD tD		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period	Selected represe				
		$dt_1 (min) =$	1.80		2.0E-11	
Elapsed time [h]	10, 2 10, 1 10, 0	$dt_2 \text{ (min)} =$		$C_D(-) =$	2.2E-03	
10 2		$T_T (m^2/s) =$	5.5E-08		21.50	
	300	S (-) =	1.0E-06		2	
p.peren		$K_s (m/s) =$	1.1E-08			
10 1	10 2	$S_s(1/m) =$	2.0E-07			
./	2.7	Comments:	2.52 07	<u> </u>	<u> </u>	
100	10,	analysis of the CHir derivative. The conf estimated to be 1E-8 during the test is 2.7	phase, because of idence range for a m2/s to 8E-8 m2. The static pressure.	5.5E-8 m2/s was derived the slight stabilization of the slight stabilization the interval transmiss 2/s. The flow dimension emeasured at transderight line extrapolation of the stability of the	on of the ivity is ion displayed acer depth, was	
50 ² 50 ¹	10 ² 10 ³ 10 ⁴	during the test is 2.	Γhe static pressur Iir phase using st		ucer depth, wa	

	Test Sur	nmary Sheet			
Project:	Oskarshamn site investigati	on Test type:[1]			CHi
Area:	Laxen	nar Test no:			1
Borehole ID:	KI X1	8A Test start:	060822 06:1		
Test section from - to (m):	399.00-404.00	m Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	0.0	76 Responsible for	†	Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
4150	W V404 200 00 404 00 000000 4 CIII- O -	p ₀ (kPa) =	3918		
٠ ئـــ	KLX18A_399.00-404.00_060822_1_CHir_Q_r	p _i (kPa) =	3909		
4100 -	+	$p_p(kPa) =$	4109	p _F (kPa) =	390
4050	+1	$Q_p (m^3/s) =$	6.28E-06		
- t	P section P above P below	tp (s) =		t_F (s) =	1200
56 4000 ·	٠٥	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
own the property of the proper		EC _w (mS/m)=			
360		Temp _w (gr C)=	12.8		
3900	<u> </u>	Derivative fact.=	0.09	Derivative fact.=	0.0
		2.1			
3850 0.00 0.20 0.40 0.50 Elapsed 1	0.80 1.00 1.20	Results		Results	
		$Q/s (m^2/s) =$	3.1E-07		
Log-Log plot incl. derivates- flo	ow period	$T_{M} (m^{2}/s) =$	2.5E-07		-
Log-Log plot ilici. delivates- ili	ow period	Flow regime:	transient	Flow regime:	transient
19. ³ 19. ² Elapsed time	[h] 10. ⁻¹ 10. ⁰ 10. ¹	dt ₁ (min) =			0.18
102 19. 19.					9.00
	10	- (/		$dt_2 (min) =$	
		$T (m^2/s) =$		$T (m^2/s) =$	1.4E-0
10	10	S (-) =	1.0E-06	` '	1.0E-0
	•	$K_s (m/s) =$		$K_s (m/s) =$	2.8E-0
10 10		$S_s(1/m) =$		$S_s (1/m) =$	2.0E-0
\$ 10 10 10 10 10 10 10 10 10 10 10 10 10	10	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	3.1E-1
	•	$\stackrel{\text{\tiny d}}{=} C_D (-) =$	NA	$C_D(-) =$	3.4E-0
10-1		ξ (-) =	6.55	ξ (-) =	21.30
	10	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁹ 10 ¹⁰	10 ¹¹ 10 ¹² 10 ¹³	$S_{GRF}(III / S) =$	NA	$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA
tD	10 10 10	$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives-	roccycry poriod	Selected repres			
Log-Log plot ilici. derivatives-	recovery period				2151
.4 Elapsed time	• [h] 2 .1	$dt_1 (min) =$	0.30	0 (III /I a) -	3.1E-1
102 103	1010.	$dt_2 (min) =$		$C_D(-) =$	3.4E-0
	0 • •••••	$T_T (m^2/s) =$	7.0E-07		6.5
	10	S (-) =	1.0E-06		
10		$K_s (m/s) =$	1.4E-07		
·\.		$S_s (1/m) =$	2.0E-07		
2 10	10	ি ট্র Comments:			
•		0	•	7.0E-7 m2/s was deri	
				e), because it shows a nge for the interval tr	
10'1	110			nge for the interval tr 2/s (this range include	
				flow dimension disp	
		test is 2. The static	pressure measured	d at transducer depth,	was derived
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵	from the CHir phas	e using straight li	ne extrapolation in th	e Horner plot to
tD/C	D	a value of 3,908.0 l		ne extrapolation in th	e moniter process

	Test Sur	nmary Sheet			
Project:	Oskarshamn site investigati	ion Test type:[1]			CHi
Area:	Laxen	nar Test no:			1
Borehole ID:	KLX1	8A Test start:	060822 08:1		
Test section from - to (m):	404.00-409.00	m Responsible for		Reinde	er van der Wal
		test execution:			Philipp Wol
Section diameter, 2-r _w (m):	0.0	76 Responsible for		Cristi	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Linear plot & and p		Indata		Indata	
		$p_0 (kPa) =$	3970		1
4250	KLX18A_404.00-409.00_060822_1_CHir_Q_r				
4200	0.0	p _i (kPa) =	3958		205
		$p_p(kPa) =$		p _F (kPa) =	395
4150	• P section	$Q_p (m^3/s) =$	4.55E-07		
4100	P above P below	tp (s) =		t _F (s) =	120
:	0.5	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4050	:	EC _w (mS/m)=			
4000	0.4	Temp _w (gr C)=	12.9		
3950		Derivative fact.=	0.08	Derivative fact.=	0.0
0.00 0.20 0.40 0.60 Elapsed Tirr	0.80 1.00 1.20 1.40 me [h]	Results		Results	
		Q/s $(m^2/s)=$	2.0E-08		
Log-Log plot incl. derivates- flo	w period	$T_M (m^2/s) =$	1.7E-08		
		Flow regime:	transient	Flow regime:	transient
10, ⁻⁴ 10, ⁻³ Elapsed time [h]	19	$dt_1 (min) =$	0.30	dt_1 (min) =	1.2
102	300	dt_2 (min) =	1.80	dt_2 (min) =	9.0
		$T (m^2/s) =$	2.9E-08	$T (m^2/s) =$	1.4E-0
+	10 ²	S (-) =	1.0E-06	` '	1.0E-0
10 1		$K_s (m/s) =$		$K_s (m/s) =$	2.8E-0
0 ° 6 9 40 40 40 40 40 40 40 40 40 40 40 40 40	30	$S_s(1/m) =$		$S_s(1/m) =$	2.0E-0
• • •	F10 ¹	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	2.8E-1
	" جشر	3 4 1	NA	a ' / \	3.1E-0
100	3	- ()	2.63	5 ()	32.8
		ξ (-) =	2.03	ξ (-) =	32.0
1	100	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
104 108	10 ⁶ 10 ⁷ 10 ⁸	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- r	ecovery period	Selected represe	entative paran		
<u> </u>	71 * * * *	dt₁ (min) =	0.30	_	2.8E-1
10. ⁻⁴ Ejapsed time [h	10, 10, 10, 10, 1	$dt_2 \text{ (min)} =$		$C_D(-) =$	3.1E-0
10-2		T (m ² /o)	2.9E-08		2.6
	300	S(-) =	1.0E-06		2.0
بمعمرو	10 ²	$K_s (m/s) =$	5.8E-09		
10	· Augustian Company		2.0E-07		
• //•	30		2.0E-07		
/.	1	Comments:		NOT 9 - 2/ 1 :	1 £ d
<u>/</u> .	λ		ransmissivity of 2	2.9E-8 m2/s was deriv	
<i>f</i> .	101	0	•	hecause of its botto	
10 d	101	analysis of the CHi	ohase (inner zone	e), because of its bette transmissivity is esti-	
10 %	10'	analysis of the CHi page 15 The confidence rang	phase (inner zone e for the interval	e), because of its bette transmissivity is esti- on displayed during t	mated to be 9E-
10 %	3	The confidence rang m2/s to 5E-8 m2/s. Static pressure measure	ohase (inner zone e for the interval The flow dimensi ured at transduce	transmissivity is estimon displayed during to r depth, was derived in	mated to be 9E- the test is 2. The from the CHir
10 0 10 10	102 103 104	The confidence rang m2/s to 5E-8 m2/s. Static pressure measure	ohase (inner zone e for the interval The flow dimensi ured at transduce	transmissivity is esti on displayed during t	mated to be 9E- the test is 2. The from the CHir

	Test Su	mmary Sheet				
Project:	Oskarshamn site investiga	tion Test type:[1]			CHi	
Area:	Laxe	mar Test no:				
Borehole ID:	KI X	18A Test start:		060822 10:0		
				060822 10:0		
Test section from - to (m):	409.00-414.0	0 m Responsible for test execution:	•	Reinde	er van der Wal Philipp Wol	
Section diameter, 2·r _w (m):	0.	076 Responsible for		Crist	ian Enachescu	
		test evaluation:				
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata		
KLX18A_409.00-414.00_060822_1_CHir_Q_r	P section	p ₀ (kPa) =	4016			
4250 ·	Paccion Pabove Pabow Q	p _i (kPa) =	4008			
		$p_p(kPa) =$		p _F (kPa) =	400	
4200		$Q_p (m^3/s) =$	6.50E-07			
₹ 2 4150	· ·	tp (s) =		t_F (s) =	120	
	Marine Commence of	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
£ 4100 ·		EC _w (mS/m)=				
4050	•	Temp _w (gr C)=	13			
		Derivative fact.	= 0.11	Derivative fact.=	0.0	
4000		0.01				
3950 0.00 0.20 0.40 0.60	0.80 1.00 1.20 1.40 Time [h]	Results		Results		
 -	[4]	Q/s $(m^2/s)=$	3.2E-08		1	
Log-Log plot incl. derivates- fl	ow poriod	$Q/S (m/S) = T_M (m^2/S) =$	2.6E-08			
Log-Log plot incl. derivates- in	ow period	Flow regime:	transient	Flow regime:	transient	
19, ⁴ 10, ³ Elapsed time	[h]10, ⁻¹ 10, ⁰	dt ₁ (min) =		dt ₁ (min) =	0.3	
102 10					9.0	
	10				1.5E-0	
	300	$T (m^2/s) = S (-) =$	1.0E-06	$T (m^2/s) =$	1.0E-0	
				` '		
10	10	$K_s (m/s) =$		$K_s (m/s) =$ $S_s (1/m) =$	2.9E-0	
• •		S _s (1/m) =		- ,	2.0E-0	
•	3	$\frac{E}{2}$ C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.1E-1	
10 ^d		${}^{\sharp}C_{D}(-) =$	NA 0.40	$C_D(-) =$	1.2E-0	
•	10	ξ (-) =	8.16	ξ (-) =	21.8	
	0.3	T (21)	NA	T (2/)	NA	
		1 GRF(111 /3) =	NA NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁹ 10 ¹⁰ tD	10 ^{11'} 10 ^{12'} 10 ¹³	$S_{GRF}(-) =$	NA	$S_{GRF}(-) = D_{GRF}(-) =$	NA	
Log-Log plot incl. derivatives-	rocovery period	D _{GRF} (-) =	sentative paran	OIII ()	INA	
Log-Log piot incl. derivatives-	recovery period	dt ₁ (min) =	0.24	C (m ³ /Pa) =	1.1E-1	
Elapsed time	[h]	$dt_1 (min) = $ $dt_2 (min) = $		$C (m^3/Pa) = C_D (-) =$	1.1E-1	
10 ²			8.0E-08		8.1	
	30	$T_T (m^2/s) = S (-) = $			0.10	
/	•	K (m/a) -	1.0E-06 1.6E-08		-	
10 17	• •					
//:	\.\.	$S_s (1/m) =$	2.0E-07			
	30	6	1 4mamamata - ta 11 - 0.0	ODE 9 m-2/ 1 :	and form at	
		0	•	3.0E-8 m2/s was deri e), because it shows a		
10 0		analysis of the Cli		nge for the interval tr		
	3	estimated to be 5E	E-8 m2/s to 1E-7 m2	2/s. The flow dimens	ion displayed	
		1 1 10 1		re measured at transd		
	<u> </u>	 Iderived from the (nir pnase using st	raight line extrapolat	ion in the Horne	
10 ⁰ 10 ¹ tD/Cl	10 ² 10 ³ 10 ⁴	plot to a value of				

	Test Su	ımr	nary Sheet			
Project:	Oskarshamn site investiga					CHir
Area:	Laxe	mar	Test no:			1
Borehole ID:	KLX	18A	Test start:	060822		060822 14:07
Test section from to (m):					Doinde	
Test section from - to (m):	414.00-419.0	JU III	Responsible for test execution:		Reinde	er van der Wall Philipp Wolf
Section diameter, 2-r _w (m):	0	.076	Responsible for		Crist	an Enachescu
			test evaluation:		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4300		0.6	p_0 (kPa) =	4069		
· •	KLX18A_414.00-419.00_060822_2_CHir_Q_r		p _i (kPa) =	4057		
4250 -		0.5	$p_p(kPa) =$	4257	p _F (kPa) =	4057
*.	•	0.4	$Q_p (m^3/s) =$	4.12E-06		
[68]	P section P above P below	(min)	tp (s) =	1200	t_F (s) =	1200
98 4150 ·	·q	0.3 R	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
	and the second s	Injection	EC _w (mS/m)=		, ,	
4100		0.2	Temp _w (gr C)=	13.1		
4050		0.1	Derivative fact.=	0.04	Derivative fact.=	0.02
4000						
0.00 0.20 0.40 0.60 Elapsed 1	0.80 1.00 1.20 Fime [h]		Results	•	Results	•
			$Q/s (m^2/s) =$	2.0E-07		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	1.7E-07		
			Flow regime:	transient	Flow regime:	transient
10,-4 Elapsed time	[h])		$dt_1 (min) =$	0.42	$dt_1 (min) =$	0.48
10 ²			$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.00
		10 ¹	$T (m^2/s) =$		$T (m^2/s) =$	8.8E-07
			S (-) =	1.0E-06		1.0E-06
10 1		3	$K_s (m/s) =$		$K_s (m/s) =$	1.8E-07
		10° _	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-07
		10 <u>j</u>	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	5.6E-11
2	:	U3 &	$C_D(-) =$	NA	$C_D(-) =$	6.2E-03
100	*******	0.5 _		10.90		2.10
		10 ⁻¹	ξ (-) =	10.90	ξ (-) =	2.10
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹² 10 ¹³	10 ¹⁴ 10 ¹⁵ 10 ¹⁶	0.03	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
TU .			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative param	neters.	
			$dt_1 \text{ (min)} =$	0.48		5.6E-11
Elapsed time J	ክ 		$dt_2 (min) =$	9.00	,	6.2E-03
10			$T_T (m^2/s) =$	8.8E-07	* *	2.10
	3	000	S (-) =	1.0E-06		
	_	2	$K_s (m/s) =$	0.0E+00		
10	1	02	$S_s (1/m) =$	0.0E+00		
		10 3	Comments:	0.0∟+00		<u>I</u>
d d	3	~ 5		anemicoivity of C	3.8E-7 m2/s was deriv	and from the
·· <u>/</u> ·	1	o¹			ows the better derivat	
10 0					transmissivity is esti	
	3	3	m2/s to 2E-6 m2/s. T	The flow dimensi	on displayed during t	he test is 2. The
	İ				r depth, was derived	
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵	00	phase using straight 4,055.8 kPa.	line extrapolation	n in the Horner plot to	o a value of
tD/CD	10 10		■→ U 1 1 0 KFA			

			nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	mar	Test no:			
Borehole ID:	KI X	′1ΩΔ	Test start:	ne ne		060822 15:59
Test section from - to (m):	419.00-424.0	00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachesci
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4350	KLX18A_419.00-424.00_060822_1_CHir_Q_r	4.0	p ₀ (kPa) =	4115		
4300 -	REXIDE-413.00-424.00_000022_1_GHII_Q_1	3.5	p _i (kPa) =	4105		
	•	- 3.0	$p_p(kPa) =$	4306	p _F (kPa) =	410
4250		130	$Q_p (m^3/s) =$	3.32E-05		
RA 4200	P socion P above P below One One P socion One One One One One One One O	- 2.5 [u] m	tp (s) =	1200	t_F (s) =	120
•	And the second s	n Rate [V	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4150	•	Injection	EC _w (mS/m)=			
4100	<u> </u>	1.0	Temp _w (gr C)=	13.1		
:		1.0	Derivative fact.=	0.04	Derivative fact.=	0.0
4050		0.5				
4000 0.00 0.40 0.60 Elapse	0.80 1.00 1.20	0.0	Results		Results	
			$Q/s (m^2/s)=$	1.6E-06		
Log-Log plot incl. derivates- fl	low period		$T_{\rm M} (m^2/s) =$	1.3E-06		
	on poneu		Flow regime:	transient	Flow regime:	transient
Elapsed tim	ne [h] 10, -1 10, 0		$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	0.5
102		3	$dt_1 (min) =$ $dt_2 (min) =$		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	9.0
					2	7.2E-0
		10°	T (m2/s) = S (-) =	1.0E-06	` /	1.0E-0
101	0.0 Mp. commission of the comm				$K_s (m/s) =$	
		0.3	$K_s (m/s) =$			1.4E-0
•		10 ⁻¹ iii	$S_s(1/m) =$. , ,	2.0E-0
•	•	. (1/9).[$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	6.1E-1
10.0	منبر يشيرن والمساورة	0.03	$C_D(-) =$	NA	$C_D(-) =$	6.7E-0
			ξ (-) =	7.76	ξ (-) =	19.8
		10 ⁻²	- , 2,)	NA	- , 2,)	NA
	·		$T_{GRF}(m^2/s) =$	NA NA	$T_{GRF}(m^2/s) =$	NA NA
10 ¹⁰ 10 ¹¹ tf	10 ¹² 10 ¹³ 10 ¹⁴		$S_{GRF}(-) =$	NA NA	$S_{GRF}(-) =$	
lan lan mlatimal danivativas			D _{GRF} (-) =		D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			6454
5 4 Elapsed tigs	(h) .2 .4		dt ₁ (min) =	0.54	0 (III /I u) -	6.1E-1
102 103	10,-		$dt_2 (min) =$		C_D (-) =	6.7E-0
i	ļ	100	$T_T (m^2/s) =$	7.2E-06		19.8
	13		S (-) =	1.0E-06		
	3-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2					
101	2.	0 ²	$K_s (m/s) =$	1.4E-06		
10 5	2.	0 ²	S _s (1/m) =	1.4E-06 2.0E-07		
10 7		0) [kPa]	S _s (1/m) = Comments:	2.0E-07		
10 To To To To To To To To To To To To To		5 (0-90) [kPa]	S _s (1/m) = Comments: The recommended tr	2.0E-07	7.2E-6 m2/s was deriv	
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			S _s (1/m) = Comments: The recommended tr analysis of the CHir	2.0E-07 ransmissivity of 7 phase, which sho	7.2E-6 m2/s was derivows the better derivat	ive stabilization
ndond .		5 (0-90) [kPa]	S _s (1/m) = Comments: The recommended translysis of the CHir The confidence rang	2.0E-07 cansmissivity of 7 phase, which sho e for the interval	7.2E-6 m2/s was derivous the better derivat transmissivity is esti	ive stabilization mated to be 3E-
ndond .		5 (0-90) [kPa]	S _s (1/m) = Comments: The recommended translysis of the CHir The confidence rang m2/s to 1E-5 m2/s. The confidence rang m2/s to 1E-5 m2/s. The confidence rang m2/s to 1E-5 m2/s. The confidence range m2/s to 1E-5 m2/s to 1E	2.0E-07 cansmissivity of 7 phase, which sho e for the interval The flow dimensi	7.2E-6 m2/s was derivows the better derivat	ive stabilization mated to be 3E- the test is 2. The
ndond .		5 (0-90) [kPa]	S _s (1/m) = Comments: The recommended translysis of the CHir The confidence rang m2/s to 1E-5 m2/s. The static pressure measure	2.0E-07 ransmissivity of 7 phase, which sho e for the interval The flow dimensioned at transduce	7.2E-6 m2/s was derivous the better derivat transmissivity is estion displayed during t	ive stabilization mated to be 3E- the test is 2. The from the CHir

	Test Su	mn	nary Sheet			
Project:	Oskarshamn site investiga	tion	Test type:[1]			CHi
Area:	Laxer	mar	Test no:			1
Borehole ID:	KI X	18Δ	Test start:	060822		060822 17:42
Test section from - to (m):	424.00-429.00		Responsible for test execution:		Reinde	r van der Wal Philipp Wol
Section diameter, 2-r _w (m):	0.0		Responsible for		Crist	an Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
		L	Indata		Indata	
4500	WI Y49A 424 00 420 00 000022 4 CUI- O -	L	p ₀ (kPa) =	4165		
4450 -	KLX18A_424.00-429.00_060822_1_CHir_Q_r	L	p _i (kPa) =	4153		
4400	•	L	p _p (kPa) =	4353	p _F (kPa) =	415
4350	•	- 2.0	$Q_p (m^3/s) =$	2.37E-05		
£ 4300	P section P above	min]	tp (s) =	1200	t _F (s) =	120
25 4250 -	P Delow Q	L 1.5 L	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
80 80 80 80 80 80 80 80 80 80 80 80 80 8	4	Injection	EC _w (mS/m)=			
4150		1.0	Temp _w (gr C)=	13.2		
4100			Derivative fact.=	0.05	Derivative fact.=	0.0
4050	•	- 0.5				
4000	0.80 1.00 1.20 1.40	0.0				
Elapsed T	ime [h]		Results	4.05.00	Results	_
			$Q/s (m^2/s) =$	1.2E-06		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	9.6E-07		
Else ed time (h)		L	Flow regime:	transient	Flow regime:	transient
10 ⁴ 10 ³	10,2		$dt_1 (min) =$		dt_1 (min) =	0.2
		3	$dt_2 (min) =$		dt_2 (min) =	9.0
	<u>.</u>	10 °	$T (m^2/s) =$	3.4E-06	$T (m^2/s) =$	7.6E-0
	00 0 000 SE SÚMIC (DANTE AND SE SE SE SE SE SE SE SE SE SE SE SE SE		S (-) =	1.0E-06	S (-) =	1.0E-0
10 1		0.3	$K_s (m/s) =$	6.8E-07	$K_s (m/s) =$	1.5E-0
•	•		$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
•		10 · 10 /t	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.9E-1
2		3,0	C _D (-) =	NA	C _D (-) =	2.1E-0
10 °	······································	0.03	ξ (-) =	9.73	ξ (-) =	31.90
	A A A A A A A A A A A A A A A A A A A	10 -2				
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹² 10 ¹³ tD	10 14 10 15		S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
			$dt_1 (min) =$	0.36	$C (m^3/Pa) =$	1.9E-10
Elapsed time [h]	10,210,1		$dt_2 (min) =$	2.40	C_D (-) =	2.1E-0
	300	,	$T_T (m^2/s) =$	3.4E-06	ξ (-) =	9.73
	***************************************		S (-) =	1.0E-06		
	10	2	$K_s (m/s) =$	6.8E-07		
10 1		L	$S_s(1/m) =$	2.0E-07		
	30	L	Comments:			
.\	F10	₽.		ansmissivity of 3	3.4E-6 m2/s was deriv	ed from the
10 °		-2		•), which shows the sl	
~	3 · · · · · · · · · · · · · · · · · · ·		and derivative qualit	y. The confidenc	e range for the interv	al transmissivity
	+				m2/s. The flow dimer	
	10				e measured at transduraight line extrapolati	
10 1 10 2	10 3 10 4 10 5		plot to a value of 4,1		.a.gm inic canapoian	on m the Horne
tD/CD						

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation				CHir
Area:	Laxemar	Tost no:			1
Alea.	Laxemai	restrio.			'
Borehole ID:	KLX18A	Test start:			060822 19:32
Test section from - to (m):	429.00-434.00 m	Responsible for		Reinde	er van der Wal
		test execution:			Philipp Wolf
Section diameter, 2-r _w (m):	0.076	Responsible for test evaluation:		Cristi	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
4450	T 3.0	p ₀ (kPa) =	4214		
KLX18A_429.00-434.00_060822_1_CHir_Q_r		p _i (kPa) =	4202		
4400 -	2.5	$p_p(kPa) =$	_	p _F (kPa) =	4202
4350	P saction P above P below	$Q_p (m^3/s) =$	2.35E-05		.20.
₹ .	• P below • Q	$\frac{Q_p(\Pi/S)=}{tp(s)} =$		t _F (s) =	1200
(Fed.)	lte [bmin			S el S [*] (-)=	1.00E-06
8 6 4250	+ 1.5 & uo	S el S [*] (-)= EC _w (mS/m)=	1.0015-00	୦ ଖ ୦ (-)=	1.0015-00
	+10	Temp _w (gr C)=	13.3		
4200		Derivative fact.=		Derivative fact.=	0.03
4150	0.5	Delivative fact.=	0.04	Derivative fact.=	0.0.
·					
4100	0.80 1.00 1.20 1.40 me [h]	Results		Results	
		$Q/s (m^2/s) =$	1.2E-06		
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$	9.5E-07		
	poou	Flow regime:	transient	Flow regime:	transient
Elapsed time 10, 4	[h]10,0	$dt_1 (min) =$		$dt_1 \text{ (min)} =$	0.60
102		$dt_1 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.00
	3	$T (m^2/s) =$		$T (m^2/s) =$	5.2E-06
		S (-) =	1.0E-06	, ,	1.0E-06
10 1	10	$K_s (m/s) =$		$K_s (m/s) =$	1.0E-06
	0.3	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-07
		- ,	NA		3.2E-10
2	10 ⁻¹ g	$C (m^3/Pa) =$	NA	$C (m^3/Pa) = C_D (-) =$	3.5E-02
10°	•	$C_D(-) =$	4.22		20.10
	0.03	ξ(-) =	4.22	ξ (-) =	20.10
		$T_{GRF}(m^2/s) =$	NA	T (==2/=)	NA
107 108	10 ⁹ 10 ¹⁰ 10 ¹¹	$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	NA	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA
tD tD	10 10	$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives- i	rocovery period	Selected represe			l N/A
Log-Log plot ilici. delivatives- i	recovery period		0.60		3.2E-10
Elapsed time [h	n)		9.00	σ (iii /i α) =	3.5E-02
10 2 10 10 10 10		` ′	5.2E-06		3.5E-02 20.10
	300	$T_T (m^2/s) =$			20.10
0.00.000		S (-) =	1.0E-06		
101	102	$K_s (m/s) =$	1.0E-06		
		$S_s(1/m) =$	2.0E-07		
	(90 30 E	Comments:		: OF () () : :	1.6
•	101 8			5.2E-6 m2/s was derive f its horizontal derive	
100				ence range for the int	
	Special and a second property of the second	transmissivity is esti	mated to be 8E-7	m2/s to 9E-6 m2/s.	The flow
				s 2. The static pressur	
10 ¹ 10 ²	10°			ne CHir phase using stalue of 4,200.4 kPa.	
tD/CD		eapoianon in tile i	prot to a v	01 7,200.7 KI d.	

