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Oskarshamn site investigation

Hydraulic injection tests in borehole KLX11A

Subarea Laxemar

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September 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 KLX11A 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 KLX11A performed between 29th of June and 11th of August 2006.

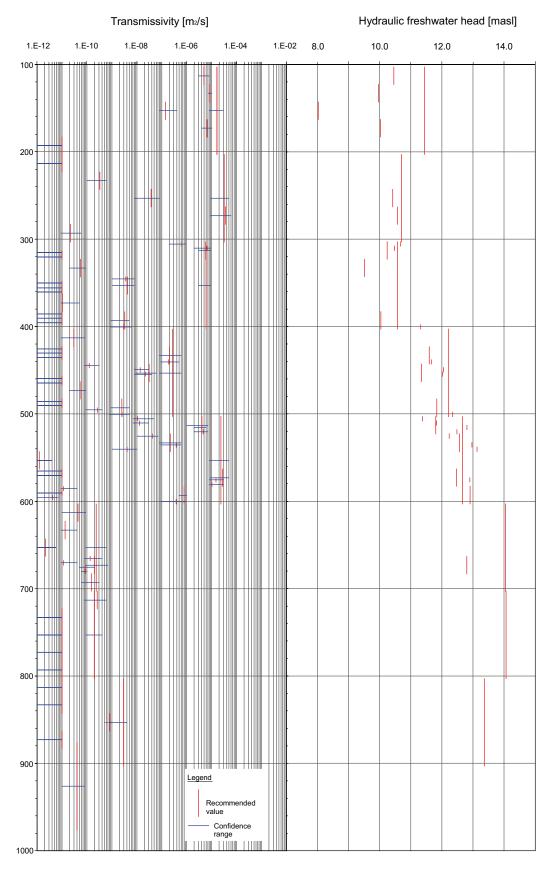
The objective of the hydrotests was to describe the rock around the borehole with respect of hydraulic parameters, mainly transmissivity (T) and hydraulic conductivity (K) at different measurement scales of 100 m, 20 m and 5 m sections. Transient evaluation during flow and recovery period provided additional information such as flow regimes, hydraulic boundaries and cross-over flows. Constant pressure injection tests were conducted between 103.00–976.00 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 KLX11A 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 KLX11A. Testerna utfördes mellan den 29 juni till den 11 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 103,00–976,00 m borrhålslängd. Resultaten av testutvärderingen presenteras som transmissivitet, hydraulisk konduktivitet och grundvattennivå uttryckt i ekvivalent sötvattenpelare (fresh-water head).



Borehole KLX11A – 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 2005/. 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 according in borehole KLX11A during 29th of June and 11th of August 2006 following the methodology described in SKB MD 323.001 and in the activity plan AP PS 400-06-072 (SKB controlling documents). Data and results were delivered to the SKB site characterisation 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 KLX11A. The commission was conducted by Golder Associates AB and Golder Associates GmbH.

Borehole KLX11A is situated in the Laxemar area approximately 2.5 km west of the nuclear power plant of Simpevarp, Figure 1-1. The borehole was drilled from November 2005 to March 2006 at 992.29 m length with an inner diameter of 76 mm and an inclination of –76.43°. The upper 12.05 m is cased with large diameter telescopic casing ranging from diameter (outer diameter) 208 mm–323 mm.

The work was carried out in accordance with activity plan AP PS 400-06-072. 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 PSS2.

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

Activity plan	Number	Version
Hydraulic injection tests in borehole KLX11A	AP PS 400-06-072	1.0
Method descriptions	Number	Version
Hydraulic injection tests	SKB MD 323.001	1.0
Instruktion för rengöring av borrhålsutrustning och viss markbaserad utrustning	SKB MD 600.004	1.0
Instruktion för längdkalibrering vid undersökningar I kärnborrhål	SKB MD 620.010	1.0
Allmäna ordning-, skydds- och miljöregler för platsundersökningar Oskarshamn	SKB SDPO-003	1.0
Miljökontrollprogram Platsundersökningar	SKB SDP-301	1.0
Hantering av primärdata vid platsundersökningar	SKB SDP-508	1.0

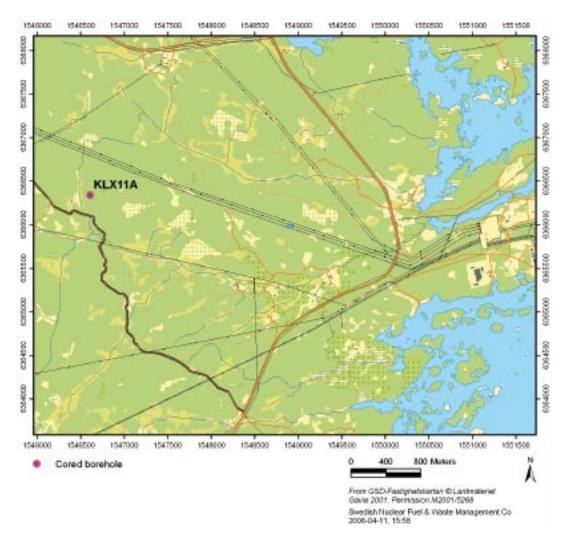


Figure 1-1. The investigation area Laxemar, Oskarshamn with location of borehole KLX11A.

2 Objective

The objective of the hydrotests in borehole KLX11A 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 PSS2 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 PSS2 tool. Calibration checks and function checks were documented in the daily log and/or relevant documents.

The following hydraulic injection tests were performed between 29th June and 11th August 2006 (Table 3-1).

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.

Table 3-1. Performed injection tests at borehole KLX11A.

No. of injection tests*	Interval	Positions	Time/test	Total test time
9	100 m	103.00–976.00 m	125 min	18.75 hrs
39	20 m	103.00-883.00 m	90 min	58.50 hrs
45	5 m	303.00-683.00 m	90 min	67.50 hrs
			Total:	144.75 hrs

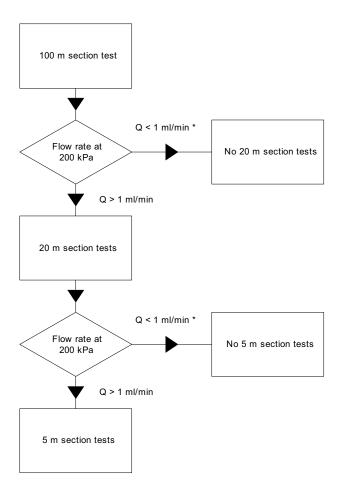
^{*} excluding repeated tests and additional over night pulse injections.

Table 3-2. Information about KLX11A (from SICADA 2006-06-07).

Title	Value				
Borehole length (m):	992.290				
Reference level:	TOC				
Drilling Period (s):	From Date	To Date	Secup (m)	Seclow (m)	Drilling Type
	2005-11-01	2005-11-08	0.430	100.060	Percussion drilling
	2005-11-24	2006-03-02	100.060	992.290	Core drilling
Starting point coordinate:	Length (m)	Northing (m)	Easting (m)	Elevation (m.a.s.l.)	Coord System
(centerpoint of TOC)	0.000	6366339.716	1546608.490	27.143	RT90-RHB70 Measured
Angles:	Length (m)	Bearing	Inclination (– = down)		
	0.000	89.840	-76.434	RT90-RHB70 Measured	
Borehole diameter:	Secup (m)	Seclow (m)	Hole Diam (m)		
	0.430	9.600	0.343		
	9.600	12.050	0.248		
	12.050	99.960	0.195		
	99.960	100.060	0.160		
	100.060	101.530	0.086		
	101.530	992.290	0.076		
Core diameter:	Secup (m)	Seclow (m)	Core Diam (m)		
	100.060	100.530	0.072		
	100.530	992.290	0.050		
Casing diameter:	Secup (m)	Seclow (m)	Case In (m)	Case Out (m)	
	0.000	12.050	0.200	0.208	
	0.430	9.600	0.310	0.323	
Grove milling:	Length (m)	Trace detectable	9		
	110.000	YES			
	150.000	YES			
	200.000	YES			
	250.000	YES			
	300.000	YES			
	350.000	YES			
	400.000	YES			
	450.000	YES			
	500.000	YES			
	550.000	YES			
	600.000	YES			
	650.000	YES			
	700.000	YES			
	750.000	YES			
	800.000	YES			
	850.000	YES			
	900.000	YES			
	944.000	YES			
	974.000	YES			

3.2 Injection tests

Injection tests were conducted according to the Activity Plan AP PS 400-06-072 and the method description for hydraulic injection tests, SKB MD 323.001 (SKB internal documents). Tests were done in 100 m test sections between 103.00-976.00 m below ToC, in 20 m test sections between 103.00-883.00 m below ToC and in 5 m test sections between 303.00-683.00 m (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 SKBs custom made equipment for hydraulic testing called PSS2.



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

Figure 3-1. Flow chart for test sections.

Table 3-3. Tests performed.

Bh ID	Test section (m bToC)	Test type ¹	Test no	Test start Date, Time	Test stop Date, Time
KLX11A	103.00–203.00	3	1	060629 14:32:00	060629 16:40:00
KLX11A	203.00-303.00	3	1	060629 18:03:00	060629 20:21:00
KLX11A	303.00-403.00	3	1	060630 09:15:00	060630 11:12:00
KLX11A	403.00-503.00	3	1	060630 13:11:00	060630 15:20:00
KLX11A	503.00-603.00	3	1	060701 08:47:00	060701 10:50:00
KLX11A	603.00-703.00	3	1	060701 12:14:00	060701 15:43:00
KLX11A	703.00-803.00	3	1	060701 17:09:00	060702 01:32:00
KLX11A	803.00-903.00	3	1	060702 09:11:00	060702 13:33:00
KLX11A	876.00-976.00	4B	1	060702 14:45:00	060702 16:49:00
KLX11A	103.00-123.00	3	1	060704 08:19:00	060704 09:46:00
KLX11A	123.00-143.00	3	1	060704 10:31:00	060704 11:54:00
KLX11A	143.00-163.00	3	1	060704 12:49:00	060704 14:32:00
KLX11A	163.00-183.00	3	1	060704 15:05:00	060704 16:33:00
KLX11A	183.00-203.00	3	1	060704 17:12:00	060704 18:14:00
KLX11A	203.00-223.00	3	1	060704 18:50:00	060704 19:46:00
KLX11A	223.00-243.00	4B	1	060705 08:38:00	060705 10:07:00
KLX11A	243.00-263.00	3	1	060705 10:48:00	060705 12:22:00
KLX11A	263.00-283.00	3	1	060705 13:18:00	060705 14:44:00
KLX11A	283.00-303.00	4B	1	060705 15:25:00	060705 16:51:00
KLX11A	303.00-323.00	3	1	060705 17:25:00	060705 18:49:00
KLX11A	323.00-343.00	3	1	060705 19:21:00	060706 00:42:00
KLX11A	343.00-363.00	3	1	060706 08:48:00	060706 10:30:00
KLX11A	363.00-383.00	4B	1	060706 11:03:00	060706 12:55:00
KLX11A	383.00-403.00	3	1	060706 13:34:00	060706 15:02:00
KLX11A	403.00-423.00	4B	1	060706 15:54:00	060706 17:22:00
KLX11A	423.00-443.00	3	1	060706 17:56:00	060706 19:21:00
KLX11A	443.00-463.00	3	1	060707 08:32:00	060707 10:01:00
KLX11A	463.00-483.00	4B	1	060707 10:33:00	060707 12:34:00
KLX11A	483.00-503.00	3	1	060707 13:12:00	060707 14:44:00
KLX11A	503.00-523.00	3	1	060707 15:12:00	060707 16:39:00
KLX11A	523.00-543.00	3	1	060707 17:07:00	060707 18:30:00
KLX11A	543.00-563.00	4B	1	060707 19:07:00	060708 08:26:00
KLX11A	563.00-583.00	3	1	060708 08:58:00	060708 10:21:00
KLX11A	583.00-603.00	3	1	060708 10:53:00	060708 12:23:00
KLX11A	603.00-623.00	4B	1	060708 13:17:00	060708 14:41:00
KLX11A	623.00-643.00	4B	1	060708 15:12:00	060708 16:39:00
KLX11A	643.00-663.00	4B	1	060708 17:11:00	060708 18:34:00
KLX11A	663.00-683.00	3	1	060708 19:06:00	060709 08:39:00
KLX11A	683.00-703.00	4B	1	060709 09:11:00	060709 10:40:00
KLX11A	703.00-723.00	3	1	060709 11:08:00	060709 13:27:00
KLX11A	723.00-743.00	4B	1	060709 13:58:00	060709 15:13:00
KLX11A	743.00-763.00	4B	1	060709 15:45:00	060709 16:56:00
KLX11A	763.00–783.00	4B	1	060709 17:25:00	060709 18:10:00
KLX11A	783.00-803.00	4B	1	060709 18:43:00	060709 20:01:00
KLX11A	803.00-823.00	3	1	060710 08:19:00	060710 09:15:00
KLX11A	823.00-843.00	3	1	060710 09:45:00	060710 10:37:00
KLX11A	843.00-863.00	3	1	060710 11:10:00	060710 13:24:00
KLX11A	863.00-883.00	3	1	060710 14:04:00	060710 14:56:00
KLX11A	303.00-308.00	3	1	060712 07:38:00	060712 09:06:00
KLX11A	308.00-313.00	3	1	060712 09:30:00	060712 10:51:00

Bh ID	Test section (m bToC)	Test type ¹	Test no	Test start Date, Time	Test stop Date, Time
KLX11A	313.00–318.00	3	1	060712 11:13:00	060712 12:03:00
KLX11A	318.00-323.00	3	1	060712 13:09:00	060712 13:57:00
KLX11A	343.00-348.00	3	1	060712 14:31:00	060712 16:11:00
KLX11A	348.00-353.00	3	1	060712 16:38:00	060712 17:38:00
KLX11A	353.00-358.00	3	1	060712 17:56:00	060712 18:45:00
KLX11A	358.00-363.00	3	1	060713 07:52:00	060713 08:41:00
KLX11A	383.00-388.00	3	1	060713 09:14:00	060713 10:05:00
KLX11A	388.00-393.00	3	1	060713 10:28:00	060713 11:17:00
KLX11A	393.00-398.00	3	1	060713 12:29:00	060713 13:20:00
KLX11A	398.00-403.00	3	1	060713 13:44:00	060713 15:16:00
KLX11A	423.00-428.00	3	1	060713 15:46:00	060713 16:55:00
KLX11A	428.00-433.00	3	1	060713 16:59:00	060713 17:47:00
KLX11A	433.00-438.00	3	1	060714 07:59:00	060714 08:46:00
KLX11A	438.00-443.00	3	1	060714 09:17:00	060714 10:39:00
KLX11A	442.00-447.00	4B	1	060714 11:06:00	060714 12:51:00
KLX11A	447.00-452.00	3	1	060714 13:16:00	060714 14:37:00
KLX11A	452.00-457.00	3	1	060714 15:01:00	060714 16:22:00
KLX11A	457.00-462.00	3	1	060714 16:45:00	060714 17:35:00
KLX11A	462.00-467.00	3	1	060714 18:01:00	060714 18:50:00
KLX11A	483.00-488.00	3	1	060715 08:16:00	060715 09:05:00
KLX11A	488.00-493.00	3	1	060715 09:29:00	060715 10:19:00
KLX11A	493.00-498.00	4B	1	060715 10:47:00	060715 13:39:00
KLX11A	498.00-503.00	3	1	060715 14:04:00	060715 15:29:00
KLX11A	503.00-508.00	3	1	060715 15:53:00	060715 17:47:00
KLX11A	508.00-513.00	3	1	060715 18:09:00	060715 21:14:00
KLX11A	513.00–518.00	3	1	060716 08:05:00	060716 10:33:00
KLX11A	513.00–518.00	3	2	060807 09:04:00	060807 11:01:00
KLX11A	513.00–518.00	3	3	060808 15:30:00	060808 17:15:00
KLX11A	518.00–523.00	3	1	060808 17:47:00	060808 19:37:00
KLX11A	523.00-528.00	3	1	060809 08:08:00	060809 09:41:00
KLX11A	528.00-533.00	3	1	060809 10:08:00	060809 11:34:00
KLX11A	533.00-538.00	3	1	060809 12:48:00	060809 14:16:00
KLX11A	538.00-543.00	3	1	060809 14:40:00	060809 16:19:00
KLX11A	563.00–568.00	3	1	060809 16:59:00	060809 17:53:00
KLX11A	568.00-573.00	3	1	060809 18:17:00	060809 19:11:00
KLX11A	573.00–578.00	3	1	060810 08:06:00	060810 09:34:00
KLX11A	578.00–583.00	3	1	060810 10:02:00	060810 11:28:00
KLX11A	583.00-588.00	4B	1	060810 12:20:00	060810 14:15:00
KLX11A KLX11A	588.00-593.00	4B	1	060810 14:41:00	060810 16:05:00
KLX11A KLX11A	593.00–598.00	4B	1	060810 16:33:00	060810 18:19:00
KLX11A KLX11A	598.00–603.00	3	1	060811 08:01:00	060811 09:26:00
KLX11A KLX11A	663.00–668.00	3	1	060811 10:29:00	060811 09.26.00
KLX11A KLX11A	668.00–673.00	3 4B	1	060811 10:29:00	060811 15:14:00
KLX11A KLX11A	673.00–678.00	4B 4B	1	060811 15:38:00	060811 17:22:00
ハレハ・ハハ	010.00-010.00	עד		000011 10.00.00	00001111.22.00

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

No other additional measurements except the actual hydraulic tests and related measurements of packer position and water level in annulus of borehole KLX11A were conducted.

3.3 Control of equipment

Control of equipment was mainly performed according to the 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 PSS2 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 PSS2 (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.

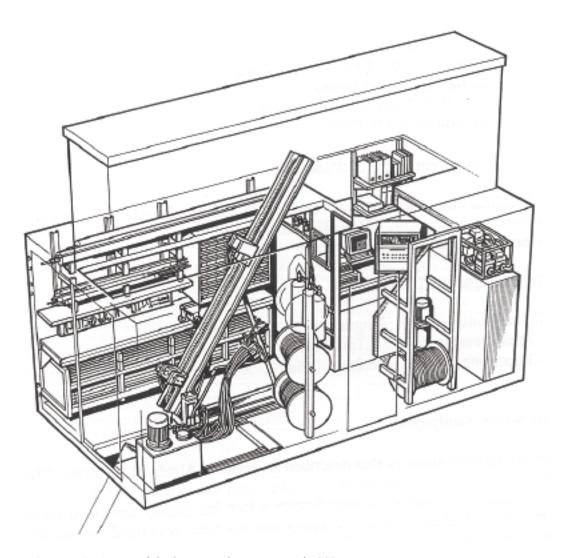


Figure 4-1. A view of the layout and equipment of PSS2.

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 PSS2 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.

PSS2 is documented in photographs 1–6.



Photo 1. Hydraulic rig.



Photo 3. Computer room, displays and gas regulators.



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



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



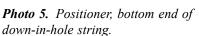




Photo 6. Packer and gauge carrier.

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 3 kPa/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 3 kPa/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.

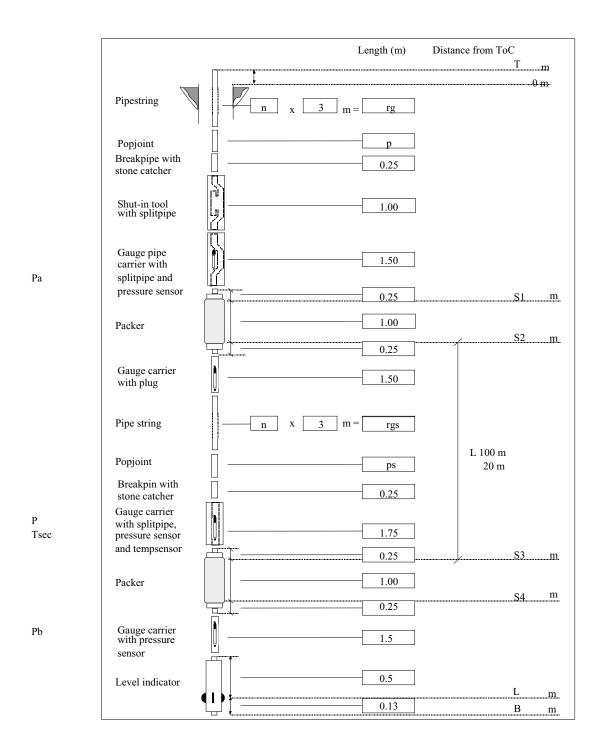


Figure 4-2. Schematic drawing of the down-hole equipment in the PSS2 system.

4.2 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 mA °C °C	
Q_{big}	Flow	Micro motion Elite sensor	0–100 +0.1	kg/min %	Massflow
$Q_{\text{small}} \\$	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 information			Senso	Sensors Equipment affecting		fecting WBS coe	ting WBS coefficient	
ID	Test section (m)	Test no	Type	Position (m fr ToC)	Position	Function	Outer diameter (mm)	
KLX11A	103.00–203.00	1	pa p T pb L	101.11 202.37 202.20 205.01 206.25	Test section	Signal cable Pump string Packer line	9.1 33 6	
KLX11A	103.00–123.00	1	pa p T pb L	101.11 122.37 122.20 125.01 126.25	Test section	Signal cable Pump string Packer line	9.1 33 6	
KLX11A	303.00–308.00	1	pa p T pb L	301.11 307.37 307.20 310.01 311.25	Test section	Signal cable Pump string Packer line	9.1 33 6	

4.3 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.

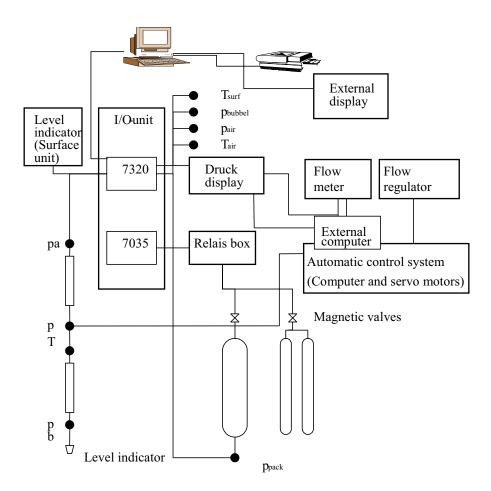


Figure 4-3. Schematic drawing of the data acquisition system and the flow regulation control system in PSS.

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 tank with water and tracer it with Uranin; take water sample from non tracered and tracered water.
- · 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.

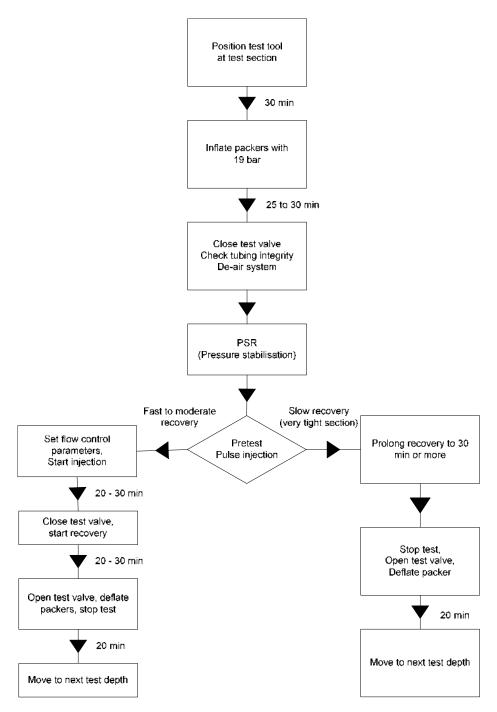


Figure 5-1. Flow chart for test performance.

5.3.2 Test procedure

A test cycle includes the following phases: 1) Transfer of down-hole equipment to the next section. 2) Packer inflation. 3) Pressure stabilisation. 4) Pulse injection. 5) Constant head injection. 6) Pressure recovery. 7) Packer deflation. The injection tests in KLX11A has been carried out by applying a constant injection pressure of appr. 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 was measured. In cases, where small flow rates were expected, the automatic regulation unit was switched off and the test was performed manually. In those cases, the constant difference pressure was usually unequal to 200 kPa. In other cases, where the pressure recovery of the pulse injection test took very long, the recovery

was extended and the pulse test was taken for the analysis. No injection test was performed in those sections.

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. 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

The analyses of the tests is divided in two parts. The first part of the analysis consists of a radial flow analysis. For this analysis a flow dimension of 2 (radial flow) was assumed. The second part is a generalized radial flow analysis (GRF) and the flow dimension was evaluated using the slope of the derivative on the log-log plot of the CHi and CHir test phases.

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.

Table 5-1. Durations for packer inflation, pressure stabilisation, injection and recovery phase and packer deflation in KLX11A.

Position test tool to new test section (correct position using the borehole markers)	Approx. 30 min
Inflate packers with appr. 1,900 kPa	25 min
Close test valve	10 min
Check tubing integrity with appr. 800 kPa	5 min
De-air system	2 min
Pretest, pulse injection	2–30 min
Set automatic flow control parameters or setting for manual test	5 min
Start injection	20 to 45 min
Close test valve, start recovery	20 min or more
Open test valve	10 min
Deflate packers	25 min
Move to next test depth	_

5.5.2 Analysis approach

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

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.

The generalized radial flow analysis is based on the flow model developed by /Barker 1988/. This flow model allows the modelling of flow dimensions between 1 (linear flow) and 3 (spherical flow).

5.5.3 Analysis methodology

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

Injection Tests

- Assumption of a flow dimension 2 (radial flow) for the radial flow analysis. 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.
- Identification of the flow model by evaluation of the derivative on the log-log diagnostic
 plot for the generalized radial flow analysis and superposition type curve matching in
 log-log coordinates.

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

Pulse Injection Tests

A test cycle always started with a pulse injection test whose goal it was to derive a first estimation of the formation transmissivity. If the pressure recovery of this brief injection was very slow, it indicated a very tight section. It is then decided to extend the recovery time and measure the pressure recovery (PI).

During the brief injection phase a small volume is injected (derived from the flowmeter measurements and/or replacement in injection vessel). This injected volume produces the pressure increase of dp. Using a dV/dp approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated. 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.

- Calculation of initial estimates of the model parameters by using the Ramey Plot /Ramey et al. 1975/. This plot is typically not presented in the appendix.
- Assumption of radial flow 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.
- Identification of the flow dimension based on the slope of the derivative and type curve analysis for the generalized radial flow analysis. An Example of the type curves is presented in Figure 5-3

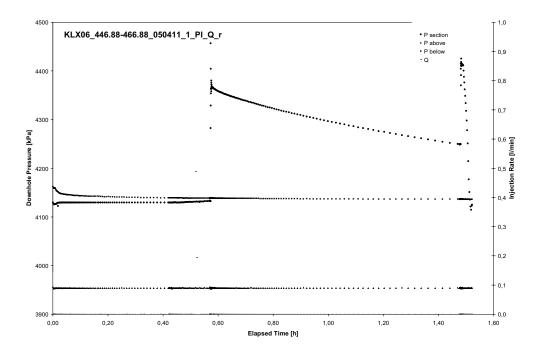


Figure 5-2. Typical pressure versus time plot of a Pulse injection test.

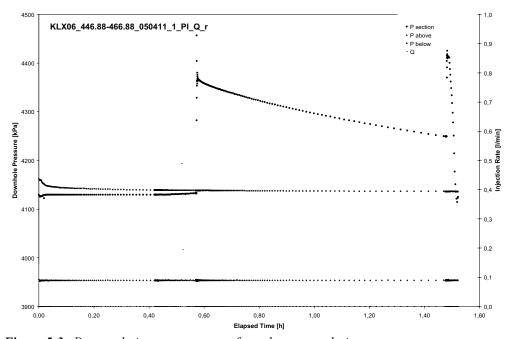


Figure 5-3. Deconvolution type curve set for pulse test analysis.

5.5.4 Flow models used for analysis

Radial flow analysis

Analyses were performed with the assumption of radial flow. Changes of the slope in the pressure derivative were interpreted as a change of transmissivity at some distance from the borehole. In such cases a composite radial 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 chosen flow model (homogeneous or composite) were commented for each tests.

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.

Generalized radial flow 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.

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. In several cases the pressure derivative suggests a change of flow dimension at some distance from the test interval. In such cases a composite flow model was used in the analysis. The flow dimension diagnosis was commented for each of the tests.

In following cases no generalized radial flow analysis was performed:

- data quality (no clear flow model identification was possible due to noise in the recorded data),
- no formation flow stabilization was reached (due to low transmissivity and/or short test time),
- flow dimension calculated by the slope of derivative indicates radial flow (no generalized radial flow analysis was needed).

In such cases it was commented for the relevant tests as well.

The analysis with respect to the flow dimension is limited in some cases. Figure 5-4 shows the analysis of a pulse using a flow dimension of 1 (linear flow).

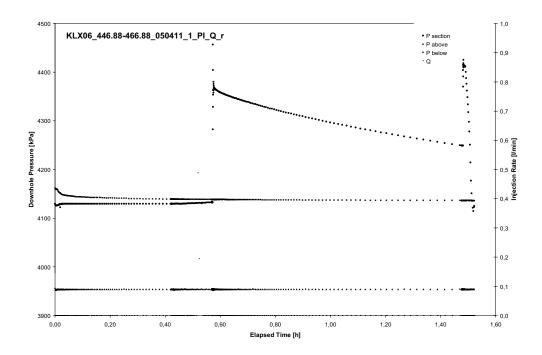


Figure 5-4. Analysis of a pulse injection test with flow dimension 1. (The arrows indicate the change in parameter when moving the data).

The log-log coordinates plotted type curve show a continues upward trend with no change in distance between data and derivative type curve. Vertical movement of the data changes the transmissivity and horizontal movement changes the storativity. It is possible to move the plotted data to nearly every position on the type curve and moving the data transposes transmissivity with storativity and vice versa. This shows that under such circumstances the transmissivity and storativity values are strongly correlated.

5.5.5 Steady state analysis

In addition to the type curve analysis, an interpretation based on the assumption of stationary conditions was performed as described by /Moye 1967/.

5.5.6 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 $h_{\rm iwf}$ is:

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

5.5.7 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.

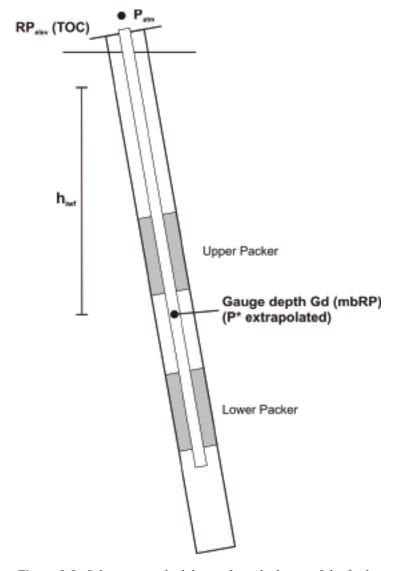


Figure 5-5. Schematic methodologies for calculation of the freshwater head.

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

On 16th of July the automate regulation system stopped to work. This caused a delay and the testing program was continued on the 8th of August.

6 Results

In the following, results of all tests are presented and analysed. Section 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 (generalized radial flow analysis) and calculated parameters and finally the parameters which are considered as most representative are chosen and justification is given. The results of the radial flow analysis are summarised in Table 7-1 and Table 7-2 of the Synthesis chapter. Table 7-3 presents the results of the generalized radial flow analysis.

6.1 100 m hydraulic injection tests

In the following, the 100 m section tests conducted in borehole KLX11A are presented and analysed.

6.1.1 Section 103.00-203.00 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 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 198 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 13.3 L/min at start of the CHi phase to 7.9 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase shows a relatively flat derivative with a slight downward trend. However, an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a slight downward trend at late times. In case of this analysis it was interpreted as infinite acting radial flow and a homogeneous flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-1.

Generalized Radial Flow Analysis

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 the CHi and CHir phase show a slight downward trend indicating a slope below 0 and a flow dimension above 2. For the analysis of both phases a homogeneous flow model with a flow dimension of n = 2.1 was chosen. The analysis is presented in Appendix 2-1.

Selected representative parameters

The recommended transmissivity of $1.6 \cdot 10^{-5}$ m²/s was derived from the radial flow analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-6}$ to $3.0 \cdot 10^{-5}$ m²/s. 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 1,838.6 kPa.

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

6.1.2 Section 203.00-303.00 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 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 hydraulic connection to the adjacent zones was observed. The injection rate decreased from 9.4 L/min at start of the CHi phase to 9.1 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). The data of CHi phase is a little bit noisy, but amenable for a quantitative analysis. The CHir phase recovered relatively fast, but shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase is a little bit noisy but shows a relatively flat derivative with a slight downward trend. However, an infinite acting homogenous radial 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 consistent with a large positive skin and a slight downward trend at late times. In case of this analysis the late time derivative was interpreted as infinite acting radial flow and a homogeneous flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-2.

Generalized Radial Flow Analysis

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 the CHi and CHir phase show a slight downward trend indicating a slope below 0 and a flow dimension above 2. For the analysis of both phases a homogeneous flow model with a flow dimension of n = 2.1 was chosen. The analysis is presented in Appendix 2-2.

Selected representative parameters

The recommended transmissivity of $3.2 \cdot 10^{-5}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-6}$ to $6.0 \cdot 10^{-5}$ m²/s. 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 2,776.6 kPa.

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

6.1.3 Section 303.00–403.00 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 195 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 5.4 L/min at start of the CHi phase to 3.4 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase was matched using an infinite acting homogenous radial flow model. The derivative of the CHir phase shows an upward trend at middle times followed by a kind of horizontal stabilization at late times. This behaviour is interpreted as a decrease of transmissivity at some distance from the borehole. A two shell composite radial flow model was chosen for the analysis of the CHir Phase. The analysis is presented in Appendix 2-3.

Generalized Radial Flow Analysis

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 the CHi show a slight downward trend. The flow dimension calculated by the slope of the derivative is n = 2.2. For the analysis of the CHi phase a homogeneous flow model was chosen. The flow dimension displayed during the CHir phase is n = 2 and no generalized radial flow analysis was performed. The analysis is presented in Appendix 2-3.

Selected representative parameters

The recommended transmissivity of $6.0 \cdot 10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase (outer zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-6}$ to $9.0 \cdot 10^{-6}$ m²/s. 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 3.705.2 kPa.

The radial flow analyses of the CHi and CHir phases show some inconsistency regarding the chosen flow models. However, regarding the derived transmissivities both phases show consistency. No further analysis is recommended.

6.1.4 Section 403.00-503.00 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 relatively 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 204 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system was not able to maintain stable pressure conditions in the interval during the injection and the pressure oscillates by approximately 10 kPa. However, the CHi phase is still amenable for qualitative analysis. The injection rate decreased from 0.15 L/min at start of the CHi phase to 0.07 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir shows a fast recovery but is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test no trend could be observed for the derivative of the CHi phase. This is attributed to the poor data quality. However, the CHi phase was analysed using an infinite acting homogenous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times, which is consistent with a large positive skin, and a kind of horizontal stabilization at late times. A homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-4.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no clear flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.7\cdot10^{-7}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-8}$ to $6.0\cdot10^{-7}$ m²/s. 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 3,705.2 kPa.

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

6.1.5 Section 503.00-603.00 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 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 215 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 18.0 L/min at start of the CHi phase to 11.5 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase shows a relatively flat derivative with a slight downward trend. However, an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a slight downward trend at middle and late times. In case

of this analysis it was interpreted as infinite acting radial flow and a homogeneous flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-5.

Generalized Radial Flow Analysis

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 the CHi and CHir phase show a slight downward trend indicating a slope below 0 and a flow dimension above 2. For the analysis of the both phases a homogeneous flow model with a flow dimension of n = 2.1 was chosen. The analysis is presented in Appendix 2-5.

Selected representative parameters

The recommended transmissivity of $2.4 \cdot 10^{-5}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-6}$ to $5.0 \cdot 10^{-5}$ m²/s. 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 5.579.0 kPa.

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

6.1.6 Section 603.00-703.00 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 slow 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 205 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 6 kPa. The injection rate decreased from 9 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). The recovery phase was measured for 1 h. Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. No flow stabilization was reached during the CHir phase and the data is still influenced by wellbore effects like wellbore storage and skin. However, a homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-6.

Generalized Radial Flow Analysis

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 show an upward trend indicating a slope above 0 and a flow dimension below 2. For the analysis of the CHi phases

a homogeneous flow model with a flow dimension of n = 1.58 was chosen. Due to the fact that no flow stabilization was reached the CHir phase does not allow a specific determination of the flow dimension. The analysis is presented in Appendix 2-6.

Selected representative parameters

The recommended transmissivity of $2.3 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-11}$ to $6.0 \cdot 10^{-10}$ m²/s (this range includes the transmissivity from the CHi phase). 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 6.513.4 kPa.

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

6.1.7 Section 703.00-803.00 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 slow 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 203 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 6 kPa. The injection rate decreased from 10 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). The recovery phase was measured for 6 h over night. Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. No clear flow stabilization was reached during the CHir phase and the data is still influenced by wellbore effects like wellbore storage and skin. However, a homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-7.

Generalized Radial Flow Analysis

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 show an upward trend. The flow dimension calculated by the slope of the derivative is n = 1.5. For the analysis of the CHi phases a homogeneous flow model was chosen. Due to the fact that no clear flow stabilization was reached the CHir phase does not allow a specific determination of the flow dimension. The analysis is presented in Appendix 2-7.

Selected representative parameters

The recommended transmissivity of $2.0 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-11}$ to $4.0 \cdot 10^{-10}$ m²/s. 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 7,429.3 kPa.

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

6.1.8 Section 803.00-903.00 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 slow 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 235 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 10 kPa. The injection rate decreased from 19 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). The recovery phase was measured for 2 h. Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test an infinite acting homogenous radial flow model was used 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 chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-8.

Generalized Radial Flow Analysis

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 show an upward trend. The flow dimension calculated by the slope of the derivative is n = 1.7. For the analysis of the CHi phases a homogeneous flow model was chosen. Due to the fact that no clear flow stabilization was reached the CHir phase does not allow a specific determination of the flow dimension. The analysis is presented in Appendix 2-8.

Selected representative parameters

The recommended transmissivity of $2.9 \cdot 10^{-9}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-10}$ to $4.0 \cdot 10^{-9}$ m²/s (this range includes the derived transmissivity of the CHi phase). 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 8,333.1 kPa.

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

6.1.9 Section 876.00-976.00 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.

After closing the testvalve the pressure in the test section rose by 12 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 54 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 $2.6 \cdot 10^{-10}$ 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.

Radial Flow Analysis

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 at early and middle times followed by a downward trend at late times. This downward trend at late times can be attributed to the uncertainty of the initial formation pressure. Due to this uncertainty only the early and middle time data was matched using an infinite acting radial flow model. The analysis is presented in Appendix 2-9.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The flow dimension calculated by the slope of the pressure derivative at early and middle times is n = 1.33. The PI phase was analysed using a homogeneous flow model. The analysis is presented in Appendix 2-9.

Selected representative parameters

The recommended transmissivity of $4.0 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-11}$ to $8.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2 20 m hydraulic injection tests

In the following, the 20 m section tests conducted in borehole KLX11A are presented and analysed.

6.2.1 Section 103.00-123.00 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 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. The injection rate decreased from 1.5 L/min at start of the CHi phase to 1.4 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The recorded data of the CHi phase is a little bit noisy, but still amenable for qualitative analyses. The CHir phase shows a relatively fast recovery, but shows no further problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present the CHi phase (although noisy) shows a flat derivative. The relatively fast recovery of the CHir phase adds a little bit uncertainty to the late time derivative of this phase. However, an indication of horizontal stabilization can be observed at late times. Both phases were analysed using a radial infinite acting homogenous flow model. The analysis is presented in Appendix 2-10.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because no clear flow stabilization could be observed. No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $4.9 \cdot 10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase, which was considered to be more reliable. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-6}$ to $8.0 \cdot 10^{-6}$ m²/s. 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 1,092.9 kPa.

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

6.2.2 Section 123.00-143.00 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 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 4.3 L/min at start of the CHi phase to 3.9 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). The both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivatives of both phases show a downward trend at late times, which was interpreted as an increase of transmissivity at some distance from the borehole. Both phases were analysed using a two shell composite radial flow model. The analysis is presented in Appendix 2-11.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The changes of slope in the derivatives of both phases are interpreted as a change in flow dimension away from the borehole. The CHi phase was analysed using a two shell composite flow model with n1 = 2.3 and n2 = 2.38 and the CHir phase with a two shell composite flow model with n1 = 2.3 and n2 = 2.40. The analysis is presented in Appendix 2-11.

Selected representative parameters

The recommended transmissivity of $8.1 \cdot 10^{-6}$ m²/s was derived from the radial flow 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 $7.0 \cdot 10^{-6}$ to $1.0 \cdot 10^{-5}$ m²/s. 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 1,275.5 kPa.

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

6.2.3 Section 143.00–163.00 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 207 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 1.1 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 some problems at the beginning of the injection caused by the automatic regulation unit, but the middle and late time data is still amenable for quantitative analysis. The CHir phase shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the middle time data of the CHi phase, which shows a kind of horizontal stabilization of the derivative, was matched using a homogeneous radial flow model. The derivative of the CHir phase shows an upward trend at middle times followed by a stabilization at late times, indicating a decrease of transmissivity at some distance from the borehole. A two shell composite radial flow model was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-12.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The flow dimension calculated by the slope of the CHi derivative at middle and late times is n = 2.3. A homogeneous flow model was used to match the CHi phase. No generalized radial flow analysis was performed for the CHir phase. The analysis is presented in Appendix 2-12.

Selected representative parameters

The recommended transmissivity of $1.4\cdot10^{-7}$ m²/s was derived from the radial flow analysis of the CHir phase (outer zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-8}$ to $4.0\cdot10^{-7}$ m²/s. 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 1,443.8 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency regarding the chosen flow models, but a comparison of the derived transmissivities (CHi and outer zone CHir) in combination with the negative skin of the CHi phase show consistency between both phases. No further analysis is recommended.

6.2.4 Section 163.00-183.00 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 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 201 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 3.0 L/min at start of the CHi phase to 2.5 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The CHir phase shows a fast recovery, which adds uncertainty to the derivative analysis. Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivatives of both phases show a clear horizontal stabilization at middle and late times. The fast recovery of the CHir phase adds ambiguity to the middle and late time derivative of this phase. A homogeneous radial flow model was used for the analysis of both phases. The analysis is presented in Appendix 2-13.

Generalized Radial Flow Analysis

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 show a clear horizontal stabilization which is indicative for a flow dimension of 2 (radial flow). For this reason no generalized radial flow analysis was necessary.

Selected representative parameters

The recommended transmissivity of $6.5 \cdot 10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase, because it shows the most clear derivative stabilization. The confidence range for the interval transmissivity is estimated to be $4.0 \cdot 10^{-6}$ to $1.0 \cdot 10^{-5}$ m²/s. 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 1,650.5 kPa.

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

6.2.5 Section 183.00-203.00 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. 60 kPa in 30 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 2-14.

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.

6.2.6 Section 203.00-223.00 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. 106 kPa in 25 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 2-15.

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.

6.2.7 Section 223.00-243.00 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.

After closing the testvalve the pressure in the test section rose by 14 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 13 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 225 kPa. Using a dV/dP

approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to 5.8·10⁻¹¹ 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.

Radial Flow Analysis

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 downward trend at late times. This downward trend at late times can be attributed to the uncertainty of the initial formation pressure. Due to this uncertainty only the early and middle time data was matched using an infinite acting radial flow model. The analysis is presented in Appendix 2-16.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The flow dimension calculated by the slope of the pressure derivative at early and middle times is n = 1.79. The PI phase was analysed using a homogeneous flow model. The analysis is presented in Appendix 2-16.

Selected representative parameters

The recommended transmissivity of $3.3 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-10}$ to $6.0 \cdot 10^{-10}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.8 Section 243.00-263.00 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 213 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 0.5 L/min at start of the CHi phase to 0.04 L/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The recorded data of the injection phase is noisy, but amenable for quantitative analysis. The CHir phase shows a fast recovery, which adds uncertainty to the derivative analysis. The phase shows no further problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase is noisy but it shows a relatively flat derivative at middle times. The Chi phase was matched using a homogeneous radial flow model. The derivative of the CHir phase shows a downward trend at late times followed by a kind of flow stabilization at late times. A composite radial flow model with wellbore storage and skin was used to analyse the CHir phase. The analysis is presented in Appendix 2-17.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the noisy data (CHi phase) and no clear flow stabilisation (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $3.7\cdot10^{-8}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-9}$ to $8.0\cdot10^{-8}$ m²/s (this range encompasses the transmissivity of the CHi phase). 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 2,401.2 kPa.

The radial flow analyses of the CHi and CHir phases little inconsistency in the derived transmissivities, which is attributed to the noise in the CHi phase and the fast recovery of the CHir phase. No further analysis is recommended.

6.2.9 Section 263.00-283.00 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 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 10.8 L/min at start of the CHi phase to 9.9 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). The data of CHi phase is a little bit noisy, but amenable for a quantitative analysis. The CHir phase recovered relatively fast, but shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase is a little bit noisy but shows a relatively flat derivative at late times. However, an infinite acting homogenous radial 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 consistent with a large positive skin and a kind of horizontal stabilization at late times. In case of this analysis the late time derivative was interpreted as infinite acting radial flow and a homogeneous flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-18.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the noisy data (CHi phase) and no clear flow stabilisation (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $3.6\cdot10^{-5}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0\cdot10^{-6}$ to $6.0\cdot10^{-5}$ m²/s. 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 2,589.2 kPa.

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

6.2.10 Section 283.00-303.00 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.

After closing the testvalve the pressure in the test section rose by 15 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 13 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 237 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $5.6 \cdot 10^{-11}$ 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.

Radial Flow Analysis

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 at early and middle times followed by a kind of downward trend at late times, which can be attributed to the uncertainty of the initial formation pressure. In case of the present analysis the continuing upward trend at the beginning of the derivative 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 2-19.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the upward trend at early and middle times of the derivative indicates a slope above 0 and a flow dimension below 2. For the generalized radial flow analysis a homogeneous flow model with n = 1.49 was used. The analysis is presented in Appendix 2-19.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-12}$ to $6.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.11 Section 303.00-323.00 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 224 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 3.9 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The injection phase is a little bit noisy but still amenable for qualitative analysis. The CHir phase shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase was matched using an infinite acting homogenous radial flow model. The derivative of the CHir phase shows an upward trend at middle times followed by a horizontal stabilization at late times. This behaviour is interpreted as a decrease of transmissivity at some distance from the borehole. A two shell composite radial flow model was chosen for the analysis of the CHir Phase. The analysis is presented in Appendix 2-20.

Generalized Radial Flow Analysis

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 the CHi show a slight downward trend. The flow dimension calculated by the slope of the derivative is n = 2.2. For the analysis of the CHi phases a homogeneous flow model was chosen. The flow dimension displayed during the CHir phase is n = 2 and no generalized radial flow analysis was performed. The analysis is presented in Appendix 2-20.

Selected representative parameters

The recommended transmissivity of $5.8 \cdot 10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase (outer zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-6}$ to $9.0 \cdot 10^{-6}$ m²/s. 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 2,958.2 kPa.

The radial flow analyses of the CHi and CHir phases show some inconsistency regarding the chosen flow models. However, regarding the derived transmissivities both phases show consistency. No further analysis is recommended.

6.2.12 Section 323.00-343.00 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 slow 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 218 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, no pressure loss occurred during the injection phase. The injection rate was with 4 mL/min at start of the CHi phase and dropped below measurement limit (1 mL/min) after 11 min, indicating a very low interval transmissivity (consistent with the pulse recovery). Due to the very low flow rate the recorded data of the flow rate is very noisy and the results of the CHi phase should be regarded carefully. The CHir phase was measured for 4 h and shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test an infinite acting homogenous radial flow model was used 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 chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-21.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the very poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $5.5 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-11}$ to $9.0 \cdot 10^{-11}$ m²/s. 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 3,137.1 kPa.

No further analysis is recommended.

6.2.13 Section 343.00-363.00 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 slow 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 195 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 7 kPa. The injection rate decreased from 87 mL/min at start of the CHi phase to 9 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). The injection phase is a little bit noisy but still amenable for quantitative analysis. The CHir phase shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase shows an upward trend at middle times followed by a kind of horizontal stabilization at late times. This behaviour is interpreted as a decrease of transmissivity at some distance from the borehole. The derivative of the CHir phase shows an upward trend at middle times as well but no stabilization at late time, indicating no formation flow stabilization was reached. Both phases are matched using a two shell composite radial flow model. The analysis is presented in Appendix 2-22.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present analysis the upward trend at middle times is interpreted as a change of flow dimension. The calculation based on the slope of the derivatives indicates a flow dimension of n2 = 1.6 for the CHi phase as well as for the CHir phase. A two shell composite flow model was used for the analysis of both phases. The analysis is presented in Appendix 2-22.

Selected representative parameters

The recommended transmissivity of $4.3 \cdot 10^{-9}$ m²/s was derived from the radial flow 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 $1.0 \cdot 10^{-9}$ to $8.0 \cdot 10^{-9}$ m²/s. Due to the low transmissivity no fresh water head was calculated.

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

6.2.14 Section 363.00-383.00 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.

After closing the testvalve the pressure in the test section rose by 4 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 8 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 217 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $3.6 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. The deconvolved PI pressure derivative shows a slight upward trend at middle and late. However, in case of the present analysis the PI phase was matched using a radial homogeneous flow model. The analysis is presented in Appendix 2-23.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the slight upward trend at middle and late times of the derivative indicates a slope above 0 and a flow dimension below 2. For the generalized radial flow analysis a homogeneous flow model with n = 1.75 was used. The analysis is presented in Appendix 2-23.

Selected representative parameters

The recommended transmissivity of $1.1 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-12}$ to $5.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.15 Section 383.00-403.00 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 slow 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 244 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, no pressure loss occurred during the injection phase. The injection rate decreased from 12 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 very low flow rate the recorded data of the flow rate is very noisy and the results of the CHi phase should be regarded carefully. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the poor data quality the CHi phase is not very conclusive. However, in case of the present test an infinite acting homogenous radial flow model was used 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 chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-24.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the very poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $3.3 \cdot 10^{-09}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-10}$ to $5.0 \cdot 10^{-09}$ m²/s. 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 3,699.9 kPa.

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

6.2.16 Section 403.00-423.00 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 16 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 233 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $6.8 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the deconvolved PI pressure derivative is noisy at early and middle times, which adds uncertainty to the derivative analysis. However, the PI phase was analysed using a radial homogeneous flow model. The analysis is presented in Appendix 2-52.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the flow dimension calculated by the slope of the derivative at early and middle times is n = 1.45. A homogeneous flow model was chosen for the analysis of the PI phase. The analysis is presented in Appendix 2-52.

Selected representative parameters

The recommended transmissivity of $2.9 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-12}$ to $8.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.17 Section 423.00-443.00 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 relatively 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 regulation system was not able to maintain stable pressure conditions in the interval during the injection and the pressure oscillates by approximately 5 kPa. However, the CHi phase is still analysable, but the results should be regarded carefully. The injection rate decreased from 80 mL/min at start of the CHi phase to 60 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHir shows a fast recovery but is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test no trend could be observed for the derivative of the CHi phase. This is attributed to the poor data quality. However, the CHi phase was analysed using an infinite acting homogenous radial flow model. The derivative of the CHir phase shows a steep downward trend at middle times, which is consistent with a large positive skin, and a kind of horizontal stabilization at late times. A homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-26.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no clear flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.0\cdot10^{-7}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-8}$ to $6.0\cdot10^{-7}$ m²/s. 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 4,086.5 kPa.

The radial flow analyses of the CHi and CHir phases show little inconsistency in the derived transmissivity, which can be attributed to the poor data quality of the CHi phase. No further analysis is recommended.

6.2.18 Section 443.00-463.00 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 slow recovery of the pulse test indicated a relatively 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 244 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 9 kPa. The injection rate decreased from 36 mL/min at start of the CHi phase to 30 mL/min at the end, indicating a relatively low interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relatively fast recovery, which adds uncertainty to the derivative analyses. However, both phases are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase shows a flat derivative which can be interpreted as radial flow. A radial homogeneous flow model was used to analyse the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times, indicating a large positive skin. There is an indication of stabilization in the late time derivative. The CHir phase is matched using a radial homogeneous flow model. The analysis is presented in Appendix 2-27.

Generalized Radial Flow Analysis

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 with a slope of 0, indicating a flow dimension n = 2. For this reason no generalized radial flow analysis was performed. Due to the fast recovery and no clear flow stabilization of the CHir phase, no generalized radial flow analysis was performed, either. The analysis is presented in Appendix 2-27.

Selected representative parameters

The recommended transmissivity of $3.1 \cdot 10^{-8}$ m²/s was derived from the radial flow analysis of the CHi phase, which shows a better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-9}$ to $6.0 \cdot 10^{-8}$ m²/s. 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 4,269.7 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency in the derived transmissivities, which is attributed to the fast recovery of the CHir phase. The fast recovery may be caused by non-Darcy flow effects in the formation. No further analysis is recommended.

6.2.19 Section 463.00-483.00 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.

After closing the testvalve the pressure in the test section rose by approx. 20 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 13 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 $6.3 \cdot 10^{-11}$ 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.

Radial Flow Analysis

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 at early and middle times followed by a downward trend at late times, which can be attributed to the uncertainty of the initial formation pressure. However, in case of the present analysis the early and middle time derivative of the PI phase was matched using a homogeneous radial flow model. The analysis is presented in Appendix 2-28.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the upward trend at early and middle times of the derivative indicates a slope above 0 and a flow dimension below 2. For the generalized radial flow analysis a homogeneous flow model with n = 1.7 was used. The analysis is presented in Appendix 2-28.

Selected representative parameters

The recommended transmissivity of $5.7 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-11}$ to $9.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.20 Section 483.00-503.00 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 slow 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 250 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, no pressure loss occurred during the injection phase. The injection rate decreased from 20 mL/min at start of the CHi phase to 7 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 the results of the CHi phase should be regarded carefully. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the poor data quality the CHi phase is not very conclusive. However, in case of the present test an infinite acting homogenous radial flow model was used 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 composite radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-29.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.5 \cdot 10^{-9}$ m²/s was derived from the radial flow 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 $9.0 \cdot 10^{-10}$ to $5.0 \cdot 10^{-09}$ m²/s. 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 4,645.5 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency regarding the chosen flow model. This inconsistency can be attributed to the poor data quality of the CHi phase. However, regarding the derived transmissivities, both phases show consistency. No further analysis is recommended.

6.2.21 Section 503.00-523.00 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 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. The injection rate decreased from 4.2 L/min at start of the CHi phase to 3.5 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi and CHir phases show a flat derivative at middle and late times, indicating formation flow stabilization and radial flow. Both phases are analysed using a radial homogeneous flow model. The analysis is presented in Appendix 2-30.

Generalized Radial Flow Analysis

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 both phases show a horizontal stabilization with a slope of 0, indicating a flow dimension n = 2. Therefore no generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $4.1\cdot10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0\cdot10^{-6}$ to $7.0\cdot10^{-6}$ m²/s. 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 4.830.4 kPa.

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

6.2.22 Section 523.00-543.00 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 204 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from approx. 110 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). The start of the CHi phase is noisy and the automatic regulation system needs a while to reach stable pressure conditions. However, the CHi phase is still amenable for qualitative analysis. The CHir phase shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. 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 deep downward trend at middle times, which is consistent with a large positive skin. There is an indication of formation flow stabilization at the end. The CHir phase was analysed using a radial homogeneous flow model. The analysis is presented in Appendix 2-31.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no clear flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-7}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-8}$ to $6.0 \cdot 10^{-7}$ m²/s. 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 5,023.2 kPa.

Apart from the high skin derived from the CHir phase, the radial flow analyses of the CHi and CHir phases show good consistency. No further analysis is recommended.

6.2.23 Section 543.00-563.00 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.

After closing the testvalve the pressure in the test section rose by approx. 7 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. 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 220 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.1 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. The deconvolved PI pressure derivative shows an upward trend at middle times followed by a kind of horizontal stabilization at late times. In this analysis this behaviour is interpreted as decrease of transmissivity at some distance from the borehole. A two shell composite radial flow model was used for the analysis of the PI phase. The analysis is presented in Appendix 2-32.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the upward trend at middle times of the derivative indicates a slope above 0 and a flow dimension below 2. For the generalized radial flow analysis a homogeneous flow model with n = 1 (linear flow) was used. The analysis is presented in Appendix 2-32.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-12}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-13}$ to $4.0 \cdot 10^{-12}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.24 Section 563.00-583.00 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 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 198 kPa. The pressure in the bottom zone rose by approx. 10 kPa indicating a connection to the test interval. The injection rate decreased from 13.8 L/min at start of the CHi phase to 8.8 L/min at the end, indicating a high interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase shows a relatively flat derivative with a slight downward trend. However, an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. The derivative of the CHir phase shows a slight downward trend at late times. In case of this analysis it was interpreted as infinite acting radial flow and a homogeneous flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-33.

Generalized Radial Flow Analysis

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 the CHi and CHir phase show a slight downward trend indicating a slope below 0 and a flow dimension above 2. For the analysis of the both phases a homogeneous flow model with a flow dimension of n = 2.1 was chosen. The analysis is presented in Appendix 2-33.

Selected representative parameters

The recommended transmissivity of $2.7 \cdot 10^{-5}$ m²/s was derived from the radial flow analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-6}$ to $5.0 \cdot 10^{-5}$ m²/s. 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 5,392.3 kPa.

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

6.2.25 Section 583.00-603.00 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 0.5 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). Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase shows a horizontal stabilization at middle times followed by an upward trend at late times. The CHir response is consistent with the CHi phase. Both phases are matched using a two shell composite radial flow model with decreasing transmissivity at some distance from the borehole. The analysis is presented in Appendix 2-34.

Generalized Radial Flow Analysis

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 show a horizontal stabilization at middle times which is typical for radial flow (n = 2). The following upward trend was interpreted as a change of flow dimension away from the borehole. The calculation of the outer zone flow dimension based on the slope of the derivative is n2 = 1.9 (CHi) and 1.95 (CHir), respectively. Both phases are matched using a two shell composite flow model with a change of flow dimension at some distance from the borehole. The analysis is presented in Appendix 2-34.

Selected representative parameters

The recommended transmissivity of $7.9 \cdot 10^{-7}$ m²/s was derived from the radial flow 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 $5.0 \cdot 10^{-7}$ to $1 \cdot 10^{-6}$ m²/s. 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 5.581.5 kPa.

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

6.2.26 Section 603.00-623.00 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 13 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 243 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $5.5 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis the derivative of the PI phase was matched using a homogeneous radial flow model. The analysis is presented in Appendix 2-35.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the upward trend of the derivative indicates a slope above 0 and a flow dimension below 2. For the generalized radial flow analysis a homogeneous flow model with n = 1.5 was used. The analysis is presented in Appendix 2-35.

Selected representative parameters

The recommended transmissivity of $4.4 \cdot 10^{-11}$ m²/s was derived from the radial flow 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 static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.27 Section 623.00-643.00 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 13 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 220 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $6.0 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the PI phase shows an upward trend at middle and late times, interpreted as a decrease of transmissivity at some distance from the borehole. Because the outer zone stabilization was not observed, the derived outer zone transmissivity should be regarded as an upper limit only. The PI phase was matched using a radial composite flow model. The analysis is presented in Appendix 2-36.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test no reliable flow dimension can be calculated by the slope of derivative. No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $1.3 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the PI phase (inner zone). The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-12}$ to $4.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.28 Section 643.00-663.00 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.

After closing the testvalve the pressure in the test section rose by 6 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 7 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 $3.1 \cdot 10^{-11}$ 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.

Radial Flow Analysis

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 attributed to fact that the dimensionless test time is to small and the semi-logarithmic asymptotic solution was not achieved (due to the small transmissivity). The PI phase was analysed using a radial homogeneous flow model. The analysis is presented in Appendix 2-37.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the continuing upward trend indicates a flow dimension of n = 1.6 (interpreted form the slope of derivative). For the generalized radial flow analysis a homogeneous flow model was used. The analysis is presented in Appendix 2-37.

Selected representative parameters

The recommended transmissivity of $2.1 \cdot 10^{-12}$ m²/s was derived from the radial flow analysis of the PI phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-13}$ to $6.0 \cdot 10^{-12}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.29 Section 663.00-683.00 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 slow recovery of the pulse test indicated a low formation transmissivity. The pulse recovery was measured over night. Based on this result a sequence consisting of a constant pressure injection phase (CHi) and a recovery phase (CHir) was conducted. All phases were analysed quantitatively.

The CHi phase was conducted using a pressure difference of 256 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, no large pressure loss occurred during the injection phase. The injection rate decreased from 5 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 but is still amenable for qualitative analysis. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase (although noisy) shows a upward trend at middle times and a kind of stabilization at late times, indicating a transition to a zone of lower transmissivity. A radial flow composite model was used for the analysis of the CHi phase. No clear flow stabilization was reached during the CHir phase and the data is still influenced by wellbore effects like wellbore storage and skin. However, a homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-38.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the no clear flow stabilization. No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.0 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the CHi phase (outer zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-11}$ to $7.0 \cdot 10^{-10}$ m²/s (this range includes the transmissivity derived from the inner zone transmissivity the CHi phase). 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 6.317.5 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency regarding the chosen flow model. This inconsistency can be attributed to the fact that no flow stabilization was reached during the CHir phase caused by the low transmissivity. No further analysis is recommended.

The conducted over night pulse was analysed using a radial composite flow model with decreasing transmissivity away from the borehole. Due to the uncertainty of the initial formation pressure the results should be regarded carefully. The derived inner zone transmissivity is $1.3 \cdot 10^{-10}$ m²/s. The analysis is presented in Appendix 2-38.

6.2.30 Section 683.00-703.00 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 12 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 224 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to 5.3·10⁻¹¹ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the PI shows an upward trend at middle and late times. This behaviour is interpreted as an decrease of transmissivity at some distance form the borehole. A two shell composite radial flow model was chosen for the analysis of the PI phase. The analysis is presented in Appendix 2-39.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the upward trend of the derivative at middle and late times is interpreted as a change of flow dimension. The flow dimension displayed at the middle and late time is n = 1.87. A composite flow model with a decrease in flow dimension at some distance from the borehole was chosen for the analysis. The analysis is presented in Appendix 2-39.

Selected representative parameters

The recommended transmissivity of $1.5 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the Pi phase (outer zone). The confidence range for the interval transmissivity is estimated to be $6.0 \cdot 10^{-11}$ to $3.0 \cdot 10^{-10}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.2.31 Section 703.00-723.00 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 slow 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. However, no large pressure loss occurred during the injection phase. The injection rate decreased from 30 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 noisy but is still amenable for qualitative analysis. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase is noisy. However, the CHi phase was matched using a radial flow composite model. No clear flow stabilization was reached during the CHir phase and the data is still influenced by wellbore effects like wellbore storage and skin. A homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-40.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the noisy data (CHi phase) and no clear flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.6 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-11}$ to $6.0 \cdot 10^{-10}$ m²/s. Due to the low transmissivity no fresh water head was calculated.

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

6.2.32 Section 723.00-743.00 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, no pulse recovery was observed and the pressure stayed stable for approx. 40 minutes. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-41.

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.

6.2.33 Section 743.00-763.00 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, no pulse recovery was observed. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-42.

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.

6.2.34 Section 763.00-783.00 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, no pulse recovery was observed and the pressure stayed stable for approx. 10 minutes. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-43.

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.

6.2.35 Section 783.00-803.00 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, no pulse recovery was observed and the pressure increases. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than 1E–11 m²/s). None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-44.

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.

6.2.36 Section 803.00-823.00 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. 36 kPa in 25 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 2-45.

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.

6.2.37 Section 823.00-843.00 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. 47 kPa in 20 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 2-46.

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.

6.2.38 Section 843.00-863.00 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 slow 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 240 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 4 kPa. The injection rate decreased from 14 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 but is still amenable for qualitative analysis. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase is noisy. However, the CHi phase was matched using a radial flow composite model. The late time derivative of the CHir phase shows an indication of horizontal stabilization, which can be attributed to radial flow. A homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-46.

Generalized Radial Flow Analysis

In case of the present test CHi phases do not allow a specific determination of the flow dimension, because of the noisy data (CHi phase) and the insufficient flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $8.2 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-10}$ to $1.0 \cdot 10^{-09}$ m²/s. Due to the low transmissivity no fresh water head was calculated.

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

6.2.39 Section 863.00-883.00 m, test no. 1, 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, no pulse recovery was observed and the pressure stayed stable for approx. 15 minutes. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-48.

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 m hydraulic injection tests

In the following, the 5 m section tests conducted in borehole KLX11A are presented and analysed.

6.3.1 Section 303.00-308.00 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 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 201 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 1.2 L/min at start of the CHi phase to 0.6 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The CHi phase shows no problems and is adequate for quantitative analysis. The CHir phase shows a fast recovery, which adds uncertainty to the derivative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present the derivative of the CHi phase shows a slight upward trend. The CHir derivative is very poor due to the very fast recovery. However, a radial homogeneous flow model was used for the analysis of both phases. The analysis is presented in Appendix 2-49.

Generalized Radial Flow Analysis

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 indicates a flow dimension of 1.9. For the analysis of the CHi phases a homogeneous flow model was chosen. Due to the poor data quality of the CHir phase no generalized radial flow analysis was performed. The analysis is presented in Appendix 2-49.

Selected representative parameters

The recommended transmissivity of $6.0 \cdot 10^{-7}$ m²/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-7}$ to $9.0 \cdot 10^{-7}$ m²/s. 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 2.822.7 kPa.

The quality of the CHir phase is very poor and leads to inconsistency between the CHi and CHir phase. The fast recovery may be caused by non-Darcy flow effects in the formation. No further analysis recommended.

6.3.2 Section 308.00-313.00 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. The injection rate decreased from 3.2 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 automatic rate control functioned well, the recorded flow rate is however a little bit noisy. The CHir phase shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase was matched using an infinite acting homogenous radial flow model. The derivative of the CHir phase shows an upward trend at middle times followed by a horizontal stabilization at late times. This behaviour is interpreted as a decrease of transmissivity at some distance from the borehole. A two shell composite radial flow model was chosen for the analysis of the CHir Phase. The analysis is presented in Appendix 2-50.

Generalized Radial Flow Analysis

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 the CHi show a slight downward trend. The flow dimension calculated by the slope of the derivative is n = 2.2. For the analysis of the CHi phases a homogeneous flow model was chosen. The flow dimension displayed during the CHir phase is n = 2 and no generalized radial flow analysis was performed. The analysis is presented in Appendix 2-50.

Selected representative parameters

The recommended transmissivity of $6.5 \cdot 10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase (outer zone), which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $2.0 \cdot 10^{-6}$ to $9.0 \cdot 10^{-6}$ m²/s. 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 2,867.5 kPa.

The radial flow analyses of the CHi and CHir phases show some inconsistency regarding the chosen flow models. However, regarding the derived transmissivities both phases show consistency. No further analysis is recommended.

6.3.3 Section 313.00–318.00 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. 47 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-51.

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.

6.3.4 Section 318.00-323.00 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. 118 kPa in 20 minutes. This phenomenon is caused

by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-52.

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.

6.3.5 Section 343.00-348.00 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 slow 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. However no large pressure loss occurred. The injection rate decreased from 75 mL/min at start of the CHi phase to 10 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). The injection phase is a little bit noisy but still amenable for quantitative analysis. The CHir phase shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase shows an upward trend at middle times followed by a kind of horizontal stabilization at late times. This behaviour is interpreted as a decrease of transmissivity at some distance from the borehole. The derivative of the CHir phase shows an upward trend at middle times as well but no stabilization at late time, indicating no formation flow stabilization was reached. Both phases are matched using a two shell composite radial flow model. The analysis is presented in Appendix 2-53.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present analysis the upward trend at middle times is interpreted as a change of flow dimension. The calculation based on the slope of the derivatives indicates a flow dimension of n2 = 1.68 (CHi phase) and n2 = 1.76 (CHir phase), respectively. A two shell composite flow model was used for the analysis of both phases. The analysis is presented in Appendix 2-53.

Selected representative parameters

The recommended transmissivity of $3.6 \cdot 10^{-9}$ m²/s was derived from the radial flow 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 $1.0 \cdot 10^{-9}$ to $8.0 \cdot 10^{-9}$ m²/s. Due to the low transmissivity no fresh water head was calculated.

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

6.3.6 Section 348.00–353.00 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. 82 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-54.

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.

6.3.7 Section 353.00–358.00 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. 99 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-55.

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.

6.3.8 Section 358.00–363.00 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. 130 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than 1.0·10⁻¹¹ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-56.

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.

6.3.9 Section 383.00-388.00 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. 74 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-57.

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.

6.3.10 Section 388.00-393.00 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. 108 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than 1.0·10⁻¹¹ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-58.

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.

6.3.11 Section 393.00-398.00 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. 40 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-59.

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.

6.3.12 Section 398.00-403.00 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 slow 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 234 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 N₂ backpressure. However, no pressure loss occurred during the injection phase. The injection rate decreased from 7 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 very low flow rate the recorded data of the flow rate is very noisy and the results of the CHi phase should be regarded carefully. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the poor data quality the CHi phase is not very conclusive. However, in case of the present test an infinite acting homogenous radial flow model was used 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 two shell composite radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-60.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the very poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $3.0 \cdot 10^{-09}$ m²/s was derived from the radial flow 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 $9.0 \cdot 10^{-10}$ to $6.0 \cdot 10^{-09}$ m²/s. 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 3,712.4 kPa.

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

6.3.13 Section 423.00-428.00 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. 60 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-61.

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.

6.3.14 Section 428.00-433.00 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. 82 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-62.

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.

6.3.15 Section 433.00-438.00 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 $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-63.

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.

6.3.16 Section 438.00-443.00 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 relatively 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 relatively well, except for oscillations occurring at the beginning of the phase. However, the CHi phase is still analysable. The injection rate decreased from 75 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).

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test no clear trend could be observed for the derivative of the CHi phase. However, the CHi phase was analysed using an infinite acting homogenous radial flow model. The derivative of the CHir phase shows a horizontal stabilization at late times. A homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-64.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The flow dimension calculated by the slope of the CHi derivative is n=2.2. For the analysis of the CHi phases a homogeneous flow model was chosen. The flow dimension displayed during the CHir phase is n=2 and no generalized radial flow analysis was performed. The analysis is presented in Appendix 2-64.

Selected representative parameters

The recommended transmissivity of $1.9 \cdot 10^{-7}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better derivative stabilization. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-8}$ to $5.0 \cdot 10^{-7}$ m²/s. 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 4,087.3 kPa.

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

6.3.17 Section 442.00-447.00 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.

After closing the testvalve the pressure in the test section rose by approx. 10 kPa. This can be explained either by prolonged packer expansion in a relatively tight section or by the fact that the initial formation pressure is higher than the pressure measured on test depth. During the brief injection phase of the pulse injection a total volume of about 8 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 210 kPa.

Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to 3.8·10⁻¹¹ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the strong influence of the packer expansion the pressure before inflation has been assumed to be the initial formation pressure. Therefore the results of the late time derivative (e.g. outer zone transmissivity) should be regarded carefully. In case of the present analysis the PI phase was matched using a radial composite flow model with increasing transmissivity at some distance from the borehole. The analysis is presented in Appendix 2-65.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the downward trend at middle and late times of the derivative is interpreted as change of flow dimension. For the generalized radial flow analysis a composite flow model with n1 = 2 and n2 = 2.23 was used. The analysis is presented in Appendix 2-65.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the Pi phase (inner zone). The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-11}$ to $3.0 \cdot 10^{-10}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.18 Section 447.00-452.00 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 relatively 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 regulation system worked relatively well, except some oscillations at the start of the injection. Due to the low flow rate the recorded data is a little bit noisy. However, the CHi phase is adequate for analysis. The injection rate decreased from 18 mL/min at start of the CHi phase to 13 mL/min at the end, indicating a relatively low interval transmissivity (consistent with the pulse recovery). The CHir shows a fast recovery, which adds uncertainty to the derivative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. The response of the CHir phase is consistent with the presence of a large skin, which

in turn, is not consistent with the response observed during the CHi phase. A homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-66.

Generalized Radial Flow Analysis

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 indicates a flow dimension of 2. For this reason no generalized radial flow analysis was performed. The CHir phase does not allow a specific determination of the flow dimension, because of no clear flow stabilization. No generalized radial flow analysis was performed for the CHir phase.

Selected representative parameters

The recommended transmissivity of $1.4\cdot10^{-08}$ m²/s was derived from the radial flow analysis of the CHi phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0\cdot10^{-09}$ to $3.0\cdot10^{-08}$ m²/s. 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 4.174.5 kPa.

The radial flow analysis of the CHi and CHir phases show little inconsistency, which can be attributed to the fast recovery of the CHir phase. No further analysis is recommended.

6.3.19 Section 452.00-457.00 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 slow recovery of the pulse test indicated a relatively 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 208 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system worked relatively well, except some oscillations at the start of the injection. Due to the relatively low flow rate the recorded data is noisy. The injection rate decreased from approx. 22 mL/min at start of the CHi phase to 17 mL/min at the end, indicating a relatively low interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relatively fast recovery, which adds uncertainty to the derivative analyses. However, both phases are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi phase (although noisy) shows a relatively flat derivative which can be interpreted as radial flow. A radial homogeneous flow model was used to analyse the CHi phase. The derivative of the CHir phase shows a unit slope downward trend at middle times, indicating a large positive skin. There is a slight indication of stabilization in the late time derivative. The CHir phase is matched using a radial homogeneous flow model. The analysis is presented in Appendix 2-67.

Generalized Radial Flow Analysis

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 a little bit noisy and shows a horizontal stabilization, indicating a flow dimension n = 2. Due to the noise in the data

the interpretation of the flow dimension should be regarded carefully. No generalized radial flow analysis was performed. Due to the fast recovery and no clear flow stabilization of the CHir phase, no generalized radial flow analysis was performed, either. The analysis is presented in Appendix 2-67.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-8}$ m²/s was derived from the radial flow analysis of the CHi phase, which shows better data quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-9}$ to $4.0 \cdot 10^{-8}$ m²/s. 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 4.220.6 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency in the derived transmissivities, which is attributed to the fast recovery of the CHir phase. The fast recovery may be caused by non-Darcy flow effects in the formation. No further analysis is recommended.

6.3.20 Section 457.00-462.00 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. 170 kPa in 20 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 2-68.

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.

6.3.21 Section 462.00-467.00 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. 108 kPa in 20 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 2-69.

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.

6.3.22 Section 483.00-488.00 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. 90 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-70.

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.

6.3.23 Section 488.00-493.00 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. 90 kPa in 20 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than 1.0·10⁻¹¹ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-71.

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.

6.3.24 Section 493.00-498.00 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.

After closing the testvalve the pressure in the test section rose by approx. 10 kPa and drops after approx. 0.5 h. This can be explained by prolonged packer expansion in a relatively tight section. 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 226 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.2 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the deconvoluted PI pressure shows a horizontal stabilization at middle and late times indicating radial flow. An infinite acting homogeneous radial flow model was used for the analysis. The analysis is presented in Appendix 2-72.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the calculation of the flow dimension based on the slope of derivative shows a flow dimension of n = 2 (radial flow). Therefore no generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.6 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-11}$ to $4.0 \cdot 10^{-10}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.25 Section 498.00-503.00 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 slow 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 241 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, no pressure loss occurred during the injection phase. The injection rate decreased from 8 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 the results of the CHi phase should be regarded carefully. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the poor data quality the CHi phase is not very conclusive. However, in case of the present test an infinite acting homogenous radial flow model was used 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 composite radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-73.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $2.5 \cdot 10^{-9}$ m²/s was derived from the radial flow 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 $8.0 \cdot 10^{-10}$ to $5.0 \cdot 10^{-09}$ m²/s. 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 4,650.5 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency regarding the chosen flow model. This inconsistency can be attributed to the poor data quality of the CHi phase. However, regarding the derived transmissivities, both phases show consistency. No further analysis is recommended.

6.3.26 Section 503.00-508.00 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 slow 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 182 kPa. No hydraulic connection to the adjacent zones was observed. The automatic regulation system functioned well, except the oscillations at the beginning of the injection phase. The recorded data is however noisy, but still analysable. The injection rate decreased from approx 25 mL/min at start of the CHi phase to 17 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test an infinite acting homogenous radial flow model was used for the analysis of the CHi phase. No clear flow stabilization was reached during the CHir phase and the data is still influenced by wellbore effects like wellbore storage and skin. However, a homogeneous radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-74.

Generalized Radial Flow Analysis

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 show a slight downward trend. The flow dimension calculated by the slope of the derivative is n = 2.1. Due to the fact that the data of the CHi phase is relatively noisy, the results should be regarded carefully. A homogeneous flow model was chosen for the analysis of the CHi phase. No clear flow stabilization was reached during the CHir phase. This does not allow a specific determination of the flow dimension. The analysis is presented in Appendix 2-74.

Selected representative parameters

The recommended transmissivity of $1.1\cdot10^{-08}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0\cdot10^{-09}$ to $5.0\cdot10^{-08}$ m²/s. 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 4,687.3 kPa.

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

6.3.27 Section 508.00-513.00 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 slow 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 199 kPa. No hydraulic connection to the adjacent zones was observed. The start of the injection phase was a little bit noisy. The injection rate decreased from 48 mL/min at start of the CHi phase to 16 mL/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). The recovery was measured 2 h. Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi derivative shows a slight upward trend and an infinite acting homogenous radial flow model was used. The CHir phase shows an upward trend at middle times and an indication of stabilization at late times. This behaviour is interpreted as a change of transmissivity at some distance from the borehole. A two shell composite radial flow model was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-75.

Generalized Radial Flow Analysis

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 slight upward trend of the CHi derivative is interpreted as a flow dimension of n = 1.9. A homogenous flow model was used for the analysis of the CHi phase. The derivative of the CHir phase is interpreted as a change of flow dimension at some distance form the borehole. A composite flow model with n = 2 and n = 1.86 was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-75.

Selected representative parameters

The recommended transmissivity of $1.3 \cdot 10^{-08}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $7.0 \cdot 10^{-09}$ to $3.0 \cdot 10^{-08}$ m²/s (this range includes the derived transmissivity from the CHi phase). 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 4,738.8 kPa.

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

6.3.28 Section 513.00-518.00 m, test no. 1-3, injection

Comments to test

Due to a technical problem with the regulation unit the test was repeated. The third test in this interval worked well.

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 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 201 kPa. No hydraulic connection to the adjacent zones was observed. The injection rate decreased from 1.7 L/min at start of the CHi phase to 1.2 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivatives of both phases show a clear horizontal stabilization at middle and late times. A homogeneous radial flow model was used for the analysis of both phases. The analysis is presented in Appendix 2-76.

Generalized Radial Flow Analysis

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 show a clear horizontal stabilization which is indicative for a flow dimension of 2 (radial flow). For this reason no generalized radial flow analysis was necessary.

Selected representative parameters

The recommended transmissivity of $4.0\cdot10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase, because it shows the most clear derivative stabilization. The confidence range for the interval transmissivity is estimated to be $2.0\cdot10^{-6}$ to $6.0\cdot10^{-6}$ m²/s. 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 4,794.0 kPa.

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

6.3.29 Section 518.00-523.00 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 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. The injection rate decreased from 5.7 L/min at start of the CHi phase to 3.1 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi and CHir phases show a flat derivative at middle and late times, indicating formation flow stabilization and radial flow. Both phases are analysed using a radial homogeneous flow model. The analysis is presented in Appendix 2-77.

Generalized Radial Flow Analysis

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 both phases show a horizontal stabilization with a slope of 0, indicating a flow dimension n = 2. Therefore no generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $4.7\cdot10^{-6}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $2.0\cdot10^{-6}$ to $7.0\cdot10^{-6}$ m²/s. 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 4.837.1 kPa.

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

6.3.30 Section 523.00-528.00 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 slow 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 injection rate decreased from 15 mL/min at start of the CHi phase to 9 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 the results of the CHi phase should be regarded carefully. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the poor data quality the CHi phase is not very conclusive. However, in case of the present test an infinite acting homogenous radial flow model was used 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 chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-78.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $4.2\cdot10^{-8}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0\cdot10^{-8}$ to $7.0\cdot10^{-8}$ m²/s. 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 4,881.0 kPa.

The radial flow analyses of the CHi and CHir phases show little inconsistency regarding the derived transmissivity. This inconsistency can be attributed to the poor data quality of the CHi phase. No further analysis is recommended.

6.3.31 Section 528.00-533.00 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 approx. 700 mL/min at start of the CHi phase to 50 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis the Chi phase (although a little bit noisy) shows a relatively flat derivative. An infinite acting homogenous radial flow model was used for the analysis of the CHi phase. The CHir phase shows a slight horizontal stabilization at middle times and a downward trend at late times, which is typical for a change of transmissivity away from the borehole. A two shell composite radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-79.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present analysis the CHi phase does not allow a specific determination of the flow dimension and no generalized radial flow analysis was performed for this phase. The calculated flow dimension based on the slope of the CHir derivative shows a flow dimension of n = 3 (spherical). A homogeneous flow model was used for the analysis of the CHir phase. The analysis is presented in Appendix 2-79.

Selected representative parameters

The recommended transmissivity of $6.7 \cdot 10^{-8}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $3.0 \cdot 10^{-8}$ to $9.0 \cdot 10^{-8}$ m²/s. 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 4,932.1 kPa.

The radial flow analyses of the CHi and CHir phases show inconsistency regarding the chosen flow models. If further analysis is planned, a total test simulation should help resolving this inconsistency.

6.3.32 Section 533.00-538.00 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 injection rate decreased from 190 mL/min at start of the CHi phase to 100 mL/min at the end, indicating a medium interval transmissivity (consistent with the pulse recovery). The CHi phase is a little bit noisy, which can be attributed to the automatic regulation unit which was switching between the injection pump and the injection vessel. The CHir phase shows a relatively fast recovery. Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis both phases are matched using a homogeneous radial flow model. The analysis is presented in Appendix 2-80.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The flow dimension calculated by the slope of the CHi derivative is n = 2.3. A homogeneous flow model was used to match the CHi phase. No generalized radial flow analysis was performed for the CHir phase. The analysis is presented in Appendix 2-80.

Selected representative parameters

The recommended transmissivity of $3.7 \cdot 10^{-7}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the best data and derivative quality. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-8}$ to $6.0 \cdot 10^{-7}$ m²/s. 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 4,980.7 kPa.

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

6.3.33 Section 538.00-543.00 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 slow 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 242 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. 1 kPa. The injection rate decreased from 8 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). Because of the low flow rate the recorded data of the flow rate is noisy and the results of the CHi phase should be regarded carefully. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. Due to the poor data quality the CHi phase is not very conclusive. However, in case of the present test an infinite acting homogenous radial flow model was used 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 chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-81.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the poor data quality (CHi phase) and no flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $4.1\cdot10^{-9}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $1.0\cdot10^{-9}$ to $1.0\cdot10^{-8}$ m²/s. 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 5,028.7 kPa.

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

6.3.34 Section 563.00-568.00 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. 63 kPa in 25 minutes. This phenomenon is caused by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-82.

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.

6.3.35 Section 568.00-573.00 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. 60 kPa in 25 minutes. This phenomenon is caused

by prolonged packer expansion in a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

The measured data is presented in Appendix 2-83.

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.

6.3.36 Section 573.00-578.00 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 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. A hydraulic connection between test interval and bottom zone (the pressure rose by 13 kPa during injection) was observed. The automatic regulation unit functioned well. However, the recorded data of the Chi phase is noisy. The injection rate decreased from 5.5 L/min at start of the CHi phase to 4.1 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery. Both phases are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase is very noisy. However, a homogeneous radial flow model was used for the analysis of the CHi phase. The CHir phase shows a flat derivative at middle and late times, indicating radial 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 2-84.

Generalized Radial Flow Analysis

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 does not allow a specific determination of the flow dimension, because of the poor data quality. The derivative of the CHir phase shows a horizontal stabilization with a slope of 0, indicating a flow dimension n = 2. Therefore no generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $1.5 \cdot 10^{-5}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the best data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-6}$ to $3.0 \cdot 10^{-5}$ m²/s. 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 5,350.3 kPa.

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

6.3.37 Section 578.00-583.00 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 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 201 kPa. The pressure rose by 6 kPa in the bottom zone during the injection indicating a connection to the adjacent zone. The injection rate decreased from 7.5 L/min at start of the CHi phase to 5.6 L/min at the end, indicating a relatively high interval transmissivity (consistent with the pulse recovery). The CHir phase shows a relative fast recovery. Both phases are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase is relatively flat and a homogeneous radial flow model was used for the analysis of this phase. The CHir phase shows a flat derivative at middle and late times, indicating radial 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 2-85.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present analysis the slope of the derivative of the CHi phase indicates a flow dimension of 2.1. A homogeneous flow model was used for the analysis of the CHi phase. The analysis is presented in Appendix 2-85. No generalized radial flow analysis was performed for the CHir phase.

Selected representative parameters

The recommended transmissivity of $1.0 \cdot 10^{-5}$ m²/s was derived from the radial flow analysis of the CHi phase, which shows the best data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-6}$ to $3.0 \cdot 10^{-5}$ m²/s. 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 5.397.7 kPa.

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

6.3.38 Section 583.00-588.00 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.

After closing the testvalve the pressure in the test section rose by approx. 4 kPa. This can be explained by prolonged packer expansion in a relatively tight section. 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 242 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.2 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis the deconvoluted PI pressure was matched using an infinite acting homogeneous radial flow model. The analysis is presented in Appendix 2-86.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the calculation of the flow dimension based on the slope of derivative shows a flow dimension of n = 1.4. A homogeneous flow model was used for the analysis of the PI phase. The analysis is presented in Appendix 2-86.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-12}$ to $4.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.39 Section 588.00-593.00 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, no pulse recovery was observed and the pressure stayed stable for approx. 40 minutes. This phenomenon is caused by a combination of prolonged packer expansion and a very tight section (T probably smaller than $1.0 \cdot 10^{-11}$ m²/s). None of the test phases is analysable.

No analysis was performed. The measured data is presented in Appendix 2-87.

Selected representative parameters

Based on the test response the interval transmissivity is lower than 1.0·10⁻¹¹ m²/s.

No further analysis recommended.

6.3.40 Section 593.00-598.00 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 5 mL was injected (derived from the flow meter readings). This injected volume produced a pressure increase of 238 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the PI phase shows an upward trend at early times followed by a kind of stabilization at late times. The PI phase was matched using a radial homogeneous flow model. The analysis is presented in Appendix 2-88.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test no reliable flow dimension can be calculated by the slope of derivative. No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $4.2 \cdot 10^{-12}$ m²/s was derived from the radial flow analysis of the PI phase. The confidence range for the interval transmissivity is estimated to be $1.0 \cdot 10^{-12}$ to $7.0 \cdot 10^{-12}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.41 Section 598.00-603.00 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 approx 0.5 L/min at start of the CHi phase to 0.3 L/min at the end, indicating a low interval transmissivity (consistent with the pulse recovery). Both phases show no problems and are adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the CHi derivative shows a horizontal stabilization at middle times followed by an upward trend at late times. A two shell composite flow model with decreasing transmissivity at some distance from the test interval was used for the analysis of the CHi phase. The response of the CHir phase is consistent with the CHi phase and a two shell composite flow model was used for the analysis as well. The analysis is presented in Appendix 2-89.

Generalized Radial Flow Analysis

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 both phases do not allow a reliable calculation of the flow dimension. No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $3.8 \cdot 10^{-07}$ m²/s was derived from the radial flow 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 $9.0 \cdot 10^{-08}$ to $9.0 \cdot 10^{-07}$ m²/s (this range includes the derived transmissivity from the CHir phase). 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 5,583.6 kPa.

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

6.3.42 Section 663.00-668.00 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 slow 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. However, no large pressure loss occurred during the injection phase. The injection rate decreased from 5 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 noisy but is still amenable for qualitative analysis. The CHir shows no problems and is adequate for quantitative analysis.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present test the derivative of the CHi phase is noisy. However, the CHi phase was matched using a radial flow composite model with decreasing transmissivity away from the borehole. No clear flow stabilization was reached during the CHir phase and the data is still influenced by wellbore effects like wellbore storage and skin. A two shell composite radial flow model with wellbore storage and skin was chosen for the analysis of the CHir phase. The analysis is presented in Appendix 2-90.

Generalized Radial Flow Analysis

In case of the present test both phases do not allow a specific determination of the flow dimension, because of the noisy data (CHi phase) and no clear flow stabilization (CHir phase). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $1.3 \cdot 10^{-10}$ m²/s was derived from the radial flow analysis of the CHir phase, which shows the better data and derivative quality. The confidence range for the interval transmissivity is estimated to be $8.0 \cdot 10^{-11}$ to $4.0 \cdot 10^{-10}$ m²/s. Due to the low transmissivity no fresh water head was calculated.

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

6.3.43 Section 668.00-673.00 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.

After closing the testvalve the pressure in the test section rose by approx. 6 kPa. This can be explained by prolonged packer expansion in a relatively tight section. 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 231 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.7 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis the deconvoluted PI pressure was matched using an infinite acting homogeneous radial flow model. The analysis is presented in Appendix 2-91.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the calculation of the flow dimension based on the slope of derivative shows a flow dimension of n = 1.6. A homogeneous flow model was used for the analysis of the PI phase. The analysis is presented in Appendix 2-91.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $9.0 \cdot 10^{-12}$ to $4.0 \cdot 10^{-11}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.44 Section 673.00-678.00 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 246 kPa. Using a dV/dP approach, the wellbore storage coefficient relevant for the subsequent pressure recovery can be calculated to $1.2 \cdot 10^{-11}$ 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis the deconvoluted PI pressure show a horizontal stabilization at early times and a short downward trend at middle times followed by a new stabilization at a lower level. This behaviour is consistent with an increase of transmissivity at some distance from the borehole. A two shell composite radial flow model was used for the analysis of the PI phase. The analysis is presented in Appendix 2-91.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the calculated flow dimension is n = 2 (radial flow). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $9.0 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the PI phase (inner zone). The confidence range for the interval transmissivity is estimated to be $5.0 \cdot 10^{-11}$ to $2.0 \cdot 10^{-10}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

No further analysis is recommended.

6.3.45 Section 678.00-683.00 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.

After closing the testvalve the pressure in the test section rose by approx. 4 kPa. This can be explained by prolonged packer expansion in a relatively tight section. 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 246 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.

Radial Flow Analysis

For the interpretation a flow dimension of 2 (radial flow) was assumed. In case of the present analysis the deconvoluted PI pressure was matched using an infinite acting homogeneous radial flow model. The analysis is presented in Appendix 2-93.

Generalized Radial Flow Analysis

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of this analysis the calculation of the flow dimension shows a flow dimension of n = 2 (radial flow). No generalized radial flow analysis was performed.

Selected representative parameters

The recommended transmissivity of $8.4 \cdot 10^{-11}$ m²/s was derived from the radial flow analysis of the Pi phase. The confidence range for the interval transmissivity is estimated to be $6.0 \cdot 10^{-11}$ to $1.0 \cdot 10^{-10}$ m²/s. The static pressure could not be extrapolated due to the very low transmissivity.

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.

7.1 Summary of results

Table 7-1. General test data from constant head injection tests in KLX11A (for nomenclature see Appendix 4).