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemar	Test no:			1
Borehole ID:	KI Y18A	Test start:			060822 21:24
borenole ib.					000022 21.2-
Test section from - to (m):	434.00-439.00 m			Reinde	er van der Wal
Section diameter, 2·r _w (m):	0.076	test execution: Responsible for		Crist	Philipp Wol an Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
4500	0.080 KLX18A_434.00-439.00_060822_1_CHir_Q_r	p ₀ (kPa) =	4262		
4450	·	p _i (kPa) =	4256		
	- 0.060	$p_p(kPa) =$		p _F (kPa) =	425
4400 · i	•	$Q_p (m^3/s) =$	6.50E-07		
	Paction Pabove	tp (s) =	1200	t _F (s) =	120
	Photow 2 0.040 & 0.040	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4300 ·	Injection	EC _w (mS/m)=			
4250		Temp _w (gr C)=	13.4		
	0.020	Derivative fact.=	0.04	Derivative fact.=	0.0
4200					
4150	0.000				
Elapsed Time		Results		Results	
		$Q/s (m^2/s) =$	3.2E-08		
Log-Log plot incl. derivates- flo	w period	$T_M (m^2/s) =$	2.6E-08		
		Flow regime:	transient	Flow regime:	transient
10. ⁴ 10. ³ Elapsed time [10,10,1	$dt_1 (min) =$	0.60	dt_1 (min) =	0.2
	10 ²	dt_2 (min) =	18.00	dt_2 (min) =	0.9
-		$T (m^2/s) =$	5.8E-08	$T (m^2/s) =$	2.6E-0
101		S (-) =	1.0E-06	S (-) =	1.0E-0
• • • • • • • • • • • • • • • • • • • •	101	$K_s (m/s) =$	1.2E-08	K_s (m/s) =	5.1E-0
		$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
2 10 ⁴		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.9E-1
• ••••	100 \$	$C_D(-) =$	NA	C_D (-) =	2.1E-0
10 ⁻¹		ξ (-) =	5.70		0.8
10	- 				
1		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁷ 10 ⁸ 1D	10 ^s 10 ¹⁰ 10 ¹¹	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
n n		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- r	ecovery period	Selected represe	ntative paran		
	,	dt_1 (min) =	0.27	C (m ³ /Pa) =	1.9E-1
Elapsed time [h]		$dt_2 (min) =$		$C_D(-) =$	2.1E-0
101	300	$T_T (m^2/s) =$	2.6E-08		0.8
a-retreatment.		S (-) =	1.0E-06		
. / .	102	$K_s (m/s) =$	5.1E-09		
100	30	$S_s(1/m) =$	2.0E-07		
	30 I	Comments:]
	101		ansmissivity of	2.6E-8 m2/s was deriv	ed from the
	· Name ·		•	e), which shows the l	
10 ⁻¹	3	derivative quality. The	he confidence rai	nge for the interval tra	ansmissivity is
1				2/s. The flow dimensi	
	10 ⁰			re measured at transdor raight line extrapolati	
10 ⁰ 10 ¹	10 ² 10 ³ 10 ⁴	plot to a value of 4,2		raigiit iiile extrapolati	оп ин ше погле
tD/CD		1			

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				Р
Area:	Laxemar	Test no:			
, ii oa.	Edxomai	rest no.			'
Borehole ID:	KLX18A	Test start:			060822 23:10
Test section from - to (m):	439.00-444.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period Indata	
		Indata p ₀ (kPa) =	4308		
KLX18A_439.00-444.00_060822_1_Pi_Q_r	0.009	$p_0 (KPa) = p_i (kPa) =$	4300		
4550	P section	$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	444:
4500	P above P below Q			$p_F(KPa) =$	444.
	0.002	$Q_p (m^3/s) =$	NA		2.50
(e. 4450 ·	Race [limin]	tp (s) =		t _F (s) =	269
- 4400	· · · · · · · · · · · · · · · · · · ·	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
ŽE 3	: sel	EC _w (mS/m)=			
4300	0.001	Temp _w (gr C)=	13.5		
4300	i	Derivative fact.=	NA	Derivative fact.=	0.0
4250					
4200 0.00 0.20 0.40 0.50 Elapsed 1	0.000 0.000 1.00 1.40 1.40 Time [h]	Results		Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	NA		
	poi.iou	Flow regime:	transient	Flow regime:	transient
		$dt_1 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$	0.30
		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	1.80
		- ` '	NA	$T (m^2/s) =$	6.2E-1
		T (m2/s) = S (-) =	NA	S (-) =	1.0E-06
		$K_s (m/s) =$	NA	$K_s (m/s) =$	1.2E-1
		$S_s(1/m) =$	NA	$S_s(1/m) =$	2.0E-0
Not Ar	nalysed	$C_s(1/11) = C_s(1/11) = C_s(1/11) = C_s(1/11)$	NA	$C_s(1/11) = C_s(m^3/Pa) = 0$	1.8E-1
		_ ,	NA	,	
			NA	$C_D(-) =$	2.0E-03 5.10
		ξ (-) =	INA	ξ (-) =	5.10
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran		
		dt_1 (min) =	0.30	$C (m^3/Pa) =$	1.8E-1
10, 3 Elapsed time (*	1] 19, ⁻¹	$dt_2 \text{ (min)} =$		$C_D(-) =$	2.0E-0
10	10 1	$T_T (m^2/s) =$	6.2E-11		5.10
1		S (-) =	1.0E-06		Ī
10 1	110°	$K_s (m/s) =$	1.2E-11		
	The same of the sa	$S_s (1/m) =$	2.0E-07	1	
		Comments:	1 3.		I
and to o	10 1		ransmissivity of 6	5.2•10-11 m2/s was d	erived from the
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	l subsection of the subsection	analysis of the Pi ph	nase (inner zone).	The confidence rang	e for the interva
10.1		transmissivity is est	imated to be 1.0•1	10-11 to 9.0•10-11 m	2/s. The flow
*	10 -2			s 2. The static pressu	re could not be
		extrapolated due to	tne very low trans	smissivity.	
		-			
10 °1 10 °	10 ¹ 10 ² 10 ³				

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				Р
Area:	Laxema	r Test no:			1
Borehole ID:	KLX18/	A Test start:	060823 01		060823 01:02
Test section from - to (m):	444.00-449.00 n	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period Indata		Recovery period Indata	
		$p_0 (kPa) =$	4356		
KLX1	8A_444.00-449.00_060823_1_Pi_Q_r	$p_0 (kPa) =$ $p_i (kPa) =$	4371		
4550		$p_i(kPa) = p_p(kPa) =$		p _F (kPa) =	4410
4500	Patricia Pa		NA	ρ _F (KFα) =	441
	0.002	$Q_p (m^3/s) =$		t (a)	702
4450 ·	in the second se	tp (s) =		$t_F(s) =$	723
7 66	Sign of the state	()	1.00E-06	S el S [*] (-)=	1.00E-0
ğ 4400	· · · · · · · · · · · · · · · · · · ·	EC _w (mS/m)=			
4350	0.001	Temp _w (gr C)=	13.6		
<u>:</u>	:	Derivative fact.=	NA	Derivative fact.=	0.
4300	•				
4250	1.50 2.00 2.50				
Blapsed Time (h)		Results		Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates-	flow period	$T_M (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
		$dt_1 (min) =$	NA	$dt_1 (min) =$	0.12
		dt_2 (min) =	NA	$dt_2 (min) =$	42.00
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.0E-1
		S (-) =	NA	S (-) =	1.0E-0
		$K_s (m/s) =$	NA	K_s (m/s) =	2.1E-12
Not /	Analysed	$S_s (1/m) =$	NA	$S_s (1/m) =$	2.0E-0
NOT F	Miarysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	9.9E-12
		C_D (-) =	NA	$C_D(-) =$	1.1E-0
		ξ (-) =	NA	ξ(-) =	0.22
		2		2	
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D _{GRF} (-) =	NA .	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives	- recovery period	Selected represe		_	1 00E 4
- Elapsed	time Ibl	$dt_1 (min) =$	0.12	0 (III /I u) -	9.9E-12
10 1 10 3	10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	$dt_2 (min) =$		C_D (-) =	1.1E-0
	3	$T_T (m^2/s) =$	1.0E-11		0.22
	10°	S (-) =	1.0E-06		
		K_s (m/s) =	2.1E-12		
10	0.3	$S_s (1/m) =$	2.0E-07		
بنبي بيني بيني والمستناء والمستناء	William Control of the Control of th	Comments:			
	10 ⁻¹			1.0E-11 m2/s was der	
10-1	0.03			nce range for the inte 2 to 3E-11 m2/s. The	
	0.03			tic pressure could no	
1	10'2	due to the very low		=	•
	L L				
10'1' 10°	10 ¹ 10 ² 10 ³				

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site investi	igation	Test type:[1]			CHi
Area:	La	xemar	Test no:			1
Borehole ID:	KI	LX18A	Test start:			060823 06:23
Test section from to (m):					Doinde	ar von der Wel
Test section from - to (m):	449.00-454	4.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	1	0.076	Responsible for		Crist	an Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4700	: KLX18A_449.00-454.00_060823_1_CHir_Q_	0.006	p ₀ (kPa) =	4403		
4650 -	:	0.005	p _i (kPa) =	4413		
4600		10,005	$p_p(kPa) =$		p _F (kPa) =	443
į	P section P above	- 0.004	$Q_p (m^3/s) =$	2.63E-08		
450 ·	• P below • Q	(Mmin)	tp (s) =		t_F (s) =	120
4500		- 0.003 P	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4450		Injecti	EC _w (mS/m)=			
	-	0.002	Temp _w (gr C)=	13.7		
4400		0.001	Derivative fact.=	0.05	Derivative fact.=	0.0
4300						
0.00 0.20 0.40 0.60 0.80	1.00 1.20 1.40 1.60 d Time [h]	0,000	Results		Results	
			$Q/s (m^2/s) =$	1.2E-09		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	9.8E-10		
			Flow regime:	transient	Flow regime:	transient
Elapsed tim	g[h]	1	$dt_1 (min) =$	0.54	dt_1 (min) =	0.6
10		3000	dt_2 (min) =	15.00	dt_2 (min) =	9.00
1		10 ³	$T (m^2/s) =$	3.7E-10	$T (m^2/s) =$	4.2E-1
†	A STATE OF THE STA		S (-) =	1.0E-06	S (-) =	1.0E-0
100		300	K_s (m/s) =	7.3E-11	K_s (m/s) =	8.4E-1
بېنېنىز.		٠.	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
	······································	10 ²	C (m³/Pa) =	NA	$C (m^3/Pa) =$	1.5E-1
	* ***	2.0	$C_D(-) =$	NA	C_D (-) =	1.6E-0
101		30	ξ (-) =	-1.69	ξ (-) =	-1.3
		10 ¹				
†			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ^{-2'} 10 ^{-1'}	10 ⁰ 10 ¹ 10)2	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	entative paran	neters.	
			$dt_1 (min) =$	0.60	0 (III /I u) -	1.5E-1
	e[h] .1	7	dt_2 (min) =		$C_D(-) =$	1.6E-0
10 10 Elapsed time			T (2/-)	4.2E-10	ξ(-) =	-1.39
			$T_T (m^2/s) =$			I
		300	S (-) =	1.0E-06		
10 10 10		300	$S (-) = K_s (m/s) =$	1.0E-06 8.4E-11		
		300	S (-) =	1.0E-06		
10		10 ²	$S (-) = K_s (m/s) =$	1.0E-06 8.4E-11		
10			$S(-) = K_s(m/s) = S_s(1/m) = Comments:$	1.0E-06 8.4E-11 2.0E-07	1.2E-10 m2/s was der	
10		10 ² red (10 ² or or or or or or or or or or or or or	$S(-) = K_s(m/s) = S_s(1/m) = Comments:$ The recommended tranalysis of the CHir	1.0E-06 8.4E-11 2.0E-07 ansmissivity of ² phase, because o	1.2E-10 m2/s was der f its better data quali	ty. The
10 10 10 10 10 10 10 10 10 10 10 10 10 1		10 ²	$S(-) = K_s(m/s) = S_s(1/m) = Comments:$ The recommended tranalysis of the CHir confidence range for	1.0E-06 8.4E-11 2.0E-07 cansmissivity of 2 phase, because of the interval tran	4.2E-10 m2/s was der f its better data quali smissivity is estimate	ty. The d to be 1E-10
10 10 10 10 10 10 10 10 10 10 10 10 10 1		10 ² red (10 ² or or or or or or or or or or or or or	S (-) = K _s (m/s) = S _s (1/m) = Comments: The recommended translysis of the CHir confidence range for m2/s to 7E-10 m2/s.	1.0E-06 8.4E-11 2.0E-07 cansmissivity of 2 phase, because of the interval tran The flow dimensions	1.2E-10 m2/s was der f its better data quali	ty. The d to be 1E-10 the test is 2.
10 10 10 10 10 10 10 10 10 10 10 10 10 1	10, 10, 10, 10	10 ² Red (Oreo) (Oreo)	S (-) = K _s (m/s) = S _s (1/m) = Comments: The recommended tranalysis of the CHir confidence range for m2/s to 7E-10 m2/s. The static pressure n	1.0E-06 8.4E-11 2.0E-07 cansmissivity of 4 phase, because of the interval tran The flow dimension assured at transce	4.2E-10 m2/s was der f its better data quali smissivity is estimate sion displayed during	ty. The d to be 1E-10 the test is 2. ved from the

	Test Sur	mn	nary Sheet			
Project:	Oskarshamn site investigat	tion	Test type:[1]			CHii
Area:	Laxer	mar	Test no:			1
Borehole ID:	KLX ⁷	18A	Test start:			060823 08:37
Test easting from the last					Daireda	
Test section from - to (m):	454.00-459.00	υm	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	0.0	076	Responsible for		Crist	an Enachescu
			test evaluation:		,	
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4700	KLX18A_454.00-459.00_060823_1_CHir_Q_r		p ₀ (kPa) =	4453		
4650	REATON 434.00435.00_000025_T_CFIII_QT		p _i (kPa) =	4451		
•			$p_p(kPa) =$	4652	p _F (kPa) =	445
4600		0.10	$Q_p (m^3/s) =$	1.51E-06		
4550	P section P above P below	min]	tp (s) =		t_F (s) =	120
	- Q	n Rate [l/	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
8 4500 6 4500		Injectio	EC _w (mS/m)=			
		0.05	Temp _w (gr C)=	13.9		
4400			Derivative fact.=	0.07	Derivative fact.=	0.0
4350		- 0.00				
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 1.40 1 Time [h]		Results	•	Results	
			Q/s $(m^2/s)=$	7.3E-08		
Log-Log plot incl. derivates- f	low period		$T_M (m^2/s) =$	6.1E-08		
			Flow regime:	transient	Flow regime:	transient
Elapsed time	[h] 10, ⁻¹ 10, ⁰ 10, ¹		dt_1 (min) =	1.20	dt_1 (min) =	0.30
10-1	10	2	dt_2 (min) =	3.60	dt_2 (min) =	1.80
1			$T (m^2/s) =$	8.9E-08	$T (m^2/s) =$	6.5E-0
	30		S (-) =	1.0E-06	\ /	1.0E-0
10 1			$K_s (m/s) =$		$K_s (m/s) =$	1.3E-0
	10	1	S _s (1/m) =		$S_s(1/m) =$	2.0E-0
• • •		fminfl	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	9.8E-1
· ·	3	(0/1/0)	- ()	NA	a ' / \	1.1E-02
100	10		5 ()		- 5 ()	-0.03
	100		ξ (-) =	1.09	ξ (-) =	-0.0
+	0.3	3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
104 105	10 ⁵ 10 ⁷ 10 ⁸		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative param		
3 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3	,,,,		dt ₁ (min) =	0.36		9.8E-1
Elapsed time (h)	10,1		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	1.1E-02
0 1	300	,	. 2	6.5E-08		-0.03
			$T_T (m^2/s) = S (-) =$	1.0E-06		0.00
A Parket	10 -	2	$K_s (m/s) =$	1.3E-08		
000				2.0E-07		
,// .	30		$S_s (1/m) =$	2.0E-07		
	10	p-p0, (p-p0	analysis of the CHir derivative quality. The estimated to be 3E-0	phase (inner zon he confidence ran 8 m2/s to 1E-07	5.5E-08 m2/s was der e), which shows the bange for the interval transport to the interval transport to the flow dime	petter data and ansmissivity is nsion displayed
10 ° 10 ° 0)CD	10 2 10 2	•		ir phase using st	e measured at transdu raight line extrapolati	

	Test S	Sumn	nary Sheet			
Project:	Oskarshamn site investi					CHi
Area:	La:	xemar	Test no:			1
Borehole ID:	KI	X18A	Test start:			060823 10:41
Test section from - to (m):	459.00-464 	1.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot & and p			Indata		Indata	
4500 T		0.0050	p ₀ (kPa) =	4507	Indata	
	KLX18A_459.00-464.00_060823_1_CHir_Q_r		p _i (kPa) =	4541		
4750 -		0.0040	$p_p(kPa) =$	-	p _F (kPa) =	454:
4700 -	: \	+ 0.0040	•	1.67E-08		434.
m 4650 ⋅	P section P above P below		$Q_p (m^3/s) =$			120
(K)	9	0.0030 [win]	tp (s) =		t _F (s) =	120
\$2 400 ·		tion Rat	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
GEMOO 4550		0.0020 =	EC _w (mS/m)=	100		
4500			Temp _w (gr C)=	13.8		
4450		+ 0.0010	Derivative fact.=	0.08	Derivative fact.=	0.0
4400	100 120 140	0.0000				
0.00 0.20 0.40 0.60 0.80 Elapsed Ti		1.60	Results		Results	
			$Q/s (m^2/s) =$	7.4E-10		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	6.1E-10		
			Flow regime:	transient	Flow regime:	transient
Elapsed time [h	10,1 10,1 10,1 10,1 10,1 10,1 10,1 10,1	1	dt_1 (min) =	0.21	dt_1 (min) =	0.5
10 '.	•	10 ⁴	dt_2 (min) =	18.00	dt_2 (min) =	9.00
			$T (m^2/s) =$	9.0E-11	$T (m^2/s) =$	3.5E-10
+	:	3000	S (-) =	1.0E-06	,	1.0E-0
10			$K_s (m/s) =$		$K_s (m/s) =$	6.9E-1
	0.0000000000000000000000000000000000000	10 ³	$S_s (1/m) =$		$S_s(1/m) =$	2.0E-0
والمستعلق المستعلق ال		[min/]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.5E-1
		300 (1/4),	$C_D(-) =$	NA	$C_D(-) =$	1.7E-0
10-1		10 ²				-0.25
			ξ (-) =	-1.92	ξ(-) =	-0.23
		30	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10-2 10-1	10 ⁰ 10 ¹ 10 ²		S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA
tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	entative param		
-5 -5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	· · · · · / · · · · ·		dt_1 (min) =	_	C (m ³ /Pa) =	1.5E-1
10. ⁻³ Elapsed time	[h] 10 10 10 10 10 10 10 10 10 10 10 10 10		dt_1 (min) =		$C_D(-) =$	1.7E-03
10				3.5E-10		-0.25
		300	$T_{T} (m^{2}/s) =$ $S (-) =$	1.0E-06		0.20
1		300	* *			
10 9		10 ²	$K_s (m/s) =$	6.9E-11		
A Committee of the Comm	***		$S_s (1/m) =$	2.0E-07		
		30 jg	Comments:			
		3-0) (0-0		•	3.5E-10 m2/s was der	
• • • • • • • • • • • • • • • • • • • •		10 ¹			ows the better data an	
101		į.	quality. The confider			
10"			quality. The confider be 9E-11 m2/s to 6E			
10"		3	be 9E-11 m2/s to 6E	2-10 m2/s. The flo		yed during the
10 ³	10 10 1	3 0 ³ 10 ⁰	be 9E-11 m2/s to 6E test is 2. The static p	1-10 m2/s. The flooressure measured using straight lin	ow dimension display	yed during the was derived

	Test S	umi	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			CHi
Area:	Lax	emai	Test no:			1
Borehole ID:	KL	X18A	Test start:			060823 13:31
Test costion from to (m):					Doinde	or von der Mel
Test section from - to (m):	404.00-409.	.00 11	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2-r _w (m):	(0.076	Responsible for		Crist	ian Enachescı
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	•
4850	. KLX18A_464.00-469.00_060823_1_CHir_Q_r	0.004	p ₀ (kPa) =	4553		
4800 -			p _i (kPa) =	4558		
4750 -		- 0.003	$p_p(kPa) =$		p _F (kPa) =	456
:	• P section		$Q_p (m^3/s) =$	2.67E-08		
₹ 4700 ·	P store P below	[mim]	tp (s) =		t_F (s) =	120
4650		- 0.002 B	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
S 4600		Injection	EC _w (mS/m)=			
			Temp _w (gr C)=	13.9		
4550		0.001	Derivative fact.=	0.13	Derivative fact.=	0.0
4500						
4450		0.000	Results		Results	
			$Q/s (m^2/s) =$	1.0E-09		
Log-Log plot incl. derivates- flo	ow neriod		$T_{\rm M} (m^2/s) =$	8.5E-10		
Log Log plot mon derivates in	on period		Flow regime:	transient	Flow regime:	transient
Elapsed time	a [h]	.1	dt ₁ (min) =		dt ₁ (min) =	1.8
10		10 ⁴	$dt_2 \text{ (min)} =$		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	9.0
†					2	7.6E-1
	•		T (m2/s) = S (-) =	1.0E-06	` '	1.0E-0
101	·	10 ³	$K_s (m/s) =$		$K_s (m/s) =$	1.5E-1
		-	$S_s (1/m) =$		$S_s (11/s) =$ $S_s (1/m) =$	2.0E-0
10		- 2 Union				
	A140 A	102	$C (m^3/Pa) =$	NA NA	$C (m^3/Pa) =$	9.1E-1:
	**	\$	$C_D(-) =$	NA 0.74	$C_D(-) =$	1.0E-0
10 ⁻¹		10 ¹	ξ (-) =	0.74	ξ (-) =	1.10
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
101 102	10 ³ 10 ⁴ 1	05	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
			dt_1 (min) =	1.80	_	9.1E-12
Elapsed time	[h]101010.	n	$dt_2 \text{ (min)} =$	9.00	$C_D(-) =$	1.0E-0
10 '.		300	$T_T (m^2/s) =$	7.6E-10		1.10
1		300	S (-) =	1.0E-06		
		10 ²	$K_s (m/s) =$	1.5E-10		
10"	- Mandal Marie		$S_s (1/m) =$	2.0E-07		
		30	Comments:			
		3		ansmissivity of 3	7.6E-10 m2/s was der	ived from the
1		10 ¹		•	ows the better data an	
10 ⁻¹		2	quality. The confider	nce range for the	interval transmissivi	ty is estimated to
		3			ow dimension display	
		10 ⁰				
10-1	10 ¹ 10 ² 10 ³				ne extrapolation in th	e morner plot to
10 ⁻¹ 10 ⁻³ (D)CC	10 ⁷ 10 ² 10 ³			using straight lin	d at transducer depth, ne extrapolation in th	

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemar	Test no:			1
Borehole ID:	KI V19A	Test start:			060823 16:36
borenole ID.	KLATOA	rest start.			000023 10.30
Test section from - to (m):	469.00-474.00 m			Reinde	er van der Wal
Section diameter, 2-r _w (m):	0.076	test execution: Responsible for		Crist	Philipp Wol
Section diameter, 2-1 _W (iii).	0.070	test evaluation:		Onot	an Endoneso
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
4900	0.040	p_0 (kPa) =	4602		
4850 . KLX18A_469.00-474.00_060823_1_CHir_Q_r . :	0.035	p _i (kPa) =	4602		
4800	0.030	$p_p(kPa) =$	4802	p _F (kPa) =	460
4750	• P section	$Q_p (m^3/s) =$	3.00E-07		
4700	P above - 0.025 P below - Q	tp (s) =		t_F (s) =	120
B 4650	0.020 E	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4400	9 9 9	EC _w (mS/m)=			
4550		Temp _w (gr C)=	14		
4500 -	- 0.010	Derivative fact.=	0.08	Derivative fact.=	0.0
4450	0.005				
4400	0.80 1.00 1.20				
Elapsed Time		Results		Results	
		Q/s $(m^2/s)=$	1.5E-08		
Log-Log plot incl. derivates- flow	w period	$T_M (m^2/s) =$	1.2E-08		
Floored time In	1	Flow regime:	transient	Flow regime:	transient
10 ² Elapsed time [h	19,0	$dt_1 (min) =$		dt_1 (min) =	1.2
		dt_2 (min) =		$dt_2 (min) =$	9.0
1	10 ²	$T (m^2/s) =$		$T (m^2/s) =$	6.4E-0
101	······································	S (-) =	1.0E-06	` '	1.0E-0
		K_s (m/s) =		K_s (m/s) =	1.3E-0
	101	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
10	1/0/Imi	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.4E-1
	100	$C_D(-) =$	NA	$C_D(-) =$	1.6E-0
10-1	•	ξ (-) =	4.30	ξ (-) =	21.7
1	10 ⁻¹	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁶ 10 ⁷ tD	10 ⁸ 10 ⁹ 10 ¹⁰	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives- re	ecovery period	Selected represe			
Florence		$dt_1 (min) =$	1.20	0 (III /I u) -	1.4E-1
Flapsed time [h]	10. ⁻²	$dt_2 (min) =$		C_D (-) =	1.6E-0
	300	$T_T (m^2/s) =$	6.4E-08		21.7
سر ا	300	S (-) =	1.0E-06		
	10 ²	K_s (m/s) =	1.3E-08		
10	<u>.</u>	$S_s (1/m) =$	2.0E-07		
//	30 8	Comments:			
<i>/</i> .	101		•	5.4E-8 m2/s was deriv	
10"	10 2			ows a horizontal stabi the interval transmiss	
	3			2/s. The flow dimensi	
		during the test is 2.	The static pressur	re measured at transdo	icer depth, was
		Idamirrad from the CII	in mbooo waina at	roight ling autropalati	on in the Horne
100 101	10 ² 10 ³ 10 ⁴	derived from the CH plot to a value of 4,5		raigiit iiile extrapoiati	on in the Horne

	Test S	umi	mary Sheet			
Project:	Oskarshamn site investiç	gation	Test type:[1]			CHi
Area:	Lax	ema	Test no:			
Borehole ID:	KL	X18A	Test start:	060823 1		
Tast sastian from to (m)					Dainde	an von den Me
Test section from - to (m):	474.00-479	.00 11	Responsible for test execution:		Reinae	er van der Wa Philipp Wol
Section diameter, 2-r _w (m):		0.076	Responsible for		Crist	an Enachesc
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4960		0.20	p_0 (kPa) =	4652		
4900 -	KLX18A_474.00-479.00_060823_1_CHir_Q_r		p _i (kPa) =	4652		
4850	······	+ 0.15	$p_p(kPa) =$	4851	p _F (kPa) =	465
4800	•		$Q_p (m^3/s) =$	1.33E-06		
. :	P section P above P below	min.	tp (s) =		t_F (s) =	120
1700	• • • • • • •	- 0.10 Pa	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
0 4700 -	~	Injection	$EC_w (mS/m)=$			
4650			Temp _w (gr C)=	14.1		
4600		+ 0.05	Derivative fact.=	0.08	Derivative fact.=	0.0
4550						
4500 : : : : : : : : : : : : : : : : : :	0.80 1.00 1.20 iime [h]	1.40	Results		Results	
			$Q/s (m^2/s) =$	6.6E-08		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	5.4E-08		
			Flow regime:	transient	Flow regime:	transient
Elapsed time	e[h] 10, ⁻¹ 10, ⁰		$dt_1 \text{ (min)} =$	0.48	$dt_1 \text{ (min)} =$	0.4
102		10 ²	$dt_2 \text{ (min)} =$		$dt_2 (min) =$	9.0
			$T (m^2/s) =$		$T (m^2/s) =$	1.8E-0
10 ⁻¹		-	S (-) =	1.0E-06	, ,	1.0E-0
0 0 0		10 ¹	$K_s (m/s) =$		$K_s (m/s) =$	3.6E-0
	-	İ	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	e de de la compani	io li		2.0L-07 NA		2.8E-1
Obb		10,00	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	
		\$	$C_D(-) =$		$C_D(-) =$	3.1E-0
10-1	•	10-1	ξ (-) =	3.10	ξ (-) =	9.8
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁵ 10 ⁶	107 108	10 ⁹	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
D			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
	<u>-</u>		$dt_1 \text{ (min)} =$	0.48		2.8E-1
	ll 10		$dt_2 \text{ (min)} =$		$C_D(-) =$	3.1E-0
10		10 ³	$T_T (m^2/s) =$	9.9E-08		3.1
			S (-) =	1.0E-06		1
		300	$K_s (m/s) =$	2.0E-08		
101		10 ²	$S_s(1/m) =$	2.0E-07		
		-	Comments:	2.52 57		<u> </u>
d /	,	30		ansmissivity of C	9.9E-8 m2/s was deriv	ved from the
\ \frac{1}{2} \cdot \cdo	-				ws a slight better data	
10	and the same	10 ¹	quality. The confider	nce range for the	interval transmissivit	ty is estimated t
4.2.2	a description of the second of				dimension displayed	
	•	3			ransducer depth, was	
	,		the CHir phase using value of 4,647.4 kPa		rapolation in the Hor	ner plot to a
10 10 tD/CD	10 ³ 10 ⁴ 10 ⁵		value of 4 h4 / 4 kPa			

	Test Sumn	nary Sheet				
Project:	Oskarshamn site investigation	Test type:[1]			CHi	
Area:	Laxemar	Test no:				
Borehole ID:	KI Υ18Δ	Test start:	060823 20:0			
borenole ib.	KEXTOA	rest start.			000023 20.00	
Test section from - to (m):	477.00-482.00 m			Reinde	er van der Wal	
Section diameter, 2·r _w (m):	0.076	test execution: Responsible for		Crist	Philipp Wol an Enachescu	
Coolien diamotor, 2 Tw ().	0.0.0	test evaluation:				
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata		
KLX18A_477.00-482.00_060823_1_CHir_Q_r	0.020	p ₀ (kPa) =	4680			
	•	p _i (kPa) =	4679			
4850	0.015	$p_p(kPa) =$	4880	p _F (kPa) =	467	
4800	P section P above P below	$Q_p (m^3/s) =$	1.83E-07			
le (Pa)	luiui	tp (s) =		t_F (s) =	120	
4750 -	0010 A	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
noon i	Injection	EC _w (mS/m)=				
4700	0.005	Temp _w (gr C)=	14.1			
4650	į.	Derivative fact.=	0.15	Derivative fact.=	0.0	
4600 0.00 0.20 0.40 0.60 Elapsed Tir	0.000	Results		Results		
Espsea in	re [n]		8.9E-09		Ī	
Log-Log plot incl. derivates- flo	w poriod	$Q/s (m^2/s) = T_M (m^2/s) =$	7.4E-09			
Log-Log plot ilici. derivates- lic	w periou	Flow regime:	transient	Flow regime:	transient	
Elapsed time	[h] 10 ⁻¹ 10 ⁰	dt ₁ (min) =		dt ₁ (min) =	1.8	
10		$dt_1 (min) =$ $dt_2 (min) =$		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	9.0	
1	•	$T (m^2/s) =$		$T (m^2/s) =$	3.2E-0	
1012	102	S (-) =	1.0E-06	, ,	1.0E-0	
		$K_s (m/s) =$		$K_s (m/s) =$	6.3E-0	
		S _s (1/m) =		$S_s (1/m) =$	2.0E-0	
100	10 ¹ [[viiu]] (t	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.8E-1	
	1/4.(1%	$C_D(-) =$	NA	C_D (-) =	2.0E-0	
10 ⁻¹	10°	ξ (-) =	5.00		15.8	
• •	•					
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10° 107 tD	10 ⁸ 10 ⁹ 10 ¹⁰	S _{GRF} (-) =	NA	S _{GRF} (-) =	NA	
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives- r	ecovery period	Selected represe	ntative paran	neters.		
		$dt_1 (min) =$	1.80	0 (III /I u) -	1.8E-1	
10 ² Elapsed time (b)	10.10.10.10.10.	$dt_2 (min) =$		C_D (-) =	2.0E-0	
	ļ	$T_T (m^2/s) =$	3.2E-08		15.80	
	300	S (-) =	1.0E-06			
10 3	10 ²	K_s (m/s) =	6.3E-09			
10		$S_s (1/m) =$	2.0E-07			
·/·	30 8	Comments:				
	ž ,		•	3.2E-8 m2/s was derivous the better data an		
10 ^d	101			interval transmissivi		
		be 7E-9 m2/s to 7E-8	8 m2/s. The flow	dimension displayed	during the test	
	3			ransducer depth, was		
100 101	10 ² 10 ³ 10 ⁴ 10 ⁰	the CHir phase using value of 4,676.0 kPa		rapolation in the Hor	ner plot to a	
tD/CD	. 10	, and O1 7,0/0.0 KF	•			

	Test Sumi	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxema	Test no:			1
Borehole ID:	KLX18A	Test start:			060823 21:55
				5	
Test section from - to (m):	482.00-487.00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	•
KLX18A_482.00-487.00_060923_1_CHir_Q_r	0.15	p ₀ (kPa) =	4728		
4950 -	P section P above P below	p _i (kPa) =	4733		
4900 -	Q	$p_p(kPa) =$		p _F (kPa) =	467
	0.10	$Q_p (m^3/s) =$	9.33E-07		
<u>a</u> 450 -	[Minin]	tp (s) =		t_F (s) =	1200
75 4500 ·	o o n a se E	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4750	and in	EC _w (mS/m)=			
	0.05	Temp _w (gr C)=	14.2		
4700		Derivative fact.=	0.03	Derivative fact.=	0.0
4650 -					
0.00 0.20 0.40 0.60 0.80 Elapsed Ti	1.00 1.20 1.40 1.60 me [h]	Results		Results	
		Q/s $(m^2/s)=$	4.6E-08		
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$	3.8E-08		
gg p	ролов	Flow regime:	transient	Flow regime:	transient
Elapsed time	(h) 10 ⁻¹ 10 ⁰	$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	1.8
10		$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.0
1	10 ²	2		2	5.4E-0
10 17	į	$T (m^2/s) = S (-) =$	1.0E-06	, ,	1.0E-0
		$K_s (m/s) =$		$K_s (m/s) =$	1.1E-0
• • • • • • • • • • • • • • • • • • • •	10 ¹	$S_s (1/m) =$		$S_s(11/s) = S_s(1/m) = S_s(1/m)$	2.0E-0
10:		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	7.7E-1
		a ()	NA	• ' ' '	8.5E-0
	•	$C_D(-) =$		$C_D(-) =$	-3.9
10 ⁻¹		ξ (-) =	-0.90	ξ(-) =	-3.9
	10*1	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵	S _{GRF} (-) =	NA	S _{GRF} (-) =	NA
_		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran	neters.	
		dt_1 (min) =	4.20	$C (m^3/Pa) =$	7.7E-10
10 1 Elapsed ting	[h]10.1	dt_2 (min) =	18.00	$C_D(-) =$	8.5E-0
10	10 ³	$T_T (m^2/s) =$	2.6E-08	ξ(-) =	-0.90
;		S (-) =	1.0E-06		
10 4		$K_s (m/s) =$	5.2E-09		
	10 ²	$S_s(1/m) =$	2.0E-07		
	معمونية معمونية معمونية معمونية معمونية معمونية معمونية معمونية معمونية معمونية معمونية معمونية معمونية معموني	Comments:	1		<u> </u>
101	10 ¹		ansmissivity of 2	2.6E-8 m2/s was deriv	ved from the
		analysis of the CHi p	hase (outer zone), which shows the b	etter data and
10-2				ce range for the inter	
	10 ⁰			m2/s to 5E-8 m2/s.	
				s 2. The static pressur ne CHir phase using s	
10 ⁻² 10 ⁻¹ tD/C	10 ^d 10 ¹ 10 ²	-		value of 4,711.5 kPa.	-