Borehole	Borehole	Date and time	Date and time	අ	o	♣	‡ ‡	g	ق	g	۾	Te	Test phases measured
dnoes	seclow	for test, start	for test, stop										Analysed test phases
Œ)	(E)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	<u>(</u>)	marked bold
103.00	203.00	060629 14:32:00	060629 16:40:00	1.31E-04	1.37E-04	1,800	1,800	1,842	1,837	2,035	1,840	9.6	CHi / CHir
203.00	303.00	060629 18:03:00	060629 20:21:00	1.52E-04	1.53E-04	1,800	1,800	2,780	2,776	2,975	2,777	1.	CHi / CHir
303.00	403.00	060630 09:15:00	060630 11:12:00	5.67E-05	5.83E-05	1,800	1,800	3,714	3,712	3,907	3,713	12.6	CHi / CHir
403.00	503.00	060630 13:11:00	060630 15:20:00	1.17E-06	1.33E-06	1,800	1,800	4,653	4,650	4,854	4,650	14.0	CHi / CHir
503.00	603.00	060701 08:47:00	060701 10:50:00	1.91E-04	1.98E-04	1,800	1,800	5,578	5,580	5,795	2,600	15.6	CHi / CHir
603.00	703.00	060701 12:14:00	060701 15:43:00	3.33E-08	5.00E-08	1,800	3,600	6,514	6,549	6,754	6,586	17.1	CHi / CHir
703.00	803.00	060701 17:09:00	060702 01:32:00	3.33E-08	6.67E-08	1,800	21,600	7,443	7,477	7,680	7,451	18.6	CHi / CHir
803.00	903.00	060702 09:11:00	060702 13:33:00	6.67E-08	1.00E-07	1,800	7,200	8,351	8,354	8,589	8,352	20.1	CHi / CHir
876.00	976.00	060702 14:45:00	060702 16:49:00	>N#	>N#	10	3,978	9,027	9,042	9,253	9,202	21.2	i <u>a</u>
103.00	123.00	060704 08:19:00	060704 09:46:00	2.33E-05	2.33E-05	1,200	1,200	1,091	1,093	1,293	1,093	8.4	CHi / CHir
123.00	143.00	060704 10:31:00	060704 11:54:00	6.50E-05	6.67E-05	1,200	1,200	1,279	1,275	1,475	1,275	8.7	CHi / CHir
143.00	163.00	060704 12:49:00	060704 14:32:00	6.67E-06	8.33E-06	1,200	1,800	1,469	1,464	1,671	1,469	8.9	CHi / CHir
163.00	183.00	060704 15:05:00	060704 16:33:00	4.17E-05	4.33E-05	1,200	1,200	1,656	1,648	1,849	1,651	9.2	CHi / CHir
183.00	203.00	060704 17:12:00	060704 18:14:00	>N#	>N#	>N #	> N #	1,844	>N#	>N#	> N #	9.5	NN#

Boroholo	Boroholo	Date and time	Date and time	c	c	+	+	ś	5	2	٤	P	Tast phases maasured
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dnas	MOD (A)	or test, start	dois test, stop	1-10+		3	3					Ć	Alialysed test pliases
(E)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(кРа)	(kPa)	(၁၂)	marked bold
203.00	223.00	060704 18:50:00	060704 19:46:00	>N#	NN#	>N#	>N#	2,031	\N#	/N#	/N#	9.8	\N#
223.00	243.00	060705 08:38:00	060705 10:07:00	>N#	>N#	10	2,700	2,216	2,233	2,458	2,255	10.0	ā
243.00	263.00	060705 10:48:00	060705 12:22:00	6.67E-07	7.00E-07	1,200	1,200	2,406	2,403	2,616	2,402	10.4	CHi / CHir
263.00	283.00	060705 13:18:00	060705 14:44:00	1.65E-04	1.69E-04	1,200	1,200	2,594	2,588	2,789	2,590	10.8	CHi / CHir
283.00	303.00	060705 15:25:00	060705 16:51:00	>N#	>N#	10	2,700	2,781	2,797	3,034	2,958	1.	ā
303.00	323.00	060705 17:25:00	060705 18:49:00	6.50E-05	6.83E-05	1,200	1,200	2,967	2,963	3,187	2,964	11.5	CHi / CHir
323.00	343.00	060705 19:21:00	060706 00:42:00	8.33E-09	5.00E-09	099	14,400	3,155	3,159	3,377	3,155	11.8	CHi / CHir
343.00	363.00	060706 08:48:00	060706 10:30:00	1.50E-07	3.00E-07	1,200	1,200	3,339	3,356	3,551	3,443	12.1	CHi / CHir
363.00	383.00	060706 11:03:00	060706 12:55:00	>N#	>N#	10	3,960	3,530	3,536	3,753	3,693	12.3	ā
383.00	403.00	060706 13:34:00	060706 15:02:00	8.33E-08	8.33E-08	1,200	1,200	3,717	3,715	3,954	3,712	12.6	CHi / CHir
403.00	423.00	060706 15:54:00	060706 17:22:00	>N#	>N#	10	2,460	3,903	3,908	4,141	4,062	12.9	ā
423.00	443.00	060706 17:56:00	060706 19:21:00	1.00E-06	1.00E-06	1,200	1,200	4,090	4,088	4,290	4,087	13.2	CHi / CHir
443.00	463.00	060707 08:32:00	060707 10:01:00	5.00E-07	4.92E-07	1,200	1,200	4,271	4,269	4,513	4,269	13.5	CHi / CHir
463.00	483.00	060707 10:33:00	060707 12:34:00	>N#	>N#	10	4,500	4,461	4,485	4,698	4,572	13.8	ä
483.00	503.00	060707 13:12:00	060707 14:44:00	1.17E-07	1.33E-07	1,200	1,200	4,650	4,649	4,899	4,642	14.0	CHi / CHir

Borehole Date a seclow for tes	Date a for tes	Date and time for test, start	Date and time for test, stop	ď	Q	₽	#	o 0	ā	ď	ď	Te	Test phases measured Analysed test phases
YYYYMMDD hh:mm	MDD	YYYYMMD hh:mm	. ō	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(0°)	marked bold
523.00 060707 060707 15:12:00 16:39:00	0 4	060707 16:39:00		5.83E-05	6.17E-05	1,200	1,200	4,838	4,837	5,037	4,838	14.4	CHi / CHir
543.00 060707 060707 17:07:00 18:30:00	0 .	060707 18:30:00		1.33E-06	1.33E-06	1,200	1,200	5,025	5,024	5,228	5,023	14.6	CHi / CHir
563.00 060707 060708 19:07:00 08:26:00	0	060708 08:26:00		>N #	>N#	10	45,360	5,211	5,219	5,439	5,349	15.0	<u>i</u>
583.00 060708 060708 08:58:00 10:21:00		060708 10:21:00		1.47E-04	1.52E-04	1,200	1,200	5,395	5,392	5,590	5,394	15.1	CHi / CHir
603.00 060708 060708 10:53:00 12:23:00		060708 12:23:00		4.33E-06	4.50E-06	1,200	1,200	5,583	5,585	5,786	5,590	15.6	CHi / CHir
623.00 060708 060708 13:17:00 14:41:00	060708 14:41:00	0		>N#	>N #	10	2,460	5,772	5,778	6,021	5,930	15.9	<u>i</u>
643.00 060708 060708 # 15:12:00 16:39:00	060708 16:39:00		#	>N#	>N #	10	2,460	5,957	5,963	6,183	6,172	16.2	<u>i</u>
663.00 060708 060708 #I 17:11:00 18:34:00	060708 18:34:00		#	>N#	>N #	10	2,400	6,144	6,153	6,368	6,133	16.5	<u>i</u>
683.00 060708 060709 1.6 19:06:00 08:39:00	060709 08:39:00	0	9.	1.67E-08	3.67E-08	1,200	1,200	6,332	6,327	6,583	6,411	16.8	CHi / CHir
703.00 060709 060709 #NV 09:11:00 10:40:00	060709		#	≥,	>N #	10	2,520	6,513	6,516	6,740	6,556	17.1	<u>i</u>
723.00 060709 060709 5.C 11:08:00 13:27:00	060709 13:27:00		5.0	5.00E-08	8.47E-08	1,200	2,400	6,700	6,718	6,928	6,761	17.3	CHi / CHir
743.00 060709 060709 #N 13:58:00 15:13:00	060709	0	#	>N#	>N #	N#	>N #	6,886	>N#	>N#	>N#	17.6	NN#
763.00 060709 060709 #I 15:45:00 16:56:00	060709 0 16:56:00	0	#	>N#	>N #	N#	>N #	7,070	>N#	>N#	>N#	17.9	NN#
783.00 060709 060709 # 17:25:00 18:10:00	060709 0 18:10:00	0	#	>N#	>N #	N#	>N #	7,254	>N#	> N #	>N#	18.2	NN#
803.00 060709 060709 # 18:43:00 20:01:00	060709 0 20:01:00	0	#	>N#	>N #	>N #	>N #	7,439	>N#	>N#	>N#	18.5	AN#

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Poleilog		Date allo tille	Date allo Illie	ร๊	ž	٩	<u>u</u>	ŝ	ī.	ဋ	<u>5</u>	≱ 	lest phases measured
dnoes	seclow	for test, start	for test, stop										Analysed test phases
Œ)	(E)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	်	marked bold
803.00	823.00	060710 08:19:00	060710 09:15:00	N#	NN#	>N#	>N#	7,623	>N #	>N#	>N#	18.8	/N#
823.00	843.00	060710 09:45:00	060710 10:37:00	>N#	>N#	>N #	> N #	7,807	>N #	> N#	>N#	19.1	NN#
843.00	863.00	060710 11:10:00	060710 13:24:00	6.67E-08	1.05E-07	1,200	1,200	7,794	7,983	8,223	8,013	19.5	CHi / CHir
863.00	883.00	060710 14:04:00	060710 14:56:00	>N#	>N#	>N #	> N #	8,180	>N #	> N#	>N#	19.8	N#
303.00	308.00	060712 07:38:00	060712 09:06:00	1.06E-05	1.16E-05	1,200	1,200	2,828	2,823	3,024	2,823	1.1	CHi / CHir
308.00	313.00	060712 09:30:00	060712 10:51:00	5.33E-05	5.61E-05	1,200	1,200	2,875	2,871	3,071	2,871	11.3	CHi / CHir
313.00	318.00	060712 11:13:00	060706 15:02:00	>N#	>N#	>N #	> N #	2,925	>N #	> N#	>N#	4.11	NN#
318.00	323.00	060712 13:09:00	060712 12:03:00	>N#	>N#	>N #	> N #	2,972	>N #	> N#	>N#	11.5	NN#
343.00	348.00	060712 14:31:00	060712 13:57:00	1.67E-07	3.33E-07	1,200	1,200	3,206	3,222	3,432	3,312	11.8	CHi / CHir
348.00	353.00	060712 16:38:00	060712 16:11:00	>N#	>N#	>N #	>N #	3,252	>N #	> N#	>N#	11.9	N#
353.00	358.00	060712 17:56:00	060712 17:38:00	>N#	>N#	>N #	> N #	3,298	>N #	> N#	>N#	12.0	NN#
358.00	363.00	060713 07:52:00	060712 18:45:00	>N#	>N#	>N #	> N #	3,342	>N #	> N#	>N#	12.0	NN#
383.00	388.00	060713 09:14:00	060713 08:41:00	>N#	>N#	>N #	> N #	3,576	>N #	> N#	>N#	12.4	NN#
388.00	393.00	060713 10:28:00	060713 10:05:00	>N #	>N#	>N #	>N#	3,624	>N #	>N#	>N#	12.5	>N#
393.00	398.00	060713 12:29:00	060713 11:17:00	>N#	>N#	>N #	> N #	3,673	>N #	> N#	>N#	12.5	NN#

Borehole	Rorehole	Date and time	Date and time	d	d		4	ć	ć	c	ć	Ā	Test phases measured
				ŝ	Ę	9 -	÷	ŝ	ī	ž	<u>t</u>	<u>></u>	
secnb	seclow	for test, start	for test, stop										Analysed test phases
(E)	(E)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(ၞ	marked bold
398.00	403.00	060713 13:44:00	060713 13:20:00	8.33E-08	8.33E-08	1,200	1,200	3,718	3,717	3,951	3,715	12.6	CHi / CHir
423.00	428.00	060713 15:46:00	060713 15:16:00	> N #	>N#	>N#	>N#	3,952	>N#	>N#	>N#	13.0	\N#
428.00	433.00	060713 16:59:00	060713 16:55:00	> *	>N#	>N#	>N#	3,998	> <u>N</u> #	>N #	>N#	13.0	\N#
433.00	438.00	060714 07:59:00	060713 17:47:00	> N #	>N#	>N#	>N#	4,043	> <u>N</u> #	>N#	>N#	13.1	\N#
438.00	443.00	060714 09:17:00	060714 08:46:00	1.17E-06	1.16E-06	1,200	1,200	4,090	4,087	4,288	4,088	13.2	CHi / CHir
442.00	447.00	060714 11:06:00	060714 10:39:00	> *	>N#	10	3,840	4,133	4,147	4,357	4,150	13.3	Ā
447.00	452.00	060714 13:16:00	060714 12:51:00	2.17E-07	2.17E-07	1,200	1,200	4,175	4,176	4,377	4,175	13.3	CHi / CHir
452.00	457.00	060714 15:01:00	060714 14:37:00	2.83E-07	2.95E-07	1,200	1,200	4,224	4,222	4,430	4,221	13.4	CHi / CHir
457.00	462.00	060714 16:45:00	060714 16:22:00	> N #	>N#	>N#	>N#	4,271	>N#	>N #	>N#	13.5	>N#
462.00	467.00	060714 18:01:00	060714 17:35:00	> *	>N#	>N#	>N#	4,317	>N#	>N #	>N#	13.5	>N#
483.00	488.00	060715 08:16:00	060714 18:50:00	> *	>N#	>N#	>N#	4,509	>N#	>N#	>N#	13.8	\N#
488.00	493.00	060715 09:29:00	060715 09:05:00	> \ #	>N#	>N#	>N#	4,556	>N#	>N #	>N#	13.9	>N#
493.00	498.00	060715 10:47:00	060715 10:19:00	> *	>N#	10	1500	4,605	4,613	4,839	4,617	14.0	<u>i</u>
498.00	503.00	060715 14:04:00	060715 13:39:00	8.33E-08	1.00E-07	1,200	1,200	4,655	4,652	4,893	4,652	14.0	CHi / CHir
503.00	508.00	060715 15:53:00	060715 15:29:00	2.83E-07	2.83E-07	1,200	1,200	4,700	4,705	4,887	4,735	14.1	CHi / CHir

Borehole	Borehole	Date and time	Date and time	ී	ď	- 0-	۳	മ്	ā	മ്	ď	<u>•</u>	lest phases measured
dnoes	seclow	for test, start	for test, stop										Analysed test phases
(E)	(E)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	်	marked bold
508.00	513.00	060715 18:09:00	060715 17:47:00	2.67E-07	3.12E-07	1,200	7,200	4,747	4,751	4,950	4,746	14.2	CHi / CHir
513.00	518.00	060808 15:30:00	060808 17:15:00	1.93E-05	1.98E-05	1,200	1,200	4,797	4,795	4,996	4,794	14.3	CHi / CHir
518.00	523.00	060808 17:47:00	060808 19:37:00	5.12E-05	5.33E-05	1,200	1,200	4,844	4,842	5,042	4,844	4. 4.	CHi / CHir
523.00	528.00	060809 08:08:00	060809 09:41:00	1.43E-07	1.43E-07	1,200	1,200	4,884	4,885	5,086	4,884	14.5	CHi / CHir
528.00	533.00	060809 10:08:00	060809 11:34:00	7.83E-07	8.33E-07	1,200	1,200	4,931	4,932	5,132	4,931	14.6	CHi / Chir
533.00	538.00	060809 12:48:00	060809 14:16:00	1.67E-06	1.75E-06	1,200	1,200	4,983	4,981	5,180	4,981	14.6	CHi / CHir
538.00	543.00	060809 14:40:00	060809 16:19:00	3.33E-08	4.50E-08	1,200	1,200	5,028	5,032	5,274	5,032	14.7	CHi / CHir
563.00	568.00	060809 16:59:00	060809 17:53:00	>N#	>N#	N#	N#	5,262	>N #	> <u>N</u> #	>N#	15.0	NN#
568.00	573.00	060809 18:17:00	060809 19:11:00	>N#	>N#	>N #	>N #	5,308	>N#	>N#	> <u>N</u> #	15.1	N#
573.00	578.00	060810 08:06:00	060810 09:34:00	6.85E-05	7.02E-05	1,200	1,200	5,349	5,350	5,550	5,351	15.2	CHi / CHir
578.00	583.00	060810 10:02:00	060810 11:28:00	9.33E-05	9.72E-05	1,200	1,200	5,398	5,397	5,598	5,399	15.1	CHi / CHir
583.00	588.00	060810 12:20:00	060810 14:15:00	>N#	>N#	10	3,888	5,447	5,452	5,694	5,519	15.4	Pi
588.00	593.00	060810 14:41:00	060810 16:05:00	>N#	>N#	N#	>N #	5,262	>N #	> <u>N</u> #	> N#	15.4	N#
593.00	598.00	060810 16:33:00	060810 18:19:00	>N#	>N#	10	3,679	5,540	5,546	5,784	5,719	15.5	Pi
598.00	603.00	060811 08:01:00	060811 09:26:00	4.48E-06	4.80E-06	1,200	1,200	5,582	5,582	5,782	5,586	15.6	CHI / CHİr

Borehole	Borehole seclow		Date and time for test, stop	σ̈	Q	*	##	°d	ā	ρ _ο	ď	Te _w	Test phases measured Analysed test phases
(m)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m**3/s)	(m**3/s)	(s)	(s)	(kPa)	(kPa)	(кРа) (кРа) (кРа)	(kPa)	(၁ _၀)	marked bold
663.00	00'899	060811 10:29:00	060811 13:01:00	1.67E-08	1.67E-08 2.50E-08 1,200 1,200 6,188 6,196 6,428 6,261	1,200	1,200	6,188	6,196	6,428	6,261	16.5	CHi / CHir
00'899	673.00	060811 13:30:00	060811 15:14:00	>N #	>N #	10	3,582	6,237 6,245 6,458	6,245	6,458	6,366	16.6	Pi
673.00	678.00	060811 15:38:00	060811 17:22:00	>N #	>N #	10	3,693	6,283 62,88	62,88	6,534	6,296	16.7	id
678.00	683.00	060811 17:45:00	060811 20:53:00	>N #	>N #	10	9,105	6,329 6,332	6,332	6,578	6,338	16.8	<u>i</u> d

#NV: Not analysed.

CHi: Constant Head injection phase.

CHir: Recovery phase following the constant head injection phase. Pi: Pulse injection phase.

Pulse injection phase.

Table 7-2. Results from radial flow analysis of constant head tests in KLX11A (for nomenclature see Appendix 4).

Interval	Interval position	Stationary flow	flow	Transien	Transient analysis													
		parameters	v	Flow regime	ime	Formation	tion parameters										Static conditions	litions
d	wol	S/O	M	Perturb.	Recovery	1 ⁴	T _{r2}	T _s 1	T _{s2}	Ļ	T	Ттмах	ပ	~	dt,	dt ₂	*d	h _{wif}
m btoc	m btoc	m²/s	m²/s	Phase	Phase	m²/s	m²/s	m²/s	m²/s	m²/s	m²/s	m²/s	m³/Pa	ı	min	min	кРа	m.a.s.l.
103.00	203.00	6.51E-06	8.47E-06	2	WBS2	1.6E-05	>N#	2.5E-05	>N#	1.6E-05	8.0E-06	3.0E-05	3.1E-09	6.7	0.73	21.10	1,838.6	11.45
203.00	303.00	7.48E-06	9.74E-06	2	WBS2	2.4E-05	>N#	3.2E-05	>N#	3.2E-05	9.0E-06	5.0E-05	2.3E-09	19.1	0.40	5.27	2,776.6	10.70
303.00	403.00	2.85E-06	3.71E-06	2	WBS22	6.9E-06	>N#	1.1E-05	6.0E-06	6.0E-06	3.0E-06	9.0E-06	4.4E-10	14.2	1.78	9.33	3,705.2	10.58
403.00	503.00	5.61E-08	7.31E-08	2	WBS2	2.1E-07	>N#	2.7E-07	>N#	2.7E-07	8.0E-08	6.0E-07	2.4E-10	20.2	>N#	>N#	4,649.1	12.21
503.00	603.00	8.72E-06	1.14E-05	2	WBS2	1.9E-05	>N#	2.4E-05	>N#	2.4E-05	8.0E-06	5.0E-05	3.3E-09	7.4	89.0	22.28	5,579.0	12.66
603.00	703.00	1.60E-09	2.08E-09	2	WBS2	5.3E-10	>N#	2.3E-10	>N#	2.3E-10	9.0E-11	6.0E-10	1.9E-10	9.1	>N#	>N#	6,513.4	14.05
703.00	803.00	1.61E-09	2.10E-09	2	WBS2	2.9E-10	>N#	2.0E-10	>N#	2.0E-10	9.0E-11	4.0E-10	2.4E-10	-2.7	>N#	>N#	7,429.3	14.06
803.00	903.00	3.62E-09	2.78E-09	2	WBS2	9.8E-10	>N#	2.9E-09	>N#	2.9E-09	8.0E-10	4.0E-09	3.1E-10	1.7	>N#	>N#	8,333.1	13.37
876.00	976.00	>N#	>N#	>N#	2	>N#	>N#	4.0E-11	>N#	4.0E-11	1.0E-11	8.0E-11	2.6E-10	-1.5	>N#	>N#	>N#	>N#
103.00	123.00	1.14E-06	1.20E-06	2	WBS2	2.1E-06	>N#	4.9E-06	>N#	4.9E-06	3.0E-06	8.0E-06	6.3E-10	19.7	0.61	6.73	1,092.9	10.46
123.00	143.00	3.19E-06	3.34E-06	22	WBS22	9.4E-06	1.5E-05	8.1E-06	2.8E-05	8.1E-06	7.0E-06	1.0E-05	1.2E-09	7.9	0.47	1.60	1,275.5	9.97
143.00	163.00	3.16E-07	3.31E-07	2	WBS22	3.3E-07	>N#	6.6E-07	1.4E-07	1.4E-07	8.0E-08	4.0E-07	9.5E-11	1.	6.49	27.49	1,443.8	8.03
163.00	183.00	2.03E-06	2.13E-06	7	WBS2	6.5E-06	>N#	7.2E-06	>N#	6.5E-06	4.0E-06	1.0E-05	6.7E-10	10.9	0.49	16.72	1,650.5	10.02
183.00	203.00	>N#	>N#	>N#	N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	NX#	>N#
203.00	223.00	>N#	>N#	>N#	N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	NX#	>N#
223.00	243.00	>N#	>N#	>N#	2	>N#	>N#	3.3E-10	>N#	3.3E-10	1.0E-10	6.0E-10	5.8E-11	0.1	1.13	22.45	NX#	>N#
243.00	263.00	3.07E-08	3.21E-08	2	WBS22	6.1E-08	>N#	3.7E-08	1.4E-07	3.7E-08	8.0E-09	8.0E-08	5.9E-11	4.8	>N#	>N#	2,401.2	10.42
263.00	283.00	8.05E-06	8.42E-06	7	WBS2	2.4E-05	>N#	3.6E-05	>N#	3.6E-05	9.0E-06	6.0E-05	3.2E-09	19.0	0.55	5.08	2,589.2	10.58
283.00	303.00	>N#	>N#	>N#	2	>N#	>N#	2.2E-11	>N#	2.2E-11	9.0E-12	6.0E-11	5.6E-11	7.0-	>N#	>N#	NX#	>N#
303.00	323.00	2.85E-06	2.98E-06	2	WBS22	6.4E-06	>N#	1.1E-05	5.8E-06	5.8E-06	3.0E-06	9.0E-06	4.8E-10	1.4	0.31	7.93	2,958.2	10.24
323.00	343.00	1.50E-10	1.57E-10	7	WBS2	9.2E-11	>N#	5.5E-11	>N#	5.5E-11	2.0E-11	9.0E-11	1.2E-11	1.0	>N#	>N#	3,137.1	9.51
343.00	363.00	7.55E-09	7.89E-09	22	WBS22	3.9E-09	1.7E-09	4.3E-09	2.6E-09	4.3E-09	1.0E-09	8.0E-09	2.5E-10	-3.4	>N#	>N#	>N#	>N#
363.00	383.00	>N#	>N#	>N#	2	>N#	>N#	1.1E-11	>N#	1.1E-11	9.0E-12	5.0E-11	3.6E-11	0.0	15.64	60.85	>N#	>N#
383.00	403.00	3.42E-09	3.58E-09	7	WBS2	2.8E-09	>N#	3.3E-09	>N#	3.3E-09	9.0E-10	5.0E-09	6.1E-11	2.5	>N#	>N#	3,699.9	10.04
403.00	423.00	>N#	>N#	^N#	2	>N#	>N#	2.9E-11	>N#	2.9E-11	9.0E-12	8.0E-11	6.8E-11	0.1-0	>N#	>N#	>N#	>N#
423.00	443.00	4.86E-08	5.08E-08	7	WBS2	4.2E-08	>N#	2.0E-07	>N#	2.0E-07	8.0E-08	6.0E-07	4.6E-11	21.1	1.40	90.9	4,086.5	11.59
443.00	463.00	2.01E-08	2.10E-08	2	WBS2	3.1E-08	>N#	1.2E-07	>N#	3.1E-08	9.0E-09	6.0E-08	5.0E-11	2.0	0.38	17.02	4,269.7	11.35
463.00	483.00	>N#	>N#	>N#	2	>N#	>N#	5.7E-11	>N#	5.7E-11	2.0E-11	9.0E-11	6.3E-11	6.0	9.04	32.95	>N#	>N#
483.00	503.00	4.58E-09	4.79E-09	2	WBS22	4.3E-09	>N#	2.5E-09	4.1E-08	2.5E-09	9.0E-10	5.0E-09	6.0E-11	0.2	>N#	>N#	4,645.5	11.84

Interval position	osition	Stationary flow	flow	Transien	Transient analysis													
		parameters	s	Flow regime	ime	Formation	on parameters										Static conditions	ditions
dn	wol	g/s	ΜL	Perturb.	Recovery	<u>_</u>	T ₂₂	T _s 1	T _{s2}	Ļ	T	Ттмах	ပ	w	dt,	dt ₂	<u>*</u> а	h _{wif}
m btoc	m btoc	m²/s	m²/s	Phase	Phase	m²/s	m²/s	m²/s	m²/s	m²/s	m²/s	m²/s	m³/Pa	ı	min	min	кРа	m.a.s.l.
503.00	523.00	2.86E-06	2.99E-06	2	WBS2	6.0E-06	NA#	4.1E-06	AN#	4.1E-06	1.0E-06	7.0E-06	1.2E-09	1.0	0.92	14.08	4,830.4	11.80
523.00	543.00	6.41E-08	6.71E-08	2	WBS2	9.6E-08	>N#	2.2E-07	>N#	2.2E-07	8.0E-08	6.0E-07	8.5E-11	15.0	2.05	14.05	5,023.2	12.57
543.00	563.00	>N#	>N #	>N#	22	>N#	>N#	1.2E-12	3.0E-13	1.2E-12	7.0E-13	4.0E-12	1.1E-11	4.0-	>N#	> 	>N#	>N#
563.00	583.00	7.27E-06	7.60E-06	2	WBS2	2.0E-05	>N#	2.7E-05	>N#	2.7E-05	9.0E-06	5.0E-05	1.6E-09	13.5	0.45	17.96	5,392.3	12.47
583.00	603.00	2.11E-07	2.21E-07	22	WBS22	5.4E-07	1.9E-07	7.9E-07	2.5E-07	7.9E-07	5.0E-07	1.0E-06	1.6E-10	14.7	>N#	>N#	5,581.5	12.91
603.00	623.00	>N#	>N #	>N#	2	>N#	>N#	4.4E-11	>N#	4.4E-11	1.0E-11	9.0E-11	5.5E-11	7.0-	2.90	35.22	>N#	>N#
623.00	643.00	>N#	>N #	>N#	2	>N#	>N#	1.3E-11	1.8E-12	1.3E-11	9.0E-12	4.0E-11	6.0E-11	-1.5	>N#	> 	>N#	>N#
643.00	663.00	>N#	>N#	>N#	2	>N#	>N#	2.1E-12	>N#	2.1E-12	9.0E-13	6.0E-12	3.1E-11	-1.0	>N#	> \ #	>N#	>N#
663.00	683.00	6.39E-10	6.68E-10	22	WBS2	6.5E-10	2.0E-10	6.3E-11	>N#	2.0E-10	9.0E-11	7.0E-10	4.6E-11	-1.6	2.68	15.04	6,317.5	12.80
683.00	703.00	>N#	>N#	>N#	22	>N#	>N#	2.6E-10	1.5E-10	1.5E-10	6.0E-11	3.0E-10	5.3E-11	-0.1	>N#	> \ #	>N#	>N#
703.00	723.00	2.34E-09	2.44E-09	2	WBS2	1.85E-10	>N#	2.6E-10	>N#	2.6E-10	8.0E-11	6.0E-10	1.4E-10	-3.1	>N#	>N#	>N#	>N#
723.00	743.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
743.00	763.00	>N#	>N#	>N#	>N#	>N#	>N#	\N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	> \ #	>N#	>N#
763.00	783.00	>N#	>N#	>N#	>N#	>N#	>N#	\N#	NA*	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
783.00	803.00	>N#	>N#	>N#	>N#	>N#	>N#	\N#	NA*	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
803.00	823.00	>N#	>N#	>N#	>N#	>N#	>N#	\N#	NA*	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
823.00	843.00	>N#	>N#	>N#	>N#	>N#	>N#	\N#	NA*	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
843.00	863.00	2.73E-09	2.85E-09	2	WBS2	8.5E-10	>N#	8.2E-10	NA*	8.2E-10	5.0E-10	1.0E-09	8.8E-11	-2.3	>N#	>N#	>N#	>N#
863.00	883.00	>N#	>N#	>N#	>N#	>N#	>N#	\N#	NA*	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
303.00	308.00	5.16E-07	4.26E-07	2	WBS2	6.00E-07	>N#	2.4E-06	>N#	6.0E-07	2.0E-07	9.0E-07	3.62E-11	0.3	0.50	17.83	2,822.7	10.66
308.00	313.00	2.62E-06	2.16E-06	2	WBS22	6.96E-06	>N#	1.3E-05	6.46E-06	6.5E-06	2.0E-06	9.0E-06	3.46E-10	20.1	3.33	12.15	2,867.5	10.5
313.00	318.00	>N#	>N#	>N#	>N#	>N#	>N#	N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
318.00	323.00	>N#	\N#	>N#	>N#	N#	>N#	N#	NA#	1.0E-11	1.0E-13	1.0E-11	^N#	N#	>N#	>N#	>N#	>N#
343.00	348.00	7.79E-09	6.43E-09	22	WBS22	6.32E-09	2.2E-09	3.6E-09	2.08E-09	3.6E-09	1.0E-09	8.0E-09	1.29E-10	-3.6	>N#	>N#	>N#	>N#
348.00	353.00	>N#	>N#	>N#	>N#	>N#	>N#	N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
353.00	358.00	>N#	>N#	>N#	>N#	>N#	>N#	N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	NN#	>N#
358.00	363.00	>N#	>N#	>N#	>N#	>N#	>N#	∧N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
383.00	388.00	>N#	>N#	>N#	>N#	>N#	>N#	N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	NX#	>N#
388.00	393.00	>N#	>N#	>N#	>N#	>N#	>N#	N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	NN#	>N#
393.00	398.00	>N#	\N#	>N#	>N#	N#	>N#	N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	N#	>N#	>N#	>N#	>N#

Interval	Interval position	Stationary flow	flow	Transien	Transient analysis													
		parameters	(A)	Flow regime	ime	Formation	on parameters										Static conditions	ditions
d	NOI	Q/s	M	Perturb.	Recovery	Tn	T ₂	T _s 1	T _{s2}	Ļ	T	Ттмах	ပ	~	dt,	dt ₂	*d	hwif
m btoc	m btoc	m²/s	m²/s	Phase	Phase	m²/s	m²/s	m ² /s	m²/s	m²/s	m²/s	m²/s	m³/Pa	ı	min	ш	kPa	m.a.s.l.
398.00	403.00	3.49E-09	2.88E-09	2	WBS22	3.3E-09	>N#	3.0E-09	2.0E-08	3.0E-09	9.0E-10	6.0E-09	2.0E-11	3.1	NN#	\N#	3,712.4	11.32
423.00	428.00	>N#	>N#	>N #	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N #	>N#
428.00	433.00	>N#	>N#	>N #	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N #	>N#
433.00	438.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
438.00	443.00	5.69E-08	4.70E-08	2	WBS2	1.4E-07	>N#	1.9E-07	>N#	1.9E-07	9.0E-08	5.0E-07	2.4E-11	15.7	0.88	7.93	4,087.3	11.68
442.00	447.00	>N#	>N#	>N#	22	>N#	>N#	1.2E-10	3.2E-10	1.2E-10	8.0E-11	3.0E-10	3.8E-11	0.2	0.95	5.33	>N#	>N#
447.00	452.00	8.78E-09	1.06E-08	2	WBS2	1.4E-08	>N#	6.3E-08	>N#	1.4E-08	8.0E-09	3.0E-08	1.3E-11	3.5	1.95	13.05	4,174.5	12.05
452.00	457.00	1.34E-08	1.10E-08	2	WBS2	2.2E-08	>N#	8.2E-08	>N#	2.2E-08	8.0E-09	4.0E-08	1.1E-11	5.4	2.28	15.33	4,220.6	12.02
457.00	462.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	N#	>N#
462.00	467.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	N#	>N#
483.00	488.00	>N#	>N#	>N #	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	>N#	>N#
488.00	493.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	N#	>N#
493.00	498.00	>N#	>N#	>N #	2	>N#	>N#	2.6E-10	>N#	2.6E-10	9.0E-11	4.0E-10	1.2E-11	1.0	0.47	23.02	\ \ \ \ \ \ \ \	>N#
498.00	503.00	3.90E-10	2.80E-09	2	WBS22	3.8E-09	>N#	2.5E-09	1.8E-08	2.5E-09	8.0E-10	5.0E-09	2.2E-11	1.6	>N#	>N#	4,650.5	12.35
503.00	508.00	1.53E-08	1.26E-08	2	WBS2	1.4E-08	>N#	1.1E-08	>N#	1.1E-08	7.0E-09	5.0E-08	7.7E-10	1.2	>N#	>N#	4,687.3	11.38
508.00	513.00	1.31E-08	1.09E-08	7	WBS22	7.1E-09	>N#	1.3E-08	6.3E-09	1.3E-08	7.0E-09	3.0E-08	1.8E-11	-0.3	0.70	2.08	4,738.0	11.83
513.00	518.00	9.44E-07	7.79E-07	2	WBS2	1.5E-06	>N#	4.0E-06	>N#	4.0E-06	2.0E-06	6.0E-06	4.9E-10	19.9	1.15	8.73	4,794.0	12.81
518.00	523.00	2.51E-06	2.07E-06	2	WBS2	5.4E-06	>N#	4.7E-06	>N#	4.7E-06	2.0E-06	7.0E-06	1.2E-09	3.3	1.04	9.11	4,837.1	12.49
523.00	528.00	7.00E-09	5.77E-09	2	WBS2	9.1E-09	>N#	4.2E-08	>N#	4.2E-08	1.0E-08	7.0E-08	4.6E-11	32.6	>N#	>N#	4,881.0	12.24
528.00	533.00	3.84E-08	3.17E-08	2	WBS22	6.7E-08	>N#	6.8E-08	6.8E-07	6.7E-08	3.0E-08	9.0E-08	2.3E-11	2.0	1.09	11.33	4,932.1	12.73
533.00	538.00	8.22E-08	6.78E-08	7	WBS2	1.7E-07	>N#	3.7E-07	>N#	3.7E-07	9.0E-08	6.0E-07	3.0E-11	21.3	>N#	>N#	4,980.7	12.96
538.00	543.00	1.35E-09	1.12E-09	7	WBS2	1.1E-09	>N#	4.1E-09	>N#	4.1E-09	1.0E-09	1.0E-08	1.9E-11	10.0	>N#	>N#	5,028.7	13.13
563.00	568.00	>N#	>N#	>N #	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	N#	>N#
568.00	573.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	N#	>N#
573.00	578.00	3.36E-06	2.77E-06	2	WBS2	9.7E-06	>N#	1.5E-05	>N#	1.5E-05	8.0E-06	3.0E-05	7.7E-10	19.7	0.53	8.47	5,350.3	12.90
578.00	583.00	4.56E-06	3.76E-06	7	WBS2	1.0E-05	>N#	2.1E-05	>N#	1.0E-05	8.0E-06	3.0E-05	1.4E-09	9.6	0.88	15.88	5,397.7	13.02
583.00	588.00	>N#	>N#	>N #	2	>N#	>N#	1.2E-11	>N#	1.2E-11	9.0E-12	4.0E-11	1.2E-11	7.0-	>N#	>N#	>N#	>N#
588.00	593.00	>N#	>N#	>N#	>N#	>N#	>N#	>N#	>N#	1.0E-11	1.0E-13	1.0E-11	>N#	>N#	>N#	>N#	N#	>N#
593.00	598.00	>N#	>N#	>N#	2	>N#	>N#	4.2E-12	>N#	4.2E-12	1.0E-12	7.0E-12	1.9E-11	0.0	>N #	>N#	>N#	>N#
598.00	603.00	2.20E-07	1.82E-07	22	WBS22	3.8E-07	1.9E-07	8.7E-07	2.9E-07	3.8E-07	9.0E-08	9.0E-07	1.2E-10	3.9	0.83	4.65	5,583.6	13.12

Interval	position	nterval position Stationary flow		Transient analysis	t analysis													
		parameters	_o	Flow regime		Formation parameters	parameters										Static conditions	nditions
dn	low Q/s	Q/s	Ψ	Perturb.	Perturb. Recovery T _n	T _H	T ²²	T _s 1	T _{s2}	Ļ	Ттмін	Ттмах	ပ	~	dt,	dt ₂	*a	h _{wif}
m btoc	m btoc	m²/s	m btoc m btoc m ² /s Pha	Phase	Phase Phase m ² /s		m²/s	m²/s	m²/s	m²/s	m²/s	m²/s	m³/Pa	ı	min	min	кРа	m.a.s.l.
663.00	00.899	7.05E-10	5.82E-10	22	WBS22 1.0E-10	1.0E-10	3.9E-11	1.3E-10	5.4E-11	3.9E-11 1.3E-10 5.4E-11 1.3E-10	8.0E-11	8.0E-11 4.0E-10 3.9E-11 -2.8 #NV	3.9E-11	-2.8	>N#	>N#	>N#	/N#
00.899	668.00 673.00 #NV	>N#	>N#	>N#	2	>N#	>N#	1.2E-11	1.2E-11 #NV	1.2E-11	9.0E-12	9.0E-12 4.0E-11 1.7E-11 0.3	1.7E-11	0.3	6.71	42.07	>N#	>N#
673.00	678.00	>N#	>N#	>N#	2	^N#	>N#	9.0E-11	9.0E-11 1.1E-10	9.0E-11	5.0E-11		2.0E-10 1.2E-11	0.1	2.36	8.90	>N#	>N#
678.00	683.00	\N#	>N#	>N#	7	>N#	>N#	8.4E-11	>N#	8.4E-11	6.0E-11	1.0E-10	1.0E-10 1.5E-11 -0.3	-0.3	1.95	16.97	∧N#	>N#

Notes

- T1 and T2 refer to the transmissivity(s) derived from the analysis while using the recommended flow model. In case a homogeneous flow model was recommended only one T value is reported, in case a two zones composite model was recommended both T1 and T2 are given. T_T denotes the recommended transmissivity.
- 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 N
- 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. type-curve extrapolation. က

Table 7-3. Results from generalized radial flow analysis of constant head tests in KLX11A (for nomenclature see Appendix 4).

Interval	position	Stationary parameter			sient a regim	ınalysis e		Formatio	n parame	ters		
up	low	Q/s	TM	Pertu	rb.	Recovery	Phase	T _f	T _s	T _T	С	ξ
m btoc	m btoc	m²/s	m²/s	Phase n₁	e n₂	n ₁	n ₂	m²/s	m²/s	m²/s	m³/Pa	_
103.00	203.00	6.51E-06	8.47E-06	2.1	#NV	WBS2.1	#NV	6.2E-06	7.4E-06	6.2E-06	3.2E-09	2.3
203.00	303.00	7.48E-06	9.74E-06	2.1	#NV	WBS 2.1	#NV	8.7E-06	8.1E-06	8.1E-06	2.0E-09	5.8
303.00	403.00	2.85E-06	3.71E-06	2.2	#NV	#NV	#NV	1.5E-06	#NV	1.5E-06	4.4E-10	0.0
403.00	503.00	5.61E-08	7.31E-08	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
503.00	603.00	8.72E-06	1.14E-05	2.1	#NV	WBS 2.1	#NV	7.7E-06	9.0E-06	9.0E-06	3.6E-09	2.2
603.00	703.00	1.60E-09	2.08E-09	1.58	#NV	#NV	#NV	1.6E-09		1.6E-09	1.9E-10	-1.7
703.00	803.00	1.61E-09	2.10E-09	1.5	#NV	#NV	#NV	6.0E-10		6.0E-10		-3.2
803.00	903.00	3.62E-09	2.78E-09	1.7	#NV		#NV	1.8E-09	#NV	1.8E-09	3.1E-10	-2.1
876.00	976.00	#NV	#NV	#NV	#NV		#NV	#NV	6.2E-10	6.2E-10	2.6E-10	-0.6
103.00	123.00	1.14E-06	1.20E-06	#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV
123.00	143.00	3.19E-06	3.34E-06	2.3	2.38	WBS 2.3	WBS 2.4		1.2E-06	1.2E-06	1.1E-09	0.0
143.00	163.00	3.16E-07	3.31E-07	2.3	#NV		#NV	6.7E-08	#NV	6.7E-08	9.5E-11	-3.5
163.00	183.00	2.03E-06	2.13E-06	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	-3.5 #NV
183.00	203.00	#NV	2.13E-06 #NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV #NV	#NV	#NV
		#NV	#NV #NV	#NV			#NV	#NV	#NV	#NV #NV	#NV	#NV
203.00	223.00				#NV							
223.00	243.00	#NV	#NV	#NV	#NV	1.79	#NV	#NV	8.5E-10	8.5E-10	5.8E-11	0.8
243.00	263.00	3.07E-08	3.21E-08	#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV
263.00	283.00	8.05E-06	8.42E-06	#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV
283.00	303.00	#NV	#NV	#NV	#NV	1.49	#NV	#NV	1.0E-10	1.0E-10	5.6E-11	-4.9
303.00	323.00	2.85E-06	2.98E-06	2.3	#NV		#NV	9.7E-07	#NV	9.7E-07	4.8E-10	-1.8
323.00	343.00	1.50E-10	1.57E-10	#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV
343.00	363.00	7.55E-09	7.89E-09	2	1.6	WBS 2	WBS 1.6	4.0E-09	4.3E-09	4.3E-09	2.5E-10	-3.4
363.00	383.00	#NV	#NV	#NV	#NV	1.75	#NV	#NV	3.2E-11	3.2E-11	3.6E-11	0.7
383.00	403.00	3.42E-09	3.58E-09	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
403.00	423.00	#NV	#NV	#NV	#NV	1.45	#NV	#NV	1.8E-10	1.8E-10	6.8E-11	0.6
423.00	443.00	4.86E-08	5.08E-08	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
443.00	463.00	2.01E-08	2.10E-08	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
463.00	483.00	#NV	#NV	#NV	#NV	1.7	#NV	#NV	1.6E-10	1.6E-10	6.25E-11	0.0
483.00	503.00	4.58E-09	4.79E-09	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
503.00	523.00	2.86E-06	2.99E-06	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
523.00	543.00	6.41E-08	6.71E-08	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
543.00	563.00	#NV	#NV	#NV	#NV	1	#NV	#NV	1.7E-11	1.7E-11	1.1E-11	0.1
563.00	583.00	7.27E-06	7.60E-06	2.1	#NV	WBS 2.1	#NV	7.0E-06	8.2E-06	8.2E-06	2.0E-09	5.8
583.00	603.00	2.11E-07	2.21E-07	2	1.9	WBS 2	WBS 1.95	55.4E-07	7.9E-07	7.9E-07	1.6E-10	14.7
603.00	623.00	#NV	#NV	#NV	#NV	1.5	#NV	#NV	1.1E-09	1.1E-09	5.5E-11	1.9
623.00	643.00	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV	#NV
643.00	663.00		#NV	#NV	#NV		#NV	#NV	5.3E-12	5.3E-12	3.1E-11	-0.9
663.00		6.39E-10	6.68E-10	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
683.00	703.00		#NV	#NV	#NV		1.87	#NV	2.6E-10	2.6E-10	5.3E-11	-1.3
703.00		2.34E-09	2.44E-09	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
723.00	743.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
743.00	763.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
763.00	783.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
783.00	803.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
	823.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV #NV	#NV	#NV
	843.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
843.00		2.73E-09	2.85E-09	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
863.00	883.00		#NV	#NV		#NV	#NV	#NV	#NV	#NV	#NV	#NV
303.00		5.16E-07	4.26E-07	1.9		#NV	#NV	1.47E-06			3.62E-11	
308.00	313.00	2.62E-06	2.16E-06	2.2	#NV	#NV	#NV	1.49E-06	i#NV	1.49E-06	3.46E-10	0.9

up low Q/s TM Perturb. Phase n1 Recovery Phase n1 T₁ T₅ 313.00 318.00 #NV #NV <td< th=""><th>m²/s #NV #NV 9 3.6E-09 #NV #NV #NV #NV #NV #NV #NV #NV #NV #NV</th><th>C m³/Pa #NV #NV 1.29E-10 #NV #NV #NV #NV #NV #NV #NV #NV #NV #NV</th><th>\$</th></td<>	m²/s #NV #NV 9 3.6E-09 #NV	C m³/Pa #NV #NV 1.29E-10 #NV	\$
m btoc m btoc m²/s m²/s n₁ n₂ n₁ n₂ m²/s m²/s 313.00 318.00 *NV	m²/s #NV #NV 99 3.6E-09 #NV	m³/Pa #NV #NV 1.29E-10 #NV	#NV #NV 0 -3.6 #NV #NV #NV #NV #NV #NV
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343.00 348.00 7.79E-09 6.43E-09 2 1.68 WBS 2 WBS 1.76 6.30E-09 3.6E-09 3.4B-09 3.5B-00 3.53.00 353.00 4NV	9 3.6E-09 #NV	1.29E-10 #NV	9 -3.6 #NV #NV #NV #NV #NV #NV #NV
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433.00 438.00 #NV 1.2E-7 #NV	#NV 2.8E-08	#NV	#NV
438.00 443.00 5.69E-08 4.70E-08 2.2 #NV #NV #NV 2.8E-08 #NV 442.00 447.00 #NV #NV #NV #NV 2 2.23 #NV 1.2E-7447.00 452.00 8.78E-09 1.06E-08 #NV #NV #NV #NV #NV #NV #NV #NV #NV	2.8E-08		
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		3.8E-11	0.2
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462.00 467.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
483.00 488.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
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493.00 498.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
498.00 503.00 3.90E-10 2.80E-09 #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
503.00 508.00 1.53E-08 1.26E-08 2.1 #NV #NV #NV 7.9E-09 #NV	7.9E-09	7.7E-10	0.1
508.00 513.00 1.31E-08 1.09E-08 1.9 #NV WBS 2 WBS 1.861.2E-08 1.3E-08	08 1.3E-08	1.8E-11	-0.3
513.00 518.00 9.44E-07 7.79E-07 #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
518.00 523.00 2.51E-06 2.07E-06 #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
523.00 528.00 7.00E-09 5.77E-09 #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
528.00 533.00 3.84E-08 3.17E-08 #NV #NV 3 #NV #NV 3.14E-	-09 3.14E-09	9 9.5E-12	0.816
533.00 538.00 8.22E-08 6.78E-08 2.3 #NV #NV #NV 2.8E-08 #NV	2.8E-08	#NV	0.454
538.00 543.00 1.35E-09 1.12E-09 #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
563.00 568.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
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573.00 578.00 3.36E-06 2.77E-06 #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
578.00 583.00 4.56E-06 3.76E-06 2.1 #NV #NV #NV 4.2E-06 #NV	4.15E-06	6 #NV	1.415
583.00 588.00 #NV #NV #NV #NV 1.4 #NV #NV 2.55E-	-10 2.6E-10	2.6E-10	0.633
588.00 593.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
593.00 598.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
598.00 603.00 2.20E-07 1.82E-07 #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
663.00 668.00 7.05E-10 5.82E-10 #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
668.00 673.00 #NV #NV #NV #NV 1.6 #NV #NV 5.67E-	-11 5.7E–11	1.7E-11	0.9
673.00 678.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV
678.00 683.00 #NV #NV #NV #NV #NV #NV #NV #NV	#NV	#NV	#NV

Notes

- 1 n1 and n2 refer to the transmissivity(s) derived from the analysis while using the recommended flow model. In case a homogeneous flow model was recommended only one n value is reported, in case a two zones composite model was recommended both n1 and n2 are given.
- The flow regime description refers to the genaralized radial flow 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 a n1 value is used a homogeneous flow model was used in the analysis, if a value is given for n1 and n2 two shell composite model was used.

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

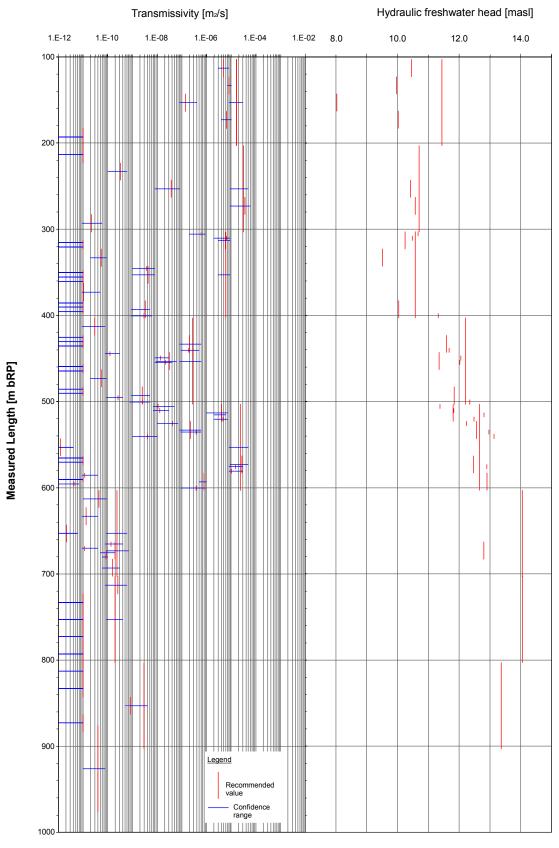


Figure 7-1. Results summary – profiles of transmissivity and equivalent freshwater head, transmissivities derived from injectiontests, freshwater head extrapolated.

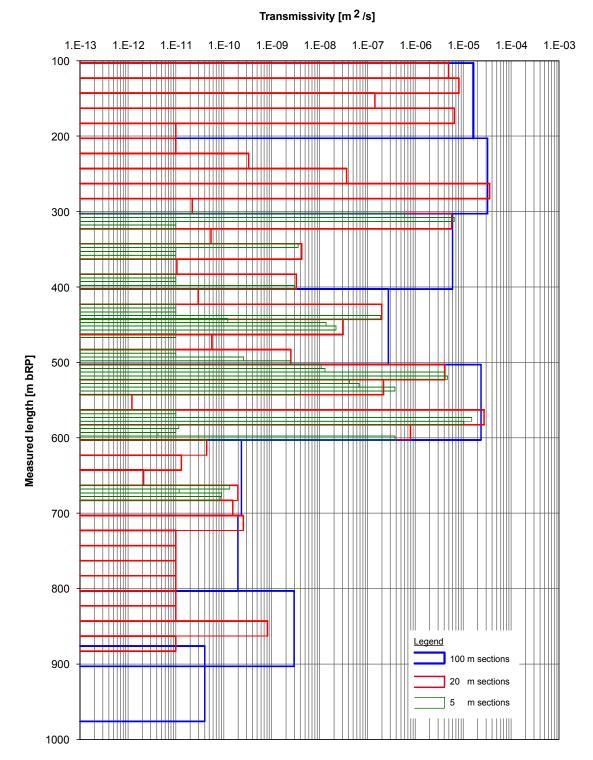


Figure 7-2. Results summary – profile of transmissivity.

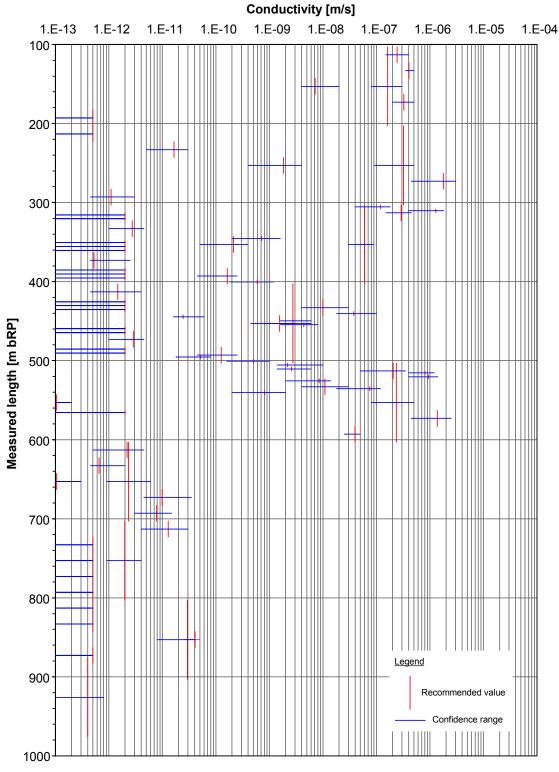


Figure 7-3. Results summary – profile of hydraulic conductivity.

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 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 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). A minimum value for the test zone compressibility is given by the water compressibility which is approx. $5 \cdot 10^{-10}$ 1/Pa. For the calculation of the theoretical wellbore storage coefficient a test zone compressibility of $7 \cdot 10^{-10}$ 1/Pa was used. 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.

Figure 7-5 presents a cross-plot of the matched and theoretical wellbore storage coefficients.

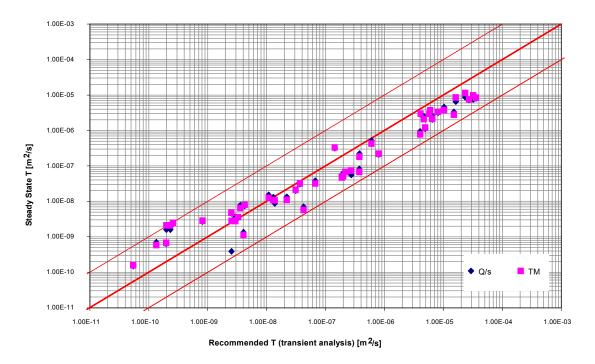


Figure 7-4. Correlation analysis of transmissivities derived by steady state and transient methods.

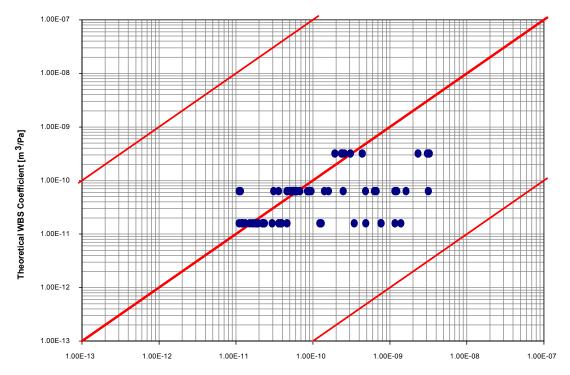


Figure 7-5. Correlation analysis of theoretical and matched wellbore storage coefficients.

It can be seen that the matched wellbore storage coefficients are up to one orders of magnitude larger than the theoretical values for the 100 m Tests and up to two orders of magnitude larger for the 20 m and 5 m tests. This phenomenon was already observed at the previous boreholes. A two 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. The discrepancy can be more likely explained by increased compressibility of the packer system. In order to better understand this phenomenon, a series of tool compressibility tests should be conducted in order to measure the tool compressibility and to assess to what extent the system behaves elastically.

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 5.5.7.

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 $1.2 \cdot 10^{-12}$ m²/s and $3.3 \cdot 10^{-10}$ m²/s.

The recommended transmissivities derived from the conducted injection tests (CHi and CHir) range between $2.0 \cdot 10^{-10}$ m²/s and $2.7 \cdot 10^{-5}$ m²/s.

The transmissivity profiles in Figures 7-1 and 7-2 show two distinct zones. The first zone between 100 m and 600 m shows all in all a relatively high and medium transmissisivity (except some sections with a transmissivity below $3 \cdot 10^{-9}$ m²/s). The average transmissivity in this zone is $2.9 \cdot 10^{-6}$ m²/s. The second zone between 600 m and 980 m shows relatively low transmissivities and the average transmissivity is $2.5 \cdot 10^{-10}$ m²/s.

A few 20 m and 5 m sections show larger transmissivities than the appropriate longer interval. The differences are relatively small and are covered by the confidence range.

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 5.5.6.

The head profile shows a freshwater head that is slightly increasing with depth. The freshwater head ranges from 8.0 m to 14.1 m. This increase can be explained by higher salinity of the water down in the borehole.

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 Generalized radial flow analysis

In addition to the radial flow analysis a generalized radial flow analysis was performed. The generalized radial flow analysis is based on the flow model developed by /Barker 1988/ and allows the modelling of flow dimensions between 1 (linear flow) and 3 (spherical flow). Figure 8-1 presents the statistical distribution of the derived flow dimension with respect to the interval length.

The statistical distribution chart contains only the tests that were analysable with the GRF and tests with clear radial flow (n = 2). Tests with insufficent data quality e.g. noise or no clear flow stabilization were not counted in the chart. No value (e.g. below measurement limit) tests are also not included in the statistic. The basis for the chart is,

- 100 m section: 8 number of tests "with a flow dimension".
- 20 m section: 18 number of tests "with a flow dimension".
- 5 m section: 20 number of tests "with a flow dimension".

This totals 46 tests out of 93 tests have a value.

The figure shows that the most of the generalized radial flow analyses result in a flow dimension below n = 2. This behaviour indicates that sub-cylindrical flow prevails.

The general expectation is that the length of the test section would influence the derived flow dimension in the sense that a longer test interval would rather tend to display cylindrical flow geometry when compared with a shorter test section. Due to the fact that a shorter test section (e.g. 5 m) would act more like a selective source than a longer interval (e.g. 100 m) the assumption is that a short interval would rather show linear flow (only one fracture influences the response) or by spherical flow (due to the short length of the test section the occurrence of vertical flow components becomes more probable). Comparing this hypothesis with the results of the generalized radial flow analysis it can be seen that a clear relationship between interval length and derived flow dimension does not exist. This may be attributed to the relatively small amount of evaluated tests.

In addition, given the data quality (i.e. relatively short duration of the individual test phases) there is considerable uncertainty in the derived flow dimension.

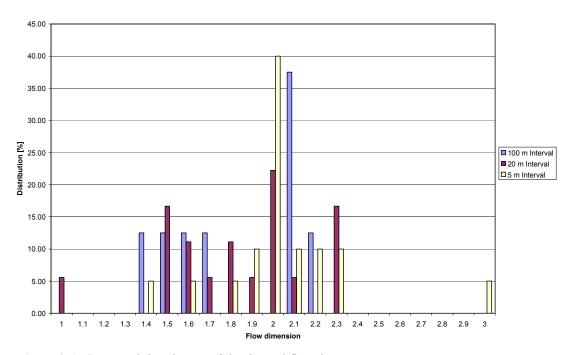


Figure 8-1. Statistical distribution of the derived flow dimension.

8.4 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 or a change in flow dimension 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 low transmissivities (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.

9 References

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Borehole: KLX11A

APPENDIX 1

File Description Table

Borehole: KLX11A

APPENDIX 2

Analysis diagrams

Borehole: KLX11A

APPENDIX 3

Test Summary Sheets

Borehole: KLX11 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		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	[L³/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	
		$dp_f = p_i - p_f$ 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	naracter SICADA Explanation designation			
Te _o	are or greater or	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	lesignation						
T _D		Transmissivity evaluated from PFL-Difference Flow Meter	[L ² /T]	m²/s				
Tı		Transmissivity evaluated from Impeller flow log		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	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	$[(LT^2)\cdot M^2]$	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]	m²/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
nc _t		Porosity-compressibility factor: nc _t = n·c _t	[(LT ²)/M]	1/Pa
nc _t b		Porosity-compressibility-thickness product: nc _t b= n·c _t ·b	$[(L^2T^2)/M]$	m/Pa
n		Total porosity		-
n _e		Kinematic porosity, (Effective porosity)	-	-
е		Transport aperture. e = n _e ·b	[L]	m
	Danish	Describe	FR 4 /1 31	1 // 3\
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_0	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/(m ³)
μ	my	Dynamic viscosity Dynamic viscosity (Fluid density in measurement section	[M/LT]	Pa s Pa s
μ _w	my	during pumping/injection)	[M/LT]	
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	10. o(10 03; 03 . 03 o(; 1 03 pw g		
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		
М		Moye		
GRF		Generalised Radial Flow according to Barker (1988)		
m		Matrix		
f		Fracture		
Т		Judged best evaluation based on transient evaluation.		

Character SICADA Explanation 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 h _{opf} ; the first index shows "where" and the second index shows "what" and the last one "recalculation")		

	Test	t Sum	mary Sheet			
Project:	Oskarshamn site inve	stigatio	n Test type:[1]			CHi
Area:	1	Laxem	ar Test no:			
Borehole ID:	KI X11A		A Test start:	+		060629 14:32
Test section from - to (m):	103.00-2	203.00	m Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):		0.07	6 Responsible for		Crist	ian Enachescı
Linear plot Q and p			test evaluation:		Recovery period	
· · · · · · · · · · · · · · · · · · ·			Indata	<u>, , , , , , , , , , , , , , , , , , , </u>	Indata	-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
2400	KLX11A_103.00-203.00_060629_1_CHir_Q_r	P section	p ₀ (kPa) =	1842		
2200	:	P above 18 P below	p _i (kPa) =	1837		
2000	•	16	$p_p(kPa) =$	2035	p _F (kPa) =	184
200		14	$Q_p (m^3/s) =$	1.31E-04		
1800 ·		12	to (a) -	1800	t _F (s) =	180
중 1800 - 1 1800 - 1 1800 - 1 1800 -		10	S el S* (-)=		S el S [*] (-)=	1.00E-0
apole apole			EC _w (mS/m)=		00.0()	
1400	The state of the s	†®	Temp _w (gr C)=	9.6		
1200		6	Derivative fact.=		Derivative fact.=	0.0
		4		***		
1000		2				
0.00 0.50 1.00 Elap	1.50 2.00 seed Time [h]	2.50	Results		Results	
			Q/s $(m^2/s)=$	6.5E-06		
Log-Log plot incl. derivates-	flow period		$T_{\rm M} (m^2/s) =$	8.5E-06		
Elapsed tir	me [h]		Flow regime:	transient	Flow regime:	transient
102		\neg	dt_1 (min) =	0.73	dt_1 (min) =	0.9
			$dt_2 (min) =$	21.10	dt_2 (min) =	27.4
		┥.	$T (m^2/s) =$	1.6E-05	$T (m^2/s) =$	2.5E-0
101		10 ⁻¹	S (-) =	1.0E-06	. , ,	1.0E-0
1	:		$K_s (m/s) =$		$K_s (m/s) =$	2.5E-0
			C (4/m) -		$S_s(1/m) =$	1.0E-0
팅 10 ⁰	and the second	10-2	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	3.1E-0
2			$C_D(-) =$	NA	$C_D(-) =$	3.4E-0
			ξ(-) =		ξ(-) =	13.
10-1	•	10 ⁻³	Ç (-) —	0.7	ς (-) –	10.2
	•		$T_{GRF}(m^2/s) =$	6.2E-06	$T_{GRF}(m^2/s) =$	7.4E-0
		10 ⁻⁴	$S_{GRF}(-) =$	1.0E-06		1.0E-0
10 11 10 1	10 ¹³	10 14	D _{GRF} (-) =		D _{GRF} (-) =	2.
Log-Log plot incl. derivatives	- recovery period		Selected repres			
Hapsed tim			dt ₁ (min) =		$C (m^3/Pa) =$	3.1E-0
102			$dt_2 (min) =$		$C_D(-) =$	3.4E-0
		-	$T_T (m^2/s) =$	1.6E-05		6.
- a de state de contraction		300	S(-) =	1.0E-06		-
Ze se		10 ²	$K_s (m/s) =$	8.0E-07		
101		10		5.0E-08		
. // . `				5.0⊑-08		
		30	Comments:		C1 (F 5 2)	: .16 -4
\(\frac{1}{2}\).	. •	F10 ¹			f 1.6E-5 m2/s was do	
10	A Commence of the Commence of	10			se, which shows the range for the interva	
• • • • • • • • • • • • • • • • • • • •	A STATE OF THE STA	\dashv			m2/s. The static pre-	
· •						
	A Maria Mari	3			om the CHir phase u	
	I Same Aller and A Same	3 10 ⁵ 10 ⁰	at transducer depth	n, was derived fro		sing straight

		CHii
		1
		060629 18:03
		Stephan Rohs
	Crist	ian Enachescı
	Recovery period	
	Indata	
2780)	
2776	5	
2975	p _F (kPa) =	277
1.52E-04	l.	
1800	t _F (s) =	180
	S el S [*] (-)=	1.00E-0
	0010()	
11.1		
0.02		0.0
0.02	Derivative last.	0.0
	Results	
7.5E-06	6	
9.7E-06	6	
ransient	Flow regime:	transient
0.68	dt_1 (min) =	0.4
	$dt_2 \text{ (min)} =$	5.2
	$T (m^2/s) =$	3.2E-0
1.0E-06		1.0E-0
	$K_s (m/s) =$	3.2E-0
	$S_s(1/m) =$	1.0E-0
1.0L-00	,	
	$C (m^3/Pa) =$	2.3E-0
NA	C _D (-) =	2.6E-01
18.7	ζ ξ (-) =	19.1
8 7F-06	$T_{GRF}(m^2/s) =$	8.1E-06
1.0E-06		1.0E-0
	$D_{GRF}(-) =$	2.
tative paran		
	<u>-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1</u>	2 2 5 0
0.40	0 (III /I u)	2.3E-0
5.27	5 ()	2.6E-0
3.2E-05		19.
1.0E-06		
1.6E-06		
5.0E-08	<u> </u>	
	f 3.2E-5 m2/s was d	
	ase, which shows the	
	range for the interva m2/s. The static pre	
· r · ·	. ,	
		derived from the CHir phase u Horner plot to a value of 2,776

	Test Si	ımı	mary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lax	emar	Test no:			
Borehole ID:	KLX11A		Test start:			060630 09:15
Test section from - to (m):	303.00-403	00 m	Responsible for			Stephan Roh
, ,			test execution:			-
Section diameter, 2·r _w (m):	C).076	Responsible for test evaluation:		Crist	ian Enachesci
Linear plot Q and p			Flow period		Recovery period	
		10	Indata		Indata	
3900 - KLX11A_303.00-403.00_060630_1_CHir_Q_r	P section P above		p ₀ (kPa) =	3714		
	• P bdaw • O	ľ	p _i (kPa) =	3712		
3700		8	$p_p(kPa) =$		p _F (kPa) =	371
3500		7	$Q_p (m^3/s) =$	5.67E-05		
[kPa]		6 E	tp (s) =	1800	t _F (s) =	180
5 3300 : :		Injection Rate [1/min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
80 a 3100		Injection	EC _w (mS/m)=			
***	The state of the s		Temp _w (gr C)=	12.6		
2900		3	Derivative fact.=	0.07	Derivative fact.=	0.0
2700	·	2				
200		1	Danilla		Describe	
0.00 0.20 0.40 0.60 0.80 1. Elapsed		2.00	Results	0.05.00	Results	ı
			Q/s $(m^2/s)=$	2.9E-06		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	3.7E-06		
10, ⁻⁴ 10, ⁻³ Elapsed time	[h]	_	Flow regime:	transient	Flow regime:	transient
102			dt_1 (min) =		dt_1 (min) =	1.7
		10 ⁰	dt_2 (min) =		$dt_2 (min) =$	9.3
			$T (m^2/s) =$	6.9E-06	$T (m^2/s) =$	6.0E-0
- 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.3	S (-) =	1.0E-06	S (-) =	1.0E-0
101	•		$K_s (m/s) =$	6.9E-08	$K_s (m/s) =$	6.0E-0
5		10 ⁻¹ ∈	$S_s(1/m) =$	1.0E-08	$S_s(1/m) =$	1.0E-0
		d)' [min	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	4.4E-1
		0.03	$C_D(-) =$	NA	$C_D(-) =$	4.8E-0
100	و المعالم المع		ξ(-) =		ξ(-) =	14.
		10 ⁻²	∂ (-) —	0.0	<i>⊳</i> (⁻) −	
			$T_{GRF}(m^2/s) =$	1.5E-06	T (m²/a) -	NA
	•	0.003	$S_{GRF}(III/S) =$ $S_{GRF}(-) =$	1.0E-06	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA
10 ¹⁰ 10 ¹¹ tD	10 ¹² 10 ¹³ 10 ¹⁴				$D_{GRF}(-)$ =	NA
Log-Log plot incl. derivatives-	wa a a sua mu ma mi a d		D _{GRF} (-) = Selected represe			INA
						4 4 5 4
Elapsed time [10 ⁻³]	10,2 10,0		dt ₁ (min) =	1.78	$C (m^3/Pa) =$	4.4E-1
			$dt_2 \text{ (min)} =$		$C_D(-) =$	4.8E-0
	3	00	$T_T (m^2/s) =$	6.0E-06		14.
A			S (-) =	1.0E-06		
101	1	02	K_s (m/s) =	3.0E-07		
			$S_s (1/m) =$	5.0E-08		
na //	[3); KPa]	Comments:			
	•	0, (p-p0)*	The recommended		f 6.0E-6 m2/s was de	
100	1	01 4			ise (outer zone), whi	
	The state of the s				The confidence range	
	3				E-6 to 9.0E-6 m2/s.	
	•				oth, was derived from on in the Horner plo	
	103 10 1051	00	3,705.2 kPa.	ime extrapolati	on in the Horner pio	t to a value of
10 ¹ 10 ²						

	Test Su	ımı	mary Sheet			
Project:	Oskarshamn site investig	atior	Test type:[1]			CHi
Area:	Laxe	ema	r Test no:			•
Borehole ID:	KL>	<11 <i>I</i>	Test start:			060630 13:11
Took on the or forms to (m).						
			Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	C	.076	Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
KLX11A_403.00-503.00_060630_1_CHir_Q_r	P section	0.6	p ₀ (kPa) =	4653		
الم بسار أ	A P above P below		p _i (kPa) =	4650		
4700			$p_p(kPa) =$		p _F (kPa) =	4650
		0.4	$Q_p (m^3/s) =$	1.17E-06		
4200 - 42	:	min)	tp (s) =		t _F (s) =	180
2 400 ·		injection Rate [l/min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
ownhole	·	Injectio	EC _w (mS/m)=			
⁸		0.2	Temp _w (gr C)=	14.0		
3900			Derivative fact.=	0.07	Derivative fact.=	0.0
3700						
0.00 0.50 1.00 Elapsed Tim	1.50 2.00 te [h]	0.0	Results	F 0F 00	Results	I
 			Q/s $(m^2/s)=$	5.6E-08		
Log-Log plot incl. derivates- flo	w period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	7.3E-08		
10, ⁻⁴ 10, ⁻³ 10, ⁻² Elapsed time [h]	101		Flow regime:	transient	Flow regime:	transient
10			$dt_1 (min) =$	NA	$dt_1 (min) =$	NA
	\$	30	$dt_2 (min) =$	NA	$dt_2 (min) =$	NA
		10 ¹	$T (m^2/s) =$		$T (m^2/s) =$	2.7E-0
101			S (-) =	1.0E-06		1.0E-0
	•	,	$K_s (m/s) =$		$K_s (m/s) =$	2.7E-0
· ·		, , , , , , , , , , , , , , , , , , ,	$S_s(1/m) =$		$S_s(1/m) =$	1.0E-0
dbi.		10° [10]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.4E-1
10 °	•	1/0	$C_D(-) =$	NA	$C_D(-) =$	2.6E-0
	•	0.3	ξ (-) =	8.5	ξ (-) =	20.
·	·		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
	į.	10 -1	$S_{GRF}(III/S) =$	NA	$S_{GRF}(III/S) =$	NA
10 ¹⁰ 10 ¹¹ tD	10 ¹² 10 ¹³ 10 ¹⁴		$D_{GRF}(-) =$	NA	$D_{GRF}(-)$ =	NA
Log-Log plot incl. derivatives- r	ecovery period		Selected represe			
			$dt_1 (min) =$	NA	C (m ³ /Pa) =	2.4E-1
10 ² Hapsed tighe [n]	10,-1		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$C_D(-) =$	2.4E-0
	į		2	2.7E-07		20.5
1	3	00	$T_T (m^2/s) = S (-) =$	1.0E-06		20
	E1	0 ²	$K_s (m/s) =$	1.4E-08		
10 ¹	<u>.</u>	o	$S_s (11/s) =$ $S_s (1/m) =$	5.0E-08		
<i>[</i>	3			3.0L-00		
	**	0 (F	The management of		62.7-10.7 2/2 2	daniara d Cuarra
	<u>.</u>	اء 10 ج	i ne recommended		f 2.7•10-7 m2/s was phase, which shows	
10 0					nce range for the inte	
/.	and a second sec		transmissivity is es	timated to be 8.0	•10-8 to 6.0•10-7 m	2/s. The static
			pressure measured	at transducer de	oth, was derived from	m the CHir
		0°		t line extrapolati	on in the Horner plo	ot to a value of
10 ^d 10 ^f	10 ² 10 ³ 10		3,705.2 kPa.			

	Test	Sum	mary Sheet			
Project:	Oskarshamn site inves	tigation	Test type:[1]			CHi
Area:	L	axema	r Test no:			1
Borehole ID:	l k	(I X11/	Test start:			060701 08:47
Borchole IB.						
Test section from - to (m):	503.00-60	03.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p			test evaluation:		Recovery period	
Emedi plot & and p			Indata		Indata	
5900		20	p ₀ (kPa) =	5578		
KLX11A_503.00-603.00_060701_1_CHIr_Q_r	P:	section above 18 below	p _i (kPa) =	5580		
5700	-0	16	$p_p(kPa) =$	5795	p _F (kPa) =	560
5500		14	$Q_p (m^3/s) =$	1.91E-04		
· ·	_		$\operatorname{tp}(s) =$		t _F (s) =	1800
(eg) suno-		12 [u w/] es	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
· .		12 12 10 11 12 11 12 11 12 11 11 11 11 11 11 11	EC _w (mS/m)=	1.002 00	3 61 3 (-)-	1.002 0
g		8 <u>e</u>	Temp _w (gr C)=	15.6		
4900		6	Derivative fact.=		Derivative fact.=	0.0
		4	Derivative fact.=	0.02	Derivative fact.=	0.0
4700		2		1		
4500	1, 1,50 200	0	Results		Results	
	150 200 Time [h]		$Q/s (m^2/s)=$	8.7E-06		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	1.1E-05		
	-		Flow regime:	transient	Flow regime:	transient
10 ⁻³ 10 ⁻² Elapsed time	"10 ₁ -1	<u>'</u>	$dt_1 (min) =$		$dt_1 \text{ (min)} =$	0.6
		0.3	$dt_2 (min) =$		$dt_2 \text{ (min)} =$	22.28
1		0.3	, ,		$T (m^2/s) =$	2.4E-0
†		10-1	<u> </u>	1.0E-06		1.0E-0
101			0 ()		$K_s(m/s) =$	2.4E-0
1		0.03	-5 ()		- ' '	
•		Luin II	$S_s(1/m) =$		$S_s(1/m) =$	1.0E-0
<u> </u>	•	10 2	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	3.3E-09
100	4 , 4		$C_D(-) =$	NA	$C_D(-) =$	3.6E-0
		0.003	ξ (-) =	4.8	ξ (-) =	7.4
	in the dark of the second of t	•	2	7.75.00	2	0.05.0
		10 ⁻³	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	9.0E-06
10 ⁹ 10 ¹⁰ tD	10 ¹¹ 10 ¹² 1	0 ¹³	$S_{GRF}(-) =$	1.0E-06		1.0E-0
			D _{GRF} (-) =		D _{GRF} (-) =	2.
Log-Log plot incl. derivatives-			Selected represe	<u> </u>		
Elapsed time [h		٦.	$dt_1 (min) =$	0.68	Ο (III /I α)	3.3E-0
		10 ³	$dt_2 (min) =$		$C_D(-) =$	3.6E-0
		†	$T_T (m^2/s) =$	2.4E-05		7.4
		300	S (-) =	1.0E-06		
107		,	$K_s (m/s) =$	1.2E-06		
		10 ²	$S_s(1/m) =$	5.0E-08		
		30 (00-0)	Comments:			· · · · · · · · · · · · · · · · · · ·
- //		30 (6	The recommended		f 2.4E-5 m2/s was de	
100			radiai iiow anarysis		se, which shows the	
7	Maria and and a second a second and a second a second and	101			range for the interval	
•	ن مدیست				m2/s. The static preson the CHir phase us	
	an and a second	3			t to a value of 5,579	
101 102	10 ³ 10 ⁴ 10	<u>.</u>	January January I	pio		
tD/CD			1			

	Test S	umi	mary Sheet			
Project:	Oskarshamn site investi	gatior	Test type:[1]			CHi
Area:	Lax	kema	Test no:			•
Borehole ID:	KI	X11A	Test start:			060701 12:14
Test section from - to (m):	tion from - to (m): 603.00-703.00 m		Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
· ·			Indata		Indata	
6000	KLX11A_603.00-703.00_060701_1_CHir_Q_r	0.010	p ₀ (kPa) =	6514		
		0.009	p _i (kPa) =	6549		
		0.008	$p_p(kPa) =$	6754	p _F (kPa) =	658
6600	<u> </u>	0.007	$Q_p (m^3/s) =$	3.33E-08		
[eps]	P section P above P below	10.006 €	tp (s) =	1800	t _F (s) =	360
B 6000 -	· Q	Rate [l/m in] 9000	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
	i. F	lujection P	EC _w (mS/m)=		3 61 3 (-)-	
800 0	ę S	0.004	Temp _w (gr C)=	17.1		
5900		0.003	Derivative fact.=		Derivative fact.=	0.0
· ·		0.002	Derivative lact.	0.2	Derivative fact.	0.0
5700		0.001				
5500 0.00 0.50 1.00 1.50	200 250 300	0.000	Results		Results	
Elapsed Time [Q/s $(m^2/s)=$	1.6E-09		
Log-Log plot incl. derivates- flo	w period			2.1E-09		
Log-Log plot ilici. delivates- ilo	w periou		T _M (m ² /s)= Flow regime:	transient	Flow regime:	transient
10, ⁻³ Elapsed time [h]	.10.1		$dt_1 \text{ (min)} =$	NA		NA
101			` ′		dt ₁ (min) =	
1		10 ³	dt ₂ (min) =	NA 5 05 40	$dt_2 (min) =$	NA
	· · · · · · · · · · · · · · · · · · ·		$T (m^2/s) =$		$T (m^2/s) =$	2.3E-1
		300	S (-) =	1.0E-06		1.0E-0
100			$K_s (m/s) =$		$K_s (m/s) =$	2.3E-1
	. • . · · · · · · · · · · · · · · · · ·	10 ²	$S_s(1/m) =$		$S_s(1/m) =$	1.0E-0
GB(J) GB	. *. *.	/o/ [mi	C (m³/Pa) =	NA	C (m³/Pa) =	1.9E-1
		30	$C_D(-) =$	NA	$C_D(-) =$	2.1E-0
10-1			ξ (-) =	-1.4	ξ (-) =	-1.
		10 ¹				
			$T_{GRF}(m^2/s) =$	1.6E-09	· GKF(··· / • /	NA
10-1, 100	10 ¹ 10 ² 10 ³	3	$S_{GRF}(-) =$	1.0E-06		NA
tD			D _{GRF} (-) =		D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- r	ecovery period		Selected represe		ieters.	
Bapsed time (h)		ı	dt_1 (min) =	NA	C (m³/Pa) =	1.9E-1
100		300	dt_2 (min) =	NA	$C_D(-) =$	2.1E-0
A STATE OF THE PARTY OF THE PAR		10 ²	$T_T (m^2/s) =$	2.3E-10		-1.9
		10	S (-) =	1.0E-06		
10-13		30	$K_s (m/s) =$	1.2E-11		
got.		30	$S_s(1/m) =$	5.0E-08		
		101	Comments:			
³ /		- Q			f 2.3E-10 m2/s was	
10 ⁻²		3	radial flow analysis	of the CHir pha	se, which shows the	better data and
joint 1		ľ			ange for the interva	
		10 ⁰			0 m2/s (this range i	
					The static pressure the CHir phase usin	
10 10	10 ¹ 10 ² 10 ³	ļ			value of 6,513.4 kl	

	Test S	Sumi	mary Sheet				
Project:	Oskarshamn site invest	igatior	Test type:[1]			CHi	
Area:	La	xema	Test no:				
Borehole ID:	K	LX11A	Test start:		060701 17		
Test section from - to (m):	703.00-801	3 00 m	Responsible for		Stephan R		
` '	700.00-000		test execution:				
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachesc	
Linear plot Q and p			Flow period		Recovery period		
7800		0.010	Indata		Indata		
KLX11A_703.00	-803.00_060701_1_CHir_Q_r • P section • P above	0.009	p ₀ (kPa) =	7443			
7800	• P below		p _i (kPa) =	7477			
		800.0	$p_p(kPa) =$		p _F (kPa) =	745	
7400	•	0.007	$Q_p (m^3/s) =$	3.33E-08			
		0.006 =	tp (s) =	1800	t_F (s) =	2160	
		Rate [l/m in]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
3000		0.004 III	EC _w (mS/m)=				
ă			Temp _w (gr C)=	18.6			
6800		0.003	Derivative fact.=	0.1	Derivative fact.=	0.0	
6000		0.002					
		0.001					
0.00 1.00 2.00 3.00 4.00 Elaps	5.00 6.00 7.00 8.00 ed Time [h]	9.00	Results		Results	ı	
			Q/s $(m^2/s)=$	1.6E-09			
Log-Log plot incl. derivates-	flow period		$T_M (m^2/s)=$	2.1E-09			
Elapsed tin	ne [h]		Flow regime:	transient	Flow regime:	transient	
10 1		3000	dt_1 (min) =	NA	dt_1 (min) =	NA	
		3000	dt_2 (min) =	NA	dt_2 (min) =	NA	
		10 ³	$T (m^2/s) =$	2.9E-10	$T (m^2/s) =$	2.0E-1	
			S (-) =	1.0E-06	S (-) =	1.0E-0	
10°	Por principal and the second	300	$K_s (m/s) =$	2.9E-12	$K_s (m/s) =$	2.0E-1	
	· · · · · · · · · · · · · · · · · · ·]	$S_{s}(1/m) =$	1.0E-08	$S_s(1/m) =$	1.0E-0	
D Advantage of the second		10 ²	C (m³/Pa) =	NA	$C (m^3/Pa) =$	2.4E-1	
5 Some Good day	• · · · · · · · · · · · · · · · · · · ·	3	$C_D(-) =$	NA	$C_D(-) =$	2.6E-0	
10-1	· ·	30	ξ(-) =		ξ(-) =	-2.	
	••	30	5()	1	5()		
· · ·		10 ¹	$T_{GRF}(m^2/s) =$	6.0F-10	$T_{GRF}(m^2/s) =$	NA	
			$S_{GRF}(m/s) =$ $S_{GRF}(-) =$	1.0E-06		NA	
10 ⁻² 10 ⁻¹ t	10 ⁰ 10 ¹ 10	2				NA	
Log-Log plot incl. derivatives			D _{GRF} (-) = Selected repres		- OKI ()	INA	
Log-Log plot incl. derivatives	o (b)					2 45 4	
10 1 10 10 10 10 10 10 10 10 10 10 10 10		ì	dt ₁ (min) =	NA	$C (m^3/Pa) =$	2.4E-1	
		3000	$dt_2 (min) =$	NA	$C_D(-) =$	2.6E-0	
			$T_T (m^2/s) =$	2.0E-10		-2.	
		10 ³	S (-) =	1.0E-06			
10 9		-	$K_s (m/s) =$	1.0E-11			
pitth.		300	$S_s (1/m) =$	5.0E-08			
a de la companya de l		2	Comments:				
		10 ²			f 2.0E-10 m2/s was		
10-1		,			ase, which shows the		
		30			range for the interva 10 m2/s. The static p		
					derived from the CH		
		10 ¹			orner plot to a value		
10 ⁰ 10 ¹ tD/	10 ² 10 ³ 10 ⁶	ł				,	
			-				

	r	Test Sui	mmary Sheet				
Project:	Oskarshamn site	investigat	ion Test type:[1]			CHi	
Area:		Laxer	nar Test no:				
Borehole ID:		KLX1	1A Test start:		060702 09:		
Toot coation from to (m):	903	00 003 00) m Doononsible for				
Test section from - to (m):	803	.00-903.00) m Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):		0.0	076 Responsible for test evaluation:		Crist	ian Enachescu	
Linear plot Q and p			Flow period		Recovery period		
			Indata		Indata		
	KLX11A_803.00-903.00_060702_1_CHir_Q_r	• Presion	° p ₀ (kPa) =	8351			
8600	KENTA_000000000000000000000000000000000000	Pabove 0.01	^s p _i (kPa) =	8354			
		0.01	$p_p(kPa) =$	8589	p _F (kPa) =	835	
8400			$Q_p (m^3/s) =$	6.67E-08			
		t	to (a) -	1800	t_F (s) =	720	
2000			$\int_{0}^{2} \int_{0}^{\infty} \int_{0$	1.00E-06	S el S [*] (-)=	1.00E-0	
E 8000			EC _w (mS/m)=		. ,		
NO .		0.00	Temp _w (gr C)=	20.1			
7800	. . •	0.00		= 0.14	Derivative fact.=	0.0	
		0.00					
7600	•	0.00	2				
7400		0.00	Results		Results		
0.00 0.50 1.00 1.50	200 250 3.00 3.50 Elapsed Time [h]	4.00 4.50	$Q/s (m^2/s) =$	2.8E-09			
Log-Log plot incl. derivate	s- flow period			3.6E-09			
	-		T _M (m ² /s)= Flow regime:	transient	Flow regime:	transient	
10 1	osed time [h] 19, ⁻²	10,1	$dt_1 (min) =$			NA	
			` ′		` '	!	
	:		$dt_2 (min) =$		$dt_2 (min) =$	NA 0.05.0	
	A STANSON OF THE STAN	300	$T(m^2/s) =$		$T (m^2/s) =$	2.9E-0	
10 ^d	Take Take	F10 ²	S (-) =	1.0E-06		1.0E-0	
9,90			$K_s (m/s) =$	_	$K_s (m/s) =$	2.9E-1	
	- Action of the Control of the Contr		$S_s (1/m) =$		$S_s(1/m) =$	1.0E-0	
, v	*	30	© (m³/Pa) =	NA	$C (m^3/Pa) =$	3.1E-1	
10-17		10 ¹	[₹] C _D (-) =	NA	$C_D(-) =$	3.4E-0	
	*** *	["	ξ (-) =	-1.8	ξ (-) =	1.	
	•						
		[3	$T_{GRF}(m^2/s) =$	1.8E-09	$T_{GRF}(m^2/s) =$	NA	
10 ⁻² 10 ⁻¹	10 ⁰ 10 ¹ 10 ²	103	$S_{GRF}(-) =$	1.0E-06	S _{GRF} (-) =	NA	
	tD		D_{GRF} (-) =	1.7	D _{GRF} (-) =	NA	
Log-Log plot incl. derivati	ves- recovery period		Selected repre	sentative paran	neters.		
	sed time [h]		$dt_1 (min) =$	NA	$C (m^3/Pa) =$	3.1E-1	
102			dt_2 (min) =	NA	$C_D(-) =$	3.4E-0	
		3000	$T_T (m^2/s) =$	2.9E-09		1.	
			S (-) =	1.0E-06			
		10 ³	K_s (m/s) =	1.5E-10			
10			$S_s(1/m) =$	5.0E-08			
		300		J.UL-00	I		
d qd	`	10 ²	G	d transmississis	£2.0E.0 m2/~ 1	arivad fram 41 -	
	3,4	10	radial flow analys		f 2.9E-9 m2/s was d ase, which shows the		
10°	**		radiai iio w anary		range for the interva		
A Company of the Comp	;	30			9 m2/s (this range in		
A Comment			derived transmiss	ivity of the CHi pl	hase). The static pre	ssure measured	
<i>37</i>		10 ¹					
.		10			om the CHir phase u t to a value of 8,333		

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			Р
Area:	Lax	emar	Test no:			
D I. I. ID.	1/1	V44A	T			000700 44 4
Borehole ID:	KL	X11A	Test start:			060702 14:45
Test section from - to (m):			Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescı
Linear plot Q and p			test evaluation: Flow period		Recovery period	
			Indata		Indata	
9600		0.005	p ₀ (kPa) =	9027		
9400 -	KLX11A_876.00-976.00_060702_1_PI_Q_r		p _i (kPa) =	9042		
		0.004	$p_p(kPa) =$	9253	p _F (kPa) =	920
9200 -	,		$Q_p (m^3/s) =$	NA	. , ,	
<u></u>	:	0.003 =	tp (s) =	10	t _F (s) =	397
		lojection Rate [Vmin]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
5 8 8 8 8	·	ection Ra	EC _w (mS/m)=		0 61 0 (-)-	
800		- 0.002 ≦	Temp _w (gr C)=	21.2		
: 8400 -	• Psection		Derivative fact.=	NA	Derivative fact.=	0.0
• .	Pabove Pbelow Q	- 0.001	Bonvativo naot.	1 1/2 1	Donvativo laot.	0.0
8200	I.i.					
8000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.000	Results	<u> </u>	Results	
0.00 0.90 1.00 Elapsed	1.50 2.00 Time [h]		Q/s $(m^2/s)=$	NA	rtoounto	
Log-Log plot incl. derivates- f	low period		$T_M (m^2/s) =$	NA		
Log-Log plot mei. denvates- i	low period		Flow regime:	transient	Flow regime:	transient
			dt ₁ (min) =	NA	dt ₁ (min) =	NA
			$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 (min) = $ $dt_2 (min) = $	NA
			` ,	NA		4.0E-1
			$T (m^2/s) = S (-) =$	Na	$T (m^2/s) = S (-) =$	1.0E-0
			0 ()	NA NA	9()	
			K _s (m/s) =	NA NA	$K_s (m/s) =$	4.0E-1
Not A	nalysed		$S_s(1/m) =$		S _s (1/m) =	1.0E-0
			$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.6E-1
			$C_D(-) =$	NA	$C_D(-) =$	2.8E-0
			ξ (-) =	NA	ξ (-) =	-1.
			2	NI A	2	0.05.4
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	6.2E-1
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E-0
l - 4			D _{GRF} (-) =	NA	D _{GRF} (-) =	1.3
Log-Log plot incl. derivatives			Selected represe			2.65.4
10 1 10 2	. 101	1	dt ₁ (min) =	NA	C (m ³ /Pa) =	2.6E-1
]			$dt_2 (min) =$	NA 4.05.44	$C_D(-) =$	2.8E-0
•		10 ¹	$T_T(m^2/s) =$	4.0E-11		-1.
			S (-) =	1.0E-06		
10 ⁻⁰		3	$K_s (m/s) =$	2.0E-12		
		ns sa.	$S_s (1/m) =$	5.0E-08		
a de la companya de l		10° oluted pre	Comments:		24.0E 11 . 27	1 . 10 .
	7.74 7.44	Pecanvo			4.0E-11 m2/s was of The confidence ran	
10 1	* * * * * * * * * * * * * * * * * * * *	0.3	interval transmissiv			ge ioi uie
//:		10 -1			pressure could not	be extrapolated
		10	due to the very low			-
•						
10 ⁻² 10 ⁻¹	10 ⁰ 10 ¹ 10	0.03				

	Test Su	ımı	nary Sheet				
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi	
Area:	Laxe	emar	Test no:				
D 1 1 1D	171.	/	T		000704.00		
Borehole ID:	KLX	(11A	Test start:			060704 08:19	
Test section from - to (m):	103.00-123.00 m		Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):	0	.076	Responsible for test evaluation:		Crist	ian Enachescu	
Linear plot Q and p			Flow period		Recovery period		
· · ·			Indata		Indata		
5400		5	p ₀ (kPa) =	1091			
KLX11A_103.00-123.00_060704_1_CHir_Q_r	Psection Pabove Pbelow		p _i (kPa) =	1093			
1300	.0	4	$p_p(kPa) =$	1293	p _F (kPa) =	1093	
:	•		$Q_p (m^3/s) =$	2.33E-05	. , ,		
1200	:		tp(s) =		t _F (s) =	120	
Tidd a man and a		te [Vmin]			S el S [*] (-)=	1.00E-0	
		ction Ra	S el S* (-)=	1.00E-00	S el S (-)=	1.00E-0	
Downth de		2 =	EC _w (mS/m)=				
1000 ·	**************************************		Temp _w (gr C)=	8.4			
900		1	Derivative fact.=	0.05	Derivative fact.=	0.0	
÷	•						
0.00 0.20 0.40 0.60 0.00 Elapsed		1.60	Results		Results		
			$Q/s (m^2/s) =$	1.1E-06			
Log-Log plot incl. derivates- flo	w period		$T_M (m^2/s) =$	1.2E-06			
	•		Flow regime:	transient	Flow regime:	transient	
10 ⁻⁴ Elapsed time	nj 10, ⁻² 10, ⁻¹ 10, ⁰	ì	dt ₁ (min) =		$dt_1 (min) =$	0.6	
			$dt_1 (min) =$ $dt_2 (min) =$		$dt_1 (min) =$ $dt_2 (min) =$	6.7	
		3	, ,		, ,	4.9E-0	
•		10 ⁰	$T (m^2/s) =$		$T (m^2/s) =$		
101	S See econfo _s erations (military)	10	S (-) =	1.0E-06		1.0E-0	
		[$K_s (m/s) =$		$K_s (m/s) =$	2.5E-0	
.(100).		0.3	$S_s (1/m) =$		$S_s (1/m) =$	5.0E-0	
(14p)		1,0%	C (m³/Pa) =	NA	C (m ³ /Pa) =	6.3E-1	
10 ^o .		10 \$	$C_D(-) =$	NA	$C_D(-) =$	7.0E-0	
10		ŀ	ξ (-) =	4.7	ξ(-) =	19.	
	***	0.03					
•		F10 ⁻²	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
·		F	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
10 ⁷ 10 ⁸ tD	10 ⁹ 10 ¹⁰ 10 ¹		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe				
Elapsed time [h]	position position		dt_1 (min) =	0.61	C (m³/Pa) =	6.3E-1	
10,15 10,4 10,3	10,-2		$dt_2 \text{ (min)} =$		$C_D(-) =$	7.0E-0	
	300)	$T_T (m^2/s) =$	4.9E-06		19.	
			S (-) =	1.0E-06			
101	10 ⁻¹		$K_s (m/s) =$	2.5E-07			
	<i>"</i> .	_	$S_s (1/m) =$	5.0E-08			
	30)) [kPa	Comments:				
		_ p-p0, (p-p0)' [kPa]			4.9E-6 m2/s was de		
10 0	. 10	p-b			se, which was consi		
	A de la				e for the interval tran		
	3				2/s. The static pressu		
/	İ		transducer depth, w		-		
<u> </u>	10	0	extrapolation in the	Horner plot to a	value of 1,092.9 kl	Pa.	
10 ⁰ 10 ¹	10 ² 10 ³ 10 ⁴						

	Test	Sumr	nary Sheet			
Project:	Oskarshamn site invest	tigation	Test type:[1]			CHi
Area:	La	axemar	Test no:			•
Borehole ID:	K	T X11A	Test start:			060704 10:31
Test section from - to (m):	123.00-14	3.00 m	Responsible for test execution:			Stephan Rohs
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	
1600		T 10	p ₀ (kPa) =	1279		
KLX11A_123.00-143.00_060704_1_CHir_Q_r	• Ps • Pa	ection bove +9	p _i (kPa) =	1275		
1500 -	• Pb	elow	$p_p(kPa) =$		p _F (kPa) =	127:
	•	18		6.50E-05		127
s400 -		7	$Q_p (m^3/s) =$			120
(a)	• •	6 July	tp (s) =		t _F (s) =	120
1300		P G G Injection Rate [Vmin]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
Sownhol Company		nje ctik	EC _w (mS/m)=			
1200	·	3	Temp _w (gr C)=	8.7		
			Derivative fact.=	0.13	Derivative fact.=	0.0
1100		_ [
300						
0.00 0.20 0.40 0.60 Elapsed Til	0.80 1.00 1.20 me [h]	1.40	Results		Results	
			$Q/s (m^2/s) =$	3.2E-06		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	3.3E-06		
			Flow regime:	transient	Flow regime:	transient
Elapsed time 10. ⁻⁵	[h] 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	 -	dt_1 (min) =	0.32	dt_1 (min) =	0.4
10	•	10°	dt_2 (min) =	1.16	dt_2 (min) =	1.6
			$T (m^2/s) =$	9.4E-06	$T (m^2/s) =$	8.1E-0
a deber		0.3	S (-) =	1.0E-06	, ,	1.0E-0
10 1		10-1	$K_s (m/s) =$		K_s (m/s) =	4.1E-0
· .	•	10	S _s (1/m) =		S _s (1/m) =	5.0E-0
(항)), [min/f	. ,	NA	- ,	1.2E-0
		0.03 (b/1)	O (III /I u)	NA	$C (m^3/Pa) =$	
10 ⁰⁷		10 -2	C _D (-) =		C _D (-) =	1.4E-0
			ξ (-) =	10.2	ξ (-) =	7.9
		0.003				
10 12 10 13 10 14	10 15 10 16	10 17	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	1.2E-0
10 ¹² 10 ¹³ 10 ¹⁴ tD	10 10	IU	$S_{GRF}(-) =$	1.0E-06		1.0E-0
			D_{GRF} (-) =		D _{GRF} (-) =	2.3
Log-Log plot incl. derivatives-	recovery period		Selected represe	intative paran	neters.	
4 3 Elapsed time	ihl		dt_1 (min) =	0.47	C (m ³ /Pa) =	1.2E-0
10. ⁻⁴ 10. ⁻³ 10. ⁻²		103	dt_2 (min) =	1.60	C _D (-) =	1.4E-0
	•	10	$T_T (m^2/s) =$	8.1E-06	ξ (-) =	7.9
		_	S (-) =	1.0E-06		1
101		10 ²	$K_s (m/s) =$	4.1E-07		
·i		-	S _s (1/m) =	5.0E-08		
	•	<u>R</u>	Comments:	3.32 30		1
100	t :	01 01 0-00, (0-00), [kPa		tranomicoivity a	f 8.1E-6 m2/s was de	arived from the
	The state of the s	p-b0. (se (inner zone), whi	
10-1	Manage of the same	\dashv	better data and deri			
IU .		10 ⁰	transmissivity is est			
į.		+			oth, was derived from	
			pressure measured a	at transducer dej	oni, was actived from	
10 ¹ 10 ² ID/CD	10 ³ 10 ⁴	105			on in the Horner plo	

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			
Darahala ID.	IZI V	(4 4 A	Test start:			000704.40:40
Borehole ID:	KLX	(11A	i est start:			060704 12:49
Test section from - to (m):	143.00-163.0		Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0		Responsible for test evaluation:		Crist	ian Enachesc
Linear plot Q and p			Flow period		Recovery period	
· · ·			Indata		Indata	1-
1800		2.0	p ₀ (kPa) =	1469		
	3.00-163.00_060704_1_CHir_Q_r		p _i (kPa) =	1464		
1700	•••		$p_p(kPa) =$	1671	p _F (kPa) =	146
1600	:	1.5	$Q_p (m^3/s) =$	6.67E-06		
- 1900 	j	[u]	tp (s) =	1200	t _F (s) =	180
2 1500		Rate [Vm]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
		ੋ injection Rate [l/min]	EC _w (mS/m)=	1.00E 00	S el S (-)-	1.00E 0
1400		-	Temp _w (gr C)=	8.9		
	¥.	0.5			De introduction	0.0
1300			Derivative fact.=	0.02	Derivative fact.=	0.0
0.00 0.20 0.40 0.60 0.80 Elapsed	1.00 1.20 1.40 1.50 1.8 Time [h]	80	Results		Results	•
			Q/s $(m^2/s)=$	3.2E-07		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	3.3E-07		1
	·		Flow regime:	transient	Flow regime:	transient
10, ⁻⁴ 10, ⁻³ Elapsed tim	e[h]		$dt_1 \text{ (min)} =$	2 41	dt ₁ (min) =	6.4
10			$dt_2 \text{ (min)} =$		$dt_2 (min) =$	27.4
		3	3		$T (m^2/s) =$	1.4E-0
. 0.220	, ·· · · · · · · · · · · · · · · · · ·				. ,	
10 1		10 ⁰	0 ()	1.0E-06		1.0E-0
	· · · · · · · · · · · · · · · · · · ·		$K_s (m/s) =$		K_s (m/s) =	7.0E-0
· ·	A	0.3	$S_s(1/m) =$		$S_s(1/m) =$	5.0E-0
	•	(1/0).1	C (m ³ /Pa) =	NA	C (m³/Pa) =	9.5E-1
10-1	•	10-1 %	$C_D(-) =$	NA	C _D (-) =	1.0E-0
			ξ (-) =	-3.5	ξ (-) =	1.
		0.03				
	•	10-2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	NA
10 ⁻¹ 10 ⁰ ti	10 ¹ 10 ² 10		$S_{GRF}(-) =$	1.0E-06	$S_{GRF}(-)$ =	NA
			D_{GRF} (-) =	2.3	D_{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	ieters.	
			dt_1 (min) =	6.49	C (m³/Pa) =	9.5E-1
10 ² 10,15 10,14 10,13	10,-	,	dt_2 (min) =	27.49	C _D (-) =	1.0E-0
	10 ³	_	$T_T (m^2/s) =$	1.4E-07	ξ(-) =	1.
	į		S (-) =	1.0E-06		
	300	J	K_s (m/s) =	7.0E-09		
10	10	2	$S_s(1/m) =$	5.0E-08		
3	and the same of th	[kPa]	Comments:	3.02 00		<u> </u>
a	St. Astronometer 30	, (p-p0)*		tranomicoivity a	1.4E-7 m2/s was de	arived from the
10 10	· po printer particular	0-b0			se (outer zone), whi	
	10	1	better data and deri			
					E-8 to 4.0E-7 m2/s.	
	3		pressure measured a	at transducer de	oth, was derived from	n the CHir
<u> </u>	10 ² 10 ³ 10 ⁴		phase using straight	line extrapolati	on in the Horner plo	t to a value of
10 ⁰ 10 ¹	10 10 10		1,443.8 kPa.			