	Test Su	mr	nary Sheet				
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi	
Area:	Laxe	mar	Test no:			1	
D 1 1 1D	1017	40.4			060833		
Borehole ID:	KLX	18A	Test start:		060823 23:		
Test section from - to (m):	487.00-492.0	00 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol	
Section diameter, 2·r _w (m):	0.	.076	Responsible for		Crist	ian Enachescu	
			test evaluation:				
Linear plot Q and p			Flow period		Recovery period		
			Indata	455.4	Indata		
KLX18A_487.00-492.00_060823_1_CHir_Q_r	P section	0.08	$p_0 (kPa) =$	4774			
4960	P above P below Q	0.07	$p_i(kPa) =$	4773		477	
::	•	- 0.06	$p_p(kPa) =$		p _F (kPa) =	4772	
4900			$Q_p (m^3/s) =$	5.47E-07		120	
		[Mmin]	tp (s) =		t _F (s) =	1200	
\$ 4850 -	hammen .	ion Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
	· ·	- 0.03	EC _w (mS/m)=				
4800	<u> </u>		Temp _w (gr C)=	14.3			
4750		+ 0.02	Derivative fact.=	0.09	Derivative fact.=	0.0	
		- 0.01					
4700 0.00 0.20 0.40 0.60 Elapsed T	0.80 1.00 1.20 1.40	1,,,,,	Results		Results		
Esquiser i	mue [n]			2.7E-08		1	
log log what includes in the			Q/s $(m^2/s)=$	2.7E-08 2.2E-08			
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M}$ (m ² /s)=			tua nais nt	
Elapşed time	h)		Flow regime:	transient	Flow regime:	transient	
10 ² 10, ⁴ 10, ³ 10, ⁴	10,		$dt_1 (min) =$		$dt_1 (min) =$	0.30	
		2	$dt_2 (min) =$		$dt_2 (min) =$	9.00	
	110	02	$T (m^2/s) =$		$T (m^2/s) =$	1.3E-0	
	3(0	S (-) =	1.0E-06	` '	1.0E-0	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	31	U	$K_s (m/s) =$		$K_s (m/s) =$	2.6E-08	
	110	o¹ [a	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0	
	204	(1/0).	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.3E-1	
10.0	3	1/0	C _D (-) =	NA	C _D (-) =	1.4E-0	
		0	ξ (-) =	3.67	ξ (-) =	21.70	
	10	0°	2	NIA	2	NIA	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁵ 10 ⁶	107 108 109 0.	.3	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe			1 4054	
.5 .4 Elapsed time	h)		$dt_1 (min) =$	0.39	0 (III /I u) -	1.3E-1	
102 103 103	10 ⁻² 10 ⁻¹		$dt_2 (min) =$		$C_D(-) =$	1.4E-03	
	. 3	00	$T_T (m^2/s) =$	4.4E-08		3.6	
	p-2-0-0-0-00000000000000000000000000000		S (-) =	1.0E-06			
101		0 ²	$K_s (m/s) =$	8.8E-09			
1	\.\.		$S_s (1/m) =$	2.0E-07			
10 %	3	0 all (00-d) (00-d)	analysis of the CHi p derivative quality. The estimated to be 1E-8 during the test is 2. The	ohase (inner zone he confidence ran m2/s to 9E-8 m2 The static pressur	nge for the interval tr 2/s. The flow dimens the measured at transd	etter data and ansmissivity is ion displayed ucer depth, was	
10 ⁰ 10 ¹ 10.CD	10 ² 10 ³ 10 ⁴	o°	derived from the CH plot to a value of 4,7		raight line extrapolati	on in the Horne	

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CHi
Area:	Laxemar	Test no:			1
Borehole ID:	KLX18A	Test start:			060824 06:23
Test section from - to (m):	489.00-494.00 m	Responsible for		Reinde	er van der Wal
rest section from to (iii).	400.00 404.00 III	test execution:		romac	Philipp Wol
Section diameter, 2⋅r _w (m):	0.076	Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
5060	. 0.10	p ₀ (kPa) =	4791		
KLX18A_489.00-494.00_060824_1_CHir_Q_r	P section P above P below	p _i (kPa) =	4792		
•	• P below • Q - 0.08	$p_p(kPa) =$	4992	p _F (kPa) =	479
4950		$Q_p (m^3/s) =$	7.32E-07		
	- 0.05 [2]	tp (s) =	1200	t_F (s) =	1200
Pressure	- 2000 A	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
80 C 4850 -	1 1900	EC _w (mS/m)=			
4800	- 0.03	Temp _w (gr C)=	14.3		
	- 0.02	Derivative fact.=	0.09	Derivative fact.=	0.03
4750	0.01				
4700 0.60 0.80 0.80 Elaosed T		Results		Results	
Драг.			3.6E-08		I
Log-Log plot incl. derivates- flo		Q/s $(m^2/s)=$	3.0E-08		
Log-Log plot incl. derivates- in	ow period	$T_M (m^2/s) =$			
10.3 Elapsed time	[n] ,	Flow regime:	transient	Flow regime:	transient
102 103 103	10, ⁻¹ 10, ⁻¹ 10, ⁻¹	$dt_1 (min) =$		$dt_1 (min) =$	0.48
		$dt_2 (min) =$		$dt_2 (min) =$	2.40
	102	$T (m^2/s) =$		$T (m^2/s) =$	2.5E-08
1017		S (-) =	1.0E-06		1.0E-06
0 0 0 0 0 000		K_s (m/s) =		K_s (m/s) =	4.9E-09
	10 ¹	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-07
10 ⁶	<u> </u>	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	4.5E-1
	100	$C_D(-) =$	NA	$C_D(-) =$	5.0E-03
10"		ξ (-) =	-0.04	ξ (-) =	-0.79
	. F10 ⁻¹	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ² 10 ³	10 ⁴ 10 ⁵ 10 ⁶	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
10		$D_{GRF}(\cdot) =$	NA	$D_{GRF}(-) =$	NA
Log-Log plot incl. derivatives-	rocovery period	Selected represe			
Log-Log plot illol. delivatives-	receivery period	dt ₁ (min) =	0.48		4.5E-11
.3 Ejapsed time	[h] ₋₁ 0			0 (III /I u) -	
101	10	$dt_2 (min) =$	2.40	5 ()	5.0E-03
_	300	$T_T (m^2/s) =$	2.5E-08		-0.79
.prenomment	- 10 ²	S (-) =	1.0E-06		
10.		$K_s (m/s) =$	4.9E-09		
	30	$S_s (1/m) =$	2.0E-07		
10.1	10	analysis of the CHir derivative quality. The estimated to be 9E-9	phase (inner zon he confidence ran m2/s to 4E-8 m2	2.5E-8 m2/s was derive), which shows the large for the interval trace. 2/s. The flow dimensive measured at transdu	petter data and ansmissivity is on displayed
10 ⁰ 10 ¹ 10/CE	10 ² 10 ³ 10		ir phase using st	raight line extrapolati	

	Test Sun	nmary Sheet			
Project:	Oskarshamn site investigation	on Test type:[1]			CHi
Area:	Laxem	ar Test no:			
Borehole ID:	KLX18	BA Test start:	060824 0		
Test section from - to (m):	404 00 400 00	m Responsible for		Poinde	er van der Wal
rest section from - to (iii).	494.00-499.00	test execution:		Kelilue	Philipp Wol
Section diameter, 2·r _w (m):	0.07	76 Responsible for		Crist	ian Enachesc
1: 1:0		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	•
•	0.012 KLX18A_494.00-499.00_060824_1_CHir_Q_r	$p_0 (kPa) =$	4841		
5050	0.010	p _i (kPa) =	4851		
	:	$p_p(KPa) =$		p _F (kPa) =	487
5000 -	• P section + 0.000	$Q_p (m^3/s) =$	7.17E-08		
₹ ₩ 4950 -	P above P below Q	tp (s) =		t_F (s) =	120
Pre 8 61	0.000	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
E 4900 -		[₹] EC _w (mS/m)=			
4850		Temp _w (gr C)=	14.4		
	:	Derivative fact.=	0.08	Derivative fact.=	0.0
4800					
4750 0.00 0.20 0.40 0.60 0.1 Elapsed	80 1.00 1.20 1.40 1.60 Time [h]	Results		Results	
		Q/s $(m^2/s)=$	3.5E-09		
Log-Log plot incl. derivates- fl	low period	$T_{\rm M} (m^2/s) =$	2.9E-09		
<u> </u>	•	Flow regime:	transient	Flow regime:	transient
Elapsed_tim	e [h] 10, ⁻¹	$dt_1 \text{ (min)} =$	0.90	$dt_1 \text{ (min)} =$	2.4
101		$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	9.0
·.,	300	$T (m^2/s) =$		$T (m^2/s) =$	3.5E-0
	and the state of t	S (-) =	1.0E-06	\ /	1.0E-0
10"	10 ²	$K_s (m/s) =$		$K_s (m/s) =$	6.9E-1
		$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
	30	C (m ³ /Pa) =	NA	$C_s(7711) = C_s(m^3/Pa) = 0$	4.2E-1
		9 - /)	NA	a ()	
101	101	$ \stackrel{\text{g}}{=} C_{D}(-) = $		$C_D(-) =$	4.6E-0
		ξ (-) =	-1.40	ξ(-) =	0.4
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ³¹ 10 ⁰ tD	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
L.		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran		
		dt_1 (min) =	2.40		4.2E-1
Elapsed tim	e[h]	$dt_2 (min) =$		$C_D(-) =$	4.6E-0
10 1	300	$T_T (m^2/s) =$	3.5E-09		0.4
		S (-) =	1.0E-06		1
	10 ²	$K_s (m/s) =$	6.9E-10		
10°	30	$S_s (1/m) =$	2.0E-07		
	30	Grant Comments:	2.02 07		<u> </u>
.//	101	0.0	ransmissivity of 3	3.5E-09 m2/s was der	ived from the
./				ows the better data an	
10 ⁻¹	3	quality. The confider	nce range for the	interval transmissivi	ty is estimated t
	•		E-09 m2/s. The flo	ow dimension display	ed during the
	10°	test is 2. The static p			
10 ⁴¹ 10 ⁸ (D)C	10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	test is 2. The static p	using straight li	d at transducer depth, ne extrapolation in th	

Laxemal KLX18A 00-504.00 m	Test type:[1] Test no: Test start: Responsible for test execution: Responsible for test evaluation: Flow period Indata p ₀ (kPa) = p _i (kPa) = p _p (kPa) = Q _p (m³/s)= tp (s) = S el S (-)=	NA		P 1 060824 11:04 er van der Wal Philipp Wolfian Enachescu
0.076	Responsible for test execution: Responsible for test execution: Responsible for test evaluation: Flow period Indata p ₀ (kPa) = p _i (kPa) = Q _p (m³/s)= tp (s) = S el S (-)=	4899 5153 NA	Cristi Recovery period Indata	er van der Wal Philipp Woh ian Enachescu
0.076	Responsible for test execution: Responsible for test evaluation: Flow period Indata p ₀ (kPa) = p _i (kPa) = p _p (kPa) = Q _p (m³/s)= tp (s) = S el S · (-)=	4899 5153 NA	Cristi Recovery period Indata	er van der Wal Philipp Woh ian Enachescu
0.076	Responsible for test execution: Responsible for test evaluation: Flow period Indata p ₀ (kPa) = p _i (kPa) = p _p (kPa) = Q _p (m³/s)= tp (s) = S el S · (-)=	4899 5153 NA	Cristi Recovery period Indata	er van der Wal Philipp Woh ian Enachescu
0.076	test execution: Responsible for test evaluation: Flow period Indata p ₀ (kPa) = p _i (kPa) = p _p (kPa) = Q _p (m³/s)= tp (s) = S el S · (-)=	4899 5153 NA	Cristi Recovery period Indata	Philipp Wolf
	Responsible for test evaluation: Flow period Indata p ₀ (kPa) = p _i (kPa) = p _p (kPa) = Q _p (m³/s)= tp (s) = S el S · (-)=	4899 5153 NA	Recovery period Indata	ian Enachescu
	test evaluation: Flow period Indata $p_0 \text{ (kPa)} =$ $p_i \text{ (kPa)} =$ $p_p \text{ (kPa)} =$ $Q_p \text{ (m}^3/\text{s)} =$ $p_p \text{ (kPa)} =$ Sel S (-)=	4899 5153 NA	Indata	
	Indata $p_{0} (kPa) = p_{i} (kPa) = p_{p} (kPa) = p_{p} (kPa) = q_{p} (m^{3}/s) = q$	4899 5153 NA	Indata	
	$p_0 (kPa) =$ $p_i (kPa) =$ $p_p (kPa) =$ $p_p (kPa) =$ $Q_p (m^3/s) =$ $tp (s) =$ $S el S (-) =$	4899 5153 NA		4899
	p_{i} (kPa) = p_{p} (kPa) = Q_{p} (m ³ /s)= p_{p} (tp (s) = p_{p} S el S (-)=	4899 5153 NA	p _F (kPa) =	489
	$p_p(kPa) =$ $Q_p (m^3/s)=$ $tp (s) =$ $S el S (-)=$	5153 NA	p _F (kPa) =	489
	$Q_{p} (m^{3}/s) =$ tp (s) = $S el S^{*} (-) =$	NA	p _F (kPa) =	489
	tp (s) = S el S (-)=			407
	S el S [*] (-)=	10		
10000 - in Section Rate (VA			t _F (s) =	678
- 0.001		1.00E-06	S el S [*] (-)=	1.00E-0
0.001	$EC_w (mS/m) =$		()	
:	Temp _w (gr C)=	14.5		
		NA	Derivative fact.=	0.0
1.00	Doculto		Deculto	
		INIA	Results	1
	` '			
			_	transient
				0.18
				10.20
				9.9E-1
		NA		1.0E-06
	. , ,	NA		2.0E-1
	$S_s (1/m) =$	NA		2.0E-0
	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.8E-12
	$C_D(-) =$	NA	$C_D(-) =$	2.0E-0
	ξ (-) =	NA	ξ (-) =	1.8
			$T_{GRF}(m^2/s) =$	NA
	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
	D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
	Selected represe	entative param	neters.	
	dt_1 (min) =		. ,	1.8E-12
10°	dt_2 (min) =	10.20	C_D (-) =	2.0E-04
	$T_T (m^2/s) =$	9.9E-11	ξ (-) =	1.8
0.03	S (-) =	1.0E-06		
10 -2	$K_s (m/s) =$	2.0E-11		
	$S_s (1/m) =$	2.0E-07		
0.003	Comments:			<u>-</u>
		ransmissivity of 9	0.9E-11 m2/s was der	ived from the
10 -3	analysis of the Pi ph	ase. The confider	nce range for the inter	rval
3E-4			tic pressure could not	be extrapolated
Fact of	due to the very low	amonnosivity.		
10 4				
	0.03 0.03 10 ⁻² 0.003	Results $Q/s \ (m^2/s) = T_M \ (m^2/s) = Flow regime: dt_1 \ (min) = dt_2 \ (min) = T \ (m^2/s) = S \ (-) = K_s \ (m/s) = C \ (m^3/Pa) = C_D \ (-) = S_GRF(-) = D_{GRF} \ (-) = D_{GRF} \ (-) = Selected represent dt_1 \ (min) = dt_2 \ (min) = T_T \ (m^2/s) = S \ (-) = K_s \ (m/s) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) = S \ (-) =$	Results $Q/s \ (m^2/s) = NA$ $T_M \ (m^2/s) = NA$ Flow regime: transient $dt_1 \ (min) = NA$ $dt_2 \ (min) = NA$ $T \ (m^2/s) = NA$ $S \ (-) = NA$ $K_s \ (m/s) = NA$ $S_s \ (1/m) = NA$ $C \ (m^3/Pa) = NA$ $C_D \ (-) = NA$ $T_{GRF} \ (m^2/s) = NA$ $S_{GRF} \ (-) = NA$ $S_{GRF} \ (-) = NA$ $S_{GRF} \ (-) = NA$ $Selected representative parameters and the selection of the selecti$	Results Q/s (m²/s)= NA T_M (m²/s)= NA Flow regime: transient Flow regime: dt_1 (min) = NA dt_1 (min) = dt_2 (min) = NA dt_2 (min) = T (m²/s) = NA T (m²/s) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = NA S (-) = S (-) = S (-) = NA S (-) = S (-) = S (-) = NA S (-) = S (-) = S (-) = NA S (-) = S (-) = S (-) = NA S (-) =

	Test Su	mr	nary Sheet			
Project:	Oskarshamn site investiga	tion	Test type:[1]			CHi
Area:	Laxe	mar	Test no:			1
Borehole ID:	KI X	184	Test start:	060824		
Test section from - to (m):	504.00-509.0	0 m	Responsible for test execution:		Reinde	er van der Wal Philipp Wol
Section diameter, 2·r _w (m):	0.	076	Responsible for		Crist	ian Enachescu
			test evaluation:			
Linear plot Q and p			Flow period Indata		Recovery period Indata	
5700		0.05	p ₀ (kPa) =	4967	iliuata	
· •	KLX18A_504.00-509.00_060824_1_CHir_Q_r	0.00	p _i (kPa) =	4966		
5150			$p_p(kPa) =$		p _F (kPa) =	499
5100	P section P above P below	0.04		3.67E-07	ρ _F (Ki α) =	4770
= rava			$Q_p (m^3/s) =$		t (a)	120
i.	'\	0.03 [win]	tp (s) =		t _F (s) =	1200
\$ 5000		70.0 Injection Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
0 4950		0.02	EC _w (mS/m)=	11.5		
4900 -			Temp _w (gr C)=	14.5		
		0.01	Derivative fact.=	0.05	Derivative fact.=	0.0
4850	:					
4800 0.50 1.00 Elapsed Tir	1.50 2.00	0.00	Results		Results	
	[4]			1.8E-08		
Log-Log plot incl. derivates- flo	w poriod		Q/s $(m^2/s)=$ T _M $(m^2/s)=$	1.5E-08		
Log-Log plot illel. derivates- lie	w period		Flow regime:	transient		transient
.4 .3 Elapsed tinge	[h]		dt ₁ (min) =		Flow regime: dt ₁ (min) =	0.3
10, ⁻⁴ 10, ⁻³ Eapsed single	19.1					1.20
	······································	an.	$dt_2 (min) =$		$dt_2 (min) =$	1.3E-0
		,,	$T (m^2/s) =$		$T (m^2/s) =$	
		101	S (-) =	1.0E-06	. ,	1.0E-0
10"			$K_s (m/s) =$		$K_s (m/s) =$	2.6E-09
	3	3 Ivin	$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
- day		.(1/a).	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.8E-10
10-1	1	10° =	$C_D(-) =$	NA	$C_D(-) =$	2.0E-0
·		0.3	ξ (-) =	-0.10	ξ(-) =	-2.6
·		1.3	- (2)	NA	- , 2,)	NA
		10-1	$T_{GRF}(m^2/s) =$	NA NA	$T_{GRF}(m^2/s) =$	NA NA
10 ¹ 10 ² tD	10 ³ 10 ⁴ 10 ⁵		$S_{GRF}(-) =$		$S_{GRF}(-) =$	
			D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- i	recovery period		Selected represe	-		1 0 5 1 (
43 Elapşed time [i	i)40		,	0.60	0 (III /I u) -	1.8E-10
10 10 10 10 10 10 10 10 10 10 10 10 10 1	103		$dt_2 (min) =$		$C_D(-) =$	2.0E-02
	30	00	$T_T (m^2/s) =$	1.6E-08		-0.10
	-10) ²	S (-) =	1.0E-06		
10"			$K_s (m/s) =$	3.2E-09		
Appendix and the second	30) =	$S_s(1/m) =$	2.0E-07		
		50)' [kPa	Comments:		CE 9 - 2/	
	10	1 00 A			.6E-8 m2/s was derive). The confidence ran	
1011					be 8E-9 m2/s to 4E-	
	[3		dimension displayed	during the test is	s 2. The static pressur	re measured at
	10)°			ne CHir phase using s	
10-11 10	10 ¹ 10 ² 10		extrapolation in the	norner plot to a v	value of 4,959.6 kPa.	
tD/CD						

	Test Sum	mary Sheet				
Project:	Oskarshamn site investigatio	n Test type:[1]			Р	
Area:	Laxema	ar Test no:			1	
Danahala ID.	IZI V4.0	A T 4 - 4 4		060824 16		
Borehole ID:	KLX18/	A Test start:		060824 16.2		
Test section from - to (m):	509.00-514.00 r	m Responsible for		Reinde	er van der Wal	
Section diameter, 2·r _w (m):	0.07	test execution: 6 Responsible for		Criet	Philipp Wol ian Enachescu	
Section diameter, 2:1 _w (m).	0.07	test evaluation:		Clist	ian Enachesci	
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
5300		p ₀ (kPa) =	4995			
KLX18A_509.00-514.00_060824_1_CHir_Q_r	: :	p _i (kPa) =	5027			
	l w	$p_p(kPa) =$	5240	p _F (kPa) =	5030	
* P section		$Q_{p} (m^{3}/s) =$	NA			
Pabove Pbelow C	0.002	to (a)	10	t_F (s) =	690	
\$ 5100 ·		S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
80	\mathbf{I} :	EC _w (mS/m)=		(/		
Š 5050 ·	0.001	Temp _w (gr C)=	14.6			
5000		Derivative fact.=	NA	Derivative fact.=	0.	
4950 -						
4800						
0.00 0.10 0.20 0.30 0.40 0.5 Elapsed 1	0 0.60 0.70 0.80 0.90 1.00	Results		Results		
		Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	NA			
		Flow regime:	transient	Flow regime:	transient	
		$dt_1 (min) =$	NA	dt_1 (min) =	0.24	
		$dt_2 (min) =$	NA	dt_2 (min) =	9.00	
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.9E-0	
		S (-) =	NA	S (-) =	1.0E-06	
		$K_s (m/s) =$	NA	K_s (m/s) =	3.8E-10	
		$S_s (1/m) =$	NA	$S_s (1/m) =$	2.0E-07	
Not Ar	nalysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.1E-1	
		$C_D(-) =$	NA	$C_D(-) =$	2.3E-0	
		ξ (-) =	NA	ξ(-) =	2.00	
		5()		5 ()		
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative param			
99 p	, p	$dt_1 (min) =$	0.24		2.1E-1	
Elapsed time [h]	10 -2 10 -1	$dt_2 \text{ (min)} =$		$C_D(-) =$	2.3E-03	
10 '	0.03	$T_T (m^2/s) =$	1.9E-09		2.00	
	c * 0x 00 abdapatement * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 *	S (-) =	1.0E-06			
	10 -2	$K_s (m/s) =$	3.8E-10			
10 0		$S_s(1/m) =$	2.0E-07			
	0.003	Comments:	2.52 57	<u> </u>	<u> </u>	
	10 -3	ă.	ransmissivity of 1	1.9E-09 m2/s was dei	rived from the	
10 -1 -		analysis of the Pi ph	ase. The confider	nce range for the inte	rval	
NV .	3E-4			-10 to 3.0E-09 m2/s.		
	•	dimension displayed extrapolated due to		s 2. The static pressur	re could not be	
1	10 -4	can aporated due to	uie very iow trans	omissivity.		
10 ¹ 10 ²	10 3 10 4 10 5					

	Test Sun	mary Sheet			
Project:	Oskarshamn site investigation				CHir
Area:	Lavem	ar Test no:			1
Alea.	Laxeiii	ai i est iio.			'
Borehole ID:	KLX18	BA Test start:			060824 18:02
Test section from - to (m):	514.00-519.00	m Responsible for test execution:		Reinde	er van der Wall Philipp Wolf
Section diameter, 2·r _w (m):	0.07	76 Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	1
		Indata	_	Indata	•
5400	. 0.006	$p_0 (kPa) =$	5043		
KLX18A_514.00-519.00_060824_1_CHir_Q_r		p _i (kPa) =	NA		
5300	0.004	· P (/	NA	p _F (kPa) =	NA
P section P above P below		$Q_p (m^3/s) =$	NA		
- C	0.000	$_{g}$ tp (s) =		t_F (s) =	(
& S150 -	·	⁸ S el S (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
9 04 × 05 100 ·	0.000	EC _w (mS/m)=		, ,	
å		Temp _w (gr C)=	14.7		
•	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Derivative fact =	NA	Derivative fact.=	NA
5000 -			1		
4950 -					
4900		Results		Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$	NA		
	ролош	Flow regime:	transient	Flow regime:	transient
		$dt_1 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$	NA
		$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	NA
		1 1			NA
		$T (m^2/s) =$		$T (m^2/s) =$	
		S (-) =	NA	S (-) =	NA
		$K_s (m/s) =$	NA	K_s (m/s) =	NA
Not Ar	nalysed	$S_s (1/m) =$	NA	$S_s (1/m) =$	NA
		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
		$C_D(-) =$	NA	C_D (-) =	NA
		ξ (-) =	NA	ξ (-) =	NA
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected repres		neters.	
		dt_1 (min) =	NA	$C (m^3/Pa) =$	NA
		$dt_2 (min) =$	NA	C _D (-) =	NA
		$T_T (m^2/s) =$	1.0E-10	ξ(-) =	NA
		S (-) =	NA	i	
Not Analysed		$K_s (m/s) =$	NA		
		$S_s(1/m) =$	NA		
		Comments:			
		Based on the test re 1E-10 m2/s.	esponse the inter	val transmissivity is	assumed to be

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxema	r Test no:			1
Borehole ID:	KLX18/	A Test start:			060824 19:21
Test section from - to (m):	519.00-524.00 r	n Responsible for		Reinde	er van der Wal
Tool couldn't to ().	0.000 02 000 0	test execution:			Philipp Wol
Section diameter, 2-r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Linear plot & and p		Indata		Indata	
		$p_0 (kPa) =$	5092	inuata	
KLX18A_519.00-524.00_060824_1_CHir_Q_r	● P section				
5350	Pabove Pbalow Q	p _i (kPa) =	5098	n (IsDa)	510
5300	0.015	$p_p(kPa) =$		p _F (kPa) =	512
: 1		$Q_p (m^3/s) =$	1.17E-07		120
© 5250	Divers	tp (s) =		t _F (s) =	120
2 5200	0.010	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
Q 5150		EC _w (mS/m)=			
5100	0.005	Temp _w (gr C)=	14.8		
500	•	Derivative fact.=	0.08	Derivative fact.=	0.0
5000	0.000				
030 0.40 0.50 Elapsed Tin		Results		Results	
		Q/s $(m^2/s)=$	5.7E-09		
Log-Log plot incl. derivates- flo	w period	$T_M (m^2/s) =$	4.7E-09		
		Flow regime:	transient	Flow regime:	transient
Elapsed time	[h]101	$dt_1 (min) =$	0.42	dt_1 (min) =	0.9
		dt_2 (min) =	1.80	dt_2 (min) =	3.0
		$T (m^2/s) =$	1.1E-08	$T (m^2/s) =$	1.5E-0
101	. 10 ²	S (-) =	1.0E-06	S (-) =	1.0E-0
		K_s (m/s) =	2.2E-09	$K_s (m/s) =$	3.0E-0
· · ·	:	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
100	101	E C (m³/Pa) =	NA	$C (m^3/Pa) =$	1.7E-1
		$C_D(-) =$	NA	$C_D(-) =$	1.8E-0
10 ⁻¹		ξ (-) =		ξ(-) =	5.5
†		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁸ 10 ⁸ tD	10 ⁷ 10 ⁸ 10 ⁹	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe		_	-
_		$dt_1 (min) =$	0.90	0 (III /I u) -	1.7E-1
Elapseg time (h)		dt_2 (min) =		C_D (-) =	1.8E-0
	10 ³	$T_T (m^2/s) =$	1.5E-08	ξ(-) =	5.50
		S (-) =	1.0E-06		
	300	$K_s (m/s) =$	3.0E-09		
101	102	$S_s (1/m) =$	2.0E-07		
, see		Comments:			
	30	of the same of the	•	1.5E-8 m2/s was deriv	
10 "	ac disposit			e), which shows the l	
	101			nge for the interval tra 2/s. The flow dimensi	
	1				
	ŀ	during the test is 2.	The static pressur	e measured at transdi	ucer depth, was
	3	during the test is 2.7 derived from the CH		e measured at transd raight line extrapolati	

		nary Sheet				
Project:	Oskarshamn site investigation	Test type:[1]			Р	
Area:	Laxemar	Test no:			1	
Borehole ID:	KLX18A	Test start:		060824 21:		
Test section from - to (m):	524.00-529.00 m			Reinde	er van der Wal	
Section diameter, 2-r _w (m):	0.076	test execution: Responsible for		Crist	Philipp Wol	
Section diameter, 21 _W (III).	0.070	test evaluation:		Clist	ian Enachesco	
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata		
5400	- 0.003	p ₀ (kPa) =	5138			
KLX18A_524.00-529.00_060824_1_CHir_Q_r	· .	p _i (kPa) =	5149			
5350 -	\	$p_p(kPa) =$	5356	p _F (kPa) =	515	
5300 ·	0.002	$Q_{p} (m^{3}/s) =$	NA			
P above P below O	. 1	tp (s) =	10	t_F (s) =	126	
5 5250 - Q	njection Rate [timin]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
8 5200 -	·	$EC_w (mS/m) =$		()		
š	0.001	Temp _w (gr C)=	14.8			
5150		Derivative fact.=	NA	Derivative fact.=	0.0	
5100						
5050	0.000					
	Time [h]	Results		Results		
		Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- f	low period	$T_M (m^2/s) =$	NA			
		Flow regime:	transient	Flow regime:	transient	
		dt_1 (min) =	NA	dt_1 (min) =	0.15	
		dt_2 (min) =	NA	dt_2 (min) =	9.00	
		$T (m^2/s) =$	NA	$T (m^2/s) =$	6.1E-10	
		S (-) =	NA	S (-) =	1.0E-06	
		K_s (m/s) =	NA	K_s (m/s) =	1.2E-10	
NT. (A		$S_s (1/m) =$	NA	$S_s (1/m) =$	2.0E-07	
Not A	nalysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.6E-1	
		$C_D(-) =$	NA	C_D (-) =	1.8E-03	
		ξ (-) =	NA	ξ (-) =	3.23	
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative param	neters.		
		$dt_1 (min) =$	0.15	$C (m^3/Pa) =$	1.6E-1	
Elapsed time 10, 3 10, 2	[h] 10,-1 10,0 10,1	dt_2 (min) =	9.00	$C_D(-) =$	1.8E-03	
1		$T_T (m^2/s) =$	6.1E-10	ξ (-) =	3.23	
	0.3	S (-) =	1.0E-06			
	·	K_s (m/s) =	1.2E-10			
10 1	10 -1	$S_s (1/m) =$	2.0E-07			
0 8 9 2 9 9 4 000 00 00 00 00 00 00 00 00 00 00 00	nesa	Comments:	_	-	-	
	0.03 Person			5.1E-10 m2/s was der		
10 °	10 °2			nce range for the inte		
	10			0 to 8E-10 m2/s. The tic pressure could no		
			wat to 4. THE Sta	ac pressure coura 110	i oc canapoiated	
	0.003	due to the very low		•	-	
	0.003			•	-	