	Test Sun	nmary Sheet			
Project:	Oskarshamn site investigati	on Test type:[1]			CHi
Area:	Laxem	ar Test no:			•
D 1 1 1D	10.74	40 = 4 4			000704450
Borehole ID:	KLX1	1A Test start:			060704 15:05
Test section from - to (m):	163.00-183.00	m Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0.0	76 Responsible for		Crist	ian Enachescı
Linear plot Q and p		test evaluation: Flow period		Recovery period	
т р т ц т		Indata		Indata	
		p ₀ (kPa) =	1656		
KLX11A_163.00-183.00_080704_1_CHir_Q_r	P section	p _i (kPa) =	1648		
1950	♣ P above □ P below • Q	$p_p(kPa) =$	1849	p _F (kPa) =	165
1900	•	$Q_p (m^3/s) =$	4.17E-05		
7750-	•	tp(s) =	1200	t _F (s) =	120
7 (200)	·	*		S el S [*] (-)=	1.00E-0
Ted do annua 4 socyano do		EC _w (mS/m)=	1.00L-00	S el S (-)=	1.00L-0
O 0 1000 -			0.2		
1550		Temp _w (gr C)=	9.2		
1500	-1	Derivative fact.=	0.11	Derivative fact.=	0.0
H50					
0.00 0.20 040 080 Bapsed	0.80 1.00 1.20 1.40 Time [b]	Results		Results	
		Q/s $(m^2/s)=$	2.0E-06		
Log-Log plot incl. derivates- fle	ow period	$T_{\rm M} (m^2/s) =$	2.1E-06		
gg p		Flow regime:	transient	Flow regime:	transient
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	[h] 10. 2	$dt_1 (min) =$		dt ₁ (min) =	0.4
10 2		` '		$dt_1 (min) =$ $dt_2 (min) =$	9.6
	10 ⁰	J. 12 ()	I .		
	0.0.0.0.0000000000000000000000000000000	$T (m^2/s) =$		$T (m^2/s) =$	7.2E-0
1	0.3	S (-) =	1.0E-06		1.0E-0
10 1		$K_s (m/s) =$		$K_s (m/s) =$	3.6E-0
(ldb)	10	$S_s(1/m) =$	5.0E-08	$S_s(1/m) =$	5.0E-0
1/4b(.)		© C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	6.6E-1
10 ^c l	0.03	C _D (-) =	NA	$C_D(-) =$	7.2E-0
• •	110	2 ()	10.9	ξ (-) =	14.
·	A STATE OF THE STA	3 ()			
	0.00	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹² 10 ¹³ 10 ¹⁴ tD	10 ¹⁵ 10 ¹⁶ 10 ¹⁷	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.	
		$dt_1 (min) =$	0.49	$C (m^3/Pa) =$	6.6E-10
Elapsed time (h	·	$dt_2 (min) =$	16.72	$C_D(-) =$	7.2E-0
		$T_T (m^2/s) =$	6.5E-06		10.
	300	S (-) =	1.0E-06		10.
***************************************		$K_s (m/s) =$			
101	10 ²		3.3E-07		
	ţ	$S_s(1/m) =$	5.0E-08		
iod od	30	Comments:			
.\				f 6.5E-6 m2/s was d	
100	101	radiai flow alialysis		se, because it shows	
	· com and and and			ence range for the in DE-6 to 1.0E-5 m2/s.	
·			awa w ve 4.l	_ U W 1.UL-J IIIZ/S.	ine static
· ·	[3				m the CHir
10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	103 104 106 100	pressure measured	at transducer de	oth, was derived from	

	Test Su	mn	nary Sheet			
Project:	Oskarshamn site investiga					CHir
A 100	Lava		Taskmar			
Area:	Laxer	mar	Test no:			1
Borehole ID:	KLX	11A	Test start:			060704 17:12
Test section from - to (m):	183.00-203.00		Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.0		Responsible for		Crist	ian Enachescu
			test evaluation:		<u> </u>	
Linear plot Q and p			Flow period		Recovery period	
2100		10	Indata	1844	Indata	I
KLX11A_183.00-203.00_060704_1_CHir_Q_r	• P section • P above	9	p ₀ (kPa) = p _i (kPa) =	NA		
2000 -	• P below • Q	8	$p_i(kPa) = p_p(kPa) =$	NA NA	p _F (kPa) =	NA
		,	•	NA NA	ρ _F (κΡά) =	NA
1900		,	$Q_p (m^3/s) =$		1 ()	N. A.
d d orise	:	te [Vmin]	tp (s) =	NA	t _F (s) =	NA
fed unised approximate		h n n Injection Rate [Vmin]	S el S* (-)=	NA	S el S [*] (-)=	NA
1700		4 =	EC _w (mS/m)=			
1700		3	Temp _w (gr C)=	9.5		
1600 -		2	Derivative fact.=	NA	Derivative fact.=	NA
		1				
1500 0,00 0,20 0,40 0,6	0 0.80 1.00 1.20	0				
Elapsed 1	Time (h)		Results		Results	
			Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fle	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 Ar	nalysed		C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	NA
			$C_D(-) =$	NA	$C_D(-) =$	NA
			ξ(-) =	NA	ξ(-) =	NA
			5()	 	3()	1
			$T_{GRF}(m^2/s) =$	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			
. J = - 9 p			$dt_1 (min) =$	NA	C (m ³ /Pa) =	NA
			dt_1 (min) =	NA	$C_D(-) =$	NA
			$T_T (m^2/s) =$	NA	ξ(-) =	NA
			S (-) =	NA	> (⁻) -	
			$K_s (m/s) =$	NA		
			$S_s(11/s) =$ $S_s(1/m) =$	NA		
			Comments:		<u> </u>	
Not Ar	narysed				ged packer complian 1 m2/s.	ce) the interval

	Test Sur	nmary Sheet			
Project:	Oskarshamn site investigati	on Test type:[1]			CHi
Area:	Lavam	nar Test no:			
Alea.	Laxen	iai i est iio.			ļ
Borehole ID:	KLX1	1A Test start:			060704 18:50
Test section from - to (m):	203.00-223.00	m Responsible for test execution:			Stephan Rohs
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	
2300 KLX11A_203.00-223.00_060704_1_CHir_Q_r	• P section	p ₀ (kPa) =	2031		
2250	P above P bdow 9	p _i (kPa) =	NA		
2200		$p_p(kPa) =$	NA	p _F (kPa) =	NA
2150	7.	$Q_p (m^3/s) =$	NA	- /	
2100	7		NA	t _F (s) =	NA
2 2050	<u>;</u>	S el S* (-)=	NA	S el S [*] (-)=	NA
Ed. 2100-	:	S el S (-)= EC _w (mS/m)=	1.12.1	ડઇાડ(-) -	- 14 1
1950	3	Temp _w (gr C)=	9.8		1
	T ³	Derivative fact.		Derivative fact.=	NA
1900	2	Derivative fact.	- INA	Derivative fact.=	NA
1850	1		+		
1800 .00 0.10 0.20 0.30 0.40 0.50 Elapsed T		Darrita		Danista	
Ciapseu i	and by	Results	In a	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
NIA4 A	له مسام	$S_s (1/m) =$	NA	$S_s (1/m) =$	NA
Not Ar	iarysed	$C (m^3/Pa) =$	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	sentative paran		
<u> </u>		$dt_1 (min) =$	NA	C (m ³ /Pa) =	NA
		$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ(-) =	NA
		S (-) =	NA	ə() —	
		$K_s (m/s) =$	NA	 	
		$S_s (1/m) =$	NA	 	
		Comments:	1	<u> </u>	<u> </u>
Not Ar	larysed		recnonce (prolo	ged packer complian	ca) the interval
		transmissivity is le			,

		mary Sheet			
Oskarshamn site investiga	ation	Test type:[1]			Р
Laxe	maı	Test no:			
KLX	(11A	Test start:			060705 08:38
					Stephan Roh
0	.076	Responsible for		Crist	ian Enachesc
				Recovery period	
		140404040404070404040404040404040			
	T 5		2216		
P section P above					
* P below · Q	4			n- (kPa) =	225
				p _F (Ki a) −	223
***************************************				t (a) –	270
	3 [mim 5]				270
	tion Rate		1.00E-06	S el S (-)=	1.00E-0
*	2 =				
		Temp _w (gr C)=	10.0		
		Derivative fact.=	NA	Derivative fact.=	0.0
0.80 1.00 1.20 1.40	1.	Populto		Doculto	
Timie (ii)			NΙΔ	Nesuits	
		` '			
ow period					
		_		_	transient
					1.1
		, ,		dt_2 (min) =	22.4
		$T (m^2/s) =$	NA	$T (m^2/s) =$	3.3E-1
		S (-) =	NA	S (-) =	1.0E-0
		$K_s (m/s) =$	NA	$K_s (m/s) =$	1.6E-1
		$S_s(1/m) =$	NA	S _s (1/m) =	5.0E-0
nalysed			NA		5.8E-1
				, ,	6.4E-0
					0.
		<i>≥</i> (⁻) −	1.0.1	S (-) -	0.
		$T_{opp}(m^2/s) =$	NA	$T_{ops}(m^2/s) =$	8.5E-10
			NA		1.0E-0
					1.79
recovery period					
					5.8E-1
[h]					6.4E-0
					0.4E-0.
	3				0.
	100				
	.0				
	0.3		5.0E-08		
	o patnic				
	10 1 8				
8 3. 18 9 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
The same	0.03				
•			ia noi de extrapo	iaica auc to the very	y 10 W
		transmissivity			
10 ² 10 ³ 10 ⁴	10 -2	transmissivity.			
r	Laxe KLX 223.00-243.0 0 **Factors** - Factors** - Fa	Laxemal KLX11A 223.00-243.00 m 0.076 1 formula and a second and a s	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Laxemar Test no: KLX11A Test start: 223.00-243.00 m Responsible for test execution: 0.076 Responsible for test evaluation: Flow period Indata p_0 (kPa) = 2216 p_1 (kPa) = 2233 p_0 (kPa) = 2458 Q_0 (m ³ /s)= NA p_0 (kPa) = 1.00E-06 Sel S (-)= 1.00E-06 EC _w (mS/m)= Temp _w (gr C)= 10.0 Derivative fact = NA Results Q/s (m ² /s)= NA Flow regime: transient dt ₁ (min) = NA dt ₂ (min) = NA T (m ² /s) = NA T (m ² /s) = NA T (m ³ /s)	Laxemar Test no:

	Test Sur	<u>mma</u>	<u>ry Sh</u>	<u>eet</u>			
Project:	Oskarshamn site investiga	tion <u>Te</u>	est type:	[1]			CHi
Area:	Laxer	mar Te	est no:				
Borehole ID:	KLX	11A Te	est start:				060705 10:48
Test section from - to (m):	243.00-263.00		esponsik st execu		Stephan Rol		
Section diameter, 2·r _w (m):	0.0	076 Re	esponsik	ole for		Crist	ian Enachescu
			st evalua				
Linear plot Q and p			ow peri	od		Recovery period	
2700			data			Indata	
	KLX11A_243.00-263.00_060705_1_CHir_Q_r		(kPa) =		2406		
2650	P above 0.1 P below	p _i	(kPa) =		2403		
2600	0.1	16 p p	(kPa) =	1	2616	p _F (kPa) =	240
2550	0.1	14 Q _p	_p (m ³ /s)=	=	6.67E-07		
<u>6</u> 2500	0.1	12 g tp	(s) =		1200	t _F (s) =	120
2450	-0.1	tp	el S [*] (-)=	=	1.00E-06	S el S [*] (-)=	1.00E-0
900		2	C _w (mS/ı			```	
2350		₀ Te	emp _w (gr	C)=	10.4		
2300		De	erivative		0.08	Derivative fact.=	0.0
2250	- 0.0	02					
0.00 0.20 0.40 0.60 0. Elapsed		Re	esults			Results	
		0/	/s (m²/s	\ <u>-</u>	3.1E-08		
Log-Log plot incl. derivates- f	low period		_M (m ² /s)=		3.2E-08		
- cg - cg p.o dod.cc .	ion policu		ow regin		transient	Flow regime:	transient
			1 (min)	=		$dt_1 \text{ (min)} =$	NA
10 1			2 (min)	-		$dt_1 (min) =$ $dt_2 (min) =$	NA
	10 ²					` ,	
			(/0)	=		$T (m^2/s) =$	3.7E-0
10	30		()	=	1.0E-06	` '	1.0E-0
	10	1	, ()	=		$K_s (m/s) =$	1.8E-0
3 (1/dp)	•	Ξ.	(1/m)			$S_s(1/m) =$	5.0E-0
,	3	ō	(m ³ /Pa)		NA	$C (m^3/Pa) =$	5.9E-1
10			_D (-)	=	NA	$C_D(-) =$	6.4E-0
	100	΅ ξ((-)	=	6.5	ξ (-) =	4.8
	0.3	To	GRF(m²/s) =	NA	$T_{GRF}(m^2/s) =$	NA
10 ⁸ 10 ⁹ tD	10 10 10 11 10 12		GRF(-)	=	NA	$S_{GRF}(-) =$	NA
		_	GRF (-)	=	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives	recovery period			represe	ntative paran		
gg p	, , , , , , , , , , , , , , , , , , , ,		1 (min)	934.600.000 =	NA	C (m ³ /Pa) =	5.9E-1
10. ⁴ 10. ³ Elapsed tin	ne [h]		₂ (min)	=	NA	$C_D(-) =$	6.4E-0
102			(m ² /s)		3.7E-08		4.8
	11	o³ I _T		=	1.0E-06		7.
10 ¹³				=	1.9E-09		
			(M/s)				
	["	_	_s (1/m)	=	5.0E-08		
nd 10 0		ò	omment				
		1 0 11				f 3.7E-8 m2/s was d	
	, m. ···································					se, which shows the range for the interva	
10-1						m2/s (this range end	
	[11					ne static pressure m	
ı L	10 ² 10 ³ 10 ⁴					the CHir phase usin	ng straight line
10 ¹ 10 ¹	. 10 ² 10 ³ 10 ⁴					a value of 2,401.2 k	

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxemar	Test no:			•
Borehole ID:	KLX11A	Test start:			060705 13:18
Test section from - to (m):	263.00-283.00 m				Stephan Roh
Section diameter, 2·r _w (m):	0.076	test execution: Responsible for		Crist	ian Enachesc
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3000		p ₀ (kPa) =	2594		
KLX11A_263.00-263.00_060705_1_CHir_Q_r	●P section ▲ P above 18	p _i (kPa) =	2588		
2900	• Q P below • 16	$p_p(kPa) =$	2789	p _F (kPa) =	259
2800	14	$Q_p (m^3/s) =$	1.65E-04		
Ed.	12 =	tp (s) =	1200	t _F (s) =	120
TACI 2000	to the state of th	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
200	8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	EC _w (mS/m)=		3 61 3 (-)-	
2500	100	Temp _w (gr C)=	10.8		
2500	1,	Derivative fact.=		Derivative fact.=	0.0
240	- 2	Derivative fact.	0.02	Derivative lact.	0.0
2300	0 1.00 1.20 1.40 Thi				
,		Results		Results	
		$Q/s (m^2/s) =$	8.1E-06		
Log-Log plot incl. derivates- flo	w period	$T_{\rm M} (m^2/s) =$	8.4E-06		
		Flow regime:	transient	Flow regime:	transient
Bapsed time [h]	10-110.010.1	dt ₁ (min) =	1.28	dt_1 (min) =	0.5
102		$dt_2 (min) =$		$dt_2 \text{ (min)} =$	5.0
1	0.3	$T (m^2/s) =$		$T (m^2/s) =$	3.6E-0
	- 10 ⁻¹	S (-) =	1.0E-06	/	1.0E-0
1012		$K_s(m/s) =$		$K_s(m/s) =$	1.8E-0
	0.03	- ' '			
		$S_s (1/m) =$		S _s (1/m) =	5.0E-0
<u> </u>	10 ⁻² (5)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	3.2E-0
10	*	$C_D(-) =$	NA	$C_D(-) =$	3.5E-0
	0.003	ξ (-) =	10.2	ξ (-) =	19.
· · · · · · · · · · · · · · · · · · ·		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ¹³ 10 ¹⁴ 10 ¹⁵	10 ¹⁶ 10 ¹⁷ 10 ¹⁸	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
E.		$D_{GRF}(-) =$	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- r	ecovery period	Selected represe			
Log-Log plot ilici. delivatives- i	ecovery period	dt ₁ (min) =			3.2E-0
10 ² 10 ⁻⁴ 10 ⁻³ 10 ⁻²	10,-1			$C (m^3/Pa) =$	3.2E-0 3.5E-0
		$dt_2 (min) =$		$C_D(-) =$	
. 0.9	300	$T_T (m^2/s) =$	3.6E-05		19.
	- - 10 ²	S (-) =	1.0E-06		
101		K_s (m/s) =	1.8E-06		
. \	30 <u>&</u>	$S_s (1/m) =$	5.0E-08		
	p-p0)' R	Comments:			
\.	101 8			f 3.6E-5 m2/s was de	
10"	min to the same and the			se, which shows the	
	3			range for the interval	
				m2/s. The static preson the CHir phase us	
10 10 10	10 ³ 10 ⁴ 10 ⁵			t to a value of 2,589	
10 10 tD/CD	10 10	apointion ii	pio		***
		Ī			

	Test Su	ımı	nary Sheet				
Project:	Oskarshamn site investig	ation	Test type:[1]			Р	
Area:	Laxe	emar	Test no:				
, ii ca.							
Borehole ID:	KL>	<11A	Test start:		060705 15:29		
Test section from - to (m):	283.00-303.0	00 m	Responsible for test execution:	Stephan Roh			
Section diameter, 2·r _w (m):	C	0.076	Responsible for		Crist	ian Enachescu	
Linear what O and a			test evaluation:			q(+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0	
Linear plot Q and p			Flow period		Recovery period Indata		
3100		5	Indata p ₀ (kPa) =	2781			
KLX11A_283.00-303.00_060705_1_Pi_Q_r	P section P below		$p_0 (RPa) =$ $p_i (RPa) =$	2797			
3000	· Q	- 4	$p_p(kPa) =$		p _F (kPa) =	295	
			•	NA	p _F (Ki a) −	293	
2900 -			$Q_{p} (m^{3}/s) = $ $tp (s) =$		t _F (s) =	270	
e de	· · · · · · · · · · · · · · · · · · ·	Injection Rate [/min]				1.00E-0	
2800 ·	:	ection Re	S el S [*] (-)=	1.00E-00	S el S [*] (-)=	1.00E-0	
2700 -		- ₂ <u>=</u>	EC _w (mS/m)=	11.1			
			Temp _w (gr C)=	11.1		0.0	
2600		- 1	Derivative fact.=	NA	Derivative fact.=	0.0	
2500 0.20 0.40 0.60	0.80 1.00 1.20 1.40 sed Time [h]		Results		Results		
Eispe	zea rime (n)		Q/s $(m^2/s)=$	NA	results		
Log-Log plot incl. derivates-	flow period		$T_M (m^2/s) =$	NA			
Log Log plot mon denvates	now period		Flow regime:	transient	Flow regime:	transient	
			dt ₁ (min) =	NA	dt ₁ (min) =	NA	
			$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	NA	
			$T (m^2/s) =$	NA		2.2E-1	
			S (-) =	NA	$T (m^2/s) = S(-) =$	1.0E-0	
				NA	$S(-) = K_s(m/s) =$	1.0E-0	
			$K_s (m/s) =$ $S_s (1/m) =$	NA	$S_s(1/m) =$	5.0E-0	
Not A	analysed		- ,		- ,		
			$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.6E-1	
			$C_D(-) =$	NA	$C_D(-) =$	6.2E-0	
			ξ (-) =	NA	ξ (-) =	-0.	
			_ , 2, ,	NA	_ , 2, ,	1.0E-1	
			$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$		
			$S_{GRF}(-) = D_{GRF}(-) =$	NA NA	$S_{GRF}(-) =$	1.0E-0	
Log-Log plot incl. derivatives	received notice		D _{GRF} (-) = Selected represe		D _{GRF} (-) =	1.4	
Log-Log plot incl. derivatives	- recovery period				<u> </u>	F 6E 1	
10, ⁻³ Elapsed ti	me [h] 10,0 10,1 10,1		$dt_1 (min) = dt_2 (min) =$	NA NA	$C (m^3/Pa) =$	5.6E-1 6.2E-0	
					$C_D(-) =$		
		3	$T_T (m^2/s) = S(-) = $	2.2E-11 1.0E-06		-0.	
_			0 ()				
10°	- -	10 ⁰	$K_s (m/s) =$	1.1E-12			
a Chillipp		pressur	S _s (1/m) =	5.0E-08			
a constant of the state of the		0.3 panjovu	Comments:	4	CO OF 11 O/	1 16 4	
10-1	•	10 ⁻¹	The recommended	transmissivity of	f 2.2E-11 m2/s was The confidence ran	aerived trom th	
·. ·· "			interval transmissiv			igo for the	
	ļ	0.03			pressure could not	be extrapolated	
†			due to the very low			-	
	I I		,	,			

	Test Su	mm	ary Sheet			
Project:	Oskarshamn site investiga	tion	Test type:[1]			CHi
Area:	Laxe	mar	Test no:			
Borehole ID:	KLX	11A	Test start:			060705 17:25
Test section from - to (m):	303.00-323.0	0 m F	Responsible for			Stephan Rohs
, ,		t	test execution:			-
Section diameter, 2·r _w (m):	0.		Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p			Flow period		Recovery period	
		Ī	Indata		Indata	
3300		5 F	o ₀ (kPa) =	2967		
KLX11A_303.00-323.00_060705_1_CHir_Q_r	P section P above P below		o _i (kPa) =	2963		1
3200	-0	_	o _p (kPa) =		p _F (kPa) =	296
	.		$Q_p (m^3/s) =$	6.50E-05	pr (a)	
3100 T			tp(s) =		t _F (s) =	120
Assure (P.p.)	;	ě.			S el S [*] (-)=	1.00E-0
<u>2</u> 3000		ection R	S el S* (-)=	1.00E-00	S el S (-)=	1.00E-0
2900			EC _w (mS/m)= Temp _w (gr C)=	11.5		
	•		,	11.5	D : " ()	0.4
2800	-	*1 	Derivative fact.=	0.02	Derivative fact.=	0.1
2700 0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 1.40		Results		Results	
Etapse d	ime [n]	L		2.8E-06		
Log-Log plot incl. derivates- fl	ow paried		$Q/s (m^2/s) =$	3.0E-06		
Log-Log plot mer. derivates- n	ow period		T _M (m ² /s)= Flow regime:			transiant
.3 .2 ⊟apşed time	[h] ₀ ₁			transient	Flow regime:	transient
10.2 10. 10.			dt ₁ (min) =		dt ₁ (min) =	0.3
	1		dt ₂ (min) =		$dt_2 (min) =$	7.9
			$T (m^2/s) =$		$T (m^2/s) =$	5.8E-0
	- C		S (-) =	1.0E-06		1.0E-0
10 1		10-1	$K_s (m/s) =$		$K_s (m/s) =$	2.9E-0
		lin/li	$S_s(1/m) =$	5.0E-08	$S_s(1/m) =$	5.0E-0
or of the state of		0.03	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	4.8E-1
10 0	•		C _D (-) =	NA	$C_D(-) =$	5.3E-0
		10 ⁻²	Ę (-) =	5.8	ξ (-) =	14.
	• .					
		0.003	$T_{GRF}(m^2/s) =$	9.7E-07	$T_{GRF}(m^2/s) =$	NA
10 ^{f0'} 10 ^{f1'} tD	10 ¹² 10 ¹³ 10 ¹⁴		S _{GRF} (-) =	1.0E-06		NA
		_	D _{GRF} (-) =		D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
Elapsed time [dt ₁ (min) =		C (m ³ /Pa) =	4.8E-1
102	10,		$dt_2 \text{ (min)} =$		$C_D(-) =$	5.3E-0
			2	5.8E-06		14.
A	300		$T_{T} (m^2/s) = $ $S (-) = $	1.0E-06		14.
			$K_s (m/s) =$	2.9E-07		
101	110 ²					
	[30	([kPa]	S _s (1/m) =	5.0E-08		
and and and and and and and and and and	30	0 .	Comments:	,	25.00.6.24	. 10 -
10	is since the second second second second second second second second second second second second second second				5.8E-6 m2/s was de	
•	A. C.	1			se (outer zone), whi he confidence range	
	3				E-6 to 9.0E-6 m2/s.	
i	+					
		1	pressure measured	at transducer der	oth, was derived froi	n the Chir
10 ¹ 10 ² tD/CD	10 ³ 10 ⁴ 10 ⁵ 10°	ŗ		-	oth, was derived from on in the Horner plo	

	Test Sur	nmary Sheet				
Project:	Oskarshamn site investigat	on Test type:[1]			CHi	
Area:	Laxen	nar Test no:				
Darahala ID.	IZI VA	4 0 T t - t t			000705 40:0	
Borehole ID:	KLX1	1A Test start:	060705 19:2			
Test section from - to (m):	323.00-343.00	m Responsible for test execution:		Stephan Roh		
Section diameter, 2·r _w (m):	0.0	76 Responsible for test evaluation:		Crist	tian Enachesci	
Linear plot Q and p		Flow period		Recovery period	j	
		Indata		Indata		
3500	0.005	p ₀ (kPa) =	3155			
KLX11A_323.00-343.00_060705_1_0	Hir_Q_r	p _i (kPa) =	3159			
3400	• Q	$p_p(kPa) =$		p _F (kPa) =	315	
:		$Q_p (m^3/s) =$	3.33E-09		1	
3300-				t _F (s) =	1440	
2 2200	0.003	tb (0)		S el S [*] (-)=	1.00E-0	
2 3200 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.003	$S \text{ el } S^* (-) = \\ EC_w (mS/m) = \\$	1.00L-00	S el S (-)=	1.00L-0	
3100	0.002	Temp _w (gr C)=	11.8			
3100					0.0	
3000	0.001	Derivative fact.=	0.23	Derivative fact.=	0.0	
2900						
0.00 1.00 2.00 Elapsed Ti	3.00 4.00 5.00 me [h]	Results		Results	_	
		Q/s $(m^2/s)=$	1.5E-10			
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s)=$	1.6E-10			
		Flow regime:	transient	Flow regime:	transient	
Elapsed time [h	101	$dt_1 (min) =$	NA	dt_1 (min) =	NA	
10	104	dt_2 (min) =	NA	dt_2 (min) =	NA	
		$T (m^2/s) =$	9.2E-11	$T (m^2/s) =$	5.5E-1	
	3000	S (-) =	1.0E-06	S (-) =	1.0E-0	
10	103	$K_s (m/s) =$	4.6E-12	$K_s (m/s) =$	2.7E-1	
	•	_ S _s (1/m) =	5.0E-08	$S_s(1/m) =$	5.0E-0	
	300	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.2E-1	
*	•	C _D (-) =	NA	$C_D(-) =$	1.3E-0	
10-1	10 ²	ξ (-) =	-0.4	ξ(-) =	1.0	
		3()		3()	†	
1	30	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁻¹ 10 ⁰ tD	10 ² 10 ³	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
		$D_{GRF}(-) =$	NA	$D_{GRF}(-) =$	NA	
Log-Log plot incl. derivatives-	recovery period	Selected represe				
5 5 F. 9 C 111 O.11 4011 1411 1403-		dt ₁ (min) =	NA	C (m ³ /Pa) =	1.2E-1	
	h] 10, ¹	$dt_2 (min) =$	NA	$C (m /Pa) = C_D (-) =$	1.3E-0	
10	F ₁₀ ³		5.5E-11		1.3E-0	
		$T_T (m^2/s) = S(-1) = -1$	1.0E-06		1.	
	300	0 ()			<u> </u>	
10°		$K_s (m/s) =$	2.8E-12			
	102	S _s (1/m) =	5.0E-08			
		Comments:		0.5.55		
	30			f 5.5E-11 m2/s was		
10"				ase, which shows the range for the interva		
	101			range for the interval 11 m2/s. The static p		
1				derived from the CH		
	3			rner plot to a value		
10 ⁰ 10 ¹	10 ² 10 ³ 10 ⁴	· · · · · · · · · · · · · · · · · ·				

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
Area:	Laxema	r Test no:			
Borehole ID:	KI V11/	Test start:			060706 08:48
Borenole ID.	KLXTIA	Test start.			000700 08.40
Test section from - to (m):	343.00-363.00	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.076	Responsible for	Cristian Enaches		
Linear plot Q and p		test evaluation: Flow period		Recovery period	
		Indata		Indata	
3600	0.10	p ₀ (kPa) =	3339		
KLX11A_343.00-363.00_060706_1_CHir_Q_r	P section P above P bdow	p _i (kPa) =	3356		
3500	· Q	$p_p(kPa) =$	3551	p _F (kPa) =	344
		$Q_p (m^3/s) =$	1.50E-07	, , ,	
3490		$\operatorname{tp}(s) =$		t _F (s) =	120
G 3400	:			S el S [*] (-)=	1.00E-0
3350	0.00 (alum) 0.00 pp. 10	S el S* (-)=	1.00E-00	S el S (-)=	1.00E-0
2 3300 ·	ਚ 0.04 드	EC _w (mS/m)=	10.1		
3250		Temp _w (gr C)=	12.1		
3200	0.02	Derivative fact.=	0.02	Derivative fact.=	0.0
3150					
3100	0.00	Results		Results	
0.00 0.20 0.40 0.60 0.80 Elapsed Time	1.00 1.20 1.40 1.60 1.80 [h]		7.5E-09		
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- flo	w period	$T_{\rm M} ({\rm m}^2/{\rm s}) =$	7.9E-09		
		Flow regime:	transient	Flow regime:	transient
Elapsed time [h]		dt_1 (min) =	NA	$dt_1 (min) =$	NA
10	300	$dt_2 (min) =$	NA	$dt_2 (min) =$	NA
	102	$T (m^2/s) =$	3.9E-09	$T (m^2/s) =$	4.3E-0
مبر	[10	S (-) =	1.0E-06	S (-) =	1.0E-0
ارد. بخونین د	30	$K_s (m/s) =$	1.9E-10	$K_s (m/s) =$	2.1E-1
2:3:7.	, <i>i</i>	S _s (1/m) =		S _s (1/m) =	5.0E-0
	[[h/w], [h/w], [h/w]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.5E-1
og · · · · · · · · · · · · · · · · · · ·	1/4, (1/q),	$C_D(-) =$	NA	$C_D(-) =$	2.7E-0
10-1	3				-3.
•		ξ (-) =	-2.9	ξ (-) =	-3.
1	10°	- , 2,)	4 0E 00	T (2()	4.3E-0
		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ⁰ tD	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$	1.0E-06		1.0E-0
		D _{GRF} (-) =		D _{GRF} (-) =	1.0
Log-Log plot incl. derivatives- r	ecovery period	Selected represe			
10. ⁻² Elapsed time [h]	10.1	dt_1 (min) =	NA	$C (m^3/Pa) =$	2.5E-1
10 10		dt_2 (min) =	NA	$C_D(-) =$	2.7E-0
		$T_T (m^2/s) =$	4.3E-09	ξ (-) =	-3.
	300	S (-) =	1.0E-06		
10°	- 2	$K_s (m/s) =$	2.2E-10		
" desired	10 ²	$S_s(1/m) =$	5.0E-08		
and the same of th	kPal	Comments:			
المستنب المستد	[6-20], [6-20]	The recommended	transmissivity of	f 4.3•10-9 m2/s was	derived from
10-1 32-3-1-1-1-1-1	10 ¹			phase (inner zone),	
F		the better data and	derivative qualit	y. The confidence ra	ange for the
+	3	interval transmissiv	ity is estimated	to be 1.0•10-9 to 8.0)•10-9 m2/s.
		Due to the low trans	smissivity no fre	esh water head was o	calculated.
10 ^d 10 ^f tD/CD	10 ² 10 ³ 10 ⁴				

	1 est Si	umr	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			Р
Area:	Lax	emar	Test no:			
Borehole ID:	KI.:	X11Δ	Test start:			060706 11:03
Borchole IB.						
Test section from - to (m):	363.00-383.	00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
			Indata		Indata	
3900 -		0.002	p ₀ (kPa) =	3530		
KLX11A_363.00-3	883.00_060706_1_PI_Q_r		p _i (kPa) =	3536		
3800 -			$p_p(kPa) =$	3753	p _F (kPa) =	369
	***************************************		$Q_p (m^3/s) =$	NA	, , ,	
3700 ·	•	2	tp(s) =	0	t _F (s) =	396
- 1000	:	Rate [Vmin]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
2 3500		Injection R 100.0	EC _w (mS/m)=	1.00L-00	S el S (-)=	1.00L-0
	:	Ē	` ,	12.2		
3500-			Temp _w (gr C)=	12.3		
3400			Derivative fact.=	NA	Derivative fact.=	0.0
	<u> </u>					
3300 0.00 0.20 0.40 0.60 0.80 1.0		0.000	Results		Results	
Elapsed	Time [h]		Q/s $(m^2/s)=$	NA	resuits	
Log-Log plot incl. derivates- f	low pariod			NA		
Log-Log plot ilici. derivates- i	low period		$T_M (m^2/s) =$		Flavora sima s	tropologi
			Flow regime:	transient	Flow regime:	transient
			$dt_1 (min) =$	NA	$dt_1 (min) =$	15.6
			dt_2 (min) =	NA	dt_2 (min) =	60.8
			$T (m^2/s) =$	NA	$T (m^2/s) =$	1.1E-1
			S (-) =	NA	S (-) =	1.0E-0
			$K_s (m/s) =$	NA	$K_s (m/s) =$	5.3E-1
27			$S_s(1/m) =$	NA	$S_s(1/m) =$	5.0E-0
Not A	nalysed		$C (m^3/Pa) =$	NA	C (m³/Pa) =	3.6E-1
			$C_D(-) =$	NA	$C_D(-) =$	4.0E-0
			ξ(-) =	NA	ξ(-) =	0.
			2()		5()	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	3.2E-1
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E-0
			$D_{GRF}(\cdot) =$	NA	D _{GRF} (-) =	1.7
Log-Log plot incl. derivatives-	recovery period		Selected represe			
Elenand tim	2 (2)		dt ₁ (min) =	15.64		3.6E-1
10. ³ 10. ² 10. ¹	10,0 10,1				0 (III /I u)	
1		10 ¹	$dt_2 \text{ (min)} =$		C _D (-) =	4.0E-0
1			$T_T (m^2/s) =$	1.1E-11		0.
		3	S (-) =	1.0E-06		
10 0		- 0	$K_s (m/s) =$	5.5E-13		
a property of the second	Literature.	10 ⁰ Jngs	$S_s (1/m) =$	5.0E-08		
i i i i i i i i i i i i i i i i i i i	T.F.	ited pre	Comments:			
		0.3 No.			f 1.1E-11 m2/s was	
10-1		Ďě.			The confidence ran	ge for the
		10 ⁻¹	interval transmissiv			,
* *					pressure could not	be extrapolated
†		0.03	due to the very low	uansmissivity.		

	Test	Sum	mary Sheet			
Project:	Oskarshamn site invest	igation	Test type:[1]			CHi
Area:	l la	exema	Test no:			
, ii oa.						
Borehole ID:	К	LX11/	Test start:	060706 13:0		
Test section from - to (m):	383.00-40	3.00 m	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachesc
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
4200 KLX11A_383.00-403.00_060706_1_CHir_Q_r		0.020	p ₀ (kPa) =	3717		
	P section P above P below		p _i (kPa) =	3715		
4000			$p_p(kPa) =$	3959	p _F (kPa) =	371
.\		0.015	$Q_p (m^3/s) =$	8.33E-08		
3800		-	tp (s) =	1200	t _F (s) =	120
8 3 300 -	. \	. Rate [l/min]	S el S* (-)=		S el S [*] (-)=	1.00E-0
G along	·	Injection I	EC _w (mS/m)=		0 01 0 (-)-	
3400	:	1	Temp _w (gr C)=	12.6		
·		0.005	Derivative fact.=	1.7	Derivative fact.=	0.0
3200	Angertal for the		Donative lact.	0.13	Domairo last.	0.0
3000 0.00 0.40 0.60 0.80 Elapsed	1.00 1.20 1.40 1.60 1.80 Time [h]	0.000	Results	-	Results	
			Q/s $(m^2/s)=$	3.4E-09		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	3.5E-09		
10. ³ Elapsed time	[h] 0 1		Flow regime:	transient	Flow regime:	transient
10 2 10. 10.		3000	dt_1 (min) =	0.97	dt_1 (min) =	NA
	ž.	1	dt_2 (min) =	15.82	dt_2 (min) =	NA
		10 ³	$T (m^2/s) =$	2.8E-09	$T (m^2/s) =$	3.3E-0
			S (-) =	1.0E-06	. ,	1.0E-0
10 1	Cap 144	300	$K_s (m/s) =$	1.4E-10	$K_s (m/s) =$	1.6E-1
91 90 100 100 100 100 100 100 100 100 10	ૡૺૢ૿ૡ૽૽ૺૢૼૡ૿ૺ		$S_s(1/m) =$	5.0E-08	$S_s(1/m) =$	5.0E-0
8		10 ²	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	6.1E-1
		2	$C_D(-) =$	NA	$C_D(-) =$	6.8E-0
10"	1	30	ξ(-) =	1.8	ξ (-) =	2.
		1	3 ()	†	3 ()	
•	•	101	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
* * *		,	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
10 ³ 10 ⁴ tD	10 ⁵ 10 ⁶ 1	J	D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres			
Hapsed time [dt_1 (min) =	NA	$C (m^3/Pa) =$	6.1E-1
102		3000	$dt_2 (min) =$	NA	$C_D(-) =$	6.8E-0
		1	$T_T (m^2/s) =$	3.3E-09		2.
		10 ³	S (-) =	1.0E-06		
, d		-	$K_s (m/s) =$	1.7E-10		1
10 '		300	$S_s(1/m) =$	5.0E-08		
	•	- E	Comments:	1.02.00		
		10 ²		transmissivity o	f 3.3E-09 m2/s was	derived from th
10 10		1 8			ise, which shows the	
A. S.		30	derivative quality.	The confidence	ange for the interva	l transmissivity
, p. p. p. p. p. p. p. p. p. p. p. p. p.		1			09 m2/s. The static p	
y		10 ¹	measured at transd	ucer depth, was	derived from the CH	
, , ,		-		olation in the Uo	rner plot to a value	of 3 600 0 LDa

	Lest S	ıımı	mary Sheet				
Project:	Oskarshamn site investig	gation	Test type:[1]			Р	
Area:	Lax	cemai	Test no:				
Borehole ID:	KI	X11Δ	Test start:			060706 15:54	
Test section from - to (m):	403.00-423	.00 m	Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):		0.076	Responsible for		Cristian Enacheso		
Linear plot Q and p			test evaluation: Flow period		Recovery period		
			Indata		Indata		
* KLX11A_403.00-423.00_060706_1_PI_Q_r		0.002	p ₀ (kPa) =	3903			
4150	P section P above		p _i (kPa) =	3908			
4100	P below Q		$p_p(kPa) =$		p _F (kPa) =	406	
4050 -	***************************************		$Q_p (m^3/s) =$	NA	F1 (5.)		
£ 4000 -	:	=	$\frac{Q_p (\Pi / S) -}{tp (s)} =$		t _F (s) =	245	
© 4000 • 60		Rate [l/m			S el S [*] (-)=	1.00E-0	
of of o		Injection Rate [Vmin]	S el S * (-)= EC $_w$ (mS/m)=	1.00E-00	S el S (-)=	1.00E-0	
3900	i	-		12.0			
3850			Temp _w (gr C)=	12.9	D. 1. 11. 11. 11. 1	0.0	
3800			Derivative fact.=	NA	Derivative fact.=	0.0	
3750	•						
3700 0.00 0.20 0.40 0.60 Elapsed T	0.80 1.00 1.20 1.40 Time [h]	0.000	Results		Results		
			Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	NA			
33	p		Flow regime:	transient	Flow regime:	transient	
			dt ₁ (min) =	NA	dt ₁ (min) =	NA	
			$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	NA	
			` ′	NA	, ,	2.9E-1	
			$T (m^2/s) =$		$T (m^2/s) = S (-) =$		
			S (-) =	NA	0 ()	1.0E-0	
			$K_s (m/s) =$	NA	$K_s (m/s) =$	1.5E-1	
Not Aı	nalysed		S _s (1/m) =	NA	S _s (1/m) =	5.0E-0	
	,		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	6.8E-1	
			$C_D(-) =$	NA	$C_D(-) =$	7.5E-0	
			ξ (-) =	NA	ξ (-) =	-1.	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	1.8E-1	
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E-0	
			$D_{GRF}(-) =$	NA	D _{GRF} (-) =	1.4	
Log-Log plot incl. derivatives-	recovery period		Selected repres				
				NA	<u></u>	6.8E-1	
10 1 Elapsed time	10, ⁰ 10, ¹ 10). ²	$dt_1 (min) = dt_2 (min) =$	NA NA	$C (m^3/Pa) = C_D (-) =$	7.5E-0	
1		3	$T_T (m^2/s) =$	2.9E-11		-1.	
†			S (-) =	1.0E-06			
10 ^d	-	10 ⁰	$K_s (m/s) =$	1.5E-12			
2.1. 1.1.	***	Ji S	$S_s (1/m) =$	5.0E-08			
and the state of t	17.	0.3 Pg	Comments:				
· Joseph · Joseph · ·		onvolut			f 2.9E-11 m2/s was		
101		10-1			The confidence ran to be 9.0E-12 to 8.0		
· · · · ·					to be 9.0E-12 to 8.0 lated due to the very		
		0.03	transmissivity.	a not be extrapo	and and to the very	, 10 11	
•							
•							

	Test S	Sum	mary Sheet			
Project:	Oskarshamn site investi	gatio	Test type:[1]			CHir
Area:	La	xema	r Test no:			1
Borehole ID:	VI	V11/	A Test start:			060706 17:56
borenole ID.	NI.		a rest start.			
Test section from - to (m):	423.00-443	3.00 n	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.07	Responsible for		Crist	ian Enachescu
Linear plot Q and p			test evaluation:		Recovery period	
			Indata		Indata	
4500		0.20	p ₀ (kPa) =	4090		
KLX11A_423.00-443.00_060706_1_CHir_Q_r	P section P above P below		p _i (kPa) =	4088		
	-0		$p_p(kPa) =$	4290	p _F (kPa) =	4087
4300	······	0.15	$Q_p (m^3/s) =$	1.00E-06		
<u> </u>	• •	Ē	tp (s) =	1200	t _F (s) =	1200
60 4200		Rate [I/min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
e 4100		Injection	EC _w (mS/m)=		, ,	
ă	A Secretary and the second sec		Temp _w (gr C)=	13.2		
4000		- 0.05	Derivative fact.=	0.19	Derivative fact.=	0.02
3900						
3800	. 	0.00	Results		Results	
0.00 0.20 0.40 0.60 Elapsed	0.80 1.00 1.20 1.40 ime [h]			4.9E-08		
Log-Log plot incl. derivates- fl	aw pariad		Q/s $(m^2/s)=$	4.9E-08		
Log-Log plot incl. derivates- fi	ow perioa		$T_M (m^2/s) =$ Flow regime:			transiant
Elapsed time 10, ² 10, ² 10, ²	h]10; ⁻¹ 10; ⁰	1300		transient NA	Flow regime:	transient 1.40
10	t	300	, ,	NA NA	$dt_1 (min) =$	6.06
		10 ²	J. 12 ()		$dt_2 (min) =$	2.0E-07
			$T (m^2/s) = S (-) =$	1.0E-06	$T (m^2/s) =$	1.0E-06
101		30	0 ()		$K_s(m/s) =$	1.0E-08
	A S S S S S S S S S S S S S S S S S S S	1	$K_s (m/s) = S_s (1/m) =$			
راهان		10 ¹	C (m ³ /Pa) =	NA	$S_s(1/m) =$	5.0E-08 4.6E-1
• • • • •			- ' /	NA NA	$C (m^3/Pa) = C_D (-) =$	5.1E-03
10 0		3	-5()		- 5 ()	5. TE-03
	***	-	ξ (-) =	0.3	ξ (-) =	21.
		10 °	T (2(-)	NA	T (2/-)	NA
	• •		$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA
10 ² 10 ³ tD	10 ⁴ 10 ⁵ 10) ⁶	$D_{GRF}(-)$ =	NA	$D_{GRF}(-)$ =	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres			
Elapsed time			$dt_1 (min) =$	1.40		4.6E-1
10 ² 10, ³	10,"4	10"	$dt_2 \text{ (min)} =$		$C_D(-) =$	5.1E-03
			$T_T (m^2/s) =$	2.0E-07		21.1
		300	S (-) =	1.0E-06		
6.0.00	.	10 ²	$K_s (m/s) =$	1.0E-08		
101	···	100	$S_s(1/m) =$	5.0E-08		
<u>//.</u> ·	j	30	Comments:	J.UL 00		
ad 'ad	*\		Ė	transmissivity o	f 2.0E-7 m2/s was d	erived from the
	·	10 ¹			se, which shows the	
10"	· · · · · · · · · · · · · · · · · · ·		derivative quality.	The confidence	ange for the interva	l transmissivity
	, #	3			m2/s. The static pre	
		-			om the CHir phase u	
	· · · · · · · · · · · · · · · · · · ·	10°	ine extrapolation	ıı ine riomer plo	t to a value of 4,086	.s kra.
10 ⁰ 10 tD/CI	10 ² 10 ³ 10	04				

estigation Laxemar KLX11A 463.00 m	Test type:[1] Test no: Test start:			CHi	
KLX11A 463.00 m	Test start:				
463.00 m					
463.00 m			060707 08:3		
	D 11. (060707 08:32	
0.076	Responsible for test execution:			Stephan Roh	
	Responsible for		Crist	ian Enachescı	
	test evaluation: Flow period		Recovery period		
	Indata		Indata		
0.05	p ₀ (kPa) =	4271			
Pabove	p _i (kPa) =	4269			
0.04	$p_p(kPa) =$	4513	p _F (kPa) =	426	
			,		
+ 0.03 E			t₋ (s) =	120	
ate [/mi				1.00E-0	
		1.00L-00	S el S (-)=	1.00L-0	
+ 0.02 ⊆		12.5			
				0.0	
- 0.01	Derivative fact.=	0.04	Derivative lact	0.0	
0.00	Results		Results		
	$Q/s (m^2/s) =$	2.0E-08			
		2.1E-08			
		transient	Flow regime:	transient	
		0.38		NA	
	, ,			NA	
10 ²	, ,		, ,	1.2E-0	
	` ′		` '	1.0E-0	
				5.9E-0	
101					
min l			. ,	5.0E-0	
[/a]	, ,			5.0E-1	
10° ₽				5.6E-0	
	ξ(-) =	5.0	ξ(-) =	32.	
10-1	T (==2/=)	NΔ	T (2/-)	NA	
				NA	
10 ^{10'}				NA	
				5 OE 1	
<u>,°</u>				5.0E-1	
-				5.6E-0	
300				5.	
102					
10					
-		5.0E-08			
· 生					
ف ا					
" <u>g</u>					
3					
100	_		-		
		1	,		
	0.000 liquid 100 liqui	$\begin{array}{c} p_{0}(kPa) = \\$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

	Test S	umi	mary Sheet			
Project:	Oskarshamn site investi	gatior	Test type:[1]			Р
Area:	Lax	cema	r Test no:			
, ii oa.						'
Borehole ID:	KL	.X11A	Test start:	060707 10:3		
Test section from - to (m):	463.00-483	.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu
11			test evaluation:			0-1-1-1-1-1-1-1-1-1-1-1-1-1-1
Linear plot Q and p			Flow period		Recovery period Indata	
4800		T 0.003	Indata $p_0 (kPa) =$	4461	indata	1
KLX11A_463.00-483.0	00_060707_1_PI_Q_r		$p_0 (kPa) =$	4485		
4700	_		$p_i(kPa) =$ $p_p(kPa) =$		p _F (kPa) =	4572
	••••			4698 NA	ρ _F (κΡα) =	437.
	***************************************	0.002	$Q_p (m^3/s) =$		(()	145
egd annes	•	[/win]	tp (s) =		t _F (s) =	4473
\$\frac{2}{6} \cdot \frac{4500}{6}		injection Rate [[/min]	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
Do wah	;	injec	EC _w (mS/m)=			
4400	P section P above	0.001	Temp _w (gr C)=	13.8		
	■ P below • Q		Derivative fact.=	NA	Derivative fact.=	0.0
4300						
4200		0.000				
0.00 0.50 1.00 Elapsed T	1.50 2.00 ime [h]		Results	In a	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) =	9.0
			dt_2 (min) =	NA	dt_2 (min) =	32.9
			$T (m^2/s) =$	NA	$T (m^2/s) =$	5.7E-1
			S (-) =	NA	S (-) =	1.0E-0
			$K_s (m/s) =$	NA	$K_s (m/s) =$	2.8E-1
374			$S_s (1/m) =$	NA	$S_s (1/m) =$	5.0E-0
Not Ar	nalysed		$C (m^3/Pa) =$	NA	C (m³/Pa) =	6.3E-1
			$C_D(-) =$	NA	$C_D(-) =$	6.9E-0
			ξ(-) =	NA	ξ(-) =	-0.3
			5 ()		5 ()	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	1.6E-1
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E-0
			D _{GRF} (-) =	NA	D _{GRF} (-) =	1.
Log-Log plot incl. derivatives-	recovery period		Selected represe			
			dt_1 (min) =	9.04	C (m³/Pa) =	6.3E-1
10 10 Elapsed time	10, 10, 10, 10,	<u>'</u>	$dt_2 (min) =$		$C_D(-) =$	6.9E-0
1		3		5.7E-11		-0.3
†			$T_{T}(m^{2}/s) = S(-) =$	1.0E-06		-0
]	Service Control of the 10°	$S(-) = K_s(m/s) =$				
100			$S_s (1/m) =$	2.9E-12 5.0E-08		
هد معتقون ا	the the state of t	0.3	Comments:	3.0⊑-06		
		Della Della			25 TE 11 2/	1 1 10 3
		10 ⁻¹			5.7E-11 m2/s was of The confidence ran	
10-1		1	interval transmissiv			ge ioi uic
		0.03			pressure could not	be extrapolated
•			due to the very low			p
		10 ⁻²				

	Test	Sumr	nary Sheet				
Project:	Oskarshamn site inve	stigation	Test type:[1]			CHi	
Area:	l	_axemar	Test no:	1			
Borehole ID:		KLX11A	Test start:		060707 13:1		
Test section from - to (m):	483 00-5	03 00 m	Responsible for		Stephan Roh		
, ,	+00.00-0		test execution:			· .	
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachesc	
Linear plot Q and p			Flow period		Recovery period		
			Indata		Indata		
KLX11A_483.00-503.00_060707_1_CHir_Q_r		0.05 Psection	p ₀ (kPa) =	4650			
	* F	P above P below	p _i (kPa) =	4649			
5000		+ 0.04	$p_p(kPa) =$	4899	p _F (kPa) =	464	
4800			$Q_p (m^3/s) =$	1.17E-07			
· · · · · · · · · · · · · · · · · · ·	\	- 0.03 =	tp (s) =	1200	t_F (s) =	120	
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		sate [l/m]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
	· ·	1 mjection Rate	EC _w (mS/m)=		0 0.0 ()		
4400		- 0.02 =	Temp _w (gr C)=	14.0			
			Derivative fact.=		Derivative fact.=	0.0	
4200	Mary and the second	+ 0.01	Domairo laoi.	0.1	Donivativo laot.	0.0	
	•						
4000 0.00 0.20 0.40 0.00 0.80 1.00 1.20 1.40 1.80 Elapsed Time [h]			Results		Results		
			$Q/s (m^2/s)=$	4.6E-09			
Log-Log plot incl. derivates- flo	w period		$T_{\rm M} (m^2/s) =$	4.8E-09			
10. ⁻⁴ Eapsed time [h]			Flow regime:	transient	Flow regime:	transient	
10 ² 10 ³ 10 ³		\neg	dt_1 (min) =	0.40	dt_1 (min) =	NA	
	•	103	$dt_2 (min) =$	11.17	$dt_2 (min) =$	NA	
		10	$T (m^2/s) =$	4.3E-09	$T (m^2/s) =$	2.5E-0	
		Ė	S (-) =	1.0E-06	. , ,	1.0E-0	
10 1		300	$K_s (m/s) =$		$K_s (m/s) =$	1.3E-1	
٠	C. Marie Control of the Control of t	10 ²	$S_s (1/m) =$		$S_s(1/m) =$	5.0E-0	
	•	10 Frim	$C (m^3/Pa) =$	NA	. , ,	6.0E-1	
·		g,(1/q)	C (m³/Pa) =		$C (m^3/Pa) =$		
10 0		30 ₹	$C_D(-) =$	NA	$C_D(-) =$	6.6E-0	
		101	ξ (-) =	1.8	ξ (-) =	0.	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		3	$S_{GRF}(III/S) =$	NA	$S_{GRF}(III/S) =$	NA	
10 ² 10 ³ tD	10 ⁴ 10 ⁵	10		NA		NA	
			- GRF ()		- OKI ()	INA	
Log-Log plot incl. derivatives- I	hi		Selected represe			T 0.0F.4	
101	10,010,1	10,2	$dt_1 (min) =$	NA	$C (m^3/Pa) =$	6.0E-1	
			$dt_2 (min) =$	NA	$C_D(-) =$	6.6E-0	
			$T_T (m^2/s) =$	2.5E-09		0.	
10°		10 ²	S (-) =	1.0E-06			
		İ	K_s (m/s) =	1.3E-10			
			$S_s(1/m) =$	5.0E-08			
2 10 ⁻¹		10 ¹ KPa	Comments:				
		0. (p			f 2.5E-9 m2/s was d		
-		2 7 2	radial flow analysis	of the CHir pha	se (inner zone), whi	ch shows the	
10 ⁻²		10 °			he confidence range		
1					E-10 to 5.0E-09 m ²		
					oth, was derived from on in the Horner plo		
10 10	10 ² 10 ³	10-1	4,645.5 kPa.	i inic cattapoiati	on in the Horner pic	n to a value of	
tD/CD		.0	.,0 .0.0 111 4.				

	Test S	umi	nary Sheet				
Project:	Oskarshamn site investig	gation	Test type:[1]			CHi	
Area:	Lax	cemai	Test no:			1	
Daniela ID.	1/1	V44A	T 4 - 4 4.			000707 45:46	
Borehole ID:	KL	X11A	Test start:		060707 15:12		
Test section from - to (m):	503.00-523	.00 m	Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu	
Linear plot Q and p			test evaluation: Flow period		Recovery period		
Emodi piot & una p			Indata		Indata		
5100		6	p ₀ (kPa) =	4838			
KLX11A_503.00-523.00_060707_1_CHir_Q_r	Patow Patow Podow	e	p _i (kPa) =	4837			
5000 -	· q	- 5	$p_p(kPa) =$		p _F (kPa) =	483	
	;		$Q_p (m^3/s) =$	5.83E-05		.03	
		4	$\frac{Q_p (\Pi / s)^2}{tp (s)} =$		t _F (s) =	120	
4400 · · ·		د اnjection Rate [Vmin]			S el S [*] (-)=	1.00E-0	
		action R ₂	S el S * (-)= EC $_w$ (mS/m)=	1.00L-00	S el S (-)=	1.00E-0	
\$ 4800 ·		Ē	Temp _w (gr C)=	14.4			
;		1		•		0.0	
4700		- 1	Derivative fact.=	0.04	Derivative fact.=	0.0	
4600	0.80 1.00 1.20 1.40	1.60	Results		Results		
	psed time (i)		Q/s $(m^2/s)=$	2.9E-06			
Log-Log plot incl. derivates	flow period		$T_{\rm M} (m^2/s) =$	3.0E-06			
Hanse	time [h]		Flow regime:	transient	Flow regime:	transient	
10 ²	10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	7	$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	0.9	
		10 ⁰	$dt_2 \text{ (min)} =$		dt_1 (min) =	14.0	
		ľ	$T (m^2/s) =$		$T (m^2/s) =$	4.1E-0	
	•	0.3	S (-) =	1.0E-06		1.0E-0	
10 1		0.3	$K_s(m/s) =$		$K_s(m/s) =$	2.1E-0	
	:	10 ⁻¹	$S_s(11/s) = S_s(1/m) = S_s(1/m)$			5.0E-0	
(1/d)	•	[min/l]	. ,	3.0E-06	$S_s(1/m) =$		
1/4D	ė	0.03 \$	$C (m^3/Pa) =$		$C (m^3/Pa) =$	1.2E-0	
10 0	. 4. 1. 1	-	$C_D(-) =$	NA	$C_D(-) =$	1.3E-0	
		10 ⁻²	ξ(-) =	5.0	ξ (-) =	1.	
• • • • • • • • • • • • • • • • • • • •			2	N. A	2	TA LA	
	••	0.003	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁹ 10 ¹⁰	10 ¹¹ 10 ¹² 10	13	S _{GRF} (-) =	NA	S _{GRF} (-) =	NA	
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivative			Selected represe				
10. ⁻⁴ Elapsed t	me [h]		$dt_1 (min) =$	0.92	$C (m^3/Pa) =$	1.2E-0	
10 1			dt_2 (min) =		$C_D(-) =$	1.3E-0	
	1	10 ³	$T_T (m^2/s) =$	4.1E-06		1.0	
			S (-) =	1.0E-06			
10 1	3	300	$K_s (m/s) =$	2.1E-07			
3,2,2,490	20 W 000 00 000 000 000 000 000 000 000		$S_s (1/m) =$	5.0E-08			
ad o	. [1	(p-p0), [KPa]	Comments:				
		o o			f 4.1E-6 m2/s was de		
10 4	Sec	30 🚡			se, which shows the		
	A Committee of the second of t	1			range for the interval		
	Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Sa	101			m2/s. The static preson the CHir phase us		
	•				t to a value of 4,830		
10 ^d 10 ^t	10 ² 10 ³ 10 ⁴	3		pio			
10 10 tf	/CD 10 10 10						

	Test Sun	ımary Sheet				
Project:	Oskarshamn site investigation	on Test type:[1]			CHi	
Area:	Laxem	ar Test no:			1	
Borehole ID:	VI V1	A Test start:			060707 17:07	
borenole ID.	KLAT	iA rest start.				
Test section from - to (m):	523.00-543.00	m Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):	0.0	76 Responsible for		Crist	ian Enachescu	
Linear plot Q and p		test evaluation: Flow period		Recovery period		
Emedi plot & and p		Indata		Indata		
KLX11A_523.00-543.00_060707_1_CHir_Q_r	. 0.30	p ₀ (kPa) =	5025			
KEATIN_323.00*343.00_000707CHII_Q_1	P section P above P below	p _i (kPa) =	5024			
5300 -	0.25	$p_p(kPa) =$	5228	p _F (kPa) =	5023	
		$Q_p (m^3/s) =$	1.33E-06			
\$200 - \$\overline{e}\$	0.20	4 (-)		t _F (s) =	1200	
X 100 - 2	0.15			S el S [*] (-)=	1.00E-06	
2 5100 ·	0.15	S el S* (-)= EC _w (mS/m)=	1.00E-00	S el S (-)=	1.00E-00	
5000	0.10		14.6			
	0.10	Temp _w (gr C)=			0.00	
4900	0.05	Derivative fact.=	0.1	Derivative fact.=	0.02	
	•					
4800 V 0.00 0.20 0.40 0.60 Elaos	0.00 0.00 1.20 1.40 od Time [h]	Results		Results		
		Q/s $(m^2/s)=$	6.4E-08			
Log-Log plot incl. derivates-	flow period	$T_{\rm M} ({\rm m}^2/{\rm s}) =$	6.7E-08			
	-	Flow regime:	transient	Flow regime:	transient	
10 ⁻⁴ 10 ⁻³ Hapsed	10 ⁻² 10 ⁻¹ 10 ⁰	$dt_1 (min) =$	2.05	$dt_1 \text{ (min)} =$	2.4	
	110-	$dt_2 (min) =$	I .	$dt_2 \text{ (min)} =$	9.23	
		$T (m^2/s) =$		$T (m^2/s) =$	2.2E-0	
101	1	S (-) =	1.0E-06	. ,	1.0E-06	
	: :	$K_s (m/s) =$		$K_s(m/s) =$	1.1E-08	
	•			$S_s(11/s) = S_s(1/m) = S_s(1/m)$	1	
10 ⁰		$S_s(1/m) =$,	5.0E-08	
14D.		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	8.5E-1	
		^g C _D (-) =	NA	C _D (-) =	9.4E-03	
10 ⁻¹	10 ⁻¹	ξ (-) =	3.6	ξ (-) =	15.0	
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		$S_{GRF}(1175) =$	NA	$S_{GRF}(III / S) =$	NA	
10 ⁵ 10 ⁶	tD 10 ⁷ 10 ⁸ 10 ⁸	$D_{GRF}(-) =$	NA	$D_{GRF}(-)$ =	NA	
Log-Log plot incl. derivatives	rocovery period	Selected represe				
Log-Log plot mer. derivatives	nelii				I 05E 1	
102	10,-2	dt ₁ (min) =	2.40	0 (III /I u)	8.5E-1	
	ĺ	$dt_2 (min) =$		$C_D(-) =$	9.4E-03	
	300	$T_T (m^2/s) =$	2.2E-07		15.0	
**************************************		S (-) =	1.0E-06			
101	• 10 ²	$K_s (m/s) =$	1.1E-08			
	i,	$S_s(1/m) =$	5.0E-08			
Ad 'Od	30	Comments:				
Ī /·	****			f 2.2•E-7 m2/s was o		
100	101			ise, which shows the		
	. Market Market Links			range for the interva		
	3			m2/s. The static pre om the CHir phase u		
	•			t to a value of 5,023		
10 0 10 10	10 ² 10 ³ 10 ²				***	
tD.	CD					

	Test S	umi	mary Sheet				
Project:	Oskarshamn site investig	gation	Test type:[1]			Р	
Area:	Lax	emar	Test no:				
Borehole ID:	KI	Χ11 Δ	Test start:			060707 19:07	
Borchoic IB.							
Test section from - to (m):	543.00-563.	.00 m	Responsible for test execution:			Stephan Rohs	
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) =	5211			
KLX11A_543.00-563.00_060707_1_Pi_Q_r	● P section ♣ P above	0103	p _i (kPa) =	5219			
540	© P below - Q		$p_p(kPa) =$		p _F (kPa) =	534	
520 -	•••••••••••••••••••		$Q_p (m^3/s) =$	NA	pr (iii a)	331	
		0.002	$\frac{Q_p \text{ (m /s)=}}{\text{tp (s)}} =$		t _F (s) =	4536	
2 000 5 1 000 6 100 6 100	•	ato (i/min)					
\$ 550	• • • • • • • • • • • • • • • • • • • •	Injection Rate (I/min)	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
\$ 5200		全 0.001	EC _w (mS/m)=				
5150			Temp _w (gr C)=	15.0			
5100			Derivative fact.=	NA	Derivative fact.=	0.0	
550							
0.00 2.00 4.00 6.00	8.00 10.00 12.00 ·	0.000					
Сарана	rum (v)		Results		Results		
			Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- f	low period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	NA			
<u> </u>	•		Flow regime:	transient	Flow regime:	transient	
			dt ₁ (min) =	NA	$dt_1 \text{ (min)} =$	NA	
			$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	NA	
				NA		1.2E-1	
			$T (m^2/s) =$		$T (m^2/s) =$		
			S (-) =	NA	S (-) =	1.0E-0	
			$K_s (m/s) =$	NA	$K_s (m/s) =$	6.1E-1	
Not A	nalysed		$S_s (1/m) =$	NA	$S_s(1/m) =$	5.0E-0	
11011	narysea		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.1E-1	
			$C_D(-) =$	NA	$C_D(-) =$	1.2E-0	
			ξ (-) =	NA	ξ (-) =	-0.	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	1.7E-1	
			$S_{GRF}(-) =$	NA	S _{GRF} (-) =	1.0E-0	
			D _{GRF} (-) =	NA	D _{GRF} (-) =	1.	
Log-Log plot incl. derivatives-	recovery period		Selected represe	entative paran			
			dt_1 (min) =	NA	C (m ³ /Pa) =	1.1E-1	
10. ⁻³ Elapsed tim		730	$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	1.2E-0	
			3	1.2E-12		-0.4	
	1	101	$T_T (m^2/s) = S (-) =$	1.0E-06		-0.	
		ŧ					
10 0	Jiffi -	3	K_s (m/s) =	6.0E-14			
		essur	$S_s(1/m) =$	5.0E-08			
od od	·/·	10° ph	Comments:				
0.000		Sonvol			f 1.2E-12 m2/s was		
10-1		0.3			The confidence ran	ige for the	
• /			interval transmissiv		to be pressure could not	he extranolated	
		10-1	due to the very low		pressure could not	ос сли арогатес	
.		[
·		ł					

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	emar	Test no:			
Develop ID:	IZI V	(4 4 A	Took otomb			000700 00.50
Borehole ID:	KLX	(11A	Test start:			060708 08:58
Test section from - to (m):	563.00-583.0		Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0		Responsible for		Crist	ian Enachescı
Linear plot Q and p			test evaluation: Flow period		Recovery period	
			Indata		Indata	
5700 KLX11A_563.00-583.00_060708_1_CHir_Q_r]	p ₀ (kPa) =	5395		
5600	P section P above P bdow	7 14	p _i (kPa) =	5392		
•	·	12	$p_p(kPa) =$	5590	p _F (kPa) =	539
5500 -	•		$Q_{p} (m^{3}/s) =$	1.47E-04		
<u> </u>		10	tp (s) =		t _F (s) =	120
5400	-	Rate [Vm]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
a. 9 € 5300 -	•	njection Rate [Vmin	EC _w (mS/m)=	1.002 00	3 61 3 (-)-	1.002 0
		6 =	Temp _w (gr C)=	15.1		
5200		4	Derivative fact.=		Derivative fact.=	0.
5100		- 2	Derivative lact.	0.03	Derivative lact.	0.
3.						
0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40 Elapsed Time [h]			Results	Results		
			$Q/s (m^2/s) =$	7.3E-06		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	7.6E-06		
10 ⁻⁵ Elapsed time [h	1 0		Flow regime:	transient	Flow regime:	transient
10 10 10 10 10 10	10,-2		$dt_1 (min) =$	0.86	dt_1 (min) =	0.4
	0.3	3	$dt_2 (min) =$	18.55	$dt_2 (min) =$	17.9
			$T (m^2/s) =$	2.0E-05	$T (m^2/s) =$	2.7E-0
6 0 0 00 00 00 00 00 00 00 00 00 00 00 0	10) ⁻¹	S (-) =	1.0E-06		1.0E-0
10			$K_s (m/s) =$		$K_s (m/s) =$	1.4E-0
	0.0	03 _	S _s (1/m) =		$S_s(1/m) =$	5.0E-0
, (14p	+)" [min/f	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	1.6E-0
1/04	10	, ₂ p,	$C_D(-) =$	NA	$C_D(-) =$	1.8E-0
10 0		-			ξ(-) =	13.
•	0.0	003	ξ (-) =	0.7	ς (-) –	13.
			$T_{GRF}(m^2/s) =$	7.0F-06	$T_{GRF}(m^2/s) =$	8.2E-0
	10)-3	$S_{GRF}(III / S) =$	1.0E-06		1.0E-0
10 ¹¹ 10 ¹² 10 ¹³ tD	10 ¹⁴ 10 ¹⁵ 10 ¹⁸		D _{GRF} (-) =		$D_{GRF}(\cdot) =$	2.
Log-Log plot incl. derivatives-	recovery period		Selected represe			
	1		$dt_1 (min) =$	0.45		1.6E-0
10, ⁴ 10, ³ Elapsed time (b)	10,"1		$dt_1 (min) =$ $dt_2 (min) =$		$C (m^3/Pa) = C_D (-) =$	1.8E-0
				2.7E-05		1.6E-0
	300	0	$T_T(m^2/s) = S(-) =$	1.0E-06		13.
2 0 00 00 00 00 00 00 00 00 00 00 00 00			9 ()			
101	10	-	$K_s (m/s) =$	1.4E-06		
		a a	S _s (1/m) =	5.0E-08		
, od ,	30	.p0)' [kPa]	Comments:		00.7F.5 0/ :	. 10 -
	110	o, (p			f 2.7E-5 m2/s was do se, which shows the	
<u>`</u>	t ₄₀	. 4				
105	["		derivative quality '	The confidence	ange for the interval	
	· · · · · · · · · · · · · · · · · · ·		derivative quality. 'is estimated to be 9			
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		is estimated to be 9	0.0E-6 to 5.0E-5	range for the interval m2/s. The static preson the CHir phase us	ssure measured
	3		is estimated to be 9 at transducer depth	0.0E-6 to 5.0E-5, was derived fro	m2/s. The static pres	ssure measured sing straight

	Test S	umr	nary Sheet				
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi	
Area:	Lax	emar	Test no:				
Borehole ID:	KL	X11A	Test start:		060708 10:53		
Test section from - to (m):	583 00-603	00 m	Responsible for		Stephan Roh		
. ,			test execution:				
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Cristian Enachesco		
Linear plot Q and p			Flow period		Recovery period		
5900 T		T 1.0	Indata		Indata		
• •	KLX11A_583.00-603.00_060708_1_CHir_Q_r		p ₀ (kPa) =	5583			
5800	<u></u>		p _i (kPa) =	5585			
: :		0.8	$p_p(kPa) =$		p _F (kPa) =	559	
5700	P section P above P below		$Q_p (m^3/s) =$	4.33E-06			
Read durings	• 0	0.6 🖺	tp (s) =		t_F (s) =	1200	
8 seco		Injection Rate [Ilmin]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
W Those	1	injection .	EC _w (mS/m)=		` ,		
š			Temp _w (gr C)=	15.6			
. •			Derivative fact.=	0.1	Derivative fact.=	0.0	
5400 -	***************************************	0.2					
5300							
0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40 Elapsed Time (h)			Results		Results		
			$Q/s (m^2/s) =$	2.1E-07			
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	2.2E-07			
Elapsed time	[h]		Flow regime:	transient	Flow regime:	transient	
10.2		}	dt_1 (min) =	1.01	dt ₁ (min) =	NA	
			$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	NA	
		10 ¹	$T (m^2/s) =$		$T (m^2/s) =$	7.9E-0	
			S (-) =	1.0E-06		1.0E-0	
10		3			$K_s(m/s) =$		
			$K_s (m/s) =$. ,	4.0E-0	
149		10°	$S_s (1/m) =$		$S_s(1/m) =$	5.0E-0	
, , , , , , , , , , , , , , , , , , ,		(1/a) [r	C (m ³ /Pa) =	NA	C (m³/Pa) =	1.6E-1	
10 ⁻⁰	; ::	0.3	$C_D(-) =$	NA	$C_D(-) =$	1.8E-0	
	**************************************		ξ (-) =	8.4	ξ (-) =	14.	
. :	And a	10 -1					
•	: ·		$T_{GRF}(m^2/s) =$	5.4E-07	$T_{GRF}(m^2/s) =$	7.9E-0	
10 10 10 11	10 ¹² 10 ¹³ 10 ¹	0.03	S _{GRF} (-) =	1.0E-06		1.0E-0	
10 ^{10'} 10 ^{11'} tD	10 ¹² 10 ¹³ 10 ¹		D _{GRF} (-) =		D _{GRF} (-) =	1.9	
Log-Log plot incl. derivatives-	recovery period		Selected represe				
Flansed time [dt_1 (min) =	NA	C (m³/Pa) =	1.6E-1	
102 102	h]10,-1		$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	1.8E-0	
				7.9E-07		1.02-0	
		800	$T_T (m^2/s) =$			14.	
- Company of the Comp			S (-) =	1.0E-06			
10		102	K_s (m/s) =	4.0E-08			
		_	$S_s (1/m) =$	5.0E-08			
ng de de de de de de de de de de de de de		8 (p-p0) [kPa]	Comments:				
ā //	.::	l, (p-p0			f 7.9E-7 m2/s was d		
10.0		101 6			se (inner zone), whi		
The same of the sa					he confidence range		
· · · · ·					E-7 to 1.0E-6 m2/s.		
1	1+				1 1 1 1 C	di CIII	
	•	5	pressure measured				
	10 ³ 10 ⁴ 10 ⁵	o ⁰			on in the Horner plo		

	Test S	umr	nary Sheet				
Project:	Oskarshamn site investig	gation	Test type:[1]			Р	
Area:	Lax	emar	Test no:				
D I. I. ID.	1/1	V/4.4.A	T - 1 - 1 - 1			000700 40 4	
Borehole ID:	KL	X11A	Test start:		060708 13:1		
Test section from - to (m):	603.00-623	.00 m	Responsible for test execution:		Stephan Roh		
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Cristian Enachesc		
Linear plot Q and p			Flow period		Recovery period		
			Indata		Indata		
6100 KLX	11A_603.00-623.00_060708_1_PI_Q_r	0.003	p ₀ (kPa) =	5772			
	-		p _i (kPa) =	5778			
6000			$p_p(kPa) =$	6021	p _F (kPa) =	593	
·	***************		$Q_p (m^3/s) =$	NA			
5900 -	:	0.002	tp (s) =	10	t _F (s) =	246	
To all an analysis of the state	•	ate [Vm in	S el S [*] (-)=		S el S [*] (-)=	1.00E-0	
\$ 5500 -	;	injection Rate [Vmin]	EC _w (mS/m)=		3 61 3 (-)-		
O Down	•	-	Temp _w (gr C)=	15.9			
5700-	P section P above P below	0.001	Derivative fact.=	NA	Derivative fact.=	0.0	
6600	• P below • Q		Derivative lact	IVA	Derivative fact.	0.0	
0.00 0.20 0.40 0.60	0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40						
Elapsed T	me [h]		Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	NA			
			Flow regime:	transient	Flow regime:	transient	
			$dt_1 (min) =$	NA	dt ₁ (min) =	2.9	
			$dt_2 \text{ (min)} =$	NA	$dt_2 (min) =$	35.2	
			$T (m^2/s) =$	NA	$T (m^2/s) =$	4.4E-1	
			S (-) =	NA	S (-) =	1.0E-0	
			$K_s (m/s) =$	NA	$K_s (m/s) =$	2.2E-1	
			$S_s(1/m) =$	NA	S _s (1/m) =	5.0E-0	
Not A	nalysed		C (m ³ /Pa) =	NA	C (m ³ /Pa) =	5.5E-1	
			$C_D(-) =$	NA	$C_D(-) =$	6.1E-0	
				NA		-0.	
			ξ (-) =	INA	ξ (-) =	-0.	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	1.0E-0	
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E+0	
			D _{GRF} (-) =	NA	D _{GRF} (-) =	1.	
Log-Log plot incl. derivatives-	recovery period		Selected represe	entative paran			
10, ⁻³		10 ¹	dt_1 (min) =	2.90	<u> </u>	5.5E-1	
101		7	$dt_2 \text{ (min)} =$	35.22	o (iii /i u)	6.1E-0	
		3	$T_T (m^2/s) =$	4.4E-11		-0.	
			S (-) =	1.0E-06		0.	
		10°	$K_s (m/s) =$	2.2E-12			
10°	etc. etc	-	$S_s(1/m) =$	5.0E-08			
نين بين بين	A CONTRACTOR OF THE PARTY OF TH	0.3	Comments:	3.0L-00			
		Inted			C 4 4 10 11 2/	1 : 16	
		10 ⁻¹ lovuooa0			f 4.4•10-11 m2/s wa ase. The confidence		
10-1		"	interval transmissiv			range for the	
		0.03			tatic pressure could	not be	
			extrapolated due to				
		10 -2					
10-1 100	10 ⁷ 10 ² 1	103					

	Test S	umi	mary Sheet				
Project:	Oskarshamn site investi	gation	Test type:[1]			Р	
Area:	Lax	kemar	Test no:			•	
Borehole ID:	KL	.X11A	Test start:		060708 15:1.		
Test section from - to (m):	623.00-643	.00 m	Responsible for test execution:	1	Stephan Roh		
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescı	
Linear plot Q and p			test evaluation: Flow period		Recovery period		
Emour prot & una p			Indata		Indata		
6300 KLX11A_623.00-643.00_060708_1_PI_Q_r		0.003	p ₀ (kPa) =	5957			
			p _i (kPa) =	5963			
6200			$p_p(kPa) =$	6183	p _F (kPa) =	617	
			$Q_p (m^3/s) =$	NA	,		
6100 ·	:	0.002	$\frac{Q_p (\Pi / s)^2}{tp (s)} =$		t _F (s) =	246	
Fg)	:	at e [Vmir	S el S [*] (-)=		S el S [*] (-)=	1.00E-0	
8 000 -		njection Rate [Vmin]	EC _w (mS/m)=	1.00E 00	S el S (-)=	1.00L 0	
\$00 t		0.001	Temp _w (gr C)=	16.2			
	• P section	0.001	Derivative fact.=	NA	Derivative fact.=	0.2	
5800	P above P below Q		Derivative fact.=	INA	Derivative fact.=	0.2	
5700	0.80 1.00 1.20 1.40	0.000	Results		Results		
Elapsed	Time [h]		$Q/s (m^2/s)=$	NA			
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	NA			
log log plot mon domatoc .			Flow regime:	transient	Flow regime:	transient	
			dt ₁ (min) =	NA	dt ₁ (min) =	NA	
			$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	NA	
				NA		1.3E-1	
			$T (m^2/s) = S (-) = $	NA	$T (m^2/s) = S (-) =$	1.0E-0	
			• ()		0 ()		
			$K_s (m/s) =$	NA	$K_s(m/s) =$	6.6E-1	
Not A	nalysed		$S_s(1/m) =$	NA	$S_s(1/m) =$	5.0E-0	
	,		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	6.0E-1	
			$C_D(-) =$	NA	$C_D(-) =$	6.6E-0	
			ξ (-) =	NA	ξ (-) =	-1.	
			2	NIA	2	NI A	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
			S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA	
			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives			Selected represe			0.05.4	
Elapsed tim	e [n]19, ⁰ 19, ¹	٦	dt ₁ (min) =	NA	$C (m^3/Pa) =$	6.0E-1	
		F10 ¹	$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	6.6E-0	
		-	$T_T (m^2/s) =$	1.3E-11		-1.	
	partition .	3	S (-) =	1.0E-06			
10°		-	K_s (m/s) =	6.5E-13			
		10° 8	$S_s(1/m) =$	5.0E-08			
		ted pre	Comments:				
		0.3			f 1.3E-11 m2/s was		
10 ⁻¹		l ă			(inner zone). The co		
		10-1			imated to be 9.0E-12 be extrapolated due		
		-	transmissivity.	osare could not	oo extrapolated due	w mic very iow	
:		0.03					

Oskarshamn site investig Lax KL 643.00-663	gation xemar -X11A 3.00 m	Test type:[1] Test no: Test start: Responsible for test execution:			P 1	
KL 643.00-663	X11A 3.00 m	Test start: Responsible for			060709 17:10	
KL 643.00-663	X11A 3.00 m	Test start: Responsible for			060709 17:10	
643.00-663	3.00 m	Responsible for			060700 17:10	
				060708 17:1		
	0.076	test execution.			Stephan Rohs	
	0.076 F to			Crist	ian Enachescu	
		test evaluation: Flow period		Recovery period		
		Indata		Indata		
	0.003	p ₀ (kPa) =	6144		T	
P section P above P below		$p_0 (kPa) =$ $p_i (kPa) =$	6153			
· q					612	
		•		ρ _F (κΡα) =	613	
	0.002					
. :	[Vmin]				240	
·	tion Rate		1.00E-06	S el S (-)=	1.00E-0	
;	Inject	` '				
•	0.001	Temp _w (gr C)=	16.5			
		Derivative fact.=	NA	Derivative fact.=	0.0	
1.00 1.20 1.40	0.000	Results		Results		
		Q/s $(m^2/s)=$	NA			
v period		$T_{\rm M} (m^2/s) =$	NA			
		Flow regime:	transient	Flow regime:	transient	
		$dt_1 (min) =$	NA	$dt_1 (min) =$	NA	
			NA		NA	
		` '		. ,	2.1E-1	
		. ,		, ,	1.0E-0	
					1.1E-1	
lysed					5.0E-0	
		. ,		, ,	3.1E-1	
					3.4E-0	
		ξ (-) =	NA	ξ (-) =	-1.	
		T (2)	NΙΛ	T (21)	5.3E-1	
					1.0E-06	
					+	
		1 1			1.0	
ecovery perioa				<u> </u>	7 45 1	
.10 ⁻¹	<u>'</u>				3.1E-1	
	20				3.4E-0	
	30				-1.	
	101					
		K_s (m/s) =				
	ınş	$S_s(1/m) =$	5.0E-08			
	adpres	Comments:				
Significant of the second	10° out					
	Deox				ige for the	
	0.2				1	
	0.3			pressure could not	be extrapolated	
	10-1	ude to the very 10W	u ansiinssivity.			
10 ⁻¹ 10 ⁰ 10	 					
,	v period lysed covery period 10° 10° 10°	v period lysed 100 100 100 100 100 100 100 1	$\begin{array}{c} & & & & & & & & & & & & & & & & & & &$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c} p_{p}(\text{kPa}) = \\ Q_{p} \ (\text{m}^{3}/\text{s}) = \\ P_{p}(\text{kPa}) = \\ Q_{p} \ (\text{m}^{3}/\text{s}) = \\ P_{p}(\text{kPa}) = \\ Q_{p} \ (\text{m}^{3}/\text{s}) = \\ P_{p}(\text{kPa}) = \\ P_{p}(kP$	

	Test St	um	mary Sheet				
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi	
Area:	Lax	ema	r Test no:				
Danahala ID.	IZI.		T44-			000700 40-00	
Borehole ID:	KL)	X11 <i>F</i>	Test start:			060708 19:06	
Test section from - to (m):	663.00-683.	00 n	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):	(0.076	Responsible for test evaluation:		Cristian Enachesc		
Linear plot Q and p			Flow period		Recovery period		
			Indata	• • • • • • • • • •	Indata		
6700 KLX11A_663.00-683.00_060708_1_CHir_Q_r	Psection	0.005	p ₀ (kPa) =	6332			
	Pabove Phelow Q		p _i (kPa) =	6327			
6600	1	0.004	$p_p(kPa) =$	6583	p _F (kPa) =	641	
6500			$Q_p (m^3/s) =$	1.67E-08			
	:	0.003 ਵ	tp (s) =	1200	t _F (s) =	120	
8 6400 -	\ \	Injection Rate [/min]	S el S* (-)=		S el S* (-)=	1.00E-0	
and the state of t	<u> </u>	injection	EC _w (mS/m)=		00.0()		
6300 -		0.002 -	Temp _w (gr C)=	16.8			
			Derivative fact.=		Derivative fact.=	0.0	
6200	1 •	0.001		,,,,,			
6100		0.000					
0.00 2.00 4.00 6.00 Elapsed T		.00	Results		Results		
			Q/s $(m^2/s)=$	6.4E-10			
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	6.7E-10			
Elapsed time [h	1 ,		Flow regime:	transient	Flow regime:	transient	
10 ⁻³ Elapsed time [h	10,-110,0		dt_1 (min) =	2.68	dt_1 (min) =	NA	
	10	4	dt_2 (min) =	15.04	dt ₂ (min) =	NA	
			$T (m^2/s) =$	2.0E-10	$T (m^2/s) =$	6.3E-1	
	300	00	S (-) =	1.0E-06	S (-) =	1.0E-0	
101			$K_s (m/s) =$		$K_s (m/s) =$	3.2E-1	
	10	3	$S_s(1/m) =$		S _s (1/m) =	5.0E-0	
		l)ciw]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	4.6E-1	
	300	0 3	$C_D(-) =$	NA	$C_D(-) =$	5.1E-0	
10°	· . · · ·		ξ(-) =	1	ξ(-) =	-2.	
	10	2	ς (-) –	-1.0	ς (-) –	-2.	
	•		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
	30		$S_{GRF}(m/s) =$ $S_{GRF}(-) =$	NA	$S_{GRF}(III/S) =$ $S_{GRF}(-) =$	NA	
10 ⁻¹ 10 ⁰ tD	10 ¹ 10 ² 10 ³			NA		NA	
Log-Log plot incl. derivatives-	receivems period		D _{GRF} (-) = Selected represe		- OI(I ()	INA	
Classed Services					<u></u>	1054	
10° 10° 10° 10° 10° 10° 10° 10° 10° 10°	10,1		dt ₁ (min) =	2.68	ο (III /I α)	4.6E-1	
			$dt_2 (min) =$		C _D (-) =	5.1E-0	
		300	$T_T (m^2/s) =$	2.0E-10		-1.	
			S (-) =	1.0E-06			
10 ⁻¹		10 ²	$K_s (m/s) =$	1.0E-11			
and the state of t		_	$S_s (1/m) =$	5.0E-08			
		30	Comments:				
a distribution of the second o		,			f 2.0E-10 m2/s was		
10 2 3	Ę	101			se (outer zone), which		
7.					he confidence range		
	13	3			E-11 to 7.0E-10 m2 from the inner zone		
1							
			the CHi phase) Th	e static pressure	measured at transdu	cer denin was	
10-1 10 ⁰	10 ² 10 ³	10 ⁰	the CHi phase). The derived from the C		measured at transdu straight line extrapo		

	Test S	umi	mary Sheet				
Project:	Oskarshamn site investig	gation	Test type:[1]			Р	
Area:	Lax	emai	Test no:	1			
Danahala ID:	121	V44A	T			060709 09:11	
Borehole ID:	KL.	X11A	Test start:		000709 09.1		
Test section from - to (m):	683.00-703.	.00 m	Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescı	
Linear plot Q and p	<u> </u>		test evaluation: Flow period		Recovery period		
			Indata		Indata		
KLX11A_683.00-703.00_060709_1_Pi_Q_r		0.003	p ₀ (kPa) =	6513			
6750	-		p _i (kPa) =	6516			
6700	: :		$p_p(kPa) =$	6740	p _F (kPa) =	655	
	• P section • P above	0.002	$Q_p (m^3/s) =$	NA	, , ,		
<u>E</u> 6000	P below Q		tp (s) =	10	t _F (s) =	252	
0550 ·	**************	njection Rate [Vmin]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0	
9 1		Jection !	$EC_w (mS/m) =$		00.0()		
O 0500 -	•	0.001	Temp _w (gr C)=	17.1			
6450 -	•		Derivative fact.=	NA	Derivative fact.=	0.0	
6400	<u>.</u>						
6390 -							
6300	0.80 1.00 120 1.40	0.000	Results		Results		
	Time [h]		$Q/s (m^2/s)=$	NA			
Log-Log plot incl. derivates-	low period		$T_{\rm M} (m^2/s) =$	NA			
gg p.o			Flow regime:	transient	Flow regime:	transient	
			dt ₁ (min) =	NA	dt ₁ (min) =	NA	
			$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	NA	
			$T (m^2/s) =$	NA	$T (m^2/s) =$	1.5E-1	
			S (-) =	NA	S (-) =	1.0E-0	
			$K_s (m/s) =$	NA	$K_s (m/s) =$	7.5E-1	
			$S_s(1/m) =$	NA	$S_s(1/m) =$	5.0E-0	
Not A	nalysed		$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	5.3E-1	
			$C_D(-) =$	NA	$C (m /Pa) =$ $C_D (-) =$	5.9E-0	
			ξ (-) =	NA		-0.	
			ζ(-) –	INA	ξ (-) =	-0.	
			T (2)	NA	T (2/)	2.6E-1	
			$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	1.0E-0	
			$D_{GRF}(-) =$	NA	$D_{GRF}(-) =$	1.8	
Log-Log plot incl. derivatives	- recovery period		Selected represe				
Flansed tin	ne [h]		dt ₁ (min) =	NA	<u></u>	5.3E-1	
102 1013	.10.2	7	$dt_1 (min) =$ $dt_2 (min) =$	NA	$C (m^3/Pa) = C_D (-) =$	5.9E-0	
		-		1.5E-10		-0.	
		3	$T_{T} (m^{2}/s) = S (-) =$	1.5E-10 1.0E-06		-0.	
			$S(-) = K_s(m/s) =$				
10 1		10 ⁰	$S_s (11/s) = S_s (1/m) = S_s (1/m)$	7.5E-12 5.0E-08			
5		ressur		J.U⊑-U0			
od od		0.3 Deconvoluted pres	The recommended	tranomicaisits: at	f 1.5•10-10 m2/s wa	e derived from	
	Ch. Lacabagaa.	To-1	the radial flow anal		ase (outer zone). Th		
10 0	معسینمیپیشیپیشیپیشید	Ţ <u> </u>	range for the interv			John delice	
· · · · · · · · · · · · · · · · · · ·	The state of the s	0.03	6.0E-11 to 3.0E-10	m2/s. The static	pressure could not	be extrapolated	
	. •	0.03	due to the very low	transmissivity.			
		10 ⁻²					
10-1' 10-0	10 ¹ 10 ² 10) °					