	Test Su	mn	nary Sheet			
Project:	Oskarshamn site investiga					Pi
Area:	Laxe	mar	Test no:			1
Alca.	Laxe	IIIai	163(110.			'
Borehole ID:	KLX	18A	Test start:	060824 22:37		
Test section from - to (m):	529.00-534.0		Responsible for test execution:		Reinde	er van der Wall Philipp Wolf
Section diameter, 2·r _w (m):	0.		Responsible for		Crist	ian Enachescu
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
KLX18A_529.00-534.00_060824_1_CHir_Q_r			p ₀ (kPa) =	5185		
5450			p _i (kPa) =	5192		
5400 -	:		$p_p(kPa) =$		p _F (kPa) =	5194
P section		0.002	$Q_p (m^3/s) =$	NA		
F 2500 - P 2600 - P 2		Vmin]	tp (s) =		t_F (s) =	1273
ਤੋਂ 2500 -		Injection Rate [l/min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
TO CHE WOOD (\$250)		Injectik	EC _w (mS/m)=			
		0.001	Temp _w (gr C)=	14.9		
5200	**************************************		Derivative fact.=	NA	Derivative fact.=	0.11
5150 -	. <u>.</u>					
5100 0.00 0.20 0.40 0.6		0.000				
0.00 0.20 0.40 0.6 Elapsed T		0	Results		Results	
			Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	NA		
			Flow regime:	transient	Flow regime:	transient
			dt_1 (min) =	NA	dt_1 (min) =	0.12
			dt_2 (min) =	NA	dt_2 (min) =	18.00
			$T (m^2/s) =$	NA	$T (m^2/s) =$	7.2E-10
			S (-) =	NA	S (-) =	1.0E-06
			$K_s (m/s) =$	NA	$K_s (m/s) =$	1.4E-10
			$S_s (1/m) =$	NA	$S_s (1/m) =$	2.0E-07
Not Ar	nalysed		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.9E-11
			$C_D(-) =$	NA	C_D (-) =	2.1E-03
			ξ (-) =	NA	ξ(-) =	3.43
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	*.*.*.*.*.*.*.*.*.*.*.*.		
Elaosed time (h)			$dt_1 (min) =$		$C (m^3/Pa) =$	1.9E-11
Elapsed time (h) 10 -4 10 -3 10 -2	10,1	ļ.	$dt_2 (min) =$		C_D (-) =	2.1E-03
			$T_T (m^2/s) =$	7.2E-10		3.43
		0.3	S (-) =	1.0E-06		
			$K_s (m/s) =$	1.4E-10		
D .		10 -1	$S_s (1/m) =$	2.0E-07		
0 0 0		ressur	Comments:			
+		0.83 moduted p			7.2•10-10 m2/s wa	
0°;		10 -2			nfidence range for th	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					•10-10 to 9.0•10-10 is 2. The static pres	
· · · · · ·			be extrapolated due			sure could not
			apolated duc			
10 ³ 10 ⁴	10 ⁵ 10 ⁶ 10 ⁷					

	Test	Sumr	nary Sheet			
Project:	Oskarshamn site inves					CHi
Area:	La	axemar	Test no:			1
Borehole ID:	K	LX18A	Test start:			060825 00:07
Test section from - to (m):	534.00-53	9.00 m	Responsible for	Reinder van der V		er van der Wal
• •			test execution:			Philipp Wol
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	an Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot & and p			Indata		Indata	
			p ₀ (kPa) =	5232		
5000	KLX18A_534.00-539.00_060825_1_CHir_Q_r	0.020	p _i (kPa) =	5232		
5450 -			$p_p(kPa) =$		p _F (kPa) =	5232
		0.015	•			323.
5400	• P section		$Q_p (m^3/s) =$	1.62E-07		120
S550	P above P below	Rate [/min]	tp (s) =		t _F (s) =	1200
000		- Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
8 E 5300		Injection	EC _w (mS/m)=			
5250			Temp _w (gr C)=	15		
5200		- 0.005	Derivative fact.=	0.09	Derivative fact.=	0.03
5150		0.000				
0.00 0.20 0.40 0.60 Elapsed Ti	0.80 1.00 1.20 1.40 me [h]		Results		Results	
			$Q/s (m^2/s) =$	7.9E-09		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	6.5E-09		
			Flow regime:	transient	Flow regime:	transient
Elapsed time [h	l_1 0,1 10,0 10,1	_	$dt_1 (min) =$	1.50	dt_1 (min) =	0.60
102		- 3	$dt_2 (min) =$	18.00	dt_2 (min) =	2.40
		10 ³	$T (m^2/s) =$	6.6E-09	$T (m^2/s) =$	8.8E-09
		ļ	S (-) =	1.0E-06	, ,	1.0E-06
101	*	300	$K_s (m/s) =$		$K_s (m/s) =$	1.8E-09
	piperii	10 ²	$S_s(1/m) =$		$S_s(1/m) =$	2.0E-0
		Point	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.5E-1
	•.	30 3	$C_D(-) =$	NA		1.7E-03
100		•			$C_D(-) =$	2.00
	<u> </u>	101	ξ (-) =	0.54	ξ (-) =	2.00
• • • • • • • • • • • • • • • • • • • •	*	3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ² 10 ³ tD	10 ⁴ 10 ⁵	10 ⁶	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
υ			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative param	neters.	
			$dt_1 \text{ (min)} =$	0.60	_	1.5E-11
Elapsed time	[h]1010		$dt_2 \text{ (min)} =$	2.40	,	1.7E-03
101		300	$T_T (m^2/s) =$	8.8E-09		2.06
3x22 the the the the the the the the the the		10 ²	S (-) =	1.0E-06		
. /		-	$K_s (m/s) =$	1.8E-09		
10 10		30	$S_s (1/m) =$	2.0E-07		<u> </u>
	* Andrews	-	Comments:	2.0∟-07		
nd .	ing.	101		conemiceivity of S	QE 0 m2/c was dari	ad from the
		- 3			3.8E-9 m2/s was derive), which shows the l	
10-1	-	3			nge for the interval tra	
1		0	estimated to be 4E-9	m2/s to 3E-8 m2	2/s. The flow dimensi	on displayed
-		10 ⁰			e measured at transd	
10 10			derived from the CH plot to a value of 5,2		raight line extrapolati	on in the Horner
10 ⁰ 10 ¹	10 ² 10 ³	10 ⁴				

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lax	emar	Test no:			
Borehole ID:	KI.	Υ1 ΩΔ	Test start:			060825 06:09
borenole ib.						000023 00.03
Test section from - to (m):	539.00-544.	.00 m	Responsible for		Reinde	er van der Wal
Section diameter, 2·r _w (m):	(0.076	test execution: Responsible for		Crist	Philipp Wol
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
KLX18A_539.00-544.00_060825_1_CHir_Q_r		1.0	p_0 (kPa) =	5286		
5550	P section P above P below		p _i (kPa) =	5278		
5500 -	:	0.8	$p_p(kPa) =$		p _F (kPa) =	527
:	<u>i</u>		$Q_p (m^3/s)=$	7.20E-06		
· 조 조		0.6 [win]	tp (s) =		t_F (s) =	120
50 04.5400 -		on Rate	S el S (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
2550 -	The second of th	0.4 =	EC _w (mS/m)=			
5300			Temp _w (gr C)=	15.1		
i	_	0.2	Derivative fact.=	0.02	Derivative fact.=	0.0
5250						
	180 1.00 1.20 1.40 1Time [h]	1.60	Results		Results	<u> </u>
			Q/s $(m^2/s)=$	3.5E-07		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	2.9E-07		
			Flow regime:	transient	Flow regime:	transient
Elapsed time	∍[b] 0, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1	,	$dt_1 (min) =$	0.72	dt_1 (min) =	0.1
102		10 ¹	$dt_2 (min) =$	15.00	dt_2 (min) =	9.0
			$T (m^2/s) =$	9.0E-07	$T (m^2/s) =$	1.6E-0
		3	S (-) =	1.0E-06	\ /	1.0E-0
101			K_s (m/s) =	1.8E-07	K_s (m/s) =	3.2E-0
		10°	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
		0.3 (o)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	6.0E-1
•	· · · · · · · · · · · · · · · · · · ·	0.3 %	$C_D(-) =$	NA	$C_D(-) =$	6.6E-0
10 0		10-1	ξ(-) =	9.49		20.9
		1	3 ()		5 ()	
		0.03	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹¹ 10 ¹²	10 ¹³ 10 ¹⁴ 10 ¹	īs	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
E .			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	neters.	
			dt_1 (min) =	0.18		6.0E-1
z10, 4	[h] -2	7	$dt_2 \text{ (min)} =$	9.00	$C_D(-) =$	6.6E-0
10 7			$T_T (m^2/s) =$	1.6E-06		20.9
4		300	S (-) =	1.0E-06		1
			$K_s (m/s) =$	3.2E-07		1
		10 ²				
10		10 ²	$S_s (1/m) =$	2.0E-07		
10		10 ²	$S_s (1/m) =$ Comments:	2.0E-07		
10 7		_	Comments:		1.6E-6 m2/s was deri	ved from the
at or		_	Comments: The recommended to analysis of the CHir	ansmissivity of I	f its horizontal deriva	ative
10 T	· · · · · · · · · · · · · · · · · · ·	30 g	Comments: The recommended to analysis of the CHir stabilization at late to	ransmissivity of I phase, because o imes. The confid	of its horizontal derivation of its horizontal derivation.	ative erval
ad on	· · · · · · · · · · · · · · · · · · ·	30 0	Comments: The recommended tranalysis of the CHir stabilization at late transmissivity is esti	ransmissivity of I phase, because of imes. The confid mated to be 7E-7	of its horizontal derivation of its horizontal derivation of the interpretation of the mass of the first of the mass of the ma	ative erval The flow
ad on		30 g	Comments: The recommended tranalysis of the CHir stabilization at late transmissivity is estidimension displayed	ransmissivity of I phase, because of imes. The confid mated to be 7E-7 during the test is	of its horizontal derivation of its horizontal derivation.	ative erval The flow re measured at

	Test St	umn	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lax	emar	Test no:			1
Borehole ID:	KL	X18A	Test start:			060825 08:29
Test section from - to (m):	544.00-549.	00 m	Responsible for		Reinde	er van der Wal
			test execution:			Philipp Wol
Section diameter, 2-r _w (m):	(0.076	Responsible for		Cristi	ian Enachesci
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot & and p			Indata		Indata	
			p ₀ (kPa) =	5328	iiiuata	1
5750	. KLX18A_544.00-549.00_060825_1_CHir_Q_r	0.20				
5700 -	•.		$p_i(kPa) =$	5329	n (IsDa)	522
5650	·	0.16	$p_p(kPa) =$		p _F (kPa) =	533
5600	• P section	0.14	$Q_p (m^3/s) =$	1.13E-06		
Z 5550 -	P above P below Q	0.12 [u W]	tp (s) =		t _F (s) =	120
5500	•	ion Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
\$ 5450 -	:	0.08	EC _w (mS/m)=			
5400		- 0.06	Temp _w (gr C)=	15.1		
5350		0.04	Derivative fact.=	0.06	Derivative fact.=	0.0
5300		0.02				
0.00 0.20 0.40 0.60 Elaps	0.80 1.00 1.20 ed Time [h]	0.00	Results		Results	<u> </u>
			Q/s $(m^2/s)=$	5.5E-08		
Log-Log plot incl. derivates-	flow period		$T_{\rm M} (m^2/s) =$	4.6E-08		
gg p			Flow regime:	transient	Flow regime:	transient
Elapsed tii	me [h]		$dt_1 \text{ (min)} =$		dt ₁ (min) =	0.3
102			$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$dt_2 (min) =$	1.2
•		ŀ	2		2	9.1E-0
•		30	$T (m^2/s) = S (-) =$	1.0E-06	` /	1.0E-0
10		10 ¹	$K_s (m/s) =$		$K_s (m/s) =$	1.8E-0
•			$S_s(11/s) =$ $S_s(1/m) =$		$S_s (1/m) =$	2.0E-0
(1)		3 [min/l]			. , ,	4.0E-1
objet		(1/d)	$C (m^3/Pa) =$	NA NA	$C (m^3/Pa) =$	
10 0	· · · · · · · · · · · · · · · · · · ·	10° ≈	$C_D(-) =$	NA 0.04	$C_D(-) =$	4.4E-0
1			ξ (-) =	8.64	ξ(-) =	5.03
		0.3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹⁰ 10 ¹¹	10 ¹² 10 ¹³ 10 ¹	4 10 ⁻¹	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
10	tD 10 10		$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives	- recovery period		Selected represe			Ľ
Log-Log plot filel. derivatives	- recovery period		$dt_1 (min) =$	0.30		4.0E-1
La .4 .3 Elapsed	time [h] 21		$dt_1 (min) = $ $dt_2 (min) = $		5 (III /I G) =	4.4E-0
10 1		10 ³	$T_T (m^2/s) = S (-) =$	9.1E-08		5.0
10		1	S (-) =	1.0E-06		
				4.05.00		
10		10 ²	K_s (m/s) =	1.8E-08		
		10 ²	$K_s (m/s) = S_s (1/m) =$	1.8E-08 2.0E-07		
		0). [kPa]	$K_s (m/s) = S_s (1/m) = Comments:$	2.0E-07		
10	In the state of th	0 10 (MPa)	$K_s (m/s) = S_s (1/m) = $ Comments: The recommended tr	2.0E-07	0.1E-8 m2/s was deriv	
10	And the state of t	p0)' [kPa]	K _s (m/s) = S _s (1/m) = Comments: The recommended tranalysis of the CHir	2.0E-07 ransmissivity of 9 phase (inner zon	0.1E-8 m2/s was derive), which shows the b	etter data and
10	And And And And And And And And And And	D. C. (p-p0), [kPa]	K _s (m/s) = S _s (1/m) = Comments: The recommended tranalysis of the CHir derivative quality. The	2.0E-07 cansmissivity of 9 phase (inner zon the confidence rai	0.1E-8 m2/s was deriv	petter data and ansmissivity is
10 no no no no no no no no no no no no no	And Market and a second	p0)' [kPa]	K _s (m/s) = S _s (1/m) = Comments: The recommended translysis of the CHir derivative quality. The estimated to be 6E-8 during the test is 2. The state of the comments of the	2.0E-07 ransmissivity of 9 phase (inner zon the confidence rat m2/s to 4E-7 m2 The static pressur	2.1E-8 m2/s was derive), which shows the bage for the interval trace/s. The flow dimension measured at transducers	petter data and ansmissivity is ion displayed acer depth, was
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	TO TO TO TO	D. C. (p-p0), [kPa]	K _s (m/s) = S _s (1/m) = Comments: The recommended translysis of the CHir derivative quality. The estimated to be 6E-8 during the test is 2. The state of the comments of the	2.0E-07 ransmissivity of 9 phase (inner zon the confidence rat m2/s to 4E-7 m2 The static pressur ir phase using sta	0.1E-8 m2/s was derive), which shows the bage for the interval trace.	petter data and ansmissivity is ion displayed acer depth, was

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio				CHir
Area:	Laxema	r Test no:			1
Borehole ID:	KLX18	A Test start:		0608	
Test section from - to (m):	549.00-554.00 r	n Responsible for	Reinder van der l		er van der Wal
r eet eestien nem te (m).	0 10.00 00 1.00 1	test execution:		rtomat	Philipp Wolf
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
KLX18A_549.00-554.00_060825_1_CHir_Q_r		p_0 (kPa) =	5380		
5600 -		p_i (kPa) =	5388		
		$p_p(kPa) =$	5589	p _F (kPa) =	5398
6590 -	· ,	$Q_{p} (m^{3}/s) =$	2.00E-07		
<u> </u>	Patowe Palow 5	tp (s) =	1200	t _F (s) =	1200
5500 - 138 -	- Colonom	S el S [*] (-)=		S el S [*] (-)=	1.00E-06
		EC _w (mS/m)=	1.002 00	3 61 3 (-)=	1.002 0
	#	Temp _w (gr C)=	15.2		
5400					0.00
5350		Derivative fact.=	0.07	Derivative fact.=	0.02
	1.00 1.20 1.40 1.60 1.80				
Elapsed Ti	me [h]	Results		Results	ı Tı
		Q/s $(m^2/s)=$	9.8E-09		
Log-Log plot incl. derivates- flo	ow period	$T_M (m^2/s) =$	8.1E-09		
		Flow regime:	transient	Flow regime:	transient
10 ¹	[h]	$dt_1 (min) =$	1.56	dt_1 (min) =	6.00
		dt_2 (min) =	18.00	dt_2 (min) =	9.00
·	10 ²	$T (m^2/s) =$	5.2E-09	$T (m^2/s) =$	9.8E-09
		S (-) =	1.0E-06	` '	1.0E-06
10°	30	K_s (m/s) =		K_s (m/s) =	2.0E-09
, , ,		$S_s(1/m) =$		$S_s(1/m) =$	2.0E-0
	101	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	9.4E-1
	• • •	g C (III / F a) = ² C _D (-) =	NA	$C_D(-) =$	1.0E-02
10 ⁻¹	<u>.</u>				-2.92
	100	ξ (-) =	-1.33	ξ (-) =	-2.92
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
100 101	10 ² 10 ³ 10 ⁴	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
tD		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe			
		$dt_1 (min) =$	6.00	•	9.4E-1
Elapsed time [1	1) ₁	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	9.00	· ' '	1.0E-02
101		, ,	9.8E-09		-2.92
	10 ³	$T_T (m^2/s) =$			-2.92
		S (-) =	1.0E-06		
10 7	300	$K_s (m/s) =$	2.0E-09		
	10 ²	$S_s (1/m) =$	2.0E-07		
10"	30 - 10'	analysis of the CHir interval transmissivit range includes the in dimension displayed transducer depth, wa	phase (outer pha ty is estimated to ner zone transmi during the test is derived from the	9.8E-09 m2/s was der se). The confidence r be 1E-09 m2/s to 2E issivity of the CHir pl s 2. The static pressur he CHir phase using s	ange for the 2-08 m2/s (this hase). The flow re measured at straight line
10 ⁻³ 10 ⁰ 1D/CD	10 ¹ 10 ² 10 ³			value of 5,365.8 kPa.	

	Test Sum	mary Sheet				
Project:	Oskarshamn site investigation	n Test type:[1]			CHi	
Area:	Laxema	ar Test no:			1	
Borehole ID:	KLX18	A Test start:		060825 13:24		
Test costion from to (m):				Daired		
Test section from - to (m):	554.00-559.00 i	n Responsible for test execution:		Reinde	er van der Wal Philipp Wol	
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu	
		test evaluation:				
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata		
5750	. KLX18A_554.00-559.00_060825_1_CHir_Q_r	p_0 (kPa) =	5447			
5700		p _i (kPa) =	5437			
! .1	0.08	$p_p(kPa) =$	5633	p _F (kPa) =	543	
• • •	WWW.	$Q_p (m^3/s) =$	7.50E-08			
₹ 5600 2.	P section 0.06	tp (s) =	1200	t _F (s) =	1200	
© 5000	• P accord • P accord	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
6 6 6 8500	0.04	EC _w (mS/m)=				
		Temp _w (gr C)=	15.3			
5450	0.02	Derivative fact.=	NA	Derivative fact.=	0.0	
5400						
5350	1.00 1.20 1.40 1.60	_				
Elapsed 1	Time [h]	Results		Results		
		Q/s $(m^2/s)=$	3.8E-09			
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$	3.1E-09			
		Flow regime:	transient	Flow regime:	transient	
		$dt_1 (min) =$	NA	dt_1 (min) =	0.90	
		$dt_2 (min) =$	NA	dt_2 (min) =	3.60	
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.9E-09	
		S (-) =	NA	S (-) =	1.0E-0	
		K_s (m/s) =	NA	K_s (m/s) =	3.8E-10	
N	11	$S_s (1/m) =$	NA	$S_s (1/m) =$	2.0E-0	
Not Ar	narysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	4.3E-12	
		$C_D(-) =$	NA	C _D (-) =	4.8E-0	
		ξ (-) =	NA	ξ(-) =	2.68	
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.		
		$dt_1 (min) =$	0.90	$C (m^3/Pa) =$	4.3E-12	
Elapsed time (h)	10, 2 10, 1	$dt_2 (min) =$	3.60	$C_D(-) =$	4.8E-04	
10		$T_T (m^2/s) =$	1.9E-09		2.68	
		S (-) =	1.0E-06			
1	300	$K_s (m/s) =$	3.8E-10			
10 1	10 ²	$S_s(1/m) =$	2.0E-07			
2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	And Completely Many	Comments:	1 3.		<u> </u>	
/ ,	J. A. Carlotte	9	ransmissivity of 1	.9E-09 m2/s was der	ived from the	
	:			se). The confidence r		
10 °	10 1	interval transmissivi	ity is estimated to	be 8E-10 m2/s to 5E	-09 m2/s. The	
				test is 2. The static pr		
	3			the CHir phase usin value of 5,421.4 kPa.	g straight line	
			received brot to a v	O1 J,721.4 KI'd.		
10 ° 10 ¹ HDICD	10 ² 10 ³ 10 ⁴		1			

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	mar	Test no:			1
Doroholo ID:	IZI V	′4 O A	Tank akamb			000005 45:00
Borehole ID:	KLX	.18A	Test start:			060825 15:36
Test section from - to (m):	559.00-564.0		Responsible for		Reinde	er van der Wal
Section diameter, 2-r _w (m):	0.		test execution: Responsible for		Crist	Philipp Wol
			test evaluation:			
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
5700		T ^{2.0}	p ₀ (kPa) =	5490		
KLX18A_559.00-564.00_060825_1_CHir_Q_r	P section P above D heles		p _i (kPa) =	5481		
5650	• P below • Q		$p_p(kPa) =$	5683	p _F (kPa) =	548
		- 1.5	$Q_p (m^3/s) =$	1.27E-05		
5500	:		tp (s) =	1200	t _F (s) =	1200
98 5550		Rate [Vm	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
embode p	s	5	EC _w (mS/m)=		()	
5500			Temp _w (gr C)=	15.3		
	***************************************	- 0.5	Derivative fact.=	0.03	Derivative fact.=	0.0
5450						
0.00 0.20 0.40 0.50 Elapsed Tir	0.80 1.00 1.20 me [h]	100	Results		Results	
			$Q/s (m^2/s) =$	6.2E-07		
Log-Log plot incl. derivates- flo	w period		$T_{\rm M} (m^2/s) =$	5.1E-07		
Log Log plot mon derivates me	, period		Flow regime:	transient	Flow regime:	transient
Elapsed time [h]]		$dt_1 \text{ (min)} =$		dt_1 (min) =	0.24
10 1			$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	2.40
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		10 °			2	4.6E-0
		t I	T (m2/s) = S (-) =	1.0E-06	. ,	1.0E-0
10°		0.3	$K_s (m/s) =$			9.3E-0
			$S_s (11/s) =$ $S_s (1/m) =$		$K_s (m/s) =$ $S_s (1/m) =$	2.0E-0
	and the second second					
· · ·		(1/0	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.7E-1
10 -1	•		$C_D(-) =$	NA 0.75	$C_D(-) =$	2.9E-0
		10 -2	ξ (-) =	-0.75	ξ (-) =	-1.6
			_ , 2, ,	NIA	_ , 2, ,	NΙΔ
			$T_{GRF}(m^2/s) =$	NA NA	$T_{GRF}(m^2/s) =$	NA
10 ² 10 ³ tD	10 ⁴ 10 ⁵ 10 ⁶		$S_{GRF}(-) =$	NA NA	$S_{GRF}(-) =$	NA NA
Law Law wist to all all all all all			D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- i	recovery period		Selected represe		_	0 35 4
Elapsed time (h)			$dt_1 (min) =$		$C (m^3/Pa) =$	2.7E-10
10 1 10 3 10 3	2		$dt_2 (min) =$		$C_D(-) =$	2.9E-0
	3	00	$T_T (m^2/s) =$	4.6E-07		-1.6
a-ba-ranaranana.	110	0 2	S (-) =	1.0E-06		
10 °	ļ		$K_s (m/s) =$	9.3E-08		
	- Article 18	-	$S_s(1/m) =$	2.0E-07		
	***************************************	£	Comments:			
1 //	10				4.6E-07 m2/s was der	
<i> </i>					se), which shows the ce range for the inter	
10 -1	ı				ce range for the filler	· u.1
10 1	3				7 m2/s to 7E-07 m2/s	s. The flow
10 -1	3		transmissivity is esti	mated to be 1E-0	7 m2/s to 7E-07 m2/s s 2. The static pressur	
10 "	10 2 10 2 10 4	0 0	transmissivity is estindimension displayed transducer depth, wa	mated to be 1E-0 during the test is s derived from the		re measured at

	Test Su	ımı	mary Sheet			
Project:	Oskarshamn site investig					CHi
Area:	Laxe	ema	r Test no:			1
Borehole ID:	ΚL>	(18/	Test start:		060825 17	
Test section from - to (m):	564.00-569.0	00 n	n Responsible for	Reinder van der \		er van der Wal
			test execution:			Philipp Wol
Section diameter, 2·r _w (m):	C	.076	Responsible for test evaluation:		Cristi	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
Emeai plot & and p			Indata		Indata	
5900 v		- 0.20	p_0 (kPa) =	5531		
•		0.10	$p_i(kPa) =$	5530		
5750 KLX18A_564.00-569.00_060825_1_CHir_Q_r			$p_p(kPa) =$		p _F (kPa) =	5528
5700 -	Pabove	0.15	<u> </u>	1.72E-06		3320
: :	• P below - Q		$Q_p (m^3/s) =$			120
len un		[Wmin]	tp (s) =		t _F (s) =	1200
\$ 5500 g	•	tion Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
É 5550		Inject	EC _w (mS/m)=			
5500			Temp _w (gr C)=	15.4		
5460		0.25	Derivative fact.=	0.01	Derivative fact.=	0.0
5400	· 	0.00				
0.00 0.20 0.40 0.60 Elapsed Time	0.80 1.00 1.20 [h]	1.40	Results		Results	<u> </u>
			Q/s $(m^2/s)=$	8.4E-08		
Log-Log plot incl. derivates- flo	w period		$T_{\rm M} (m^2/s) =$	7.0E-08		
			Flow regime:	transient	Flow regime:	transient
Elapsed time [h	l	1	$dt_1 (min) =$	0.48	dt ₁ (min) =	0.66
10 ² 1			$dt_2 \text{ (min)} =$	18.00	$dt_2 \text{ (min)} =$	4.80
			$T (m^2/s) =$		$T (m^2/s) =$	5.4E-07
101	_	10 ¹	S (-) =	1.0E-06	, ,	1.0E-06
	•		$K_s (m/s) =$		$K_s (m/s) =$	1.1E-0
			$S_s (1/m) =$		$S_s (1/m) =$	2.0E-0
10		10 ⁰	ll i	NA	. , ,	5.3E-1
			$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.8E-0
	a a a		$\stackrel{=}{=} C_D(-) =$		$C_D(-) =$	
10 ⁻¹	A	10 ⁻¹	ξ (-) =	5.05	ξ (-) =	32.50
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁷ 10 ⁸ tD	10 ⁹ 10 ¹⁰ 10 ¹	10 ⁻²	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives- re	ecovery period		Selected represe	ntative paran	neters.	
			dt_1 (min) =	0.48	$C (m^3/Pa) =$	5.3E-1
Elapsed time [h]	101		dt_2 (min) =	18.00	,	5.8E-03
"		300	$T_T (m^2/s) =$	1.5E-07	ξ(-) =	5.05
· Santasan			S (-) =	1.0E-06		<u> </u>
<u> </u>		10 ²	$K_s (m/s) =$	3.0E-08		
10			$S_s(1/m) =$	2.0E-07		
		30	្ទី Comments:			<u> </u>
		10 ¹		ansmissivity of	.5E-7 m2/s was deriv	ved from the
<u>,</u>		10			ws the better data and	
10	<u>;</u>	3	quality. The confider	nce range for the	interval transmissivit	ty is estimated to
		_			dimension displayed	
		10 ⁰	is 2. The static press		_	
10 ¹ 10 ² tD/CD	10 ³ 10 ⁴ 10 ⁵		value of 5,529.0 kPa		rapolation in the Hor	ner prot to a

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				Pi
Area:	Laxema	r Test no:			1
Borehole ID:	KLX18/	A Test start:			060825 19:03
Test section from - to (m):	569.00-574.00 n	Responsible for test execution:		Reinde	er van der Wall Philipp Wolf
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu
		test evaluation:			-
Linear plot Q and p		Flow period	*,	Recovery period Indata	
		Indata $p_0 (kPa) =$	5581		
5800	KLX18A_569.00-574.00_060825_1_Pi_Q_r	$p_0(kPa) =$ $p_i(kPa) =$	NA		
5800		$p_p(kPa) =$		p _F (kPa) =	NA
5750 -		$Q_{p} (m^{3}/s) =$	NA	ρ _Γ (κι α) –	11/1
- Bad	P saction P showe P bloow P bloow O O	tn (a)		t _F (s) =	1200
± 5700 ·	· Q	S el S [*] (-)=		S el S [*] (-)=	1.00E-06
9 5550 ·	P babow - 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	EC _w (mS/m)=	1.002 00	3 61 3 (-)=	1.002 00
	. 125	Temp _w (gr C)=	15.5		
5600		Derivative fact.=		Derivative fact.=	
5550 -	. 1				
	·				
0.00 0.50 1.00 Elapsec	1.50 2.00 I Time [h]	Results		Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	NA		
	-	Flow regime:	transient	Flow regime:	transient
		$dt_1 (min) =$	NA	dt_1 (min) =	NA
		$dt_2 (min) =$	NA	dt_2 (min) =	NA
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.0E-11
		S (-) =	NA	S (-) =	NA
		$K_s (m/s) =$	NA	K_s (m/s) =	NA
NT-4 A-	ld	$S_s(1/m) =$	NA	$S_s (1/m) =$	NA
Not Ar	aryseu	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
		$C_D(-) =$	NA	C_D (-) =	NA
		ξ (-) =	NA	ξ (-) =	NA
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =		D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe			T
		$dt_1 (min) =$		$C (m^3/Pa) =$	NA
		$dt_2 (min) =$	NA 1 0F 11	$C_D(-) =$	NA
		$T_T (m^2/s) =$	1.0E-11	ξ (-) =	NA
		S (-) =	NA		
		$K_s (m/s) =$	NA NA		
		S _s (1/m) = Comments:	NA		
Not Aı	nalysed		sponse the interva	al transmissivity is lo	wer than 1E-11

	Test Sumi	nary Sheet			
Project:	Oskarshamn site investigation				CHir
Area:	Lavemai	Test no:			1
Alea.	Laxemai	rest no.			'
Borehole ID:	KLX18A	Test start:			060825 21:36
Test section from - to (m):	574.00-579.00 m	Responsible for test execution:		Reinde	er van der Wall Philipp Wolf
Section diameter, 2-r _w (m):	0.076	Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata	5.625	Indata	T
KLX18A_574.00-579.00_060825_1_CHir_Q_r	0.003	p ₀ (kPa) =	5627		
6000 -	P section P above P below	p _i (kPa) =	NA	- (I-D-)	N. 4
	•	$p_p(kPa) =$	NA	p _F (kPa) =	NA
5900 -		$Q_p (m^3/s) =$	NA		
(Fg.4) 9 unos s 9 2 5000 •	Rase [bmin]	tp (s) =		t_F (s) =	(
55 5500 - - -	on Rate	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
Downhic	y .	EC _w (mS/m)=			
5700 -	0.001	Temp _w (gr C)=	15.6		
5600	:::: 	Derivative fact.=	NA	Derivative fact.=	NA
5600					
0.00 0.10 0.20 0.30	0.000				
Elapsed		Results	I	Results	1
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	low period	$T_M (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
		dt_1 (min) =	NA	$dt_1 (min) =$	NA
		dt_2 (min) =	NA	$dt_2 (min) =$	NA
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.0E-1
		S (-) =	NA	S (-) =	NA
		$K_s (m/s) =$	NA	K_s (m/s) =	NA
NT-4 A		$S_s(1/m) =$	NA	$S_s (1/m) =$	NA
Not A	nalysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
		$C_D(-) =$	NA	C_D (-) =	NA
		ξ (-) =	NA	ξ (-) =	NA
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D_{GRF} (-) =	NA	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.	
		dt_1 (min) =	NA	$C (m^3/Pa) =$	NA
		dt_2 (min) =	NA	C _D (-) =	NA
		$T_T (m^2/s) =$	1.0E-11	ξ (-) =	NA
		S (-) =	NA		
		K_s (m/s) =	NA		
		$S_s (1/m) =$	NA		
Not A	nalysed	Comments:			
		Based on the test re- transmissivity is low		d packer compliance) 2/s.) the interval

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				Р
Area:	Laxemar	Test no:			1
Borehole ID:	KLX18A	Test start:			060825 22:38
Test section from - to (m):	579.00-584.00 m	Responsible for		Reinde	er van der Wal
	0.070	test execution:		0.1.1	Philipp Wol
Section diameter, 2-r _w (m):	0.076	Responsible for test evaluation:		Crist	an Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
5950	7 0.008	p ₀ (kPa) =	5673		
KLX18A_579.00-584.00_060825_1_Chir_Q_r	P section P above O below 0 to the control of the	p _i (kPa) =	5737		
5900	• P below • • 0.007	$p_p(kPa) =$	5894	p _F (kPa) =	568
5850 -		$Q_{p} (m^{3}/s) =$	NA		
<u> </u>	- 0002 - 1	tp (s) =	10	t _F (s) =	2025
5800	• ************************************	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5750	Injection	EC _w (mS/m)=		()	
	0.003	Temp _w (gr C)=	15.6		
5700	0.002	Derivative fact.=	NA	Derivative fact.=	0.0
5650	0.001				
5600	0,000				
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 1.40	Results		Results	
		$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
		dt_1 (min) =	NA	dt_1 (min) =	4.20
		$dt_2 (min) =$	NA	dt_2 (min) =	18.00
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.4E-1
		S (-) =	NA	S (-) =	1.0E-0
		K_s (m/s) =	NA	$K_s (m/s) =$	2.8E-12
		S _s (1/m) =	NA	S _s (1/m) =	2.0E-0
Not A	nalysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.8E-1
		$C_D(-) =$	NA	C_D (-) =	2.0E-0
		ξ (-) =	NA	ξ(-) =	2.50
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		S _{GRF} (-) =	NA	S _{GRF} (-) =	NA
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.	
		dt_1 (min) =	4.20	0 (III /I a) -	1.8E-12
Elapsed time (h)		dt_2 (min) =	18.00	C_D (-) =	2.0E-0
	10 -1	$T_T (m^2/s) =$	1.4E-11	ξ (-) =	2.50
-		S (-) =	1.0E-06		
The state of the s	0.03	K_s (m/s) =	2.8E-12		
O O O	· - • *	$S_s (1/m) =$	2.0E-07		
	10 -2	Comments:			
	0.003			.4E-11 m2/s was der	
,a	U.003 8			The confidence range	
+	10 -3			2 to 6E-11 m2/s. The tic pressure could no	
1		manupia, ou uulilig ilit	. wor to 2. THE sta	ar pressure courd no	. Je emapoiaiec
		due to the very low	transmissivity.		
10 ° 10 '	3E-4		transmissivity.		

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio				CHir
Area:	Layema	r Test no:			1
Alea.	Laxema	11 631 110.			'
Borehole ID:	KLX18	A Test start:			060826 00:20
Test section from - to (m):	584.00-589.00 r	n Responsible for test execution:		Reinde	er van der Wall Philipp Wolf
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata	5710	Indata	T
KLX18A_584.00-589.00_060826_1_Chir_Q_r	0.003 • P section	$p_0 (kPa) =$	5719		
5850 -	P section P above P better Q	p _i (kPa) =	NA	n (kDa)	NΙΛ
	•	$p_p(kPa) =$	NA	p _F (kPa) =	NA
5800	. 0.002	$Q_p (m^3/s) =$	NA	t /-\	NI A
sure (KP)	: :	tp (s) =	NA	t _F (s) =	NA
To the same of the	<u>/</u>	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5700		EC _w (mS/m)=			
5700	• 0.001	Temp _w (gr C)=	15.7		
5650		Derivative fact.=	NA	Derivative fact.=	
0,00 0.10 0.20 0.30	0.40 0.50 0.60 0.70 0.80				
	ed Time (h)	Results		Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates-	flow period	$T_M (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
		$dt_1 (min) =$	NA	dt_1 (min) =	NA
		$dt_2 (min) =$	NA	dt_2 (min) =	NA
		$T (m^2/s) =$	NA	$T (m^2/s) =$	1.0E-1
		S (-) =	NA	S (-) =	NA
		$K_s (m/s) =$	NA	$K_s (m/s) =$	NA
3 7		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
Not A	Analysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
		$C_D(-) =$	NA	$C_D(-) =$	NA
		ξ (-) =	NA	ξ(-) =	NA
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
1		D_{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives	- recovery period	Selected represe			
5 - 5 p	.	$dt_1 \text{ (min)} =$	NA	C (m ³ /Pa) =	NA
		$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	1.0E-11		NA
		S (-) =	NA	- / ۱ <i>ح</i>	
		$K_s (m/s) =$	NA		
		$S_s (1/m) =$	NA		
NT . A	Analysed	Comments:	I	<u> </u>	
NOVE	maysed			d packer compliance) 2/s.	the interval

Test Su	ımr	nary Sheet			
Oskarshamn site investiga	ation	Test type:[1]			CHi
Laxemar		Test no:			
KI X18A		Test start:			060826 06:16
				Delega	
589.00-594.0	JU M			Reinde	er van der Wa Philipp Wol
0.	.076			Crist	an Enachescu
		test evaluation:			
*	T 3.0				
-					
• P section	2.5	$p_p(kPa) =$	5966	p _F (kPa) =	576
Pabove Pictor Q	2.0	$Q_p (m^3/s) =$	2.35E-05		
\ }	min.	tp (s) =			120
A second	1.5 U	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
	Injectio	$EC_w (mS/m)=$			
	1.0	Temp _w (gr C)=	15.7		
	0.5	Derivative fact.=	0.06	Derivative fact.=	0.0
		Results		Results	
		Q/s $(m^2/s)=$	1.2E-06		
low period		$T_{\rm M} (m^2/s) =$	9.5E-07		
		Flow regime:	transient	Flow regime:	transient
ne [h] 10,-1 10,0 10,0		$dt_1 (min) =$	1.62	dt_1 (min) =	0.1
	3	$dt_2 (min) =$	15.00	$dt_2 \text{ (min)} =$	0.7
					1.6E-0
	10 ⁰			\ /	1.0E-0
					3.1E-0
	0.3				2.0E-0
•	[min/				3.3E-1
.:	: €	- ()		a ()	3.6E-0
					1.6
A ARRANA	0.03	ξ(-) =	6.06	ζ(-) =	1.0
A	10 ⁻²	2	NIA	2	N I A
					NA
10 ¹³ 10 ¹⁴ 10 ¹⁵					NA
					NA
recovery period				_	
me lh1				, ,	3.3E-1
	}				3.6E-0
	10 ³	$T_T (m^2/s) =$			1.6
		S (-) =	1.0E-06		
	ŀ	$K_s (m/s) =$	3.1E-07		
	10 ²	$S_s (1/m) =$	2.0E-07		
	KPa	Comments:			
The state of the s	101 (00-0)		•		
"The same					
Andrew Assets of					
			1117/8 10 3E-D M	zzs. The HOW dimensi	on displayed
ł	10°	estimated to be 8E-7 during the test is 2.			
	10°	during the test is 2.	The static pressur	re measured at transduraight line extrapolation	icer depth, was
	Oskarshamn site investiga Laxe KLX 589.00-594.0 0 1 Pation 1	Oskarshamn site investigation Laxeman KLX18A 589.00-594.00 m 0.076 100 period Iow period	Flow period indata $p_{0} (kPa) = p_{1} (kP$	Coskarshamn site investigation Test type: 1	Content Con

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investiç	gation	Test type:[1]			CHi
Area:	Laxemar		Test no:			,
Borehole ID:	KLX18A		Test start:			060826 08:29
Test section from - to (m):	594.00-599	.00 m	Responsible for		Reinde	er van der Wa
, ,			test execution:			Philipp Wo
Section diameter, 2-r _w (m):		0.076	Responsible for		Cristi	an Enachesc
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot & and p			Indata		Indata	
6100		0.4	p ₀ (kPa) =	5822	aata	
	KLX18A_594.00-599.00_060826_1_Chir_Q_r	"	$p_i(kPa) =$	5818		
6050			$p_p(kPa) =$		p _F (kPa) =	581
6000		0.3			ρ _F (κρα) =	361
	P section P above P below		$Q_p (m^3/s) =$	2.80E-06	4 (-)	100
9990	• Postow	[Mmin]	tp (s) =		t _F (s) =	120
i l		tion Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
5900	A Control of Control o	활	EC _w (mS/m)=			
5850	•	.	Temp _w (gr C)=	15.9		
5800		7	Derivative fact.=	0.04	Derivative fact.=	0.0
5750 0.00 0.20 0.40 0.60	0.80 1.00 1.20	0.0	D 14		- ·	
Elapsed 1	lime [h]		Results	4.45.07	Results	
			Q/s $(m^2/s)=$	1.4E-07		
og-Log plot incl. derivates- flo	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	1.1E-07		
Elapsed time	e [h]		Flow regime:	transient	Flow regime:	transient
10.4 10.3	10, 10, 10, 1	7	$dt_1 (min) =$		$dt_1 (min) =$	0.3
			dt_2 (min) =		dt_2 (min) =	9.0
		10 ¹	$T (m^2/s) =$		$T (m^2/s) =$	6.1E-0
101	0.0 adds garden commission		S (-) =	1.0E-06		1.0E-0
		ŀ	$K_s (m/s) =$	5.3E-08	$K_s (m/s) =$	1.2E-0
10.5	*	10 ⁰	$S_s (1/m) =$	2.0E-07	$S_s(1/m) =$	2.0E-0
. 100		ay [mir	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	3.3E-1
		10-1	$C_D(-) =$	NA	C _D (-) =	3.7E-0
10'1		10	ξ (-) =	5.67	ξ (-) =	21.2
		10 ⁻²	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁷ 10 ⁸ tD	10 ⁹ 10 ¹⁰ 10	71	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
L.			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
og-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran		
			dt_1 (min) =	0.72	$C (m^3/Pa) =$	3.3E-1
Elapsed time [hj	٦.	$dt_2 \text{ (min)} =$		$C_D(-) =$	3.7E-0
102			$T_T (m^2/s) =$	2.6E-07		5.6
. 0.0.000.0000		300	S (-) =	1.0E-06	- \ /	
, and the same of		2	$K_s (m/s) =$	5.3E-08		
10		10 ²	$S_s (1/m) =$	2.0E-07		
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		30 2	Comments:	2.02 07		
\		3-00)' [k	1	ansmissivity of 3	2.6E-7 m2/s was deriv	ed from the
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		10 ¹ 8		•	its horizontal derivat	
10 10			at late times. The con	nfidence range fo	r the interval transmi	ssivity is
· . ·		3	estimated to be 8E-8	m2/s to 5E-7 m2	2/s. The flow dimensi	on displayed
•				The exercise management	a managered at transdu	icer denth was
			during the test is 2. T			
10 ⁷ 10 ² IDCD	10 ⁻³ 10 ⁻⁴ 10	10°		ir phase using st	raight line extrapolati	

Borehole: KLX18 A

APPENDIX 4

Nomenclature

Character	SICADA designation	Explanation	Dimension	Unit
Variables,	constants		•	
A_{w}		Horizontal area of water surface in open borehole, not	[L ²]	m ²
		including area of signal cables, etc.		
b		Aquifer thickness (Thickness of 2D formation)	[L]	m
В		Width of channel	[L]	m
L		Corrected borehole length	[L]	m
L ₀		Uncorrected borehole length	[L]	m
L _p		Point of application for a measuring section based on its centre point or centre of gravity for distribution of transmissivity in the measuring section.	[L]	m
L _w		Test section length.	[L]	m
dL		Step length, Positive Flow Log - overlapping flow logging. (step length, PFL)	[L]	m
r		Radius	[L]	m
r _w		Borehole, well or soil pipe radius in test section.	[L]	m
r _{we}		Effective borehole, well or soil pipe radius in test section. (Consideration taken to skin factor)	[L]	m
r _s		Distance from test section to observation section, the shortest distance.	[L]	m
r _t		Distance from test section to observation section, the interpreted shortest distance via conductive structures.	[L]	m
r_D		Dimensionless radius, r _D =r/r _w	=	-
Z		Level above reference point	[L]	m
Z _r		Level for reference point on borehole	[L]	m
Z _{wu}		Level for test section (section that is being flowed), upper limitation	[L]	m
Z _{wl}		Level for test section (section that is being flowed), lower limitation	[L]	m
Z _{ws}		Level for sensor that measures response in test section (section that is flowed)	[L]	m
Z _{ou}		Level for observation section, upper limitation	[L]	m
Z _{ol}		Level for observation section, lower limitation	[L]	m
Z _{os}		Level for sensor that measures response in observation section	[L]	m
			34-12-	ļ .
E		Evaporation:	[L³/(T L²)]	mm/y, mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
ET		Evapotranspiration	[L ³ /(T L ²)]	mm/y, mm/d, m ³ /s
		hydrological budget:	[L ³ /T]	
Р		Precipitation	[L ³ /(T L ²)]	mm/y, mm/d,
-		hydrological budget:	[L ³ /T]	m ³ /s
R		Groundwater recharge	[L ³ /(T L ²)]	mm/y, mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
D		Groundwater discharge	[L ³ /(T L ²)]	mm/y, mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
Q_R		Run-off rate	[L ³ /T]	m³/s
Q_p		Pumping rate	[L ³ /T]	m³/s
Q_I		Infiltration rate	[L ³ /T]	m³/s
Q		Volumetric flow. Corrected flow in flow logging $(Q_1 - Q_0)$	[L ³ /T]	m³/s
Q_0		(Flow rate) Flow in test section during undisturbed conditions (flow	[L ³ /T]	m³/s
Q _p		logging). Flow in test section immediately before stop of flow.	[L ³ /T]	m³/s
•		Stabilised pump flow in flow logging.	_	

Character	SICADA designation	Explanation	Dimension	Unit
Q _m		Arithmetical mean flow during perturbation phase.	[L ³ /T]	m ³ /s
Q ₁		Flow in test section during pumping with pump flow Q _{p1} , (flow logging).	[L ³ /T]	m³/s
Q ₂		Flow in test section during pumping with pump flow Q_{p1} , (flow logging).	[L ³ /T]	m³/s
ΣQ	SumQ	Cumulative volumetric flow along borehole	[L ³ /T]	m ³ /s
ΣQ_0	SumQ0	Cumulative volumetric flow along borehole, undisturbed conditions (ie, not pumped)	[L³/T]	m³/s
ΣQ_1	SumQ1	Cumulative volumetric flow along borehole, with pump flow Q _{p1}	[L ³ /T]	m³/s
ΣQ_2	SumQ2	Cumulative volumetric flow along borehole, with pump flow Q _{p2}	[L ³ /T]	m³/s
ΣQ_{C1}	SumQC1	Corrected cumulative volumetric flow along borehole, ΣQ_1 - ΣQ_0	[L ³ /T]	m³/s
ΣQ_{C2}	SumQC2	Corrected cumulative volumetric flow along borehole, ΣQ_2 - ΣQ_0	[L ³ /T]	m³/s
q		Volumetric flow per flow passage area (Specific discharge (Darcy velocity, Darcy flux, Filtration velocity)).	([L ³ /T*L ²]	m/s
V		Volume	[L ³]	m ³
V_{w}		Water volume in test section.	[L ³]	m ³
V _p		Total water volume injected/pumped during perturbation phase.	[L ³]	m ³
V		Velocity	$([L^3/T*L^2]$	m/s
V _a		Mean transport velocity (Average linear velocity (Average linear groundwater velocity, Mean microscopic velocity));. $v_a=q/n_e$	([L ³ /T*L ²]	m/s
t		Time	[T]	hour,mi n,s
t _o		Duration of rest phase before perturbation phase.	[T]	S
t _p		Duration of perturbation phase. (from flow start as far as p_p).	[T]	s
t _F		Duration of recovery phase (from p_p to p_F).	[T]	S
t ₁ , t ₂ etc		Times for various phases during a hydro test.	[T]	hour,mi n,s
dt		Running time from start of flow phase and recovery phase respectively.	[T]	s
dt _e		$dt_e = (dt \cdot tp) / (dt + tp)$ Agarwal equivalent time with dt as running time for recovery phase.	[T]	S
t _D		$t_D = T \cdot t / (S \cdot r_w^2)$. Dimensionless time	-	-
р		Static pressure; including non-dynamic pressure which depends on water velocity. Dynamic pressure is normally ignored in estimating the potential in groundwater flow relations.	[M/(LT) ²]	kPa
p _a		Atmospheric pressure	$[M/(LT)^2]$	kPa
p _t		Absolute pressure; p _t =p _a +p _g	$[M/(LT)^2]$	kPa
p _g		Gauge pressure; Difference between absolute pressure and atmospheric pressure.	[M/(LT) ²]	kPa
p ₀		Initial pressure before test begins, prior to packer expansion.	[M/(LT) ²]	kPa
p _i		Pressure in measuring section before start of flow.	$[M/(LT)^2]$	kPa
P _f		Pressure during perturbation phase.	$[M/(LT)^2]$	kPa
p_s		Pressure during recovery.	$[M/(LT)^2]$	kPa
p_p		Pressure in measuring section before flow stop.	[M/(LT) ²]	kPa
p _F		Pressure in measuring section at end of recovery.	[M/(LT) ²]	kPa
p _D		$p_D = 2\pi \cdot T \cdot p/(Q \cdot \rho_w g)$, Dimensionless pressure		-
dp		Pressure difference, drawdown of pressure surface between two points of time.	[M/(LT) ²]	kPa

Character	SICADA designation	Explanation	Dimension	Unit
dp _f	usoig	$dp_f = p_i - p_f$ or $= p_f - p_i$, drawdown/pressure increase of pressure surface between two points of time during perturbation phase. dp_f usually expressed positive.	[M/(LT) ²]	kPa
dp _s		$dp_s = p_s - p_p$ or $= p_p - p_s$, pressure increase/drawdown of pressure surface between two points of time during recovery phase. dp_s usually expressed positive.	[M/(LT) ²]	kPa
dp _p		$dp_p = p_i - p_p$ or $= p_p - p_i$, maximal pressure increase/drawdown of pressure surface between two points of time during perturbation phase. dp_p expressed positive.	[M/(LT) ²]	kPa
dp _F		$dp_F = p_p - p_F$ or $= p_F - p_p$, maximal pressure increase/drawdown of pressure surface between two points of time during recovery phase. dp_F expressed positive.	[M/(LT) ²]	kPa
Н		Total head; (potential relative a reference level) (indication of h for phase as for p). H=h _e +h _p +h _v	[L]	m
h		Groundwater pressure level (hydraulic head (piezometric head; possible to use for level observations in boreholes, static head)); (indication of h for phase as for p). h=h _e +h _p	[L]	m
h _e		Height of measuring point (Elevation head); Level above reference level for measuring point.	[L]	m
h _p		Pressure head; Level above reference level for height of measuring point of stationary column of water giving corresponding static pressure at measuring point	[L]	m
h _v		Velocity head; height corresponding to the lifting for which the kinetic energy is capable (usually neglected in hydrogeology)	[L]	m
S		Drawdown; Drawdown from undisturbed level (same as dh _o , positive)	[L]	m
Sp		Drawdown in measuring section before flow stop.	[L]	m
h ₀		Initial above reference level before test begins, prior to packer expansion.	[L]	m
h _i		Level above reference level in measuring section before start of flow.	[L]	m
h _f		Level above reference level during perturbation phase.	[L]	m
h _s		Level above reference level during recovery phase.	[L]	m
h _p		Level above reference level in measuring section before flow stop.	[L]	m
h _F		Level above reference level in measuring section at end of recovery.	[L]	m
dh		Level difference, drawdown of water level between two points of time.	[L]	m
dh _f		$dh_f = h_i - h_f$ or $= h_f - h_i$, drawdown/pressure increase of pressure surface between two points of time during perturbation phase. dh_f usually expressed positive.	[L]	m
dh _s		$dh_s = h_s - h_p$ or $= h_p - h_s$, pressure increase/drawdown of pressure surface between two points of time during recovery phase. dh_s usually expressed positive.	[L]	m
dh _p		$dh_p = h_i - h_p$ or $= h_p - h_i$, maximal pressure increase/drawdown of pressure surface between two points of time during perturbation phase. dh_p expressed positive.	[L]	m
dh _F		$dh_F = h_p - h_F$ or $= h_F - h_p$, maximal pressure increase/drawdown of pressure surface between two points of time during perturbation phase. dh_F expressed positive.	[L]	m
Te _w		Temperature in the test section (taken from temperature logging). Temperature		°C
Te _{w0}		Temperature in the test section during undisturbed conditions (taken from temperature logging).		°C

Character	SICADA designation	Explanation	Dimension	Unit
Te _o	area gradien	Temperature in the observation section (taken from temperature logging). Temperature		°C
EC _w		Electrical conductivity of water in test section.		mS/m
EC _{w0}		Electrical conductivity of water in test section during		mS/m
0		undisturbed conditions.		
EC _o		Electrical conductivity of water in observation section		mS/m
TDS _w		Total salinity of water in the test section.	[M/L ³]	mg/L
TDS _{w0}		Total salinity of water in the test section during undisturbed conditions.	[M/L ³]	mg/L
TDS₀		Total salinity of water in the observation section.	[M/L ³]	mg/L
g		Constant of gravitation (9.81 m*s ⁻²) (Acceleration due to gravity)	[L/T ²]	m/s ²
π	pi	Constant (approx 3.1416).	[-]	
π r		Residual. $r=p_c-p_m$, $r=h_c-h_m$, etc. Difference between measured data (p_m , h_m , etc) and estimated data (p_c , h_c , etc)		
ME		Mean error in residuals. $ME = \frac{1}{n} \sum_{i=1}^{n} r_i$		
NME		Normalized ME. NME=ME/(x _{MAX} -x _{MIN}), x: measured variable considered.		
MAE		Mean absolute error. $MAE = \frac{1}{n} \sum_{i=1}^{n} r_i $		
NMAE		Normalized MAE. NMAE=MAE/(x _{MAX} -x _{MIN}), x: measured variable considered.		
RMS		Root mean squared error. $RMS = \left(\frac{1}{n}\sum_{i=1}^{n}r_i^2\right)^{0.5}$		
NRMS		Normalized RMR. NRMR=RMR/(x _{MAX} -x _{MIN}), x: measured variable considered.		
SDR		Standard deviation of residual.		
		$SDR = \left(\frac{1}{n-1}\sum_{i=1}^{n} (r_i - ME)^2\right)^{0.5}$		
SEMR		Standard error of mean residual.		
		$SEMR = \left(\frac{1}{n(n-1)} \sum_{i=1}^{n} (r_i - ME)^2\right)^{0.5}$		
Parameter:	S			
Q/s		Specific capacity $s=dp_p$ or $s=s_p=h_0-h_p$ (open borehole)	[L ² /T]	m²/s
D		Interpreted flow dimension according to Barker, 1988.	[-]	-
dt₁		Time of starting for semi-log or log-log evaluated characteristic counted from start of flow phase and recovery phase respectively.	[T]	S
dt ₂		End of time for semi-log or log-log evaluated characteristic counted from start of flow phase and recovery phase respectively.	[T]	S
dt _L		Response time to obtain 0.1 m (or 1 kPa) drawdown in observation section counted from start of recovery phase.	[T]	S
ТВ		Flow capacity in a one-dimensional structure of width B and transmissivity T. Transient evaluation of one-dimensional structure	[L ³ /T]	m³/s
T		Transmissivity	[L ² /T]	m²/s
T _M		Transmissivity according to Moye (1967)	[L ² /T]	m²/s
T _Q		Evaluation based on Q/s and regression curve between Q/s and T, as example see Rhén et al (1997) p. 190.	[L ² /T]	m²/s
Ts		Transmissivity evaluated from slug test	[L ² /T]	m²/s

Character	SICADA designation	Explanation	Dimension	Unit
T _D		Transmissivity evaluated from PFL-Difference Flow Meter	[L ² /T]	m²/s
Tı		Transmissivity evaluated from Impeller flow log	[L ² /T]	m²/s
T_{Sf} , T_{Lf}		Transient evaluation based on semi-log or log-log	[L ² /T]	m²/s
		diagram for perturbation phase in injection or pumping.		2.
T_{Ss} , T_{Ls}		Transient evaluation based on semi-log or log-log diagram for recovery phase in injection or pumping.	[L ² /T]	m²/s
T _T		Transient evaluation (log-log or lin-log). Judged best evaluation of T _{Sf} , T _{Lf} , T _{Ss} , T _{Ls}	[L ² /T]	m²/s
T _{NLR}		Evaluation based on non-linear regression.	[L ² /T]	m²/s
T _{Tot}		Judged most representative transmissivity for particular test section and (in certain cases) evaluation time with respect to available data (made by SKB at a later stage).	[L²/T]	m²/s
K		Hydraulic conductivity	[L/T]	m/s
K _s		Hydraulic conductivity based on spherical flow model	[L/T]	m/s
K _m		Hydraulic conductivity matrix, intact rock	[L/T]	m/s
k		Intrinsic permeability	[L ²]	m ²
kb		Permeability-thickness product: kb=k·b	[L ³]	m ³
NO.		T criticability trilokticso product. No 10 b	[<u>-</u>]	1
SB		Storage capacity in a one-dimensional structure of width B and storage coefficient S. Transient evaluation of one-dimensional structure	[L]	m
SB*		Assumed storage capacity in a one-dimensional structure of width B and storage coefficient S. Transient evaluation of one-dimensional structure	[L]	m
S		Storage coefficient, (Storativity)	[-]	-
S*		Assumed storage coefficient	[-]	-
S _y		Theoretical specific yield of water (Specific yield; unconfined storage. Defined as total porosity (n) minus retention capacity (S _r)	[-]	-
S _{ya}		Specific yield of water (Apparent specific yield); unconfined storage, field measuring. Corresponds to volume of water achieved on draining saturated soil or rock in free draining of a volumetric unit. S_{ya} = S_y (often called S_y in literature)	[-]	-
S _r		Specific retention capacity, (specific retention of water, field capacity) (Specific retention); unconfined storage. Corresponds to water volume that the soil or rock has left after free draining of saturated soil or rock.	[-]	-
S _f		Fracture storage coefficient	[-]	-
S _m		Matrix storage coefficient	[-]	-
S _{NLR}		Storage coefficient, evaluation based on non-linear regression	[-]	
S _{Tot}		Judged most representative storage coefficient for particular test section and (in certain cases) evaluation time with respect to available data (made by SKB at a later stage).	[-]	-
2		Specific storage coefficient: confined storage	[1/L]	1/m
S _s		Specific storage coefficient; confined storage.		1/m
S _s *		Assumed specific storage coefficient; confined storage.	[1/L]	1/m
C _f		Hydraulic resistance: The hydraulic resistance is an aquitard with a flow vertical to a two-dimensional formation. The inverse of c is also called Leakage coefficient. c _i =b'/K' where b' is thickness of the aquitard and K' its hydraulic conductivity across the aquitard.	[T]	S
L _f		Leakage factor: $L_f = (K \cdot b \cdot c_f)^{0.5}$ where K represents characteristics of the aquifer.	[L]	m

Character	SICADA designation	Explanation	Dimension	Unit
٤*	Skin	Assumed skin factor	[-]	-
ξ* C		Wellbore storage coefficient	[(LT ²)·M ²]	m³/Pa
C _D		$C_D = C \cdot \rho_w g / (2\pi \cdot S \cdot r_w^2)$, Dimensionless wellbore storage coefficient	[-]	_
ω	Stor-ratio	ω = S_f /(S_f + S_m), storage ratio (Storativity ratio); the ratio of storage coefficient between that of the fracture and total storage.	[-]	-
λ	Interflow-coeff	λ = α · (K _m / K _f) · r_w^2 interporosity flow coefficient.	[-]	-
T_{GRF}		Transmissivity interpreted using the GRF method	[L ² /T]	m ² /s
S _{GRF}		Storage coefficient interpreted using the GRF method	[1/L]	1/m
D _{GRF}		Flow dimension interpreted using the GRF method	[-]	-
C _w		Water compressibility; corresponding to β in hydrogeological literature.	[(LT ²)/M]	1/Pa
C _r		Pore-volume compressibility, (rock compressibility); Corresponding to α/n in hydrogeological literature.	[(LT ²)/M]	1/Pa
Ct		$c_t = c_r + c_w$, total compressibility; compressibility per volumetric unit of rock obtained through multiplying by the total porosity, n. (Presence of gas or other fluids can be included in c_t if the degree of saturation (volume of respective fluid divided by n) of the pore system of respective fluid is also included)	[(LT ²)/M]	1/Pa
nct		Porosity-compressibility factor: nc _t = n·c _t	[(LT ²)/M]	1/Pa
nctb		Porosity-compressibility-thickness product: nc _t b= n·c _t b	[(L ² T ²)/M]	m/Pa
n		Total porosity	-	-
n _e		Kinematic porosity, (Effective porosity)	-	-
е		Transport aperture. e = n _e ·b	[L]	m
ρ	Density	Density	[M/L ³]	kg/(m³)
ρ_{w}	Density-w	Fluid density in measurement section during pumping/injection	[M/L ³]	kg/(m³)
ρ_{o}	Density-o	Fluid density in observation section	[M/L ³]	kg/(m³)
$ ho_{\sf sp}$	Density-sp	Fluid density in standpipes from measurement section	[M/L ³]	kg/(m³)
μ	my	Dynamic viscosity	[M/LT]	Pa s
μ_{w}	my	Dynamic viscosity (Fluid density in measurement section during pumping/injection)	[M/LT]	Pa s
FC _T		Fluid coefficient for intrinsic permeability, transference of k to K; K=FC _T ·k; FC _T = ρ_w ·g/ μ_w	[1/LT]	1/(ms)
FCs		Fluid coefficient for porosity-compressibility, transference of c_t to S_s ; S_s = FC_S · n · c_t ; FC_S = ρ_w · g	[M/T ² L ²]	Pa/m
Index on K	, T and S			1
S		S: semi-log		
L		L: log-log		
f		Pump phase or injection phase, designation following S or L (withdrawal)		
S		Recovery phase, designation following S or L (recovery)		
NLR		NLR: Non-linear regression. Performed on the entire test sequence, perturbation and recovery		
M		Moye		
GRF		Generalised Radial Flow according to Barker (1988)		
m		Matrix		
f		Fracture		
Т	1	Judged best evaluation based on transient evaluation.	1	1