	Test S	Sum	mary Sheet						
Project:	Oskarshamn site investi					CHi			
Area:	Lax	xema	r Test no:			1			
Borehole ID:	KI	X11/	Test start:			060709 11:08			
Test section from - to (m):	703.00-723	3.00 m	Responsible for test execution:			Stephan Roh			
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescı			
Linear plot Q and p			test evaluation: Flow period		Recovery period				
			Indata		Indata				
7000	KLX11A_703.00-723.00_060709_1_CHir_Q_r	0.05	p ₀ (kPa) =	6700					
e950 - •			p _i (kPa) =	6718					
6900	. \	0.04	$p_p(kPa) =$	6928	p _F (kPa) =	676			
6850 -			$Q_p (m^3/s) =$	5.00E-08					
<u>₹</u> 6800 -		0.03 =	tp (s) =	1200	t _F (s) =	240			
S 0750	-	ate [1/mi	S el S [*] (-)=		S el S [*] (-)=	1.00E-0			
		Injection Rate [I/min]	EC _w (mS/m)=		0 01 0 (-)-				
\$ 6700 ·		0.02 =	Temp _w (gr C)=	17.3					
6650 -			Derivative fact.=		Derivative fact.=	0.0			
6600 -	P section P above P below	0.01	Benvative last.	0.00	Berryative ract.	0.0			
6550	· ·			+					
6500	150 2.00	0.00	Results		Results				
Elapsed Ti				2.3E-09	Results				
Log-Log plot incl. derivates- flo	ow poriod		Q/s $(m^2/s)=$	2.4E-09					
	-		T _M (m ² /s)= Flow regime:	transient	Flow regime:	transient			
10 ⁻² Lapsed time (r	,10,0	ŀ	$dt_1 \text{ (min)} =$	NA		NA			
			` ′	_	` ,	!			
1		3000	dt ₂ (min) =	NA 4.0F.40	$dt_2 (min) =$	NA			
†		10 ³	$T (m^2/s) =$		$T (m^2/s) =$	2.6E-1			
100		10	S (-) =	1.0E-06		1.0E-0			
			$K_s (m/s) =$		$K_s (m/s) =$	1.3E-1			
ida j		300	$S_s(1/m) =$		$S_s(1/m) =$	5.0E-0			
		2	C (m³/Pa) =	NA	$C (m^3/Pa) =$	1.4E-1			
10.11		10 - 5	$C_D(-) =$	NA	$C_D(-) =$	1.6E-0			
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			ξ (-) =	-3.4	ξ (-) =	-3.			
	•	30							
· · · · · · · · · · · · · · · · · · ·		10 ¹	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA			
10 ² 10 ⁻¹	10 ⁰ 10 ¹ 10 ²	10	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA			
tD			D_{GRF} (-) =	NA	D_{GRF} (-) =	NA			
Log-Log plot incl. derivatives-	recovery period		Selected repres	entative paran	neters.				
Elapsed time [!	10,1		$dt_1 (min) =$	NA	$C (m^3/Pa) =$	1.4E-1			
101			dt_2 (min) =	NA	$C_D(-) =$	1.6E-0			
}		3000	$T_T (m^2/s) =$	2.6E-10	ξ (-) =	-3.			
		10 ³	S (-) =	1.0E-06					
or or			K_s (m/s) =	1.3E-11					
10°		300	S _s (1/m) =	5.0E-08					
		- 6	Comments:						
September 1		10 ²		l transmissivity o	f 2.6E-10 m2/s was	derived from th			
1011		G			ase, which shows the				
" Market		30	derivative quality.	The confidence	range for the interva	l transmissivity			
and the state of t		-			10 m2/s. Due to the	low			
* * * * * * * * * * * * * * * * * * *		10 ¹	transmissivity no	tresh water head v	was calculated.				
,°'//.									
10 ⁻¹ 10 ⁰ tD/CD	10 ¹ 10 ² 10 ³								

	Test Si	umr	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			Р
Area:	Lax	emar	Test no:			1
Borehole ID:	KL	X11A	Test start:			060709 13:58
Test section from - to (m):	723 00-743	00 m	Responsible for			Stephan Rohs
			test execution:			
Section diameter, 2·r _w (m):	().076	Responsible for test evaluation:			ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
7200		T 0.10	Indata p ₀ (kPa) =	6886	Indata	
KLX11A_723.00-743.00_060709_1_PLQ_r	P section P above	- 0.09	$p_0 (kPa) =$ $p_i (kPa) =$	NA	,	
7100	P below Q		$p_i(kPa) =$	NA	p _F (kPa) =	NA
7000 -		- 0.08	*	NA	ρ _F (KFa) –	INA
·	•	0.07	$Q_p (m^3/s) =$		t (a) -	NIA
g 6900		[win] 90.0	tp (s) =	NA	$t_F(s) =$	NA
Fed in 1990 (1990)	ſ	njection Rate (I/min)	S el S [*] (-)=	NA	S el S [*] (-)=	NA
A 8800 -		0.04	EC _w (mS/m)=			<u> </u>
6700		- 0.03	Temp _w (gr C)=	17.6		
		0.02	Derivative fact.=	NA	Derivative fact.=	NA
6600				<u> </u>		
		- 0.01				
6500 0.00 0.20 0.40 0.60 Elapsed T		0.00	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) =	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 Ar	nalysed		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
			$C_D(-) =$	NA	$C_D(-) =$	NA
			ξ(-) =	NA	ξ (-) =	NA
			- \ /	1	· \ /	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
			$S_{GRF}(III / S) =$	NA	$S_{GRF}(III / S) =$	NA
			$D_{GRF}(-) =$	NA	$D_{GRF}(-) =$	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres			
33 biot mon delivatives-	polica		dt ₁ (min) =	NA	C (m ³ /Pa) =	NA
			$dt_1 (min) =$ $dt_2 (min) =$	NA	$C_D(-) =$	NA
				NA		NA
			$T_{T} (m^{2}/s) = S (-) =$	NA NA	ξ (-) =	INA
			$K_s (m/s) =$	NA		<u> </u>
			$S_s (1/m) =$ Comments:	NA	<u> </u>	
Not Ai	nalysed			esponse the inter	val transmissivity is	lower than 1E-

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation				Р
Area:	Laxemar	Took no.			
Alea.	Laxemai	restrio.			
Borehole ID:	KLX11A	Test start:			060709 15:45
Test section from - to (m):	743.00-763.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.076	Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
7400 KLX11A_743.00-763.00_060709_1_PI_Q_r	α10	p ₀ (kPa) =	7070		
		p _i (kPa) =	NA		
7300	0.08	$p_p(kPa) =$	NA	p _F (kPa) =	NA
		$Q_p (m^3/s) =$	NA		
7200 ·		tp (s) =	NA	t _F (s) =	NA
\$ 7100 ·	• ist e [Vmis	S el S [*] (-)=	NA	S el S [*] (-)=	NA
(Fed) answered a 7000	Place Property Control of Control	EC _w (mS/m)=		5 51 5 (·)-	
7000-	• + 0.04 <u>=</u>	Temp _w (gr C)=	17.9		
	P section P above P below	Derivative fact.=	NA NA	Derivative fact.=	NA
6900 -	- 0.02	Benvative last.	10.0	Derivative last.	147 (
6800	0.80 1.00 1.20	Results		Results	
0.00 0.20 0.40 0.60 Elapsed Ti			NA	Results	
l and an most included instance for	an maniad	Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$	NA	[]	t
		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
Not Ar	alved	$S_s(1/m) =$	NA	$S_s(1/m) =$	NA
Not Al	larysed	$C (m^3/Pa) =$	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		
		dt_1 (min) =	NA	C (m ³ /Pa) =	NA
		dt_2 (min) =	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ(-) =	NA
		S (-) =	NA	- (/	
		$K_s (m/s) =$	NA	 	
		S _s (1/m) =	NA	 	
Not Ar	nolyced	Comments:		<u> </u>	1
10071	anysed	Based on the test re 11 m2/s.	esponse the inter	val transmissivity is	lower than 1.0

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				F
Area:	Lavamar	Test no:			
Alea.	Laxemai	restrio.			
Borehole ID:	KLX11A	Test start:			060709 17:2
Test section from - to (m):	763.00-783.00 m	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0.076	Responsible for test evaluation:		Crist	ian Enachesc
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
7600	0.10 • P section	p ₀ (kPa) =	7254		
KLX11A_763.00-783.00_060709_1_PI_Q_r	P above P below	p _i (kPa) =	NA		
7500 -	0.08	$p_p(kPa) =$	NA	p _F (kPa) =	NA
		$Q_p (m^3/s) =$	NA	, ,	
7400	1006 =	tp (s) =	NA	t _F (s) =	NA
2 8 7300	sate [l/m ir	S el S [*] (-)=	NA	S el S [*] (-)=	NA
[* d)	000 lingertion Rate (Pm.hz)	EC _w (mS/m)=		0 61 0 (*) <u>-</u>]· "·
7200	0.04 =	Temp _w (gr C)=	18.2		1
		Derivative fact.=	NA	Derivative fact.=	NA
7100 -	0.02	Derivative fact.	INA	Derivative lact.	INA
7000	0.50 0.80 0.70 0.80	Results		Results	
0.00 0.10 0.20 0.30 0.40 Elapsed Tir			INIA	Results	I
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} ({\rm m}^2/{\rm s}) =$	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
Not An	alveed	$S_s(1/m) =$	NA	$S_s(1/m) =$	NA
Not All	arysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
		$C_D(-) =$	NA	$C_D(-) =$	NA
		ξ (-) =		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
		$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ (-) =	NA
		S (-) =	NA	/	
		K _s (m/s) =	NA	 	
		S _s (1/m) =	NA	 	
Not An	alvead	Comments:	1	<u> </u>	1
Not All	aryscu		esponse the inter	val transmissivity is	lower than

	Test Si	umn	nary Sheet			
Project:	Oskarshamn site investig					CHir
Area:	Lav		Took no.			
Area:	Lax	emar	Test no:			1
Borehole ID:	KL	X11A	Test start:			060709 18:43
Test section from - to (m):	783.00-803.	00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachescı
Linear plot Q and p			test evaluation:		Recovery period	
a p.o. 4 aa p			Indata		Indata	
7500 1		¥ 0.10	p ₀ (kPa) =	7439		
KLX11A_783.00-803.00_060709_1_PI_Q_r	●P section ▲P above	0.09	p _i (kPa) =	NA		
7700	©P below *Q	0.08	$p_p(kPa) =$	NA	p _F (kPa) =	NA
		0.07	$Q_p (m^3/s) =$	NA	, ,	
7600 - G.		0.06 🖫	tp (s) =	NA	t _F (s) =	NA
2 7500 P	•	Rate (I/mir	S el S [*] (-)=	NA	S el S [*] (-)=	NA
(red) united according		Injection Rate [I/min]	EC _w (mS/m)=		()	
7400	•	0.04 =	Temp _w (gr C)=	18.5		
			Derivative fact.=	NA	Derivative fact.=	NA
7300		0.02		<u> </u>	22	1
-		0.01				
7200	0.80 1.00 1.20 1.	0.00 40	Results		Results	
			Q/s $(m^2/s)=$	NA	results	
Log-Log plot incl. derivates- flo	ow period			NA	1	
Log-Log plot mei. denvates- ne	ow period		T _M (m ² /s)= Flow regime:	transient	Flow regime:	transient
			dt ₁ (min) =	NA	$dt_1 \text{ (min)} =$	NA
			$dt_1 (min) = $ $dt_2 (min) = $	NA	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA
				NA	$T (m^2/s) =$	NA
			$T (m^2/s) = S (-) =$	NA	S (-) =	NA
			9 ()	NA NA		NA
			$K_s (m/s) =$		$K_s (m/s) =$	
Not An	alysed		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
			- , 2, ,	NA	T (2,)	NA
			$T_{GRF}(m^2/s) =$	NA NA	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	NA
			$S_{GRF}(-) = D_{GRF}(-) =$	NA NA	- Ora ()	NA
Log Log platinal desiratives	receive my period		D _{GRF} (-) = Selected represe		D _{GRF} (-) =	INA Selektristristris
Log-Log plot incl. derivatives-	recovery period		dt ₁ (min) =	NA	<u> </u>	NA
			$dt_1 (min) =$ $dt_2 (min) =$	NA NA	$C (m^3/Pa) = C_D (-) =$	NA
				NA		NA
			$T_T (m^2/s) = S(-) = $	NA NA	ξ (-) =	INA
			9 ()			
			$K_s (m/s) =$	NA		
			S _s (1/m) = Comments:	NA		
Not An	alysed			esponse the inter	val transmissivity is	lower than 1.0H

	Test Sun	nmary Sheet			
Project:	Oskarshamn site investigation	on Test type:[1]			CHi
A 100	Lavama	an Taat na			
Area:	Laxem	ar Test no:			
Borehole ID:	KLX1	A Test start:			060710 08:19
Test section from - to (m):	803.00-823.00	m Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):	0.0	test execution: 76 Responsible for	1	Cris	stian Enachescu
occion diameter, 2 m (m).	0.0	test evaluation:		One	Starr Enachesee
Linear plot Q and p		Flow period		Recovery perio	d
7900	T 0.10	Indata		Indata	
KLX11A_803.00-823.00_060710_1_CHir_Q_r	•	p ₀ (kPa) =	7623		
		p _i (kPa) =	NA		
7800	0.08	$p_p(kPa) =$	NA	p _F (kPa) =	NA
7750	0.07	$Q_p (m^3/s) =$	NA		
G 7700	0.00	tp (s) =	NA	$t_F(s) =$	NA
7650	0.05	S el S* (-)=	NA	S el S [*] (-)=	NA
€ 7600 ·	0.04				
7550	0.03	Temp _w (gr C)=	18.8		
7500	P section P above P below	Derivative fact.=	NA NA	Derivative fact.=	NA
7450 -	· Q				
7400	0.00	Danilla	<u> </u>	D 16 -	
0.00 0.10 0.20 0.30 0.40 0.50 Elapsed T		Results	INIA	Results	
lan lan mistimal danivatas fi	maniad	Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M}$ (m ² /s)=	NA	Flow regime:	transiant
		Flow regime:	transient	Flow regime:	transient
		$dt_1 (min) =$	NA	$dt_1 (min) =$	NA NA
		$dt_2 (min) =$	NA NA	$dt_2 (min) =$	NA NA
		$T (m^2/s) =$		$T (m^2/s) =$	
		$S(-) = K_s(m/s) =$	NA NA	$S(-) = K_s(m/s) =$	NA NA
		$S_s (1/m) =$	NA	$S_s(11/s) =$ $S_s(1/m) =$	NA
Not Ar	nalysed	$C (m^3/Pa) =$	NA	$S_s(1/111) = C(m^3/Pa) =$	NA
		$C_D(-) =$	NA	$C_D(-) =$	NA
		$\xi(-) =$	NA	ξ(-) =	NA
		Ç (−) =	INA	S (-) -	INA
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(m / s) =$ $S_{GRF}(-) =$	NA	$S_{GRF}(III/S) =$ $S_{GRF}(-) =$	NA
		$D_{GRF}(-) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives-	recovery period	Selected repres			
<u> </u>	, ,	dt₁ (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		
		K_s (m/s) =	NA		
		$S_s(1/m) =$	NA		
Not Ar	nalysed	Comments:			
		Based on the test r transmissivity is lo			nce) the interval

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CHi
A = 0 = 1	Lavaman	Took no			
Area:	Laxemar	rest no:			
Borehole ID:	KLX11A	Test start:			060710 09:45
Test section from - to (m):	823.00-843.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.076	Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
8100	0.10	p ₀ (kPa) =	7807	7	
KLX11A_823.00-843.00_060710_1_CHir_Q_r	• P section • P above • 0.09 • P below	p _i (kPa) =	NA		
8000	-0	$p_p(kPa) =$	NA	p _F (kPa) =	NA
	0.07	$Q_p (m^3/s) =$	NA	, ,	
7900	0.06	tp (s) =	NA	t _F (s) =	NA
d sare	Parce [hw ho]	S el S [*] (-)=	NA	S el S [*] (-)=	NA
Fade sense of section 1999	• • • • • • • • • • • • • • • • • • •	S el S (-)= EC _w (mS/m)=		o ero (-)≕	
	0.04 🖻	Temp _w (gr C)=	19.1	 	1
7700	- 0.03	Derivative fact.=		Derivative fact.=	NA
7600	0.02	Derivative fact	INA	Derivative fact	INA
760	001				
7500	0.00	Danista		Describe	
0.00 0.10 0.20 0.30 0.40 0. Elapsed	0 0.60 0.70 0.60 0.90 1.00	Results	To a second	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) =	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
NI ₂₄ A	u a la ca d	$S_s(1/m) =$	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 repres	entative paran		
		dt_1 (min) =	NA	C (m ³ /Pa) =	NA
		dt_2 (min) =	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ (-) =	NA
		S (-) =	NA	· (/	
		$K_s (m/s) =$	NA	 	1
		$S_s(1/m) =$	NA	 	
NT. / A	malroad	Comments:	<u> </u>	<u> </u>	<u> </u>
Not A	nalysed	Based on the test re		ged packer complian	ce) the interval
		transmissivity is lo	wer than 1.0E-1	1 m2/s.	

	Test S	Sumi	mary Sheet				
Project:	Oskarshamn site investi	igatior	Test type:[1]			CHi	
Area:	La	xema	Test no:				
Borehole ID:	KI	I ¥11∆	Test start:			060710 11:10	
Borenole ID.	N		rest start.			00071011.10	
Test section from - to (m):	843.00-863	3.00 m	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescı	
Linear plot Q and p			Flow period		Recovery period		
			Indata		Indata		
8500 KLX11A_843.00-863.00_	060710_1_CHir_Q_r		p ₀ (kPa) =	7794			
8400	P secton P above P below	0.014	p _i (kPa) =	7983			
	•	0.012	$p_p(kPa) =$	8223	p _F (kPa) =	801	
8300			$Q_p (m^3/s) =$	6.67E-08	, , ,		
<u>a</u> ≈200 -		0.010	tp (s) =		t _F (s) =	120	
§	1	0.008			S el S [*] (-)=	1.00E-0	
8 8100 ·		9000 Injection Rate [Vm in]	S el S* (-)=	1.00E-00	S el S (-)=	1.00E-0	
0 800		0.006	EC _w (mS/m)=	10.5			
			Temp _w (gr C)=	19.5			
7900	1.7.7	0.004	Derivative fact.=	0.08	Derivative fact.=	0.0	
7800		0.002					
<u>:</u>							
7700 0.00 0.50 1.00	1.50 2.00	0.000	Results		Results		
Elaps	ed Time [h]		Q/s $(m^2/s)=$	2.7E-09			
Log-Log plot incl. derivates-	flow period		$T_{\rm M} (m^2/s) =$	2.9E-09			
Elapsed tip	ne [h]		Flow regime:	transient	Flow regime:	transient	
10,10,10,10,10,10,10,10,10,10,10,10,10,1	10,0	13	$dt_1 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$	NA	
		10 ³	$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	NA	
		1	, ,		$T (m^2/s) =$	8.2E-1	
00000		300	$T (m^2/s) =$				
109	*	,	S (-) =	1.0E-06		1.0E-0	
and the state of t	NA	10 ²	K_s (m/s) =		$K_s (m/s) =$	4.1E-1	
		, Gi	$S_{s}(1/m) =$		$S_s(1/m) =$	5.0E-0	
of the state of th	i a sa	30	$C (m^3/Pa) =$	NA	C (m³/Pa) =	8.8E-1	
10.1	•		$C_D(-) =$	NA	$C_D(-) =$	9.7E-0	
	•	10 ¹	ξ (-) =	-2.2	ξ (-) =	-2.	
						Î	
		3	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
		Į	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA	
10 ⁻¹ 10 ⁰	10 ¹ 10 ² 10 ³	-	D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives	s- recovery period		Selected represe				
Elapsed tir			dt ₁ (min) =	NA	<u></u>	8.8E-1	
101]			$C (m^3/Pa) =$		
		10 ³	$dt_2 (min) =$	NA	C _D (-) =	9.7E-0	
			$T_T (m^2/s) =$	8.2E-10		-2.	
1		300	S (-) =	1.0E-06			
10			K_s (m/s) =	4.1E-11			
	mark.	10 ²	$S_s (1/m) =$	5.0E-08			
a Junear Marie Control		EP3	Comments:				
		1 2			f 8.2E-10 m2/s was		
10 -1		30 2	radial flow analysis	s of the CHir pha	se, which shows the	better data and	
		F10 ¹			ange for the interva		
·://		10			99 m2/s. Due to the	low	
• //		[transmissivity no fi	esh water head v	vas calculated.		
10.1 10.0		3					
	10 ¹ 10 ² 10 ³						

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			CHi
Area:	Lo	(omor	Test no:			
Alea.	Lax	Kemai	rest no.			
Borehole ID:	KL	.X11A	Test start:			060710 14:04
Test section from - to (m):	863.00-883	.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu
l :			test evaluation:			q(+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0
Linear plot Q and p			Flow period Indata		Recovery period	
8500		T 0.003	p ₀ (kPa) =	NA	inuata	1
KLX11A_863.00-883.00_060710_1_CHir_Q_r	P section P above P below		$p_0 (RPa) =$ $p_i (RPa) =$	NA		
8400	.0		$p_{p}(kPa) =$	NA	p _F (kPa) =	NA
				NA	ρ _F (KF a) =	INA
8300 -		0.002	$Q_p (m^3/s) =$		t (a) -	NΙΛ
ure [k Pa	:	[Vm in]	tp (s) =	NA	t_F (s) =	NA
Fed. J. annual de 2000		injection Rate [Vmin]	S el S* (-)=	NA	S el S [*] (-)=	NA
Do wn ht	;	Inject	EC _w (mS/m)=		0	
8100		0.001	Temp _w (gr C)=	19.		
			Derivative fact.=	NA	Derivative fact.=	NA
8000						
-						
7900			Results		Results	
Eupseu I III	re (II)		$Q/s (m^2/s) =$	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
			٦()	1	٦ ()	
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
			$S_{GRF}(m/s) =$ $S_{GRF}(-) =$	NA	$S_{GRF}(HI/S) =$ $S_{GRF}(-) =$	NA
			$D_{GRF}(-)$ =	NA	$D_{GRF}(-) =$	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres			
Log Log plot incl. delivatives-	1000 very periou		dt ₁ (min) =	NA		NA
			$dt_1 (min) =$ $dt_2 (min) =$	NA	$C (m^3/Pa) = C_D (-) =$	NA
				NA		NA NA
			$T_T (m^2/s) =$		ξ (-) =	INA
			S (-) =	NA		
			$K_s (m/s) =$	NA		
			$S_s(1/m) =$	NA		
Not An	alysed		Comments:			
			Based on the test r 11 m2/s.	esponse me inte	erval transmissivity is	iower than 1.01

Characa Case		Test Su	ımı	nary Sheet				
Section from - to (m):	Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi	
Responsible for test execution: Stephan Rot test execution:	Area:	Laxe	emar	Test no:			1	
Responsible for test execution: Stephan Rot test execution:	Parahala ID:	ZI V	/11 A	Toot start:			060712 07:20	
Interest execution:	borenoie ID.						00071207.30	
Cristan Enachesc tevaluation: Cristan Enachesc tevaluation	Test section from - to (m):	303.00-308.0	00 m			Stephan Rohs		
	Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachescı	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Linear plot Q and p					Recovery period		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				Indata	• ; • ; • ; • ; • ; • ; • ; • ; • ; • ;	Indata		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3150 KLX11A_303.00-308.00_060712_1_CHir_Q_r •	P section	2.0	p ₀ (kPa) =	2828			
$ \frac{1}{\sqrt{2}} = \frac{1.06E \cdot 0S}{\text{tp (s)}} = \frac{1.00E \cdot 0S}{\text{tp (s)}} = \frac{1.200}{\text{tp (s)}$	3100	Pabove Pbelow Q		p _i (kPa) =	2823			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	3050		1.5	$p_p(kPa) =$	3024	p _F (kPa) =	282	
Total Content Total Conten	, i	Material Company of the Company of t		$Q_{n} (m^{3}/s) =$	1.06E-05			
	g 3000 ·	•	Ē		1200	t _F (s) =	120	
Temps,(gr C)= 11.1 Derivative fact.= 0.06 De	e.ins 89-22950		1.0 Mg					
Temps,(gr C)= 11.1 Derivative fact.= 0.06 De	and other states of the states		njection			3 61 3 (-)-		
Derivative fact. = 0.06 Derivative fact. = 0.00 Deriv	Š 2900 ·	A CONTRACTOR OF THE PARTY OF TH	_		11 1			
Results $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $0.5 \cdot 2E \cdot C7$ $O_{\rm s}(m^2/s)=$ $O_$	2850	·	0.5				0.0	
Results Q/s (m ² /s)= 5.2E-07 T _M (m ² /s)= 4.3E-07 Flow regime: transient Flow regime: transient dt, (min) = 0.50 dt, (min) = 0.4 dt ₂ (min) = 17.83 dt ₂ (min) = 2.1 T (m ² /s) = 6.0E-07 T (m ² /s) = 2.4E-0 S (-) = 1.0E-0 S (-) = 0.03 S (-) = 2.1 T (m ² /s) = 0.03 S (-) = 0.0E-0 T (m ² /s) = 0.0E-	2800			Denvative lact.	0.00	Derivative lact.	0.0	
Results Q/s (m^2/s)= $5.2E-07$ T _M (m^2/s)= $4.3E-07$ Flow regime: transient dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 17.83 dt_2 (min) = 2.1 t_1 (min) = 17.83 dt_2 (min) = 2.1 t_2 (min) = 17.83 dt_2 (min) = 2.1 t_3 (min) = 2.1 t_4 (min) = 2.1 t_4 (min) = 2.1 t_5		_						
Log-Log plot incl. derivates- flow period $T_{M}(m^2/s) = 4.3E-07$ Flow regime: transient $dt_1(min) = 0.50 dt_1(min) = 0.4 dt_2(min) = 2.1 T(m^2/s) = 6.0E-07 T(m^2/s) = 2.4E-0 S(-1) = 1.0E-06 S(-1) = 1.0E-06 S(-1) = 1.0E-06 S(-1) = 1.0E-06 S(-1) = 1.0E-06 S(-1) = 1.0E-07 S(-1) = 1.0E$	0.00 0.20 0.40 0.80 0.80 1.00 1.20 1.40		0.0	Results		Results		
Flow regime: transient $dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 17.83 dt_2 (min) = 2.1 Temperature dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 17.83 dt_2 (min) = 2.1 Temperature dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 17.83 dt_2 (min) = 2.1 Temperature dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 1.0 dt_2 (min) = 2.1 Temperature dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 2.1 Temperature dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 2.1 Temperature dt_1 (min) = 0.50 dt_1 (min) = 0.4 dt_2 (min) = 2.1 dt_2 (min) = 1.0 dt_2 (min) = 1.0 dt_2 (min) = 2.1 dt_2 (min) = 2.1 dt_2 (min) = 2.1 dt_2 (min) = 2.1 dt_2 (min) = 2.1 dt_2 (min) = 2.0 dt_2 (min$				Q/s $(m^2/s)=$	5.2E-07			
$\frac{dt_1 (\text{min}) = 0.50 dt_1 (\text{min}) = 0.4}{dt_2 (\text{min}) = 17.83 dt_2 (\text{min}) = 2.1}{T (\text{m}^2/\text{s}) = 6.0\text{E-}07 \text{T} (\text{m}^2/\text{s}) = 2.4\text{E-}0}{S (\cdot) = 1.0\text{E-}06 S (\cdot) = 1.0\text{E-}0}{S (\cdot) = 1.0\text{E-}06 S (\cdot) = 1.0\text{E-}0}{S (\cdot) = 1.0\text{E-}06 S (\cdot) = 1.0\text{E-}0}{S (\cdot) = 1.0\text{E-}07 \text{K}_{\text{s}} (\text{m/s}) = 4.9\text{E-}0}{S (\cdot) = 1.0\text{E-}07 \text{K}_{\text{s}} (\text{m/s}) = 3.6\text{E-}1}{S (\cdot) = 1.0\text{E-}0}{S (\cdot) = $	Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	4.3E-07			
$\frac{dt_1 (\text{min}) = 0.50}{dt_2 (\text{min}) = 17.83} dt_2 (\text{min}) = 2.1$ $T (\text{m}^2/\text{s}) = 6.0\text{E-O7} (\text{m}^2/\text{s}) = 2.4\text{E-O}$ $S (\cdot) = 1.0\text{E-O6} S (\cdot) = 1.0\text{E-O}$ $S (\cdot) = 1.0\text{E-O6} S (\cdot) = 1.0\text{E-O}$ $S (\cdot) = 1.0\text{E-O} (\cdot) (\cdot) = 1.0\text{E-O}$ $S (\cdot) = 1.0\text{E-O} (\cdot) (\cdot) (\cdot) = 1.0\text{E-O}$ $S (\cdot) = 1.0\text{E-O} (\cdot) (\cdot) (\cdot) = 1.0\text{E-O}$ $S (\cdot) = 1.0\text{E-O} (\cdot) (\cdot) (\cdot) (\cdot) = 1.0\text{E-O}$ $S (\cdot) = 1.0\text{E-O} (\cdot) (\cdot$	Elanced time	(h)		Flow regime:	transient	Flow regime:	transient	
$T (m^2/s) = 6.0E-07 T (m^2/s) = 2.4E-0 S (-) = 1.0E-06 S (-) = 1.0E-06 S (-) = 1.0E-06 S (-) = 1.0E-06 S (-) = 1.0E-06 S (-) = 1.0E-06 S (-) = 1.0E-06 S (-) = 1.0E-07 T (-)$	10 2 10,4 10,3 10,2	10,-1		dt_1 (min) =	0.50	dt_1 (min) =	0.4	
		-	101	dt_2 (min) =	17.83	dt_2 (min) =	2.1	
			10	$T (m^2/s) =$	6.0E-07	$T(m^2/s) =$	2.4E-0	
$K_{S}(m/s) = 1.2E-07 K_{S}(m/s) = 4.9E-05 K_{S}(1/m) = 2.0E-07 S_{S}(1/m) = 2.0E-07 S_{S}(1$							1.0E-0	
$S_{8} (1/m) = 2.0E-07 S_{8} (1/m) = 3.6E-1$	10 1		3					
	200000000000000000000000000000000000000		100	- ' '				
	•	•	l Vil	,		- ,		
$\xi(\cdot) = 0.3 \xi(\cdot) = 21.$ $T_{GRF}(m^2/s) = NA \qquad T_{GRF}(m^2/s) = NA$ $S_{GRF}(\cdot) = NA \qquad S_{GRF}(\cdot) = NA$ $D_{GRF}(\cdot) = NA \qquad D_{GRF}(\cdot) = NA$ $N_{GRF}(\cdot) = NA \qquad N_{GRF}(\cdot) =$	1/dp		(1/a).					
$T_{GRF}(m^2/s) = NA \qquad T_{GRF}(m^2/s) = NA$ $T_{GRF}(-) = NA \qquad D_{GRF}(-) = NA$ $T_{GRF}(-) = NA$ $T_$	10 0	ا چين پيم	0.3 ≦					
$S_{GRF}(-) = NA \qquad S_{GRF}(-) = NA$ $D_{GRF}(-) = NA \qquad D_{GRF}(-)			10 ⁻¹	ς (-) –	0.3	ς (-) –	21	
$S_{GRF}(-) = NA \qquad S_{GRF}(-) = NA$ $D_{GRF}(-) = NA \qquad D_{GRF}(-)		***		$T_{}(m^2/s) =$	NA	$T_{}(m^2/s) =$	NA	
		_	0.03					
Selected representative parameters. $ \frac{\text{dt}_1(\text{min}) = 0.50 \text{ C } (\text{m}^3/\text{Pa}) = 3.6\text{E-1}}{\text{dt}_2(\text{min}) = 17.83 \text{ C}_D(-) = 4.0\text{E-0}}{\text{dt}_2(\text{min}) = 1.0\text{E-006}} $ $ \frac{\text{K}_S(\text{m/s}) = 1.2\text{E-07}}{\text{S}_S(1/\text{m}) = 2.0\text{E-07}} $ $ \frac{\text{Comments:}}{\text{The recommended transmissivity of } 6.0\text{E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0\text{E-7 to } 9.0\text{E-7 m2/s}. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.} $	10 ³ 10 ⁴ tD	10 ⁶ 10 ⁶ 10 ⁷						
$\frac{10^{3}}{10^{3}} = \frac{10^{4}}{10^{3}} = \frac{10^{3}}{10^{3}} = 10$	Log Log plot incl. derivatives	rocovery period						
$dt_2 \text{ (min)} = 17.83 \text{ C}_D \text{ (-)} = 4.0\text{E-O}$ $T_T \text{ (m}^2\text{/s)} = 6.0\text{E-O}^7 \xi \text{ (-)} = 0.$ $S \text{ (-)} = 1.0\text{E-O}^6 \text{ K}_s \text{ (m/s)} = 1.2\text{E-O}^7$ $S_s \text{ (1/m)} = 2.0\text{E-O}^7$ $Comments:$ The recommended transmissivity of 6.0E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.							2 GE 4	
$T_T (m^2/s) = 6.0E-07 \xi (-) = 0.0E$ $S (-) = 1.0E-06$ $K_s (m/s) = 1.2E-07$ $S_s (1/m) = 2.0E-07$ $Comments:$ The recommended transmissivity of 6.0E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.	10 ⁻⁵ 10,-4 10,-4 10,-4	19-2				Ο (III /I α)		
$S(-) = 1.0E-06$ $K_s(m/s) = 1.2E-07$ $S_s(1/m) = 2.0E-07$ $Comments:$ The recommended transmissivity of 6.0E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.								
K_s (m/s) = 1.2E-07 S_s (1/m) = 2.0E-07 S_s (1/m) = 2.0E-07 S_s (1/m) = 2.0E-7 S_s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.		30	00				0.	
S_s (1/m) = 2.0E-07 Comments: The recommended transmissivity of 6.0E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.			2					
Comments: The recommended transmissivity of 6.0E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.	101	10	0-					
The recommended transmissivity of 6.0E-7 m2/s was derived from the radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.			_		2.0E-07			
radial flow analysis of the CHi phase, which is showing the best data quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.		30	-					
quality. The confidence range for the interval transmissivity is estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.	`\							
estimated to be 2.0E-7 to 9.0E-7 m2/s. The static pressure measured a transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.	100	[10	0. 5	radiai flow affaiysis				
transducer depth, was derived from the CHir phase using straight line extrapolation in the Horner plot to a value of 2,822.7 kPa.		a a a a a a a a a a a a a a a a a a a						
extrapolation in the Horner plot to a value of 2,822.7 kPa.		3						
10 10 10 10 10			0					
	101 102	103 104 105	0 ັ	I .	1	,		
	tD/CD	10						

	Test Su	ımı	nary Sheet				
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi	
Area:	Laxe	emar	Test no:			1	
Borehole ID:	KI X	(11A	Test start:			060712 09:30	
Borelloic IB.							
Test section from - to (m):	308.00-313.0	00 m	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):	0	.076	Responsible for		Crist	ian Enachescu	
Linear plot Q and p			test evaluation: Flow period		Recovery period		
Emour prot & and p			Indata		Indata		
3200		T ⁶	p ₀ (kPa) =	2875			
KLX11A_308.00-313.00_060712_1_CHir_Q_r	Psection Pabove Pbelow		p _i (kPa) =	2871		1	
3100	· Q	5	$p_p(kPa) =$		p _F (kPa) =	287	
3050	the state of the s			5.33E-05		207	
_	•	4	$Q_p (m^3/s) =$			120	
6 3000 8 3		2 Rate [l/min]	tp (s) =		t _F (s) =	120	
\$ 2950 - C 2	•	on Rate	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
2900		Injection	EC _w (mS/m)=				
2850		2	Temp _w (gr C)=	11.3			
2800			Derivative fact.=	0.1	Derivative fact.=	0.0	
2750		1					
2700].					
0.00 0.20 0.40 0.60 0.80 1.00 1.20 Ellapsed Time [h]		1.40	Results		Results	т	
			$Q/s (m^2/s) =$	2.6E-06			
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	2.2E-06			
Elapsed time	[h]		Flow regime:	transient	Flow regime:	transient	
102			dt_1 (min) =	0.55	dt_1 (min) =	3.3	
		10 ⁰	dt_2 (min) =	4.85	dt_2 (min) =	12.1	
			$T (m^2/s) =$	7.0E-06	$T (m^2/s) =$	6.5E-0	
0 0 0 000000000000000000000000000000000		0.3	S (-) =	1.0E-06	, ,	1.0E-0	
10 ¹			$K_s (m/s) =$		$K_s (m/s) =$	1.3E-0	
		10 ⁻¹	C (1/m) =				
(14D)	:	[min./]	S _s (1/m) =		S _s (1/m) =	2.0E-0	
, v	<i>y</i> . :	0.03 (8)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	3.5E-10	
10 ".	, · · ·	1/4	C _D (-) =	NA	C _D (-) =	3.8E-0	
7. 10. 10.	* * · · · · · · · · · · · · · · · · · ·	10 ⁻²	ξ (-) =	8.2	ξ (-) =	20.	
• • •	· •		2	4.55.00	2	NIA	
	*	0.003	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	NA	
10 ¹¹ 10 ¹² 10 ¹³ tD	10 ¹⁴ 10 ¹⁵ 10 ¹⁶		$S_{GRF}(-) =$	1.0E-06		NA	
			D_{GRF} (-) =		D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	ieters.		
10. ⁻⁴ 10. ⁻³ Elapsed time [f	10-210-110-0		dt_1 (min) =	3.33	C (m ³ /Pa) =	3.5E-10	
10			dt_2 (min) =	12.15	C _D (-) =	3.8E-0	
	30	0	$T_T (m^2/s) =$	6.5E-06	ξ (-) =	20.	
	***************************************		S (-) =	1.0E-06		1	
	10	2	$K_s (m/s) =$	1.3E-06			
101			S _s (1/m) =	2.0E-07		1	
. \	30	KP [e		2.52 07		<u> </u>	
a · ·	•	p-p0, (p-p0)' [kPa]	The recommendation	manamiasi i	F 6 5 E 6 2/ 1	aniroad Casa d	
.\	10	1 0d-(radial flow analysis		f 6.5E-6 m2/s was de		
10	we will be a second	۵	radiai ilow aliarysis		se (outer zone), whi he confidence range		
	3				E-6 to 9.0E-6 m2/s.		
	•				oth, was derived from		
	F 10	0			on in the Horner plo		
101 102	10 ³ 10 ⁴ 10 ⁵		2,867.5 kPa.		pro		
tD/CD			1 1				

	Test Si	umn	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
Area:	Lov	omor	Test no:			
Alea.	Lax	emai	restrio.			
Borehole ID:	KLX	X11A	Test start:			060712 11:13
Test section from - to (m):	313.00-318.	00 m	Responsible for test execution:	Stephan Rohs		
Section diameter, 2⋅r _w (m):	(0.076	Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
3150	• • P section	0.003	p ₀ (kPa) =	2925	5	
KLX11A_313.00-318.00_060712_1_CHir_Q_r	P above P below		p _i (kPa) =	NA		
3100	:		$p_p(kPa) =$	NA	p _F (kPa) =	NA
	•		$Q_p (m^3/s) =$	NA		
3050 T		0.002	tp (s) =	NA	t _F (s) =	NA
2 2 2 2 2	•	tate [l/mi	S el S [*] (-)=	NA	S el S [*] (-)=	NA
For All services of the Control of t		in jection Rate [l/m in]	EC _w (mS/m)=		· · · · /	
2990		0.001	Temp _w (gr C)=	11.4	1	
			Derivative fact.=	NA	Derivative fact.=	NA
2900 -	· :		20		20	
2850 0.00 0.10 0.20 0.30 0.40	0.50 0.60 0.70 0.80 0.3	0.000	Results		Results	
0.00 0.70 0.20 0.30 0.40 Elapsed Tin		90		NA	Results	
Log-Log plot incl. derivates- flo	nu pariad		$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- no	ow period		$T_M (m^2/s) =$		Flavy va sima a v	transiant
			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
Not An	alvsed		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
1100111	arysoa		$C (m^3/Pa) =$	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		neters.	
			dt_1 (min) =	NA	$C (m^3/Pa) =$	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
			$T_T (m^2/s) =$	NA	ξ (-) =	NA
			S (-) =	NA		
			K _s (m/s) =	NA		
			S _s (1/m) =	NA		
Not An	alvsed		Comments:	•	-	-
			Based on the test re transmissivity is lo		ged packer complian 1 m2/s.	ce) the interval

	Test S	umr	nary Sheet				
Project:	Oskarshamn site investi	gation	Test type:[1]			CHi	
Area:	La	xemar	Test no:				
Arca.	La	xciiiai	1 631 110.				
Borehole ID:	KL	X11A	Test start:			060712 13:09	
Test section from - to (m):	318.00-323	3.00 m	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Cris	tian Enachescı	
Linear plot Q and p			Flow period		Recovery period	d	
			Indata		Indata	<u> </u>	
3200 KLX11A_318.00-323.00_060712_1_CHir_Q_r	• P section	0.003	p ₀ (kPa) =	297	12		
3150	Pabore Pbelow Q		p _i (kPa) =	NA			
3100	· ·		$p_p(kPa) =$	NA	p _F (kPa) =	NA	
3100	<u>.</u> .	0.002	$Q_p (m^3/s) =$	NA			
			tp (s) =	NA	t _F (s) =	NA	
To 2000 - 0.00		njection Rate [l/min]	S el S [*] (-)=	NA	S el S* (-)=	NA	
mhole	· ·	Injection	EC _w (mS/m)=		3 5. 5 ()		
å 3000	<u> </u>	0.001	Temp _w (gr C)=	11	.5	 	
	•		Derivative fact.=		Derivative fact.=	NA	
2950	•		20		20		
	*					+	
2900 0.10 0.20 0.30 0.40	0.50 0.60 0.70 0.80	0.000	Results		Results		
Elapsed Time [h]				NA	Results	1	
Log Log platinal derivates fla	aw nariad		Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$		Flavora eiro e	transiant	
			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	
Not An	alvsed		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA	
1,00711	arysou		$C (m^3/Pa) =$	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		meters.		
			dt_1 (min) =	NA	$C (m^3/Pa) =$	NA	
			dt_2 (min) =	NA	$C_D(-) =$	NA	
			$T_T (m^2/s) =$	NA	ξ (-) =	NA	
			S (-) =	NA			
			K _s (m/s) =	NA			
			$S_s (1/m) =$	NA			
Not An	alvsed		Comments:	-	-	_	
			Based on the test r transmissivity is lo		nged packer compliar 11 m2/s.	nce) the interval	

1	1 est 5	um	mary Sheet			
Project:	Oskarshamn site investi	gatior	Test type:[1]			CHi
Area:	Lax	xema	r Test no:			
Borehole ID:	KL	X11/	Test start:			060712 14:3
Test section from - to (m):	3//3 00-3//8	2 00 m	Responsible for			Stephan Roh
` ,			test execution:			
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachesc
Linear plot Q and p			Flow period		Recovery period	
349.		-0.40	Indata		Indata	
KLX11A_343.00-348.00_060712_1_CHIEQ_r	• P section	0.10	p ₀ (kPa) =	3206		
3400 -	• P above • P below • Q		p _i (kPa) =	3222		
	:	0.08	$p_p(kPa) =$		p _F (kPa) =	331
3350 -	'		$Q_p (m^3/s) =$	1.67E-07		
<u>e</u> 3300 -		0.06 =	tp (s) =	1200	t_F (s) =	120
P 76 S L L		10 jection Rate [l/m in]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
g 3250		0.04 II	$EC_w (mS/m)=$			
			Temp _w (gr C)=	11.8		
3200 -	:		Derivative fact.=	0.05	Derivative fact.=	0.0
3150		0.02				
3100	· 	0.00	Results		Results	
0.00 0.20 0.40 0.60 0.80 Elapsed Time	1.00 1.20 1.40 1.80 [h]	1.80		7.05.00		
			Q/s (m ² /s)=	7.8E-09		
Log-Log plot incl. derivates- flo	w perioa		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	6.4E-09		
Elapsed time [h]	10,010,1		Flow regime:	transient	Flow regime:	transient
10		. 3	$dt_1 (min) =$	NA	dt ₁ (min) =	NA
		10 ³	dt ₂ (min) =	NA	$dt_2 (min) =$	NA
			$T (m^2/s) =$		$T (m^2/s) =$	3.6E-0
10 1		300	S (-) =	1.0E-06		1.0E-0
		10 ²	K_s (m/s) =		$K_s (m/s) =$	7.2E-1
		I) II)	$S_s(1/m) =$		$S_s (1/m) =$	2.0E-0
المنافق المناف		(1/0/1	C (m ³ /Pa) =	NA	C (m³/Pa) =	1.3E-1
10 10 10 10 10 10 10 10 10 10 10 10 10 1	•	30 5	$C_D(-) =$	NA	$C_D(-) =$	1.4E-0
· · · · · · · · · · · · · · · · · · ·		10 ¹	ξ (-) =	-2.1	ξ (-) =	-3.
· · · · · · · · · · · · · · · · · · ·						
•		3	$T_{GRF}(m^2/s) =$	6.3E-09	$T_{GRF}(m^2/s) =$	3.6E-0
10 ⁸ 10 ¹	10 ² 10 ³ 10 ⁴		$S_{GRF}(-) =$	1.0E-06		1.0E-0
tD			D_{GRF} (-) =	1.68	D _{GRF} (-) =	1.7
Log-Log plot incl. derivatives- r	ecovery period		Selected repres	entative paran	neters.	
Elapsed time [h]	10,-1 , , , , , , , , , , , , , , , , , ,		dt_1 (min) =	NA	C (m³/Pa) =	1.3E-1
101		10 ³	dt_2 (min) =	NA	$C_D(-) =$	1.4E-0
			$T_T (m^2/s) =$	3.6E-09	ξ(-) =	-3.
		300	S (-) =	1.0E-06		
10 ⁴		•	K_s (m/s) =	7.2E-10		
"	<u>.</u>	10 ²	$S_s (1/m) =$	2.0E-07		
	ALTER AND AND AND AND AND AND AND AND AND AND	- 2	Comments:	•		
a.v.y.	-	30		transmissivity of	f 3.6E-9 m2/s was d	erived from the
10 ⁻¹					se (inner zone), whi	
		10 1	better data and de	rivative quality. T	he confidence range	for the interva
					E-9 to 8.0E-9 m2/s.	Due to the low
//		3	transmissivity no	tresh water head v	vas calculated.	
//						
10 ⁻¹ 10 ⁰	10 ¹ 10 ² 10 ³					

	Test S	ıımr	nary Sheet			
Project:	Oskarshamn site investig	gation	Test type:[1]			CHi
A	1		T 4			
Area:	Lax	kemar	Test no:			1
Borehole ID:	KL	.X11A	Test start:			060712 16:38
Test section from - to (m):	348.00-353	.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	tian Enachescu
Linear plot Q and p			Flow period		Recovery period	j
			Indata		Indata	
3500		0.003	p ₀ (kPa) =	325		
KLX11A_348.00-353.00_060712_1_CHir_Q_r	P section P above P below		p _i (kPa) =	NA		
3450	, "		$p_p(kPa) =$	NA	p _F (kPa) =	NA
3400 -	•:		$Q_p (m^3/s) =$	NA	, ,	
[eds]	•	0.002	tp (s) =	NA	t _F (s) =	NA
3350		te [l/min	S el S [*] (-)=	NA	S el S [*] (-)=	NA
To a 1300 - 1300		njection Rate [l/min]	EC _w (mS/m)=	1.".	J 61 J (-)=	
	<u> </u>	0.001	Temp _w (gr C)=	11.	9	
3250	•	0.001	Derivative fact.=		Derivative fact.=	NA
			Derivative fact.	INA	Derivative fact.	INA
3200						
3150	· · · · · · · · · · · · · · · · · · ·	0.000	Results		Results	
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Elapsed Time [h]				IN I A	Results	1
			Q/s (m^2/s)=	NA		
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	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
Not A	nalysed		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
Not Al	naryscu		$C (m^3/Pa) =$	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	entative para		
			dt_1 (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	,	
			$K_s (m/s) =$	NA		
			S _s (1/m) =	NA		
Not A	nalysed		Comments:	1		Ī
NOT AL			Based on the test r transmissivity is lo		nged packer complian 11 m2/s.	ice) the interval

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHii
Area:	Lav	omar	Test no:			
Alea.	Lax	Ciliai	rest no.			
Borehole ID:	KL	X11A	Test start:			060712 17:56
Test section from - to (m):	353.00-358.	.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	tian Enachescu
Linear plot Q and p			Flow period		Recovery period	j
			Indata		Indata	
3550 KLX11A_353.00-358.00_060712_1_CHir_Q_r	• P section	0.003	p ₀ (kPa) =	329	8	
3500 -	Pabove P below Q		p _i (kPa) =	NA		
			$p_p(kPa) =$	NA	p _F (kPa) =	NA
3450 -	•	0.002	$Q_p (m^3/s) =$	NA		
g g. 34m.		Ē	tp (s) =	NA	t _F (s) =	NA
10 3400 - 10 10 10 10 10 10 10 10 10 10 10 10 10	and the second s	injection Rate [/m in]	S el S [*] (-)=	NA	S el S [*] (-)=	NA
90 H 3350 -	· ·	Injection	EC _w (mS/m)=		` '	
•	<u>.</u>	0.001	Temp _w (gr C)=	12.	0	1
3300	•		Derivative fact.=	NA NA	Derivative fact.=	NA
3250	*					
	•					
3200 0.00 0.10 0.20 0.30 0.40		0.000	Results		Results	<u> </u>
Elapsed Ta	[h]		$Q/s (m^2/s)=$	NA		T
Log-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	NA		
20g 20g piot iiion doi.ivateo ii	on ponou		Flow regime:	transient	Flow regime:	transient
			dt ₁ (min) =	NA	dt ₁ (min) =	NA
			$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	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
				NA		NA
Not Ar	nalysed		$S_s(1/m) =$	NA	$S_s(1/m) =$	NA
			$C (m^3/Pa) =$		$C (m^3/Pa) =$	
			$C_D(-) =$	NA	C _D (-) =	NA
			ξ (-) =	NA	ξ (-) =	NA
			2	NI A	2	NI A
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
			$S_{GRF}(-) =$	NA	S _{GRF} (-) =	NA
lantanulatinat it tot			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres			Tala
			$dt_1 (min) =$	NA	C (m ³ /Pa) =	NA
			$dt_2 (min) =$	NA	C _D (-) =	NA
			$T_T (m^2/s) =$	NA	ξ (-) =	NA
			S (-) =	NA		
			K_s (m/s) =	NA		
			$S_s(1/m) =$	NA		
Not Ar	nalysed		Comments:			
			Based on the test r transmissivity is lo		nged packer complian 11 m2/s.	ice) the interval

	Test Sumr	nary Sheet				
Project:	Oskarshamn site investigation	Test type:[1]			CHi	
Area:	Laxemar	Toot no:				
Alea.	Laxemai	restrio.				
Borehole ID:	KLX11A	Test start:			060713 07:50	
Test section from - to (m):	358.00-363.00 m	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):	0.076	Responsible for				
Linear plot Q and p		test evaluation: Flow period		Recovery period	1 0101010101010101010101010101010101010	
Linear plot Q and p		Indata		Indata		
3550 KLX11A_358.00-363.00_660713_1_CHir_Q_r	P section	p ₀ (kPa) =	3341			
3000	□ P below • ○	p _i (kPa) =	NA			
	<i>,</i>	$p_p(kPa) =$	NA	p _F (kPa) =	NA	
3450	. 2002	$Q_p (m^3/s) =$	NA	Pr (III G)	10.	
[4:8]	•	tp(s) =	NA	t _F (s) =	NA	
Edit services and a service and a services and a services and a service and a services and a services and a services and a services and a service and a servic	• Grand lead consiste of	S el S [*] (-)=	NA	S el S [*] (-)=	NA	
8		S el S (-)= EC _w (mS/m)=		J E J (-)=		
2300	0.001	Temp _w (gr C)=	12.0			
•	•	Derivative fact.=	NA	Derivative fact.=	NA	
2330 -		Solivative lact.		Denvative lact.	''''	
3250	0,000		 			
0.00 0.10 0.20 0.30 0.40 Elapsed Ti	0.50 0.50 0.70 0.20 0.90 ma [h]	Results	<u> </u>	Results		
		Q/s $(m^2/s)=$	NA	results		
Log-Log plot incl. derivates-	low period	$Q/S (m/S) =$ $T_M (m^2/S) =$	NA			
Log-Log plot ilici. derivates-	low period	I _M (m /s)= Flow regime:	transient	Flow regime:	transient	
		dt ₁ (min) =	NA	$dt_1 \text{ (min)} =$	NA	
		$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	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	
		$S_s(11/s) = S_s(1/m) = S_s(1/m)$	NA	$S_s(11/s) = S_s(1/m) = S_s(1/m)$	NA	
Not A	nalysed	$C_s(1/11) = C_s(m^3/Pa) = 0$	NA		NA	
		$C_D(-) =$	NA	$C (m^3/Pa) = C_D (-) =$	NA	
			NA		NA	
		ξ (-) =	INA	ξ (-) =	INA	
		T (" 2")	NA	T (, 2,)	NA	
		$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	NA NA	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	NA NA	
		- 614 ()	NA NA	- 614 ()	NA NA	
Log-Log plot incl. derivatives	- recovery period	D _{GRF} (-) = Selected represe		GIU ()		
Log-Log piot inci. derivatives	- recovery periou	dt ₁ (min) =	NA		NA	
		$dt_1 (min) =$ $dt_2 (min) =$	NA	$C (m^3/Pa) = C_D (-) =$	NA NA	
			NA		NA	
		$T_{T} (m^{2}/s) = S (-) =$	NA NA	ξ (-) =	INA	
			NA NA			
		$K_s (m/s) = S_s (1/m) =$	NA NA			
37	1 1	Comments:	INA	<u> </u>		
Not A	nalysed			ged packer complian 1 m2/s.	ce) the interval	

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site investi	igation	Test type:[1]			CHi
Area:	l a	vemar	Test no:			
Alea.	La	Aciliai	rest no.			
Borehole ID:	KI	_X11A	Test start:			060713 09:14
Test section from - to (m):	383.00-388	3.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	tian Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	<u> </u>
			Indata		Indata	
3800	• Psecton	0.003	p ₀ (kPa) =	357	76	
KLX11A_383.00-388.00_060713_1_CHir_Q_r	• Pabove • P below • Q		p _i (kPa) =	NA		
3750	•		$p_p(kPa) =$	NA	p _F (kPa) =	NA
			$Q_p (m^3/s) =$	NA		
3700		0.002	tp (s) =	NA	t _F (s) =	NA
Ted & 2000	ن نیز	njection Rate [l/min]	S el S [*] (-)=	NA	S el S* (-)=	NA
No.	**********	jecton R	EC _w (mS/m)=		3 51 5 (- <i>j</i> -	
3600 -		0.001	Temp _w (gr C)=	12.	4	
			Derivative fact.=		Derivative fact.=	NA
3550 -			_ calivo laot.=	1""	20	T. " '
				+		+
3500 0.00 0.10 0.20 0.30 0.40	0.50 0.60 0.70 0.80	0.000	Results		Results	
Elapsed Time [h]				NA	Results	1
Log-Log plot incl. derivates- flo	aw nariad		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- no	ow period		$T_M (m^2/s) =$		Flavora sima a	transiant
			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
Not An	alvsed		$S_s (1/m) =$	NA	$S_s (1/m) =$	NA
11007111	arysou		$C (m^3/Pa) =$	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		meters.	
			dt_1 (min) =	NA	C (m ³ /Pa) =	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
			$T_T (m^2/s) =$	NA	ξ (-) =	NA
			S (-) =	NA		
			K_s (m/s) =	NA		
			$S_s(1/m) =$	NA		
Not An	alysed		Comments:			
			Based on the test r transmissivity is lo		nged packer complian 11 m2/s.	ce) the interval

Project: Area:	Oskarshamn site investig	ation	nary Sheet	1			
Area:		J = 1	rest type.[1]			CHir	
, ii oa.	Lay	emar	Test no:	1		1	
	Lui	Ciliai	rest no.			'	
Borehole ID:	KL	.X11A	Test start:			060713 10:28	
Test section from - to (m):	388.00-393	.00 m	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescu	
Linear plot Q and p			Flow period		Recovery period	1	
			Indata		Indata		
3850 KLX11A_388.00-393.00_060713_1_CHir_Q_r	• P section	0.003	p ₀ (kPa) =	3624	1		
3800	P above P below Q		p _i (kPa) =	NA			
	•		$p_p(kPa) =$	NA	p _F (kPa) =	NA	
3750	•	0.002	$Q_p (m^3/s) =$	NA			
(K P 9)	************		tp (s) =	NA	t_F (s) =	NA	
[6d] 9 3700 -		injection Rate [l/min]	S el S [*] (-)=	NA	S el S* (-)=	NA	
9 3000 .	<u> </u>	Injection	EC _w (mS/m)=	1	5 5. 5 ()		
å <u> </u>	•	0.001	Temp _w (gr C)=	12.5	5		
3600	•		Derivative fact.=		Derivative fact.=	NA	
3550	•		Bonvativo naot.		Bonvauvo laot.		
	•			+			
0.00 0.10 0.20 0.30 0.40	0.50 0.60 0.70 0.80	0.000	Results		Results	L	
Elapsed Time [h]				NA	Results	T	
Lag Lag platinal degivetes fla	aw nariad		Q/s $(m^2/s)=$	NA			
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$		Flavy va sima a v	transiant	
			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	
Not An	alvsed		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA	
NOT All	arysea		$C (m^3/Pa) =$	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	entative parar	neters.		
			dt_1 (min) =	NA	$C (m^3/Pa) =$	NA	
			dt_2 (min) =	NA	$C_D(-) =$	NA	
			$T_T (m^2/s) =$	NA	ξ(-) =	NA	
			S (-) =	NA	- \ /		
			$K_s (m/s) =$	NA			
			S _s (1/m) =	NA			
Not An	unlusad		Comments:	1			
NOT All					ged packer complian 1 m2/s.	ce) the interval	

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CHi
A	1	T 4			
Area:	Laxema	r Test no:			
Borehole ID:	KLX11A	Test start:			060713 12:29
Test section from - to (m):	393.00-398.00 n	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachesc
		test evaluation:	*******************		*******************
Linear plot Q and p		Flow period		Recovery period	
3800 1	• 0.002	Indata	2.672	Indata	ı
KLX11A_393.00-398.00_060713_1_CHir_Q_r	• • Psection	p ₀ (kPa) =	3673		
3780	Pabove Pbelow Q	p _i (kPa) =	NA	n /l/Dn) =	NΙΔ
3760		$p_p(kPa) =$	NA	p _F (kPa) =	NA
3740	• 0.002	$Q_p (m^3/s) =$	NA		
(A) 3720	lei u	tp (s) =	NA	t _F (s) =	NA
2 3700	injection state (hm h)	S el S* (-)=	NA	S el S [*] (-)=	NA
2 1700 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	injectio	EC _w (mS/m)=	ļ		
3660	0.001	Temp _w (gr C)=	12.5		
	,	Derivative fact.=	NA	Derivative fact.=	NA
3640					
3620					
3800 0.00 0.10 0.20 0.30 0.40 0.50 Elapsed Tin	Results		Results		
Elapsea I III	te [n]	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
27		$S_s (1/m) =$	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 repres			
<u> </u>	71 * * * *	$dt_1 (min) =$	NA	C (m ³ /Pa) =	NA
		$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ(-) =	NA
		S (-) =	NA	2 () —	
		$K_s (m/s) =$	NA	 	
		$S_s (1/m) =$	NA	 	
NT-/ A	almad	Comments:	<u> </u>	<u> </u>	
Not An	un you			ged packer complian 1 m2/s.	ce) the interval

	Test	Sumi	mary Sheet			
Project:	Oskarshamn site inves	tigatior	Test type:[1]			CHi
Area:	La	axema	Test no:			
Borehole ID:	K	LX11A	Test start:			060713 13:44
Test section from - to (m):	398.00-40	3.00 m	Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	test execution: Responsible for		Crist	ian Enachescu
` ,			test evaluation:			
Linear plot Q and p			Flow period Indata		Recovery period Indata	
4000		0.010	p ₀ (kPa) =	3718		<u> </u>
.	KLX11A_398.00-403.00_060713_1_CHir_Q_r	0.009	$p_0(kl^2a) =$	3717		
3950	P section P above	0.008	$p_p(kPa) =$		p _F (kPa) =	371
3900 -	• P below • Q	0.007		8.33E-08		3/1.
-			$Q_p (m^3/s) =$			120
9850 8850	<u> </u>	0.000 Rate [/min]	tp (s) =		$t_F(s) =$	1.00E-0
600 8		njection Rat	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
E 3800	TV	- 0.004 흔	EC _w (mS/m)=	10.6		
3750		0.003	Temp _w (gr C)=	12.6		0.0
		- 0.002	Derivative fact.=	0.17	Derivative fact.=	0.0
3700 -		0.001				
3650 0.00 0.20 0.40 0.80 0.80	1.00 1.20 1.40	0.000	Results		Results	
Elapsed Tirr	e [h]		Q/s $(m^2/s)=$	3.5E-09		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	2.9E-09		
	-		Flow regime:	transient	Flow regime:	transient
Elapsed time [h] 10, ⁻⁴ 10, ⁻³ 10, ⁻²	10,-1	7,,,,,	$dt_1 (min) =$		$dt_1 \text{ (min)} =$	NA
		3000	$dt_2 (min) =$		dt_1 (min) =	NA
1		10 ³	$T (m^2/s) =$		$T (m^2/s) =$	3.0E-0
1			S (-) =	1.0E-06	` '	1.0E-0
10 ¹		300	$K_s (m/s) =$		$K_s(m/s) =$	5.9E-1
		300	$S_s (11/s) =$		$S_s(11/s) = S_s(1/m) = S_s(1/m)$!
, (1/qD)		10 ²		2.0E-07	,	2.0E-0 2.0E-1
140.	••	(16)	$C (m^3/Pa) =$		$C (m^3/Pa) =$	
10 ⁰		30	C _D (-) =	NA	C _D (-) =	2.1E-0
		-	ξ (-) =	2.7	ξ (-) =	3.
· . ·		10 ¹	2	111	2	
·		-	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 ³ 10 ⁴	10 ⁵ 10 ⁶ 11		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
-			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres			
Elapsed time (t	10, 10, 10, 10, 10, 10, 10, 10, 1	¬	$dt_1 (min) =$	NA	$C (m^3/Pa) =$	2.0E-1
10		300	$dt_2 (min) =$	NA	$C_D(-) =$	2.1E-0
			$T_T (m^2/s) =$	3.0E-09		3.
and it is the same		102	S (-) =	1.0E-06		
10"			K_s (m/s) =	6.0E-10		
		30	$S_s (1/m) =$	2.0E-07		
a		· [kPa]	Comments:			
g / / '+	am ^a	10 10 00-000 [KPa]	The recommended		f 3.0E-09 m2/s was	
م. ٠		00-0	radiai iron anarjor	s of the CHir pha	ise (inner zone), whi	ich shows the
		3			The confidence range	
					E-10 to 6.0E-09 m ²	
		10 ⁰			oth, was derived from on in the Horner plo	
l	,	_	3,712.4 kPa.	ii mie extrapolati	on in the Horner pic	n to a varac of
10 ^d 10 ^f	10 ² 10 ³ 1	104	- ,			

	Test Sumr	nary Sheet				
Project:	Oskarshamn site investigation				CHi	
Area:	l axemar	Test no:			,	
, ii oa.	Editorral	r oot no.				
Borehole ID:	KLX11A	Test start:			060713 15:46	
Test section from - to (m):	423.00-428.00 m	Responsible for test execution:		Stephan Rohs		
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachescı	
Linear plot Q and p		test evaluation: Flow period		Recovery period		
zmour prot q unu p		Indata		Indata		
4100	0.003	p ₀ (kPa) =	3952			
KLX11A_423.00-428.00_060713_1_CHir_Q_r	● Piscolon ▲ Pabove ■ Piscolow	p _i (kPa) =	NA			
4350	• •Q	$p_p(kPa) =$	NA	p _F (kPa) =	NA	
	0.002	$Q_p (m^3/s) =$	NA	, , ,		
€ 4000-		tp (s) =	NA	t_F (s) =	NA	
	· · · · · · · · · · · · · · · · · · ·	S el S [*] (-)=	NA	S el S [*] (-)=	NA	
(4) 000 000 000 000 000 000 000 000 000 0	in ject to a	EC _w (mS/m)=	<u> </u>	<u> </u>	T	
•	0.001	Temp _w (gr C)=	13.0			
		Derivative fact.=	NA	Derivative fact.=	NA	
3900	•	Derivative lact	INA	Derivative fact	INA	
	•					
3850 0.00 0.10 0.20 0.30 0.40 0.50 Elapsed Tim	0.60 0.70 0.80 0.90 1.00	Results		Results		
вархов і п	o la)		IN LA	Results	I	
		Q/s (m ² /s)=	NA			
Log-Log plot incl. derivates- flo	ow period	$T_M (m^2/s) =$	NA	[]	4	
		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	
Not An	alvsed	$S_s (1/m) =$	NA	$S_s (1/m) =$	NA	
11017111	ury 50 d	$C (m^3/Pa) =$	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	
		$T_T (m^2/s) =$	NA	ξ (-) =	NA	
		S (-) =	NA			
		$K_s (m/s) =$	NA			
		$S_s (1/m) =$	NA			
Not An	alvsed	Comments:	-	-	-	
		Based on the test re transmissivity is lov		ged packer complian 1 m2/s.	ce) the interval	

	Test Si	ıımr	nary Sheet			
Project:	Oskarshamn site investig	ation	Test type:[1]			CHi
A	1		Test no:			
Area:	Lax	emar	rest no:			
Borehole ID:	KL	X11A	Test start:			060713 16:59
Test section from - to (m):	428.00-433.	00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p			test evaluation:		Recovery period	
			Indata		Indata	
4250		0.003	p ₀ (kPa) =	399		
KLX11A_428.00-433.00_060713_1_CHir_Q_r	P section P above P below		p _i (kPa) =	NA	†	
4200 -	P below Q		$p_p(kPa) =$	NA	p _F (kPa) =	NA
4150 -	··		$Q_p (m^3/s) =$	NA	P1 (5.)	
le de		0.002	tp(s) =	NA	t _F (s) =	NA
보 4100 -		ate [Ilmin.	S el S [*] (-)=	NA		NA
To de 4100-	***************************************	njection Rate [Ilmin]	S el S (-)= EC _w (mS/m)=	14/7	S el S [*] (-)=	14/7
» od	<u> </u>	· 0.001	, ,	13.	0	
4000	•	3.001	Temp _w (gr C)= Derivative fact.=		Derivative fact.=	NA
	•		Derivative fact.=	NA	Derivative fact.=	NA
3950	•					
3900	<u> </u>	0.000				
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 Elapsed Time [h]			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
NI 4 A	1 1		$S_s(1/m) =$	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 repres			
3 3,	• r · · ·		dt ₁ (min) =	NA	$C (m^3/Pa) =$	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
			$T_T (m^2/s) =$	NA	ξ(-) =	NA
			S (-) =	NA	⇒ (⁻/ −	1.".
			$K_s (m/s) =$	NA	+	<u> </u>
			$S_s(11/s) = S_s(1/m) = S_s(1/m)$	NA NA	 	
	1 1		Comments:	I NA		
Not An	iaiyseu				ged packer complian 1 m2/s.	ce) the interval

	Test Si	umn	nary Sheet			
Project:	Oskarshamn site investig					CHi
A	Lau		T4			
Area:	Lax	emar	Test no:			
Borehole ID:	KL	X11A	Test start:			060714 07:5
Test section from - to (m):	433.00-438.	00 m	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	(0.076	Responsible for		Crist	ian Enachesc
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Linear plot & and p			Indata		Indata	
4300		0.003	p ₀ (kPa) =	4043		
KLX11A_433.00-438.00_060714_1_CHir_Q_r	P section P above P below		p _i (kPa) =	NA		
4250 *	Q		$p_p(kPa) =$	NA	p _F (kPa) =	NA
4200	*****		$Q_p (m^3/s) =$	NA	pr (Kr u)	177
·	, and the second second	0.002	$Q_p (m / s) = $ $tp (s) = $	NA	t _F (s) =	NA
보 4150 -		te [l/min]		NA		NA NA
(64.1 410.4	/	njection Rate [l/min]	S el S* (-)=	INA	S el S [*] (-)=	INA
Down	<u>/</u>	_	EC _w (mS/m)=	10.1	 	
4050	•	- 0.001	Temp _w (gr C)=	13.1		N 1 A
	•		Derivative fact.=	NA	Derivative fact.=	NA
4000	*					
3950	•	- 0.000				
0.00 0.10 0.20 0.30 0.40 Elapsed Tir	0.50 0.60 0.70 0.80 0. ne [h]	90	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
37 . 4			$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
Not Ar	alysed		C (m ³ /Pa) =	NA	C (m³/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			
<u> </u>	• r · · ·		dt ₁ (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	- ۱ / -	
			$K_s (m/s) =$	NA	 	
			$S_s(1/m) =$	NA	 	
āī · ·	1 1		Comments:	1.4/-7	<u> </u>	
Not Ar	larysed				ged packer complian 1 m2/s.	ce) the interval

	Test	Sumr	nary Sheet				
Project:	Oskarshamn site inves	stigation	Test type:[1]			CHi	
Area:	L	.axemar	Test no:			•	
Borehole ID:	I	KLX11A	Test start:			060714 09:17	
Test section from - to (m):	438.00.44	13 00 m	Responsible for			Stephan Rohs	
, ,	430.00-4-		test execution:				
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescı	
Linear plot Q and p			Flow period		Recovery period		
470		- 0.40	Indata		Indata		
	KLX11A_438.00-443.00_060714_1_CHir_Q_r P sec		p ₀ (kPa) =	4090			
4300	• P bde		p _i (kPa) =	4087			
	•	0.08	$p_p(kPa) =$		p _F (kPa) =	408	
4250	and the second s		$Q_p (m^3/s) =$	1.17E-06			
(a) 4200	:	0.06	tp (s) =	1200	t _F (s) =	120	
Pressur	;	n Rate [l/min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
90 (fi 4150	:	0.04 L	EC _w (mS/m)=				
°	· · · · · · · · · · · · · · · · · · ·		Temp _w (gr C)=	13.2			
4100			Derivative fact.=	0.09	Derivative fact.=	0.0	
4050	·	0.02					
4000 0.00 0.20 0.40 0.60	0.80 1.00 1.20 1.40	0.00	D		D 14		
U.DJ U.20 U.40 U.80 U.80 1.00 1.20 1.40 1.80 Elapsed Time [h]		1.60	Results		Results		
			Q/s $(m^2/s)=$	5.7E-08			
Log-Log plot incl. derivates-	-		$T_M (m^2/s)=$	4.7E-08			
Elapsed	time [h]	.10,1	Flow regime:	transient	Flow regime:	transient	
10 2			dt_1 (min) =	1.42	$dt_1 (min) =$	0.8	
			dt_2 (min) =	14.60	dt_2 (min) =	7.9	
		30	$T (m^2/s) =$	1.4E-07	$T (m^2/s) =$	1.9E-0	
000000000000000000000000000000000000000		10 1	S (-) =	1.0E-06	S (-) =	1.0E-0	
10 '		10	$K_s (m/s) =$	2.7E-08	$K_s (m/s) =$	3.8E-0	
,	•	. 5	$S_s(1/m) =$	2.0E-07	$S_s(1/m) =$	2.0E-0	
Ф. (1/2)	4	3 (min	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	2.4E-1	
-		100	$C_D(-) =$	NA	$C_D(-) =$	2.6E-0	
10"		10	ξ(-) =		ξ(-) =	15.	
:			S (-) -	0.7	S (-) -	10.	
		0.3	- , 2, ,	2 8⊑ 08	T (21)	NA	
	· · · · · · · · · · · · · · · · · · ·	10 15 10 1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$		
10 ¹¹ 10 ¹²	10 ^{13'} 10 ^{14'}	10 15 10	$S_{GRF}(-) =$	1.0E-06		NA	
lantanulatinat (C. 1			D _{GRF} (-) =		D _{GRF} (-) =	NA	
Log-Log plot incl. derivative	• •		Selected represe	*******************			
Elapsed to 10,-3 10,-3 10,-2	me [h]		$dt_1 (min) =$		$C (m^3/Pa) =$	2.4E-1	
			$dt_2 (min) =$		C _D (-) =	2.6E-0	
		300	$T_T (m^2/s) =$	1.9E-07		15.	
			S (-) =	1.0E-06			
10 1		10 ²	K_s (m/s) =	3.8E-08			
· · · ·			$S_s (1/m) =$	2.0E-07			
, bo, po		30 KPal	Comments:				
• 1		95 p-p0, (p-p0); [kPa			f 1.9E-7 m2/s was d		
10	•	101			se, which shows the		
÷	A CONTRACTOR OF THE PARTY OF TH				ence range for the in		
	ma	3			E-8 to 5.0E-7 m2/s. oth, was derived from		
+			-	-	on in the Horner plo		
10 102	103 104	10 ⁵ 10 ⁰	4,087.3 kPa.	c carapolan	on in the Horner pic	u varue or	
10 ¹ 10 ²	10 10 10 YCD	10	I ' - '''				

	Test S	umi	nary Sheet			
Project:	Oskarshamn site investi	gation	Test type:[1]			Р
Area:	Lax	kemar	Test no:			1
D 1 1 1D	1/1	V44A	T - 1 - 1 - 1			000711111
Borehole ID:	KL	.X11A	Test start:			060714 11:06
Test section from - to (m):	442.00-447	'.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p	1		test evaluation: Flow period		Recovery period	
			Indata		Indata	
4400	*Double	0.003	p ₀ (kPa) =	4133		
	7.00_060714_1_PI_Q_r		p _i (kPa) =	4147		
4350			$p_p(kPa) =$	4357	p _F (kPa) =	4150
. \	• •	0.002	$Q_p (m^3/s) =$	NA		
4300	•		tp (s) =	10	t _F (s) =	3840
[Fe/3]	•	Rate [I/m	S el S [*] (-)=	NA	S el S [*] (-)=	1.00E-06
0 0 E	•	njection Rate [l/min]	EC _w (mS/m)=		3 61 3 (-)-	
4200	•	0.001	Temp _w (gr C)=	13.3		
	***********		Derivative fact.=	NA	Derivative fact.=	0.0
4150			Donvativo laot.		Donvativo laot.	0.0
4100		0.000	Results		Results	
Elapsed Time (h)			$Q/s (m^2/s)=$	NA		1
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	NA		
-og -og plot men den vates .	ponou		Flow regime:	transient	Flow regime:	transient
			dt ₁ (min) =	NA	dt ₁ (min) =	0.9
			$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	5.33
			, ,	NA		1.2E-10
			$T (m^2/s) = S (-) =$	NA	$T (m^2/s) = S (-) =$	1.0E-06
			$K_s (m/s) =$	NA	9()	2.4E-1
				NA	$K_s (m/s) =$	2.4E-1
Not A	nalysed		$S_s(1/m) =$		$S_s(1/m) =$	
			$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	3.8E-1
			$C_D(-) =$	NA	$C_D(-) =$	4.2E-03
			ξ (-) =	NA	ξ (-) =	0.2
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	1.2E-10
			$S_{GRF}(III/S) =$	NA	$S_{GRF}(III/S) =$	1.0E-06
			$D_{GRF}(-) =$	NA	D _{GRF} (-) =	2.23
Log-Log plot incl. derivatives	recovery period		Selected represe			
Bapsed time [$dt_1 \text{ (min)} =$	0.95		3.8E-1
10 1 10 1	. 10 -2	T ₁₀ °	$dt_2 \text{ (min)} =$		$C_D(-) =$	4.2E-03
			3	1.2E-10		0.2
		0.3	$T_T (m^2/s) = S (-) =$	1.0E-06		0.4
	The state of the s	0.3	$K_s (m/s) =$			
10 °		10 -1		2.4E-11		
	The state of the s	,	S _s (1/m) = Comments:	2.0E-07		<u> </u>
Ba da	The state of the s			tronomicai i	£1.2E 102/-	dominad for /1
· · · · · · · · · · · · · · · · · · ·	•	Decomodul			f 1.2E-10 m2/s was (inner zone). The co	
10 -1		10 -2			mated to be 8.0E-11	
			m2/s. The static pre		be extrapolated due	
		0.003	transmissivity.			
10 ⁻¹ 10 ⁰	10 ¹ 10 ² 10	0 3	I			

	Test S	Sumi	nary Sheet				
Project:	Oskarshamn site invest	igatior	Test type:[1]			CHi	
Area:	La	ixemai	Test no:			•	
Borehole ID:	K	LX11A	Test start:	060714 13:16			
T. (447.00.45	0.00					
Test section from - to (m):	447.00-45	2.00 m	Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescu	
Linear plot Q and p			Flow period		Recovery period	1	
			Indata		Indata	.,	
KLX11A_447.00-452.00_060714_1_CHir_Q_r	******	0.03	p ₀ (kPa) =	4175			
4400	P section P above P below		p _i (kPa) =	4176			
	•		$p_p(kPa) =$	4377	p _F (kPa) =	417:	
4350	:	0.02	$Q_p (m^3/s) =$	2.17E-07			
E .	:		tp (s) =	1200	t _F (s) =	120	
e 4300 8	:	Rate [l/m	S el S [*] (-)=		S el S [*] (-)=	1.00E-0	
6. 6. 4250	i Magazini	njection Rate [l/min]	EC _w (mS/m)=		3 61 3 (-)-		
8	**	- 0.01	Temp _w (gr C)=	13.3			
4200	<u> </u>		Derivative fact.=		Derivative fact.=	0.0	
4150			Derivative fact	0.09	Derivative fact.	0.0	
	<u></u>						
4100 0.00 0.20 0.40 0.60 Elspsed	0.80 1.00 1.20 1.40	0.00	Results		Results		
			Q/s $(m^2/s)=$	1.1E-08			
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	8.7E-09			
Flansed time	- That		Flow regime:	transient	Flow regime:	transient	
10 ² 10, ⁻⁴ 10, ⁻³ 10	10,1110,0	7	$dt_1 \text{ (min)} =$	1.95	dt ₁ (min) =	NA	
			$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	NA	
		300	$T (m^2/s) =$		$T (m^2/s) =$	6.3E-0	
•		İ	. ,		` '		
101		10 ²	0 ()	1.0E-06		1.0E-0	
			K_s (m/s) =		$K_s (m/s) =$	1.3E-0	
		30	$S_s (1/m) =$		$S_s(1/m) =$	2.0E-0	
1/4/0	•	1/0/1	C (m ³ /Pa) =	NA	C (m³/Pa) =	1.3E-1	
10 ⁰		101	C _D (-) =	NA	$C_D(-) =$	1.5E-0	
	****	_	ξ (-) =	3.5	ξ (-) =	33.2	
		3					
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁴ 10 ⁵	10 ⁶ 10 ⁷ 1	0 ⁸ 10 ⁰	S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA	
10 tD	10 10 1	U	D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery period		Selected represe	entative paran			
Flansed time	[h]		dt_1 (min) =	1.95	C (m ³ /Pa) =	1.3E-1	
10 4 10,4	10,-210,-1	7	$dt_2 \text{ (min)} =$		$C_D(-) =$	1.5E-0	
		300		1.4E-08		3.9	
	R. B. Karakanananan .		$T_T (m^2/s) = S(-) = $	1.4E-06		3.	
/3, i	a constant	10 ²	9 ()			<u> </u>	
10	<u></u>		K _s (m/s) =	2.8E-09			
/,	Ì	30	S _s (1/m) =	2.0E-07			
od 'd	· /	po) [kPa]	Comments:				
	:\	101 0			f 1.4E-08 m2/s was		
10"	·	1			se, which shows the		
	and the same	3			range for the interva 08 m2/s. The static p		
		1	is estimated to be c				
			measured at transdi	ucer depth, was a	derived from the CH	Iir phase using	
		10 ⁰	measured at transdestraight line extrap		derived from the CH rner plot to a value		

	Test S	umi	mary Sheet			
Project:	Oskarshamn site investi	gatior	Test type:[1]			CHi
Area:	Lax	xema	Test no:	1		
Borehole ID:	KL	X11A	Test start:			060714 15:01
Tost section from to (m):	452.00.457	' 00 m	Dognonsible for			Stonban Dobo
Test section from - to (m):	452.00-457	.00 11	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
KLX11A_452.00-457.00_060714_1_CHir_Q_r	P section	0.030	p ₀ (kPa) =	4224		
4450	Pabove Pelow Q	0.025	p _i (kPa) =	4222		
4400	· •	+ 0.025	$p_p(kPa) =$	4430	p _F (kPa) =	422
4350	•	0.020	$Q_p (m^3/s) =$	2.83E-07		
£ 4000	en en en en en en en en en en en en en e		tp (s) =	1200	t _F (s) =	1200
4250	57.1. January	Rate [/min]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
of the state of th		Injection	EC _w (mS/m)=		0010()	
8 d200		0.010	Temp _w (gr C)=	13.4		
4150	•		Derivative fact.=		Derivative fact.=	0.0
4100		0.005	Derivative lact	0.04	Derivative fact.	0.0.
4050						
4000		0.000	Results		Results	
0.00 0.20 0.40 0.00 Elapsed Tim				4.05.00		
			Q/s (m ² /s)=	1.3E-08		
Log-Log plot incl. derivates- flo			$T_{\rm M} ({\rm m}^2/{\rm s}) =$	1.1E-08		
Bapsed time [h]		1	Flow regime:	transient	Flow regime:	transient
10			dt_1 (min) =		$dt_1 (min) =$	1.3
1	•	300	dt_2 (min) =		dt_2 (min) =	2.8
	•	10 ²	$T (m^2/s) =$		$T (m^2/s) =$	8.2E-08
	-	10	S (-) =	1.0E-06	S (-) =	1.0E-0
10			$K_s (m/s) =$	4.4E-09	$K_s (m/s) =$	1.6E-0
,(gb)		30	$S_s(1/m) =$	2.0E-07	$S_s(1/m) =$	2.0E-0
(d)/db//db/	٠	101 (91)	C (m ³ /Pa) =	NA	C (m³/Pa) =	1.1E-1
-	* * *	1/0.0	C _D (-) =	NA	C _D (-) =	1.2E-03
100			ξ(-) =	5.4	ξ (-) =	33.3
·		3	2 ()		3 ()	
	•	10°	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
6 7		ŀ	$S_{GRF}(-) =$	NA	$S_{GRF}(III / S) =$	NA
10 ⁸ 10 ⁷ tD	10 ⁸ 10 ⁹ 10 ¹⁰	-	$D_{GRF}(\cdot) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
			$dt_1 \text{ (min)} =$	2.28		1.1E-1
102 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,		1	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C (m^3/Pa) = C_D (-) =$	1.1L-1
		300				1.2E-0.
	Parameter Control of the Control of		$T_T (m^2/s) =$	2.2E-08		5.4
	·•	10 ²	S (-) =	1.0E-06		
101	<i>*</i>	ŀ	$K_s (m/s) =$	4.4E-09		
	λ	30 -	$S_s (1/m) =$	2.0E-07		
og .	<u>,</u>	00. IKP	Comments:			
	À .	10 ¹			f 2.2E-8 m2/s was de	
10		-			se, which shows bett	
	are a comment	3			al transmissivity is e ressure measured at	
		1			hase using straight l	
		10 ⁰			a value of 4,220.6 kl	
10 ^d 10 ^f	10 ² 10 ³ 10	ł		-		
tD/CD						

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investi	gation	Test type:[1]			CHi
A == 0.	l a		Test no:			
Area:	Lax	kemar	rest no:			
Borehole ID:	KL	X11A	Test start:	060714 16:45		
Test section from - to (m):	457.00-462	2.00 m	Responsible for test execution:	Stephan Rohs		
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	tian Enachescu
Linear plot Q and p			test evaluation:		Recovery period	
Emear plot & and p			Indata		Indata	
4500	1 0	0.003	p ₀ (kPa) =	427		T
KLX11A_457.00-462.00_060714_1_CHir_Q_r	P section P above P below		p _i (kPa) =	NA	-	
4450			$p_p(kPa) =$	NA	p _F (kPa) =	NA
			·	NA	ρ _F (Ki α) –	INA
4400 ·		0.002	$Q_p (m^3/s) = tp (s) =$	NA	t _r (s) =	NA
(add ann at 4,100.	, , , , , , , , , , , , , , , , , , ,	ite [[/minj	tp (e)		·F (0)	
8 4300 -		njection Rate [l/min]	S el S* (-)=	NA	S el S [*] (-)=	NA
400 t.	/	_	EC _w (mS/m)=			<u> </u>
		0.001	Temp _w (gr C)=	13.		1
4250	•		Derivative fact.=	· NA	Derivative fact.=	NA
	•					
4200		1,,,,,,				
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.50 Elapsed Time [N]			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) =	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 Ar	nalysed		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 repres			
J 0,	> r		dt ₁ (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	- ۱ ا د	T
			$K_s (m/s) =$	NA		
			$S_s(11/s) = S_s(1/m) = S_s(1/m)$	NA	1	1
3T - 4	1		Comments:	1'''	1	<u> </u>
Not Ar	nalysed			genones (mest	nged packer complian	uca) the interval
			transmissivity is lo			

Project: Area:	Oskarshamn site investig	ation	nary Sheet	ı			
Area:			rest type.[1]			CHir	
	Lax	emar	Test no:		1		
Borehole ID:			Test start:	060714 18:01			
Test section from - to (m):	462.00-467.	00 m	Responsible for test execution:			Stephan Rohs	
Section diameter, 2·r _w (m):	C	0.076	Responsible for test evaluation:		Crist	tian Enachescu	
Linear plot Q and p			Flow period		Recovery period	1	
			Indata		Indata		
4550	• Psecton	0.003	p ₀ (kPa) =	4317	7		
KLX11A_462.00-467.00_060714_1_CHir_Q_r	Pabove P below Q		p _i (kPa) =	NA			
4500 -			$p_p(kPa) =$	NA	p _F (kPa) =	NA	
	•		$Q_p (m^3/s) =$	NA	, ,	1	
4450 ·	.•.	0.002	tp (s) =	NA	t _F (s) =	NA	
9 44m		tate [/m.	S el S [*] (-)=	NA	S el S [*] (-)=	NA	
Ledi Powinds P	Approximates or .	injection Rate [*m in]	S ei S (-)= EC _w (mS/m)=		J El J (-)=	T. " \	
80 Q	.]	0.001	Temp _w (gr C)=	13.5		1	
<u> </u>	/	a.vvl	Derivative fact.=			NA	
4300	•		Derivative fact.=	NA	Derivative fact.=	NA	
	•						
4280		0.000					
0.00 0.10 0.20 0.30 0.40 Elapsed Tin	0.60 0.60 0.70 0.80 0.5 ne[h]	90	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	$C_s(1/H) = C_s(1/H)$	NA	
			, ,	NA	$C_D(-) =$	NA	
			-6()				
			ξ (-) =	NA	ξ (-) =	NA	
			- (2()	NA	- , 2, ,	NA	
			$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$		
			S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA	
Landanulation 2010			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log-Log plot incl. derivatives-	recovery perioa		Selected represe		<u>-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1</u>	Tala	
			$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA	
			$dt_2 (min) =$	NA	$C_D(-) =$	NA	
			$T_T (m^2/s) =$	NA	ξ (-) =	NA	
			S (-) =	NA			
			K_s (m/s) =	NA			
			$S_s(1/m) =$	NA			
Not An	alysed		Comments:				
			Based on the test re transmissivity is lo		ged packer complian I m2/s.	ce) the interval	

	Test Su	mm	ary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHir
Area:	Lave	mar -	Test no:			1
Borehole ID:	KLX	11A	Test start:			060715 08:16
Test section from - to (m):	483.00-488.0		Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.	.076	Responsible for test evaluation:		Crist	tian Enachescu
Linear plot Q and p			Flow period		Recovery period	1
			Indata		Indata	
4750	. 0.0	003	p ₀ (kPa) =	4509		
KLX11A_483.00-488.00_060715_1_CHir_Q_r	P section P shove P below	l	p _i (kPa) =	NA		
4700	†	l	$p_p(kPa) =$	NA	p _F (kPa) =	NA
4650	:		$Q_p (m^3/s) =$	NA	, ,	
	. 100	- 6	tp (s) =	NA	t _F (s) =	NA
Tead of works and a deposit of	·,	- S	S el S [*] (-)=	NA	S el S [*] (-)=	NA
P	***************************************	jection R	EC _w (mS/m)=		3 61 3 (-)-	1
4550			Temp _w (gr C)=	13.8		-
		L	Derivative fact.=		Derivative fact.=	NA
4500		ŀ	Derivative lact	INA	Derivative lact	INA
	•	ŀ				
4450	0.50 0.60 0.70 0.80 0.90	000	Results		Results	
Elspsed Time [h]				NIA	Results	1
			$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- flo	ow perioa		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
Not An	alvead	L	S _s (1/m) =	NA	$S_s(1/m) =$	NA
Not All	arysea	•	C (m³/Pa) =	NA	$C (m^3/Pa) =$	NA
			C _D (-) =	NA	$C_D(-) =$	NA
		ä	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.	
		L	dt ₁ (min) =	NA	$C (m^3/Pa) =$	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
		ſ	$T_T (m^2/s) =$	NA	ξ (-) =	NA
		Ī	S (-) =	NA		
		ſ	$K_s (m/s) =$	NA		
			$S_s (1/m) =$	NA		
Not An	alysed	Ī	Comments:			
			Based on the test re transmissivity is lo		ged packer complian I m2/s.	ce) the interval

Project: Oskarshamn site investigation Test type.[1]		Test S	limi	nary Sheet			
Borehole ID: KLX11A Test start:	Project:	Oskarshamn site investi	gation	Test type:[1]			CHi
Borehole ID: KLX11A Test start:	A	1		T 1			
Test section from - to (m):	Area:	Lax	xemai	rest no:			
Section diameter, $2\tau_w$ (m): 0.076 Responsible for test evaluation: Cinear plot Q and p Flow period Indata Indat	Borehole ID:	KL	X11A	Test start:	060715 09:29		
Continue	Test section from - to (m):	488.00-493	3.00 m		Stephan Rohs		
Flow period	Section diameter, 2·r _w (m):		0.076	Responsible for	Cristian Enachescu		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Linear plot Q and p					Recovery period	Y
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	zmodi prot d dila p						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	4850 KLX11A 488.00-493.00 060715 1 CHir Q r		0.003		455		1
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		[≜] P above					
Q ₀ (m³/s)= NA	4750					p _F (kPa) =	NA
Section Sect				•		F1 (- /	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$:				t _r (s) =	NA
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	9 4650 ·		ate [l/mir				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8 4600 ·		jection R		177	S €1 S (-)=	
Derivative fact. NA Deriv		·	-		12	9	1
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $:	1				NΔ
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	4500	•		Derivative fact	· INA	Derivative lact.=	INA
Results Results $O/S (m^2/S) = NA$ $O/S (m^2/S) = $	4450 -	:					
		· · · · · · · · · · · · · · · · · · ·		Decelle		Describe	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			0.90		Tana	Results	
Flow regime: transient Flow regime: transient $dt_1 \text{ (min)} = NA $ $dt_1 \text{ (min)} = NA $ $dt_2 \text{ (min)} = NA $							
$ \frac{dt_1 (\text{min}) = NA}{dt_2 (\text{min}) = NA} \frac{dt_1 (\text{min}) = NA}{dt_2 (\text{min}) = NA} $ $ \frac{dt_2 (\text{min}) = NA}{dt_2 (\text{min}) = NA} \frac{dt_2 (\text{min}) = NA}{dt_2 (\text{min}) = NA} $ $ \frac{dt_2 (\text{min}) = NA}{T (m^2/s) = NA} \frac{NA}{T (m^2/s) = NA} $ $ \frac{S (\cdot) = NA}{S (\cdot) = NA} \frac{S (\cdot) = NA}{S (\text{m/s}) = NA} $ $ \frac{S_{s} (1/m) = NA}{S_{s} (1/m) = NA} \frac{S_{s} (1/m) = NA}{S_{s} (1/m) = NA} $ $ \frac{C (m^3/Pa) = NA}{C_{D} (\cdot) = NA} \frac{S_{s} (1/m) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $ $ \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} \frac{S_{GRF} (\cdot) = NA}{S_{GRF} (\cdot) = NA} $	Log-Log plot incl. derivates-	flow period					
				_		_	transient
Not Analysed Not Analysed				` ,		` '	
$S(\cdot) = NA \qquad S(\cdot) = NA \\ K_s(m/s) = NA \qquad K_s(m/s) = NA \\ K_s(m/s) = NA \qquad K_s(m/s) = NA \\ C(m^3/Pa) = NA \qquad C(m^3/Pa) = NA \\ C_D(\cdot) = NA \qquad C_D(\cdot) = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \\ \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA $ $\frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA $ $\frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA $ $\frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac{\xi(\cdot)}{\xi(\cdot)} = NA \qquad \frac$						dt_2 (min) =	
$Not \ Analysed \ \ \ K_s \ (m/s) \ = \ NA \ K_s \ (m/s) \ = \ NA \ S_s \ (1/m) \ = \ (1/m) \ ($				$T (m^2/s) =$	NA	$T (m^2/s) =$	NA
$S_{s}\left(1/m\right) = NA \qquad S_{s}\left(1/m\right) = NA \\ C\left(m^{3}/Pa\right) = NA \qquad C\left(m^{3}/Pa\right) = NA \\ C_{D}\left(-\right) = NA \qquad C_{D}\left(-\right) = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \\ \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA $ $\frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad \frac{\xi\left(-\right)}{\xi\left(-\right)} = NA \qquad $				S (-) =	NA	S (-) =	NA
Not Analysed $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				$K_s (m/s) =$	NA	$K_s (m/s) =$	NA
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	No.4 A			$S_s(1/m) =$	NA	$S_s(1/m) =$	NA
$\xi\left(\cdot \right) = NA \qquad \xi\left(\cdot \right) = NA$ $T_{GRF}(m^{2}/s) = NA \qquad T_{GRF}(m^{2}/s) = NA$ $S_{GRF}(\cdot) = NA \qquad S_{GRF}(\cdot) = NA$ $D_{GRF}\left(\cdot \right) = NA \qquad D_{GRF}\left(\cdot \right) = NA$ $Log-Log plot incl. derivatives- recovery period \frac{dt_{1}\left(\min \right)}{dt_{2}\left(\min \right)} = NA \qquad C\left(m^{3}/Pa \right) = NA dt_{2}\left(\min \right) = NA \qquad C_{D}\left(\cdot \right) = NA T_{T}\left(m^{2}/s \right) = NA \qquad \xi\left(\cdot \right) = NA T_{T}\left(m^{2}/s \right) = NA \qquad \xi\left(\cdot \right) = NA S\left(\cdot \right) = NA \qquad K_{s}\left(m/s \right) = NA \qquad S_{s}\left(1/m \right) = NA Not Analysed Comments: Based on the test response (prolonged packer compliance) the interpretation of the properties of the$	Not A	marysed		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
$T_{GRF}(m^2/s) = NA \qquad T_{GRF}(m^2/s) = NA$ $S_{GRF}(-) = NA \qquad S_{GRF}(-) = NA$ $D_{GRF}(-) = NA \qquad D_{GRF}(-) = NA$ $Log-Log plot incl. derivatives- recovery period \begin{array}{c ccccccccccccccccccccccccccccccccccc$				C _D (-) =	NA	C _D (-) =	NA
$T_{GRF}(m^2/s) = NA \qquad T_{GRF}(m^2/s) = NA$ $S_{GRF}(-) = NA \qquad S_{GRF}(-) = NA$ $D_{GRF}(-) = NA \qquad D_{GRF}(-) = NA$ $Log-Log plot incl. derivatives- recovery period \begin{array}{ccccccccccccccccccccccccccccccccccc$				ξ(-) =	NA	ξ (-) =	NA
$S_{GRF}(-) = NA \qquad S_{GRF}(-) = NA$ $D_{GRF}(-) = NA \qquad D_{GRF}(-) = NA$ $Log-Log plot incl. derivatives- recovery period $							1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					NA		NA
					NA		NA
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Log-Log plot incl. derivatives	- recovery period			entative para		
$ dt_2 \text{ (min)} = NA \qquad C_D \text{ (-)} = NA $ $ T_T \text{ (m}^2 \text{/s)} = NA \qquad \xi \text{ (-)} = NA $ $ S \text{ (-)} = NA \qquad \qquad \xi \text{ (-)} = NA $ $ S \text{ (-)} = NA \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad $		<u>-</u>					NA
$T_{T} (m^{2}/s) = NA \qquad \xi (-) = NA$ $S (-) = NA$ $K_{s} (m/s) = NA$ $S_{s} (1/m) = NA$ Not Analysed $Comments:$ Based on the test response (prolonged packer compliance) the integral of the set of t							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$K_{s} (m/s) = NA$ $S_{s} (1/m) = NA$ Not Analysed Comments: Based on the test response (prolonged packer compliance) the interpretation of the set of						- (/	
$S_{s} (1/m) = NA$ Not Analysed Comments: Based on the test response (prolonged packer compliance) the integral of the process of the proc							†
Not Analysed Comments: Based on the test response (prolonged packer compliance) the interpretation of the compliance of the interpretation of the compliance of the compliance of the interpretation of the compliance of the comp							
Based on the test response (prolonged packer compliance) the int	NI at A	nalwad			1		<u> </u>
transmissivity is lower than 1.0E-11 m2/s.	TVOL 23	marysed					ice) the interval

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	n Test type:[1]			Р
Area:	Laxema	ar Test no:			
Borehole ID:	KI V11	A Test start:			060715 10:47
Borenole ID.	KLXTT	A Test start.			00071510.47
Test section from - to (m):	493.00-498.00 r	n Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.07	6 Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p		Flow period		Recovery period	1
		Indata		Indata	
KLX11A_493.00-498.00_060715_1_P	0.003	p ₀ (kPa) =	4605		
4850	Pabove Pbelow Q	p _i (kPa) =	4613		
	,	$p_p(kPa) =$	4839	p _F (kPa) =	461
4800	• 0002	$Q_p (m^3/s) =$	NA		
e	•	tp (s) =	10	t _F (s) =	150
e 4750 - 156 e	e	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
6. 9. 9. 14700 -	- u	EC _w (mS/m)=		3 61 3 (-)-	
88	. 0001	Temp _w (gr C)=	14.0		
4650 -					0.0
		Derivative fact.=	NA	Derivative fact.=	0.0
4600					
4550 0.00 0.50 1.00 1.50	0,000	Results		Results	
Elapsed T			NA	Results	
landan matimal demissates fl	lann mania d	Q/s $(m^2/s)=$	NA NA		
Log-Log plot incl. derivates- fl	low period	$T_{\rm M} ({\rm m}^2/{\rm s}) =$			
		Flow regime:	transient	Flow regime:	transient
		dt_1 (min) =	NA	$dt_1 (min) =$	0.4
		dt_2 (min) =	NA	dt_2 (min) =	23.0
		$T (m^2/s) =$	NA	$T (m^2/s) =$	2.6E-10
		S (-) =	NA	S (-) =	1.0E-0
		$K_s (m/s) =$	NA	$K_s (m/s) =$	5.2E-1
		$S_s(1/m) =$	NA	$S_s(1/m) =$	2.0E-0
Not A	nalysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.2E-1
		$C_D(-) =$	NA	$C_D(-) =$	1.3E-0
		ξ(-) =	NA	ξ(-) =	1.52 0.
		ς (-) -	14/-1	ς (-) –	1.
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
		$D_{GRF}(-) =$	NA	$D_{GRF}(\cdot) =$	NA
Log-Log plot incl. derivatives-	rocovery period	Selected represe			
Log-Log plot mci. derivatives-	[h]				1 105 1
10 ⁻⁴ 10 ⁻³ Enapsed tille	102	dt ₁ (min) =	0.47	C (m ³ /Pa) =	1.2E-1
1	10.1	$dt_2 (min) =$		$C_D(-) =$	1.3E-0
		$T_T (m^2/s) =$	2.6E-10		1.
	0.03	S (-) =	1.0E-06		
10 0		$K_s (m/s) =$	5.2E-11		
	10 ²	$S_s (1/m) =$	2.0E-07		
	10	© Comments:			
	0.003			f 2.6E-10 m2/s was	
10-1	0.003	radial flow analysis	s of the Pi phase.	The confidence ran	
	10 ⁻³	interval transmissiv			
†	10			pressure could not	be extrapolated
1					
	3E-4	due to the very low	transmissivity.		