Character	SICADA designation	Explanation	Dimension	Unit
Tot		Judged most representative parameter for particular test section and (in certain cases) evaluation time with respect to available data (made by SKB at a later stage).		
b		Bloch property in a numerical groundwater flow model		
е		Effective property (constant) within a domain in a		
C		numerical groundwater flow model.		
Index on p	and Q	Transcriber groundwater new meder.	1	
0		Initial condition, undisturbed condition in open holes		
i		Natural, "undisturbed" condition of formation parameter		
f		Pump phase or injection phase (withdrawal, flowing phase)		
S		Recovery, shut-in phase		
р		Pressure or flow in measuring section at end of perturbation period		
F		Pressure in measuring section at end of recovery period.		
m		Arithmetical mean value		
С		Estimated value. The index is placed last if index for "where" and "what" are used. Simulated value		
m		Measured value. The index is placed last if index for "where" and "what" are used. Measured value		
Some misc	ellaneous inde	xes on p and h		
W		Test section (final difference pressure during flow phase in test section can be expressed dp _{wp} ; First index shows "where" and second index shows "what")		
0		Observation section (final difference pressure during flow phase in observation section can be expressed dp _{op} ; First index shows "where" and second index shows "what")		
f		Fresh-water head. Water is normally pumped up from section to measuring hoses where pressure and level are observed. Density of the water is therefore approximately the same as that of the measuring section. Measured groundwater level is therefore normally represented by what is defined as point-water head. If pressure at the measuring level is recalculated to a level for a column of water with density of fresh water above the measuring point it is referred to as fresh-water head and h is indicated last by an f. Observation section (final level during flow phase in observation section can be expressed hopf; the first index shows "where" and the second index shows "what" and the last one "recalculation")		

Borehole: KLX18A

APPENDIX 5

SICADA data tables

SKB

Activity Information

SICADA/Data Import Template

(Simplified version v1.4

SKB & Ergodata AB 2004

File Identity	
Created By	Stephan Rohs
Created	2006-09-22

Compiled By	
Quality Check For Delivery	
Delivery Approval	

Activity Type	KLX 18A
	KLX 18A - Injection test

Project	AP PS 400-06-093

Additional Activity Data

C10 P200 P220 R25 Field crew evaluating Idcode Start Date Stop Date Secup (m) Seclow (m) **Section No** Company manager Field crew Report data KLX 18A 2006-08-15 10:44 2006-08-26 09:53 104.00 604.00 Golder Associates Reinder van Reinder van Stephan Reinder van der Wall der Wall, der Wall, Rohs Philipp Wolf, Philipp Wolf, Stephan Thomas Rohs Cronquist, Mesgena Gebrezghi

Table plu_s_hole_test_d
PLU Injection and pumping, General information

Column	Datatype	Unit	Column Description
site	CHAR		Investigation site name
activity_type	CHAR		Activity type code
start_date	DATE		Date (yymmdd hh:mm:ss)
stop_date	DATE		Date (yymmdd hh:mm:ss)
project	CHAR		project code
idcode	CHAR		Object or borehole identification code
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
section_no	INTEGER	number	Section number
test_type	CHAR		Test type code (1-7), see table description
formation_type	CHAR		1: Rock, 2: Soil (superficial deposits)
start_flow_period	DATE	yyyymmdd	Date & time of pumping/injection start (YYYY-MM-DD hh:mm:ss)
stop_flow_period	DATE	yyyymmdd	Date & time of pumping/injection stop (YYYY-MM-DD hh:mm:ss)
flow_rate_end_qp	FLOAT	m**3/s	Flow rate at the end of the flowing period
value_type_qp	CHAR		0:true value,-1 <lower meas.limit1:="">upper meas.limit</lower>
mean_flow_rate_qm	FLOAT	m**3/s	Arithmetic mean flow rate during flow period
q_measll	FLOAT	m**3/s	Estimated lower measurement limit of flow rate
q_measlu	FLOAT	m**3/s	Estimated upper measurement limit of flow rate
tot_volume_vp	FLOAT	m**3	Total volume of pumped or injected water
dur_flow_phase_tp	FLOAT	S	Duration of the flowing period of the test
dur_rec_phase_tf	FLOAT	S	Duration of the recovery period of the test
initial_head_hi	FLOAT	m	Hydraulic head in test section at start of the flow period
head_at_flow_end_h	FLOAT	m	Hydraulic head in test section at stop of the flow period.
final_head_hf	FLOAT	m	Hydraulic head in test section at stop of recovery period.
initial_press_pi	FLOAT	kPa	Groundwater pressure in test section at start of flow period
press_at_flow_end_	FLOAT	kPa	Groundwater pressure in test section at stop of flow period.
final_press_pf	FLOAT	kPa	Ground water pressure at the end of the recovery period.
fluid_temp_tew	FLOAT	оС	Measured section fluid temperature, see table description
fluid_elcond_ecw	FLOAT	mS/m	Measured section fluid el. conductivity, see table descr.
fluid_salinity_tdsw	FLOAT	mg/l	Total salinity of section fluid based on EC, see table descr.
fluid_salinity_tdswm	FLOAT	mg/l	Tot. section fluid salinity based on water sampling, see
reference	CHAR		SKB report No for reports describing data and evaluation
comments	VARCHAR		Short comment to data
error_flag	CHAR		If error_flag = "*" then an error occured and an error
in_use	CHAR		If in_use = "*" then the activity has been selected as
sign	CHAR		Signature for QA data accknowledge (QA - OK)
lp	FLOAT	m	Hydraulic point of application

					section		formation			flow rate end q value type q	mean flow r			
idcode	start_date	stop_date	secup	seclow	_	test_type	type	start_flow_period	stop_flow_period	p p		q measl I	q measl u t	ot_volume_vp
KLX 18A	060815 10:44:00		104.00	204.00		3		2006-08-15 11:38:39		1.42E-04 0	 	1.67E-08	8.33E-04	2.76E-0
KLX 18A	060815 14:05:00		204.00	304.00	·	3	<u> </u>	2006-08-15 15:08:02	·	 	···	1.67E-08	8.33E-04	2.83E-03
KLX 18A	060815 17:25:00	\$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	304.00	404.00	.,	3		2006-08-15 18:17:32	-h	\$\$\$\$		1.67E-08	8.33E-04	1.08E-0
KLX 18A	060815 21:08:00	}	404.00	504.00		3	1	2006-08-15 21:59:39	\$	\$\$		1.67E-08	8.33E-04	1.25E-0
KLX 18A	060816 07:34:00	·}	504.00	604.00	.j	3	1	2006-08-16 08:38:43	. \$	4.25E-05		1.67E-08	8.33E-04	3.00E-0
KLX 18A	060816 19:58:00	\$	104.00	124.00		3	1	2006-08-16 20:39:45	·{····································	\$		1.67E-08	8.33E-04	1.67E-04
KLX 18A	060816 22:02:00	\$	124.00	144.00	·{·······	3	1	2006-08-16 22:45:20	·}······	4.65E-05		1.67E-08	8.33E-04	5.78E-02
KLX 18A	060816 23:59:00	·{	144.00	164.00		3	1	2006-08-17 00:45:41	2006-08-17 01:05:51	6.63E-06		1.67E-08	8.33E-04	8.98E-03
KLX 18A	060817 06:38:00	6	164.00	184.00		3	1	2006-08-17 07:41:42	·}	1.83E-07		1.67E-08	8.33E-04	2.58E-04
KLX 18A	060817 09:06:00	\$	184.00	204.00		3	1	2006-08-17 10:06:56	· (· · · · · · · · · · · · · · · · · ·	8.27E-08		1.67E-08	8.33E-04	1.32E-04
KLX 18A	060817 11:27:00	ş	204.00	224.00		3	1	2006-08-17 12:14:13	·}······	7.00E-08		1.67E-08	8.33E-04	1.35E-0
KLX 18A	060817 14:08:00		224.00	244.00		4B	1	2006-08-17 14:59:06				1.67E-08	8.33E-04	1.89E-0
KLX 18A	060817 14:00:00	h	244.00	264.00		3	<u> </u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<i>}</i>	<u> </u>		1.67E-08	8.33E-04	1.68E-03
KLX 18A	060817 18:46:00	<i>}</i>	264.00	284.00		3	å	~ } ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<i>\$</i>	1.00E-07		1.67E-08	8.33E-04	1.60E-04
KLX 18A	060817 10:40:00	}	284.00	304.00		3		~ } ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<u> </u>	6.67E-08	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1.67E-08	8.33E-04	1.00E-04
KLX 18A	060817 21:22:00	¿	304.00	324.00	. , ,	3	<i>.</i>	2006-08-18 00:12:14	•}	{		1.67E-08	8.33E-04	8.60E-04
KLX 18A	060817 23:30:00	<i>\.</i>	324.00	344.00		3		2006-08-18 02:05:23	<i>}</i>	<u> </u>		1.67E-08	8.33E-04	2.38E-02
KLX 18A	······à······	060818 08:03:00	344.00	364.00		3	£	2006-08-18 07:21:23	<i>\$</i>	<u> </u>		1.67E-08	8.33E-04	2.00E-0
KLX 18A	060818 08:34:00	}	364.00	384.00		3		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<u> </u>	<u> </u>		1.67E-08	8.33E-04	1.14E-02
KLX 18A	060818 10:38:00	¿	384.00	404.00	ļ	3	<i>.</i>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·\	<u> </u>		1.67E-08	8.33E-04	1.14E-02
KLX 18A	060818 13:16:00	¢	404.00	424.00	.,	3	\$		2006-08-18 14:23:21	3.71E-05		1.67E-08	8.33E-04	4.60E-02
KLX 18A	060818 15:16:00	\$	424.00	444.00		3			2006-08-18 16:24:41	4.43E-05 C		1.67E-08	8.33E-04	5.58E-02
KLX 18A		ιδειτειτειτειτειτειτειτειτειτειτειτειτειτε	444.00	464.00		3		·×	2006-08-18 18:22:07	1.47E-06 0		1.67E-08	8.33E-04	1.86E-0
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	060818 17:20:00	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				3	<u> </u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<i>-</i>	<u> </u>	····	·····		·····
KLX 18A	060818 19:19:00	ş	464.00	484.00	-			2006-08-18 19:53:34	·6/	\$\$\$		1.67E-08	8.33E-04	1.64E-03
KLX 18A	060819 00:45:00	<b>}</b>	484.00	504.00		3	1	2006-08-19 01:47:42	\$	4.73E-07 0 4.70E-07 0		1.67E-08	8.33E-04	1.11E-03
KLX 18A	060819 06:24:00	£	504.00	524.00		3	1	2006-08-19 07:30:57	2006-08-19 07:51:07			1.67E-08	8.33E-04	7.93E-04
KLX 18A	060819 08:45:00	\$	524.00	544.00		3	1	2006-08-19 09:34:14	2006-08-19 09:54:24	5.53E-06	5.68E-06	1.67E-08	8.33E-04	6.82E-03
KLX 18A	060819 10:56:00	\$	544.00	564.00	·•·········	3	1	2006-08-19 11:54:33	·}······	1.19E-05 C		1.67E-08	8.33E-04	1.52E-02
KLX 18A	060819 13:29:00	\$	564.00	584.00		3	]	2006-08-19 14:14:36	·}······	1.43E-06 C	·	1.67E-08	8.33E-04	1.79E-03
KLX 18A	060819 15:30:00	<b>6</b>	584.00	604.00		3	1	2006-08-19 16:09:53	\$	2.33E-05 0		1.67E-08	8.33E-04	2.87E-02
KLX 18A	060820 08:53:00	\$	299.00	304.00		3	1	2006-08-19 09:46:02	· (· · · · · · · · · · · · · · · · · ·	2.50E-08 C		1.67E-08	8.33E-04	3.04E-05
KLX 18A	060820 10:58:00	\$	304.00	309.00	·•·········	4B	1	2006-08-20 11:40:50	·}······	#NV 0		1.67E-08	8.33E-04	3.31E-06
KLX 18A	060820 13:33:00	(§+	309.00	314.00		3	]	2006-08-20 14:22:00	2006-08-20 14:42:10	3.33E-08 C		1.67E-08	8.33E-04	4.52E-0
KLX 18A	060820 15:29:00		314.00	319.00		4B		<u></u>	#NV	#NV -1		1.67E-08	8.33E-04	#N\
KLX 18A	060820 16:52:00	<i>}</i>	319.00	324.00		3	<u> </u>	2006-08-20 17:30:48	<u> </u>	6.00E-07 C		1.67E-08	8.33E-04	7.40E-04
KLX 18A	060820 18:35:00	}	324.00	329.00		4B		<u> </u>	#NV	#NV -1		1.67E-08	8.33E-04	#N\
KLX 18A	060820 19:53:00	¿	329.00	334.00		3	<i>}</i>	2006-08-20 20:32:22	·\	\$		1.67E-08	8.33E-04	6.34E-03
KLX 18A	060820 21:58:00	<i>\.</i>	334.00	339.00		3	d	2006-08-20 23:03:52	<i>}</i>	<u> </u>		1.67E-08	8.33E-04	1.15E-02
KLX 18A	060821 00:08:00	<i>}</i>	339.00	344.00		3		2006-08-21 00:49:15				1.67E-08	8.33E-04	5.60E-03
KLX 18A	060821 01:55:00	}	344.00	349.00		3		2006-08-21 02:42:21		2.21E-05 C	······································	1.67E-08	8.33E-04	2.74E-02
KLX 18A	060821 06:23:00	₹	349.00	354.00	. <del>,</del> ,	3		2000 00 21 07.20.01	2006-08-21 07:46:41	4.32E-07		1.67E-08	8.33E-04	5.20E-04
KLX 18A	060821 08:44:00	\$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	354.00	359.00	.,	4B		2000 00 21 00.17.00	·/	\$	·	1.67E-08	8.33E-04	6.82E-05
KLX 18A	060821 10:37:00	ф	359.00	364.00	.;	3				\$\$\$\$		1.67E-08	8.33E-04	9.88E-03
KLX 18A	060821 13:02:00	ιδειτειτειτειτειτειτειτειτειτειτειτειτειτε	364.00	369.00		3						1.67E-08	8.33E-04	9.46E-03
KLX 18A	060821 15:02:00		369.00	374.00	·····	3	ļ	2000 00 21 10.00.21	<i>-</i>	3.50E-06 C		1.67E-08	8.33E-04	4.30E-03
KLX 18A	060821 16:42:00		374.00	379.00	.,	3			·6/	\$\$\$		1.67E-08	8.33E-04	3.00E-03
KLX 18A	060821 18:28:00	<b>₹</b>	379.00	384.00		3	1	2006-08-21 19:05:52		\$\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\		1.67E-08	8.33E-04	1.62E-03
KLX 18A	060821 20:20:00	060821 21:41:00	384.00	389.00		3	1	2006-08-21 20:59:23	2006-08-21 21:19:33	2.00E-06 C	2.12E-06	1.67E-08	8.33E-04	2.54E-03

			dur_flow_p	dur roc nh	initial hoad	ow and h	final hoad	initial_press_	press_at_flow_e	final proce p	fluid tomp t	fluid alcond a	fluid calinity t	fluid_salinity_t			T
idcode	secup	seclow	hase_tp	ase_tf	hi	ow_ena_n	hf	pi	nd_pp	f		cw	dsw	dswm		comments	lp
KLX 18A	104.00	204.00				iP		1978		1987			usw	uswiii	reference	Comments	154.00
KLX 18A	204.00	304.00				-		2950	3150		+		<u> </u>				254.00
KLX 18A	304.00	404.00				-		3915									354.00
KLX 18A	404.00	504.00						4881	5081				<del> </del>	<u> </u>	<del> </del>		454.00
KLX 18A	504.00	604.00						5864	6065								554.00
KLX 18A	104.00	124.00	·			-		1204	1404		·····	·····					114.00
KLX 18A	124.00	144.00						1400	1601								134.00
KLX 18A	144.00	164.00				<del> </del>		1592					<del> </del>	<del> </del>	+	<del> </del>	154.00
KLX 18A	164.00	184.00				<u> </u>		1788					<del> </del>		<del></del>	<b></b>	174.00
KLX 18A	184.00	204.00				+		1984	2186						-		194.00
KLX 18A	204.00	224.00				<u> </u>		2172					<del> </del>		-	<u> </u>	214.00
KLX 18A	224.00	244.00						2366			·				-		234.00
KLX 18A	244.00	264.00				<u> </u>		2559									254.00
KLX 18A	264.00	284.00						2766	2983								274.00
KLX 18A	284.00	304.00						2974	3197								294.00
KLX 18A	304.00	324.00				<u> </u>		3137	3337								314.00
KLX 18A	324.00	344.00						3331	3531								334.00
KLX 18A	344.00	364.00						3524	3724								354.00
KLX 18A	364.00	384.00	<del></del>		<del></del>			3720									374.00
KLX 18A	384.00	404.00				<del> </del>		3913	4114						+		394.00
KLX 18A	404.00	424.00				<u> </u>		4107	4307				<del> </del>	<b></b>	+	<u> </u>	414.00
KLX 18A	424.00	444.00				+		4301	4501						+		434.00
KLX 18A	444.00	464.00	-à			<u> </u>		4507	4706				<del> </del>		<u> </u>		454.00
KLX 18A	464.00	484.00						4700	4899						<del> </del>		474.00
KLX 18A	484.00	504.00						4915									494.00
KLX 18A	504.00	524.00						5092									514.00
KLX 18A	524.00	544.00						5279									534.00
KLX 18A	544.00	564.00						5479									554.00
KLX 18A	564.00	584.00	<del></del>		<del></del>			5674									574.00
KLX 18A	584.00	604.00				<u> </u>		5869	6069				<b> </b>		<b>+</b>		594.00
KLX 18A	299.00	304.00				<u> </u>	<u> </u>	2945							<u> </u>	<u> </u>	301.50
KLX 18A	304.00	309.00						3006							<b>T</b>		306.50
KLX 18A	309.00	314.00	-à			<u> </u>	<del> </del>	3042				- <del></del>	<b> </b>	<b> </b>	<del> </del>	<b>†</b>	311.50
KLX 18A	314.00	319.00				<u> </u>		#NV	#NV						<u> </u>		316.50
KLX 18A	319.00	324.00						3140	(								321.50
KLX 18A	324.00	329.00			1			#NV					1				326.50
KLX 18A	329.00	334.00						3236	3437								331.50
KLX 18A	334.00	339.00						3284	3484	<del></del>							336.50
KLX 18A	339.00	344.00						3332									341.50
KLX 18A	344.00	349.00				1		3381	3581							<b> </b>	346.50
KLX 18A	349.00	354.00						3428	3601	<u> </u>			<u> </u>	<u> </u>	<u> </u>		351.50
KLX 18A	354.00	359.00				<b> </b>		3489									356.50
KLX 18A	359.00	364.00	-à			1	<u> </u>	3527	3728				T	<b>T</b>	<b>†</b>	1	361.50
KLX 18A	364.00	369.00				<b>†</b>		3574	3775								366.50
KLX 18A	369.00	374.00						3630	3831					l			371.50
KLX 18A	374.00	379.00				1		3675									376.50
KLX 18A	379.00	384.00						3723									381.50
KLX 18A	384.00	389.00						3772									386.50
	, 0000	2 30.00						, 3.72	, 3311	, 0.00		1			1	,	,

					section		formation			flow_rate_end_c	value type d	mean_flow_r			
idcode	start_date	stop_date	secup	seclow	_	test_type	type	start_flow_period	stop_flow_period	p	p	ate_qm	q_measll	q_measlu	tot_volume_vp
KLX 18A	060821 22:03:00	060821 23:33:00	389.00	394.00	)	3	1	2006-08-21 22:51:21	2006-08-21 23:11:31	5.67E-08	3 (	7.50E-08	1.67E-08	8.33E-04	9.00E-05
KLX 18A	060821 23:59:00	060822 01:29:00	394.00	399.00	)	3	1	2006-08-22 00:47:00	2006-08-22 01:07:10	2.50E-07	7 (	2.71E-07	1.67E-08	8.33E-04	3.25E-04
KLX 18A	060822 06:19:00	060822 07:37:00	399.00	404.00	)	3	1	2006-08-22 06:55:34	2006-08-22 07:15:44	6.28E-06	6 (	0.66E-06	1.67E-08	8.33E-04	7.99E-03
KLX 18A	060822 08:10:00	060822 09:32:00	404.00	409.00	)	3	1	2006-08-22 08:50:48	2006-08-22 09:10:58	4.55E-07	7 (	5.15E-07	1.67E-08	8.33E-04	6.18E-04
KLX 18A	060822 10:09:00	}	409.00	·\$		3	1	2006-08-22 10:54:08	2006-08-22 11:14:18	<u> </u>	ç	7.12E-07	1.67E-08		·
KLX 18A	060822 14:07:00	\$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	414.00	<u> </u>	)	3	··\$	2006-08-22 14:43:44	2006-08-22 15:03:54	&		4.21E-06	1.67E-08	·······	··j········
KLX 18A	060822 15:59:00	060822 17:19:00	419.00	424.00	)	3	1	2006-08-22 16:37:08	2006-08-22 16:57:18	3.32E-0	5 (	3.38E-05	1.67E-08	8.33E-04	4.0600E-02
KLX 18A	060822 17:42:00		424.00			3	1	2006-08-22 18:26:29	2006-08-22 18:46:39			2.50E-05			
KLX 18A	060822 19:32:00		429.00			3	1	2006-08-22 20:12:06	2006-08-22 20:32:16			2.40E-05	1.67E-08	8.33E-04	
KLX 18A	060822 21:24:00	\$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	434.00	439.00	)	3	1	2006-08-22 22:04:28	2006-08-22 22:24:38	&		0.83E-07	1.67E-08	8.33E-04	8.2000E-04
KLX 18A	060822 23:10:00		439.00	. č		4B		2006-08-22 23:48:32	2006-08-22 23:48:42			) #NV	1.67E-08		
KLX 18A	060823 01:02:00	(	444.00			4B		2006-08-22 01:38:30	2006-08-22 01:38:40	<u> </u>	/ (	) #NV	1.67E-08		
KLX 18A	060823 06:23:00	060823 08:04:00	449.00	454.00	)	3	1	2006-08-23 07:22:28	2006-08-23 07:42:38	2.63E-08	3 (	3.36E-08	1.67E-08	8.33E-04	4.03E-05
KLX 18A	060823 08:37:00		454.00			3		2006-08-23 09:22:29	2006-08-23 09:42:39			1.61E-06	1.67E-08		·····
KLX 18A	060823 10:41:00	\$i	459.00	464.00	)	3	1	2006-08-23 11:32:26	2006-08-23 11:52:36	.&		2.10E-08	1.67E-08	8.33E-04	
KLX 18A	060823 13:31:00	060823 15:05:00	464.00	469.00	)	3		2006-08-23 14:23:41	2006-08-23 14:43:51	2.67E-06	6 (	3.10E-08	1.67E-08	8.33E-04	3.72E-05
KLX 18A	060823 16:36:00	060823 17:54:00	469.00	474.00	)	3	1	2006-08-23 17:12:33	2006-08-23 17:32:43	3.00E-07	7 (	3.08E-07	1.67E-08	8.33E-04	3.70E-04
KLX 18A	060823 18:19:00		474.00	479.00	)	3	1	2006-08-23 18:55:24	2006-08-23 19:15:34			1.45E-06	1.67E-08	8.33E-04	1.74E-03
KLX 18A	060823 20:08:00	(	477.00			3	1	2006-08-23 20:50:31	2006-08-23 21:10:41	1.83E-0		2.00E-07	1.67E-08	8.33E-04	·/······
KLX 18A	060823 21:55:00	&	482.00	4		3	1	2006-08-23 22:50:44	2006-08-23 23:10:54	<b></b>			1.67E-08		
KLX 18A	060823 23:55:00	¢	487.00	-{		3	1	2006-08-23 00:39:47	2006-08-23 00:59:57	5.47E-07			1.67E-08	·•	
KLX 18A	060824 06:23:00	<b>}</b> ;	489.00			3	· · · · · · · · · · · · · · · · · · ·	2006-08-24 07:17:42	2006-08-24 07:37:52			7.87E-07	1.67E-08		·
KLX 18A	060824 08:48:00	&	494.00			3		2006-08-24 09:46:19	2006-08-24 10:06:29	&			1.67E-08	<b>4</b>	
KLX 18A	060824 11:04:00		499.00	·§·········		4B	1	2024-08-06 11:49:17	2024-08-06 11:49:27	#N\			1.67E-08		
KLX 18A	060824 14:09:00	}·····	504.00	509.00	)	3	1	2006-08-24 15:39:02	2006-08-24 15:59:12	3.67E-07	7 (	) 4.37E-07	1.67E-08	8.33E-04	5.24E-04
KLX 18A	060824 16:44:00	ξ	509.00			4B		2006-08-24 17:21:35	2006-08-24 17:21:45			) #NV	1.67E-08		
KLX 18A	060824 18:02:00		514.00	·		3		#NV	#NV	#N\		·	1.67E-08		
KLX 18A	060824 19:21:00	\$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	519.00	524.00	)	3		2006-08-24 20:01:44	2006-08-24 20:21:54	1.17E-07	7 (	1.43E-07	1.67E-08	8.33E-04	··j········
KLX 18A	060824 21:09:00	·	524.00			4B	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	2006-08-24 21:46:01	2006-08-24 21:46:11	#N\		) #NV	1.67E-08		·
KLX 18A	060824 22:37:00		529.00			4B	·/·····	2006-08-24 23:15:26	2006-08-24 23:15:36	#N\	/ (	) #NV	1.67E-08	8.33E-04	
KLX 18A	060825 00:07:00	à	534.00			3		2006-08-25 00:50:37	2006-08-25 01:10:47	<i>}</i> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		1.80E-07	1.67E-08		
KLX 18A	060825 06:09:00	060825 07:44:00	539.00	544.00	)	3		2006-08-25 07:02:59	2006-08-25 07:23:09	7.20E-06	6 (	7.37E-06	1.67E-08	8.33E-04	··j········
KLX 18A	060825 08:29:00	\$	544.00	. č	)	3		2006-08-25 09:17:08	2006-08-25 09:37:18	·\$		1.17E-06	1.67E-08	8.33E-04	
KLX 18A	060825 10:32:00	(	549.00			3	<u> </u>	2006-08-25 11:45:30	2006-08-25 12:05:40		~}~~~~	2.53E-07	1.67E-08	8.33E-04	3.04E-04
KLX 18A	060825 13:24:00	060825 15:03:00	554.00	559.00	)	3	1	2006-08-25 14:21:12	2006-08-25 14:41:22	7.50E-08	3 (	8.33E-08	1.67E-08	8.33E-04	1.00E-04
KLX 18A	060825 15:36:00	{	559.00			3	1	2006-08-25 16:11:52	2006-08-25 16:32:02			1.32E-05	1.67E-08		·····
KLX 18A	060825 17:19:00		564.00	. č	)	3		2006-08-25 17:58:16	2006-08-25 18:18:26	·\$		1.78E-06	1.67E-08	8.33E-04	
KLX 18A	060825 19:04:00	(	569.00			4B		#NV	#NV				1.67E-08		
KLX 18A	060825 21:36:00		574.00			3		#NV	#NV		~ <del>^</del>		1.67E-08		·····
KLX 18A	060825 22:38:00	}	579.00	<i>.</i> ,		4B		2006-08-25 23:15:35	2006-08-25 23:15:45	\$	~ <del>^</del>	) #NV	1.67E-08		·····
KLX 18A	060826 00:20:00	{	584.00			3	·/·····	#NV	#NV	#N\			1.67E-08		·/····································
KLX 18A	060826 06:16:00	<u> </u>	589.00	<u> </u>		3	··}······	2006-08-26 07:04:03	2006-08-26 07:24:13	&			1.67E-08	·	·••••••••••
KLX 18A	060826 08:29:00		594.00	4		3		2006-08-26 09:11:39	2006-08-26 09:21:49	<		2.95E-06	1.67E-08		

			dur_flow_p	dur_rec_ph	initial_head_	ow_end_h	final_head_	initial_press_	press_at_flow_e	final_press_p	fluid_temp_t	fluid_elcond_e	fluid_salinity_t	fluid_salinity_t			Ί
idcode	secup	seclow			hi	р			nd_pp	f	ew	cw	dsw	dswm	reference	comments	lp
KLX 18A	389.00	394.00	1200	1200				3820	4052	3818	12.7						391.50
KLX 18A	394.00	399.00	1200	1200				3868	4068	3867	12.8						396.50
KLX 18A	399.00	404.00	1200	1200				3909	4109	3908	12.8						401.50
KLX 18A	404.00	409.00	1200					3958	4181	3958							406.50
KLX 18A	409.00	414.00	1200	1200				4008	4209	4008	13.0						411.50
KLX 18A	414.00	419.00	1200	1200				4057	4257	4057	13.1						416.50
KLX 18A	419.00	424.00	1200					4105		4106							421.50
KLX 18A	424.00	429.00	1200					4153		4153							426.50
KLX 18A	429.00	434.00	1200					4202		4202							431.50
KLX 18A	434.00	439.00	1200					4256	4455	4254							436.50
KLX 18A	439.00	444.00						4330		4445							441.50
KLX 18A	444.00	449.00	10					4371	4573	4416							446.50
KLX 18A	449.00	454.00	1200					4413		4439							451.50
KLX 18A	454.00	459.00						4451	4652	4454							456.50
KLX 18A	459.00	464.00						4541	4763	4545							461.50
KLX 18A	464.00	469.00						4558		4564							466.50
KLX 18A	469.00	474.00						4602		4601							471.50
KLX 18A	474.00	479.00						4652		4651	<u> </u>						476.50
KLX 18A	477.00	482.00						4679		4679							479.50
KLX 18A	482.00	487.00						4733		4679							484.50
KLX 18A	487.00	492.00						4773		4772							489.50
KLX 18A	489.00	494.00						4792		4794							491.50
KLX 18A	494.00	499.00	<u> </u>					4851	5052	4878							496.50
KLX 18A	499.00	504.00	10					4899		4898							501.50
KLX 18A	504.00	509.00	1200					4966		4998							506.50
KLX 18A	509.00	514.00	10					5027	5240	5030							511.50
KLX 18A	514.00	519.00						#NV		#NV							516.50
KLX 18A	519.00	524.00						5098		5125							521.50
KLX 18A	524.00	529.00						5149		5152							526.50
KLX 18A	529.00	534.00						5192		5194							531.50
KLX 18A	534.00	539.00				-		5233		5232						-	536.50
KLX 18A	539.00	544.00						5278		5278					ļ	ļ	541.50
KLX 18A	544.00	549.00	1200			ļ		5329		5330						ļ	546.50
KLX 18A	549.00	554.00						5388		5398							551.50
KLX 18A	554.00	559.00				ļ		5437	5633	5438						ļ	556.50
KLX 18A	559.00	564.00						5481	5683	5482							561.50
KLX 18A	564.00	569.00						5530		5528				-	-	-	566.50
KLX 18A	569.00	574.00						#NV		#NV					-	1	571.50
KLX 18A	574.00	579.00						#NV		#NV			<u> </u>	<u> </u>		ļ	576.50
KLX 18A	579.00	584.00				ļ		5737	5894	5688			ļ	<del> </del>	<del> </del>		581.50
KLX 18A	584.00	589.00						#NV		#NV						-	586.50
KLX 18A	589.00	594.00						5766	\$	5767				ļ	<del> </del>	ļ	591.50
KLX 18A	594.00	599.00	1200	1200				5818	6019	5818	15.9						596.50