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site investi	igation	Test type:[1]			CHi
Area:	La	xemar	Test no:			
Borehole ID:	KI	I Χ 11Δ	Test start:			060715 14:04
borenoie ib.						
Test section from - to (m):	498.00-503	3.00 m	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachesc
Linear plot Q and p			test evaluation:		Recovery period	
· · · · · · · · · · · · · · · · · · ·			Indata		Indata	
5000		0.010	p ₀ (kPa) =	4655		
4950	KLX11A_498.00-503.00_060715_1_CHir_Q_r		p _i (kPa) =	4652		
4900		0.008	$p_p(kPa) =$	4893	p _F (kPa) =	465
			$Q_p (m^3/s) =$	8.33E-08		
4850			tp (s) =	1200	t _F (s) =	120
To 100 100 100 100 100 100 100 100 100 10		Injection Rate [Vmin]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
8 4750 -	P section P above P below	ction Ra	EC _w (mS/m)=		3 61 3 (-)-	
:	• Q	0.004 =	Temp _w (gr C)=	14.0		
4700			Derivative fact.=		Derivative fact.=	0.0
4650		0.002	Berivative raot.	0.10	Derivative fact.	0.0
4600	·			+		
4550		0.000	Results		Results	
0.00 0.20 0.40 0.60 Elapsed Ti	0.80 1.00 1.20 1.40 me [h]			2.45.00		
landan olak koaladank oakaa di			Q/s (m ² /s)=	3.4E-09		
Log-Log plot incl. derivates- fle	ow period		$T_M (m^2/s) =$	2.8E-09	E1	
10, ⁻⁴ 10, ⁻³ Elapsed time [h	10,1	,	Flow regime:	transient	Flow regime:	transient
10 2			$dt_1 (min) =$		$dt_1 (min) =$	NA
		10 ³	$dt_2 (min) =$		$dt_2 (min) =$	NA
			$T (m^2/s) =$		$T (m^2/s) =$	2.5E-0
		300	S (-) =	1.0E-06		1.0E-0
101	A STATE OF THE PROPERTY OF THE	1	K_s (m/s) =	7.5E-10	K_s (m/s) =	5.1E-1
((db/)		10 ²	$S_s(1/m) =$	2.0E-07	$S_s(1/m) =$	2.0E-0
/qD/ (1		1/q)* [m	$C (m^3/Pa) =$	NA	C (m³/Pa) =	2.2E-1
10 ⁰		30 1/q.($C_D(-) =$	NA	C _D (-) =	2.4E-0
	er e e gantare de		ξ (-) =	2.8	ξ (-) =	1.0
	a a a a a a a a a a a a a a a a a a a	10 ¹				
	And the transfer of the second		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10 104	10 ⁵ 10 ⁶ 10 ⁷	73	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
10 ³ 10 ⁴ tD	10° 10° 10′		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected repres	sentative paran		
10, ³ 10, ² Elapsed time [dt ₁ (min) =	NA	C (m ³ /Pa) =	2.2E-1
10 10 10 10 10 10 10 10 10 10 10 10 10 1		7	$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	2.4E-0
		300	$T_T (m^2/s) =$	2.5E-09		1.
			S (-) =	1.0E-06]
		10 ²	$K_s (m/s) =$	5.0E-10		
10°			$S_s(11/s) =$ $S_s(1/m) =$	2.0E-07		
\(\frac{1}{2}\).		30 2		2.0L-07		
ad of the state of		·p0)* [kF	The recommends.	1 transmissi-it-	F2 5E 0 m2/a 1	arized from 4
// :		10 10 1KPal	radial flow analysis		f 2.5E-9 m2/s was do se (inner zone), whi	
10-1	· · ·	å	radiai iron anaryo		he confidence range	
		3			E-10 to 5.0E-09 m ²	
					oth, was derived from	
		10 ⁰			on in the Horner plo	

	Test	Sumi	mary Sheet			
Project:	Oskarshamn site inves	stigatior	Test type:[1]			CHi
Area:	L	_axemaı	Test no:			
Borehole ID:		KLX11A	Test start:			060715 15:53
Test section from - to (m):	503.00-5	08 00 m	Responsible for			Stephan Rohs
. ,	303.00-3		test execution:			·
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p			Flow period		Recovery period	
5000 T		T 0.050	Indata		Indata	
KLX11A_503.00-508.00_060715_1_CHir_Q_r	P section P above P below		p ₀ (kPa) =	4700		
4950	• Pbelov • Q		p _i (kPa) =	4705		
4900 -	1	0.040	$p_p(kPa) =$		p _F (kPa) =	473
	: "		$Q_p (m^3/s) =$	2.83E-07		
중 4850 - 소 조	\	0.030 E	tp (s) =	1200	t_F (s) =	120
2 de de de de de de de de de de de de de	<u>i</u> \	Injection Rate [limin]	S el S [*] (-)=	1.00E-06	S el S* (-)=	1.00E-0
Q 4750.		= 0.000 = 0.000 =	$EC_w (mS/m)=$			
- 4/50		,	Temp _w (gr C)=	14.1		
4700	***************************************	0.010	Derivative fact.	= 0.1	Derivative fact.=	0.0
4850		-				
4600 .00 0.20 0.40 0.80 0.80 1.00	120 1.40 1.60 1.80	0.000	Results		Results	
Elapsed Time	s (n)		Q/s $(m^2/s)=$	1.5E-08		
Log-Log plot incl. derivates- flo	w period		$T_M (m^2/s) =$	1.3E-08		
Element time (h)	-		Flow regime:	transient	Flow regime:	transient
10 ² 10 ³ 10 ² Elapsed unite [ii]	·1		$dt_1 (min) =$	1.76	$dt_1 (min) =$	NA
			$dt_2 (min) =$		$dt_2 \text{ (min)} =$	NA
		300	$T (m^2/s) =$		$T (m^2/s) =$	1.1E-0
	•		S (-) =	1.0E-06	` '	1.0E-0
10 1		10 ²	$K_s (m/s) =$		$K_s(m/s) =$	2.2E-0
· · · · · · · · · · · · · · · · · · ·	and the state of t		$S_s(1/m) =$	-	$S_s(11/s) = S_s(1/m) = S_s(1/m)$	2.2L-0 2.0E-0
indp. (14t D)		30			. , ,	
J ^d D	i	. (1/a)	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	7.7E-1
10 0	· · · · · · · · · · · · · · · · · · ·	10 ¹	$C_D(-) =$	NA 1.0	$C_D(-) =$	8.5E-0
• • •	<u> </u>	-	ξ (-) =	1.3	ξ (-) =	1.:
	.*	3	2	7.05.00	2	
	•		$T_{GRF}(m^2/s) =$	7.9E-09	GRE(III 70)	NA
10 ³ 10 ⁴	10 10 10 6	107	$S_{GRF}(-) =$	1.0E-06		NA
·			D_{GRF} (-) =		D _{GRF} (-) =	NA
Log-Log plot incl. derivatives- ı				sentative paran		
Bapsed time (h)	10, 10, 10, 10, 10, 10, 10, 10, 10, 10,		dt_1 (min) =	NA	C (m³/Pa) =	7.7E-1
10"		300	dt_2 (min) =	NA	$C_D(-) =$	8.5E-0
			$T_T (m^2/s) =$	1.1E-08		1.3
· ·		10 ²	S (-) =	1.0E-06		
10 °		Ī	K_s (m/s) =	2.2E-09		
		30	$S_s (1/m) =$	2.0E-07		
		, KPa	Comments:	•	-	
- *****		101 6	The recommende	d transmissivity of	f 1.1E-08 m2/s was	derived from th
10-11		- 00-0	radial flow analys	sis of the CHir pha	se, which shows the	better data and
		3			range for the interva	
					08 m2/s. The static p	
+		10°			derived from the CH	
<u> </u>			straight line extra	polation in the Ho	rner plot to a value	01 4,08 / .3 KPa.
10 ⁶ 10 ¹ tD/CD	10 ² 10 ³	104	I			

	Test Si	ımı	mary Sheet			
Project:	Oskarshamn site investig	atior	Test type:[1]			CHi
Area:	Lax	ema	Test no:			
Borehole ID:	KL)	X11A	Test start:			060715 18:09
Test section from - to (m):	508.00-513.	00 m	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	(0.076	Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
. KLX11A_508.0	0-513.00_060715_1_CHir_Q_r	0.05	p ₀ (kPa) =	4747		
4950	P below Q		p _i (kPa) =	4751		
· : :		0.04	$p_p(kPa) =$	4950	p _F (kPa) =	4740
4900			$Q_p (m^3/s) =$	2.67E-07		
Te de de de de de de de de de de de de de		0.03 E	tp (s) =	1200	t _F (s) =	720
2 9999		Rate []/m	S el S [*] (-)=		S el S* (-)=	1.00E-0
4800 -		njection Rate	EC _w (mS/m)=		3 61 3 (-)-	
å line		0.02 -	Temp _w (gr C)=	14.2		
4750			Derivative fact.=	-	Derivative fact.=	0.0
4700		0.01	Derivative lact.	0.1	Derivative fact.	0.0
	7					
0.00 0.50 1.00 1.50 Elapsed	200 250 3.00 Time [h]	0.00	Results	•	Results	•
			Q/s $(m^2/s)=$	1.3E-08		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	1.1E-08		
_ Elapsed time	(h)		Flow regime:	transient	Flow regime:	transient
101 1013 1012			$dt_1 (min) =$	1.68	dt_1 (min) =	0.7
		0 ²	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	2.0
_	Contract of the Contract of th		$T (m^2/s) =$		$T (m^2/s) =$	1.3E-0
· · · · · · · · · · · · · · · · · · ·		80	S (-) =	1.0E-06	. , ,	1.0E-0
100	•		$K_s (m/s) =$		$K_s(m/s) =$	2.6E-0
		10 ¹	- ,			
(1)		min/II	$S_s(1/m) =$		$S_s (1/m) =$	2.0E-0
1,40	•	1,(9).	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.8E-1
10-1		1/0	$C_D(-) =$	NA	$C_D(-) =$	2.0E-0
	1	0 ⁰	ξ (-) =	-1.5	ξ (-) =	-0.3
).3	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	1.3E-0
100 101	10 ² 10 ³ 10 ⁴		$S_{GRF}(-) =$	1.0E-06	$S_{GRF}(-) =$	1.0E-0
1C			D_{GRF} (-) =	1.9	D_{GRF} (-) =	1.80
Log-Log plot incl. derivatives	recovery period		Selected repres	entative paran	neters.	
Elapsed time 10, ⁴ , 10, ³ , 10, ²	h]10 ⁻¹ 10 ⁰		dt_1 (min) =	0.70	C (m³/Pa) =	1.8E-1
10 4	30	00	dt_2 (min) =	2.08	C _D (-) =	2.0E-0
			$T_T (m^2/s) =$	1.3E-08	ξ(-) =	-0.
	10	3	S (-) =	1.0E-06		
			$K_s (m/s) =$	2.6E-09		
10 1	30	0	$S_s(1/m) =$	2.0E-07		
a]		ŘΡaj		0,		
a .	10	∞ p-p0, (p-p0)' [kPa	The recommender	transmissivity o	f 1.3E-08 m2/s was	derived from th
poere	in the state of	p-p0, (radial flow analys		se, which shows the	
10	30 A A A A A A A A A A A A A A A A A A A				ange for the interval	
.//.			is estimated to be	7.0E-09 to 3.0E-0	08 m2/s (this range i	ncludes the
	10	1	derived transmissi	vity from the CH	i phase). The static p	oressure
					derived from the CH	
100 101					rner plot to a value	

	Test S	umr	nary Sheet			
Project:	Oskarshamn site investi	gation	Test type:[1]			CHi
Area:	Lax	cemar	Test no:			3
Borehole ID:	KL	X11A	Test start:			060808 15:30
Test section from - to (m):	513.00-518	.00 m	Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):		0 076	test execution: Responsible for		Criet	ian Enachescu
Section diameter, 21 _w (III).		0.076	test evaluation:		Crist	ian Enachesci
Linear plot Q and p	•		Flow period		Recovery period	
			Indata		Indata	
5100		T 2.0	p ₀ (kPa) =	4797		
: KLX11A_513.00-518.00	₄ P above	1.8	p _i (kPa) =	4795		
	P below	1.6	$p_p(kPa) =$	4996	p _F (kPa) =	479
5000 -		- 1.4	$Q_p (m^3/s) =$	1.93E-05		
[편 보 4950 -	1	1.2 =	tp (s) =	1200	t _F (s) =	120
P ress		1.0 R	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
9		1.2 1.2 1.2 1.2 1.0 1.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	EC _w (mS/m)=	1.002 00	3 61 3 (-)=	1.002 0
4850 -		0.6	Temp _w (gr C)=	14.3		
4800		- 0.4	Derivative fact.=		Derivative fact.=	0.0
4750	•	0.2	Derivative fact.	0.02	Derivative lact.	0.0
0.00 0.20 0.40 0.60 0.80		1.80				
Elapsed	fTime [h]		Results		Results	
			$Q/s (m^2/s) =$	9.4E-07		
Log-Log plot incl. derivates- f	low period		$T_M (m^2/s) =$	7.8E-07		
			Flow regime:	transient	Flow regime:	transient
10, ⁻⁴ 10, ⁻³ Bapsed tim	10,-2	7	dt_1 (min) =	0.64	dt_1 (min) =	1.1
SKB Laxemar / KLX11A 513.00-518.00 / CH	Flow Dm Version 2.14b (c) Golder Associates		$dt_2 (min) =$	16.82	$dt_2 (min) =$	8.73
			$T (m^2/s) =$	1.5E-06	$T (m^2/s) =$	4.0E-0
101	0 000 00 000	10°	S (-) =	1.0E-06	` '	1.0E-0
	: :		$K_s (m/s) =$		$K_s (m/s) =$	8.0E-0
			S _s (1/m) =		S _s (1/m) =	2.0E-0
		10 ⁻¹ [[wim] (b/t)	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	4.9E-10
1/dD		1/4, (1/4)	$C_D(-) =$	NA	$C_D(-) =$	5.4E-0
	and the second second					19.
10 ⁻¹	T= 1.48E-06 m2/s	10-2	ξ (-) =	2.0	ξ (-) =	19.
FLOWMODEL: Homogeneous BOUNDARY CONDITIONS Constant pressure WELL TYPE SUPER-OSITION TYPE: No superposition RLOT TYPE: Liggleg	S= 1.00E-06 - n= 2.00E+00 - s= 2.59E+00 -		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
10.5 10.6	10 ⁷ 10 ⁸ 10	10-3	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
t	D.		D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
Log-Log plot incl. derivatives	recovery period		Selected represe			
0 01	7.		dt₁ (min) =		$C (m^3/Pa) =$	4.9E-10
Elapsed time 10,-3 10,-2	[h]		$dt_2 \text{ (min)} =$		$C_D(-) =$	5.4E-0
10 ² SKB Laxemar / KLX11A 513.00-518.00 / OHir	Flow Dim Version 2.14b (c) Golder Associates			4.0E-06		19.9
1		300	$T_{T} (m^{2}/s) = S (-) =$	4.0E-06		19.3
			■ (2)(-) =	■ LUE-UN		
101		10 ²	K _s (m/s) =	8.0E-07		
		10 ²	$K_s (m/s) = S_s (1/m) =$			
			K _s (m/s) = S _s (1/m) = Comments:	8.0E-07 2.0E-07		
		10 ²	$K_s (m/s) = S_s (1/m) = Comments:$ The recommended	8.0E-07 2.0E-07 transmissivity of	f 4.0•10-6 m2/s was	
		10° [6-b] (04-d) (K_s (m/s) = S_s (1/m) = $Comments$: The recommended the radial flow anal	8.0E-07 2.0E-07 transmissivity of ysis of the CHir	phase, because it sh	ows the most
10 ³ RLOWMODEL : Homogeneous	· · · · · · · · · · · · · · · · · · ·	10° [6-b] (04-d) (K _s (m/s) = S _s (1/m) = Comments: The recommended the radial flow anal clear derivative stal	8.0E-07 2.0E-07 transmissivity of ysis of the CHir bilization. The c	phase, because it sh onfidence range for	ows the most the interval
10 ⁻⁷	\$2 488E18 ms/bs	10° [6-b] (04-d) (K _s (m/s) = S _s (1/m) = Comments: The recommended the radial flow anal clear derivative stal transmissivity is est	8.0E-07 2.0E-07 transmissivity of ysis of the CHir bilization. The ctimated to be 2.0	phase, because it shoonfidence range for DE-6 to 6.0E-6 m2/s.	ows the most the interval The static
10 ³ RLOW MODEL : Homogeneous	\$\frac{1}{2} \frac{1}{2} \frac	10 ² Real.(00-0) odd	K _s (m/s) = S _s (1/m) = Comments: The recommended the radial flow anal clear derivative stal transmissivity is est pressure measured	8.0E-07 2.0E-07 transmissivity of ysis of the CHir bilization. The c timated to be 2.0 at transducer departments.	phase, because it sh onfidence range for	ows the most the interval The static m the CHir

		Test S	Sumr	nary Sheet			
Pro	ject:	Oskarshamn site invest	igation	Test type:[1]			CHi
Are	a:	La	xemar	Test no:			
Bor	rehole ID:	KI	LX11A	Test start:			060808 17:47
Tes	st section from - to (m):	518.00-523	3.00 m	Responsible for	1		Stephan Rohs
Sec	ction diameter, 2·r _w (m):		0.076	test execution: Responsible for		Criet	ian Enachescu
	` ,		0.070	test evaluation:		Onst	Idii Endenesee
Lin	ear plot Q and p			Flow period		Recovery period	
				Indata		Indata	
5100	KLX11A_518.00-523.00_060808_1_CHir_Q_r	• P sec	etion 8	p ₀ (kPa) =	4844		
5050		P abo		p _i (kPa) =	4842		
		.0	16	$p_p(kPa) =$		p _F (kPa) =	484
5000	:	:		$Q_p (m^3/s) =$	5.12E-05		
ante (KPa)	. :	İ	- 5 [m]	tp (s) =	1200	t_F (s) =	120
Pres	•	•	s	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
90 4900 4900	•		njectio	EC _w (mS/m)=			
4850				Temp _w (gr C)=	14.4		
			2	Derivative fact.=	0.10	Derivative fact.=	0.0
4800	-		1				
4750 0	: 0.00 0.20 0.40 0.60 0.80 1.00 Elapsed Tin		2.00	Results		Results	
					0.55.00		1
				Q/s $(m^2/s)=$	2.5E-06		
LO	g-Log plot incl. derivates- flo	w perioa		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	2.1E-06		
	Bapsed time [h]	.10 ⁻² 10 ₋ ⁻¹ 10 ₋ ⁰		Flow regime:	transient	Flow regime:	transient
10 ²		.10,	ь	$dt_1 (min) =$		$dt_1 (min) =$	1.0
-	518.00-323.007 CH	(c) Golder Associates	10°	$dt_2 (min) =$		$dt_2 (min) =$	9.1
- 1				$T (m^2/s) =$		$T (m^2/s) =$	4.7E-0
			0.3	S (-) =	1.0E-06		1.0E-0
10 ¹	•			$K_s (m/s) =$	1.1E-06	$K_s (m/s) =$	9.4E-0
ja l			10 ⁻¹ =	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
(db)			(1/q)' [min/]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.2E-0
100	• •		0.03 🕏	$C_D(-) =$	NA	$C_D(-) =$	1.3E-0
	-			ξ(-) =	5.4	ξ(-) =	3.3
1	FLOW MODEL : Homogeneous POLINDARY CONDITIONS: Constant pressure	T= 5405.06 mg/	10 ⁻²				
ł	FLOW MODEL : Horrogeneous BOUNDARY CONDITIONS: Constant pressure WELL TYPE: Source SUFFERSTRONTYPE: No superposition FLOTTYPE: Log-log	T= 5.40E-06 m2/ S= 1.00E-06 - n= 2.00E+00 - s= 5.40E+00 -	*	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA
1	10 ⁸ 10 ⁹	10 ¹⁰ 10 ¹¹ 10	0.003	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	NA
	tD			D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
	g-Log plot incl. derivatives- r	ecovery period		Selected represe			
Loc	, 3 p			dt_1 (min) =	1.04	C (m ³ /Pa) =	1.2E-0
Log					1.54	,	1.3E-0
Log	10,-4 Bapsed time [h]	10;-210;-110;	ື່ ປ້	dt_a (min) =	Q 11	((-) =	∪∟∪
10 ²	Bapsed time [h]	10; ⁻² 10; ⁻¹ 10; Flow Dim Version 2.14b (c) Golder Associates	103	$dt_2 (min) =$ $T_{-}(m^2/n) =$	9.11 4.7F-06	D ()	2
10 ²		10; ² 10; ¹ 10 Flow Dim Version 2.14b (c) Golder Associates	103	$T_T (m^2/s) =$	4.7E-06	ξ (-) =	3.
10 ²		. 10-2 10-1 10. 10 10 10 10 10 10 10 10 10 10 10 10 10	103	$T_T (m^2/s) = S (-) =$	4.7E-06 1.0E-06	ξ (-) =	3.
10 ²	. 10," . 10," . 10," . 5KB Laxemer /KLX11A . 518.00-523.00 / CHr	.10-2 10-1 10 Play Dan Version 2.14b (c) Colder Associates	300	$T_T (m^2/s) = S (-) = K_s (m/s) =$	4.7E-06 1.0E-06 9.4E-07	ξ (-) =	3.3
10 2	. 10," . 10," . 10," . 5KB Laxemer /KLX11A . 518.00-523.00 / CHr	10; ² 10; ³ 10 Plow Den Version 2146 (c) Galder Association	300 10 ²	$T_T (m^2/s) = S (-) = K_s (m/s) = S_s (1/m) = S_s (1$	4.7E-06 1.0E-06	ξ (-) =	3.3
10 2	. 10," . 10," . 10," . 5KB Laxemer /KLX11A . 518.00-523.00 / CHr	10-2 10-1 10. Row Den Version 2.14b (c) Golder Associates	300 110 ² [e ₂] (004	$T_T (m^2/s) = S (-) = K_s (m/s) = S_s (1/m) = Comments:$	4.7E-06 1.0E-06 9.4E-07 2.0E-07	ξ (-) =	
10 ²	. 10," . 10," . 10," . 5KB Laxemer /KLX11A . 518.00-523.00 / CHr	10-2 10-1 10. Row Den Version 2.14b (c) Codder Associates	300 10 ²	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended	4.7E-06 1.0E-06 9.4E-07 2.0E-07	ξ (-) = f 4.7E-6 m2/s was do	erived from the
10 2	SKB Laxemer (KLX11A 518.00-523.00 / CHF	100-2 100-1 10 Row Dm Version 2.14b (c) Colder Associates	300 110 ² [e ₂] (004	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended radial flow analysis	4.7E-06 1.0E-06 9.4E-07 2.0E-07 transmissivity of of the CHir pha	ξ (-) = f 4.7E-6 m2/s was do use, which shows the	erived from the
10 ²	SKB Laxemer (KLX11A 518.00-523.00 / CHF	And the state of t	300 [kg/] (0d-d) 0d-d	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended radial flow analysis derivative quality.	4.7E-06 1.0E-06 9.4E-07 2.0E-07 transmissivity of of the CHir pha	ξ (-) = f 4.7E-6 m2/s was do use, which shows the range for the interva	erived from the better data and I transmissivity
10 ²	. 10," . 10," . 10," . 5KB Laxemer /KLX11A . 518.00-523.00 / CHr	And the state of t	300 [kg/] (0d-d) 0d-d	$T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ Comments: The recommended radial flow analysis derivative quality. is estimated to be 2	4.7E-06 1.0E-06 9.4E-07 2.0E-07 transmissivity of of the CHir pha The confidence is 0.0E-6 to 7.0E-6	ξ (-) = f 4.7E-6 m2/s was do use, which shows the	better data and I transmissivity ssure measured

		mary Sheet			
Project:	Oskarshamn site investigation				CHi
Area:	Laxema	r Test no:			
Borehole ID:	IZI V447	Took otomb			000000 00.00
Rotenole ID:	KLX11 <i>I</i>	Test start:			060809 08:08
Test section from - to (m):	523.00-528.00 n	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0.076	Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	· ; · ; · ; · ; · ; · ; · ; · ; · ; · ;
5200 T	- Passing ▼ 0.020	p ₀ (kPa) =	4884		
KLX11A_523.00-528.00_060809_1_CHir_Q_r	▲ P above	p _i (kPa) =	4885		
5150 -	• P below • Q	$p_p(kPa) =$	5086	p _F (kPa) =	488
5100 ·	0.015	$Q_p (m^3/s) =$	1.43E-07	, , ,	
포 물 5050 -	· [i/m]	$\operatorname{tp}(s) =$	1200	t _F (s) =	120
2 5000 -	- 0.010 A Rate (//min)	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
Fe d 5050	nijection	EC _w (mS/m)=	1.002 00	3 61 3 (-)-	1.002 0
200 PM		Temp _w (gr C)=	14.5		
4900	0.005	Derivative fact.=		Derivative fact.=	0.0
4850		Delivative lact.	0.12	Derivative fact.	0.0
0.00 0.20 0.40 0.60 0.80					
Elapsed T	ime [h]	Results		Results	
		Q/s $(m^2/s)=$	7.0E-09		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	5.8E-09		
		Flow regime:	transient	Flow regime:	transient
10 ⁻² 10 ⁻³ Bapsed time [t	0,2	dt_1 (min) =	2.47	dt_1 (min) =	NA
SKB Laxemar / KLX11A 523.00-528.00 / CH	Flow Dim Version 2.14b (c) Golder Associates 10 3	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	NA
	•	$T (m^2/s) =$		$T (m^2/s) =$	4.2E-0
<u> </u>	300	S (-) =	1.0E-06	` '	1.0E-0
101	Constitution of the Consti	$K_s (m/s) =$		$K_s(m/s) =$	8.4E-0
	10 ²				
(((((((((((((((((((1	$S_s(1/m) =$		$S_s(1/m) =$	2.0E-0
144		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	4.6E-1
100	-10 ¹	$C_D(-) =$	NA	$C_D(-) =$	5.1E-0
FLOWMODEL : Homogeneous	T= 9.07E.09 m2/s S= 1.00E.06 m2/s n= 2.00E-00 - s= 3.7Fe.00	ξ (-) =	3.8	ξ (-) =	32.
F.OWNCOEL : Harageneous BOANARY CONDITIONS Constaint pressure WELTYFE SUBBROSTION TYPE: No superposition FLOTTYFE : Log-log	n= 200E+00 - s= 3.77E+00 - 3	T (==2/=)	NA	T (==2/=)	NA
10 ⁴ 10 ⁵	10 ⁶ 10 ⁷ 10 ⁸	$T_{GRF}(m^2/s) = S_{GPF}(-) =$	NA	$T_{GRF}(m^2/s) =$ $S_{GPF}(-) =$	NA
tD		- SIRI ()	NA	-014 ()	NA
	was a superior d	DGRF ()		D _{GRF} (-) =	INA
Log-Log plot incl. derivatives-	recovery period	Selected represe	2+2+2+2+2+2+2+2+272+2+2+2+2+		1054
Eapsed time [h]	dt ₁ (min) =	NA	C (m ³ /Pa) =	4.6E-1
10 ² SKB Laxemar / KLX11A 523.00-528.00 / CHr	Flow Dim Version 2.14b (c) Golder Associates	$dt_2 (min) =$	NA	C _D (-) =	5.1E-0
	300	$T_T (m^2/s) =$	4.2E-08		32.
	102	S (-) =	1.0E-06		
10 ⁻¹	No. of the last of	$K_s (m/s) =$	8.4E-09		
· *//.	30	$S_s (1/m) =$	2.0E-07		
od od	*	Comments:			
;/	101			f 4.2E-8 m2/s was d	
100				ise, which shows the	
	3			range for the interva	
T OWNED TO			DEXto70EQ	m //c The static nre	ssure measured
FLOW MODEL : Homogeneous BOUNDARY CONDITIONS: Constant rate WELL TYPE : Source SUPERPOSITION TYPE: Ananwal time	C= 4.63E.11 mg/Pa T= 4.24E.08 m2/s S= 1.00E.06 - s= 3.26E+01 - 10.0	is estimated to be 1			
FLOWINCOE : Homogeneous PROMAINE CONTINUES Constant rate WELL TYPE: Some SUFFERS SITE of TYPE: Agarwal time RLOT TYPE: Log-log	C= 4.63E-11 m8PB T= 4.24E-80 m2/s S= 12.8E-01 - 10.0 m = 2.00E+00 - 10.0 m = 2.00E+00 - 10.0 m = 2.00E+00 - 10.0	at transducer depth,	was derived fro	om the CHir phase ut to a value of 4,881	sing straight

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio	n Test type:[1]			CHi
Area:	Laxema	r Test no:			1
Borehole ID:	KLX11	A Test start:			060809 10:08
Test section from - to (m):	528.00-533.0	0 Responsible for test execution:			Stephan Rohs
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	
Emour plot & una p		Indata		Indata	
5200 KLX11A_528.00-533.00_060809_1_CHir_Q_r •	0.10 • P section	p ₀ (kPa) =	4931	maata	
5150	Pabove Pelow	$p_0(kl a) =$ $p_i(kPa) =$	4932		
	- Q 0.08			- (I-D-)	402
5100 -	•	$p_p(kPa) =$		p _F (kPa) =	493
호 5050 -		$Q_p (m^3/s) =$	7.83E-07		
5 5000 · · · · · · · · · · · · · · · · ·	: e	tp (s) =		t_F (s) =	1200
e :	nip et lon nip et long	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
4950	10.04 \$	EC _w (mS/m)=			
4900 -	`	Temp _w (gr C)=	14.6		1
	- 0.02	Derivative fact.=	0.10	Derivative fact.=	0.0
4850					
4800	0.80 1.00 1.20 1.40 Time [h]				
		Results		Results	
		Q/s $(m^2/s)=$	3.8E-08		
Log-Log plot incl. derivates- f	low period	$T_M (m^2/s) =$	3.2E-08		
		Flow regime:	transient	Flow regime:	transient
Elapsed time [t] p, ² , , , , , , , , , , , , , , , , , , ,	dt_1 (min) =	1.09	dt_1 (min) =	0.53
10 ² SKB Laxermar / KLX11A 528.00-533.00 / CHi	FlowDim Version 2.14b (c) Golder Associates	$dt_2 (min) =$		$dt_2 \text{ (min)} =$	1.72
	10 2			, ,	6.8E-0
	:	$T (m^2/s) =$		$T (m^2/s) =$	
	30	S (-) =	1.0E-06	, ,	1.0E-0
10 1		K_s (m/s) =		$K_s (m/s) =$	1.4E-0
	10 1	$S_s(1/m) =$	2.0E-07	$S_s(1/m) =$	2.0E-0
(db)	:	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	2.3E-1
	3	^(a) C _D (-) =	NA	$C_D(-) =$	2.5E-03
10 6		ξ(-) =	5.0	ξ(-) =	5.3
	10 °				
FLOW MODEL : Homogeneous BOUNDARY CONDITIONS: Constant pressure WELL TYPE : Source SUPERPOSITION TYPE : No superposition	T= 6.70E-08 m2/s S= 1.00E-06	$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	3.1E-0
PLOT TYPE : Log-log	n= 2.00E+00 - 0.3 s= 5.03E+00 -	$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E-0
10 ⁸ 10 ⁷	10 ⁸ 10 ⁹ 10 ¹⁰	D _{GRF} (-) =	NA	D _{GRF} (-) =	3.0
Log-Log plot incl. derivatives	recovery period	Selected represe		, ,	
gg p	у решен	dt_1 (min) =	1.09		2.3E-1
Elapsed time	n)	. ,			
10 SKB Laxemar / KLX11A 528.00-533.00 / CHir	FlowDim Version 2.14b (c) Golder Associates			-0()	2.5E-03
		$T_T (m^2/s) =$	6.7E-08		5.0
ا ممعور		S (-) =	1.0E-06		
· · · · ·	. 10 ²	$K_s (m/s) =$	1.3E-08		
· · · · · · · · · · · · · · · · · · ·		$S_s(1/m) =$	2.0E-07		
	· · · · · · · · · · · · · · · · · · ·	Comments:	•		
				C (7-10 0 2/2 2	derived from
R 10 5	10 1 0	The recommended	transmissivity of	1 0. /•10-8 mz/s was	
B 10°		The recommended the radial flow anal		phase, which shows	
B 10 9	10, 8	the radial flow anal	ysis of the CHir		the better data
10 7	T 6.825-00 m2/s S 1.006-00 m2/s C 2.286-11 m3/Pa	the radial flow anal and derivative qual	ysis of the CHir ity. The confiden	phase, which shows	the better data erval
TLOW MODEL: Two shell composite GUNDARY COMDITIONS Constant the SUPERPOSITION FOR Expansed in the Superposition NYPE : Rayment from the Superposit	T 6,805-00 m2/s S 100-00 m2/s C 2,005-11 m3/Ps rd 2,005-00 - 100 n3/Ps	the radial flow anal and derivative qual- transmissivity is est pressure measured	ysis of the CHir ity. The confident simated to be 3.0 at transducer dep	phase, which shows nee range for the inte 10-8 to 9.0•10-8 m oth, was derived from	the better data erval 2/s. The static m the CHir
TO TO TWO MODEL. Two shell composite BOUMDARY CONDITIONS Constant rate	T 6.825-08 m2/s S 1.005-00 - 2/s S 1.005-00 - 2 C 2.265-11 mSP-9 2 2.055-10 mSP-9 2 2.055-1	the radial flow anal and derivative qual- transmissivity is est pressure measured	ysis of the CHir ity. The confident simated to be 3.0 at transducer dep	phase, which shows nee range for the inter- 10-8 to 9.0•10-8 m	the better data erval 2/s. The static m the CHir

	Test Su	mn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHi
Area:	Laxe	mar	Test no:			
Borehole ID:	KI X	11A	Test start:			060809 12:4
Test section from - to (m):	533.00-538.0		Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):	0.	.076	Responsible for		Crist	ian Enachesc
Linear plot Q and p			test evaluation: Flow period		Recovery period	
, , , , , , , , , , , , , , , , , , ,			Indata		Indata	
			p ₀ (kPa) =	4983		
5250 KLX11A_533.00-538.00_060809_1_CHir_Q_r	• P section 0.20		p _i (kPa) =	4981		
5200 -	• P below • Q 0.16		$p_p(kPa) =$	5180	p _F (kPa) =	498
= 5150 ·	0.10	4	$Q_p (m^3/s) =$	1.67E-06	,	
e jk Pa	• 0.1-	min.	tp (s) =		t _F (s) =	120
F 5150 - 100	0.12	Rate [l/min]	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
5050	- 0.08	mjection F	EC _w (mS/m)=	1.002 00	3 61 3 (-)-	1.002 0
5000	- 0.00	e Inje	Temp _w (gr C)=	14.6		
	- 0.04	4	Derivative fact.=		Derivative fact.=	0.0
4950	- 0.02	2	Derivative lact.	0.07	Derivative fact.	0.0
0.00 0.20 0.40 0.60 0.80	1.00 1.20 1.40 1.60	0				
Elapsed Til			Results		Results	
			Q/s $(m^2/s)=$	8.2E-08		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} (m^2/s) =$	6.8E-08		
	p		Flow regime:	transient	Flow regime:	transient
Bapsed time (h)			dt ₁ (min) =		dt ₁ (min) =	NA
SKB Laxemar / KLX11A 533.00-538.00 / CH	Flow Dim Version 2 14b (c) Golder Associates		$dt_2 (min) =$		$dt_2 \text{ (min)} =$	NA
	30)	3		$T (m^2/s) =$	3.7E-0
•• •		.1	T (m2/s) = S (-) =	1.0E-06	` '	1.0E-0
101	10	,	$K_s (m/s) =$		$K_s(m/s) =$	7.4E-0
• • • • • • • • • • • • • • • • • • • •						
days	•	o 'q. (1/q)" [min/l]	$S_s(1/m) =$		S _s (1/m) =	2.0E-0
ž]	. [10]	7/q, (1/k	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	3.0E-1
100			C _D (-) =	NA o =	C _D (-) =	3.3E-0
FLOW MODEL : Homogeneous	T= 1.68E.07 m2/s	3	ξ (-) =	6.5	ξ (-) =	21.
FLOWMODEL: Homogeneous BOUNDARY CONDITIONS: Constant pressure WELL TYPE SUFFEY: No superposition FLOT TYPE: Log bg	T= 1.68E,07 m2/s S= 1.00E,00 - n= 2.00E,00 - s= 6.45E,00 -	.d	$T_{GRF}(m^2/s) =$	2 8F-08	$T_{GRF}(m^2/s) =$	NA
10 ⁸ 10 ⁹ tD	10 10 10 11 10 12	<i>'</i>	$S_{GRF}(-) =$	1.0E-06		NA
			D _{GRF} (-) =		D _{GRF} (-) =	NA
Log-Log plot incl. derivatives-	recovery period		Selected represe			
Log Log plot mon denvanves	ecovery period		dt_1 (min) =	NA		3.0E-1
10.21 Bapsed time [h]			$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$C (m^3/Pa) = C_D (-) =$	3.3E-0
SKB Laxemar / KLX11A 533.00-538.00 / CHr	Flow Dim Version 2.14b (c) Golder Associates		2	3.7E-07		21.
***************************************	300		$T_T (m^2/s) = $ $S (-) = $	1.0E-06		
·	10 ²		$K_s (m/s) =$	7.4E-08		1
10 1			$S_s(11/s) =$ $S_s(1/m) =$	2.0E-07		1
	30	<u>[</u>	Comments:	2.UL-U/		<u>I</u>
£ /		>p0. (pp0)' [kPa]		tronomissit	f 2 7E 7 m2/== 1	arived from 4 -
10 0	101	p-pc			f 3.7E-7 m2/s was do se, which shows the	
	The state of the s				ange for the interva	
FLOW MODEL: Homogeneous BOUNDARY CONDITIONS: Constant rate WELLTYFE Source SUFFENCION TYPE: Again wal time PLOT TYPE: Log-log	C= 2.96E-11 m3/Pa T= 3.74E-07 m2/s S= 1.00E-06 = s= 2.13E-01 = n= 2.00E-00 =				m2/s. The static pre-	
PLOTTYPE : Log-log	s= 2.13E+01 - n= 2.00E+00 -	,	at transducer depth,	, was derived fro	m the CHir phase u	sing straight
10 ¹ 10 ² tD(CD	103 104 105		line extrapolation in	n the Horner plo	t to a value of 4,980	.7 kPa.

			Test S	Sumr	nary Sheet			
Project:		Oskarsham	ın site invest	tigation	Test type:[1]			СН
Area:			La	axemar	Test no:			
Borehole ID	:		K	LX11A	Test start:	+		060809 14:4
Test section	from - to (m):		538.00-	543.00	Responsible fo	r		Stephan Roh
	` ,				test execution:		0:1	
Section dian	neter, 2·r _w (m):			0.076	Responsible fo test evaluation:		Crist	ian Enachesc
Linear plot	Q and p				Flow period		Recovery period	
					Indata		Indata	
5300 KLX11A_538.00	0-543.00_060809_1_CHir_Q_r		P sectio	0.008 on	p_0 (kPa) =	5028		
5250 -			P above P below	e	p _i (kPa) =	5032		
5200	1		-Q	+ 0.006	$p_p(kPa) =$	5274	p _F (kPa) =	503
				0.000	$Q_p (m^3/s) =$	3.33E-08		
면 보 5150 · 인	į	:		l/m in]	tp (s) =	1200	t_F (s) =	120
enses 5100 -		:		Rate [//min]	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
90				Injection	$EC_w (mS/m) =$		0 0.0 ()	
5050 •				Ξ	Temp _w (gr C)=	14.7		
5000 -			:	0.002	Derivative fact	.= 0.11	Derivative fact.=	0.0
4950		-÷.			20	. , , , , ,	2011144110 14041	0.0
4900 0.00 0.20	0.40 0.60 0.80	1.00 1.20	1.40 1.60	0.000				
	Elapsed Ti	me [h]			Results		Results	
					Q/s $(m^2/s)=$	1.4E-09		
Log-Log pl	ot incl. derivates- fl	ow period			$T_M (m^2/s) =$	1.1E-09		
					Flow regime:	transient	Flow regime:	transient
	Bapsed time [h]	10,°	10,1	-	dt_1 (min) =	2.17	dt_1 (min) =	NA
10 ² SKB Laxemar / KLX 538.00-543.00 / CH	(11A	•	Flow Dim Version 2.14b (c) Golder Associates		dt ₂ (min) =	17.26	dt_2 (min) =	NA
		•		-	` , '		, ,	
I				1,000	$T (m^2/s) =$	1.1E-09	$T (m^2/s) =$	4.1E-0
1		<u>.</u>		3000	$T (m^2/s) = S (-) =$		$T (m^2/s) = S (-) =$	
101		ī		3000	S (-) =	1.0E-06	S (-) =	1.0E-0
101		·			$S(-) = K_s(m/s) =$	1.0E-06 2.1E-10	$S(-)$ = $K_s(m/s)$ =	1.0E-0 8.1E-1
1017		**************************************		103	$S(-) = K_s(m/s) = S_s(1/m) =$	1.0E-06 2.1E-10 2.0E-07	$S(-) = K_s(m/s) = S_s(1/m) =$	1.0E-0 8.1E-1 2.0E-0
10 ¹ .				10 ³	$S (-) = K_s (m/s) = S_s (1/m) = C (m^3/Pa) =$	1.0E-06 2.1E-10 2.0E-07 NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) =$	1.0E-0 8.1E-1 2.0E-0 1.9E-1
101				10 ³	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) =$	1.0E-06 2.1E-10 2.0E-07 NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) =$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0
(cha saha				300 [him]	$S (-) = K_s (m/s) = S_s (1/m) = C (m^3/Pa) =$	1.0E-06 2.1E-10 2.0E-07 NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) =$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0
100		**************************************	T= 1.055.09 m25 S= 1.005.60 - = 2.005.00 -	300 [him]	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = $	1.0E-06 2.1E-10 2.0E-07 NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = $	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0
FOWINGS FOW	:Hornogeneous DOS Zonstain pressure DES: No superposition .og-log		S= 1.00E-06 - n= 2.00E+00 - s= 9.94E-01 -	300 [Mail (Dir.) 2) 1 10 ²	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = T_{GRF}(m^2/s) =$	1.0E-06 2.1E-10 2.0E-07 NA NA 1.0	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = T_{GRF}(m^2/s) =$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10.
10°	:Homogeneous DOX Zorbarn pressure TE: No superposition	104	S= 1.00E-06 - n= 2.00E+00 -	300 [Mail (Dir.) 2) 1 10 ²	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = $	1.0E-06 2.1E-10 2.0E-07 NA NA 1.0	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = $	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10.
FOWNERS WILLIAMS SHEPSONION FLOT TYPE	; horrogeneous Source retein pressure Source (TE: No superposition cg-log (10 ² 10 ³ ID		S= 1.00E06 - n= 200E00 - s= 9.94E01 -	300 [Mail (Dir.) 2) 1 10 ²	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-)	1.0E-06 2.1E-10 2.0E-07 NA NA 1.0 NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-)	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10.
FOUNDER BOUNDER BUILTING SUBTROSIENT FLOT TYPE	Homogeneous TIONS Constant pressure Source Source July 10 ² 10 ² 10 ³		S= 1.00E06 - n= 200E00 - s= 9.94E01 -	300 [Mail (Dir.) 2) 1 10 ²	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-)	1.0E-C 8.1E-1 2.0E-C 1.9E-1 2.1E-C 10 NA NA
FOWNERS WILLIAMS SHEPSONION FLOT TYPE	; horrogeneous Source retein pressure Source (TE: No superposition cg-log (10 ² 10 ³ ID		S= 1.00E06 - n= 200E00 - s= 9.94E01 -	300 [Mail (Dir.) 2) 1 10 ²	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = Selected repression dt_1(min) = S_{GRF}(-) = S$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = C(m^3/Pa) = $	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA
FLOWMODE BOUNDARY COME WELL TYPE SUBSPROSE TO FLOT TYPE	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 = 200500 = 9.94501 10 ⁰	300 loud (h)/ Yt	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = dt_1(min) = dt_2(min) =$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = C(m^3/Pa) = C_D(-) = C_$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
BOWNOTH BOWNARY CONDING WELL THE SHEPTCONING PLOT WELL THE SHEPTCONING	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - re 200500 - re 200	300 [Mail (Dir.) 2) 1 10 ²	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = T_T(m^2/s) = T_T($	1.0E-06 2.1E-10 2.0E-07 NA NA 1.0 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = S_{$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
FLOWWORE BOUNDARY CONDING WELLTYFE SUFFECTIVE 1	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	300 loud (h)/ Yt	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-) = dt_1(min) = dt_2(min) = T_T(m^2/s) = S(-)$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(-) = D_{GRF}(-) = C_D(-)$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
BOWNOTH BOWNARY CONDING WELL THE SHEPTCONING PLOT WELL THE SHEPTCONING	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	300 [Joj.) Ye.	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = S_GRF(-) = T_T(m^2/s) = T_T($	1.0E-06 2.1E-10 2.0E-07 NA NA 1.0 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(-) = D_{GRF}(-) = C_D(-)$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
DOWNOTE BEAMARY COND WELL TYPE SUFFERCE INTO LOCATION OF THE SERVICE INTO LOCATION OF THE SERVICE INTO SOCIETY OF	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	300 July 101 721 102 300 102 102 102 102 102 102 102 102 102 1	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-) = dt_1(min) = dt_2(min) = T_T(m^2/s) = S(-)$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = C(m^3/Pa) = C_D(-) = S_C(-) = S_$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
E.OWNOTE. BOWNOTE. BO	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	300 July 101 721 102 300 102 102 102 102 102 102 102 102 102 1	$\begin{array}{lll} S \; (-) & = & \\ K_s \; (m/s) \; = & \\ S_s \; (1/m) \; = & \\ C \; (m^3/Pa) \; = & \\ C_D \; (-) & = & \\ \xi \; (-) & = & \\ \hline T_{GRF}(m^2/s) \; = & \\ S_{GRF}(-) \; = & \\ \hline D_{GRF} \; (-) \; = & \\ \hline Selected \; representation for the expression of the expr$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = C(m^3/Pa) = C_D(-) = S_C(-) = S_$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
Log-Log ple	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	300 July 101 July 102	$\begin{array}{lll} S \; (\text{-}) & = & \\ K_s \; (\text{m/s}) \; = & \\ S_s \; (1/\text{m}) \; = & \\ C \; (\text{m}^3/\text{Pa}) \; = & \\ C_D \; (\text{-}) \; = & \\ \xi \; (\text{-}) \; = & \\ S_{GRF} \; (\text{-}) \; = & \\ S_{GRF} \; (\text{-}) \; = & \\ Selected \; \text{repreduced} \; \text{temperator} \; \text{dt}_1 \; (\text{min}) \; = & \\ \text{dt}_2 \; (\text{min}) \; = & \\ T_T \; (\text{m}^2/\text{s}) \; = & \\ S \; (\text{-}) \; = & \\ K_s \; (\text{m/s}) \; = & \\ S_s \; (1/\text{m}) \; = & \\ \textbf{Comments} \; : & \\ \end{array}$	1.0E-06 2.1E-10 2.0E-07 NA NA NA 1.0 NA NA NA NA NA NA NA NA NA NA NA NA NA	$S(-) = K_s(m/s) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = S_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = C(m^3/Pa) = C_D(-) = S_C(-) = S_$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0
Log-Log ple	Homopeneus IDNS Caretari présure Source FE. No superposition 10 ² 10 ³ ID of incl. derivatives-		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	10 ³ 300	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(-) $	1.0E-06 2.1E-10 2.0E-07 NA NA NA 1.0 NA NA NA NA NA NA NA NA NA NA NA Osentative paran NA NA 2.0E-06 8.2E-10 2.0E-07	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GR}(-) = S_{G$	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0 10.
Log-Log ple SKG Laxemer / KD SKG Laxemer / KD SKG Laxemer / KD SKG Laxemer / KD SKG Laxemer / KD SKG Laxemer / KD SKG Laxemer / KD SKG Laxemer / KD	Homopropous TONS Constant pressure Source TONS Constant pressure Source 102 103 ID Ottincl. derivatives- Elapsed time [h]		\$= 100566 - r = 200500 - r = 200500 - r = 200500 - r = 0	300 July 101 721 102 300 102 102 102 102 102 102 102 102 102 1	$\begin{array}{lll} S (-) & = \\ K_s (m/s) & = \\ S_s (1/m) & = \\ C (m^3/Pa) & = \\ C_D (-) & = \\ \xi (-) & = \\ \end{array}$ $\begin{array}{lll} \xi (-) & = \\ T_{GRF}(m^2/s) & = \\ S_{GRF}(-) & = \\ D_{GRF} (-) & = \\ \end{array}$ $\begin{array}{lll} Selected\ represent \\ dt_1 (min) & = \\ dt_2 (min) & = \\ T_T (m^2/s) & = \\ S (-) & = \\ K_s (m/s) & = \\ S_s (1/m) & = \\ \end{array}$ $\begin{array}{lll} Comments: \\ The\ recommend radial\ flow\ analy\ derivative\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend radial\ flow\ analy\ quality \\ The\ recommend ra$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA A.1E-09 1.0E-06 8.2E-10 2.0E-07 ed transmissivity of sist of the CHir phay. The confidence is	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(-) = D_{GRF}(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) $	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA NA 1.9E-1 2.1E-0 10.
FOWNOTE BOUNDAY COND WELL THE SUMMAN COND WELL THE SUMMAN COND WELL THE SUMMAN COND WELL THE SUMMAN COND WELL THE SUMMAN COND	H-temperature TONS Constant pressure Source TONS Constant pressure Source 10 ² 10 ³ 10 Dot incl. derivatives- Bapsed time [h] 110.2 LOW MODEL : Homogeneous		Se 100566 -	10 ³ 300 leaf light leaf l	$\begin{array}{lll} S (-) & = \\ K_s (m/s) & = \\ S_s (1/m) & = \\ C (m^3/Pa) & = \\ C_D (-) & = \\ \xi (-) & = \\ \end{array}$ $\begin{array}{lll} \xi (-) & = \\ S_{GRF} (m^2/s) & = \\ S_{GRF} (-) & = \\ \end{array}$ $\begin{array}{lll} S_{GRF} (-) & = \\ S_{GRF} (-) & = \\ S_{GRF} (-) & = \\ \end{array}$ $\begin{array}{lll} C_{GRF} (m^2/s) & = \\ C_{GRF} (-) & = \\ C_{GRF}$	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA A.1E-09 1.0E-06 8.2E-10 2.0E-07 ed transmissivity of sist of the CHir phay. The confidence reconfidence reconf	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = D_{GRF}(-) = D_{GRF}(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = C_$	NA 1.9E-1 2.1E-0 10. erived from the better data and I transmissivity ssure measured
FOWNOTE BOUNDAY COND WELL THE SUMMAN COND WELL THE SUMMAN COND WELL THE SUMMAN COND WELL THE SUMMAN COND WELL THE SUMMAN COND	Homopropous TONS Constant pressure Source TONS Constant pressure Source 102 103 ID Ottincl. derivatives- Elapsed time [h]	recovery per	Se 100566 -	10 ³ 10 ³ 10 ² 10 ² 10 ² 10 ³ 300 10 ² 10 ³ 300	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = C_{GRF}(-) = S_{GRF}(-) $	1.0E-06 2.1E-10 2.0E-07 NA NA NA NA NA NA NA NA NA A.1E-09 1.0E-06 8.2E-10 2.0E-07 ed transmissivity or risis of the CHir phay. The confidence rie 1.0E-9 to 1.0E-8 oth, was derived from the control of the control of the confidence rie 1.0E-9 to 1.0E-8 oth, was derived from the control of the confidence rie 1.0E-9 to 1.0E-8 oth, was derived from the control of the confidence rie 1.0E-9 to 1.0E-8 oth, was derived from the control of the confidence rie 1.0E-9 to 1.0E-8 oth, was derived from the control of the control of the confidence rie 1.0E-9 to 1.0E-8 oth, was derived from the control of the contro	$S(-) = K_s(m/s) = S_s(1/m) = C(m^3/Pa) = C_D(-) = \xi(-) = S_{GRF}(-) = D_{GRF}(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) = \xi(-) = C_D(-) $	1.0E-0 8.1E-1 2.0E-0 1.9E-1 2.1E-0 10. NA NA NA 1.9E-1 2.1E-0 10. erived from the better data and I transmissivity ssure measured sing straight

	Test Su	mn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CHir
Area:	l ave	mar	Test no:			1
Alca.	Laxe	illai	163(110.			
Borehole ID:	KLX	(11A	Test start:			060809 16:59
Test section from - to (m):	563.00-568.0		Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.	.076	Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
		_	Indata		Indata	
5500 KLX11A_563.00-568.00_060809_1_CHir_Q_r	0.00 • P section	003	p ₀ (kPa) =	5262		
	Pabove Pbelow	ľ	p _i (kPa) =	NA		
5450 -	• · · · · · ·	ľ	$p_p(kPa) =$	NA	p _F (kPa) =	NA
≅ 5400 •	• • • • • • • • • • • • • • • • • • • •	002	$Q_p (m^3/s) =$	NA		
A N	•	[/min]	tp (s) =	NA	t _F (s) =	NA
8 9 5350 -	•	ר Rate	S el S [*] (-)=	NA	S el S [*] (-)=	NA
1 d 2000 - 4 d 2000 -		.0	EC _w (mS/m)=		()	
5300 -	0.00	<u>⊆</u>	Temp _w (gr C)=	15.0		
<u></u>	*	ŀ	Derivative fact.=	NA	Derivative fact.=	NA
5250 -	•	ŀ	Domairo laci.		Donvativo lact.	1 10 1
5200	0.00	100				
0.00 0.10 0.20 0.30 0.40 0.50 Elapsed Tir	0.60 0.70 0.80 0.90 1.00		Results	l	Results	
·			NA	Results		
Log Log plot incl. dorivetee. fl	ow nariad		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$		Flavy sa sissa y	transiant
			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
Not An	nalvsed		$S_s(1/m) =$	NA	$S_s (1/m) =$	NA
1100111	ai y so a		$C (m^3/Pa) =$	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		neters.	
			$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
		ľ	$T_T (m^2/s) =$	NA	ξ (-) =	NA
			S (-) =	NA		
		ľ	K _s (m/s) =	NA		
		ľ	S _s (1/m) =	NA		
Not An	nalysed	ľ	Comments:			
			Based on the test re transmissivity is lo		ged packer compilan 1 m2/s.	ce) the interval

	Test S	limi	nary Sheet			
Project:	Oskarshamn site investi	gation	Test type:[1]			CHir
Area:	Lav	vomar	Test no:			1
Area.	La	xemai	rest no.			ı
Borehole ID:	KL	_X11A	Test start:			060809 18:17
Test section from - to (m):	568.00-573	3.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
			Indata		Indata	
5500 KLX11A_568.00-573.00_060809_1_CHir_Q_r	• P section	0.003	p ₀ (kPa) =	5308		
5450 -	P above		p _i (kPa) =	NA		
9490	• •		$p_p(kPa) =$	NA	p _F (kPa) =	NA
≅ 5400 -	•	0.002	$Q_p (m^3/s) =$	NA	, ,	
KI		[Vm in	tp (s) =	NA	t _F (s) =	NA
© 5350 -		Injection Rate [Vmin]	S el S [*] (-)=	NA	S el S [*] (-)=	NA
C 5400 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0		In je ctio	EC _w (mS/m)=	I	0 61 0 (*) -	
5300	•	0.001	Temp _w (gr C)=	15.1		
5250	•		Derivative fact.=	NA	Derivative fact.=	NA
3230	•		Derivative lact	INA	Derivative fact.	INA
5200		0.000				
0.00 0.10 0.20 0.30 0.40 0.50 Elapsed Tii		.00	Results		Results	
				INIA	Results	
			Q/s (m^2/s)=	NA		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	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
Not Ar	nalyzad		$S_s(1/m) =$	NA	$S_s (1/m) =$	NA
Not Ar	iaiyseu		$C (m^3/Pa) =$	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			
<u> </u>			dt_1 (min) =	NA	$C (m^3/Pa) =$	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
			$T_T (m^2/s) =$	NA	ξ(-) =	NA
			S (-) =	NA	- · · · ·	
			$K_s (m/s) =$	NA	1	
			$\frac{R_s(11/3)}{S_s(1/m)} =$	NA	1	
3.T . A	ب ما مسام		Comments:	I. " '	1	<u> </u>
Not Ar	laryscu				ged packer complian 1 m2/s.	ce) the interval

		Test S	um	mary Sheet			
Proj	lect:	Oskarshamn site investig	jatio	Test type:[1]			CHi
Are	a:	Lax	ema	r Test no:			
Bor	ehole ID:	KL	X11/	A Test start:			060810 08:06
Tes	t section from - to (m):	573 00-578	00 n	n Responsible for			Stephan Rohs
	` ,			test execution:			
Sec	tion diameter, 2·r _w (m):	(0.07	Responsible for test evaluation:		Crist	ian Enachescı
Line	ear plot Q and p			Flow period		Recovery period	
5600			— 8	Indata		Indata	
3000	KLX11A_573.00-578.00_060810_1_CHir_Q_r	P section P above		p ₀ (kPa) =	5349		
5550	}	P below		p _i (kPa) =	5350		
		i	6	$p_p(kPa) =$	5550	p _F (kPa) =	535
[KPa]	;			$Q_p (m^3/s) =$	6.85E-05		
원 9 5450	<u> </u>		s t t t t t t t t t t t t t t t t t t t	tp (s) =	1200	t_F (s) =	120
eunsseud 6			n Rate	S el S* (-)=		S el S [*] (-)=	1.00E-0
90 5400 90 4u w		Approximately 10	njec tio	EC _w (mS/m)=		0010()	1
5350	·		=	Temp _w (gr C)=	15.2		
			2	Derivative fact.=	0.02	Derivative fact.=	0.0
5300	; .		1	Delivative fact.=	0.02	Derivative fact.	0.0
5250 0.	00 0.20 0.40 0.60 C	1.00 1.20 1.40	_۱				
	Elapsed Tin	ne [h]		Results		Results	
				Q/s $(m^2/s)=$	3.4E-06		
Log	-Log plot incl. derivates- flo	w period		$T_{\rm M} (m^2/s) =$	2.8E-06		1
		•		Flow regime:	transient	Flow regime:	transient
	Elapsed time [h]			$dt_1 (min) =$		dt ₁ (min) =	0.5
10 ²	SKB Laxemar / KLX11A 573.00-578.00 / CH	Flow Dim Version 2.14b (c) Golder Associates	10 °	$dt_1 (min) =$ $dt_2 (min) =$		$dt_1 (min) =$ $dt_2 (min) =$	8.4
		(0) 2000 7000020		` ′		, ,	
			0.3	$T (m^2/s) =$		$T (m^2/s) =$	1.5E-0
1	• •			S (-) =	1.0E-06		1.0E-0
101			10 ⁻¹	$K_s (m/s) =$	1.9E-06	K_s (m/s) =	3.0E-0
do).	•		<u></u>	$S_s (1/m) =$	2.0E-07	$S_s (1/m) =$	2.0E-0
/qD, (1k	• •		0.03 [min/]	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	7.7E-1
07			1/4.(C _D (-) =	NA	$C_D(-) =$	8.5E-0
10°			10 ⁻²	ξ(-) =	9.7		19.
	FI CWMCDR Hymneneous	- 100° A A A		ç (-) —	0.7	S (-) -	10.
	R.O.M/ODE Horrogeneous BOUNDARY CONDITIONS: Constant pressure WELL TYPE Source SUFFENDMENT (FE: No superposition R.O.T TYPE : Log-log	n= 2.00E+00 -	0.003	$T_{GRF}(m^2/s) =$	NA	T (m²/a) -	NA
1	10 ¹² 10 ¹³ 10 ¹⁴	s= 9.72E+00 -			NA	$T_{GRF}(m^2/s) = S_{GPF}(-) =$	NA
	tD			-014 ()		-014 ()	
				D _{GRF} (-) =	NA	D _{GRF} (-) =	NA
LOG	-Log plot incl. derivatives- re	ecovery period		Selected represe			
	Eapsed time [h]	. 4		$dt_1 (min) =$	0.53	0 (III /I u)	7.7E-1
10 ²		10,-1 10,0 Flow Dim Version 2,14b		dt_2 (min) =	8.47	$C_D(-) =$	8.5E-0
	5/3.00-578.00 / CHir	(c) Golder Associates	300	$T_T (m^2/s) =$	1.5E-05	ξ (-) =	19.
	***************************************			S (-) =	1.0E-06		
			10 ²	K _s (m/s) =	3.0E-06		
10 ¹				S _s (1/m) =	2.0E-07		1
e l	// · · · · \.		30	Comments:		1	
od .	\			à	transmissivity o	f 1.5E-5 m2/s was d	erived from the
10°		:	10 ¹			ase, which shows the	
10-		· resident and a second and a s				range for the interva	
	FLOW MODEL: Homogeneous	C= 7.68E-10 m3/Pa T= 1.50E-05 m2/s	3			m2/s. The static pre-	
	FLOW MODE: Homogeneous BOUNDARY CONDITIONS: Constant rate WELL TYFE: Source SUFERPOSITION TYPE: Agarwal time PLOT TYPE: Log-log	S= 1.00E-06 - s= 1.97E+01 - n= 2.00E+00 -				om the CHir phase u	
↓	10 ¹ 10 ²		10 °			t to a value of 5350.	
	SUPERFOSITION TYPE: Against time PLOT TYPE: Log-log 10 ¹ 10 ² 10 ¹ 10 ² 10 ¹		10°				

			Test S	<u>um</u> ı	nary She	et			
Proje	ct:	Oskarshamn	site investi	gation	Test type:[1]			CHi
Area:			Lax	cemar	Test no:				1
Borel	nole ID:		KL	X11A	Test start:				060810 10:02
Test	section from - to (m):		578.00-583	.00 m	Responsibl	e for			Stephan Rohs
Soction	on diameter, 2·r _w (m):			0.076	test execut Responsibl			Cric	tian Enachescu
Secil	on diameter, 21 _w (m).			0.076	test evalua			Ch	suan Enachescu
Linea	r plot Q and p				Flow perio	d		Recovery perio	d
					Indata			Indata	_
5650	KLX11A_578.00-583.00_060810_1_CHir_Q_r		• P section		p ₀ (kPa) =		5398		
5600 -	ì		P above P below Q	- 9	p _i (kPa) =		5397		
	į	:	-u	- 8	$p_p(kPa) =$			p _F (kPa) =	539
5550 ·	•	.		7 _	$Q_{p} (m^{3}/s) =$		9.33E-05		
ure [kPa]	• •			- 6 Mi	tp (s) =		1200	t_F (s) =	1200
Pressure		:		n Rate	S el S [*] (-)=		1.00E-06	S el S [*] (-)=	1.00E-0
8 5450 W	· • •	•		h ction Rate [l/min]	EC _w (mS/m	ı)=			
5400				- 3	Temp _w (gr 0	C)=	15.1		1
				- 2	Derivative	fact.=	0.06	Derivative fact.=	0.0
5350				- 1					
5300	0.20 0.40 0.60	0.80 1.00	1.20 1.40	0					
	Elapsed	i Time [h]			Results			Results	_
					$Q/s (m^2/s)$	=	4.6E-06		
Log-l	og plot incl. derivates- f	low period			$T_M (m^2/s) =$		3.8E-06		
	Bapsed time	e [h]			Flow regim	e:	transient	Flow regime:	transient
10 ² SK	0, ⁻⁴ 10, ⁻³ 10, ⁻²	10,-1	10.0 Flow Dim Version 2.14b	7	dt ₁ (min)	=	0.88	dt_1 (min) =	0.58
578	.00-583.00 / CH		Flow Dim Version 2.14b (c) Golder Associates		dt ₂ (min)	=	15.88	dt ₂ (min) =	8.04
				0.3	$T (m^2/s) =$		1.0E-05	$T (m^2/s) =$	2.1E-0
	AND CO. CO. CO. CO. CO. CO. CO. CO. CO. CO.			-10.3	S (-) =		1.0E-06	, ,	1.0E-0
10 1	• • •			10-1	K_s (m/s) =	:		$K_s (m/s) =$	4.2E-0
	• •	± .			$S_s(1/m) =$			S _s (1/m) =	2.0E-0
(3/dg)	• • •	•		0.03	C (m ³ /Pa)	_	NA	C (m ³ /Pa) =	1.4E-0
1/4[•	•		14, (14)	, ,	-	NA	$C_D(-) =$	1.5E-0
100	***			10°2					1.3L-0
				1	ξ (-)	=	5.0	ξ (-) =	19.4
B	OWMODEL: Homogeneous SUNDARY CONDITIONS: Constant pressure ELTYFE: Source PERFOSITION TYPE: No superposition OFT TYPE:	••	T= 1.03E-05 m2/s S= 1.00E-06 - n= 2.00E+00 -	0.003	2		4.05.00	2	NIA
Ä	OTTILE .Edg-log		s= 5.59E+00 -		$T_{GRF}(m^2/s)$			$T_{GRF}(m^2/s) =$	NA
	10 ⁹ 10 ¹⁰ tE	10 ¹¹ 10) ¹² 10	13	- OIKI ()		1.0E-06		NA
					D _{GRF} (-)	=		D _{GRF} (-) =	NA
Log-l	og plot incl. derivatives-	recovery perio	od			eprese	ntative paran		
	Elapsed time	b 1	0		ατ ₁ ()	=	0.88	C (m³/Pa) =	1.4E-09
10 ² SKE		10,-1	Flow Dim Version 2.14b (c) Golder Associates		dt ₂ (min)	=		$C_D(-) =$	1.5E-0
5/8	00-383.00 / CHIF		(c) code: 7 bboobleb	300	$T_T (m^2/s)$	=	1.0E-05	ξ (-) =	5.0
	0 0 00000000000000000000000000000000000				S (-) =	=	1.0E-06		
40 13	<i>_</i> ···			10 ²	K_s (m/s)	=	2.0E-06		
10 1					S _s (1/m) :	=	2.0E-07		
nd 'n	\.			30 [R _D] ((0d-d)	Comments	S:			
	. \			10 ¹ 0 ⁴			transmissivity of	1.0E-5 m2/s was	derived from the
10 °				" ²				e, which shows the	
		· Mile Mary Mary 198		3	derivative qu	uality. 7	The confidence r	ange for the interv	al transmissivity
- 1	FLOW MODEL: Homogeneous ROLINDARY CONDITIONS: Constant rate.		C= 1.40E-09 m3/Pa T= 2.11E-05 m2/s S= 1.00E-06 -	•	is estimated	to be 8.	0E-6 to 3.0E-5	m2/s. The static pr	
	WRI TYPE · Source		S= 1.00E-00 -						
	FLOW NDOEL : Horrogeneous BOADARY CONDITIONS: Constant rate WELL STATE SUPERIORITION TYPE: Agar wal time PLOTTYPE : Log-log		C= 1.40E.09 m3/Pa T= 2.11E.05 m2/s S= 1.00E.06 - s= 1.94E+01 - n= 2.00E+00 -	10 ⁰	at transduce	r depth,		m the CHir phase t to a value of 539?	

	Test Sumi	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			Р
Aroa:	Lavama	Test no:			
Area:	Laxemai	rest no.			
Borehole ID:	KLX11A	Test start:			060810 12:20
Test section from - to (m):	583.00-588.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.076	Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
		Indata		Indata	
5750	0.003	p ₀ (kPa) =	5447		
	00-588.00_060810_1_CHir_Q_r	p _i (kPa) =	5452		
5700	· P below - Q	$p_p(kPa) =$		p _F (kPa) =	551
5650	• :	$Q_p (m^3/s) =$	NA	F1 (··· •)	
₩ ± 5600	- 0.002	$\frac{Q_p (\Pi / S) -}{tp (s)} =$		t _F (s) =	388
ss ere	nijection Rate (Jimin)		NA		1.00E-0
e :	tion R	S el S * (-)= EC $_w$ (mS/m)=	INA	S el S [*] (-)=	1.00E-0
82 5500	• 3		15.4		
5450	•	Temp _w (gr C)= Derivative fact.=			0.0
5400 -	•	Derivative fact.=	NA	Derivative fact.=	0.0
5350					
0.00 0.20 0.40 0.60 0.80 1. Elapsed	00 1.20 1.40 1.60 1.80 2.00 Time [h]	Results	•	Results	L
		$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- f	low 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	$T (m^2/s) =$	1.2E-1
		S (-) =	NA	S (-) =	1.0E-0
		$K_s (m/s) =$	NA	$K_s (m/s) =$	2.4E-1
		$S_s(1/m) =$	NA	S _s (1/m) =	2.0E-0
Not A	nalysed	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.2E-1
		$C_D(-) =$	NA	$C_D(-) =$	1.3E-0
		ξ(-) =	NA	ξ(-) =	-0.
		<i>≥</i> (−) −		» (-) –	0.
		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	2.6E-1
		$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.0E-0
		$D_{GRF}(-) =$	NA	D _{GRF} (-) =	1.62 0
Log-Log plot incl. derivatives-	recovery period	Selected represe			
	- coording police	dt_1 (min) =	NA	C (m ³ /Pa) =	1.2E-1
10 ⁻³ 10 ⁻² Bapsed time	10,1 10,1	$dt_2 \text{ (min)} =$	NA	$C_D(-) =$	1.3E-0
10 SKB Laxemar / KL X11A 583.00-588.00 / Pl	Flow Dim Version 2.14b (c) Golder Associates		1.2E-11		-0.
		$T_T (m^2/s) = S(-) = $	1.0E-06		-0.
	100	9 ()			
10°		$K_s (m/s) =$	2.4E-12		
	0.3	S _s (1/m) =	2.0E-07		
od od	10 ⁻¹ 10 ⁻¹	Comments:			
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Doomodad pressur			f 1.2E-11 m2/s was	
10-1	0.03			The confidence ran to be 9.0E-12 to 4.0	
nouses	C= 123F-11 mVFa			lated due to the very	
FLOW MODEL : Homogeneous BOUNDARY CONDITIONS: Sulpruise WELL TYPE : Source SUPERFORMINON TYPE: No superposition PLOT TYPE : Peres, Reyrolds	C= 1.235.11 m3/Pa T= 1.165.11 m2/s S= 1.005.06 - 1005.06 = 100.72 s= -6.805.01 - 100.72	transmissivity.	not be extrapo	and to the very	,
PLOT TYPE : Peres, Reynolds	n= 2.00E+00 -	I			
10 ⁻² 10 ⁻¹	10 ⁰ 10 ¹ 10 ²				

	Test 9	Sumr	nary Sheet			
Project:	Oskarshamn site invest					Р
Area:	1 -	aveme:	Test no:			
AICA.	Lã	axemal	1 621 110.			
Borehole ID:	К	LX11A	Test start:			060810 14:4
Test section from - to (m):	588.00-59	3.00 m	Responsible for test execution:			Stephan Roh
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	tian Enachesc
Linear plot Q and p			Flow period		Recovery period	j
h h			Indata		Indata	
5800	• P section	T 0.003	p ₀ (kPa) =	5493		
KLX11A_588.00-593.00_060810_1_Pi_Q_r 5750	• P above • P below		p _i (kPa) =	NA		
<u> </u>	Q		$p_p(kPa) =$	NA	p _F (kPa) =	NA
5700 -	•	0.002 =	$Q_p (m^3/s) =$	NA		<u> </u>
E 97 9600	•	0.002 - 0.000 - 1 Injection Rate [//m in]	tp(s) =	NA	t _F (s) =	NA
P	•	n Rate	S el S [*] (-)=	NA	S el S* (-)=	NA
Ū 5550 ·	•	njectio	EC _w (mS/m)=		5 5. 5 (- <i>)</i> -	1
5500	#	- U.UU1 -	Temp _w (gr C)=	15.4	1	
•	•		Derivative fact.=	NA	Derivative fact.=	NA
5450			DOMAGNO NACE.	1 1 1	Donvative ract.	. */ `
0.00 0.20 0.40 0.60 0		0.000			 	
Elapsed Ti			Results		Results	
				INIA	Results	
Log Log plating daminata - #1	ow poriod		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- flo	ow period		$T_M (m^2/s) =$	NA	Class was size as	transit
			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
Not Ar	nalvsed		$S_s (1/m) =$	NA	$S_s (1/m) =$	NA
NOT AL	.u. 300 u		$C (m^3/Pa) =$	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		neters.	
			$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
			dt_2 (min) =	NA	$C_D(-) =$	NA
			$T_T (m^2/s) =$	NA	ξ (-) =	NA
			S (-) =	NA		
			K _s (m/s) =	NA		
			$S_s (1/m) =$	NA		
Not Ar	nalvsed		Comments:	•	-	
			Based on the test ro	esponse the inter	val transmissivity is	lower than 1.01

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site investi	igation	Test type:[1]			СН
Area:	La	xemar	Test no:			
Borehole ID:	KI	LX11A	Test start:			060810 16:3
Test section from - to (m):	593.00-598	3.00 m	Responsible for			Stephan Roh
2 ()		0.070	test execution:		0 : 1	
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachesc
Linear plot Q and p			Flow period		Recovery period	
			Indata	*****************	Indata	
5850	FOR DO DODGE 4 P. O - P Section	0.003	p ₀ (kPa) =	5540		
5800 -	598.00_060810_1_Pi_Q_r		p _i (kPa) =	5546		
5750	· · · · · · · · · · · · · · · · · · ·		$p_p(kPa) =$	5784	p _F (kPa) =	571
		- 0.002	$Q_p (m^3/s) =$	NA	,	
5700 -	•	[/m in]	tp (s) =	10	t _F (s) =	3679
5650 -		Rate	S el S [*] (-)=	NA	S el S [*] (-)=	1.00E-0
5600	• •	Injection Rate [I/min]	EC _w (mS/m)=		3 61 3 (-)-	
		- 0.001	Temp _w (gr C)=	15.5		
5550	<u>.</u>		Derivative fact.=		Derivative fact.=	0.0
5500 -	·		Benvative last.	10.0	Berryative ract.	0.0
5450	· · · · · · · · · · · · · · · · · · ·	0.000				
0.00 0.20 0.40 0.60 0.80 Elapsed T		1.80	Results		Results	
			$Q/s (m^2/s)=$	NA	1000110	
.og-Log plot incl. derivates- fl	ow period		$T_{\rm M} (m^2/s) =$	NA		
Log Log plot mon derivates in	ow poriou		Flow regime:	transient	Flow regime:	transient
			dt ₁ (min) =	NA	dt ₁ (min) =	NA
			$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	NA
			- 、	NA	, ,	4.2E-1
			$T (m^2/s) = S (-) =$	NA	$T (m^2/s) = S (-) =$	1.0E-0
				NA	$K_s(m/s) =$	
			-5 ()			8.4E-1
Not A	nalysed		$S_s(1/m) =$	NA	$S_s(1/m) =$	2.0E-0
			$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.9E-1
			$C_D(-) =$	NA	$C_D(-) =$	2.1E-0
			ξ(-) =	NA	ξ (-) =	0.
			- , 2,)	NA	- , 2, <u>)</u>	NA
			$T_{GRF}(m^2/s) =$ $S_{GPF}(-) =$	NA	$T_{GRF}(m^2/s) =$ $S_{GPF}(-) =$	NA
			-011 ()	NA NA	- SI(I ()	NA NA
and an plat incl. derivatives	received.		D _{GRF} (-) =		D _{GRF} (-) =	INA
.og-Log plot incl. derivatives-			Selected represe	NA	<u></u>	I 10F1
10 ⁻² Eapsed time	10,0 10,1	10.2	dt ₁ (min) =	NA NA	C (m ³ /Pa) =	1.9E-1
10 SKB Laxemar / KLX11A 593.00-598.00 / FI	Flow Dim Version 2.14b (c) Golder Associates	10 ¹	$dt_2 (min) =$		$C_D(-) =$	2.1E-0
		1	$T_T (m^2/s) =$	4.2E-12		0.
		3	S (-) =	1.0E-06		
10 .			$K_s (m/s) =$	NA		ļ
in a second of its distance		10° Ji	$S_s(1/m) =$	NA		
· · · · · · · · · · · · · · · · · · ·		nssaud palmowoog	Comments:			
10-1		0.3			f 4.2E-12 m2/s was	
		-10 ⁻¹			The confidence rar to be 1.0E-12 to 7.0	
FLOW MODEL : Horroge	meous C= 1.89E-11 m3/Pa				to be 1.0E-12 to 7.0 lated due to the very	
FLOW MODEL : Horroge BOUNDARY CONTINONS SI WELL TYPE SUPERFOSTION TYPE: No s PLOT TYPE : Peres, Re	uglpulse T= 4.24E-12 m2/s S= 1.00E-06 - uperposition s= -3.40E-02 - ynotis n= 2.00E+00 -	0.03	transmissivity.	not be extrapo	and to the very	, -0 11
10 ⁻¹ 10 ⁰	10.1 10.2 1	03				

			Test S	umi	mary Sheet				
Proj	ect:	Oskarshamn site investigation							
Area	1:		Lax	cema	Test no:	†		1	
Bore	ehole ID:		KL	.X11A	Test start:			060811 08:01	
Test	section from - to (m):		598.00-603	.00 m	Responsible for		Stephan Ro		
Sec	ion diameter, 2·r _w (m):			0.076	test execution: Responsible for		Crist	an Enachescu	
					test evaluation:				
Line	ar plot Q and p				Flow period		Recovery period		
5800 T				7 0.6	Indata	1 5500	Indata		
	KLX11A_598.00-603.00_060811_1_CHir_Q_r	•	P section P above		p ₀ (kPa) =	5582			
5750 -			• P below • Q	0.5	p _i (kPa) =	5582			
	•				$p_p(kPa) =$		p _F (kPa) =	558	
8 5700 ·	•	•		0.4 =	$Q_p (m^3/s) =$	4.48E-06			
Downhole Pressure [KPa] - 0895				Rate [I/min]	tp (s) =		t_F (s) =	120	
9 5650 ·		i		Injection R	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0	
5600			- Constitution	0.2	EC _w (mS/m)=				
		•			Temp _w (gr C)=	15.6			
5550 -				0.1	Derivative fact.=	0.05	Derivative fact.=	0.0	
5500									
0.0	0 0.20 0.40 0.60 Elapsed	0.80 1.00 Time [h]	1.20 1.40	0.0	Results		Results		
						2.2E-07	Results		
00	-Log plot incl. derivates- fl	ow pariod			Q/s $(m^2/s)=$	1.8E-07			
Log	-Log plot incl. derivates- ii	ow period			$T_M (m^2/s) =$			transiant	
	Bapsed time (i	h]	100		Flow regime:	transient	Flow regime:	transient	
10 ²	SKB Laxemar / KLX11A 998.00-603.00 / OH		Flow Dim Version 2.14b (c) Golder Associates	30	dt ₁ (min) =		dt ₁ (min) =	NA	
				l .	$dt_2 (min) =$		dt_2 (min) =	NA	
F	LOWMODEL: Two shell composite OLINDARY CONDTIONS: Constant pressure ELL TYPE: Source UFER-OSITION TYPE: No superposition LOT TYPE: Log-log			10 ¹	$T (m^2/s) =$		$T (m^2/s) =$	8.7E-0	
10 ¹	UPERPOSITION TYPE: No superposition LOT TYPE : Log-log			1	S (-) =	1.0E-06	` '	1.0E-0	
				3	$K_s (m/s) =$		$K_s (m/s) =$	1.7E-0	
<u> </u>	, As	:		10° E	$S_s (1/m) =$	2.0E-07	$S_s(1/m) =$	2.0E-0	
1	• • •	i .		10° [/uin] (b/1) '	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.2E+1	
10 ⁰	• • •			0.3	$C_D(-) =$	NA	$C_D(-) =$	1.4E+18	
-	· · · · · · · · · · · · · · · · · · ·		T 3.76E-07 m2/s		ξ (-) =	3.9	ξ (-) =	14.8	
1				10-1					
		٠.,	n1 200E+00 - n2 200E+00 - rD1 290E+04 - brw 200E+00 - s 3.92E+00 -		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
+	10 ⁶ 10 ⁷ tD	10 ⁸ 10	0 ⁹ 10 ¹⁰	,	S _{GRF} (-) =	NA	$S_{GRF}(-) =$	NA	
					D _{GRF} (-) =	NA	D _{GRF} (-) =	NA	
Log	Log plot incl. derivatives-	recovery perio	od		Selected repres	entative paran	neters.		
	Connect time (in	3			dt_1 (min) =	0.83	$C (m^3/Pa) =$	1.2E+1	
10 ²	10,-4 10,-3 Eapsed time [h	10,-1			$dt_2 \text{ (min)} =$	4.65	$C_D(-) =$	1.4E+1	
	iKB Laxemar / KLX11A 98.00-603.00 / CHir		Flow Dim Version 2.14b (c) Golder Associates		$T_T (m^2/s) =$	3.8E-07		3.5	
				300	S (-) =	1.0E-06			
	January Comments			10 ²	$K_s (m/s) =$	7.6E-08			
10 ¹					$S_s (1/m) =$	2.0E-07		<u> </u>	
				30 \(\frac{1}{2} \)	Comments:	2.0L-07			
3	, · · · ·	W				l transmissivity a	62 9E 07 m2/a waa	dariyad from th	
10 °	·	· · · · · · · · · · · · · · · · · · ·		101 5			f 3.8E-07 m2/s was se (inner zone), which		
	^ <u>, a2</u>	e partir symmetric services and a service service services and a service service services and a service service services and a service service services and a service service services and a service service service services and a service service service service services and a service service service services and a service serv	T 8.70E-07 m2/s				the confidence range		
-	-	transmissivity is estimated to be 9.0E-08 to 9.0E-07 m2/s (this range							
	FLOW MODEL : Two shell composite BOUNDARY CONDITIONS: Constant rate		S 1.00E-06 C 1.23E-10 m3/Pa n1 2.00E+00 n2 2.00E+00 -		transmissivity is es	simated to be 9.0	L 00 to 7.0L 07 III2	(
	FLOW MODEL: Two shell composite BOUNDARY CONDITIONS: Constant rate WELL TYPE: Source SUPERFORMON TYPE: Aganwal time PLOT TYPE: Log-log		n2 2.00E+00 - rD1 1.00E+09 -	10°	includes the derive	ed transmissivity	from the CHir phase	e). The static	
	R.OWMODEL : Two shell composite BOUNDARY CONTINONS: Onstart rate WELL TYPE : Source Supposed that I Log-log 10 ⁷ 10 ⁷ 10 ² 10 ¹⁰	10 3 10 4	n2 2.00E+00 - rD1 1.00E+09 - brw 3.00E+00 - s 1.48E+01 -	10°	includes the derive pressure measured	ed transmissivity l at transducer de		e). The static m the CHir	

	Test	Sumi	nary Sheet				
Project:	Oskarshamn site inves	tigation	Test type:[1]			CHi	
Area:	La	axemar	Test no:			1	
Borehole ID:	, k	/I V11A	Test start:			060811 10:29	
Borenole ID.	, n	LXIIA	rest start.			000011 10.28	
Test section from - to (m):	663.00-66	8.00 m	Responsible for test execution:	Stephan R			
Section diameter, 2·r _w (m):		0.076	Responsible for		Crist	ian Enachescı	
Linear plot Q and p	<u>†</u>	test evaluation: Flow period		Recovery period			
F F			Indata		Indata		
6450	60811 1 CHir O r Psection	0.005	p ₀ (kPa) =	6188			
KLX11A_663.00-668.00_0	60811_1_CHir_Q_r Pabove Pelow		p _i (kPa) =	6196			
		0.004	$p_p(kPa) =$	6428	p _F (kPa) =	626	
6350 -	: \		$Q_p (m^3/s) =$	1.67E-08	, , ,		
(KPa)	· \	0.003	$\frac{Q_p (\Pi / S)^{-}}{tp (s)} =$		t _F (s) =	120	
8 6300 -		Rate [I				1.00E-0	
e 6250		0.000 1)ection Rate [1/min]	S el S [*] (-)=	1.00E-00	S el S [*] (-)=	1.00E-0	
		= E	EC _w (mS/m)=	16.5			
6200	=		Temp _w (gr C)=	16.5			
6150		- 0.001	Derivative fact.=	0.02	Derivative fact.=	0.0	
••							
0.00 0.50 1.00 Elapsed	1.50 2.00 2.50 Time [h]	0.000	Deculto		Deculto		
Liapood			Results	.	Results		
			Q/s $(m^2/s)=$	7.0E-10			
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	5.8E-10			
Bapsed time [า		Flow regime:	transient	Flow regime:	transient	
10 17 10,12	² 10, ⁰ 10, ¹ 10, ²		dt_1 (min) =	NA	dt_1 (min) =	NA	
SKB Laxemar / KLX11A 663.00-668.00 / CH			dt_2 (min) =	NA	dt ₂ (min) =	NA	
	Flow Dim Version 2.14b (c) Golder Associates	3000	$T (m^2/s) =$	1.0E-10	$T (m^2/s) =$	1.3E-1	
			S (-) =	1.0E-06		1.0E-0	
10 d		10 ³	$K_s (m/s) =$		K_s (m/s) =	2.7E-1	
			$S_s (1/m) =$		$S_s(1/m) =$	2.0E-0	
:		98 (1/q)' [min/]	- ()	NA	- ()	3.9E-1	
٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠٠		Vq. (1/q	$C (m^3/Pa) =$		$C (m^3/Pa) =$		
10-1		10 ²	$C_D(-) =$	NA	$C_D(-) =$	4.3E-0	
	T 1.01E-10 m2/s		ξ (-) =	-2.8	ξ (-) =	-2.	
FLOW MODEL : Two shell com BOLNDARY CONDITIONS Constant WELL TYPE : Source SUFERCS INON TYPE : No superpo FLOT TYPE : Log-log	T 1.015.10 m2/s S 1.005.06 - pressure n1 2.0005.00 - pressure n2 2.0005.00 - (D1 1.205.00 -	30	2		2		
L	brw 2.60⊟00 - s -2.82⊑+00 -		$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	NA	
10 ⁻² 10 ⁻¹ tD	10 ^d 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	ieters.		
Bapsed time	[h]		dt_1 (min) =	NA	C (m³/Pa) =	3.9E-1	
10 ¹ SKB Laxemer / KLX11A 663.00-668.00 / CHr	10, ⁻¹ 10, ⁰ 10, Flow Dim Version 2.14b (c) Golder Associates	ή.	dt_2 (min) =	NA	$C_D(-) =$	4.3E-0	
663.00-668.00 / CHr	(c) Golder Associates	-	$T_T (m^2/s) =$	1.3E-10	ξ(-) =	-2.	
		10 ³	S (-) =	1.0E-06			
	/	300	K _s (m/s) =	2.6E-11		1	
10 4			S _s (1/m) =	2.0E-07			
	/j/	10° [84] (0d	Comments:				
		9		transmissivity of	f 1.3E-10 m2/s was	derived from th	
FLOWINDEL : Two shell composite BOUNDARY CONDITIONS: Constant rate Source Superposition YHE: Against alter PLOTTYPE : Log-log		30			se, which shows the		
SUPENPUSHION TYPE: Agarwal time PLOT TYPE : Log-log	T 1.34E-10 m2/s				range for the interval		
	S 1.00E-06 - C 3.94E-11 m3/Pa	10 ¹			0 m2/s. Due to the		
· //.	\$ [™] -2.48€+00 :		transmissivity no fr				
10 ⁻² 10 ⁻¹	10 ⁰ 10 ¹ 1	3					
			<u>I</u>				

	Test S	<u>um</u> r	nary Sheet			
Project:	Oskarshamn site investi	gation	Test type:[1]			CHi
Area:	Lax	kemar	Test no:			
Borehole ID:	KL	-X11A	Test start:			060811 13:30
Test section from - to (m):	668.00-673	.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		0.076	Responsible for test evaluation:		Crist	ian Enachescı
Linear plot Q and p			Flow period		Recovery period	
• •			Indata		Indata	
6500 • KI X11A 668 00	1-673.00_060811_1_Pi_Q_r • P section	0.003	p ₀ (kPa) =	6237		
6450	P above		p _i (kPa) =	6245		
0430	• Q •		$p_p(kPa) =$	6458	p _F (kPa) =	636
6400 -			$Q_p (m^3/s) =$	NA	P1 (- /	
요 요 요		- 0.002 	tp (s) =		t _F (s) =	358
S 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	:	Rate [I/		NA		1.00E-0
0 6300 - C	•	Injection Rate [I/min]	S el S* (-)=	INA	S el S [*] (-)=	1.00E-0
8 6300	•	<u>후</u> 0.001	EC _w (mS/m)=	16.6		
6250			Temp _w (gr C)=	16.6		
6200 -	•		Derivative fact.=	NA	Derivative fact.=	0.0
6150		0.000				
0.00 0.20 0.40 0.60 0.80 Elapsed T	1.00 1.20 1.40 1.60 1.3 ime [h]		Results		Results	<u> </u>
			$Q/s (m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	NA		
<u> </u>	<u>'</u>		Flow regime:	transient	Flow regime:	transient
			$dt_1 \text{ (min)} =$	NA	$dt_1 (min) =$	6.7
			$dt_2 \text{ (min)} =$	NA	$dt_2 (min) =$	42.0
			` '	NA		1.2E-1
			$T (m^2/s) = S (-) =$		$T (m^2/s) = S (-) =$	
			0 ()	NA	0 ()	1.0E-0
			$K_s(m/s) =$	NA	$K_s (m/s) =$	2.3E-1
Not A	nalysed		$S_s (1/m) =$	NA	S _s (1/m) =	2.0E-0
	J		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.7E-1
			$C_D(-) =$	NA	$C_D(-) =$	1.8E-0
			ξ (-) =	NA	ξ (-) =	-0.
			2		2	5.075.4
			$T_{GRF}(m^2/s) =$	NA	$T_{GRF}(m^2/s) =$	5.67E-1
			$S_{GRF}(-) =$	NA	$S_{GRF}(-) =$	1.00E-0
			D_{GRF} (-) =	NA	D _{GRF} (-) =	1.0
Log-Log plot incl. derivatives-	recovery period		Selected represe		<u></u>	
Bapsed time	[h] 40.1 40.01		$dt_1 (min) =$	6.71	C (m³/Pa) =	1.7E-1
10. ¹⁰ SKB Laxemar / KLX11A 668.00-673.00 / FI	. 10,"	7	dt_2 (min) =	42.07	$C_D(-) =$	1.8E-0
668.00-673.00 / PI	(c) Golder Associates	3	$T_T (m^2/s) =$	1.2E-11		-0.
••	·	450	S (-) =	1.0E-06		
10°		100	$K_s (m/s) =$	2.4E-12		
		0.3	$S_s (1/m) =$	2.0E-07		
a l		nted bre	Comments:			
		0.3 10 10 10 10 10 10 10 10 10 10 10 10 10	The recommended	transmissivity of	f 1.2E-11 m2/s was	derived from th
10-1		^	radial flow analysis	of the Pi phase.	The confidence ran	ge for the
T GWANDER	C= 1.65E-11	0.03			to be 9.0E-12 to 4.0	
FLOW MODEL . Homogeneous BOUNDARY CONDITIONS Stugrouse WELLTYE . Source SUPPROSITION TYPE: No superposition FLOT TYPE : Fares, Raynolds	C= 1.65E.11 mg/Pa T= 1.17E.11 mg/Ps S= 1.00E.06 - s= -2.90E.01 - n= 2.00E+00 -			d not be extrapo	lated due to the very	low
		10-2	transmissivity.			
. 10 ⁻¹ 10 ⁰ tE	10 ¹ 10 ² 10	o ³				

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site invest	igation	Test type:[1]			CHi
Area:	Laxemar		Test no:			•
Borehole ID:	KI X11A		Test start:			060811 15:38
Borchoic IB.						
Test section from - to (m):	673.00-678	3.00 m	Responsible for test execution:			Stephan Rohs
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	
6550 		T 0.003	p ₀ (kPa) =	6283	maata	
KLX11A_673.0	• P section • P above		p _i (kPa) =	6288		
6500 -	P below Q		$p_p(kPa) =$		p _F (kPa) =	629
6450 -	:			NA	ρ _Γ (κι α)	027
프	•	- 0.002	$\frac{Q_p (m^3/s)=}{tp (s)} =$		t _F (s) =	3720
2 6400 -	•	nte [1/m				
3 and	•	Injection Rate [I/min]	S el S* (-)=	NA	S el S [*] (-)=	1.00E-0
8 8550	•	nje ct	EC _w (mS/m)=			
6300		0.001	Temp _w (gr C)=	16.7		
	•		Derivative fact.=	NA	Derivative fact.=	0.0
6250						
0.00 0.20 0.40 0.60 0.80	1.00 1.20 1.40 1.60	0.000				
Elapsed		150	Results		Results	
			$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- f	low period		$T_{\rm M} (m^2/s) =$	NA		
			Flow regime:	transient	Flow regime:	transient
			dt_1 (min) =	NA	dt_1 (min) =	2.3
			$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	8.9
			$T (m^2/s) =$	NA	$T (m^2/s) =$	9.0E-1
			S (-) =	NA	S (-) =	1.0E-0
			K_s (m/s) =	NA	$K_s (m/s) =$	1.8E-1
Not A	nalysed		$S_s (1/m) =$	NA	$S_s(1/m) =$	2.0E-0
			$C (m^3/Pa) =$	NA	C (m³/Pa) =	1.2E-1
			$C_D(-) =$	NA	$C_D(-) =$	1.3E-0
			ξ (-) =	NA	ξ (-) =	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	recovery period		Selected represe	entative paran		
<u> </u>			dt_1 (min) =	2.36		1.2E-1
Bapsed time 10. ⁻³ 10. ⁻³ 10. ⁻³	[h] 10, ⁻¹ 10, ⁰	- 1	$dt_2 \text{ (min)} =$		$C_D(-) =$	1.3E-0
10 1 SKB Laxemer / KLX11A 673.00-678.00 / Pi	Flow Dim Version 2.14b (c) Golder Associates	0.3	2	9.0E-11		0.
		0.3	$T_T (m^2/s) = $ $S (-) = $	1.0E-06		0.
	The state of the s	10 -1				
10°	-		K _s (m/s) =	1.8E-11		
· · · · · ·	and the same of th	0.03	$S_s(1/m) =$	2.0E-07		
	, 	0.03 nssaud patryonuooog	Comments:			
.:		10 -2 Townood			9.0E-11 m2/s was	
10-1		_			(inner zone). The co	
	C 1.19E-11 m2/s T 8.98E-11 m2/s S 1.00E-06 -	0.003			mated to be 5.0E-11 be extrapolated due	
FLOW MODEL : Two shall composite BOLNDARY CONDITIONS: Stugrpuise WELL TYPE : Source SUFBROSTION TYPE: No superposition PLOT TYPE : Peres, Reynolds	s 1.40E-01 - n1 2.00F+00 -	F 10 -3	transmissivity.	soure could not	oc extraporated alle	w me very low
our Engrusion TYPE: No superposition	n2 2.00E+00 - rD1 9.80E+00 - brw 8.06E-01 -	10	a unsimissivity.			
10 ⁻¹ 10 ⁻⁰		 				

Test S	Sumr	nary Sheet			
Oskarshamn site investigation		Test type:[1]			CHi
La	Test no:				
KLX11A		Test start:			060811 17:45
678.00-683	3.00 m				Stephan Roh
	0.076			Cris	tian Enachescu
	test evaluation:			<u> </u>	
					d
	- 0.002		6320		T
Pi_Q_r • P section	0.003				
• P below				n- (kPa) =	633
		•		ρ _F (κι α <i>)</i> –	033
	0.002			t (a) =	912
	te [l/m				
	tion Ra		NA	S el S (-)=	1.00E-0
	0.001	, ,	1.50		

•		Derivative fact.=	NA	Derivative fact.=	0.0
2.00 2.50 3.00 3	0.000				
me [h]				Results	
		$Q/s (m^2/s) =$			
ow period		$T_M (m^2/s)=$	NA		
		Flow regime:	transient	Flow regime:	transient
		dt_1 (min) =	NA	$dt_1 (min) =$	1.9
		dt_2 (min) =	NA	dt_2 (min) =	16.9
		$T (m^2/s) =$	NA	$T (m^2/s) =$	8.4E-1
		S (-) =	NA	S (-) =	1.0E-0
		$K_s (m/s) =$	NA	$K_s (m/s) =$	1.7E-1
		$S_s(1/m) =$	NA	$S_s(1/m) =$	2.0E-0
ialysed		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	1.5E-1
		, ,	NA	, ,	1.7E-0
			NA		-0.3
		3()	†	3()	†
		$T_{}(m^2/s) =$	NA	T (m ² /s) =	NA
					NA
					NA
recovery period			<u> </u>	<u> </u>	
Tood vory portou					1.5E-1
h]					1.7E-0
	1				-0.3 -0.3
(b) Color Moderates	0.3				-0.
					<u> </u>
	10-1				
with the second	1000	. , ,	2.0 Ŀ -07		
•	0.03 aut page				
	10 ⁻² 9				
	-			The confidence ra to be 6.0E-11 to 1.0	
		• OOGA VALITATISHIISSI'	vitv is collillated	UL U.UE-II IU I.V	ノレーI U 11114/5. I IIに
C= 1.52E-11 mg/Pa T= 8.40E-11 mg/Pa	0.003				
C= 1.52E-11 m8/Pa T= 8.4E-11 m2/s S= 1.00E-06 s= 3.24E-01 - n= 2.00E+00 -	0.003			lated due to the ver	
n= 2.00E+00 -	0.003	static pressure cou			
	PLQ.r Paction Pactor Pa	Laxemar KLX11A 678.00-683.00 m 0.076 0.076 0.000	Ploy Period Indata Po (kPa) = Po (Laxemar Test no:	Laxemar Test no:

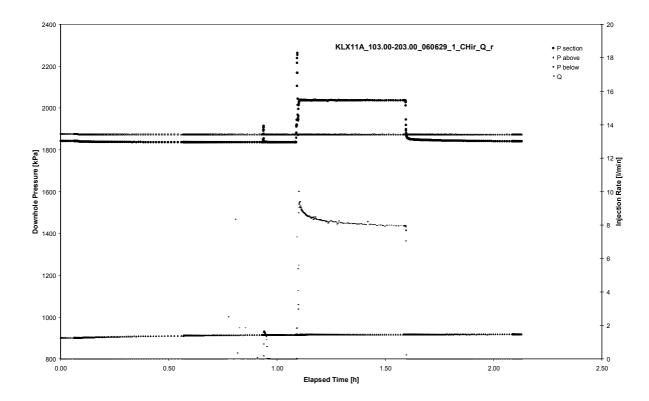
Test: 103.00 – 203.00 m

APPENDIX 2-1

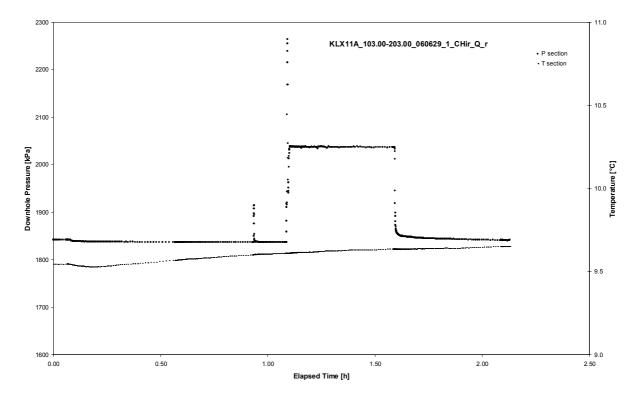
Test 103.00 – 203.00 m

Analysis diagrams

Test: 103.00 – 203.00 m

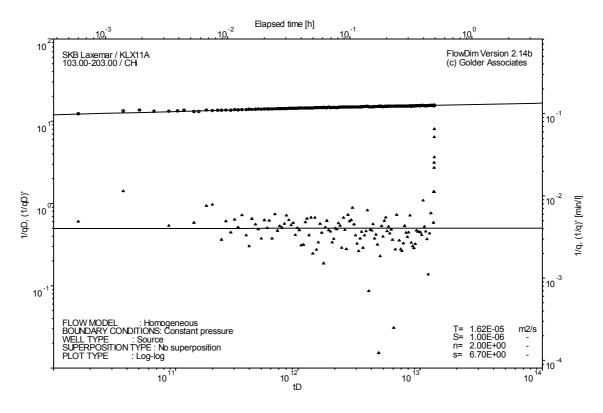


Pressure and flow rate vs. time; cartesian plot



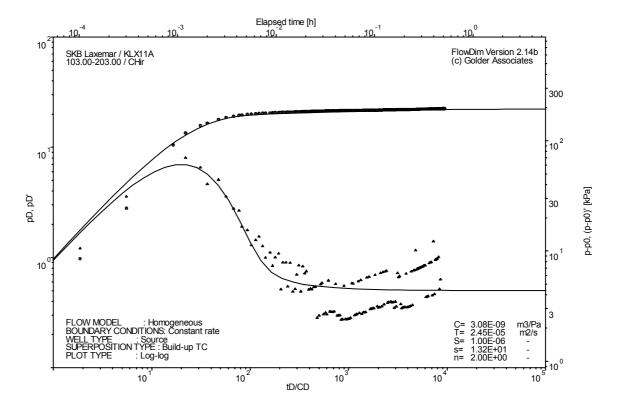
Interval pressure and temperature vs. time; cartesian plot

Test: 103.00 – 203.00 m

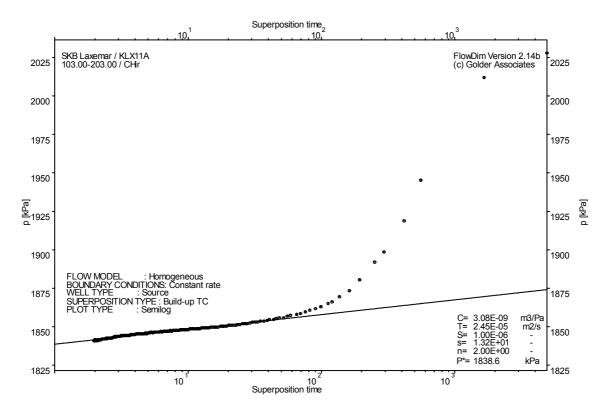


CHI phase; log-log match

Test: 103.00 – 203.00 m

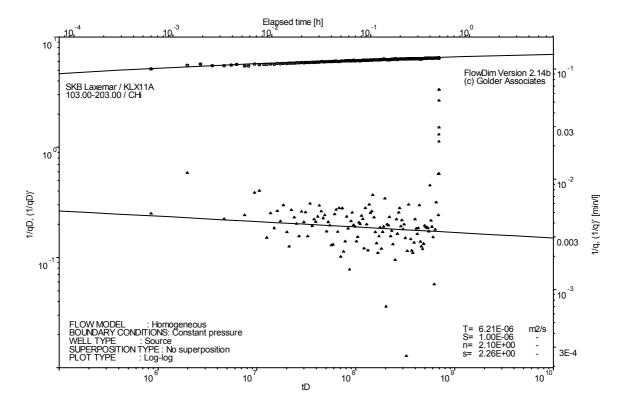


CHIR phase; log-log match

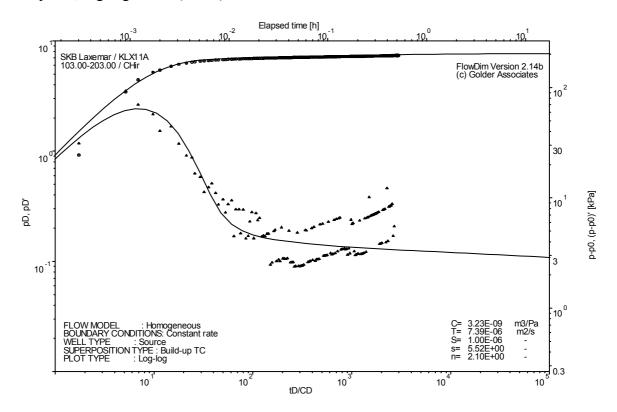


CHIR phase; HORNER match

Test: 103.00 – 203.00 m



CHI phase; log-log match (n=2.1)



CHIR phase; log-log match (n=2.1)

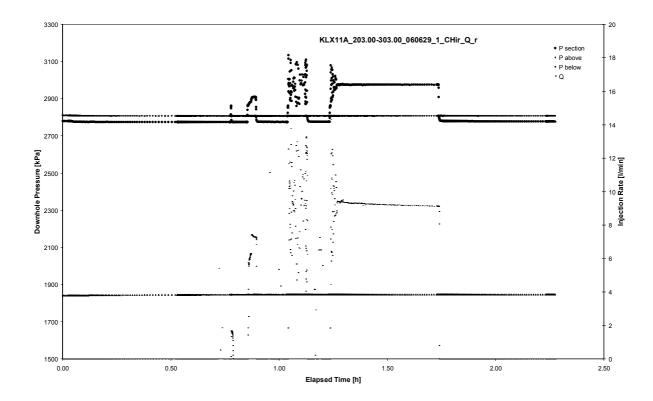
Test: 203.00 – 303.00 m

APPENDIX 2-2

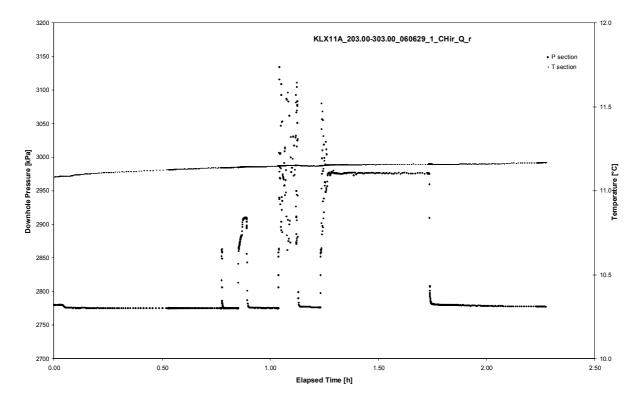
Test 203.00 – 303.00 m

Analysis diagrams

Test: 203.00 – 303.00 m

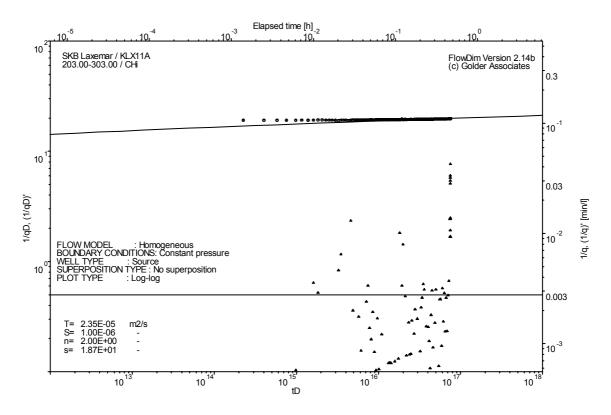


Pressure and flow rate vs. time; cartesian plot



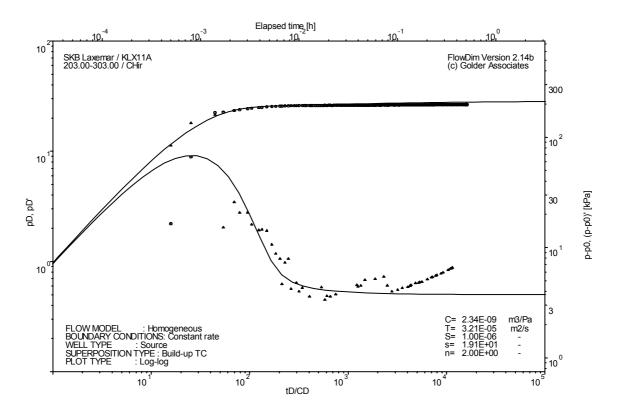
Interval pressure and temperature vs. time; cartesian plot

Test: 203.00 – 303.00 m

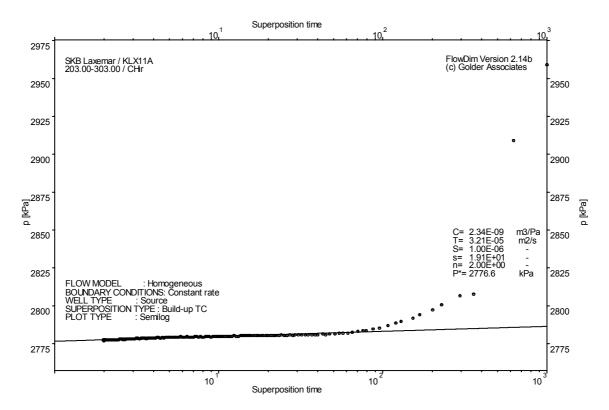


CHI phase; log-log match

Test: 203.00 - 303.00 m

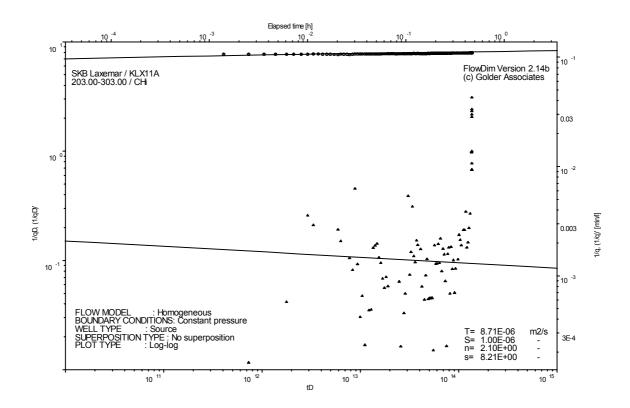


CHIR phase; log-log match

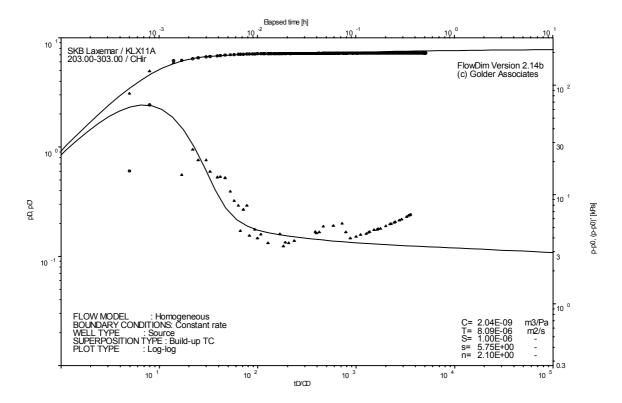


CHIR phase; HORNER match

Test: 203.00 – 303.00 m



CHI phase; log-log match (n=2.1)



CHIR phase; log-log match (n=2.1)

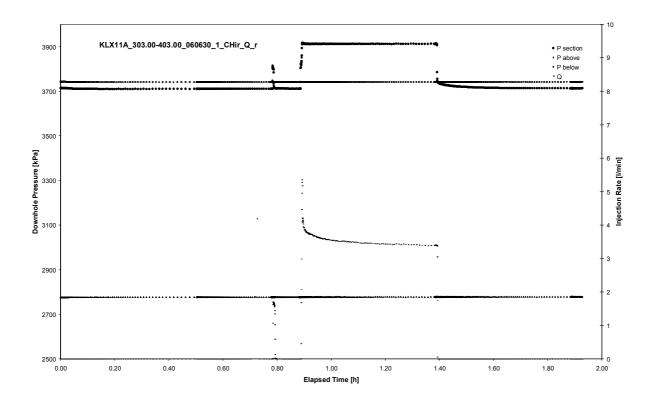
Test: 303.00 – 403.00 m

APPENDIX 2-3

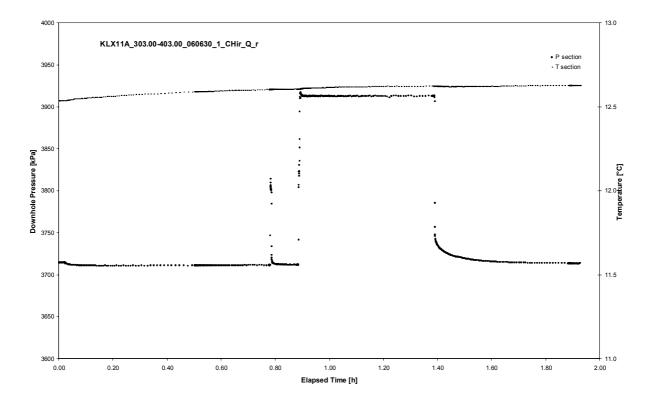
Test 303.00 – 403.00 m

Analysis diagrams

Test: 303.00 – 403.00 m

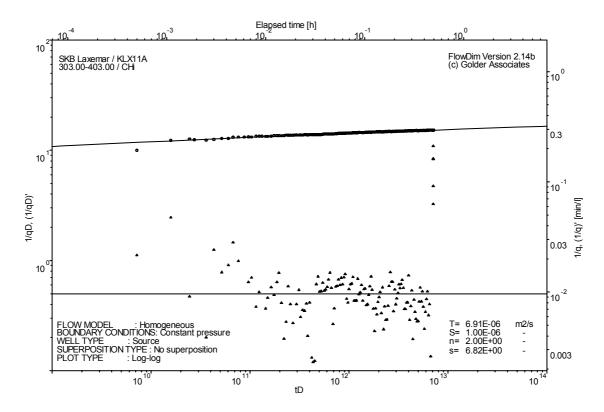


Pressure and flow rate vs. time; cartesian plot



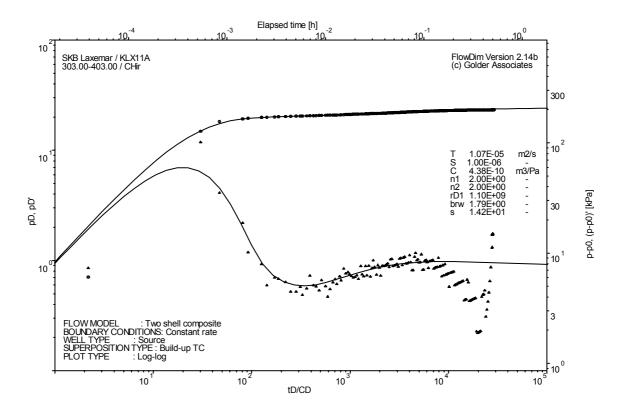
Interval pressure and temperature vs. time; cartesian plot

Test: 303.00 – 403.00 m

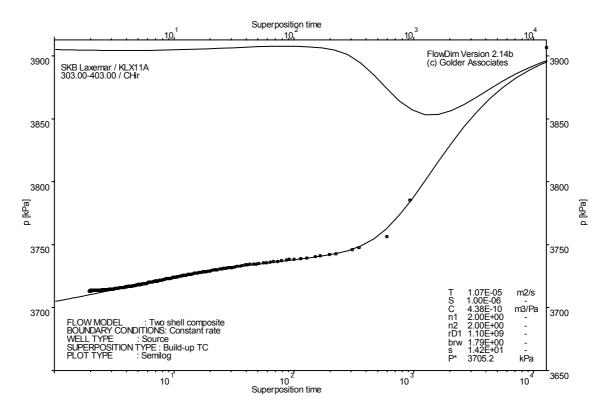


CHI phase; log-log match

Test: 303.00 – 403.00 m

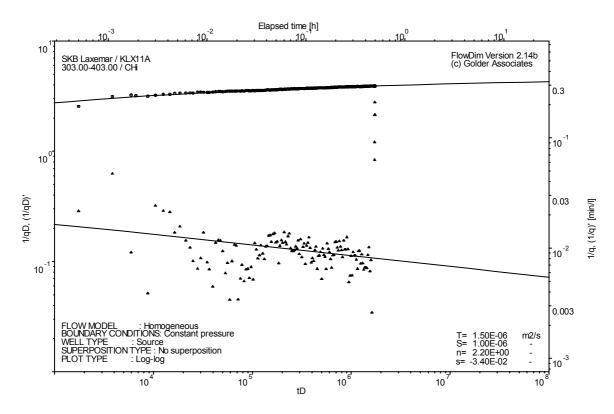


CHIR phase; log-log match



CHIR phase; HORNER match

Test: 303.00 – 403.00 m



CHI phase; log-log match (n=2.2)

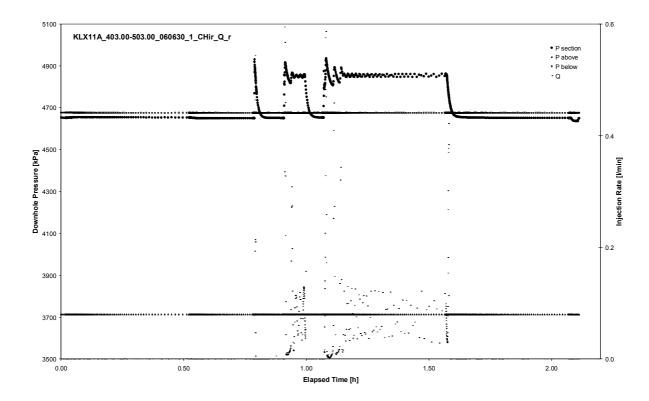
Test: 403.00 – 503.00 m

APPENDIX 2-4

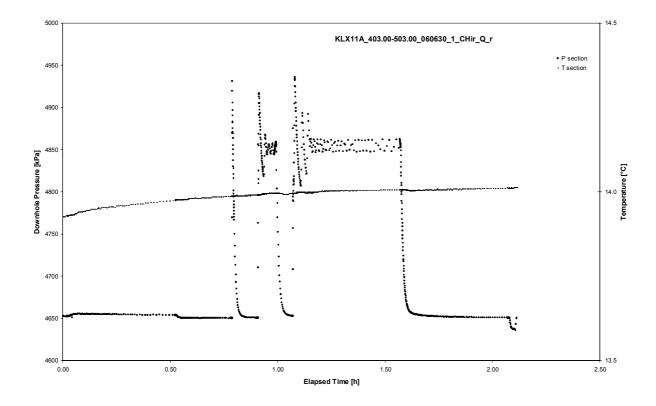
Test 403.00 – 503.00 m

Analysis diagrams

Test: 403.00 – 503.00 m

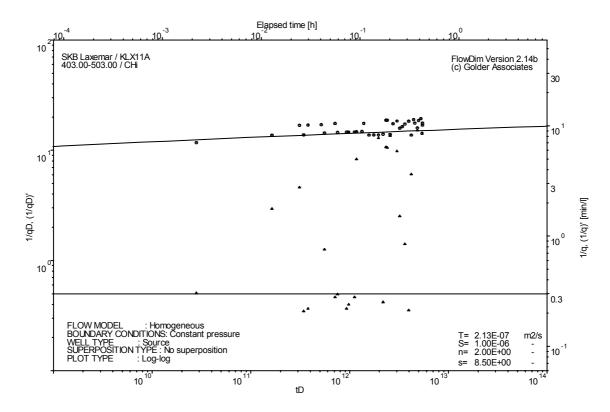


Pressure and flow rate vs. time; cartesian plot



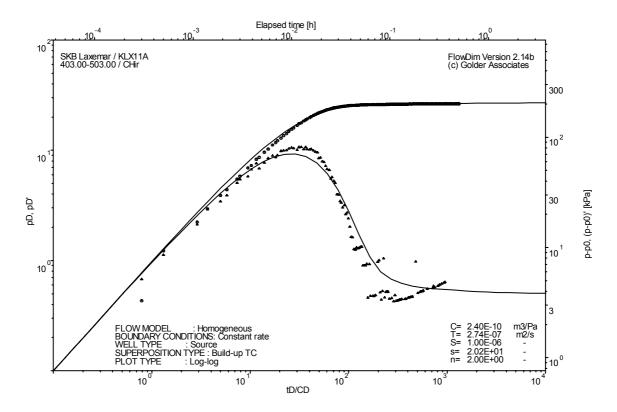
Interval pressure and temperature vs. time; cartesian plot

Test: 403.00 – 503.00 m

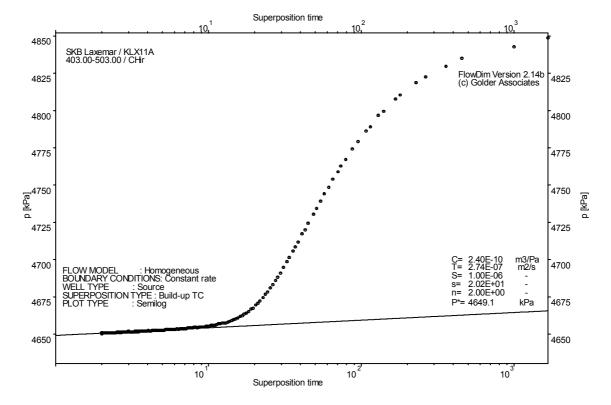


CHI phase; log-log match

Test: 403.00 - 503.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

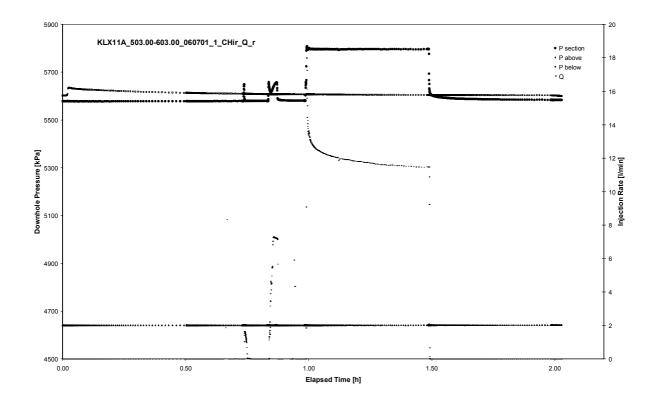
Test: 503.00 – 603.00 m

APPENDIX 2-5

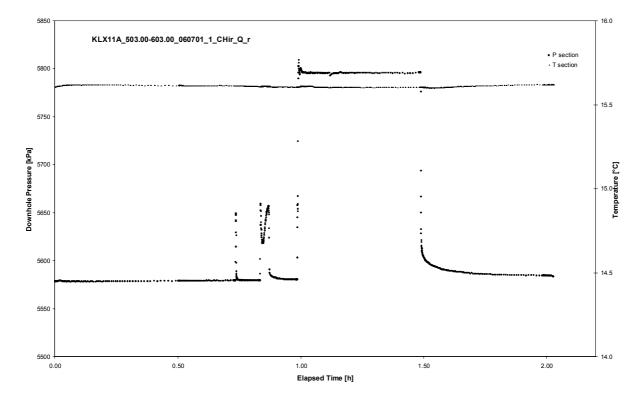
Test 503.00 – 603.00 m

Analysis diagrams

Test: 503.00 – 603.00 m

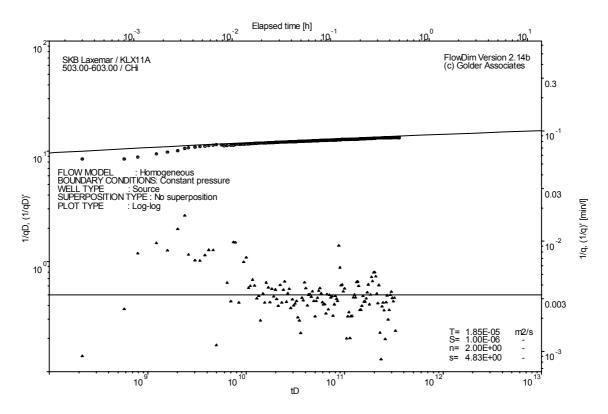


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 503.00 – 603.00 m

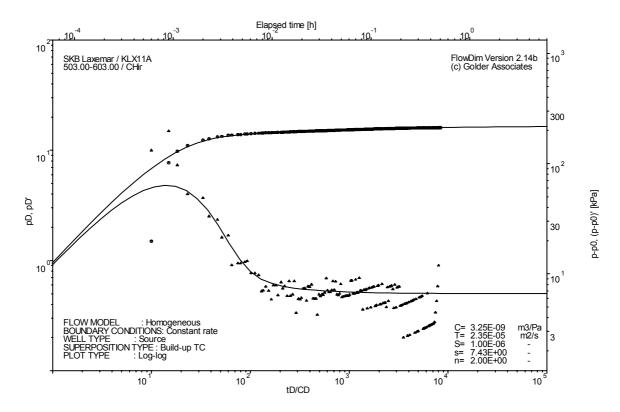


CHI phase; log-log match

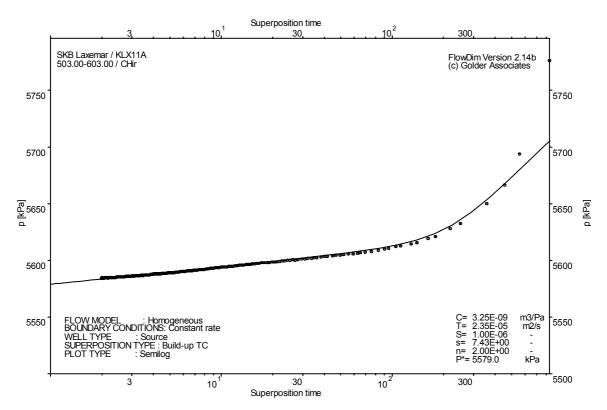
Page 2-5/4

Borehole: KLX11A

Test: 503.00 – 603.00 m

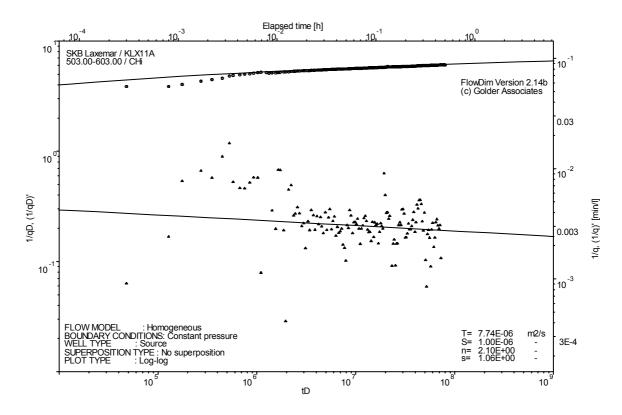


CHIR phase; log-log match

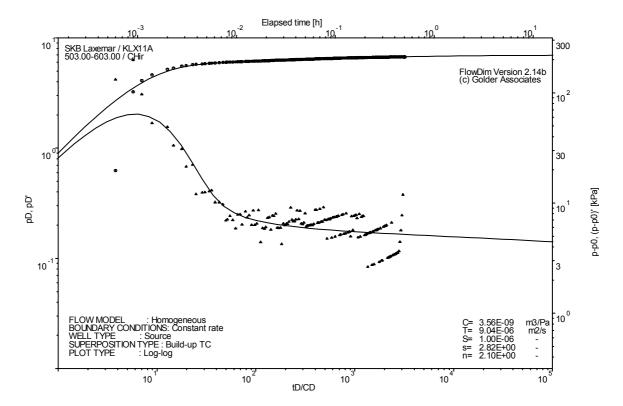


CHIR phase; HORNER match

Test: 503.00 – 603.00 m



CHI phase; log-log match (n=2.1)



CHIR phase; log-log match (n=2.1)

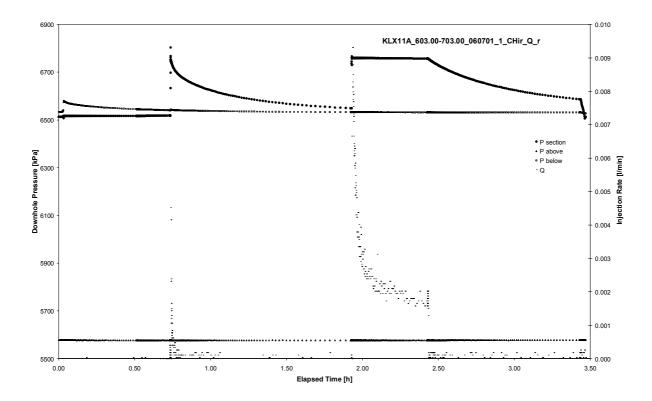
Test: 603.00 – 703.00 m

APPENDIX 2-6

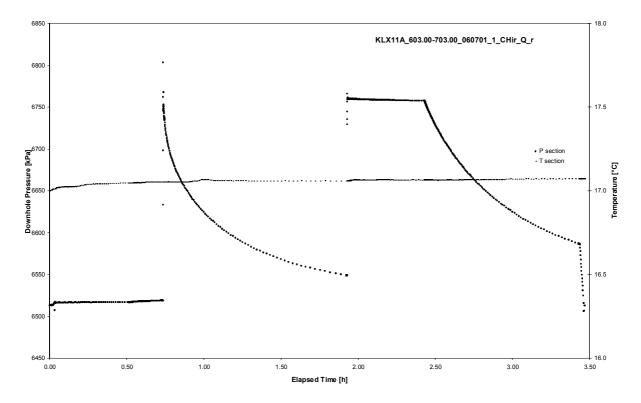
Test 603.00 – 703.00 m

Analysis diagrams

Test: 603.00 – 703.00 m

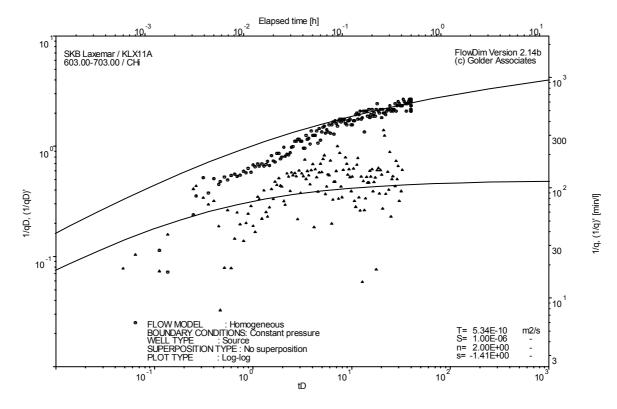


Pressure and flow rate vs. time; cartesian plot



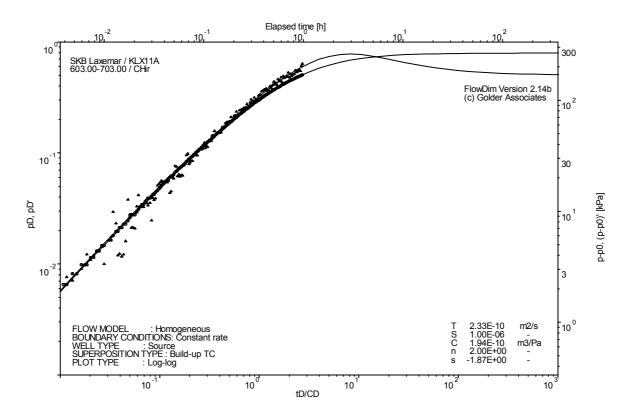
Interval pressure and temperature vs. time; cartesian plot

Test: 603.00 – 703.00 m

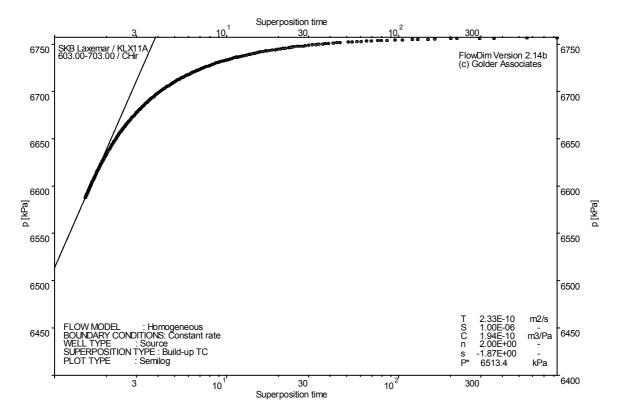


CHI phase; log-log match

Test: 603.00 – 703.00 m

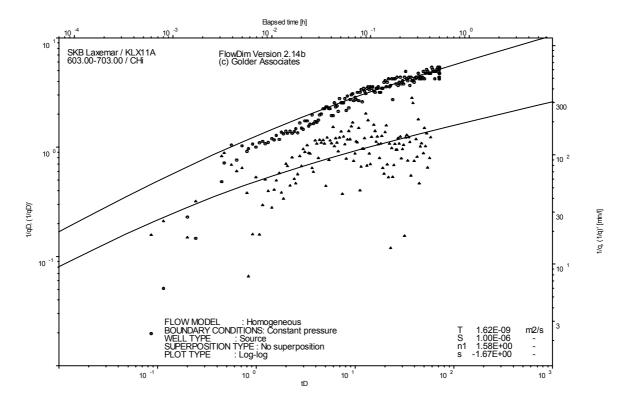


CHIR phase; log-log match



CHIR phase; HORNER match

Test: 603.00 – 703.00 m



CHI phase; log-log match (n=1.58)

Test: 703.00 – 803.00 m

APPENDIX 2-7

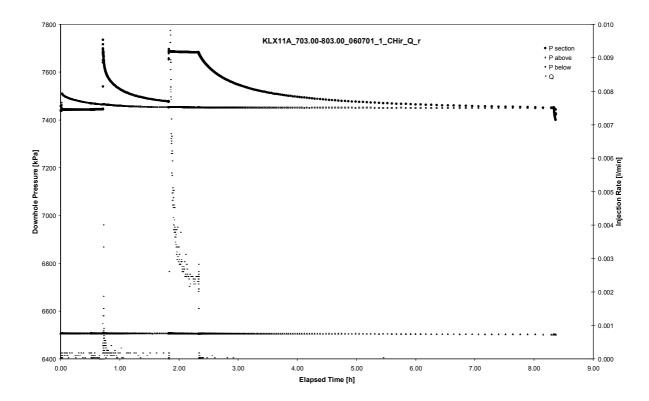
Test 703.00 – 803.00 m

Analysis diagrams

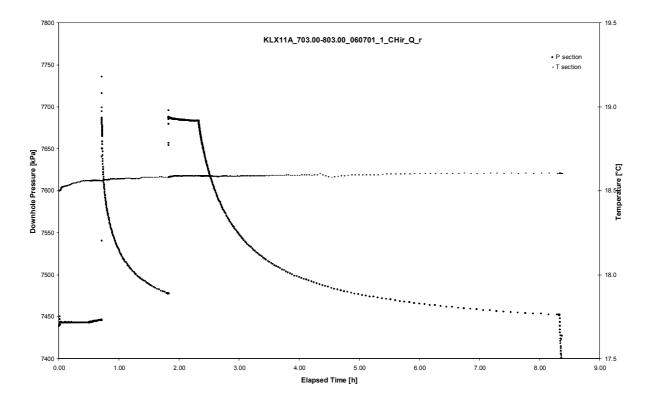
Page 2-7/2

Borehole: KLX11A

Test: 703.00 – 803.00 m



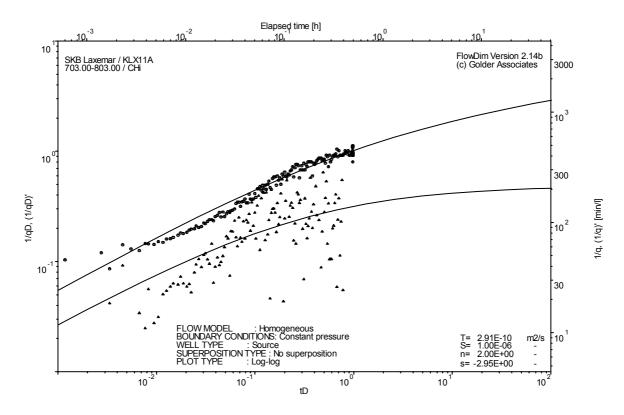
Pressure and flow rate vs. time; cartesian plot



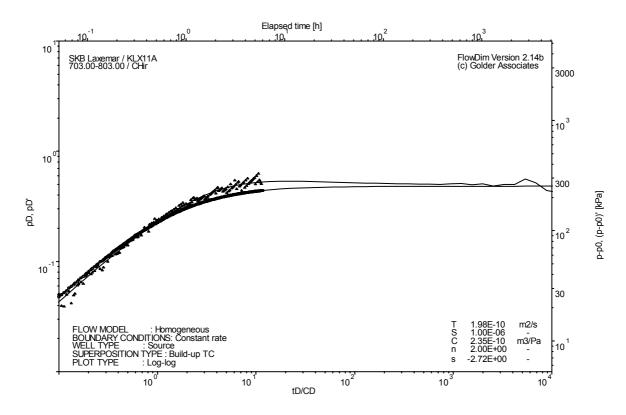
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-7/3

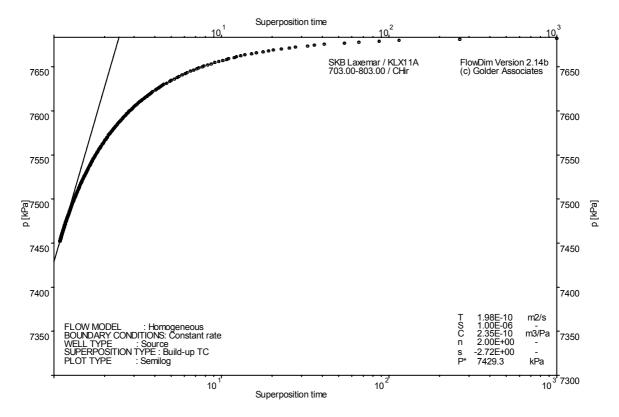
Test: 703.00 – 803.00 m



Test: 703.00 – 803.00 m



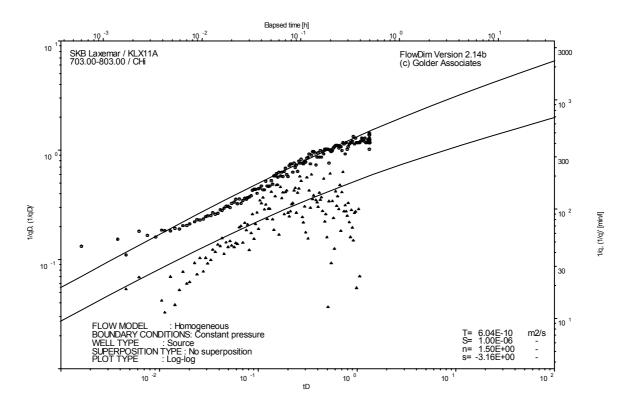
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-7/5

Test: 703.00 – 803.00 m



CHI phase; log-log match (n=1.5)

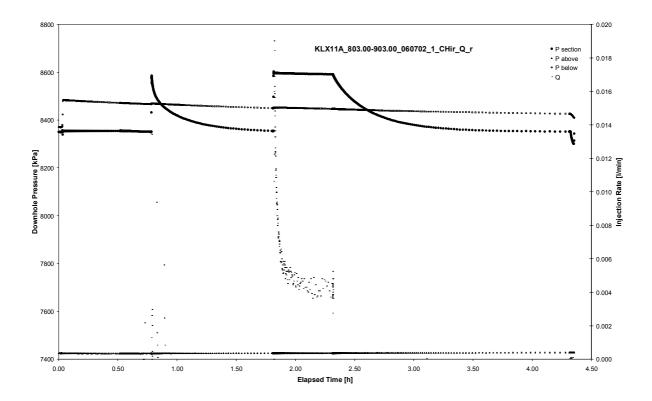
Borehole: KLX11A Page 2-8/1

Test: 803.00 – 903.00 m

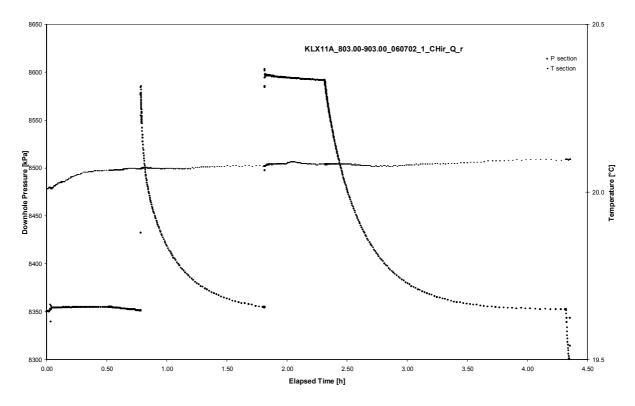
APPENDIX 2-8

Test 803.00 – 903.00 m

Test: 803.00 – 903.00 m



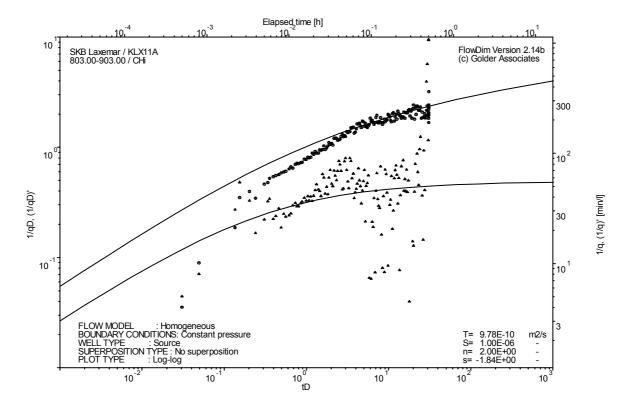
Pressure and flow rate vs. time; cartesian plot



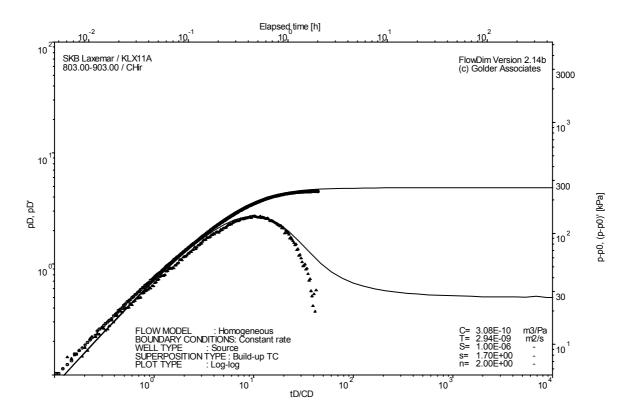
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-8/3

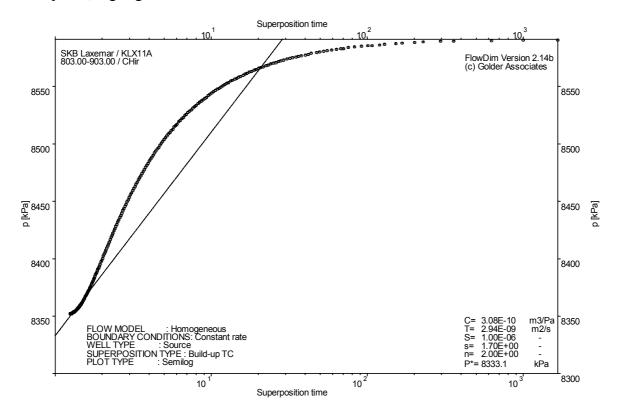
Test: 803.00 – 903.00 m



Test: 803.00 – 903.00 m



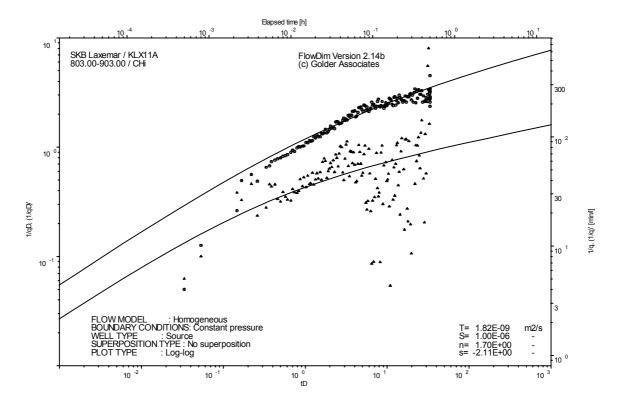
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-8/5

Test: 803.00 – 903.00 m



CHI phase; log-log match (n=1.7)

Borehole: KLX11A Page 2-9/1

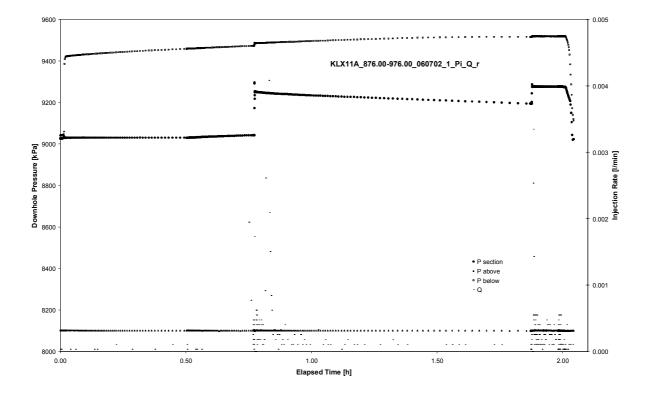
Test: 876.00 – 976.00 m

APPENDIX 2-9

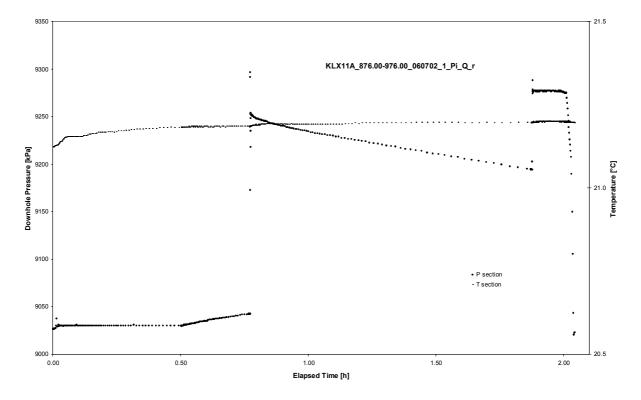
Test 876.00 – 976.00 m

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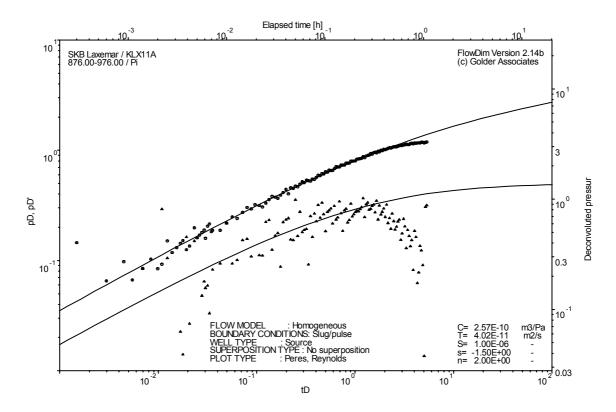


Pressure and flow rate vs. time; cartesian plot

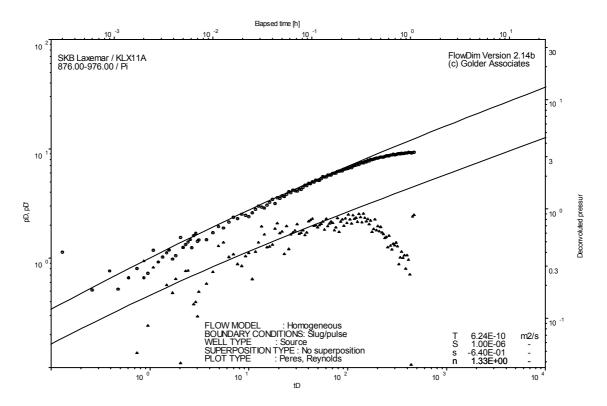


Interval pressure and temperature vs. time; cartesian plot

Test: 876.00 – 976.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.33)

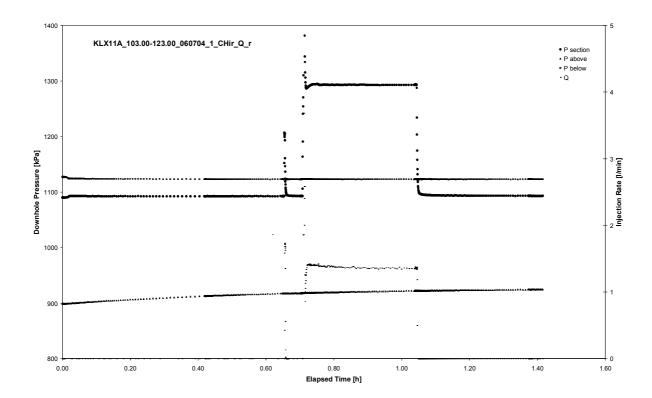
Borehole: KLX11A Page 2-10/1

Test: 103.00 – 123.00 m

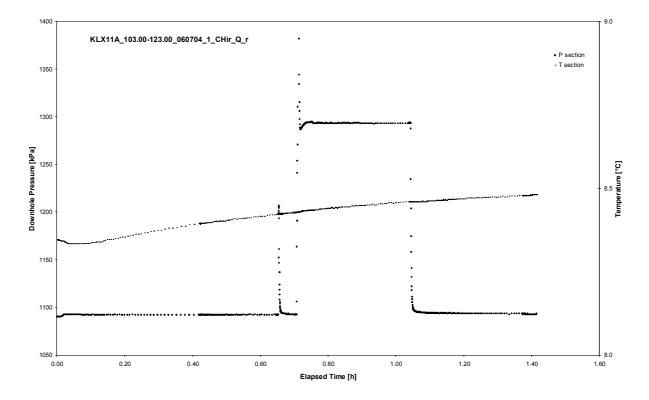
APPENDIX 2-10

Test 103.00 – 123.00 m

Test: 103.00 – 123.00 m



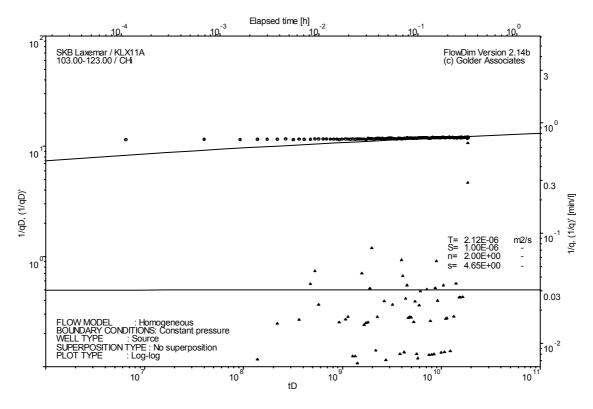
Pressure and flow rate vs. time; cartesian plot



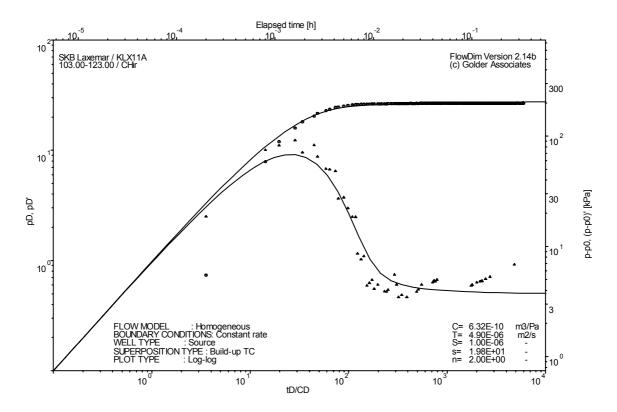
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-10/3

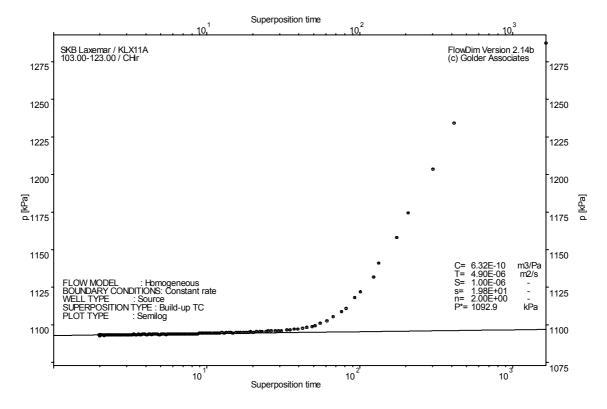
Test: 103.00 – 123.00 m



Test: 103.00 – 123.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

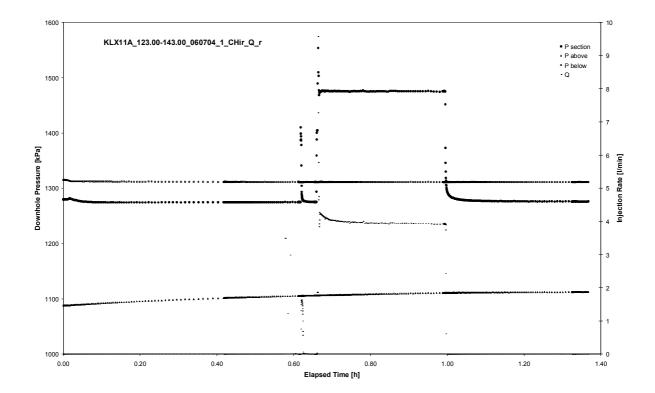
Borehole: KLX11A Page 2-11/1

Test: 123.00 – 143.00 m

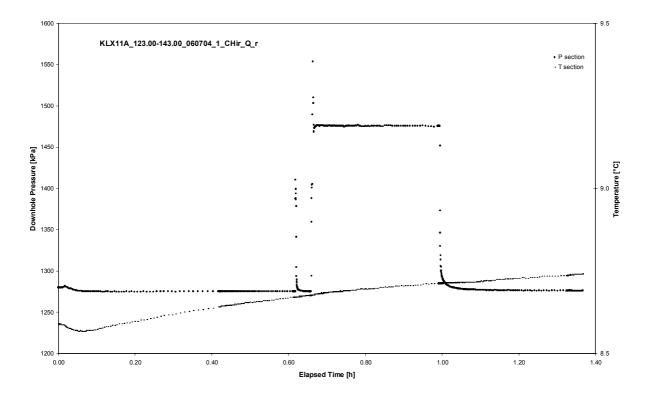
APPENDIX 2-11

Test 123.00 – 143.00 m

Test: 123.00 – 143.00 m



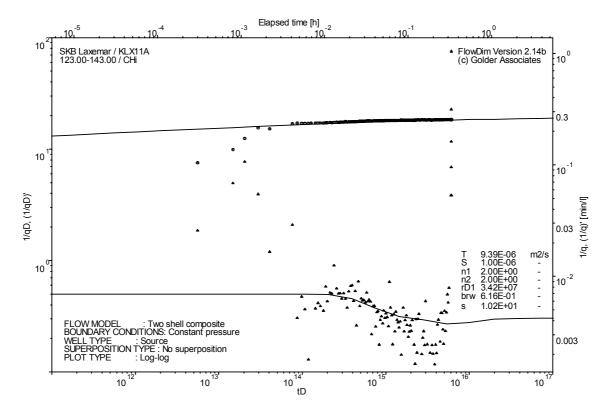
Pressure and flow rate vs. time; cartesian plot



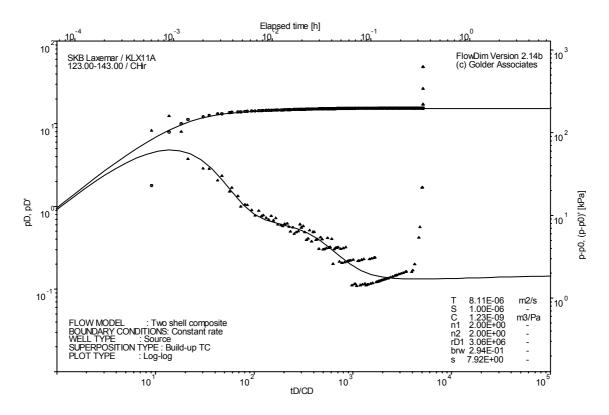
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-11/3

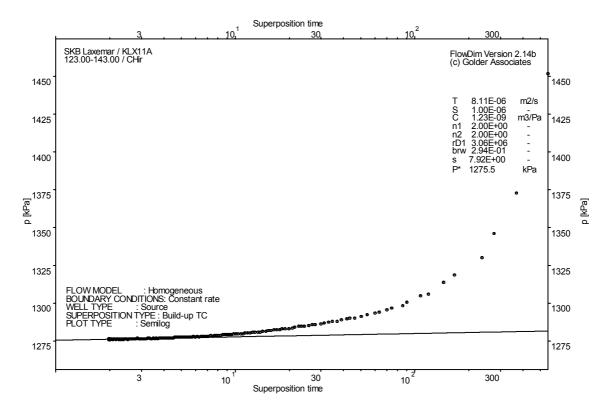
Test: 123.00 – 143.00 m



Test: 123.00 – 143.00 m

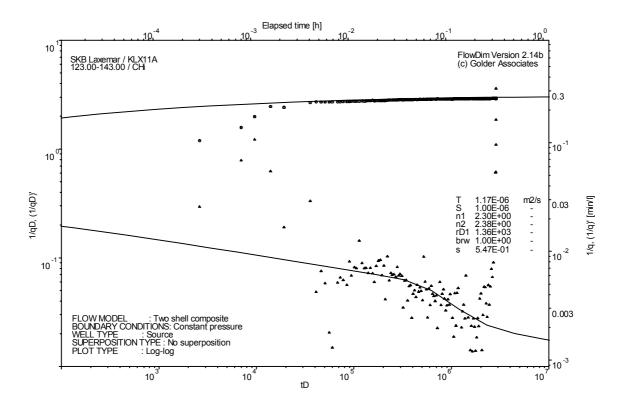


CHIR phase; log-log match

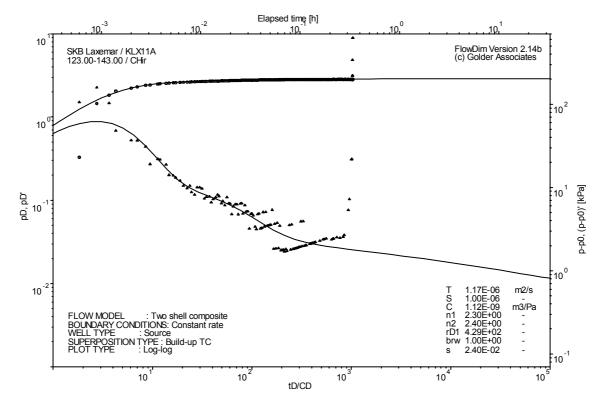


CHIR phase; HORNER match

Test: 123.00 – 143.00 m



CHI phase; log-log match (n1=2.3, n2=2.38)



CHIR phase; log-log match (n1=2.3, n2=2.4)

Borehole: KLX11A Page 2-12/1

Test: 143.00 – 163.00 m

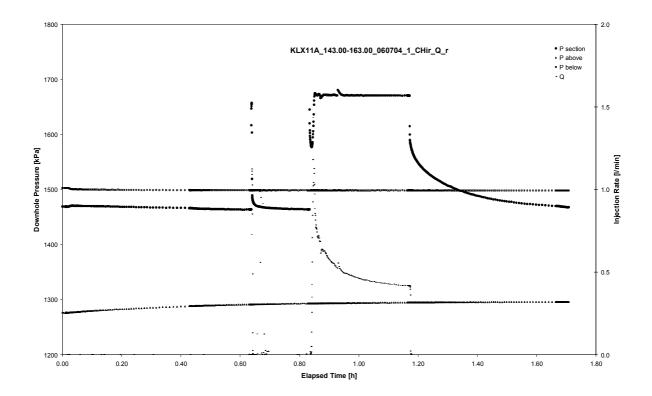
APPENDIX 2-12

Test 143.00 – 163.00 m

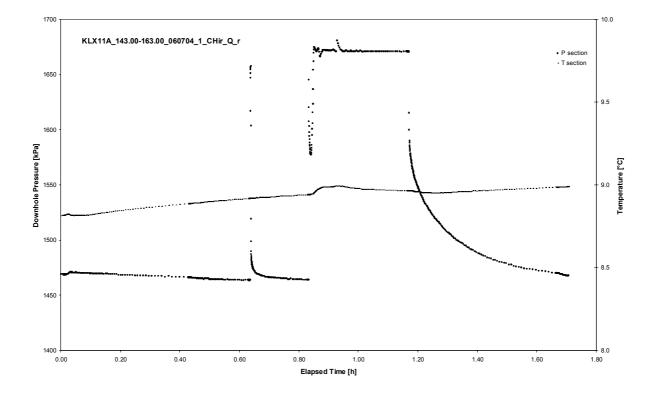
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Borehole: KLX11A

Test: 143.00 – 163.00 m



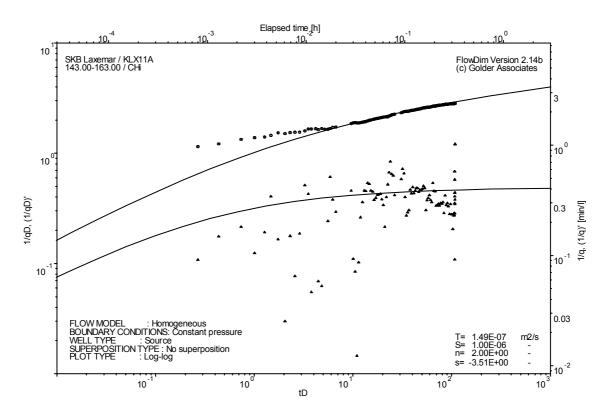
Pressure and flow rate vs. time; cartesian plot



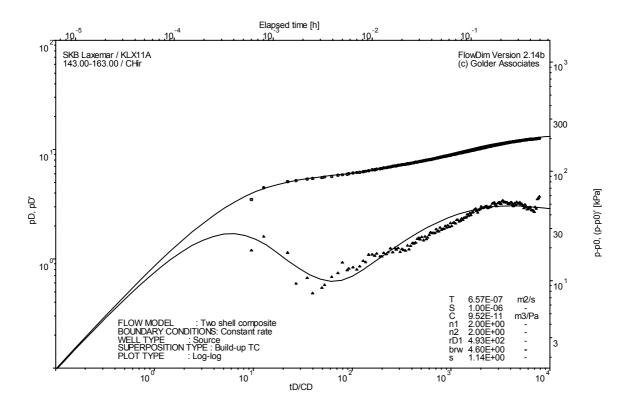
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-12/3

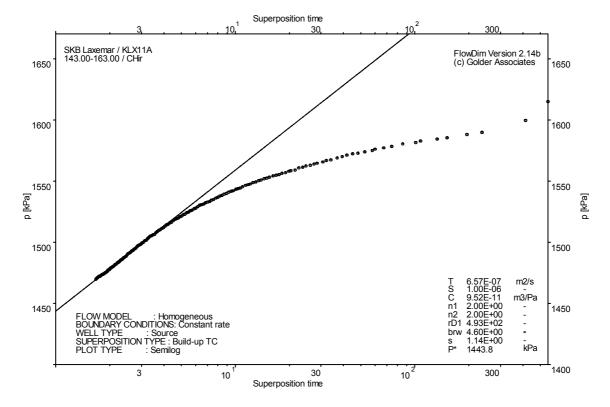
Test: 143.00 – 163.00 m



Test: 143.00 – 163.00 m



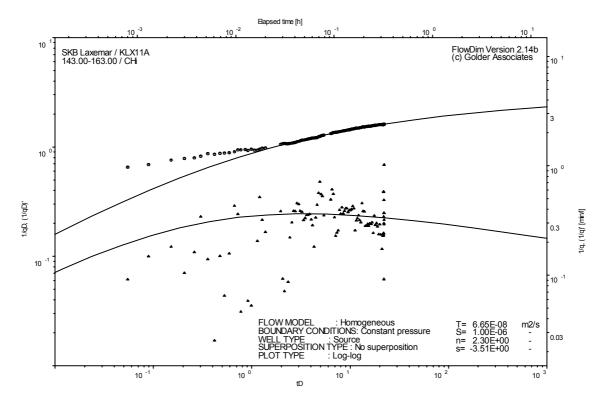
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-12/5

Test: 143.00 – 163.00 m



CHI phase; log-log match (n=2.3)

Borehole: KLX11A Page 2-13/1

Test: 163.00 – 183.00 m

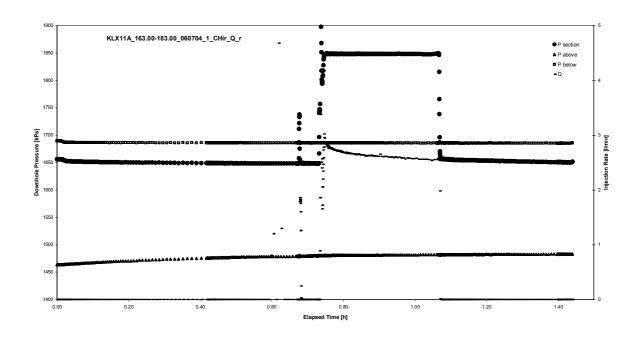
APPENDIX 2-13

Test 163.00 – 183.00 m

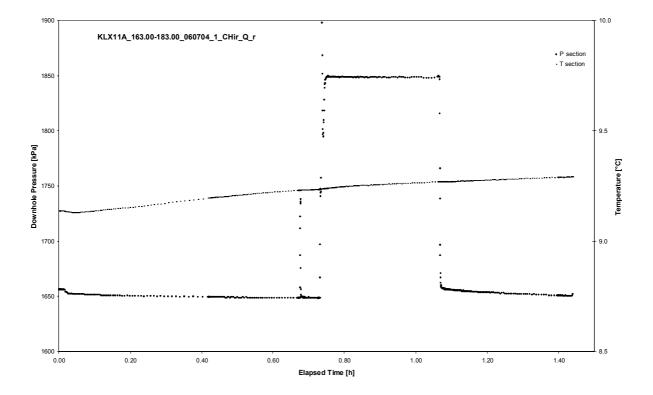
Page 2-13/2

Borehole: KLX11A

Test: 163.00 – 183.00 m



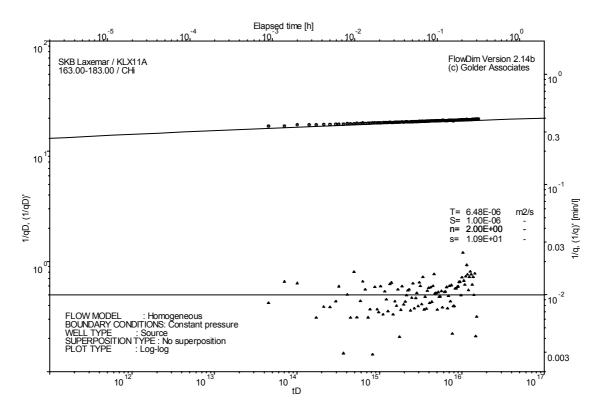
Pressure and flow rate vs. time; cartesian plot



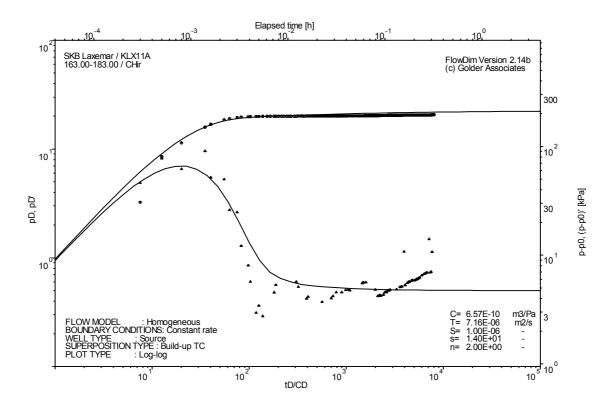
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-13/3

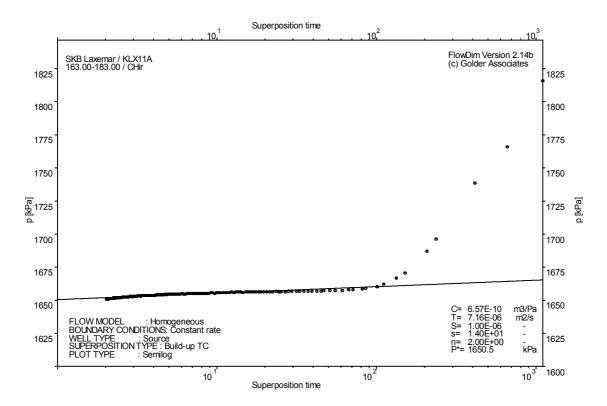
Test: 163.00 – 183.00 m



Test: 163.00 – 183.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-14/1

Test: 183.00 – 203.00 m

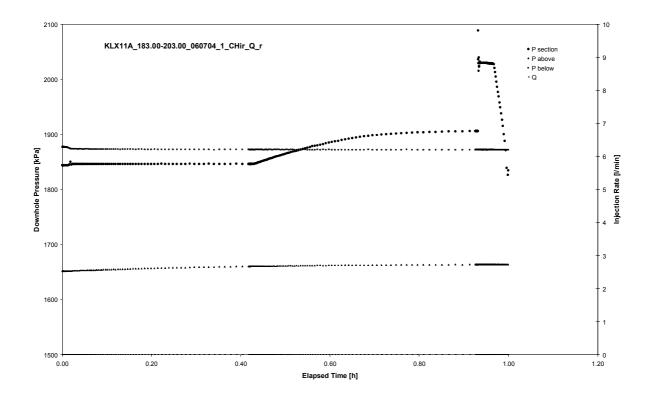
APPENDIX 2-14

Test 183.00 – 203.00 m

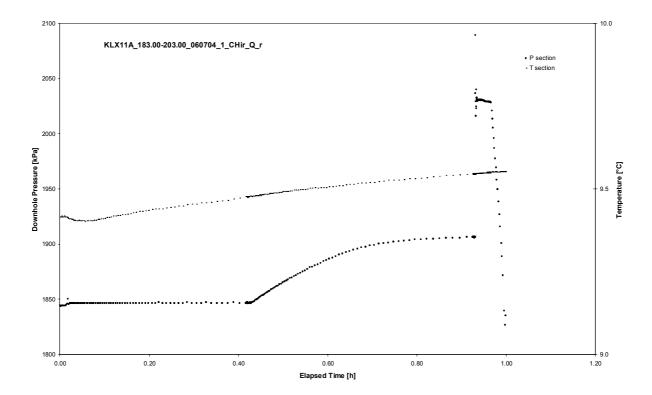
Page 2-14/2

Borehole: KLX11A

Test: 183.00 – 203.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-14/3

Test: 183.00 – 203.00 m

Not analysed

Borehole: Test:	KLX11A 183.00 – 203.00 m		Page 2-14/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

CHIR phase; HORNER match

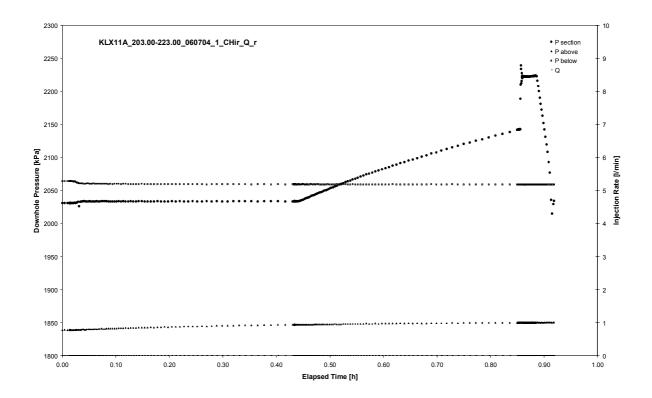
Borehole: KLX11A Page 2-15/1

Test: 203.00 – 223.00 m

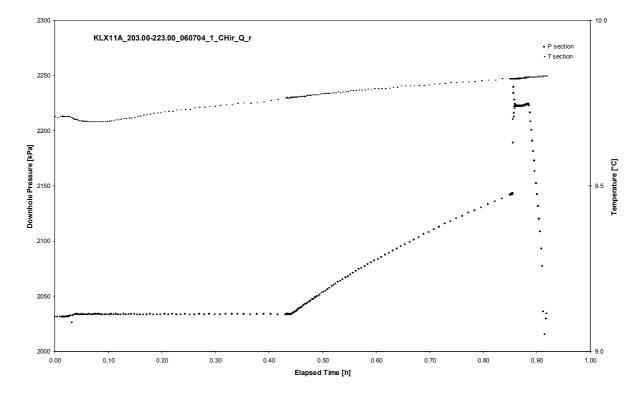
APPENDIX 2-15

Test 203.00 – 223.00 m

Test: 203.00 – 223.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-15/3

Test: 203.00 – 223.00 m

Not analysed

Borehole: Test:	KLX11A 203.00 – 223.00 m		Page 2-15/4
Test.	203.00 – 223.00 III		
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

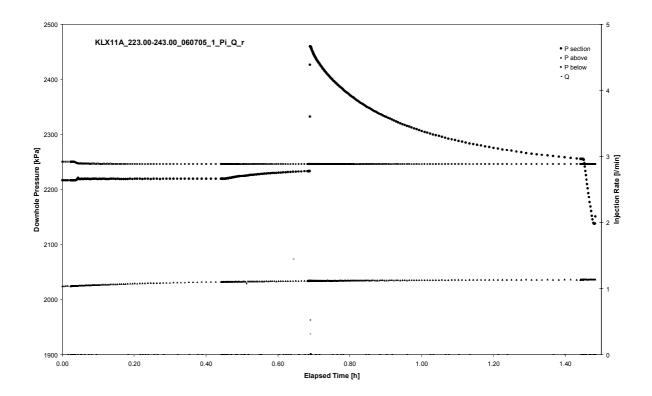
Borehole: KLX11A Page 2-16/1

Test: 223.00 – 243.00 m

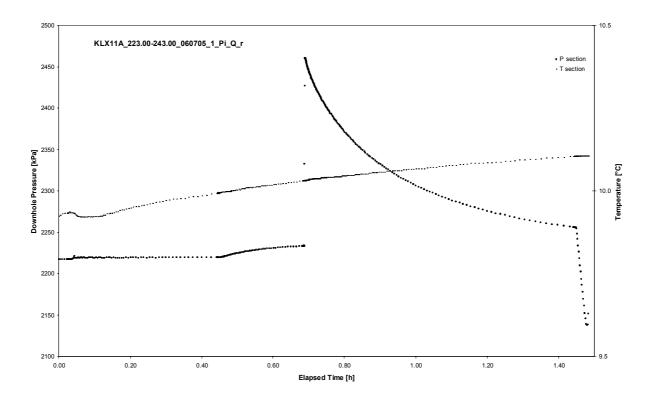
APPENDIX 2-16

Test 223.00 – 243.00 m

Test: 223.00 – 243.00 m

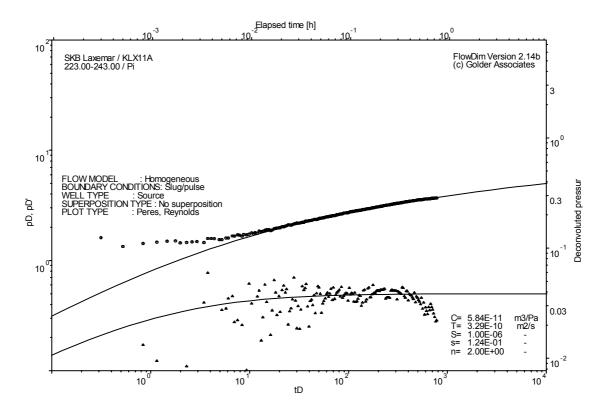


Pressure and flow rate vs. time; cartesian plot

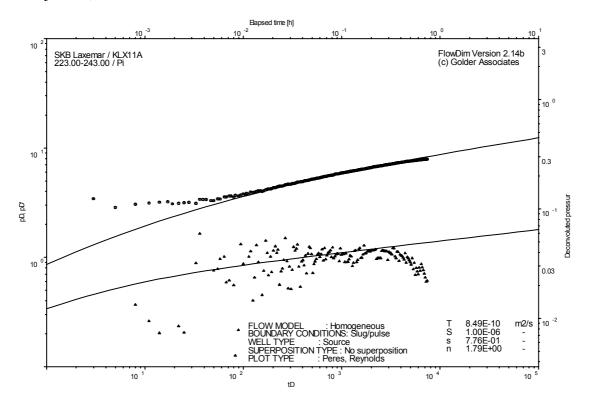


Interval pressure and temperature vs. time; cartesian plot

Test: 223.00 – 243.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.79)

Borehole: KLX11A Page 2-17/1

Test: 243.00 – 263.00 m

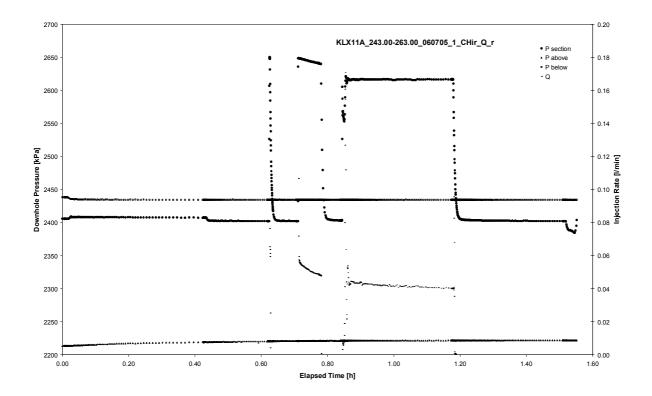
APPENDIX 2-17

Test 243.00 – 263.00 m

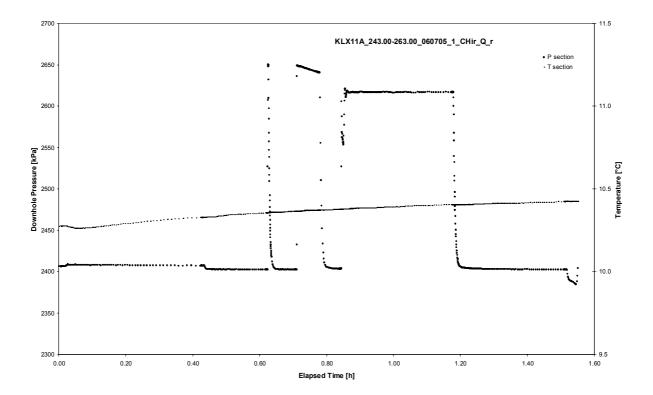
Page 2-17/2

Borehole: KLX11A

Test: 243.00 – 263.00 m



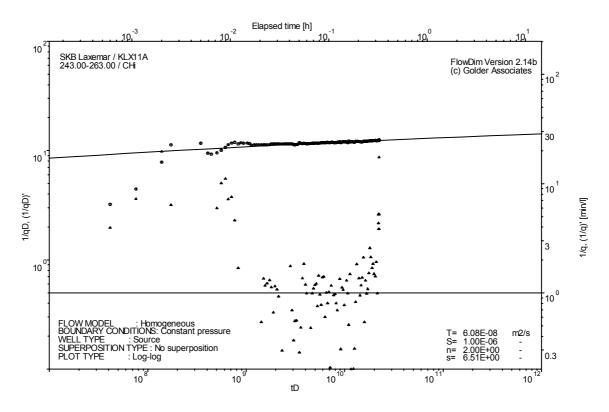
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

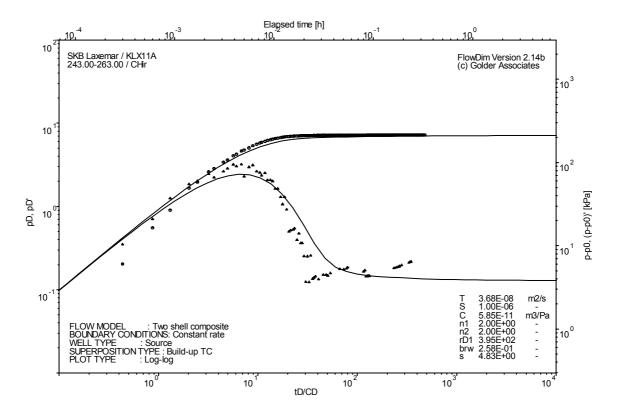
Borehole: KLX11A Page 2-17/3

Test: 243.00 – 263.00 m

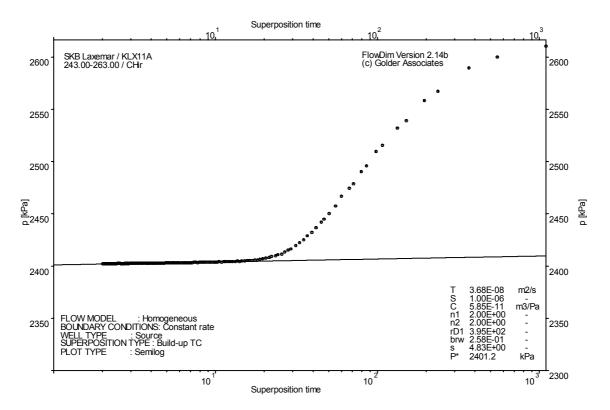


CHI phase; log-log match

Test: 243.00 – 263.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-18/1

Test: 263.00 – 283.00 m

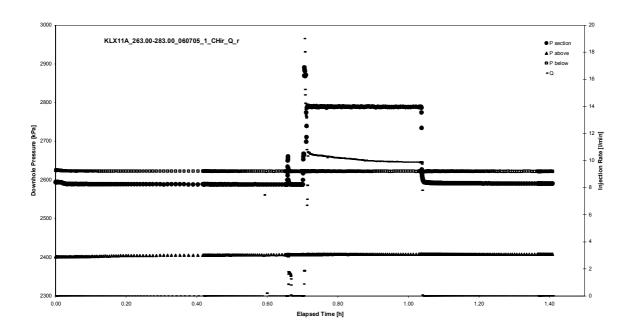
APPENDIX 2-18

Test 263.00 – 283.00 m

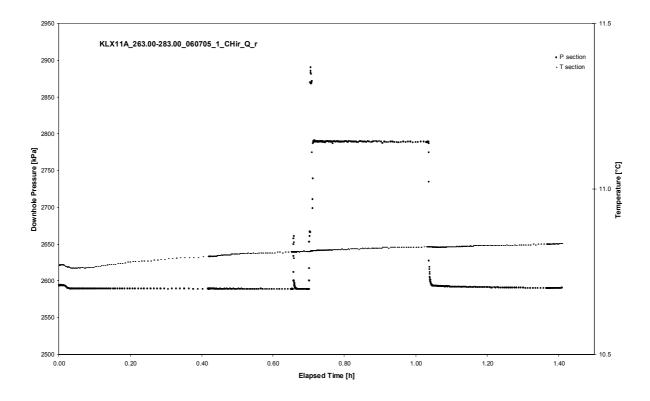
Page 2-18/2

Borehole: KLX11A

Test: 263.00 – 283.00 m



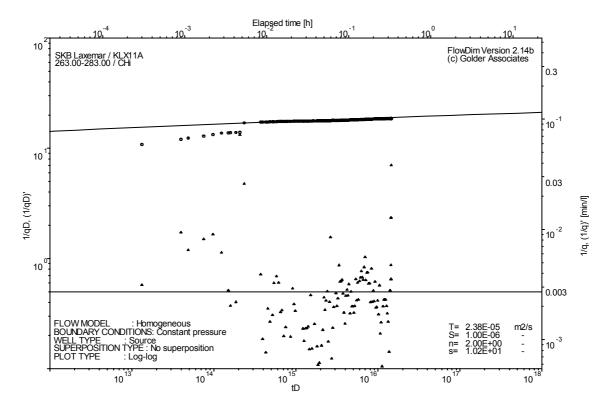
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