Table	plu_s_hole_test_ed1
	PLU Single hole tests, pumping/injection. Basic evaluation

site CHAR activity_type CHAR start_date DATE stop_date DATE project CHAR idcode CHAR secup FLOAT section_no INTEGER test_type CHAR formation_type CHAR lp FLOAT seclen_class FLOAT	m m number m m	Investigation site name Activity type code Date (yymmdd hh:mm:ss) Date (yymmdd hh:mm:ss) project code Object or borehole identification code Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits) Hydraulic point of application for test section, see descr.
start_date         DATE           stop_date         DATE           project         CHAR           idcode         CHAR           secup         FLOAT           seclow         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           p         FLOAT	m number m m	Date (yymmdd hh:mm:ss) Date (yymmdd hh:mm:ss) project code Object or borehole identification code Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
start_date         DATE           stop_date         DATE           project         CHAR           idcode         CHAR           secup         FLOAT           seclow         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           lp         FLOAT	m number m m	Date (yymmdd hh:mm:ss) Date (yymmdd hh:mm:ss) project code Object or borehole identification code Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
stop_date         DATE           project         CHAR           idcode         CHAR           secup         FLOAT           seclow         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           lp         FLOAT	m number m m	Date (yymmdd hh:mm:ss) project code Object or borehole identification code Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
project         CHAR           idcode         CHAR           secup         FLOAT           seclow         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           p         FLOAT	m number m m	project code Object or borehole identification code Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
idcode         CHAR           secup         FLOAT           seclow         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           p         FLOAT	m number m m	Object or borehole identification code Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
secup         FLOAT           seclow         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           lp         FLOAT	m number m m	Upper section limit (m) Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
section         FLOAT           section_no         INTEGER           test_type         CHAR           formation_type         CHAR           p         FLOAT	m number m m	Lower section limit (m) Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
section_no INTEGER test_type CHAR formation_type CHAR lp FLOAT	number m m	Section number Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
test_type CHAR formation_type CHAR lp FLOAT	m m	Test type code (1-7), see table description! Formation type code. 1: Rock, 2: Soil (superficial deposits)
formation_type CHAR lp FLOAT	m	Formation type code. 1: Rock, 2: Soil (superficial deposits)
lp FLOAT	m	
	m	nydraulic point of application for test section, see descr.
secien_class FLOAT		
Hanne and the second		Planned ordinary test interval during test campaign.
spec_capacity_q_s FLOAT	111 2/3	Specific capacity (Q/s) of test section, see table descript.
value_type_q_s CHAR	****	0:true value,-1:Q/s <lower meas.limit,1:q="" s="">upper meas.limit</lower>
transmissivity_tq FLOAT	m**2/s	Tranmissivity based on Q/s, see table description
value_type_tq CHAR		0:true value,-1:TQ <lower meas.limit,1:tq="">upper meas.limit.</lower>
bc_tq CHAR		Best choice code. 1 means TQ is best choice of T, else 0
transmissivity_moye FLOAT	m**2/s	Transmissivity,TM, based on Moye (1967)
bc_tm CHAR		Best choice code. 1 means Tmoye is best choice of T, else 0
value_type_tm CHAR		0:true value,-1:TM <lower meas.limit,1:tm="">upper meas.limit.</lower>
hydr_cond_moye FLOAT	m/s	K_M: Hydraulic conductivity based on Moye (1967)
formation_width_b FLOAT	m	b:Aquifer thickness repr. for T(generally b=Lw) ,see descr.
width_of_channel_b FLOAT	m	B:Inferred width of formation for evaluated TB
tb FLOAT	m**3/s	TB:Flow capacity in 1D formation of T & width B, see descr.
I_measl_tb FLOAT	m**3/s	Estimated lower meas. limit for evaluated TB,see description
u_measl_tb FLOAT	m**3/s	Estimated upper meas. limit of evaluated TB,see description
sb FLOAT	m	SB:S=storativity,B=width of formation,1D model,see descript.
assumed_sb FLOAT	m	SB*: Assumed SB,S=storativity,B=width of formation,see
leakage_factor_lf FLOAT	m	Lf:1D model for evaluation of Leakage factor
transmissivity_tt FLOAT	m**2/s	TT:Transmissivity of formation, 2D radial flow model,see
value_type_tt CHAR	=	0:true value,-1:TT <lower meas.limit,1:tt="">upper meas.limit,</lower>
bc_tt CHAR		Best choice code. 1 means TT is best choice of T, else 0
I_measl_q_s FLOAT	m**2/s	Estimated lower meas. limit for evaluated TT,see table descr
	m**2/s	Estimated upper meas. limit for evaluated TT,see description
	111 2/3	
-		S:Storativity of formation based on 2D rad flow,see descr.
assumed_s FLOAT		Assumed Storativity, 2D model evaluation, see table descr.
bc_s FLOAT		Best choice of S (Storativity) ,see descr.
ri FLOAT	m	Radius of influence
ri_index CHAR		ri index=index of radius of influence :-1,0 or 1, see descr.
leakage_coeff FLOAT	1/s	K'/b':2D rad flow model evaluation of leakage coeff,see desc
hydr_cond_ksf FLOAT	m/s	Ksf:3D model evaluation of hydraulic conductivity,see desc.
value_type_ksf CHAR		0:true value,-1:Ksf <lower meas.limit,1:ksf="">upper meas.limit,</lower>
I_measl_ksf FLOAT	m/s	Estimated lower meas.limit for evaluated Ksf,see table desc.
u_measl_ksf FLOAT	m/s	Estimated upper meas.limit for evaluated Ksf,see table descr
spec_storage_ssf FLOAT	1/m	Ssf:Specific storage,3D model evaluation,see table descr.
assumed_ssf FLOAT	1/m	Ssf*:Assumed Spec.storage,3D model evaluation,see table des.
c FLOAT	m**3/pa	C: Wellbore storage coefficient; flow or recovery period
cd FLOAT		CD: Dimensionless wellbore storage coefficient
skin FLOAT		Skin factor; best estimate of flow/recovery period, see descr.
dt1 FLOAT	S	Estimated start time of evaluation, see table description
dt2 FLOAT	s	Estimated stop time of evaluation. see table description
t1 FLOAT	s	Start time for evaluated parameter from start flow period
t2 FLOAT	s	Stop time for evaluated parameter from start of flow period
dte1 FLOAT	s	Start time for evaluated parameter from start of recovery
dte2 FLOAT	S	Stop time for evaluated parameter from start of recovery
p_horner FLOAT	kPa	p*:Horner extrapolated pressure, see table description
transmissivity_t_nlr FLOAT	m**2/s	T_NLR Transmissivity based on None Linear Regression
storativity_s_nlr FLOAT		S NLR=storativity based on None Linear Regression,see
value_type_t_nlr CHAR		0:true value,-1:T_NLR <lower meas.limit,1:="">upper meas.limit</lower>
bc_t_nlr CHAR		Best choice code. 1 means T_NLR is best choice of T, else 0
c_nlr FLOAT	m**3/pa	Wellbore storage coefficient, based on NLR, see descr.
cd_nlr FLOAT	Ο/ρα	Dimensionless wellbore storage constant, see table descrip.
skin_nlr FLOAT		Skin factor based on Non Linear Regression,see desc.
	m**2/s	
1	III Z/5	T_GRF:Transmissivity based on Genelized Radial Flow,see
value_type_t_grf CHAR		0:true value,-1:T_GRF <lower meas.limit,1:="">upper meas.limit</lower>
bc_t_grf CHAR		Best choice code. 1 means T_GRF is best choice of T, else 0
storativity_s_grf FLOAT		S_GRF:Storativity based on Generalized Radial Flow, see des.
flow_dim_grf FLOAT		Inferred flow dimesion based on Generalized Rad. Flow model
comment VARCHAR	no_unit	Short comment to the evaluated parameters
error_flag CHAR		If error_flag = "*" then an error occured and an error
in_use CHAR		If in_use = "*" then the activity has been selected as
sign CHAR		Signature for QA data accknowledge (QA - OK)

							£4	1						.1	4
idcode	start_date	stop_date	secup	seclow	section no	tost type	formation_t	lp	seclen class	spec_capacity_q	value_type_q s	transmissivity_t		bc tq	transmissivity_ move
						test_type	71	•		<b>-</b>	<b>—</b>	q	q	bc_ւq	
KLX 18A	060815 10:44:00	060815 12:10:00	104.00			3		154.00							9.09E-06
KLX 18A	060815 14:05:00	060815 16:10:00	204.00			3		254.00			0				8.61E-08
KLX 18A	060815 17:25:00	060815 19:19:00	304.00			3		354.00			0				3.62E-06
KLX 18A	060815 21:08:00	060815 23:01:00	404.00			3		454.00			0				4.12E-06
KLX 18A	060816 07:34:00	060816 09:40:00	504.00			3		554.00							2.70E-06
KLX 18A	060816 19:58:00	060816 21:22:00	104.00			3		114.00			0				8.11E-06
KLX 18A	060816 22:02:00	060816 23:27:00	124.00			3		134.00			0				2.37E-06
KLX 18A	060816 23:59:00	060817 01:27:00	144.00			3		154.00			0				3.40E-07
KLX 18A	060817 06:38:00	060817 08:23:00	164.00			3		174.00	20		0				9.13E-09
KLX 18A	060817 09:06:00	060817 10:48:00	184.00			3		194.00			0				4.20E-09
KLX 18A	060817 11:27:00	060817 13:32:00	204.00			3		214.00			0				3.34E-09
KLX 18A	060817 14:08:00	060817 16:08:00	224.00			4B		234.00			-1				#NV
KLX 18A	060817 16:43:00	060817 18:16:00	244.00	264.00		3	1	254.00	20	5.75E-08	0				6.02E-08
KLX 18A	060817 18:46:00	060817 20:28:00	264.00	284.00		3		274.00			0				4.73E-09
KLX 18A	060817 21:22:00	060817 23:01:00	284.00	304.00		3	1	294.00	20		0				3.07E-09
KLX 18A	060817 23:30:00	060818 00:54:00	304.00	324.00		3		314.00			0				8.54E-06
KLX 18A	060818 01:24:00	060818 02:47:00	324.00	344.00		3	1	334.00	20	9.32E-07	0				9.75E-07
KLX 18A	060818 06:29:00	060818 08:03:00	344.00	364.00		3	1	354.00	20	1.44E-06	0				1.51E-06
KLX 18A	060818 08:34:00	060818 10:01:00	364.00	384.00		3	1	374.00	20	4.50E-07	0				4.71E-07
KLX 18A	060818 10:38:00	060818 12:07:00	384.00	404.00		3	1	394.00	20	4.05E-07	0				4.24E-07
KLX 18A	060818 13:16:00	060818 14:45:00	404.00	424.00		3	1	414.00	20	1.82E-06	0				1.90E-06
KLX 18A	060818 15:16:00	060818 16:46:00	424.00	444.00		3	1	434.00	20	2.17E-06	0				2.27E-06
KLX 18A	060818 17:20:00	060818 18:44:00	444.00	464.00		3	1	454.00	20	7.23E-08	0				7.56E-08
KLX 18A	060818 19:19:00	060818 20:35:00	464.00			3		474.00			0				6.53E-08
KLX 18A	060819 00:45:00	060819 04:09:00	484.00			3		494.00			0				2.41E-08
KLX 18A	060819 06:24:00	060819 08:12:00	504.00			3		514.00			0				2.41E-08
KLX 18A	060819 08:45:00	060819 10:16:00	524.00			3		534.00			0				2.83E-07
KLX 18A	060819 10:56:00	060819 12:36:00	544.00			3	1	554.00	20		0				6.11E-07
KLX 18A	060819 13:29:00	060819 14:56:00	564.00			3		574.00			0				7.35E-08
KLX 18A	060819 15:30:00	060819 16:51:00	584.00			3	-	594.00			0				1.20E-06
KLX 18A	060820 08:53:00	060820 10:28:00	299.00			3		301.50			0				9.00E-10
KLX 18A	060820 10:58:00	060820 12:56:00	304.00			4B	-	306.50			-1				#NV
KLX 18A	060820 13:33:00	060820 15:04:00	309.00			3		311.50			0				1.17E-09
KLX 18A	060820 15:29:00	060820 16:27:00	314.00			4B		316.50			-1				#NV
KLX 18A	060820 16:52:00	060820 18:12:00	319.00			3		321.50			0				2.44E-08
KLX 18A	060820 18:35:00	060820 19:31:00	324.00			4B		326.50			-1				#NV
KLX 18A	060820 19:53:00	060820 21:14:00	329.00			3		331.50	5		0				2.01E-07
KLX 18A	060820 21:58:00	060820 23:46:00	334.00			3		336.50			0				3.78E-07
KLX 18A	060821 00:08:00	060821 01:31:00	339.00			3		341.50			0				1.75E-07
KLX 18A	060821 00:08:00	060821 01:31:00	344.00			3		346.50			0				8.93E-07
KLX 18A	060821 01:55:00	060821 03.24.00	349.00			3		351.50			0				2.02E-08
						_									
KLX 18A	060821 08:44:00	060821 10:08:00	354.00			4B		356.50			-1		+		#NV
KLX 18A	060821 10:37:00	060821 12:02:00	359.00			3		361.50			0			1	3.22E-07
KLX 18A	060821 13:02:00	060821 14:22:00	364.00			3		366.50			0				3.12E-07
KLX 18A	060821 15:02:00	060821 16:20:00	369.00			3		371.50			0				1.41E-07
KLX 18A	060821 16:42:00	060821 18:05:00	374.00			3		376.50			0			1	9.45E-08
KLX 18A	060821 18:28:00	060821 19:48:00	379.00			3		381.50			0				5.22E-08
KLX 18A	060821 20:20:00	060821 21:41:00	384.00	389.00		3	1	386.50	5	9.86E-08	0				8.14E-08

KLX 18A

				value_type_t hydr_cond_	formation	width of channel				assumed	leakage_f		value_type_			
idcode	secup	seclow	bc tm	m move			tb	I measl tb	u measl tb			transmissivity_tt		bc tt	I measl q s	u_measl_q_s
KLX 18A	104.00	204.00			_						_	7.80E-06			5.00E-06	
KLX 18A	204.00	304.00										1.50E-08				
KLX 18A	304.00	404.00										5.09E-06				
KLX 18A	404.00	504.00										6.10E-06				
KLX 18A	504.00	604.00										2.69E-06				
KLX 18A	104.00	124.00										8.12E-06				
KLX 18A	124.00	144.00										5.05E-06				
KLX 18A	144.00	164.00										2.50E-07				
KLX 18A	164.00	184.00										8.16E-09		1		
KLX 18A	184.00	204.00										3.43E-09		1		
KLX 18A	204.00	224.00										6.35E-09				
KLX 18A	224.00	244.00										9.29E-11	-1			
KLX 18A	244.00	264.00										1.76E-08				
KLX 18A	264.00	284.00										6.89E-09		1		
KLX 18A	284.00	304.00										3.65E-09		1		
KLX 18A	304.00	324.00	C	0 4.27E-07								2.12E-07	0	1	8.00E-08	5.00E-07
KLX 18A	324.00	344.00										5.67E-06		1	2.00E-06	
KLX 18A	344.00	364.00										9.34E-06		1	3.00E-06	
KLX 18A	364.00	384.00	C	0 2.36E-08								2.06E-06	0	1	9.00E-07	5.00E-06
KLX 18A	384.00	404.00	C	0 2.12E-08								1.87E-06	0	1	8.00E-07	
KLX 18A	404.00	424.00	C	0 9.50E-08								7.31E-06	0	1	2.00E-06	1.00E-05
KLX 18A	424.00	444.00	C	0 1.14E-07								9.86E-06	0	1	4.00E-06	
KLX 18A	444.00	464.00	C	0 3.78E-09								6.48E-08	0	1	3.00E-08	9.00E-08
KLX 18A	464.00	484.00		0 3.27E-09								1.12E-07	0	1	7.00E-08	
KLX 18A	484.00	504.00	C									1.61E-09	0	1	9.00E-10	
KLX 18A	504.00	524.00	C	0 1.21E-09								1.69E-08	0	1	8.00E-09	4.00E-08
KLX 18A	524.00	544.00	C	0 1.42E-08								6.75E-07	0	1	1.00E-07	
KLX 18A	544.00	564.00										5.46E-07	0	1	1.00E-07	
KLX 18A	564.00	584.00										4.40E-07	0	1		
KLX 18A	584.00	604.00										1.55E-06				
KLX 18A	299.00	304.00										6.46E-09	0	1	1.00E-09	
KLX 18A	304.00	309.00	C	-1 #NV								1.34E-11	-1	1	2.00E-12	3.00E-11
KLX 18A	309.00	314.00										9.72E-09	0	1	6.00E-09	
KLX 18A	314.00	319.00										1.00E-11	-1	1		
KLX 18A	319.00	324.00										7.25E-08	0	1		
KLX 18A	324.00	329.00										1.00E-11	-1	1	1.00E-13	
KLX 18A	329.00	334.00										4.08E-07	0	1	1.00E-07	
KLX 18A	334.00	339.00	C	0 7.56E-08								7.00E-06	0	1	1.00E-06	1.00E-05
KLX 18A	339.00	344.00										3.15E-07	0	1		
KLX 18A	344.00	349.00										2.27E-06	0	1		
KLX 18A	349.00	354.00										1.02E-07	0			
KLX 18A	354.00	359.00										7.88E-10				
KLX 18A	359.00	364.00										1.16E-06				
KLX 18A	364.00	369.00										1.34E-06				
KLX 18A	369.00	374.00										4.21E-07			0.000 - 0.	
KLX 18A	374.00	379.00										1.55E-07	0			
KLX 18A	379.00	384.00										2.88E-07	0	_	0.002 00	
KLX 18A	384.00	389.00	C	0 1.63E-08								4.51E-07	0	1	1.00E-07	9.00E-07

idaada		a a a la vi	ata vativity a		ha a	<b></b> :	سا اسمامی	leakage_c hydr_cond_ oeff sf	k value_type_ks				assumed_ss			lei sa	444	440
idcode	secup	seclow	storativity_s				ri_index		<u> </u> I	sf	ksf	spec_storage_ssf	I					dt2
KLX 18A	104.00 204.00	204.00 304.00	1.00E-06 1.00E-06			50.65 25.94	-1							4.83E-09 1.49E-10	5.3E-01 1.6E-02	-1.28 -3.79	54.0 360.0	
KLX 18A	304.00	404.00	1.00E-06			143.96									1.0E-02 1.1E-01	3.13	36.0	
KLX 18A							0							9.57E-10	2.3E-01		108.0	
KLX 18A KLX 18A	404.00 504.00	504.00 604.00				150.87 30.07	-1							2.06E-09 1.57E-09	1.7E-01	3.66	19.8	
KLX 18A	104.00	124.00				42.80	<u>-                                    </u>							5.27E-09	5.8E-01	0.89 -1.27	21.6	
KLX 18A	124.00	144.00				117.31								1.56E-09	1.7E-01	5.76	19.8	
KLX 18A	144.00	164.00				28.72	-1							3.93E-11	4.3E-03	-1.81	23.4	324.0
KLX 18A	164.00	184.00				23.52	- 1							5.55E-11	6.1E-03	0.25	108.0	
KLX 18A	184.00	204.00				18.94	0							8.16E-11	9.0E-03	0.23	324.0	
KLX 18A	204.00	224.00				35.27	0							6.81E-11	7.5E-03	4.76	324.0	
KLX 18A	224.00	244.00	1.00E-06			13.53	0							7.91E-11	8.7E-03	-2.40	32.4	1980.0
KLX 18A	244.00	264.00	1.00E-06			9.87	0							6.58E-12	7.3E-04	-3.20	16.8	
KLX 18A	264.00	284.00	1.00E-06			5.52	1							6.04E-11	6.7E-03	-0.92	14.4	72.0
KLX 18A	284.00	304.00				19.23	<u></u> -1							6.39E-11	7.0E-03	2.49	90.0	
KLX 18A	304.00	324.00				53.10	0							5.24E-11	5.8E-03	32.50	72.0	
KLX 18A	324.00	344.00				15.54	0							1.86E-10	2.1E-02	1.95	36.0	
KLX 18A	344.00	364.00				136.80	Ö							1.73E-10	1.9E-02	7.68	9.0	
KLX 18A	364.00	384.00				93.75	0							2.23E-10	2.5E-02	20.28	36.0	
KLX 18A	384.00	404.00				91.51	0							1.17E-10	1.3E-02	20.61	21.6	
KLX 18A	404.00	424.00	1.00E-06			18.88	0							5.35E-10	5.9E-02	1.24	46.8	
KLX 18A	424.00	444.00				138.67	C							4.43E-10	4.9E-02	19.90	18.0	
KLX 18A	444.00	464.00	1.00E-06			39.48	0							1.33E-10	1.5E-02	-0.20	90.0	
KLX 18A	464.00	484.00	1.00E-06			45.27	C							6.61E-11	7.3E-03	4.80	61.2	
KLX 18A	484.00	504.00	1.00E-06			38.40	1							1.58E-09	1.7E-01	-4.32	1980.0	6480.0
KLX 18A	504.00	524.00				28.21	-1							4.75E-10	5.2E-02	-1.97	198.0	
KLX 18A	524.00	544.00				70.93	C							6.40E-11	7.1E-03	8.40	34.2	
KLX 18A	544.00	564.00	1.00E-06	1.00E-06	6	27.32	-1							1.00E-09	1.1E-01	-2.18	16.2	198.0
KLX 18A	564.00	584.00				63.84	C							8.78E-11	9.7E-03	32.30	61.2	
KLX 18A	584.00	604.00	1.00E-06	1.00E-06	6	19.72	0							3.44E-10	3.8E-02	3.78	10.8	61.2
KLX 18A	299.00	304.00	1.00E-06			22.19	-1							1.02E-11	1.1E-03	33.30	360.0	
KLX 18A	304.00	309.00	1.00E-06			3.38	1							1.45E-11	1.6E-03	-0.95	43.2	
KLX 18A	309.00	314.00	1.00E-06	1.00E-06	6	24.57	-1							1.27E-11	1.4E-03	33.23	180.0	540.0
KLX 18A	314.00	319.00	1.00E-06			#NV	#NV	,						#NV	#NV	#NV	#NV	#NV
KLX 18A	319.00	324.00	1.00E-06	1.00E-06	6	40.61	0							2.07E-11	2.3E-03	9.70	54.0	
KLX 18A	324.00	329.00	1.00E-06	1.00E-06	6	#NV	#NV	'						#NV	#NV	#NV	#NV	#NV
KLX 18A	329.00	334.00	1.00E-06	1.00E-06	6	62.54	0							3.19E-10	3.5E-02	3.63	23.4	
KLX 18A	334.00	339.00	1.00E-06	1.00E-06	6	6.59	C							3.78E-11	4.2E-03	15.40	7.2	540.0
KLX 18A	339.00	344.00	1.00E-06	1.00E-06	6	32.31	0							5.67E-11	6.2E-03	11.30	252.0	1080.0
KLX 18A	344.00	349.00	1.00E-06	1.00E-06	6	96.05	C							1.28E-10	1.4E-02	5.66	21.6	1080.0
KLX 18A	349.00	354.00	1.00E-06	1.00E-06	6	44.22	C							1.51E-11	1.7E-03	1.91	36.0	540.0
KLX 18A	354.00	359.00	1.00E-06			4.95	-1							#NV	#NV	-0.12	108.0	
KLX 18A	359.00	364.00	1.00E-06			81.21	0							2.86E-11	3.2E-03	32.82	43.2	900.0
KLX 18A	364.00	369.00	1.00E-06	1.00E-06	6	84.19	0							5.75E-11	6.3E-03	8.23	12.6	540.0
KLX 18A	369.00	374.00	1.00E-06		ò	63.03	C							3.68E-11	4.1E-03	9.05	14.4	540.0
KLX 18A	374.00	379.00	1.00E-06	1.00E-06	6	34.40	1							1.57E-11	1.7E-03	8.54	432.0	1080.0
KLX 18A	379.00	384.00	1.00E-06	1.00E-06	6	57.33	0							2.19E-11	2.4E-03	21.40	25.2	
KLX 18A	384.00	389.00	1.00E-06	1.00E-06	6	64.13	0							2.68E-11	3.0E-03	21.30	25.2	540.0

									value_type_t_					transmissivity_t_gr			storativity_s_	flow_dim_g	
idcode	secup	seclow	t1	t2	dte1 dte2	p_horner	nlr	_nlr	nlr	bc_t_nlr	c_nlr	cd_nlr	skin_nlr	f	grf	bc_t_grf	grf	rf	comment
KLX 18A	104.00	204.00	)			1983.6													
KLX 18A	204.00	304.00	)			2938.0													
KLX 18A	304.00	404.00	)			3915.6													
KLX 18A	404.00	504.00	)			4880.5													
KLX 18A	504.00	604.00				5864.1													
KLX 18A	104.00	124.00	)			1203.3													
KLX 18A	124.00	144.00				1402.9													
KLX 18A	144.00	164.00				1590.5													
KLX 18A	164.00	184.00				1792.0													
KLX 18A	184.00	204.00				1963.3													
KLX 18A	204.00	224.00				2168.7													
KLX 18A	224.00	244.00				#NV													
KLX 18A	244.00	264.00				2543.4													
KLX 18A	264.00	284.00				2750.4													<u> </u>
KLX 18A	284.00	304.00				2938.4													
KLX 18A	304.00	324.00				3135.0													
KLX 18A	324.00	344.00				3330.2													
KLX 18A	344.00	364.00				3524.4													
KLX 18A	364.00	384.00				3720.6													+
KLX 18A	384.00	404.00				3913.3													+
KLX 18A	404.00	424.00				4107.1													
KLX 18A	424.00	444.00				4300.9													+
KLX 18A	444.00	464.00				4494.7													+
KLX 18A	464.00	484.00				4695.3													+
KLX 18A	484.00	504.00	_			4895.4													
KLX 18A	504.00	524.00				5096.4													
KLX 18A	524.00	544.00				5279.7													+
KLX 18A	544.00	564.00				5477.6													+
KLX 18A	564.00	584.00				5673.7													+
KLX 18A	584.00	604.00				5869.7													
KLX 18A	299.00	304.00				2942.8													+
KLX 18A	304.00	309.00				#NV													+
KLX 18A	309.00	314.00				3037.7													+
KLX 18A	314.00	319.00				#NV								1					<del>                                     </del>
KLX 18A	319.00	324.00				3138.9								1					<del>                                     </del>
KLX 18A	324.00	329.00				#NV													<del>                                     </del>
KLX 18A	329.00	334.00		1 +		3234.0												+	<del> </del>
KLX 18A	334.00	339.00				3283.3													<del>                                     </del>
KLX 18A	339.00	344.00		1 +		3332.1												+	<del> </del>
KLX 18A	344.00	349.00				3380.4													<del>                                     </del>
KLX 18A	349.00	354.00				3428.1													
KLX 18A	354.00	359.00		1 +		#NV													<del>                                     </del>
KLX 18A	359.00	364.00		+		3527.2												<u> </u>	<del>                                     </del>
KLX 18A	364.00	369.00				3573.6													<del> </del>
KLX 18A	369.00	374.00		+		3630.7													+
KLX 18A	374.00	374.00				3675.2													<del> </del>
KLX 18A	379.00	384.00				3721.3													<del> </del>
KLX 18A	384.00	389.00				3769.1													<del> </del>
NEX 10A	304.00	309.00	<u> </u>			3709.1			<u> </u>	L	1		1	1		1	1	1	