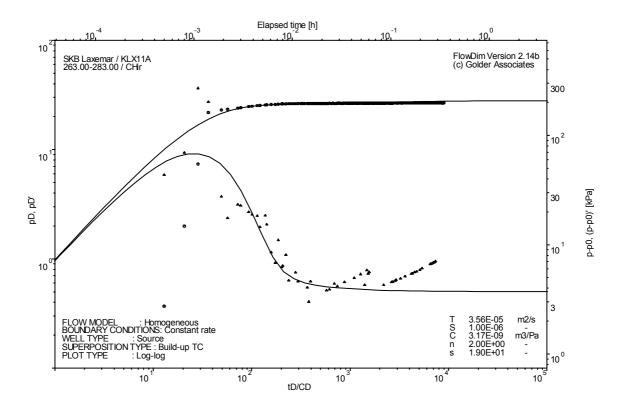
Borehole: KLX11A Page 2-18/3

Test: 263.00 – 283.00 m

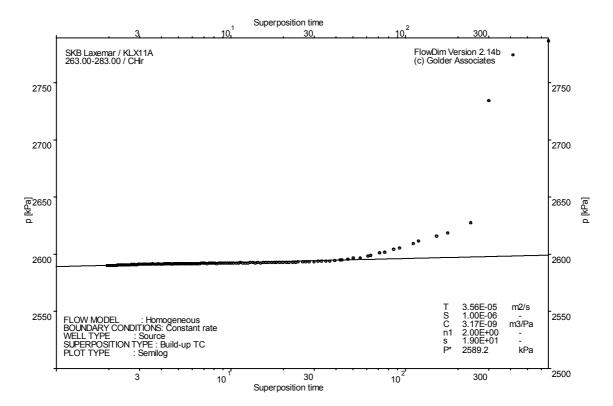


CHI phase; log-log match

Test: 263.00 – 283.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

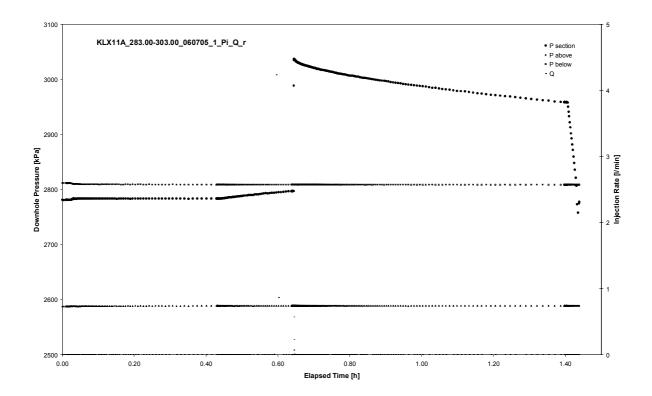
Borehole: KLX11A Page 2-19/1

Test: 283.00 – 303.00 m

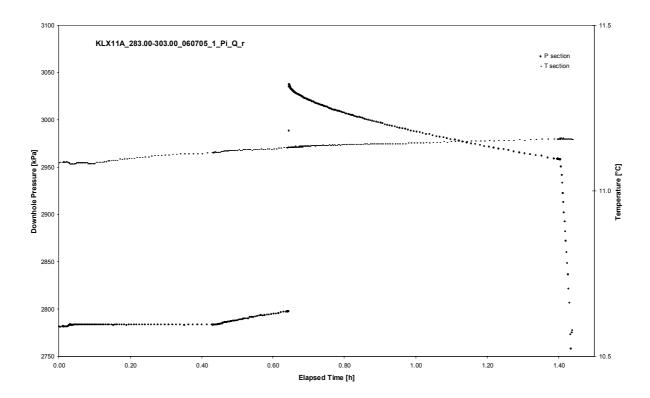
APPENDIX 2-19

Test 283.00 – 303.00 m

Test: 283.00 – 303.00 m

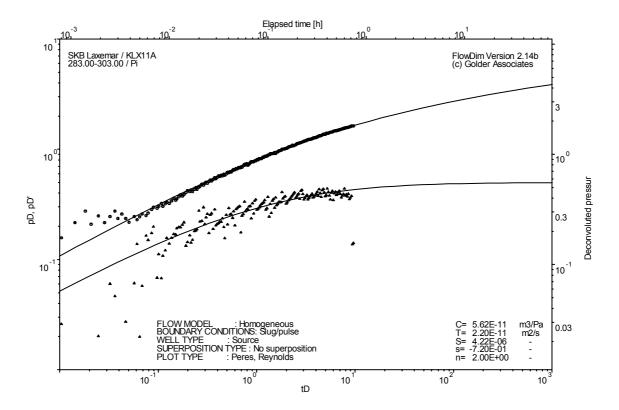


Pressure and flow rate vs. time; cartesian plot

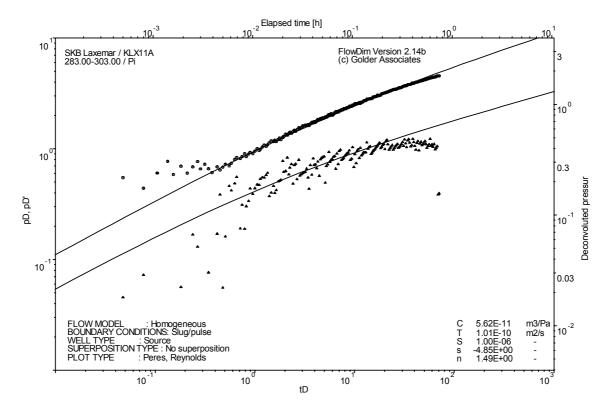


Interval pressure and temperature vs. time; cartesian plot

Test: 283.00 – 303.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.49)

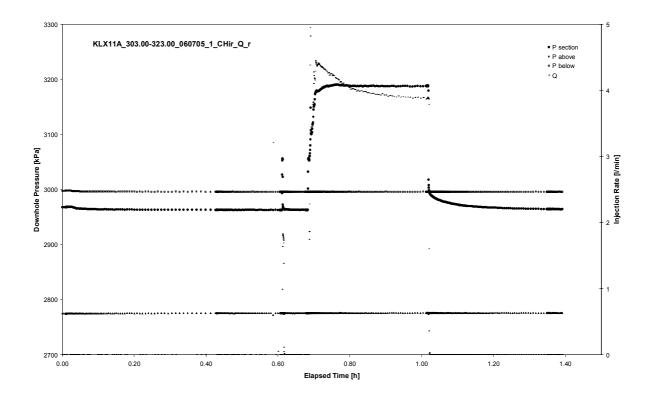
Borehole: KLX11A Page 2-20/1

Test: 303.00 - 323.00 m

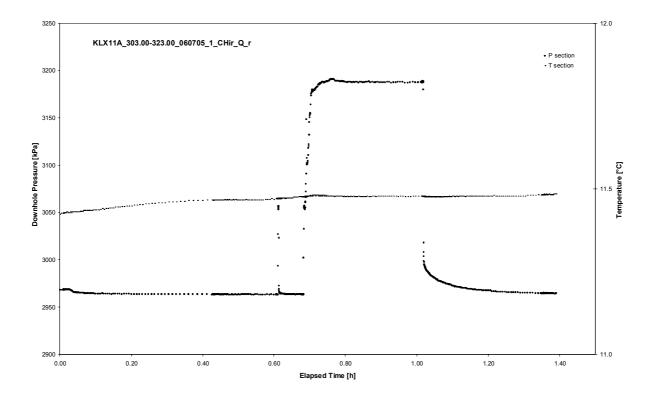
APPENDIX 2-20

Test 303.00 – 323.00 m

Test: 303.00 – 323.00 m



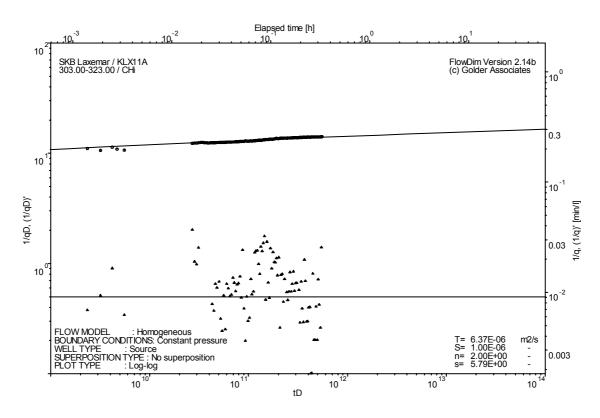
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

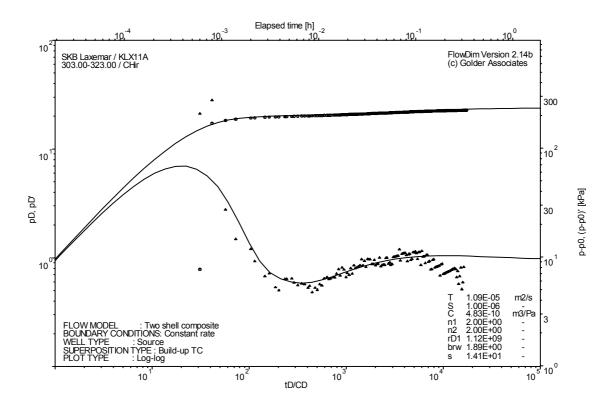
Borehole: KLX11A Page 2-20/3

Test: 303.00 – 323.00 m

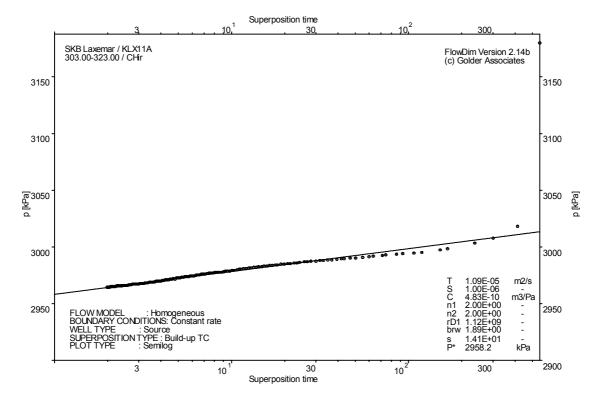


CHI phase; log-log match

Test: 303.00 - 323.00 m



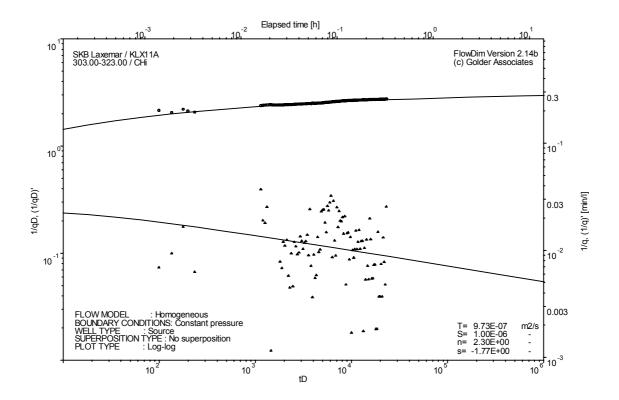
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-20/5

Test: 303.00 – 323.00 m



CHI phase; log-log match (n=2.3)

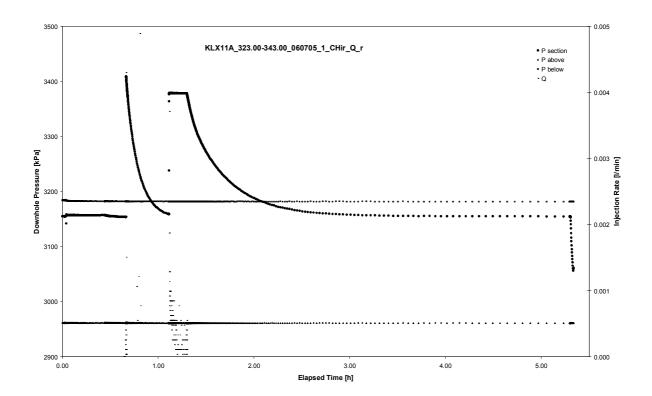
Borehole: KLX11A Page 2-21/1

Test: 323.00 – 343.00 m

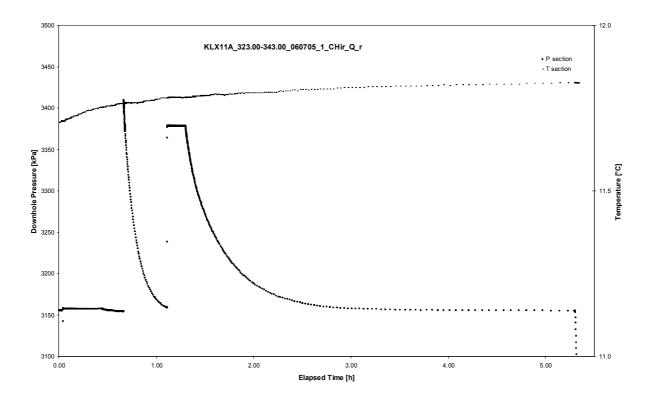
APPENDIX 2-21

Test 323.00 – 343.00 m

Test: 323.00 – 343.00 m



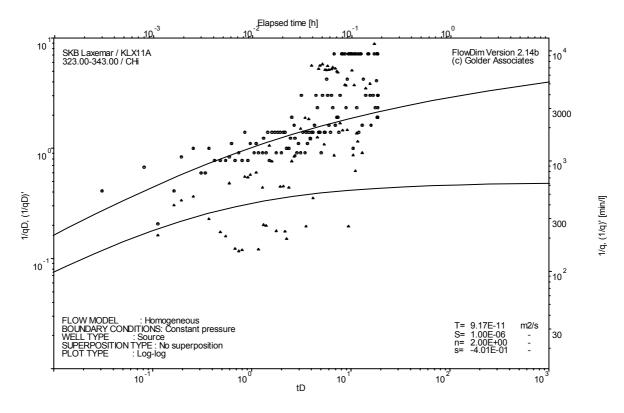
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

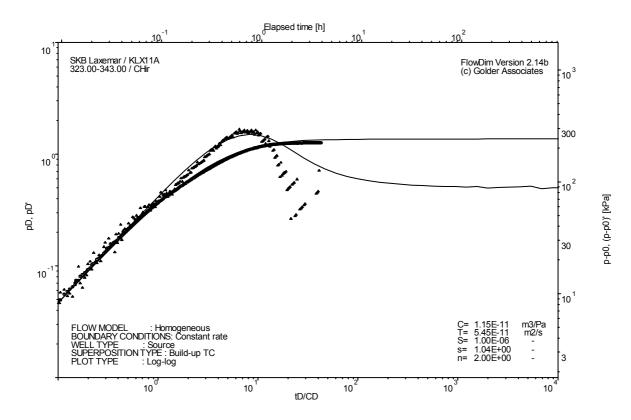
Borehole: KLX11A Page 2-21/3

Test: 323.00 – 343.00 m

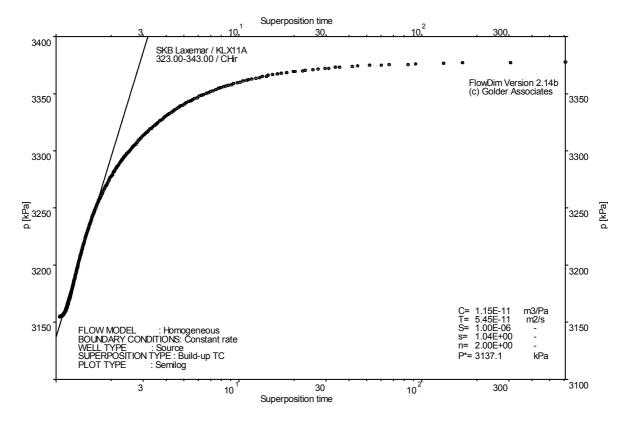


CHI phase; log-log match

Test: 323.00 - 343.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-22/1

Test: 343.00 – 363.00 m

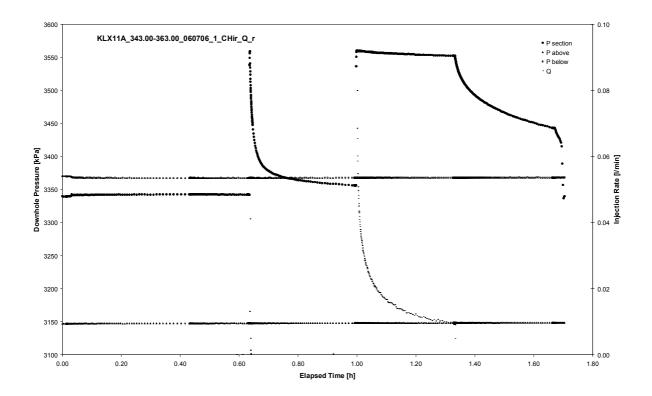
APPENDIX 2-22

Test 343.00 – 363.00 m

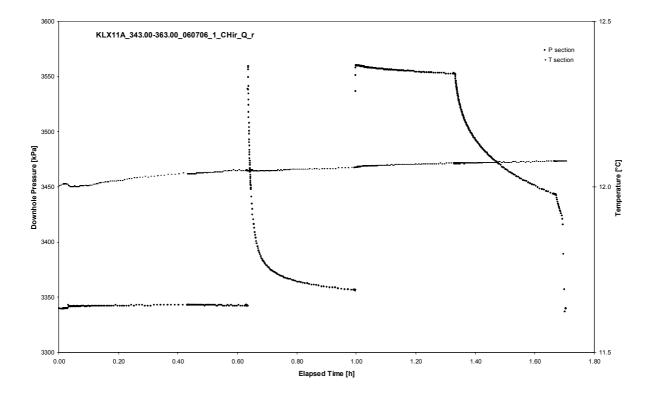
Page 2-22/2

Borehole: KLX11A

Test: 343.00 – 363.00 m



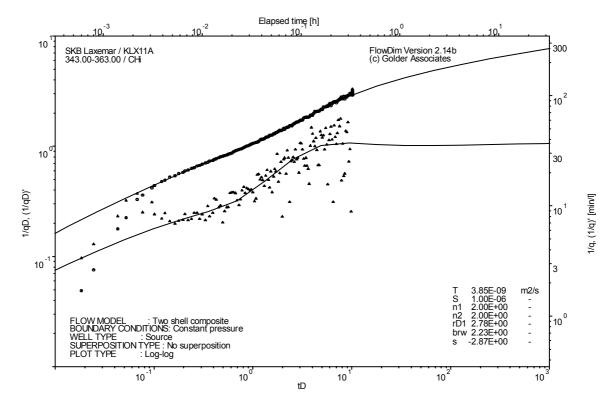
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-22/3

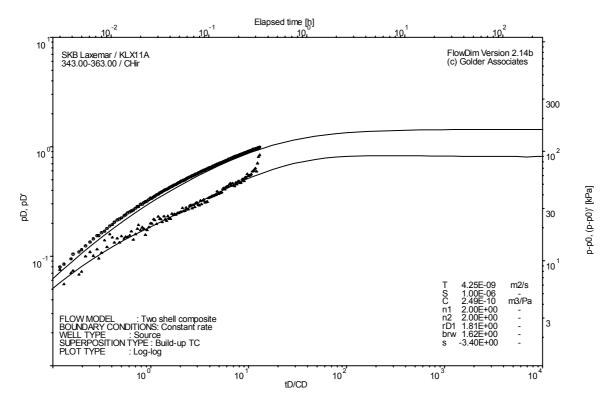
Test: 343.00 – 363.00 m



CHI phase; log-log match

Borehole: KLX11A Page 2-22/4

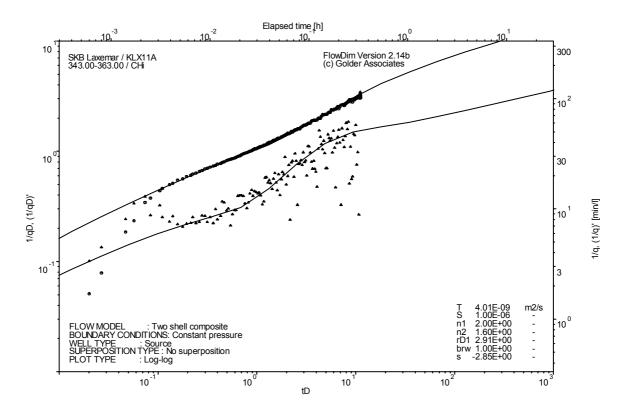
Test: 343.00 – 363.00 m



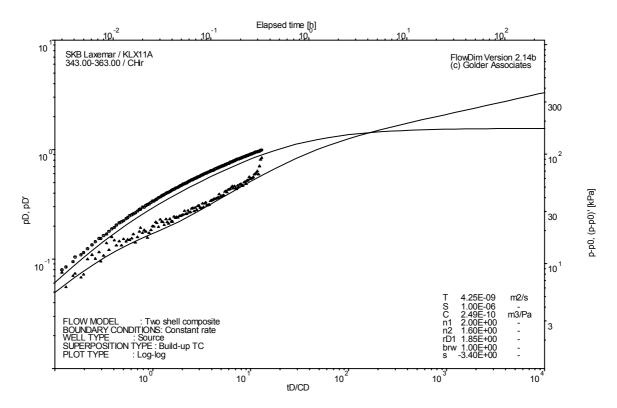
CHIR phase; log-log match

Not analysable

Test: 343.00 – 363.00 m



CHI phase; log-log match (n1=2, n2=1.6)



CHIR phase; log-log match (n1=2, n2=1.6)

Borehole: KLX11A Page 2-23/1

Test: 363.00 – 383.00 m

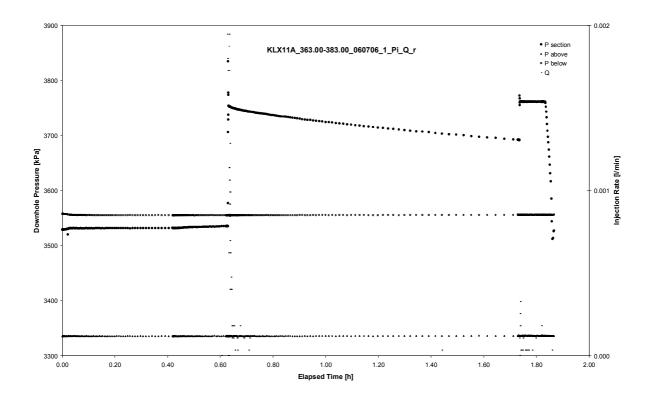
APPENDIX 2-23

Test 363.00 – 383.00 m

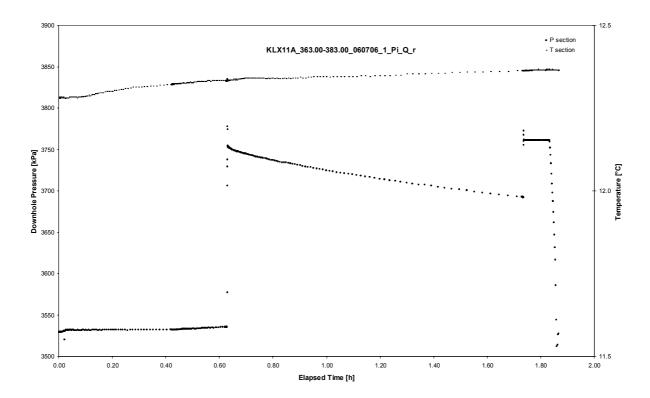
Page 2-23/2

Borehole: KLX11A

Test: 363.00 – 383.00 m

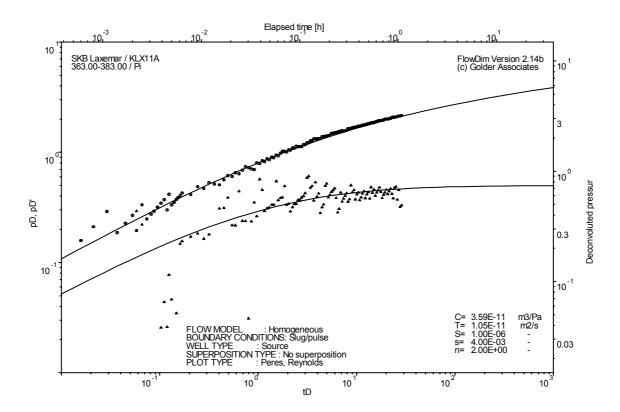


Pressure and flow rate vs. time; cartesian plot

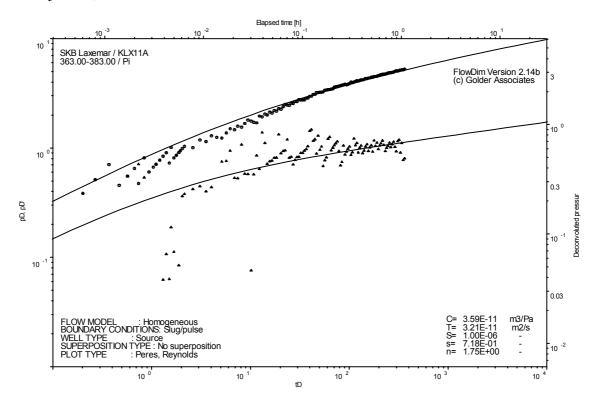


Interval pressure and temperature vs. time; cartesian plot

Test: 363.00 – 383.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.75)

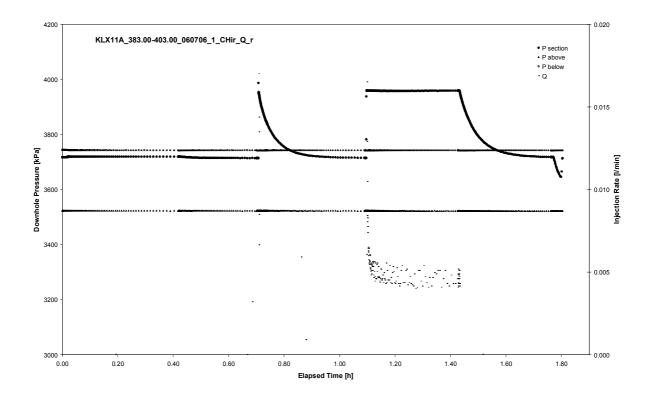
Borehole: KLX11A Page 2-24/1

Test: 383.00 – 403.00 m

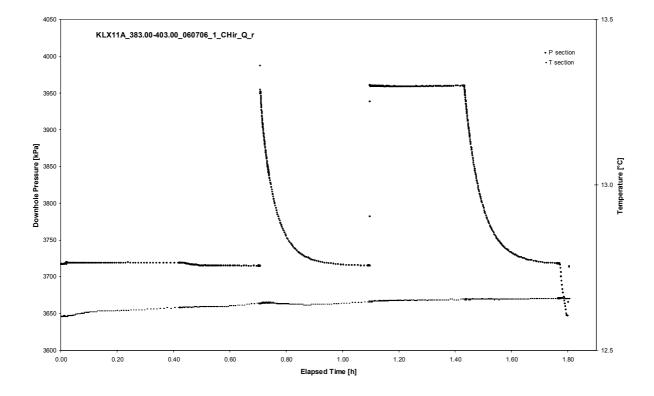
APPENDIX 2-24

Test 383.00 – 403.00 m

Test: 383.00 – 403.00 m



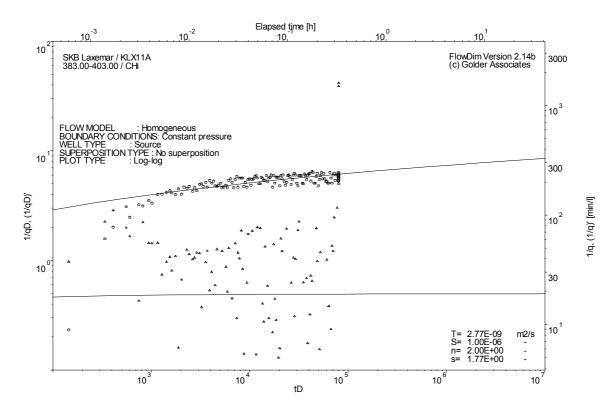
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

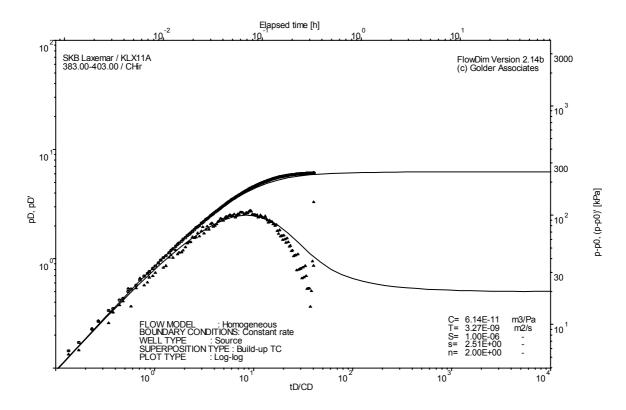
Borehole: KLX11A Page 2-24/3

Test: 383.00 – 403.00 m

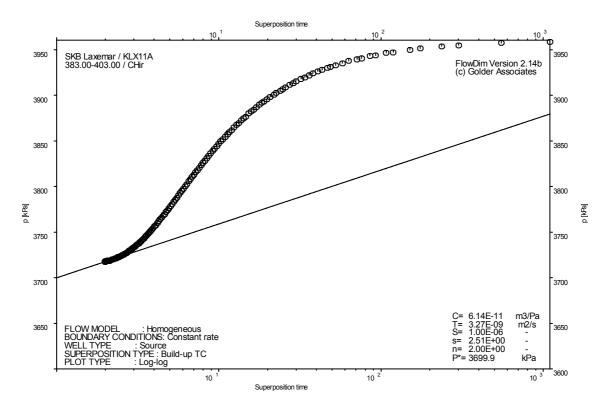


CHI phase; log-log match

Test: 383.00 – 403.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

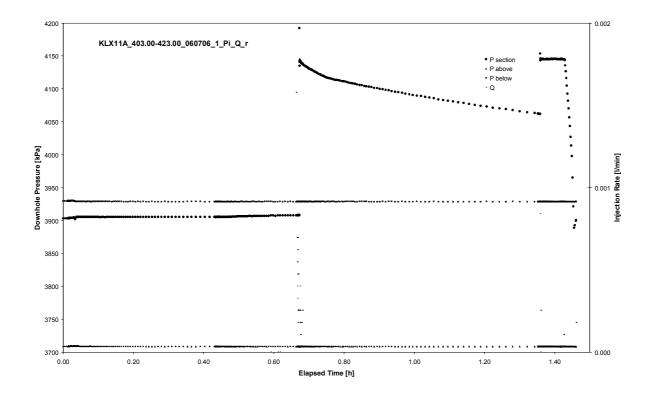
Borehole: KLX11A Page 2-25/1

Test: 403.00 – 423.00 m

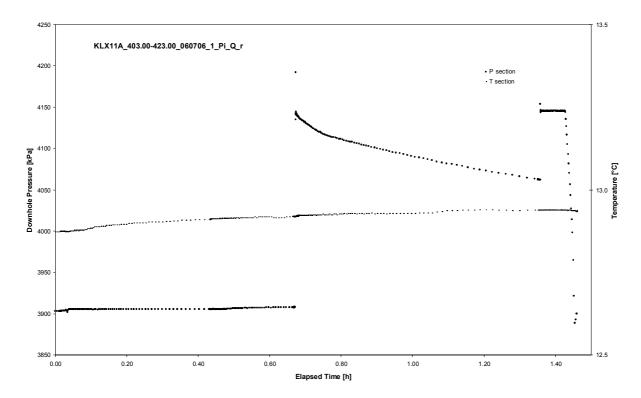
APPENDIX 2-25

Test 403.00 – 423.00 m

Test: 403.00 – 423.00 m

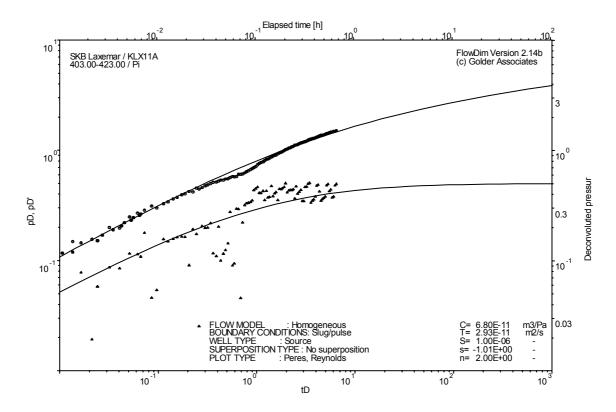


Pressure and flow rate vs. time; cartesian plot

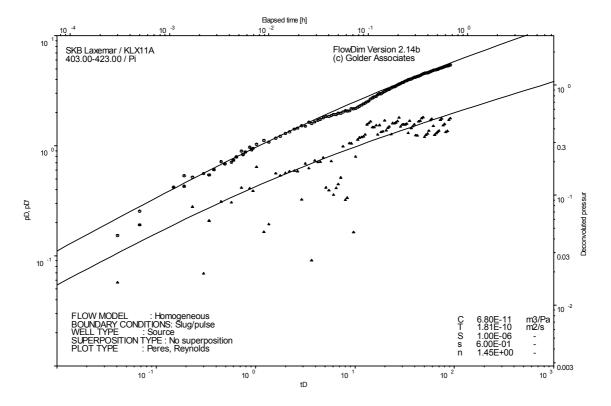


Interval pressure and temperature vs. time; cartesian plot

Test: 403.00 – 423.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.45)

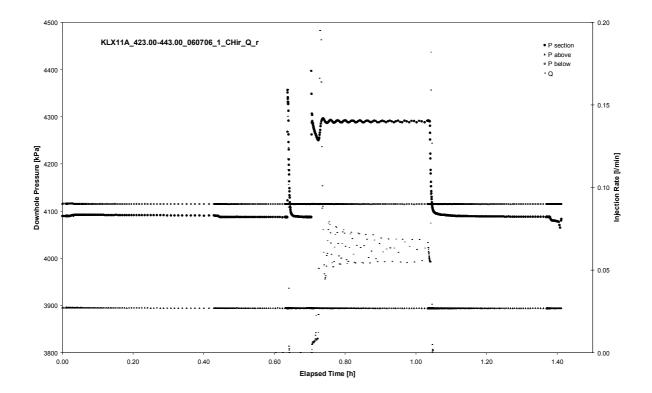
Borehole: KLX11A Page 2-26/1

Test: 423.00 – 443.00 m

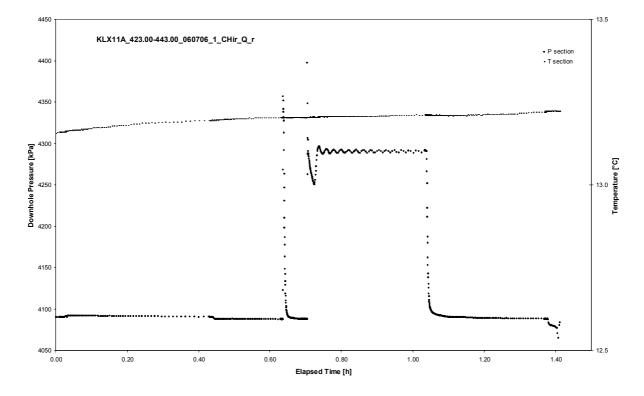
APPENDIX 2-26

Test 423.00 – 443.00 m

Test: 423.00 – 443.00 m



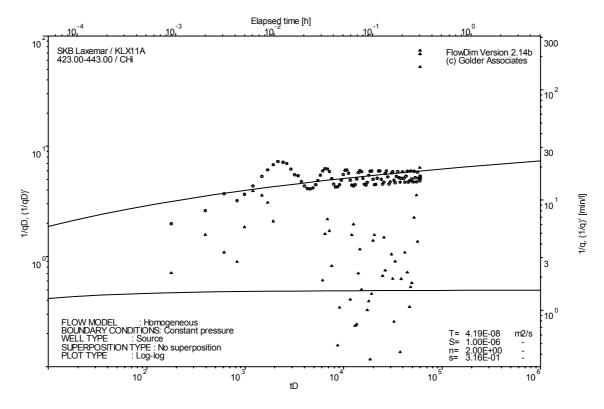
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

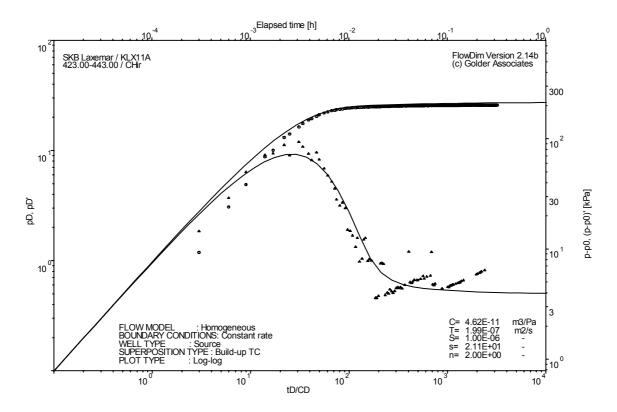
Borehole: KLX11A Page 2-26/3

Test: 423.00 – 443.00 m

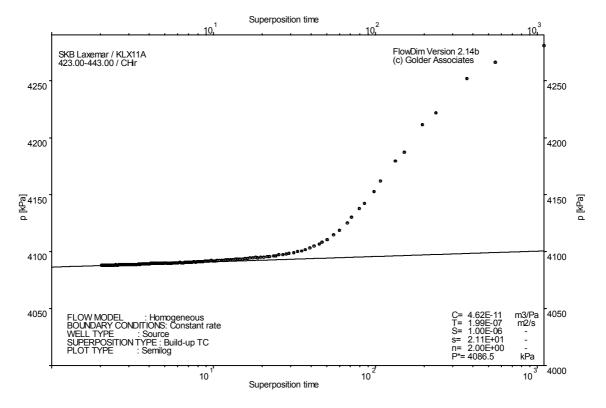


CHI phase; log-log match

Test: 423.00 – 443.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

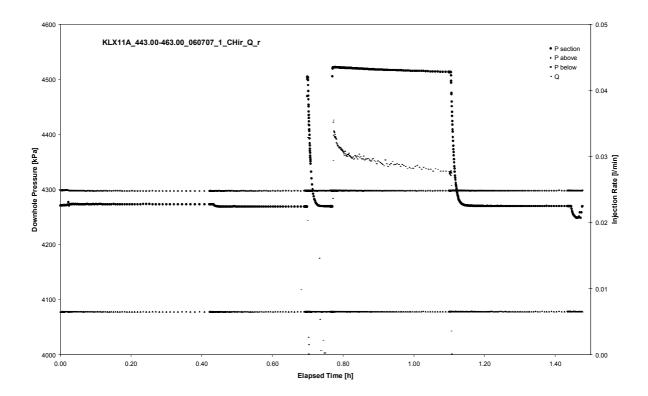
Borehole: KLX11A Page 2-27/1

Test: 443.00 – 463.00 m

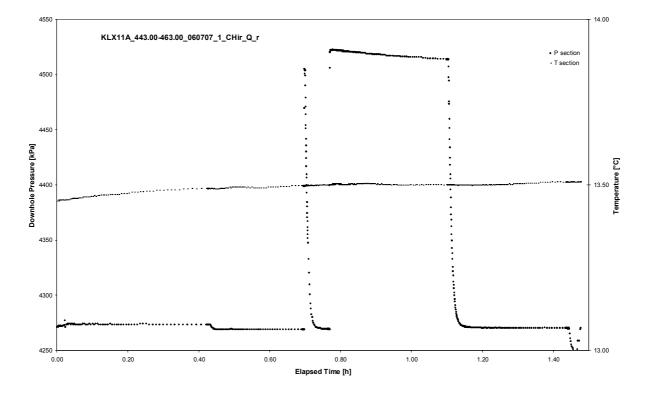
APPENDIX 2-27

Test 443.00 – 463.00 m

Test: 443.00 – 463.00 m



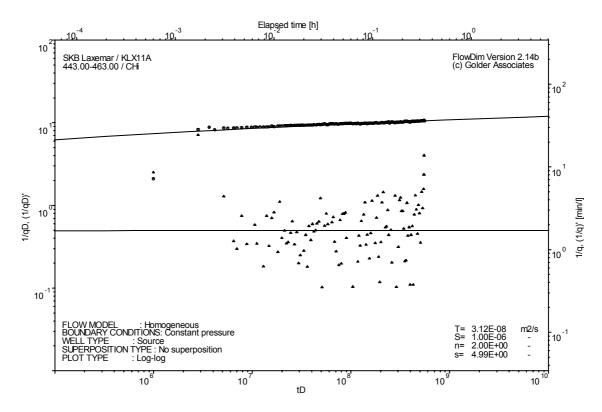
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

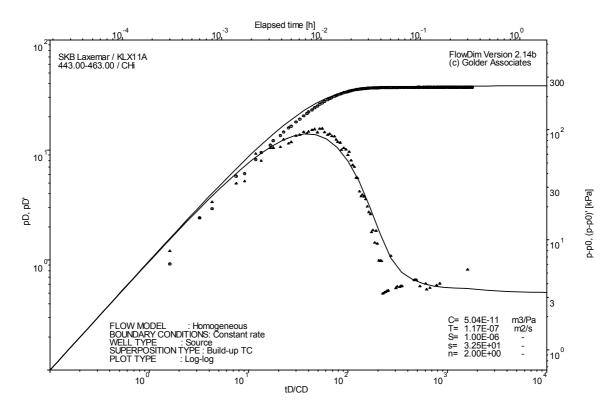
Borehole: KLX11A Page 2-27/3

Test: 443.00 – 463.00 m

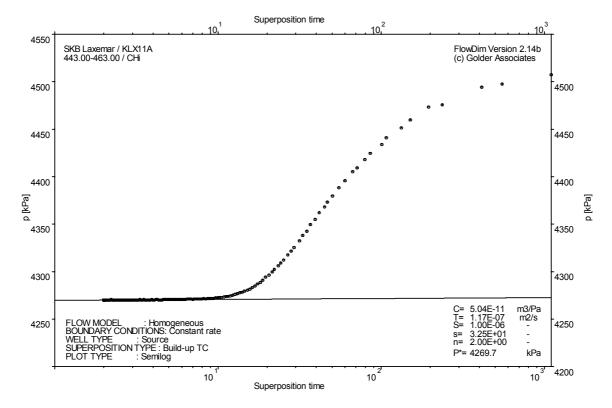


CHI phase; log-log match

Test: 443.00 – 463.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

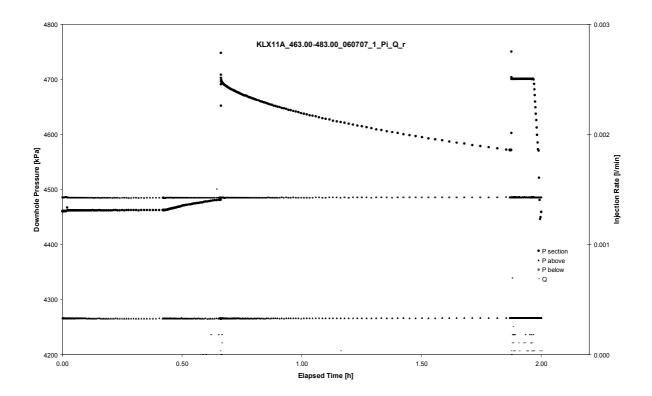
Borehole: KLX11A Page 2-28/1

Test: 463.00 – 483.00 m

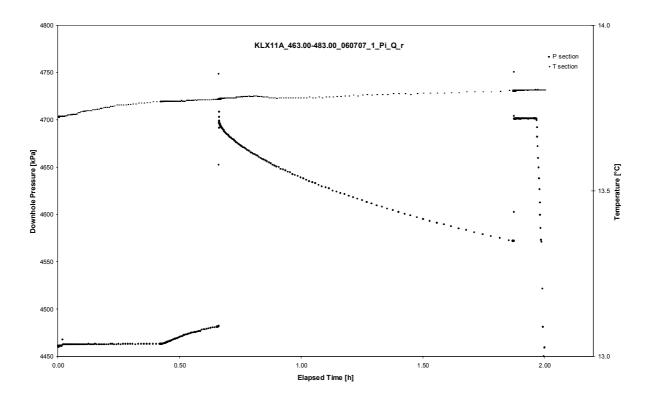
APPENDIX 2-28

Test 463.00 – 483.00 m

Test: 463.00 – 483.00 m

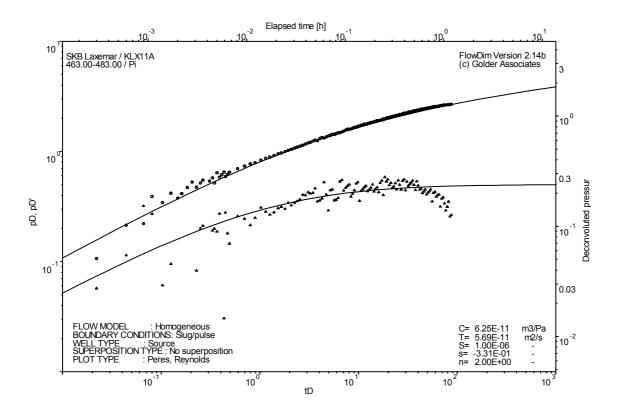


Pressure and flow rate vs. time; cartesian plot

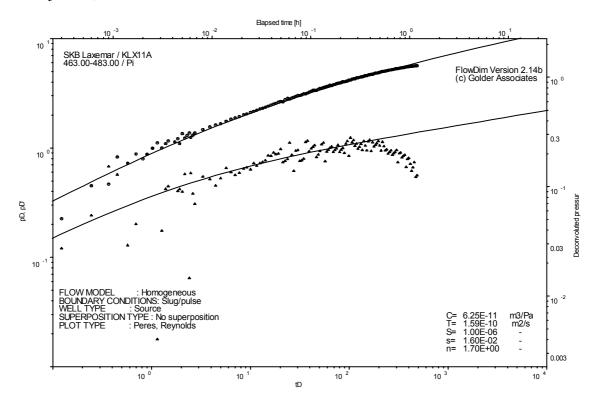


Interval pressure and temperature vs. time; cartesian plot

Test: 463.00 – 483.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.7)

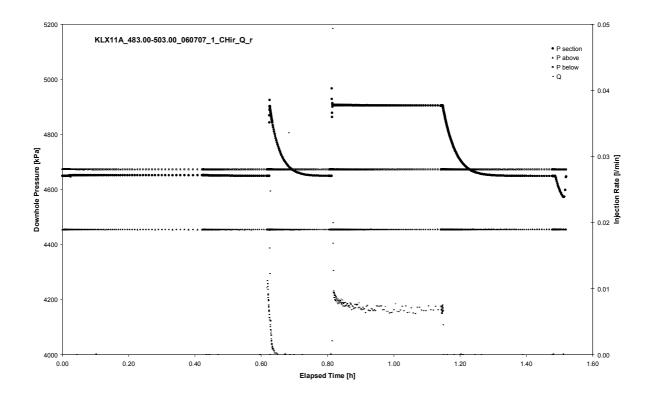
Borehole: KLX11A Page 2-29/1

Test: 483.00 – 503.00 m

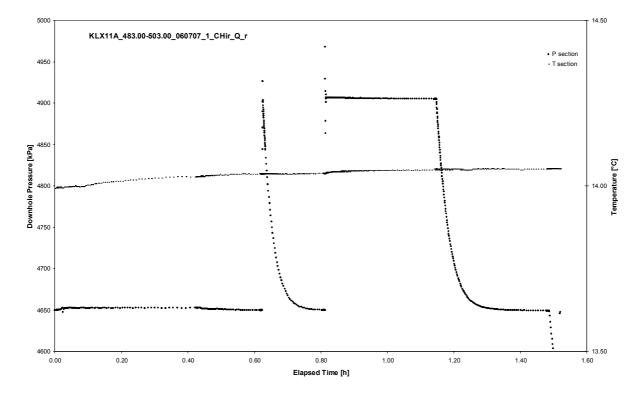
APPENDIX 2-29

Test 483.00 – 503.00 m

Test: 483.00 – 503.00 m



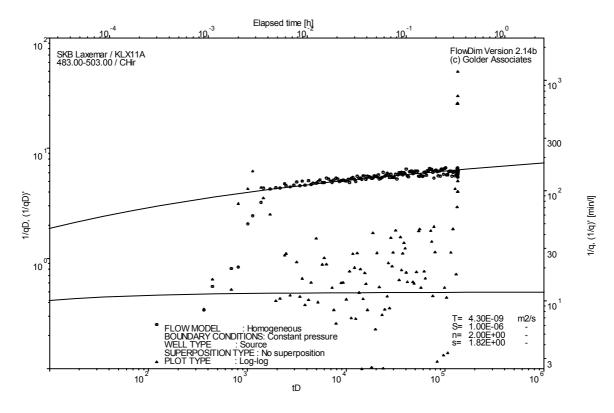
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

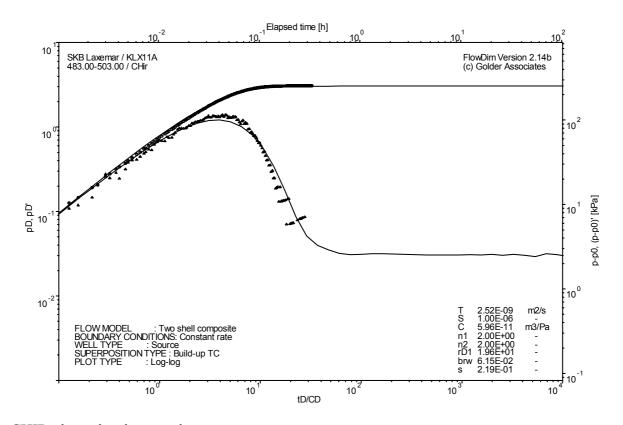
Borehole: KLX11A Page 2-29/3

Test: 483.00 – 503.00 m

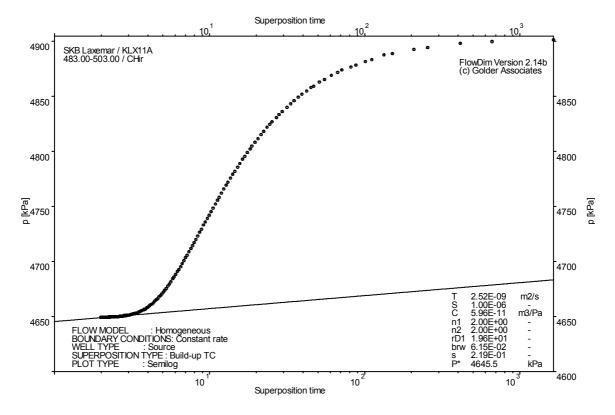


CHI phase; log-log match

Test: 483.00 – 503.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

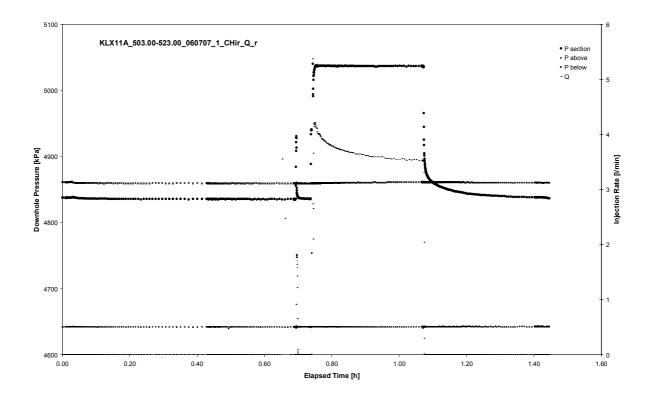
Borehole: KLX11A Page 2-30/1

Test: 503.00 – 523.00 m

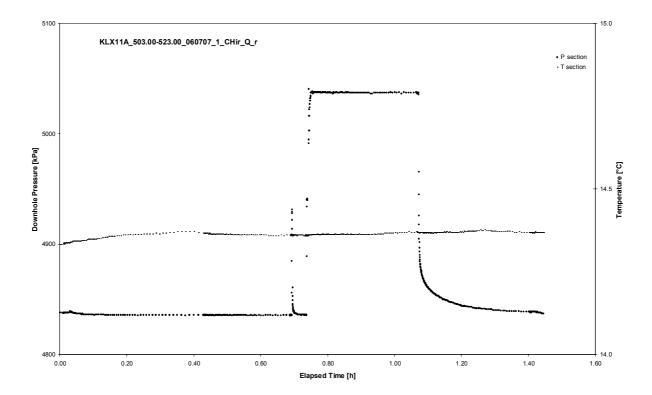
APPENDIX 2-30

Test 503.00 – 523.00 m

Test: 503.00 – 523.00 m



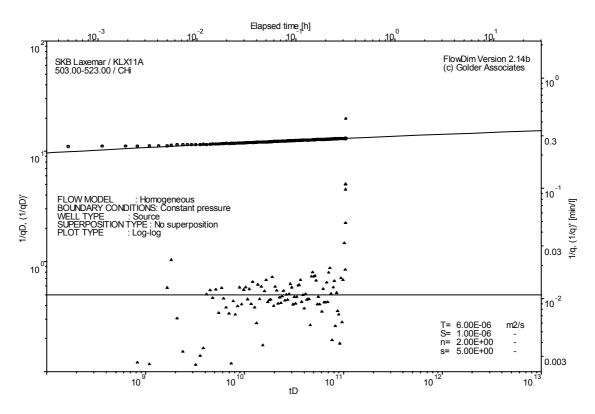
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

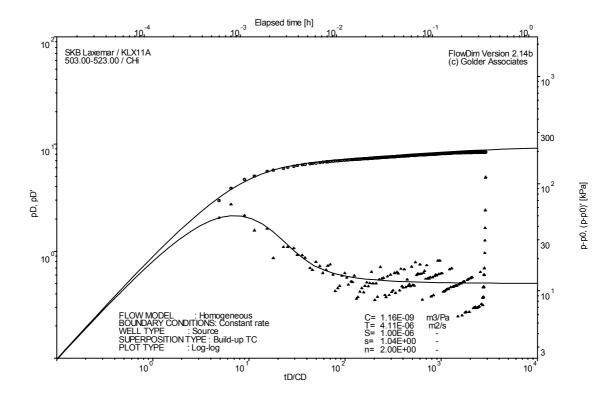
Borehole: KLX11A Page 2-30/3

Test: 503.00 – 523.00 m

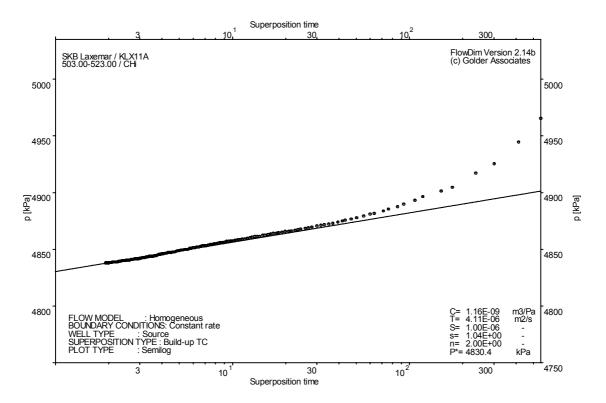


CHI phase; log-log match

Test: 503.00 – 523.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

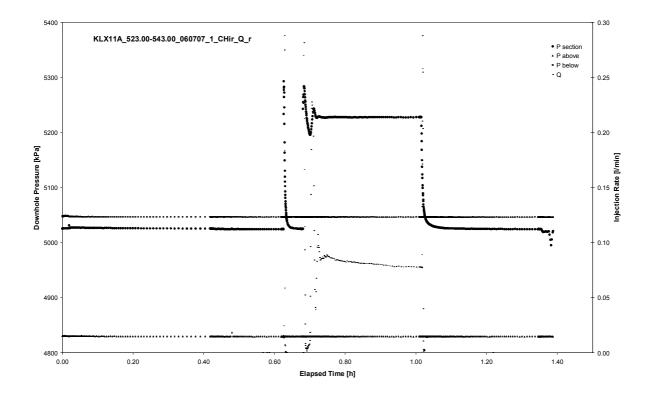
Borehole: KLX11A Page 2-31/1

Test: 523.00 – 543.00 m

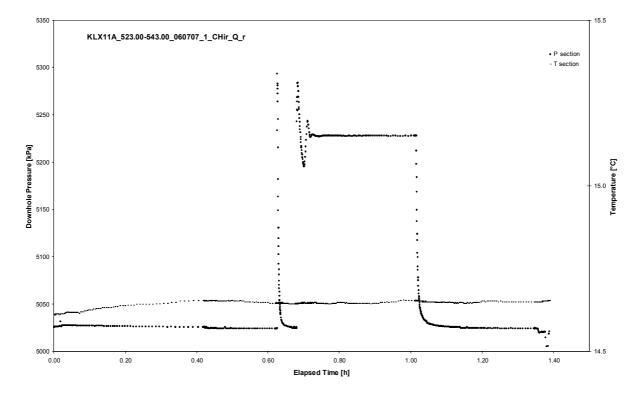
APPENDIX 2-31

Test 523.00 – 543.00 m

Test: 523.00 – 543.00 m



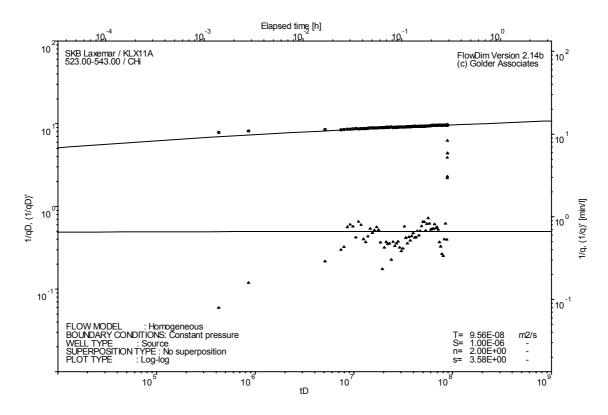
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

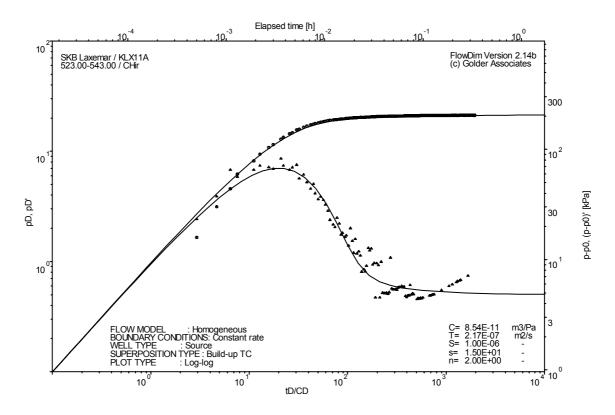
Borehole: KLX11A Page 2-31/3

Test: 523.00 – 543.00 m

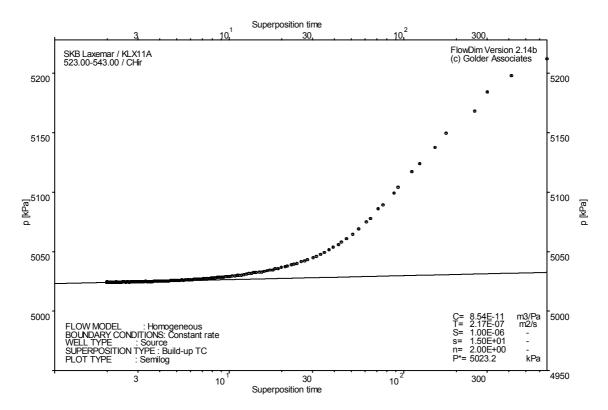


CHI phase; log-log match

Test: 523.00 – 543.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-32/1

Test: 543.00 – 563.00 m

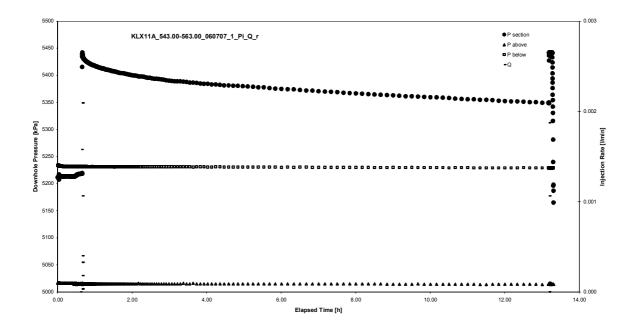
APPENDIX 2-32

Test 543.00 – 563.00 m

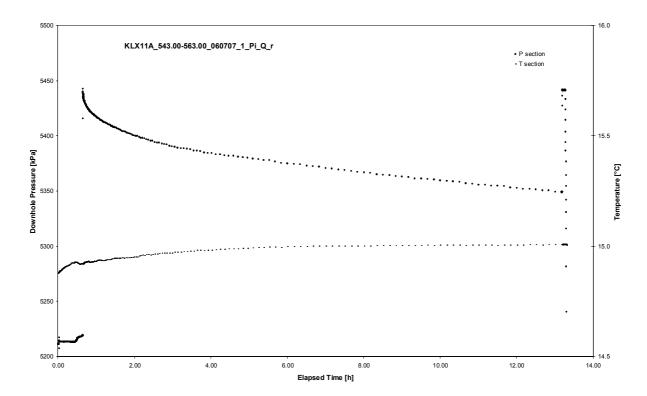
Page 2-32/2

Borehole: KLX11A

Test: 543.00 – 563.00 m

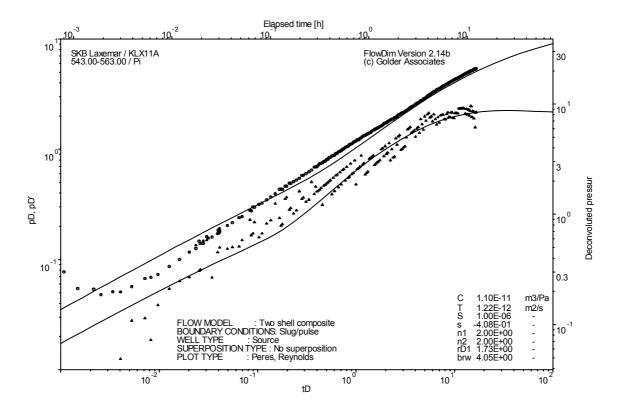


Pressure and flow rate vs. time; cartesian plot

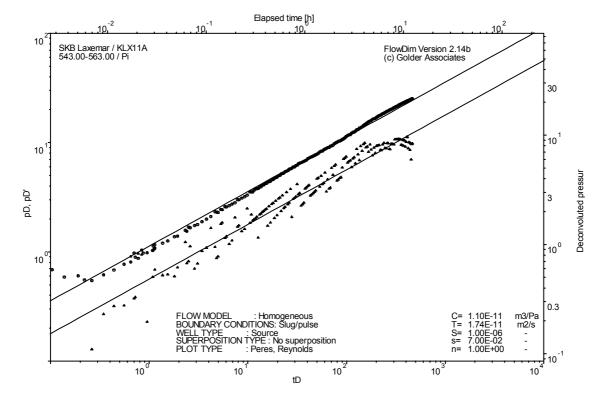


Interval pressure and temperature vs. time; cartesian plot

Test: 543.00 – 563.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1)

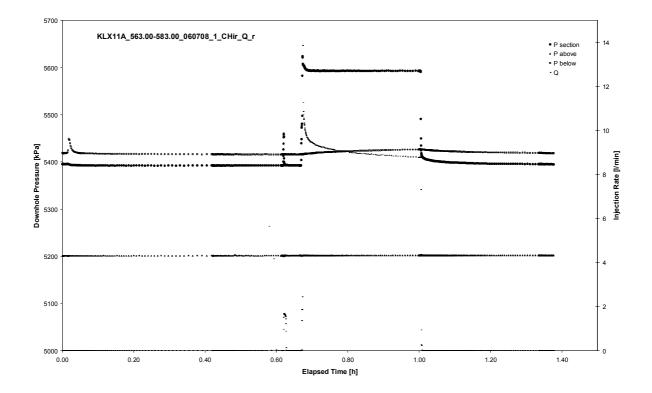
Borehole: KLX11A Page 2-33/1

Test: 563.00 – 583.00 m

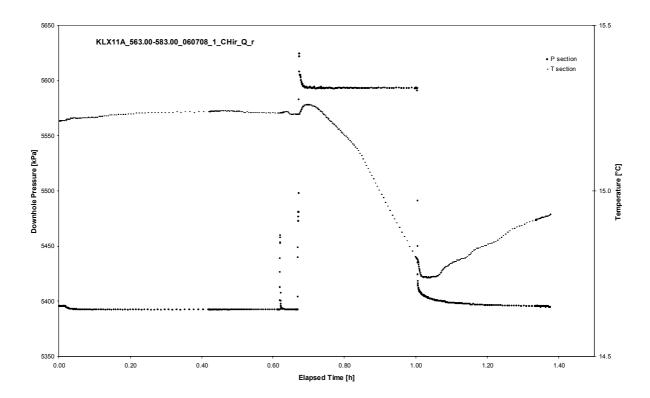
APPENDIX 2-33

Test 563.00 – 583.00 m

Test: 563.00 – 583.00 m



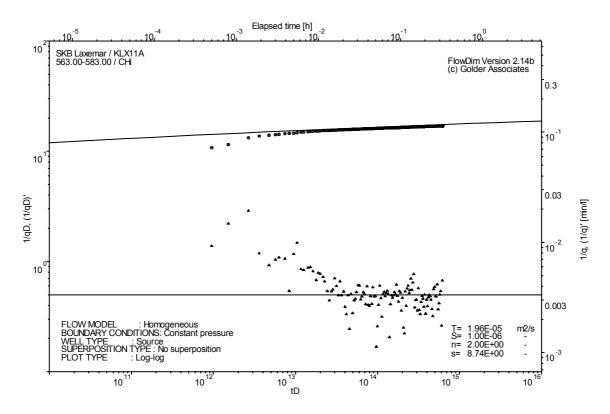
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

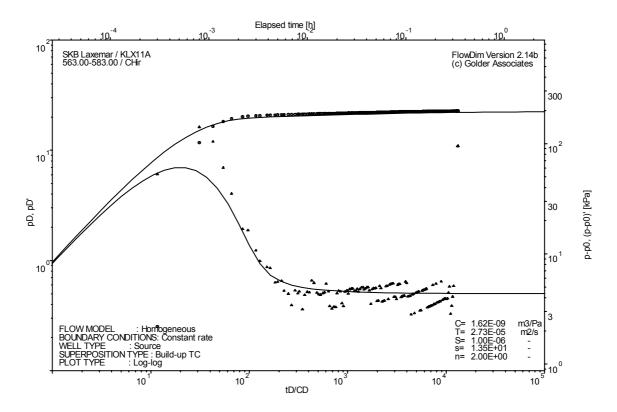
Borehole: KLX11A Page 2-33/3

Test: 563.00 – 583.00 m

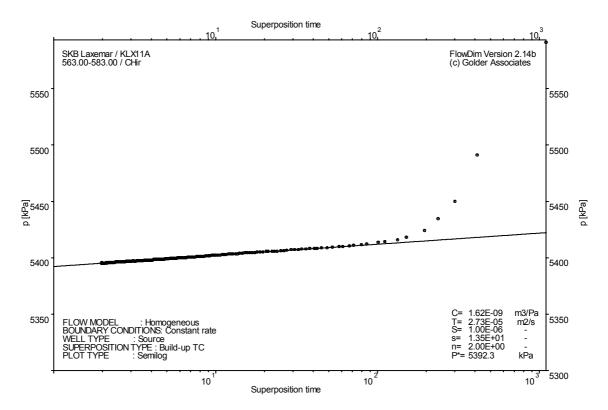


CHI phase; log-log match

Test: 563.00 – 583.00 m

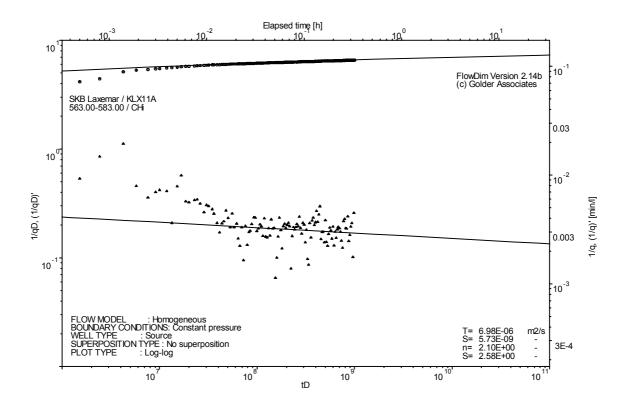


CHIR phase; log-log match

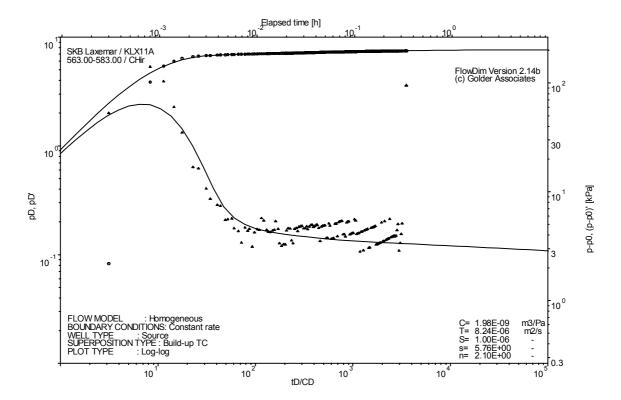


CHIR phase; HORNER match

Test: 563.00 – 583.00 m



CHI phase; log-log match (n=2.1)



CHIR phase; log-log match (n=2.1)

Borehole: KLX11A Page 2-34/1

Test: 583.00 – 603.00 m

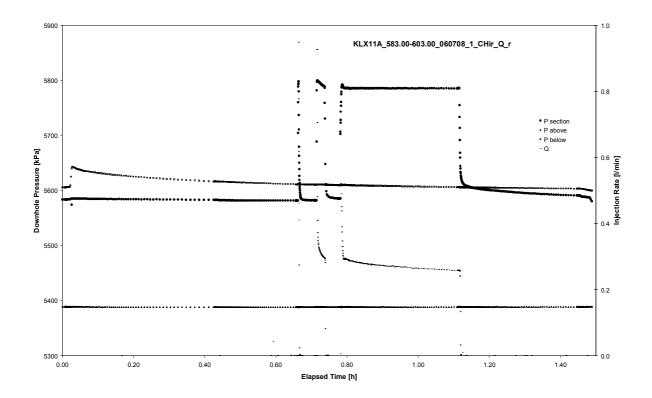
APPENDIX 2-34

Test 583.00 – 603.00 m

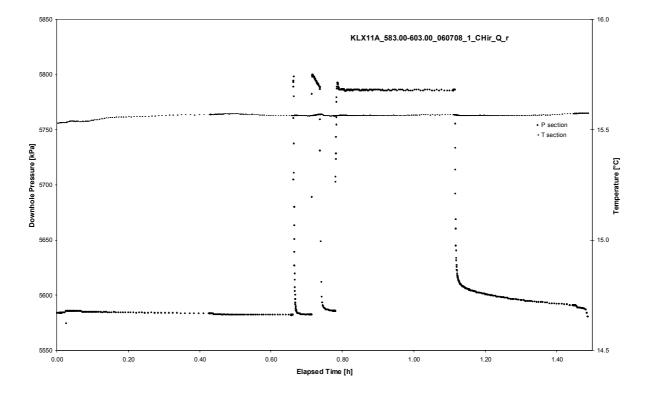
Page 2-34/2

Borehole: KLX11A

Test: 583.00 – 603.00 m



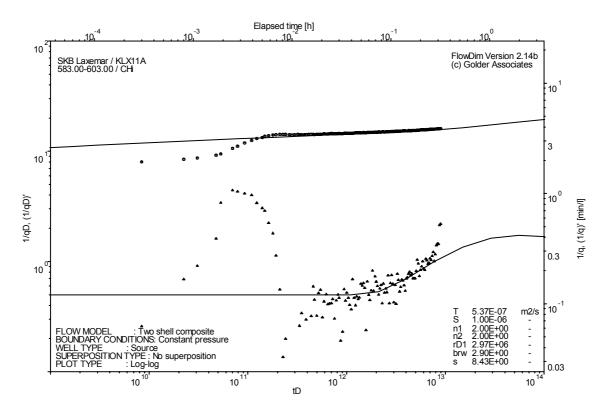
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

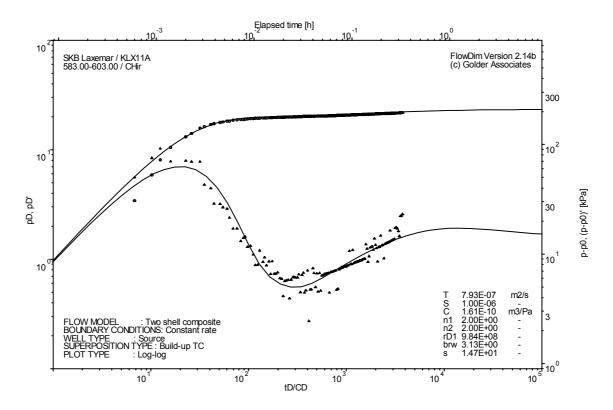
Borehole: KLX11A Page 2-34/3

Test: 583.00 – 603.00 m

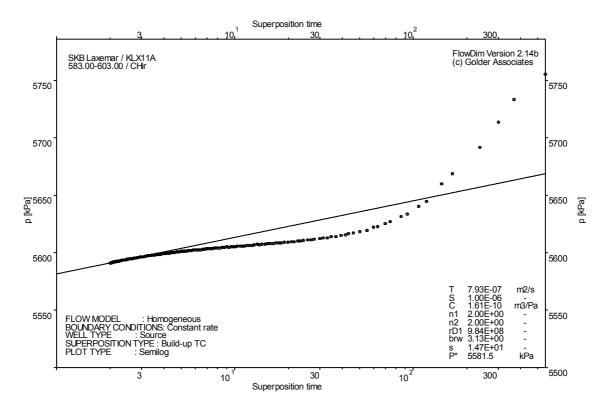


CHI phase; log-log match

Test: 583.00 - 603.00 m

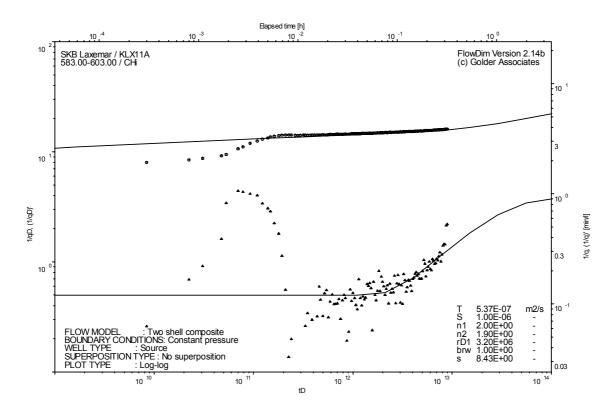


CHIR phase; log-log match

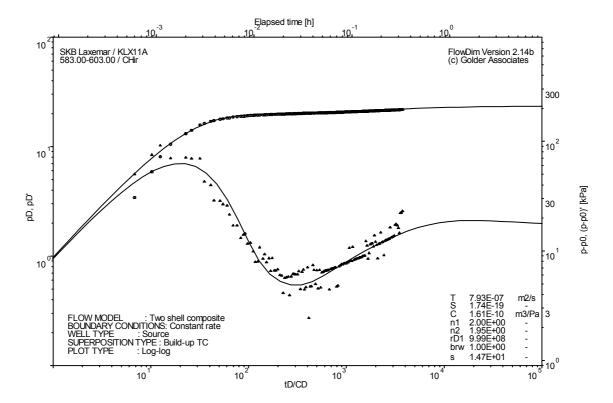


CHIR phase; HORNER match

Test: 583.00 – 603.00 m



CHI phase; log-log match (n1=2, n2=1.9)



CHIR phase; log-log match (n1=2, n2=1.95)

Borehole: KLX11A Page 2-35/1

Test: 603.00 – 623.00 m

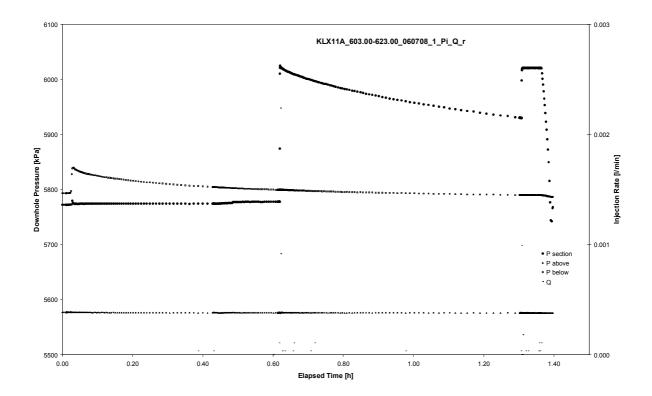
APPENDIX 2-35

Test 603.00 – 623.00 m

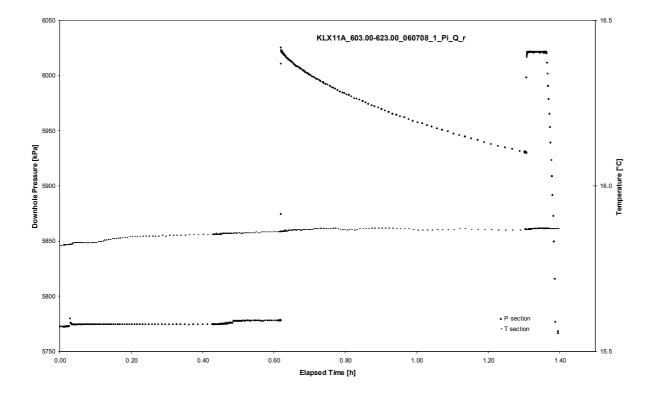
Page 2-35/2

Borehole: KLX11A

Test: 603.00 – 623.00 m

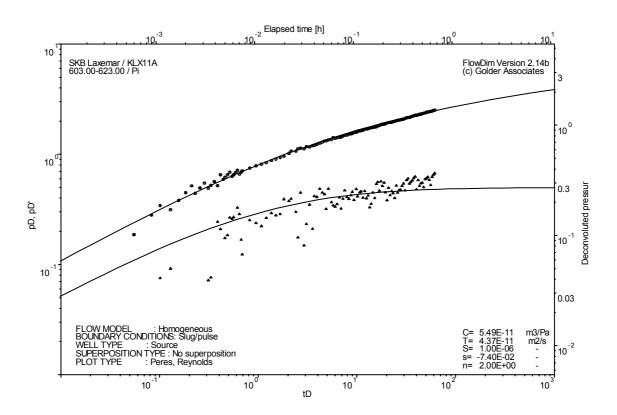


Pressure and flow rate vs. time; cartesian plot

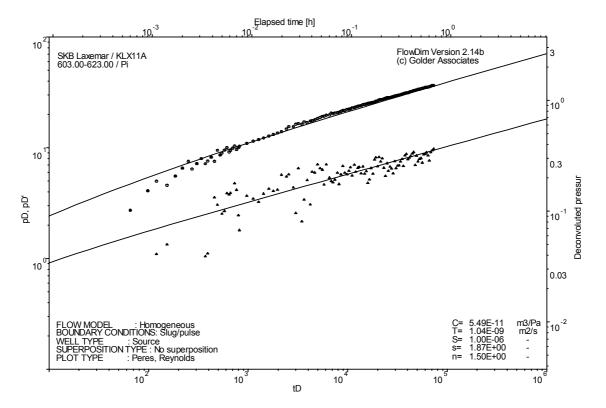


Interval pressure and temperature vs. time; cartesian plot

Test: 603.00 – 623.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.5)

Borehole: KLX11A Page 2-36/1

Test: 623.00 – 643.00 m

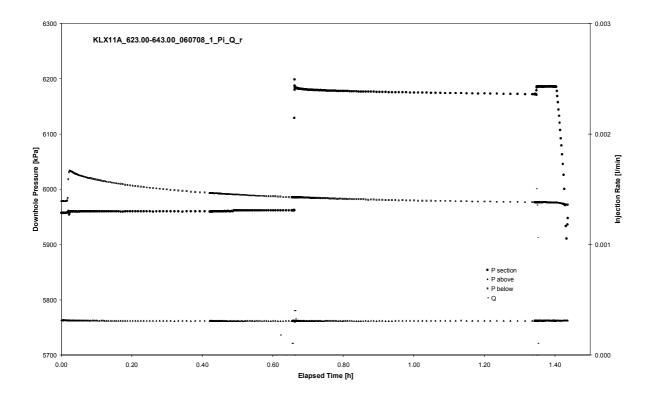
APPENDIX 2-36

Test 623.00 – 643.00 m

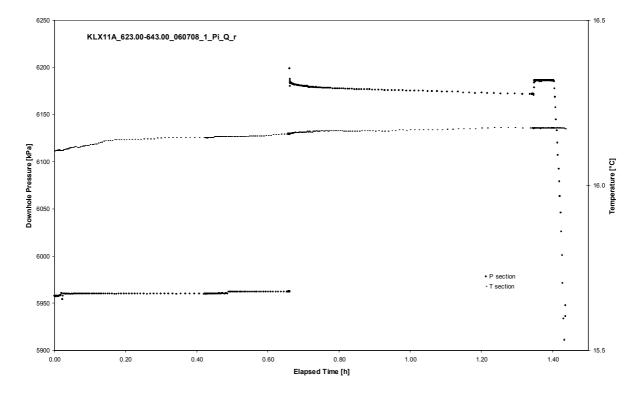
Page 2-36/2

Borehole: KLX11A

Test: 623.00 – 643.00 m



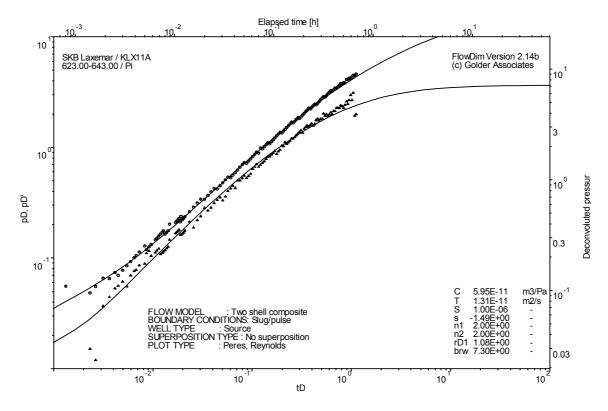
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-36/3

Test: 623.00 – 643.00 m



Pulse injection; deconvolution match

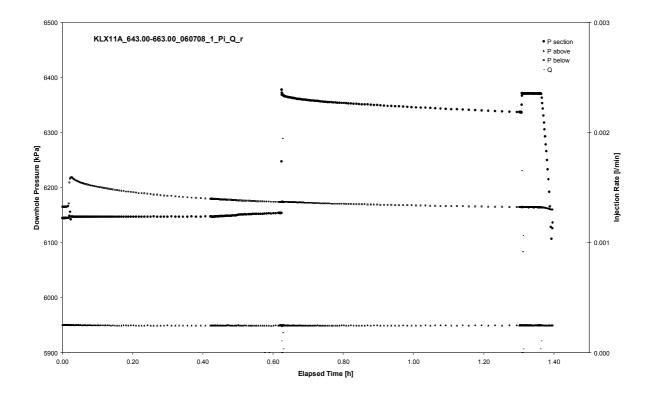
Borehole: KLX11A Page 2-37/1

Test: 643.00 – 663.00 m

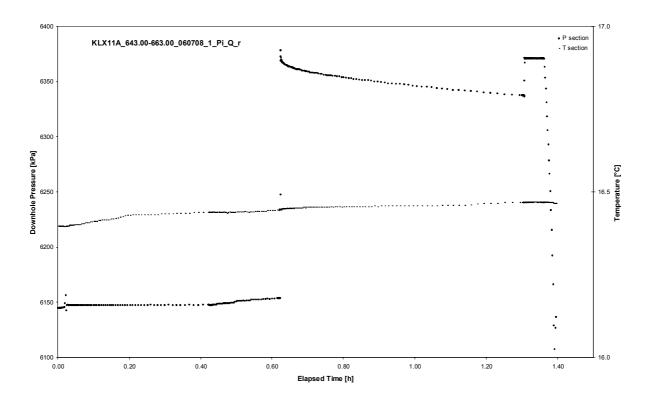
APPENDIX 2-37

Test 643.00 – 663.00 m

Test: 643.00 – 663.00 m

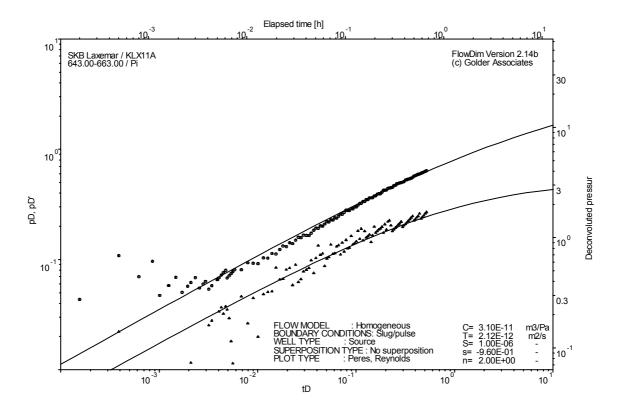


Pressure and flow rate vs. time; cartesian plot

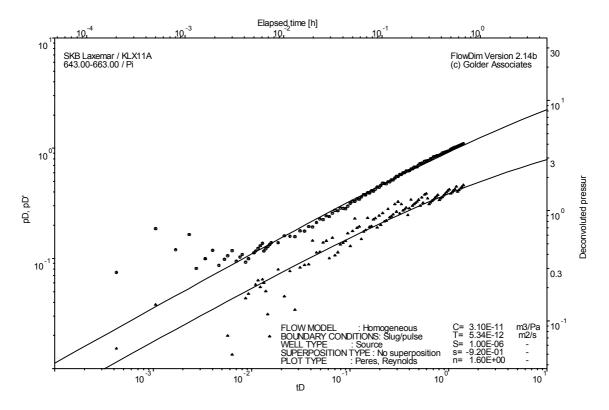


Interval pressure and temperature vs. time; cartesian plot

Test: 643.00 – 663.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.6)

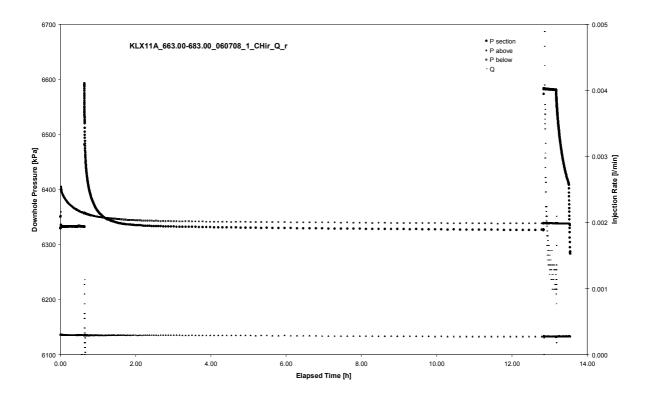
Borehole: KLX11A Page 2-38/1

Test: 663.00 – 683.00 m

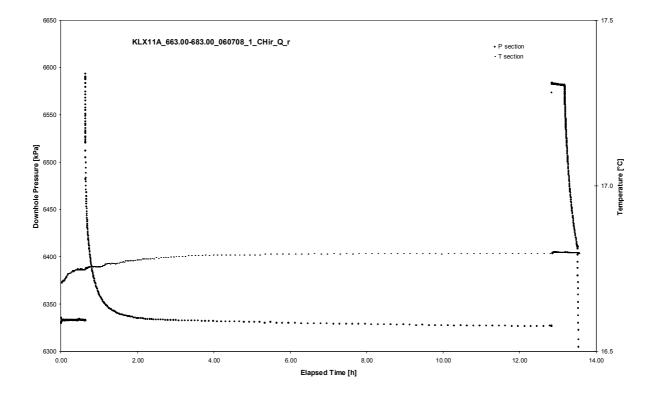
APPENDIX 2-38

Test 663.00 – 683.00 m

Test: 663.00 – 683.00 m



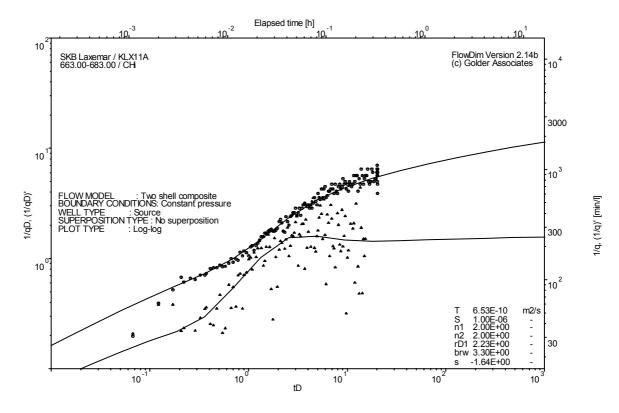
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

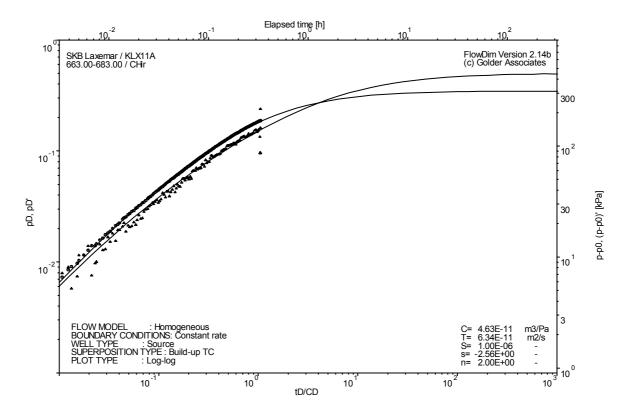
Borehole: KLX11A Page 2-38/3

Test: 663.00 – 683.00 m

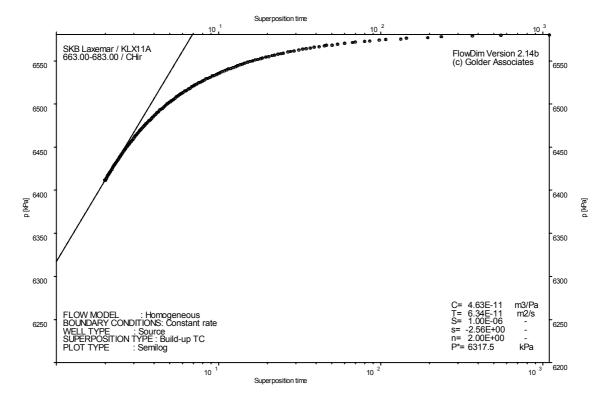


CHI phase; log-log match

Test: 663.00 – 683.00 m



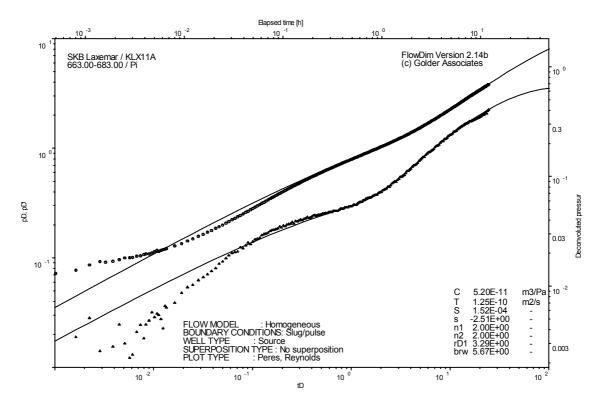
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-38/5

Test: 663.00 – 683.00 m



Pulse injection; deconvolution match

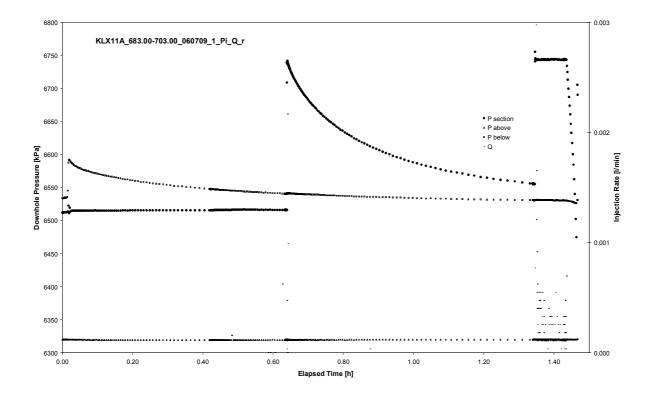
Borehole: KLX11A Page 2-39/1

Test: 683.00 – 703.00 m

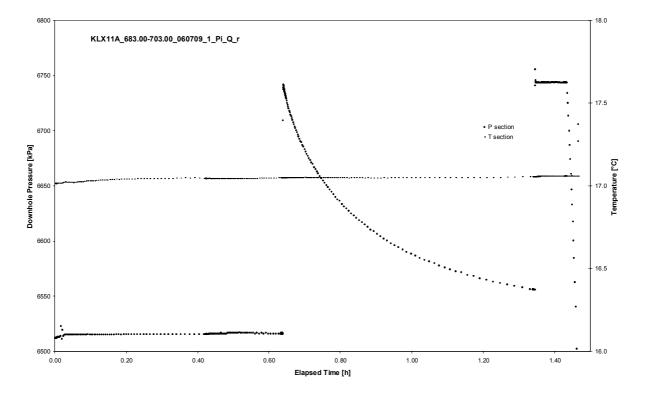
APPENDIX 2-39

Test 683.00 – 703.00 m

Test: 683.00 – 703.00 m

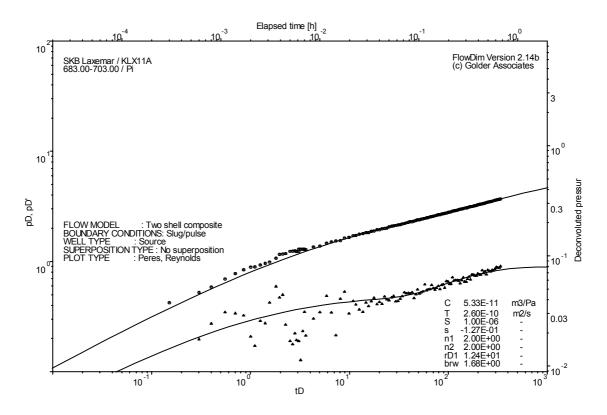


Pressure and flow rate vs. time; cartesian plot

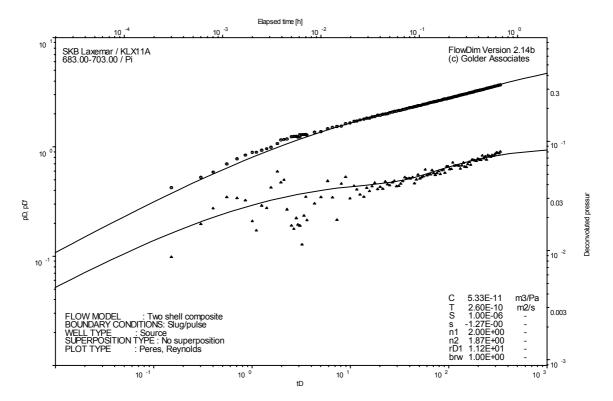


Interval pressure and temperature vs. time; cartesian plot

Test: 683.00 – 703.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n1=2, n2=1.87)