							formation_ty			,	value_type_q_		transmissivity_moy
idcode	start_date	stop_date	secup	seclow	section_no	test_type	pe	lp	seclen_class	spec_capacity_q_s		value_type_tq bc_tq	e
KLX 18A	060821 22:03:00	060821 23:33:00	389.00	394.00			3 1	391.50	5	2.40E-09	0		1.98E-09
KLX 18A	060821 23:59:00	060822 01:29:00	394.00	399.00	)	;	3 1	396.50	5	1.23E-08	0		1.01E-08
KLX 18A	060822 06:19:00	060822 07:37:00	399.00	404.00	)	;	3 1	401.50	5	3.08E-07	0		2.54E-07
KLX 18A	060822 08:10:00	060822 09:32:00	404.00	409.00	)	;	3 1	406.50	5	2.00E-08	0		1.65E-08
KLX 18A	060822 10:09:00	060822 11:36:00	409.00	414.00	)	;	3 1	411.50	5	3.17E-08	0		2.62E-08
KLX 18A	060822 14:07:00	060822 15:25:00	414.00	419.00	)	;	3 1	416.50	5	2.02E-07	0		1.67E-07
KLX 18A	060822 15:59:00	060822 17:19:00	419.00	424.00	)	;	3 1	421.50	5	1.62E-06	0		1.34E-06
KLX 18A	060822 17:42:00	060822 19:08:00	424.00	429.00		;	3 1	426.50	5	1.16E-06	0		9.58E-07
KLX 18A	060822 19:32:00	060822 20:54:00	429.00	434.00	)	;	3 1	431.50	5	1.15E-06	0		9.51E-07
KLX 18A	060822 21:24:00	060822 22:46:00	434.00	439.00	)	;	3 1	436.50	5	3.20E-08	0		2.64E-08
KLX 18A	060822 23:10:00	060823 00:35:00	439.00	444.00	)	46	3 1	441.50	5	#NV	-1		#NV
KLX 18A	060823 01:02:00	060823 03:40:00	444.00	449.00	)	48	3 1	446.50	5	#NV	-1		#NV
KLX 18A	060823 06:23:00	060823 08:04:00	449.00	454.00	)	;	3 1	451.50	5	1.19E-09	0		9.83E-10
KLX 18A	060823 08:37:00	060823 10:04:00	454.00	459.00	)	;	3 1	456.50	5	7.35E-08	0		6.06E-08
KLX 18A	060823 10:41:00	060823 12:04:00	459.00	464.00	)	;	3 1	461.50	5	7.36E-10	0		6.08E-10
KLX 18A	060823 13:31:00	060823 15:05:00	464.00	469.00	)	;	3 1	466.50	5	1.03E-09	0		8.50E-10
KLX 18A	060823 16:36:00	060823 17:54:00	469.00	474.00	)	;	3 1	471.50	5	1.47E-08	0		1.21E-08
KLX 18A	060823 18:19:00	060823 19:37:00	474.00	479.00	)	;	3 1	476.50	5	6.57E-08	0		5.43E-08
KLX 18A	060823 20:08:00	060823 21:32:00	477.00	482.00	)	;	3 1	479.50	5	8.95E-09	0		7.39E-09
KLX 18A	060823 21:55:00	060823 23:32:00	482.00	487.00	)	;	3 1	484.50	5	4.62E-08	0		3.82E-08
KLX 18A	060823 23:55:00	060824 01:21:00	487.00	492.00	)	;	3 1	489.50	5	2.67E-08	0		2.20E-08
KLX 18A	060824 06:23:00	060824 07:59:00	489.00	494.00	)	;	3 1	491.50	5	3.59E-08	0		2.96E-08
KLX 18A	060824 08:48:00	060824 10:28:00	494.00	499.00	)	;	3 1	496.50	5	3.50E-09	0		2.89E-09
KLX 18A	060824 11:04:00	060824 12:08:00	499.00	504.00	)	48	3 1	501.50	5	#NV	-1		#NV
KLX 18A	060824 14:09:00	060824 16:21:00	504.00	509.00	)	;	3 1	506.50	5	1.78E-08	0		1.47E-08
KLX 18A	060824 16:44:00	060824 17:40:00	509.00	514.00	)	46	3 1	511.50	5	#NV	-1		#NV
KLX 18A	060824 18:02:00	060824 18:57:00	514.00	519.00		;	3 1	516.50	5	#NV	-1		#NV
KLX 18A	060824 19:21:00	060824 20:43:00	519.00	524.00		;	3 1	521.50	5	5.72E-09	0		4.72E-09
KLX 18A	060824 21:09:00	060824 22:14:00	524.00	529.00		46	3 1	526.50	5	#NV	-1		#NV
KLX 18A	060824 22:37:00	060824 23:43:00	529.00	534.00		48	3 1	531.50	5		-1		#NV
KLX 18A	060825 00:07:00	060825 01:32:00	534.00	539.00		;	3 1	536.50	5	7.89E-09	0		6.51E-09
KLX 18A	060825 06:09:00	060825 07:44:00	539.00	544.00		;	3 1	541.50	5	0.002 0.	0		2.92E-07
KLX 18A	060825 08:29:00	060825 09:59:00	544.00			;	3 1	546.50	5		0		4.57E-08
KLX 18A	060825 10:32:00	060825 12:27:00	549.00	554.00		;	3 1	551.50	5	0.7 02 00	0		8.06E-09
KLX 18A	060825 13:24:00	060825 15:03:00	554.00	559.00		;	3 1	556.50	5	3.75E-09	0		3.10E-09
KLX 18A	060825 15:36:00	060825 16:54:00	559.00	564.00		;	3 1	561.50	5	0.102 01	0		5.08E-07
KLX 18A	060825 17:19:00	060825 18:40:00	564.00	569.00		;	3 1	566.50	5	0.122 00	0		6.95E-08
KLX 18A	060825 19:04:00	060825 21:13:00	569.00	574.00		46	3 1	571.50	5		-1		#NV
KLX 18A	060825 21:36:00	060825 22:15:00	574.00	579.00		;	3 1	576.50	5		-1		#NV
KLX 18A	060825 22:38:00	060825 23:58:00	579.00	584.00		48	3 1	581.50	5	,,,,,	-1		#NV
KLX 18A	060826 00:20:00	060826 01:08:00	584.00			;	3 1	586.50	5	#NV	-1		#NV
KLX 18A	060826 06:16:00	060826 07:46:00	589.00	594.00		;	3 1	591.50	5	1.15E-06	0		9.51E-07
KLX 18A	060826 08:29:00	060826 09:53:00	594.00	599.00	)	;	3 1	596.50	5	1.37E-07	0		1.13E-07

				hvdr c	ond m forma	ation wid w	ridth_of_channel_						leakage_fact		value_type_			
idcode	secup	seclow	bc_tm	value_type_tm oye	th_b			tb	l_measl_tb	u_measl_tb	sb	assumed_sb		transmissivity_tt		bc_tt	I_measI_q_s	u_measl_q_s
KLX 18A	389.00	394.00	0	0 3	.96E-10									1.97E-09	9 0	1	9.00E-10	1.00E-08
KLX 18A	394.00	399.00	0	0 2	.02E-09									5.45E-08	3 0	1	1.00E-08	8.00E-08
KLX 18A	399.00	404.00	0	0 5	.08E-08									7.03E-07	7 0	1	3.00E-07	1.00E-06
KLX 18A	404.00	409.00	0	0 3	.30E-09									2.90E-08	3 0	1	9.00E-09	5.00E-08
KLX 18A	409.00	414.00	0		.24E-09									8.03E-08	3 0	1	5.00E-08	1.00E-07
KLX 18A	414.00	419.00	0		.34E-08									8.80E-07		1	4.00E-07	2.00E-06
KLX 18A	419.00	424.00	0		.68E-07									7.15E-06		1	3.00E-06	1.00E-05
KLX 18A	424.00	429.00	0		.92E-07									3.39E-06		1	5.00E-07	7.00E-06
KLX 18A	429.00	434.00	0		.90E-07									5.16E-06		1	8.00E-07	9.00E-06
KLX 18A	434.00	439.00	0		.28E-09									2.56E-08		1	9.00E-09	6.00E-08
KLX 18A	439.00	444.00	0		#NV									6.16E-1		1	1.00E-11	9.00E-11
KLX 18A	444.00	449.00	0		#NV									1.04E-1		1	7.00E-12	3.00E-11
KLX 18A	449.00	454.00	0		.97E-10									4.20E-10		1	1.00E-10	7.00E-10
KLX 18A	454.00	459.00	0		.21E-08									6.52E-08		1	3.00E-08	1.00E-07
KLX 18A	459.00	464.00	0		.22E-10									3.47E-10		1	9.00E-11	6.00E-10
KLX 18A	464.00	469.00	0		.70E-10									7.59E-10		1	4.00E-10	2.00E-09
KLX 18A	469.00	474.00	0		.42E-09									6.43E-08		1	1.00E-08	9.00E-08
KLX 18A	474.00	479.00	0		.09E-08									9.88E-08		1	7.00E-08	3.00E-07
KLX 18A	477.00	482.00	0		.48E-09									3.17E-08		1	7.00E-09	7.00E-08
KLX 18A	482.00	487.00	0		.64E-09									2.64E-08		1	7.00E-09	5.00E-08
KLX 18A KLX 18A	487.00 489.00	492.00 494.00	0		.40E-09 .92E-09									4.40E-08		1	1.00E-08	9.00E-08
KLX 18A	489.00	494.00	0		5.78E-10									2.46E-08 3.50E-09		1	9.00E-09 1.00E-09	4.00E-08 5.00E-09
KLX 18A	499.00	504.00	0		#NV									9.93E-1		1	7.00E-09	2.00E-10
KLX 18A	504.00	504.00	0		#NV :.94E-09									9.93E-1 1.59E-08		1	8.00E-11	4.00E-08
KLX 18A	509.00	514.00	0		#NV									1.89E-0		1	1.00E-10	3.00E-09
KLX 18A	514.00	519.00	0		#NV									1.00E-10		1	1.00E-10	8.00E-09
KLX 18A	519.00	524.00	0		.44E-10									1.52E-08		1	8.00E-09	4.00E-08
KLX 18A	524.00	529.00	0		#NV									6.11E-10		1	1.00E-10	8.00E-10
KLX 18A	529.00	534.00	0		#NV									7.24E-10		1	1.00E-10	9.00E-10
KLX 18A	534.00	539.00	0		.30E-09									8.80E-09		1	4.00E-09	3.00E-08
KLX 18A	539.00	544.00	0		.84E-08									1.60E-06		1	7.00E-07	3.00E-06
KLX 18A	544.00	549.00	0		.14E-09									9.05E-08		1	6.00E-08	4.00E-07
KLX 18A	549.00	554.00	0		.61E-09									9.75E-09		1	1.00E-09	2.00E-08
KLX 18A	554.00	559.00	0		.20E-10									1.86E-09		1	8.00E-10	5.00E-09
KLX 18A	559.00	564.00	0		.02E-07									4.64E-07		1	1.00E-07	7.00E-07
KLX 18A	564.00	569.00	0		.39E-08									1.49E-07		1	7.00E-08	5.00E-07
KLX 18A	569.00	574.00	0		#NV									1.00E-1		1	1.00E-13	1.00E-11
KLX 18A	574.00	579.00	0		#NV									1.00E-1		1	1.00E-13	1.00E-11
KLX 18A	579.00	584.00	0	-1	#NV									1.41E-1	1 -1	1	9.00E-12	6.00E-11
KLX 18A	584.00	589.00	0	-1	#NV									1.00E-1	1 -1	1	1.00E-13	1.00E-11
KLX 18A	589.00	594.00	0	0 1	.90E-07									1.55E-06	6 0	1	8.00E-07	5.00E-06
KLX 18A	594.00	599.00	0		.26E-08									2.64E-07	7 0	1	8.00E-08	5.00E-07

								leakage_c			l measl ks	u_measl_ks		assumed_ss				
idcode	secup	seclow	storativity_s	assumed_s	bc_s r	i	ri_index	oeff	hydr_cond_ksf	value_type_ksf		f	spec_storage_ssf	f c	cd	skin	dt1	dt2
KLX 18A	389.00	394.00	1.00E-06	1.00E-06	6	4.95	1							1.46E-11	1.6E-03	-0.06	10.8	108.0
KLX 18A	394.00	399.00	1.00E-06	1.00E-06	6	37.81	C	)						2.00E-11	2.2E-03	21.50	108.0	540.0
KLX 18A	399.00	404.00	1.00E-06	1.00E-06	6	24.82	1	1						3.13E-11	3.4E-03	6.55	18.0	144.0
KLX 18A	404.00	409.00	1.00E-06	1.00E-06	6	9.67	1							2.79E-11	3.1E-03	2.63	18.0	108.0
KLX 18A	409.00	414.00	1.00E-06	1.00E-06	6	12.50	1							1.11E-11	1.2E-03	8.16	14.4	108.0
KLX 18A	414.00	419.00	1.00E-06	1.00E-06	6	75.79	C	)						5.58E-11	6.2E-03	21.00	28.8	540.0
KLX 18A	419.00	424.00	1.00E-06	1.00E-06	6	127.96	C	)						6.05E-10	6.7E-02	19.80	32.4	540.0
KLX 18A	424.00	429.00	1.00E-06	1.00E-06	6	36.78	1							1.88E-10	2.1E-02	9.73	21.6	144.0
KLX 18A	429.00	434.00	1.00E-06	1.00E-06	6	117.94	C	)						3.16E-10	3.5E-02	20.10	36.0	540.0
KLX 18A	434.00	439.00	1.00E-06			6.64								1.93E-11	2.1E-03			
KLX 18A	439.00	444.00	1.00E-06	1.00E-06	6	2.08	1							1.84E-11	2.0E-03	5.10	18.0	
KLX 18A	444.00	449.00	1.00E-06	1.00E-06	6	6.44	1							9.91E-12	1.1E-03	0.22	7.2	2520.0
KLX 18A	449.00	454.00	1.00E-06	1.00E-06	6	11.20	C	)						1.48E-11	1.6E-03	-1.39	36.0	540.0
KLX 18A	454.00	459.00	1.00E-06	1.00E-06	6	11.86	-1							9.84E-11	1.1E-02	-0.03	21.6	108.0
KLX 18A	459.00	464.00	1.00E-06	1.00E-06	6	10.68	-1							1.51E-11	1.7E-03	-0.25	32.4	
KLX 18A	464.00	469.00	1.00E-06	1.00E-06	6	12.99	-1							9.11E-12	1.0E-03	1.16	108.0	540.0
KLX 18A	469.00	474.00	1.00E-06	1.00E-06	6	39.41	C	)						1.42E-11	1.6E-03	21.70	72.0	540.0
KLX 18A	474.00	479.00	1.00E-06	1.00E-06	6	43.87	C	)						2.77E-11	3.1E-03	3.10	28.8	1080.0
KLX 18A	477.00	482.00	1.00E-06	1.00E-06	6	33.02	C	)						1.83E-11	2.0E-03	15.80	108.0	540.0
KLX 18A	482.00	487.00	1.00E-06	1.00E-06	6	16.00	C	)						7.70E-10	8.5E-02	-0.90	252.0	1080.0
KLX 18A	487.00	492.00	1.00E-06	1.00E-06	6	10.76	1							1.26E-11	1.4E-03	3.67	23.4	108.0
KLX 18A	489.00	494.00	1.00E-06	1.00E-06	6	10.74	-1							4.51E-11	5.0E-03	-0.79	28.8	144.0
KLX 18A	494.00	499.00	1.00E-06	1.00E-06	6	18.99	-1							4.17E-11	4.6E-03	0.40	144.0	540.0
KLX 18A	499.00	504.00		1.00E-06	6	5.87	C	)						1.79E-12	2.0E-04	1.81	10.8	
KLX 18A	504.00	509.00	1.00E-06	1.00E-06	6	9.63	1							1.79E-10	2.0E-02	-0.10	36.0	144.0
KLX 18A	509.00	514.00	1.00E-06	1.00E-06	6	12.43	C	)						2.05E-11	2.3E-03	2.06	14.4	540.0
KLX 18A	514.00	519.00	1.00E-06	1.00E-06	6	#NV	#NV	1						#NV	#NV	#NV	#NV	#NV
KLX 18A	519.00	524.00	1.00E-06	1.00E-06	6	10.64	1							1.66E-11	1.8E-03	5.50	54.0	180.0
KLX 18A	524.00					12.62		)						1.63E-11	1.8E-03			
KLX 18A	529.00	534.00			6	13.22	C	)						1.94E-11	2.1E-03	3.43		
KLX 18A	534.00			1.00E-06	6	8.30	-1							1.52E-11	1.7E-03			
KLX 18A	539.00					87.45	C	)						6.03E-11	6.6E-03			
KLX 18A	544.00					10.51	-1							4.01E-11	4.4E-03			
KLX 18A	549.00	554.00				9.01	-1							9.44E-11	1.0E-02			540.0
KLX 18A	554.00					5.46								4.33E-12				
KLX 18A	559.00					22.37	-1							2.67E-10	2.9E-02			144.0
KLX 18A	564.00	569.00				48.62								5.29E-11	5.8E-03	5.05		
KLX 18A	569.00	574.00				#NV	#NV					·		#NV	#NV	#NV	#NV	#NV
KLX 18A	574.00					#NV	#NV	1				·		#NV	#NV	#NV	#NV	#NV
KLX 18A	579.00	584.00		1.00E-06	6	2.84	C	)						1.80E-12	2.0E-04		252.0	1080.0
KLX 18A	584.00					#NV	#NV	/						#NV	#NV	#NV	#NV	#NV
KLX 18A	589.00	594.00				16.57								3.28E-10	3.6E-02			
KLX 18A	594.00	599.00	1.00E-06	1.00E-06	6	56.09	(	)						3.32E-11	3.7E-03	5.67	43.2	900.0

				1			storativity_s_	value_type_t_nl		1			I	value_type_t_g		storativity_s_g flow_dim_g	<del></del>
idcode	secup	seclow t	1 t2 dte1	dte2	p_horner	transmissivity_t_nlr			bc_t_nlr	c_nlr	cd_nlr	skin_nlr	transmissivity_t_grf		bc_t_grf	rf rf	comment
KLX 18A	389.00	394.00			3817.3												
KLX 18A	394.00	399.00			3865.8												
KLX 18A	399.00	404.00			3908.0												1
KLX 18A	404.00	409.00			3957.7												
KLX 18A	409.00				4006.8												
KLX 18A	414.00				4055.8												
KLX 18A	419.00				4105.4												
KLX 18A	424.00				4153.3												
KLX 18A	429.00				4200.4												
KLX 18A	434.00				4250.3												
KLX 18A	439.00				#NV												
KLX 18A	444.00				#NV												
KLX 18A	449.00				4393.1												
KLX 18A	454.00				4445.1												<u> </u>
KLX 18A	459.00				4492.0												
KLX 18A	464.00				4538.1												
KLX 18A	469.00				4599.8												
KLX 18A	474.00				4647.4												
KLX 18A	477.00				4676.0												
KLX 18A	482.00				4711.5												<u> </u>
KLX 18A	487.00				4772.5												
KLX 18A	489.00				4790.3												
KLX 18A	494.00				4857.9												
KLX 18A	499.00				#NV												
KLX 18A	504.00				4959.5												
KLX 18A	509.00				#NV												
KLX 18A	514.00				#NV												-
KLX 18A	519.00				5102.5												-
KLX 18A	524.00				#NV												-
KLX 18A KLX 18A	529.00 534.00				#NV 5227.9							+					+
KLX 18A KLX 18A	534.00				5227.9							+					+
KLX 18A KLX 18A	539.00				5278.3							+					+
KLX 18A	549.00				5329.3							+					+
KLX 18A	554.00				5421.4												
KLX 18A	559.00				5474.5		1					+		1			+
KLX 18A	564.00				5529.0		1					+		1			+
KLX 18A	569.00				#NV							+					+
KLX 18A	574.00				#NV							+					+
KLX 18A	579.00				#NV							+					+
KLX 18A	584.00				#NV							+					+
KLX 18A	589.00				5766.7							+					+
KLX 18A	594.00				5817.6							+					+
ILA IUA	554.00	333.00		_1	3017.0		1		1	1	1	1	1	1	1	l	

Tab	ole		ole_test_obs sections of single hole test
Column	Datatype	Unit	Column Description
site	CHAR	<u> </u>	Investigation site name
activity type	CHAR		Activity type code
idcode	CHAR		Object or borehole identification code
start_date	DATE		Date (yymmdd hh:mm:ss)
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
obs_secup	FLOAT	m	Upper limit of observation section
obs_seclow	FLOAT	m	Lower limit of observation section
pi_above	FLOAT	kPa	Groundwater pressure above test section, start of flow period
pp_above	FLOAT	kPa	Groundwater pressure above test section, at stop flow period
pf_above	FLOAT	kPa	Groundwater pressure above test section at stop recovery per
pi_below	FLOAT	kPa	Groundwater pressure below test section at start flow period
pp_below	FLOAT	kPa	Groundwater pressure below test section at stop flow period
pf_below	FLOAT	kPa	Groundwater pressure below test section at stop recovery per
comments	VARCHAR		Comment text row (unformatted text)

		T	1								1	1		
:	-44 -4-4-	atam data				-h	obs seclow	n: aba	b	mf about	ni balaw		of balance	
idcode	start_date	stop_date	secup	seclow	section_no	obs_secup		pi_above	pp_above	pf_above	• -	11.1-	pf_below	comments
KLX 18A	060815 10:44:00	060815 12:10:00	104.00			205.00		1007	1010		2002		2002	
KLX 18A	060815 14:05:00	060815 16:10:00	204.00			305.00		1982	1982		2972		2972	
KLX 18A	060815 17:25:00	060815 19:19:00	304.00		-	405.00		2958	2956		3938		3938	
KLX 18A	060815 21:08:00	060815 23:01:00	404.00			505.00		3921	3921	3920	4915		4915	
KLX 18A	060816 07:34:00	060816 09:40:00	504.00			605.00		4886	4886		5910		5901	
KLX 18A	060816 19:58:00	060816 21:22:00	104.00			125.00		1017	1018	1019	1229		1230	
KLX 18A	060816 22:02:00	060816 23:27:00	124.00			145.00		1211	1219		1422		1422	
KLX 18A	060816 23:59:00	060817 01:27:00	144.00			165.00		1404	1405		1614		1614	
KLX 18A	060817 06:38:00	060817 08:23:00	164.00			185.00		1594	1595		1806		1806	
KLX 18A	060817 09:06:00	060817 10:48:00	184.00			205.00		1790	1790	1791	2001		2001	
KLX 18A	060817 11:27:00	060817 13:32:00	204.00		-	225.00		1984	1985		2196		2196	
KLX 18A	060817 14:08:00	060817 16:08:00	224.00		-	245.00		2179	2179		2390		2390	
KLX 18A	060817 16:43:00	060817 18:16:00	244.00			265.00		2373	2373		2584		2584	
KLX 18A	060817 18:46:00	060817 20:28:00	264.00		-	285.00		2567	2567	2567	2778		2777	
KLX 18A	060817 21:22:00	060817 23:01:00	284.00		-	305.00		2806	2806	2806	2971		2970	
KLX 18A	060817 23:30:00	060818 00:54:00	304.00			325.00		2952	2952		3164		3164	
KLX 18A	060818 01:24:00	060818 02:47:00	324.00			345.00		3144	3145		3357		3356	
KLX 18A	060818 06:29:00	060818 08:03:00	344.00	364.00		365.00	611.28	3336	3337	3337	3548	3548	3548	
KLX 18A	060818 08:34:00	060818 10:01:00	364.00	384.00		385.00	611.28	3530	3531	3531	3742	3743	3742	
KLX 18A	060818 10:38:00	060818 12:07:00	384.00	404.00		405.00	611.28	3725	3725	3726	3938	3939	3938	
KLX 18A	060818 13:16:00	060818 14:45:00	404.00	424.00		425.00	611.28	3920	3920	3920	4133	4134	4134	
KLX 18A	060818 15:16:00	060818 16:46:00	424.00	444.00		445.00	611.28	4113	4114	4114	4335	4335	4335	
KLX 18A	060818 17:20:00	060818 18:44:00	444.00	464.00		465.00	611.28	4305	4305	4305	4529	4530	4530	
KLX 18A	060818 19:19:00	060818 20:35:00	464.00	484.00		485.00	611.28	4498	4498	4498	4723	4723	4723	
KLX 18A	060819 00:45:00	060819 04:09:00	484.00	504.00		505.00	611.28	4689	4689	4688	4915	4915	4914	
KLX 18A	060819 06:24:00	060819 08:12:00	504.00	524.00		525.00	611.28	4881	4881	4881	5107	5108	5108	
KLX 18A	060819 08:45:00	060819 10:16:00	524.00	544.00		545.00	611.28	5076	5076	5076	5302	5302	5303	
KLX 18A	060819 10:56:00	060819 12:36:00	544.00	564.00		565.00		5272	5273	5273	5498	5499	5499	
KLX 18A	060819 13:29:00	060819 14:56:00	564.00	584.00		585.00		5468	5468	5468	5694	5694	5694	
KLX 18A	060819 15:30:00	060819 16:51:00	584.00	604.00		605.00		5663	5663	5663	5904	5914	5901	
KLX 18A	060820 08:53:00	060820 10:28:00	299.00			305.00		2903	2903		2970		2970	
KLX 18A	060820 10:58:00	060820 12:56:00	304.00		-	310.00		2952	2952		3018	3018	3018	
KLX 18A	060820 13:33:00	060820 15:04:00	309.00		-	315.00		3001	3002		3068		3068	
KLX 18A	060820 15:29:00	060820 16:27:00	314.00			320.00		3050	3050	3050	3117		3117	
KLX 18A	060820 16:52:00	060820 18:12:00	319.00			325.00		3099	3100	3100	3166		3165	
KLX 18A	060820 18:35:00	060820 19:31:00	324.00			330.00		3147	3148		3214		3214	
KLX 18A	060820 19:53:00	060820 21:14:00	329.00			335.00		3195	3196		3262		3261	
KLX 18A	060820 21:58:00	060820 23:46:00	334.00			340.00		3243	3244	3244	3309		3309	
KLX 18A	060821 00:08:00	060821 01:31:00	339.00			345.00		3291	3291	3291	3357		3357	
KLX 18A	060821 01:55:00	060821 03:24:00	344.00			350.00		3339	3339	3339	3405		3405	
KLX 18A	060821 06:23:00	060821 03:24:00	349.00		-	355.00		3386	3386	3386	3453		3453	
KLX 18A	060821 08:44:00	060821 10:08:00	354.00			360.00		3434	3434	3434	3501		3501	
KLX 18A	060821 10:37:00	060821 10:00:00	359.00		-	365.00		3483	3484	3484	3549		3550	
KLX 18A	060821 13:02:00	060821 12:02:00	364.00		-	370.00		3532	3533	3533	3600		3599	
KLX 18A KLX 18A	060821 15:02:00	060821 14:22:00	364.00			370.00		3581	3533	3582	3648		3648	
	060821 16:42:00	060821 18:05:00	374.00			380.00		3620	3629	3629	3696		3696	
KLX 18A			374.00			385.00		3620	3629	3629	3090		3090	
KLX 18A	060821 18:28:00	060821 19:48:00												
KLX 18A	060821 20:20:00	060821 21:41:00	384.00	389.00	1	390.00	611.28	3726	3726	3726	3792	3792	3792	

			1							<u> </u>				
idcode	start_date	stop_date	secup	seclow	section_no	obs_secup	obs_seclow	pi_above	pp_above	pf_above	pi_below	pp_below	pf_below	comments
KLX 18A	060821 22:03:00	060821 23:33:00	389.00	394.00	_	395.00	611.28	3773	3773	37	73 3840	3839	3839	
KLX 18A	060821 23:59:00	060822 01:29:00	394.00	399.00		400.00	611.28	3821	3821		21 3887		3887	
KLX 18A	060822 06:19:00	060822 07:37:00	399.00	404.00		405.00	611.28	3868	3869		69 3936			
KLX 18A	060822 08:10:00	060822 09:32:00	404.00	409.00		410.00	611.28	3918	3918		18 3985			
KLX 18A	060822 10:09:00	060822 11:36:00	409.00	414.00		415.00	611.28	3966	3966	39				
KLX 18A	060822 14:07:00	060822 15:25:00	414.00	419.00		420.00	611.28	4016	4016		16 4083			
KLX 18A	060822 15:59:00	060822 17:19:00	419.00	424.00		425.00	611.28	4064	4066		65 4133		4133	
KLX 18A	060822 17:42:00	060822 19:08:00	424.00	429.00		430.00	611.28	4113	4113		13 4183			
KLX 18A	060822 19:32:00	060822 20:54:00	429.00	434.00		435.00	611.28	4159	4160		59 4236			
KLX 18A	060822 21:24:00	060822 22:46:00	434.00	439.00		440.00	611.28	4206	4206	42	06 4284	4284	4284	
KLX 18A	060822 23:10:00	060823 00:35:00	439.00	444.00		445.00	611.28	4253	4253	42	53 4332	4332	4332	
KLX 18A	060823 01:02:00	060823 03:40:00	444.00	449.00		450.00	611.28	4301	4301	43	01 4380	4380	4379	
KLX 18A	060823 06:23:00	060823 08:04:00	449.00	454.00		455.00	611.28	4349	4349	43	49 4428	4428	4429	
KLX 18A	060823 08:37:00	060823 10:04:00	454.00	459.00		460.00	611.28	4398	4398		99 4478			
KLX 18A	060823 10:41:00	060823 12:04:00	459.00	464.00		465.00	611.28	4448	4448	44	48 4527	4527	4527	
KLX 18A	060823 13:31:00	060823 15:05:00	464.00	469.00		470.00	611.28	4497	4497	44	97 4576	4576	4576	
KLX 18A	060823 16:36:00	060823 17:54:00	469.00	474.00		475.00	611.28	4546	4546	45	46 4625	4625	4625	
KLX 18A	060823 18:19:00	060823 19:37:00	474.00	479.00		480.00	611.28	4594	4594	45	94 4674	4674	4674	
KLX 18A	060823 20:08:00	060823 21:32:00	477.00	482.00		483.00	611.28	4623	4623	46	23 4703	4702	4702	
KLX 18A	060823 21:55:00	060823 23:32:00	482.00	487.00		488.00	611.28	4670	4670	46	70 4751	4751	4750	
KLX 18A	060823 23:55:00	060824 01:21:00	487.00	492.00		493.00	611.28	4718	4718	47	17 4798	4798	4798	
KLX 18A	060824 06:23:00	060824 07:59:00	489.00	494.00		495.00	611.28	4736	4736	47	36 4816	4816	4816	
KLX 18A	060824 08:48:00	060824 10:28:00	494.00	499.00		500.00	611.28	4787	4787	47	87 4867	4867	4867	
KLX 18A	060824 11:04:00	060824 12:08:00	499.00	504.00		505.00	611.28	4837	4837	48	37 4916	4916	4916	
KLX 18A	060824 14:09:00	060824 16:21:00	504.00	509.00		510.00	611.28	4887	4887	48	87 4966	4966	4966	
KLX 18A	060824 16:44:00	060824 17:40:00	509.00	514.00		515.00	611.28	4936	4936		36 5015			
KLX 18A	060824 18:02:00	060824 18:57:00	514.00	519.00		520.00	611.28	4984	4984	49	84 5064	5064	5064	
KLX 18A	060824 19:21:00	060824 20:43:00	519.00	524.00		525.00	611.28	5032	5032	50	32 5112	5112	5112	
KLX 18A	060824 21:09:00	060824 22:14:00	524.00	529.00		530.00	611.28	5079	5079	50	79 5160	5160	5160	
KLX 18A	060824 22:37:00	060824 23:43:00	529.00	534.00		535.00	611.28	5127	5127	51	27 5207	5207	5206	
KLX 18A	060825 00:07:00	060825 01:32:00	534.00	539.00		540.00	611.28	5174	5174	51	74 5254	5254	5254	
KLX 18A	060825 06:09:00	060825 07:44:00	539.00	544.00		545.00	611.28	5223	5223	52	23 5303	5303	5303	
KLX 18A	060825 08:29:00	060825 09:59:00	544.00	549.00		550.00	611.28	5272	5272	52	73 5352	5352	5352	
KLX 18A	060825 10:32:00	060825 12:27:00	549.00	554.00		555.00	611.28	5323	5323	53	23 5402	5403	5403	
KLX 18A	060825 13:24:00	060825 15:03:00	554.00	559.00		560.00	611.28	5372	5372	53	73 5452	5452	5452	
KLX 18A	060825 15:36:00	060825 16:54:00	559.00	564.00		565.00	611.28	5422	5422	54	22 5501	5502	5502	
KLX 18A	060825 17:19:00	060825 18:40:00	564.00	569.00		570.00	611.28	5470	5470	54	70 5550	5550	5550	
KLX 18A	060825 19:04:00	060825 21:13:00	569.00	574.00		575.00	611.28	5519	5519	55	19 5598	5598	5598	
KLX 18A	060825 21:36:00	060825 22:15:00	574.00	579.00		580.00	611.28	5567	5566	55	66 5646	5646	5646	
KLX 18A	060825 22:38:00	060825 23:58:00	579.00	584.00		585.00	611.28	5612	5612	56	12 5692	5692	5692	
KLX 18A	060826 00:20:00	060826 01:08:00	584.00	589.00		590.00	611.28	5660	5660	56	5740	5740	5740	
KLX 18A	060826 06:16:00	060826 07:46:00	589.00	594.00		595.00	611.28	5709	5709	57	09 5789	5819	5790	
KLX 18A	060826 08:29:00	060826 09:53:00	594.00	599.00		600.00	611.28	5759	5759	57	59 5844	5843	5841	