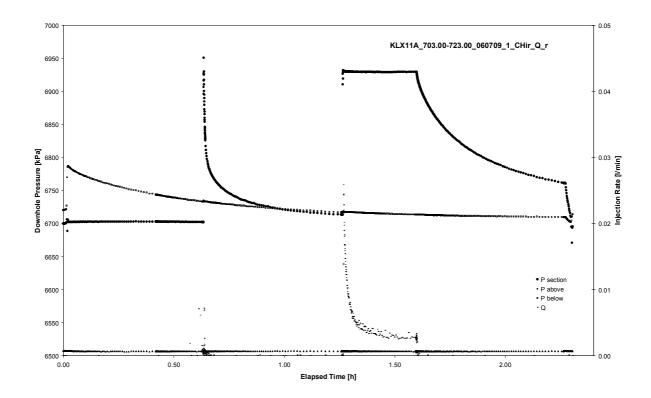
Borehole: KLX11A Page 2-40/1

Test: 703.00 – 723.00 m

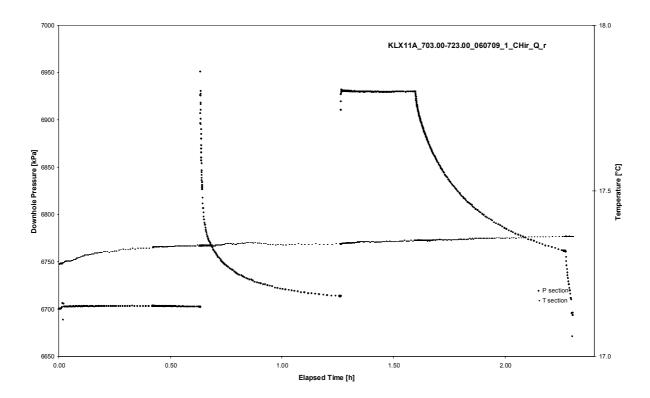
APPENDIX 2-40

Test 703.00 – 723.00 m

Test: 703.00 – 723.00 m



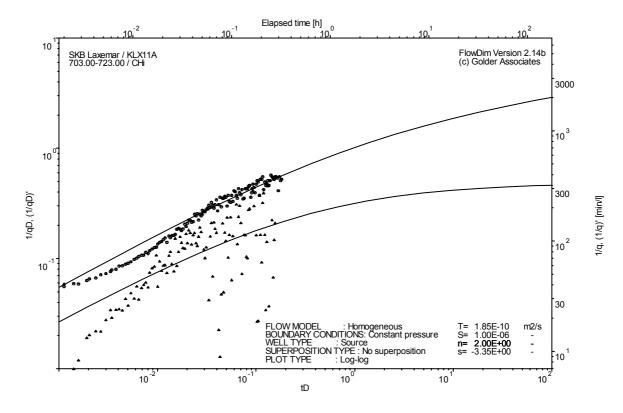
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-40/3

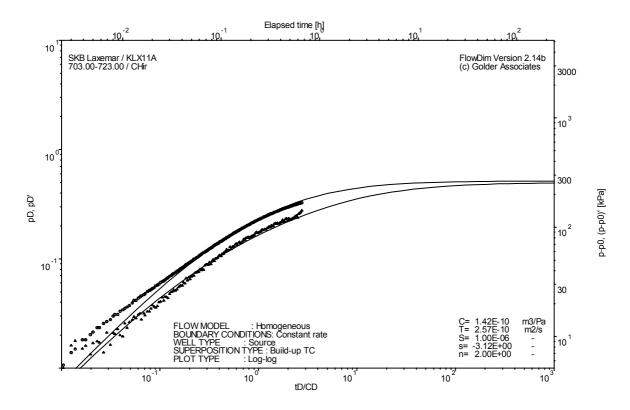
Test: 703.00 – 723.00 m



CHI phase; log-log match

Borehole: KLX11A Page 2-40/4

Test: 703.00 – 723.00 m



CHIR phase; log-log match

Not analysable

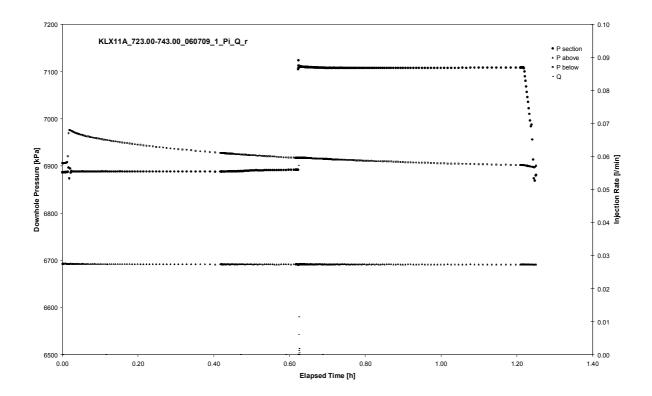
Borehole: KLX11A Page 2-41/1

Test: 723.00 – 743.00 m

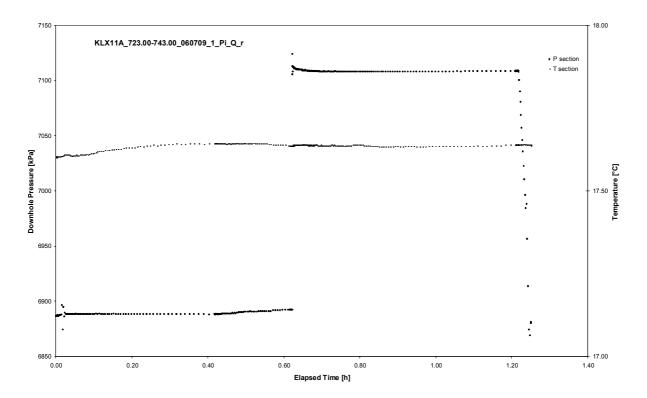
APPENDIX 2-41

Test 723.00 – 743.00 m

Test: 723.00 – 743.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-41/3 Test: 723.00 – 743.00 m

Not analysed

Pulse injection; deconvolution match

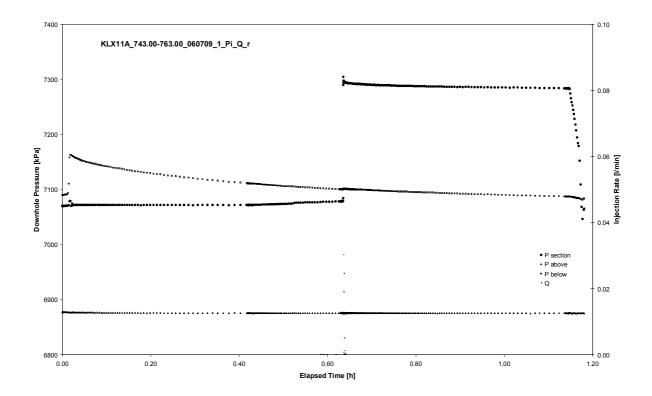
Borehole: KLX11A Page 2-42/1

Test: 743.00 – 763.00 m

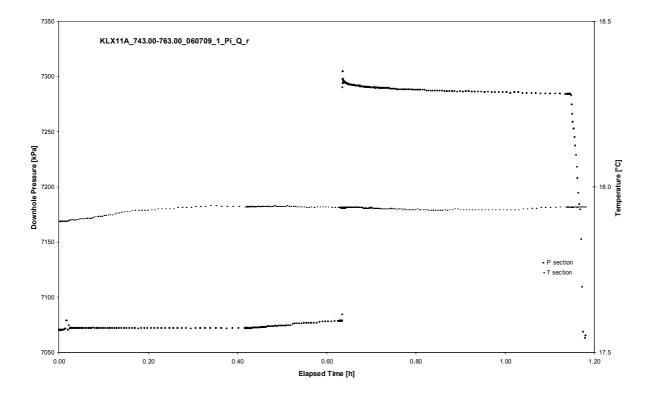
APPENDIX 2-42

Test 743.00 – 763.00 m

Test: 743.00 – 763.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-42/3 Test: 743.00 – 763.00 m

Not analysed

Pulse injection; deconvolution match

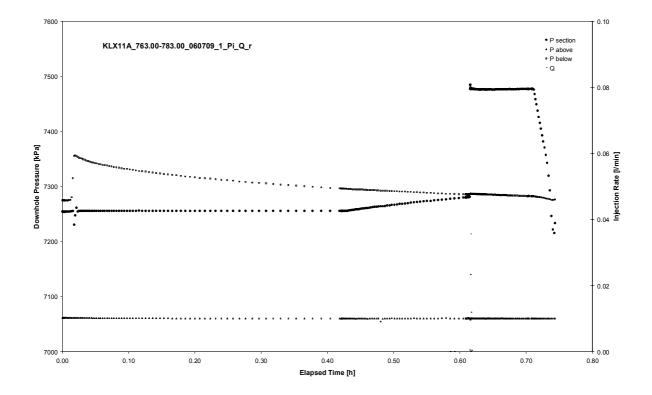
Borehole: KLX11A Page 2-43/1

Test: 763.00 – 783.00 m

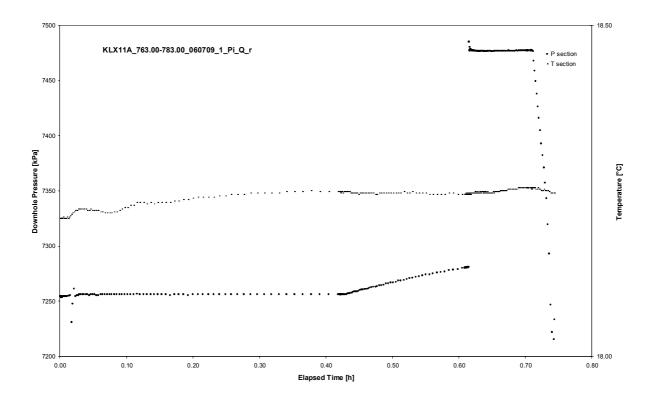
APPENDIX 2-43

Test 763.00 – 783.00 m

Test: 763.00 – 783.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-43/3 Test: 763.00 – 783.00 m

Not analysed

Pulse injection; deconvolution match

Borehole: KLX11A Page 2-44/1

Test: 783.00 – 803.00 m

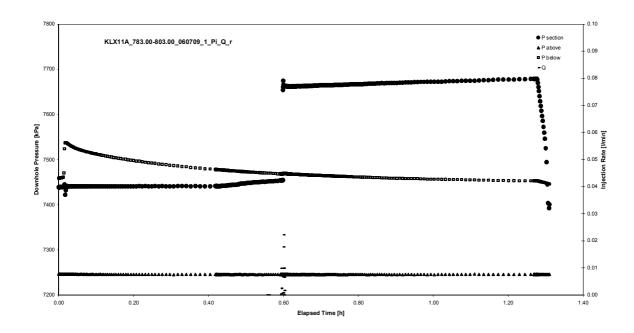
APPENDIX 2-44

Test 783.00 – 803.00 m

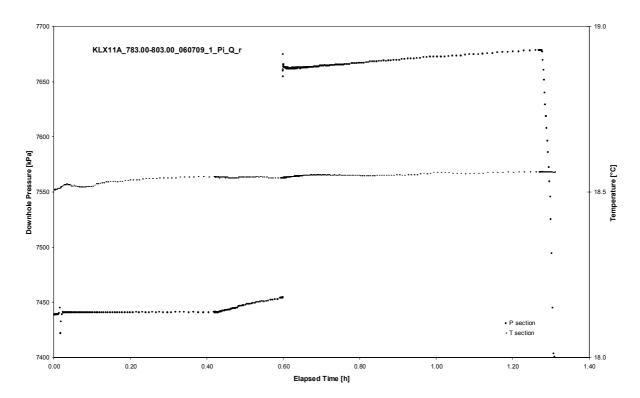
Page 2-44/2

Borehole: KLX11A

Test: 783.00 – 803.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-44/3
Test: 783.00 – 803.00 m

Not analysed

Pulse injection; deconvolution match

Borehole: KLX11A Page 2-45/1

Test: 803.00 – 823.00 m

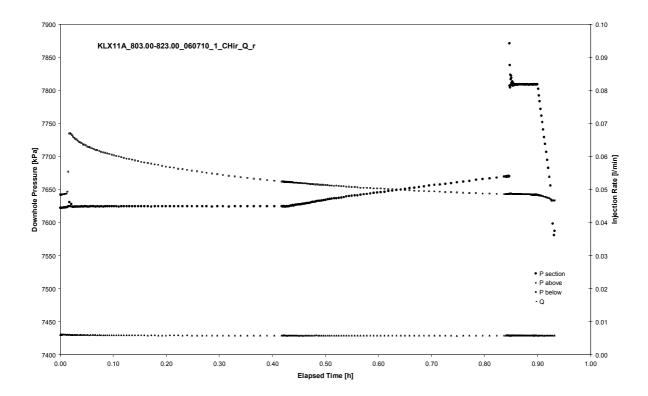
APPENDIX 2-45

Test 803.00 – 823.00 m

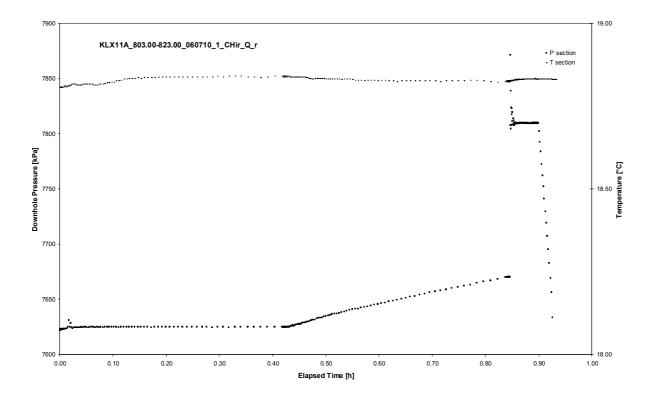
Page 2-45/2

Borehole: KLX11A

Test: 803.00 – 823.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-45/3

Test: 803.00 – 823.00 m

Not analysed

Borehole: Test:	KLX11A 803.00 – 823.00 m		Page 2-45/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

Borehole: KLX11A Page 2-46/1

Test: 823.00 – 843.00 m

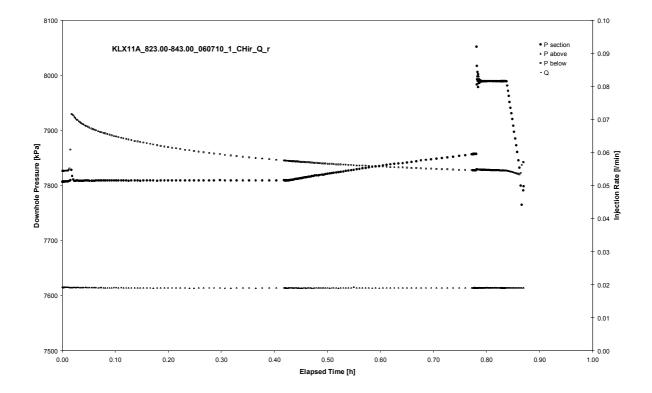
APPENDIX 2-46

Test 823.00 – 843.00 m

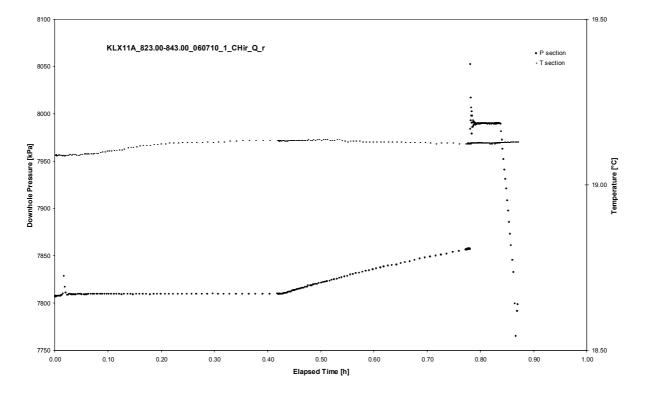
Page 2-46/2

Borehole: KLX11A

Test: 823.00 – 843.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-46/3

Test: 823.00 – 843.00 m

Not analysed

Borehole: Test:	KLX11A 823.00 – 843.00 m		Page 2-46/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

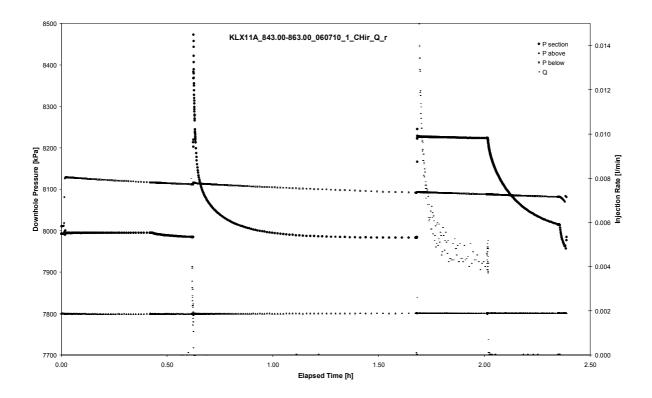
Borehole: KLX11A Page 2-47/1

Test: 843.00 – 863.00 m

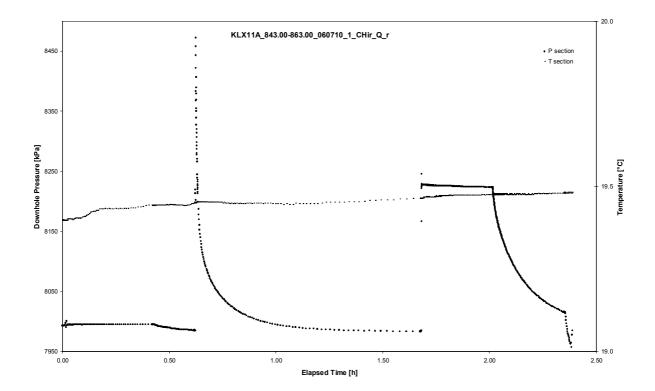
APPENDIX 2-47

Test 843.00 – 863.00 m

Test: 843.00 – 863.00 m



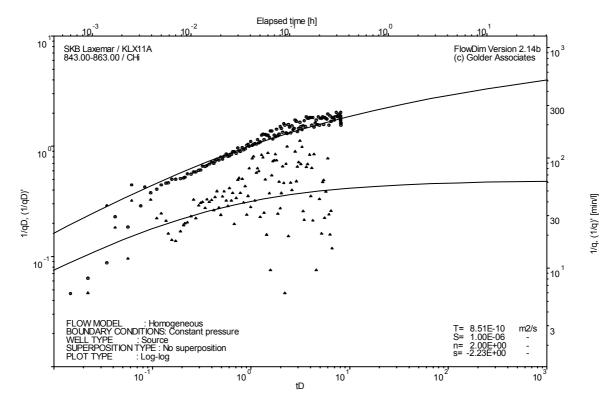
Pressure and flow rate vs. time; cartesian plot



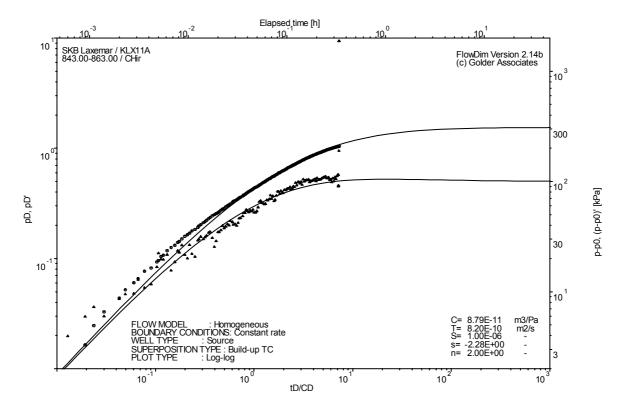
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-47/3

Test: 843.00 – 863.00 m



Test: 843.00 – 863.00 m



CHIR phase; log-log match

Not analysable

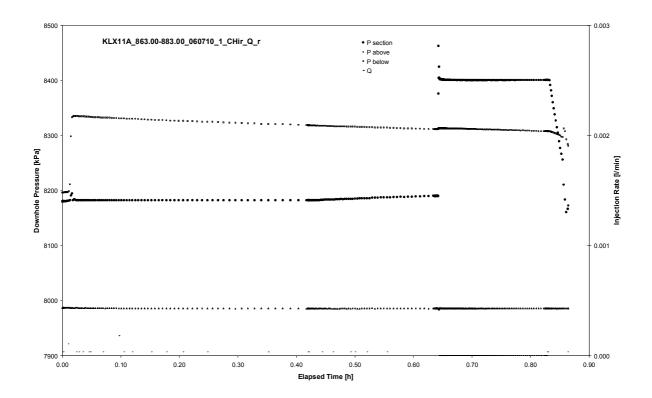
Borehole: KLX11A Page 2-48/1

Test: 863.00 – 883.00 m

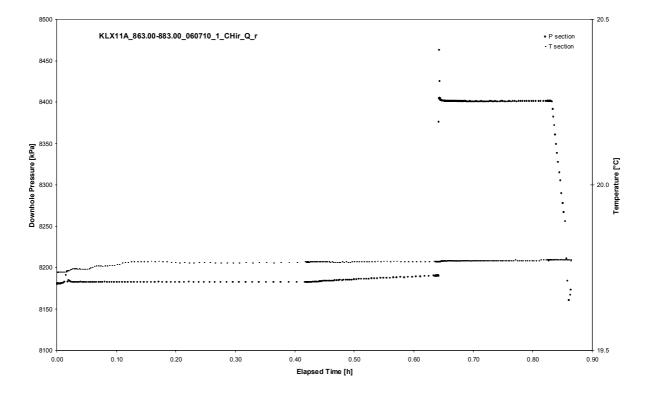
APPENDIX 2-48

Test 863.00 – 883.00 m

Test: 863.00 – 883.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-48/3

Test: 863.00 – 883.00 m

Not analysed

Borehole: Test:	KLX11A 863.00 – 883.00 m		Page 2-48/4
T CSt.	003.00 003.00 III		
		N	
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

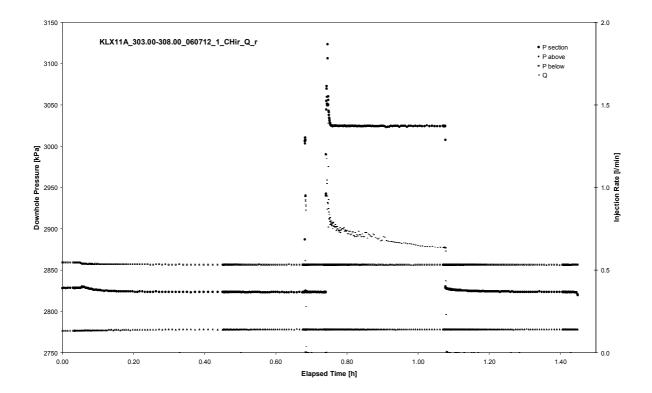
Borehole: KLX11A Page 2-49/1

Test: 303.00 – 308.00 m

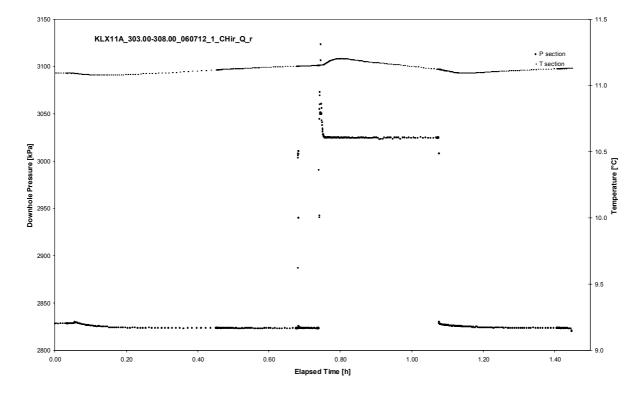
APPENDIX 2-49

Test 303.00 – 308.00 m

Test: 303.00 – 308.00 m



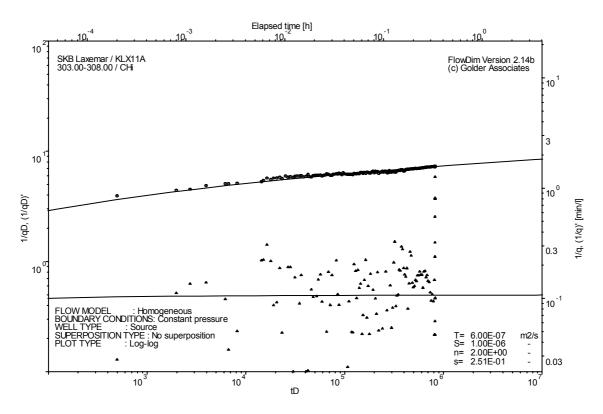
Pressure and flow rate vs. time; cartesian plot



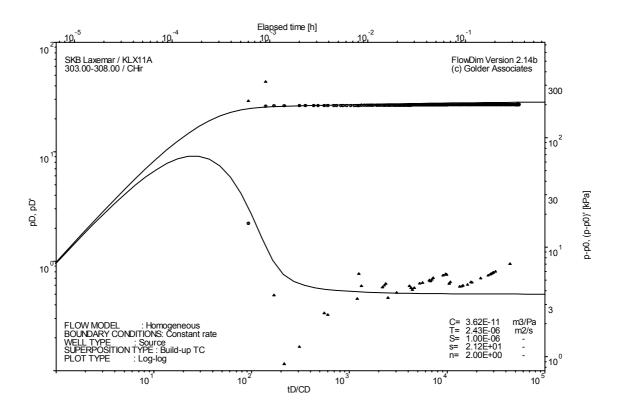
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-49/3

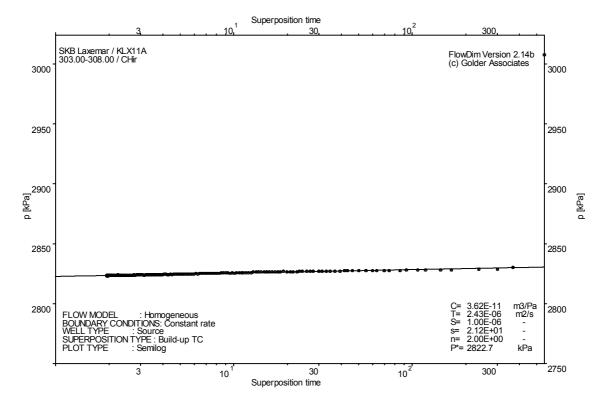
Test: 303.00 – 308.00 m



Test: 303.00 - 308.00 m



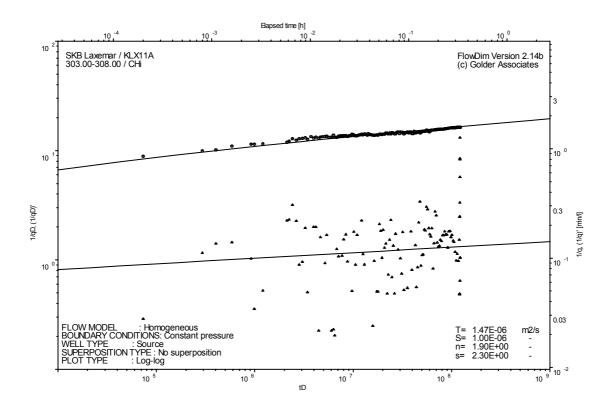
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-49/5

Test: 303.00 – 308.00 m



CHI phase; log-log match (n=1.9)

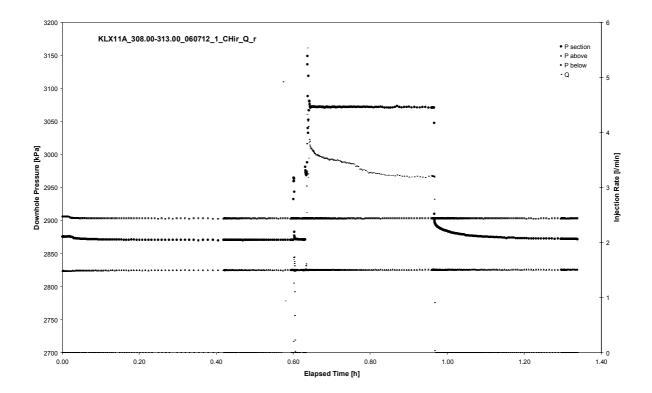
Borehole: KLX11A Page 2-50/1

Test: 308.00 - 313.00 m

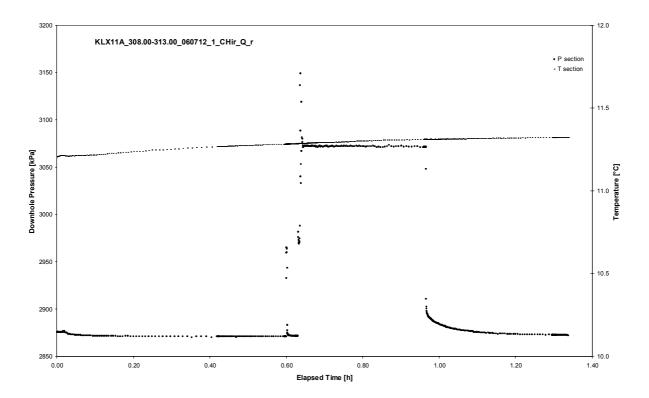
APPENDIX 2-50

Test 308.00 – 313.00 m

Test: 308.00 - 313.00 m



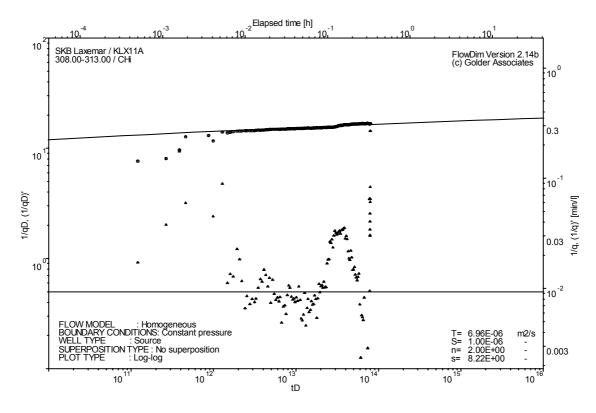
Pressure and flow rate vs. time; cartesian plot



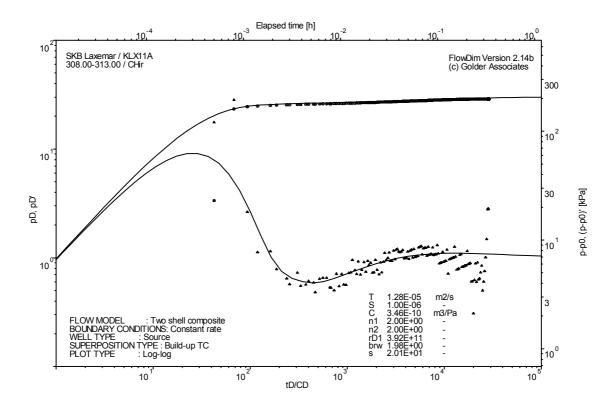
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-50/3

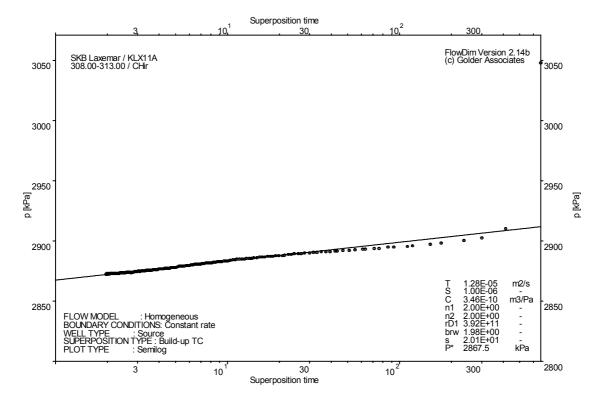
Test: 308.00 - 313.00 m



Test: 308.00 - 313.00 m



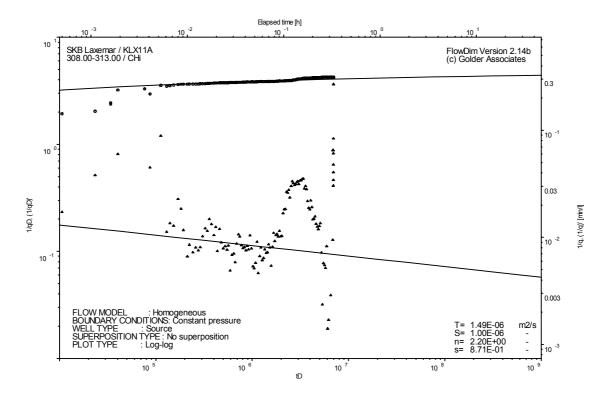
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-50/5

Test: 308.00 - 313.00 m



CHI phase; log-log match (n=2.2)

Borehole: KLX11A Page 2-51/1

Test: 313.00 – 318.00 m

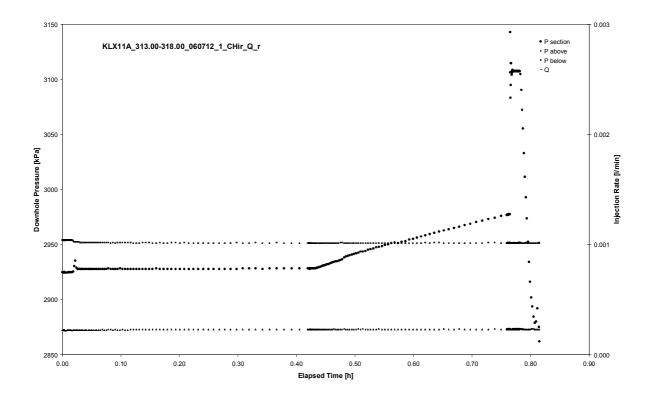
APPENDIX 2-51

Test 313.00 – 318.00 m

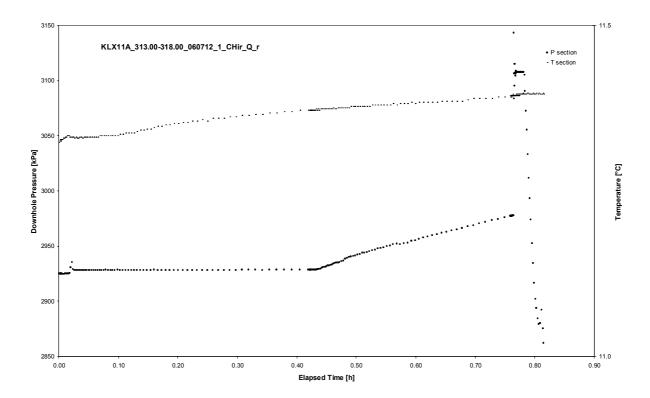
Page 2-51/2

Borehole: KLX11A

Test: 313.00 – 318.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-51/3

Test: 313.00 – 318.00 m

Not analysed

Test:	313.00 – 318.00 m	
		Not analysed
CHIR pha	se; log-log match	
		Not analysed

Page 2-51/4

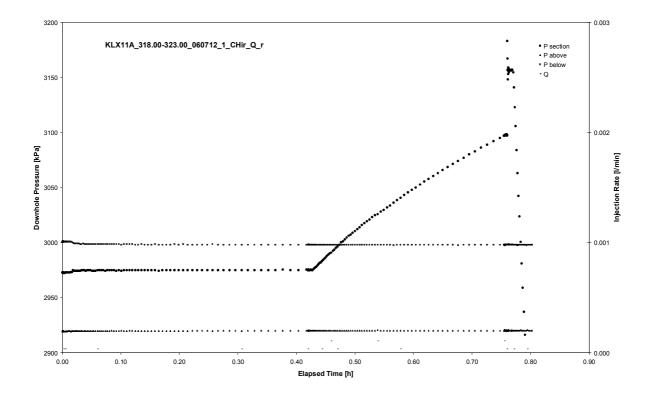
Borehole: KLX11A Page 2-52/1

Test: 318.00 – 323.00 m

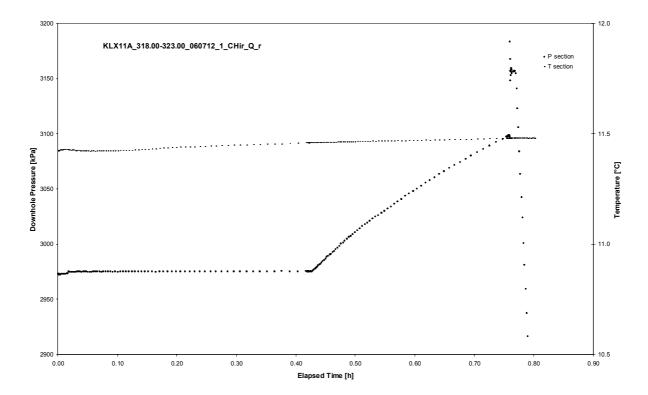
APPENDIX 2-52

Test 318.00 – 323.00 m

Test: 318.00 – 323.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-52/3

Test: 318.00 – 323.00 m

Not analysed

Borehole: Test:	KLX11A 318.00 – 323.00 m		Page 2-52/4
		Not analysed	
		·	
CHIR pha	se; log-log match		
		Not analysed	

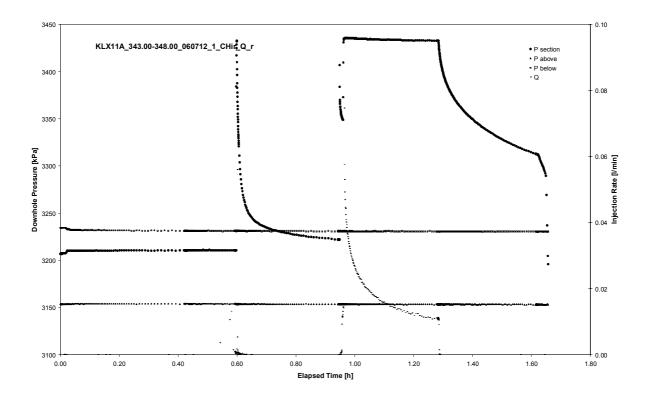
Borehole: KLX11A Page 2-53/1

Test: 343.00 – 348.00 m

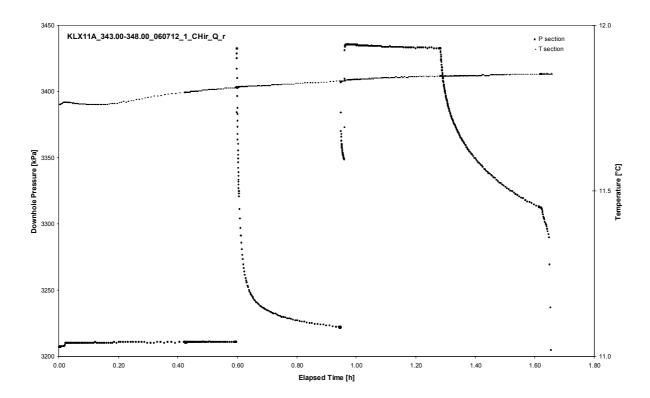
APPENDIX 2-53

Test 343.00 – 348.00 m

Test: 343.00 – 348.00 m



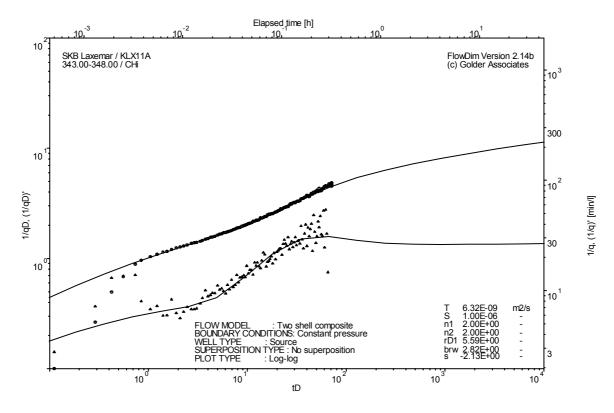
Pressure and flow rate vs. time; cartesian plot



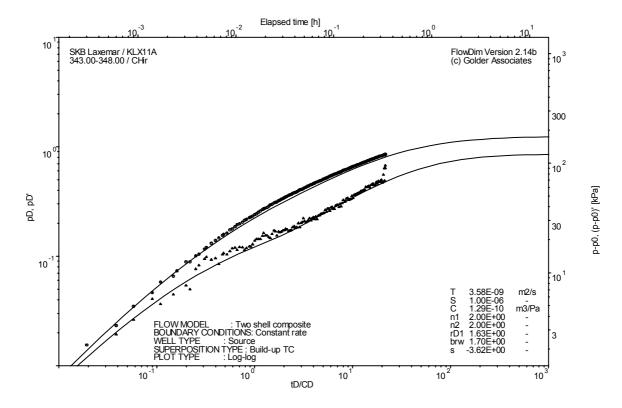
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-53/3

Test: 343.00 – 348.00 m



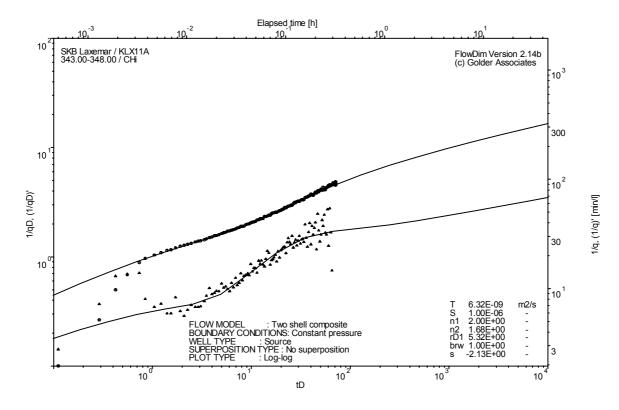
Test: 343.00 – 348.00 m



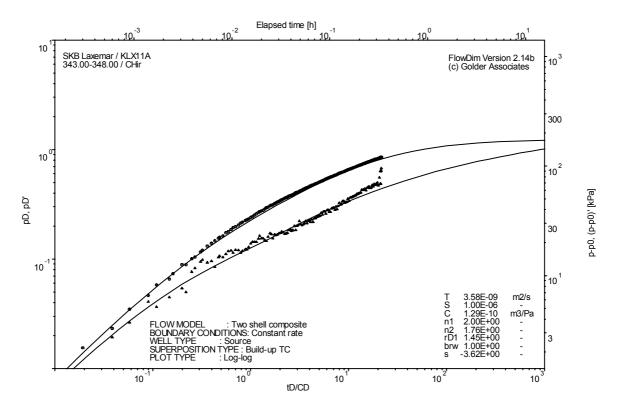
CHIR phase; log-log match

Not analysable

Test: 343.00 – 348.00 m



CHI phase; log-log match (n1=2, n2=1.68)



CHIR phase; log-log match (n1=2, n2=1.76)

Borehole: KLX11A Page 2-54/1

Test: 348.00 - 353.00 m

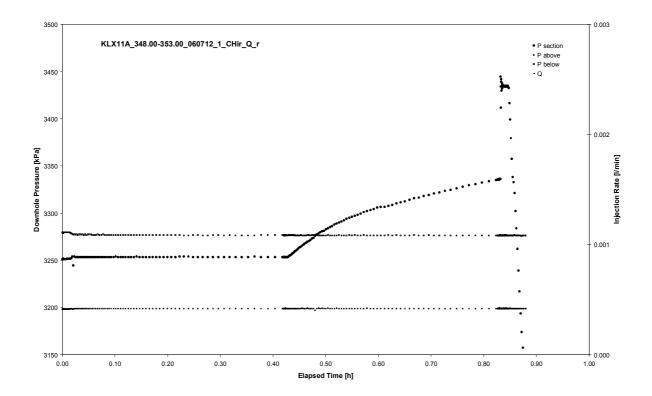
APPENDIX 2-54

Test 348.00 – 353.00 m

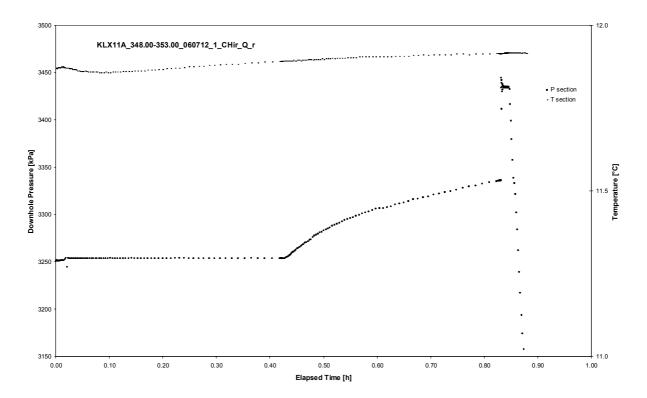
Page 2-54/2

Borehole: KLX11A

Test: 348.00 – 353.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-54/3

Test: 348.00 – 353.00 m

Not analysed

Borehole: Test:	KLX11A 348.00 – 353.00 m		Page 2-54/4
		Not analysed	
CHIR phas	se; log-log match		
		Not analysed	

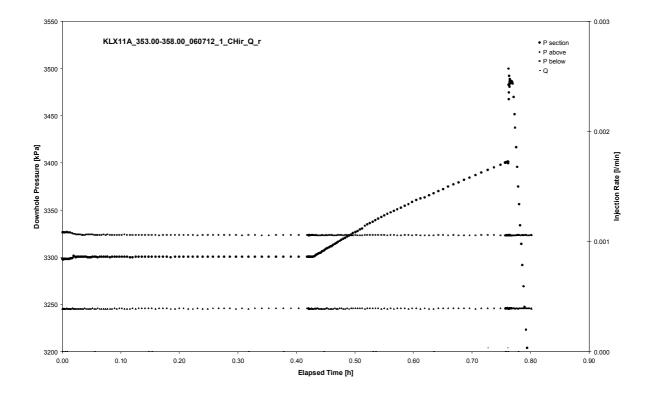
Borehole: KLX11A Page 2-55/1

Test: 353.00 – 358.00 m

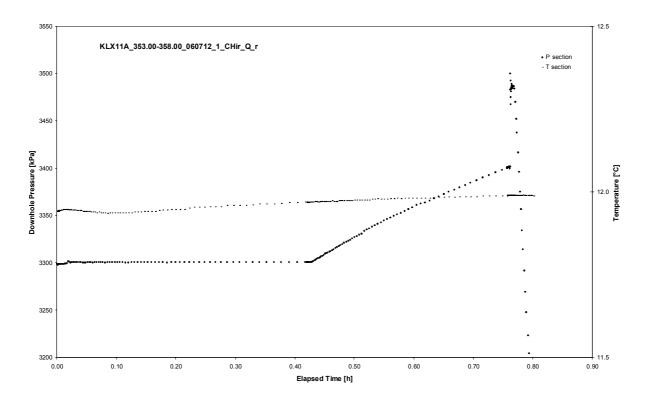
APPENDIX 2-55

Test 353.00 – 358.00 m

Test: 353.00 – 358.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-55/3

Test: 353.00 – 358.00 m

Not analysed

Borehole: Test:	KLX11A 353.00 – 358.00 m		Page 2-55/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	
		riot anaryscu	

Borehole: KLX11A Page 2-56/1

Test: 358.00 – 363.00 m

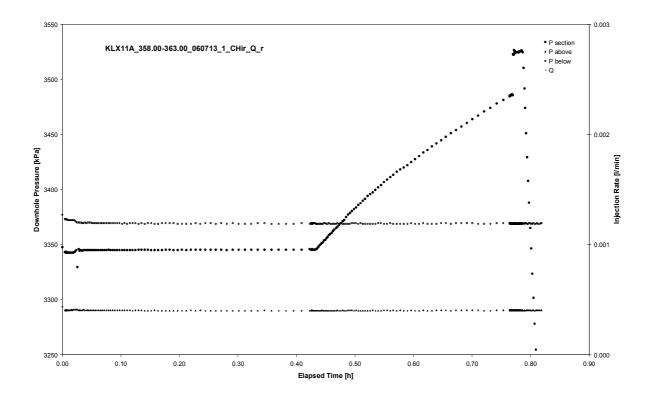
APPENDIX 2-56

Test 358.00 – 363.00 m

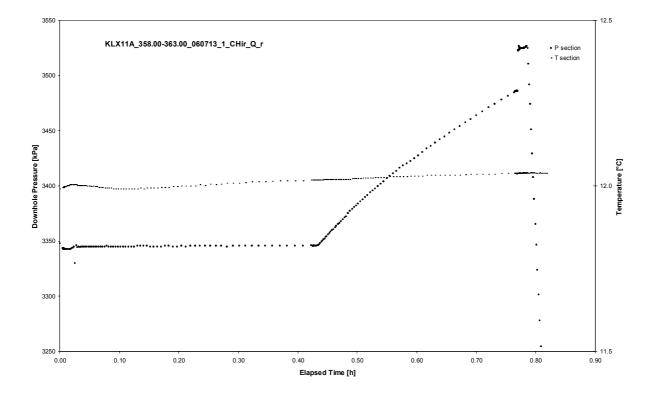
Page 2-56/2

Borehole: KLX11A

Test: 358.00 – 363.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-56/3

Test: 358.00 – 363.00 m

Not analysed

Test:	358.00 –	363.00 m		
			Not analysed	
			J	
CHIR pha	se; log-log	match		
			Not analysed	

Page 2-56/4

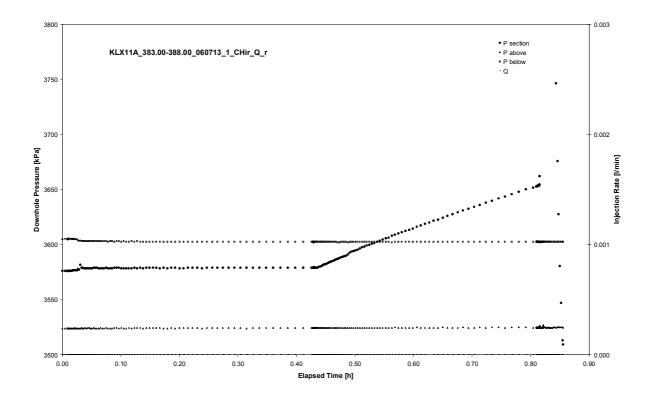
Borehole: KLX11A Page 2-57/1

Test: 383.00 – 388.00 m

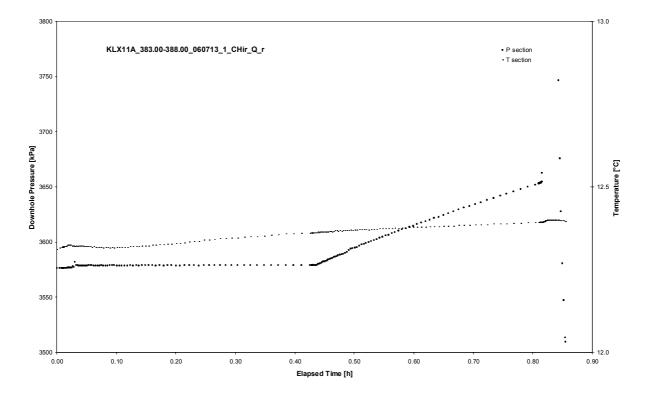
APPENDIX 2-57

Test 383.00 – 388.00 m

Test: 383.00 – 388.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-57/3

Test: 383.00 – 388.00 m

Not analysed

Borehole: Test:	KLX11A 383.00 – 388.00 m		Page 2-57/4
		NI-4 l	
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

Page 2-57/4

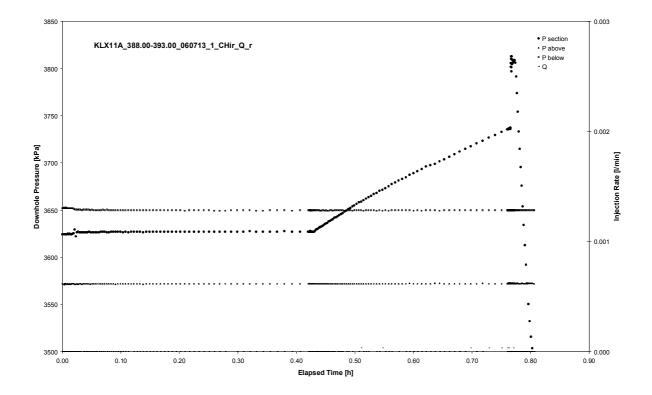
Borehole: KLX11A Page 2-58/1

Test: 388.00 – 393.00 m

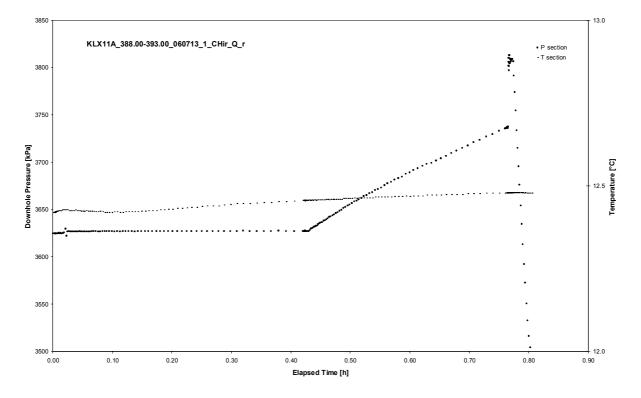
APPENDIX 2-58

Test 388.00 – 393.00 m

Test: 388.00 – 393.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-58/3

Test: 388.00 – 393.00 m

Not analysed

Borehole: Test:	KLX11A 388.00 – 393.00 m		Page 2-58/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

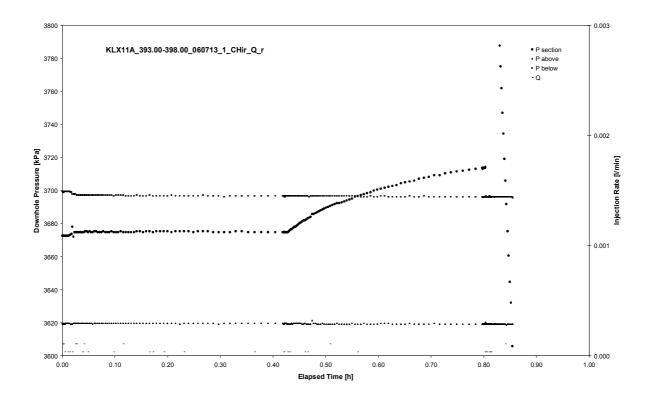
Borehole: KLX11A Page 2-59/1

Test: 393.00 – 398.00 m

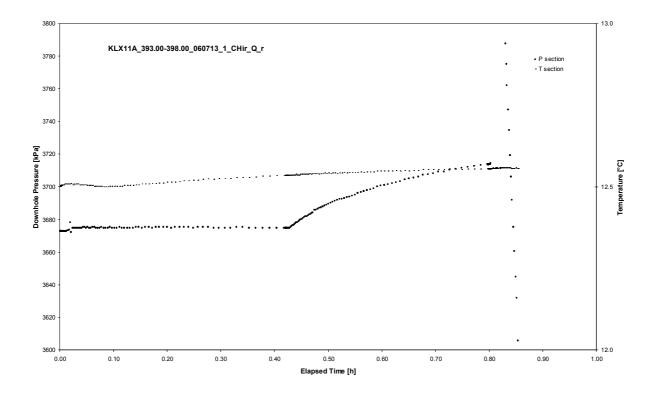
APPENDIX 2-59

Test 393.00 – 398.00 m

Test: 393.00 – 398.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-59/3

Test: 393.00 – 398.00 m

Not analysed

Test:	393.00 – 398.00 m	
		Not analysed
CHIR nha	se; log-log match	
CITIK plia	se, log-log matem	
		Not analysed

Page 2-59/4

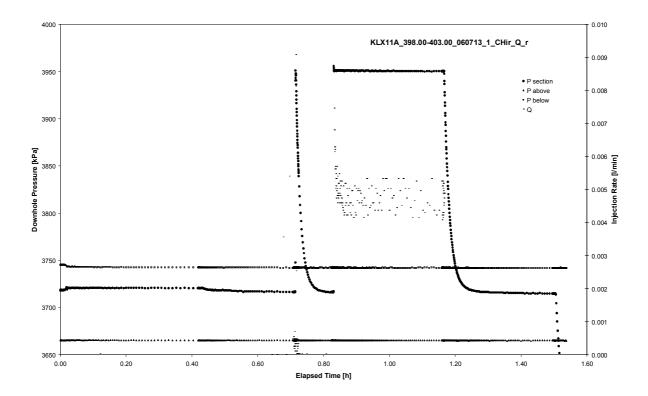
Borehole: KLX11A Page 2-60/1

Test: 398.00 – 403.00 m

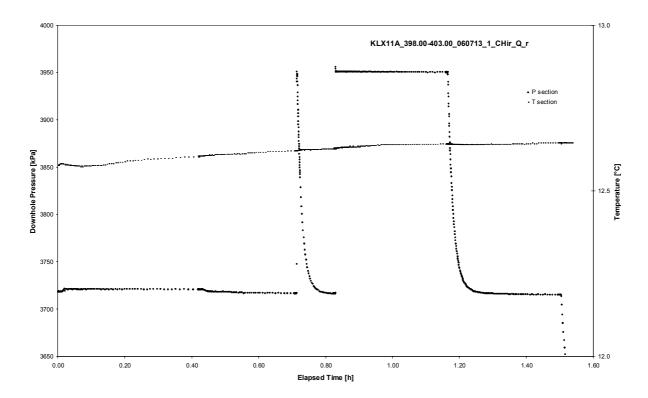
APPENDIX 2-60

Test 398.00 – 403.00 m

Test: 398.00 – 403.00 m



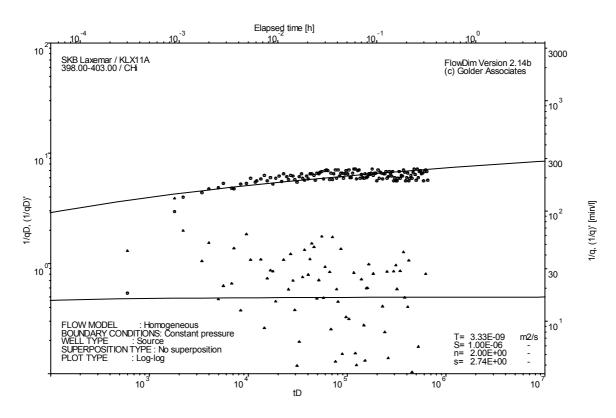
Pressure and flow rate vs. time; cartesian plot



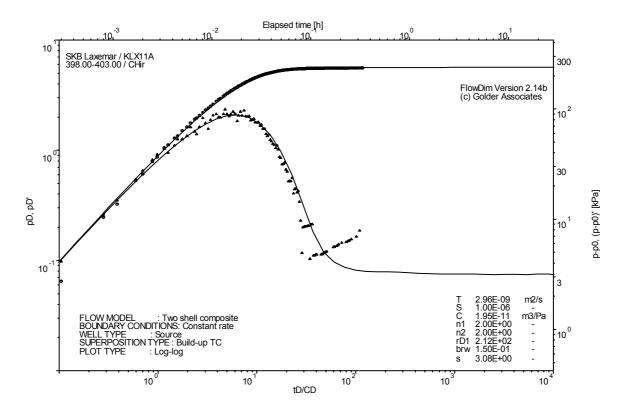
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-60/3

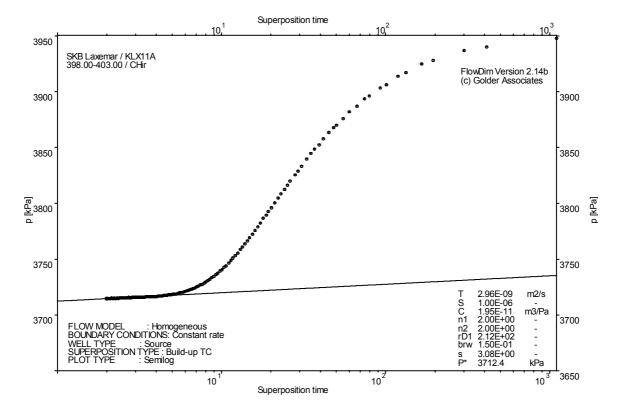
Test: 398.00 – 403.00 m



Test: 398.00 – 403.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-61/1

Test: 423.00 – 428.00 m

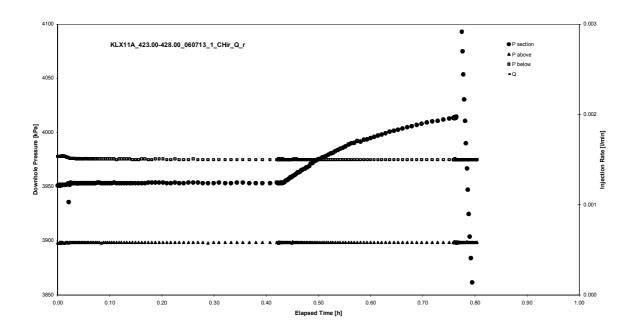
APPENDIX 2-61

Test 423.00 – 428.00 m

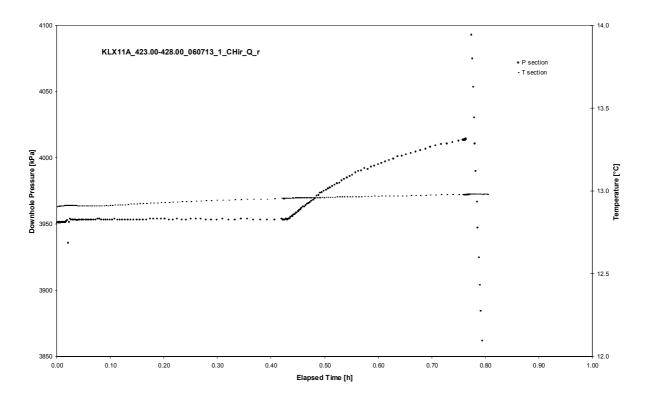
Page 2-61/2

Borehole: KLX11A

Test: 423.00 – 428.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-61/3

Test: 423.00 – 428.00 m

Not analysed

Test:	423.00 – 428.00 m	
		Not analysed
CHIR pha	se; log-log match	
CTITIC pila	se, log log maten	
		Not analysed

Page 2-61/4

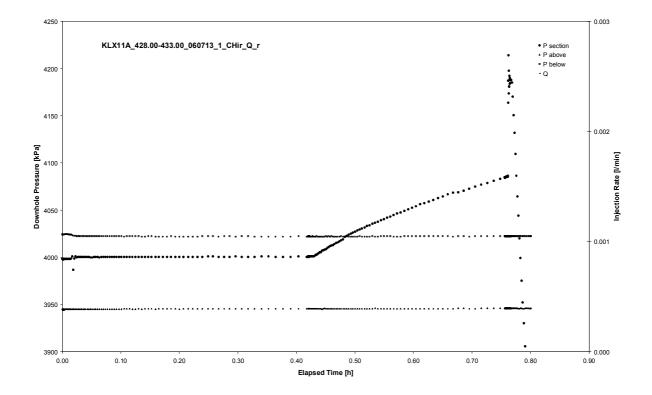
Borehole: KLX11A Page 2-62/1

Test: 428.00 – 433.00 m

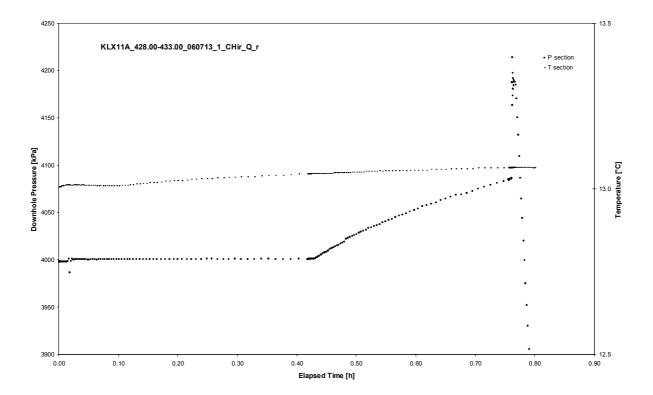
APPENDIX 2-62

Test 428.00 – 433.00 m

Test: 428.00 – 433.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-62/3

Test: 428.00 – 433.00 m

Not analysed

Test:	428.00 – 433.00 m	Page 2-62/4
	Not analysed	
CHIR phas	se; log-log match	

Not analysed

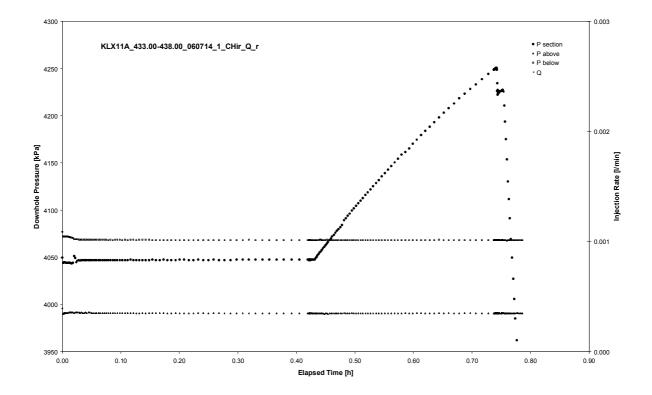
Borehole: KLX11A Page 2-63/1

Test: 433.00 – 438.00 m

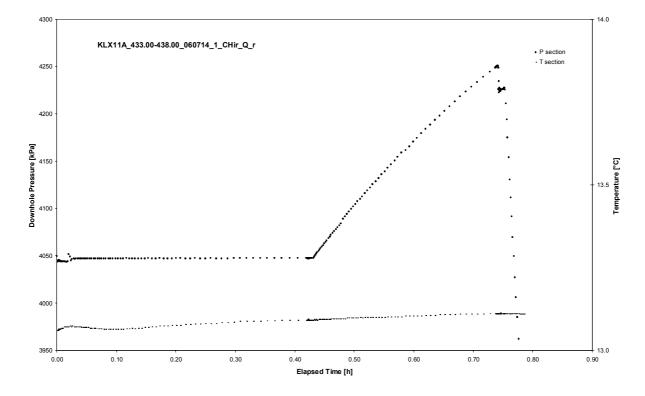
APPENDIX 2-63

Test 433.00 – 438.00 m

Test: 433.00 – 438.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-63/3

Test: 433.00 – 438.00 m

Not analysed

Test:	433.00 – 438.00 m		C
		Not analysed	
CHIR pha	se; log-log match		
· r	, -6 -6		
		Not analysed	

Page 2-63/4

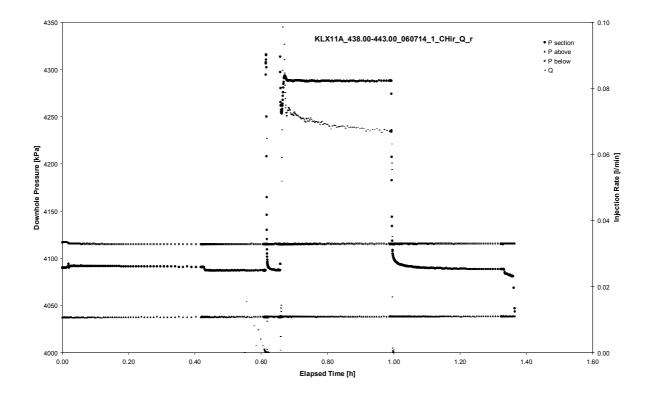
Borehole: KLX11A Page 2-64/1

Test: 438.00 – 443.00 m

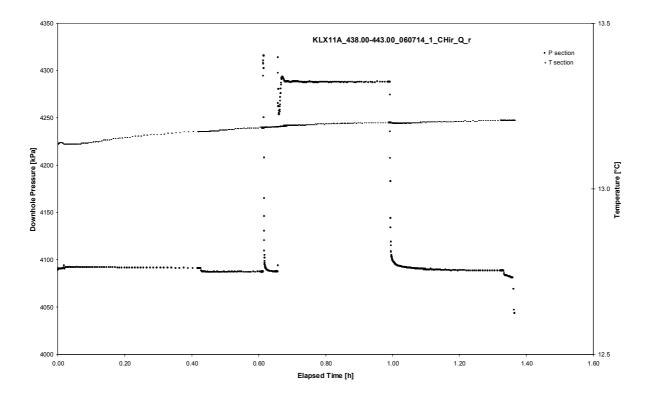
APPENDIX 2-64

Test 438.00 – 443.00 m

Test: 438.00 – 443.00 m



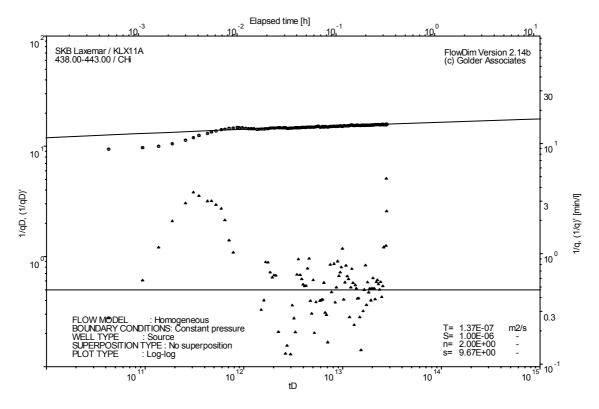
Pressure and flow rate vs. time; cartesian plot



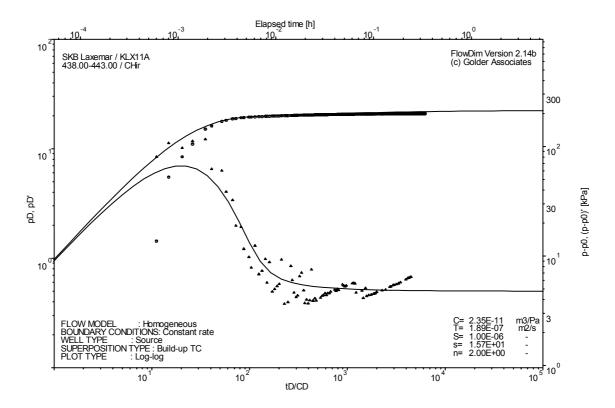
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-64/3

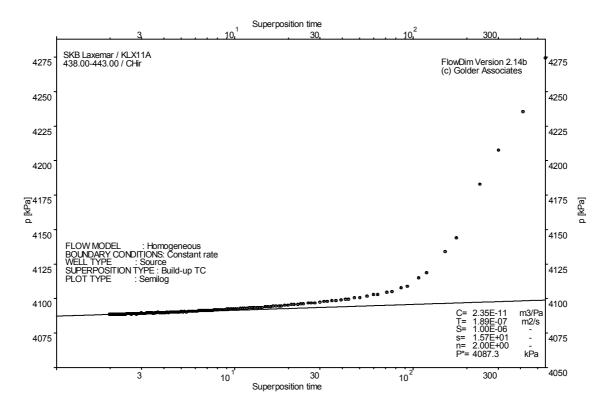
Test: 438.00 – 443.00 m



Test: 438.00 – 443.00 m



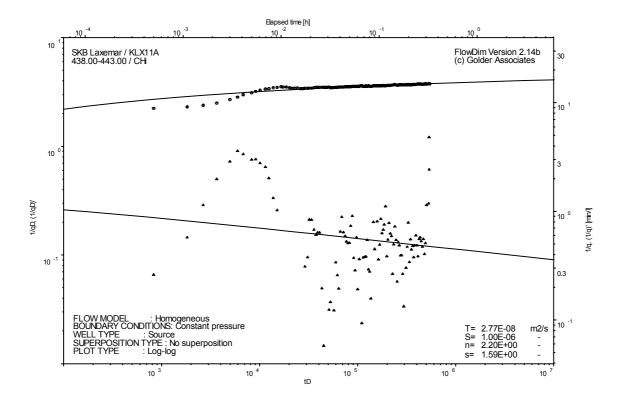
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-64/5

Test: 438.00 – 443.00 m



CHI phase; log-log match (n=2.2)

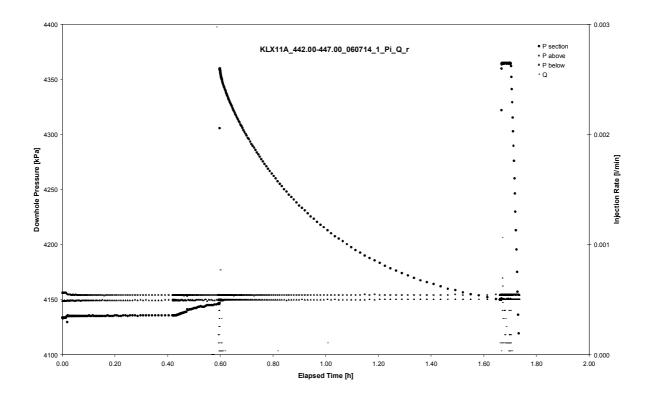
Borehole: KLX11A Page 2-65/1

Test: 442.00 – 447.0 m

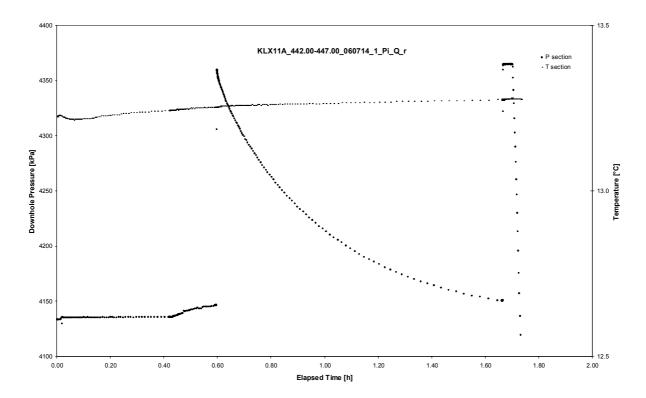
APPENDIX 2-65

Test 442.00 – 447.00 m

Borehole: KLX11A Test: 442.00 – 447.0 m

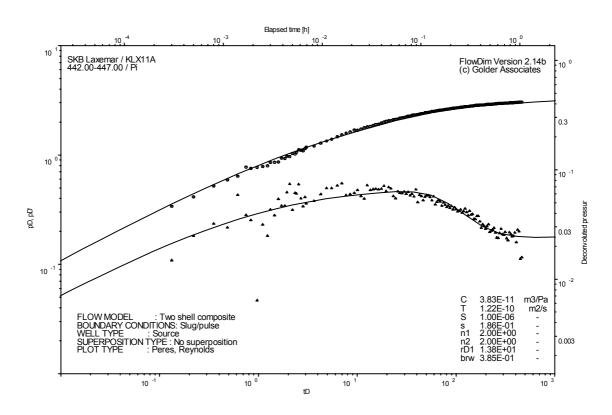


Pressure and flow rate vs. time; cartesian plot

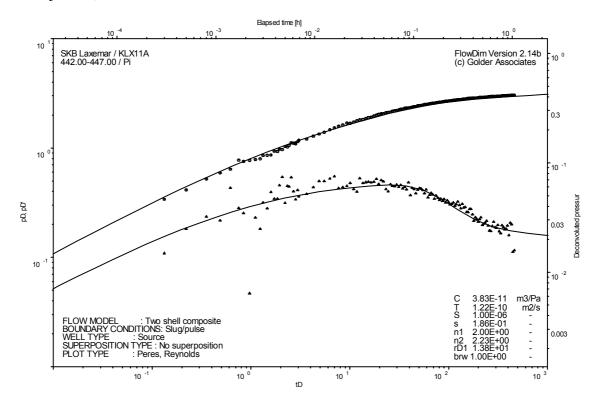


Interval pressure and temperature vs. time; cartesian plot

Test: 442.00 – 447.0 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n1=2, n2=2.23)

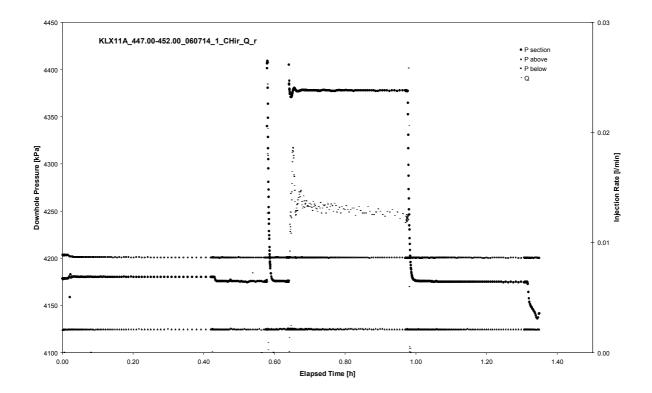
Borehole: KLX11A Page 2-66/1

Test: 447.00 – 452.00 m

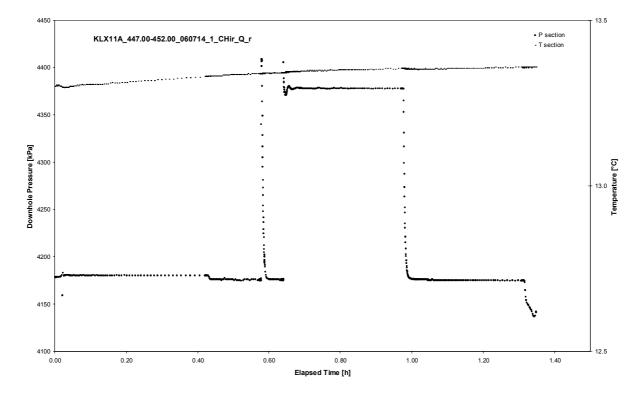
APPENDIX 2-66

Test 447.00 – 452.00 m

Test: 447.00 – 452.00 m



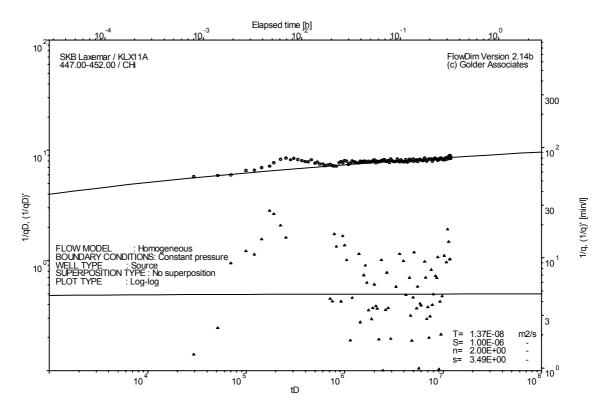
Pressure and flow rate vs. time; cartesian plot



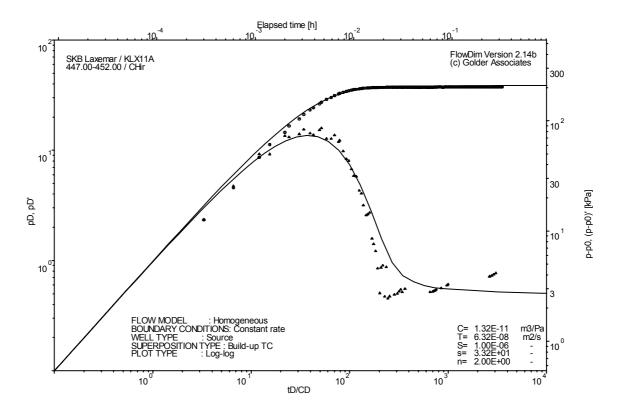
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-66/3

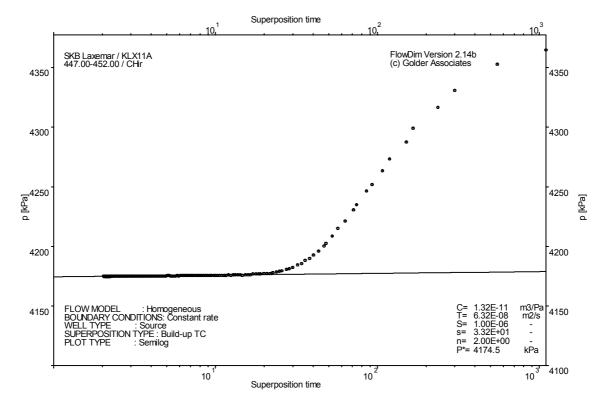
Test: 447.00 – 452.00 m



Test: 447.00 – 452.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

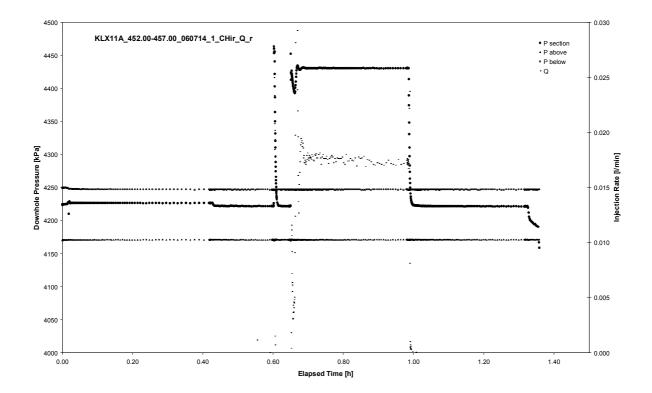
Borehole: KLX11A Page 2-67/1

Test: 452.00 – 457.00 m

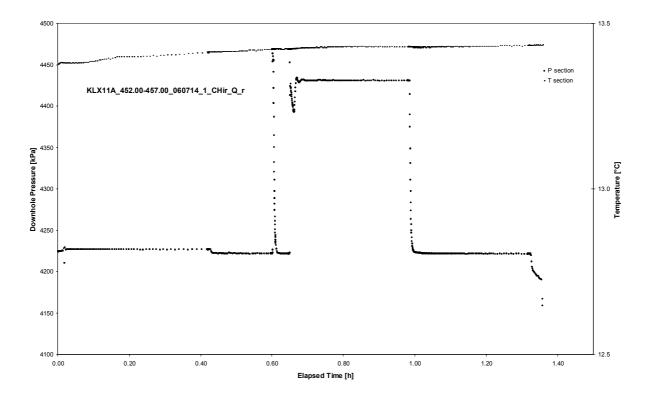
APPENDIX 2-67

Test 452.00 – 457.00 m

Test: 452.00 – 457.00 m



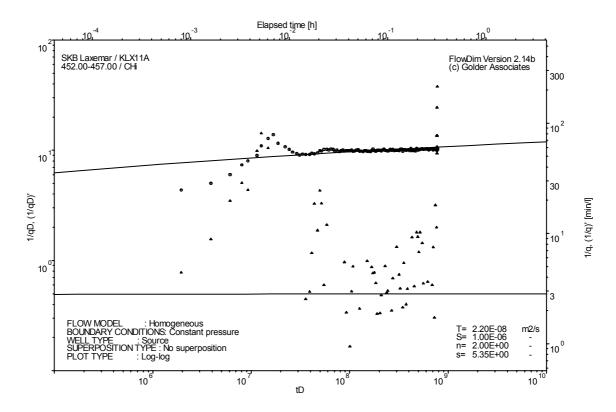
Pressure and flow rate vs. time; cartesian plot



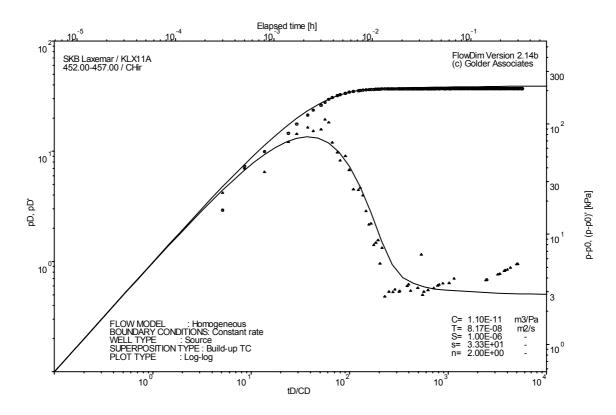
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-67/3

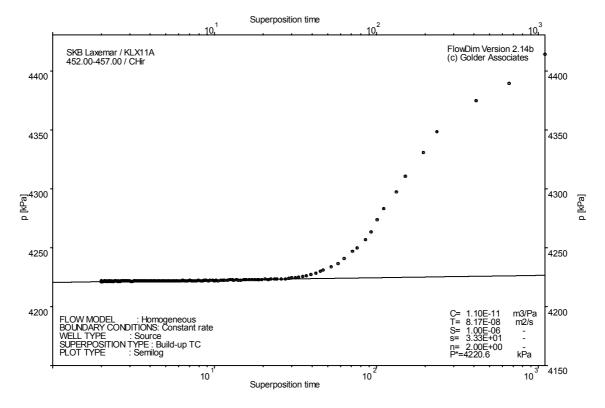
Test: 452.00 – 457.00 m



Test: 452.00 – 457.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

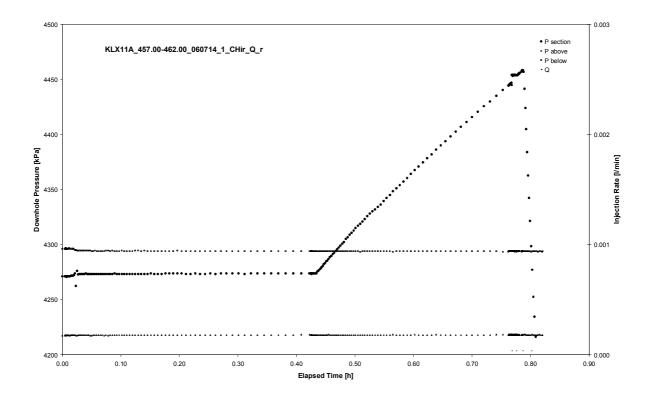
Borehole: KLX11A Page 2-68/1

Test: 457.00 – 462.00 m

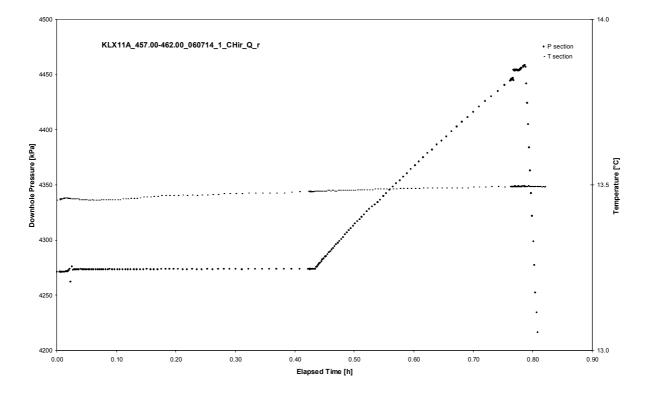
APPENDIX 2-68

Test 457.00 – 462.00 m

Test: 457.00 – 462.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-68/3

Test: 457.00 – 462.00 m

Not analysed

Test:	457.00 – 462.00 m		C
		Not analysed	
CHIR pha	se; log-log match		
F	,		
		Not analysed	

Page 2-68/4

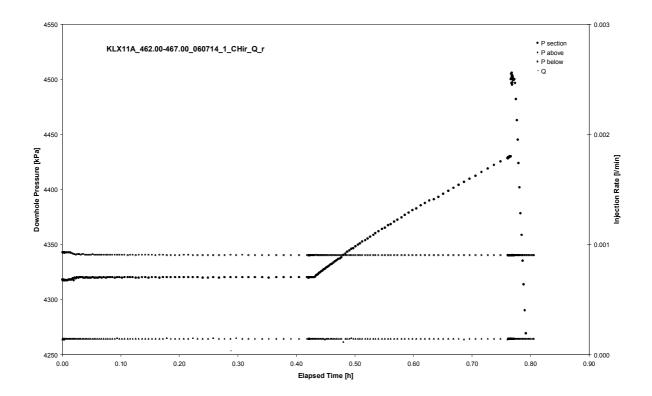
Borehole: KLX11A Page 2-69/1

Test: 462.00 – 467.00 m

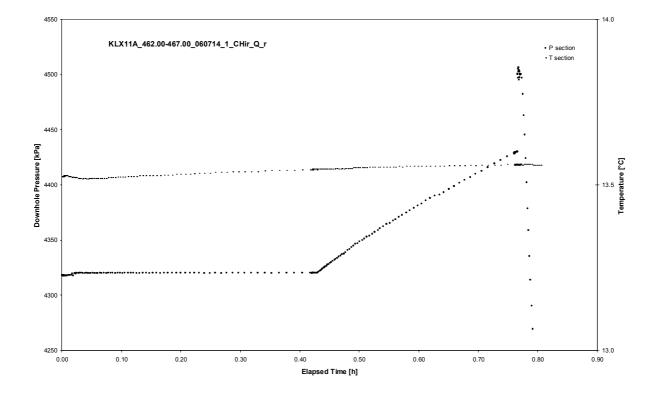
APPENDIX 2-69

Test 462.00 – 467.00 m

Test: 462.00 – 467.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-69/3

Test: 462.00 – 467.00 m

Not analysed

Borehole: Test:	KLX11A 462.00 – 467.00 m		Page 2-69/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

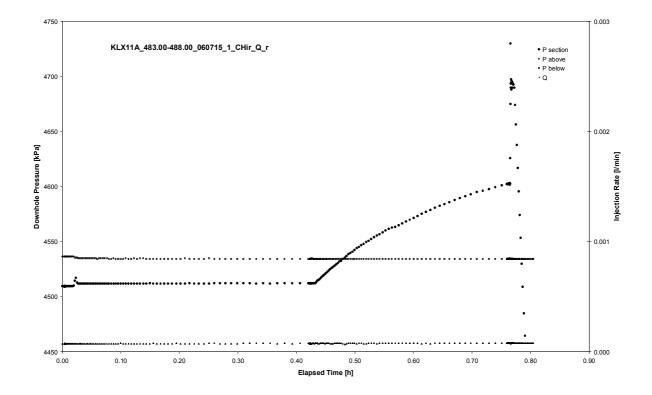
Borehole: KLX11A Page 2-70/1

Test: 483.00 – 488.00 m

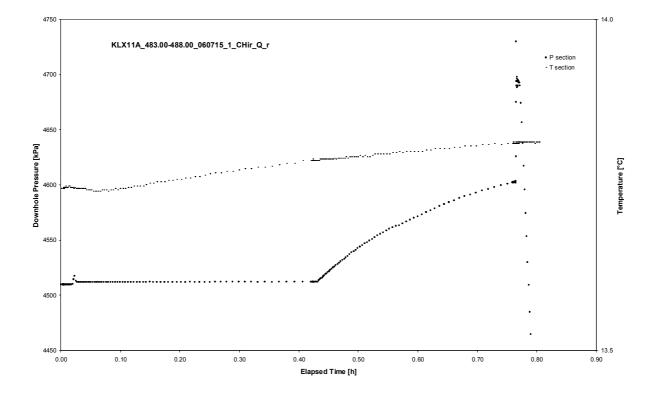
APPENDIX 2-70

Test 483.00 – 488.00 m

Test: 483.00 – 488.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-70/3

Test: 483.00 – 488.00 m

Not analysed

Borehole: Test:	KLX11A 483.00 – 488.00 m		Page 2-70/4
		Not analysed	
CHIR phas	se; log-log match		
		Not analysed	

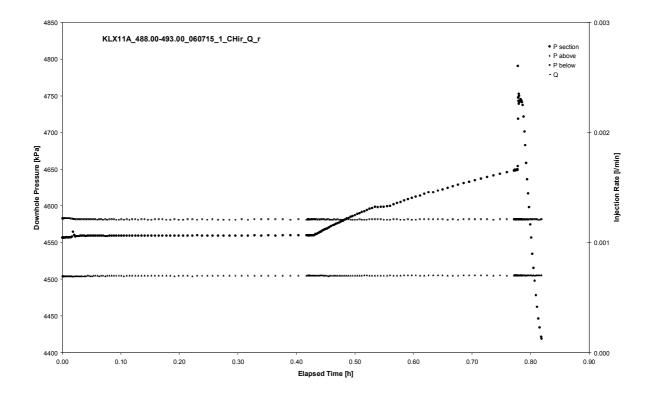
Borehole: KLX11A Page 2-71/1

Test: 488.00 – 493.00 m

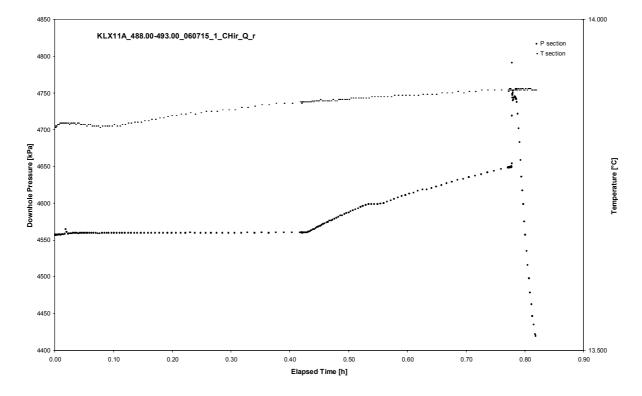
APPENDIX 2-71

Test 488.00 – 493.00 m

Test: 488.00 – 493.00 m



Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-71/3

Test: 488.00 – 493.00 m

Not analysed

CHI phase; log-log match

Test:	488.00 – 493.00 m		Č
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	
		Thot analysed	

Page 2-71/4

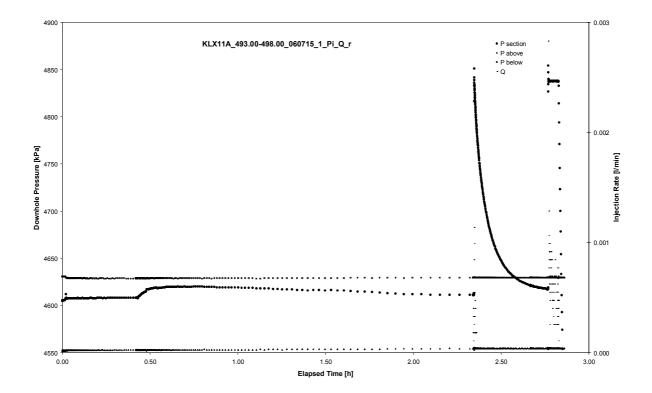
Borehole: KLX11A Page 2-72/1

Test: 493.00 – 498.0 m

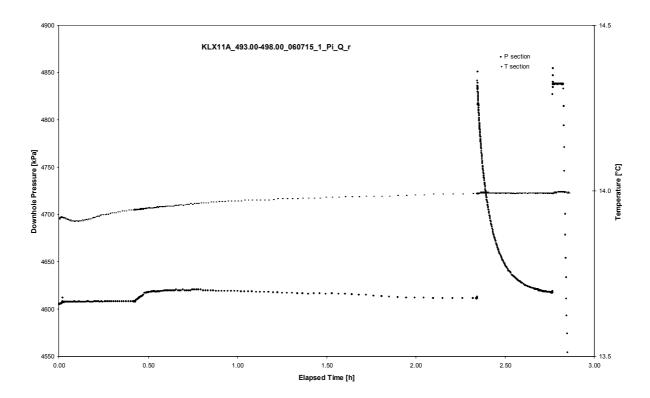
APPENDIX 2-72

Test 493.00 – 498.00 m

Test: 493.00 – 498.0 m



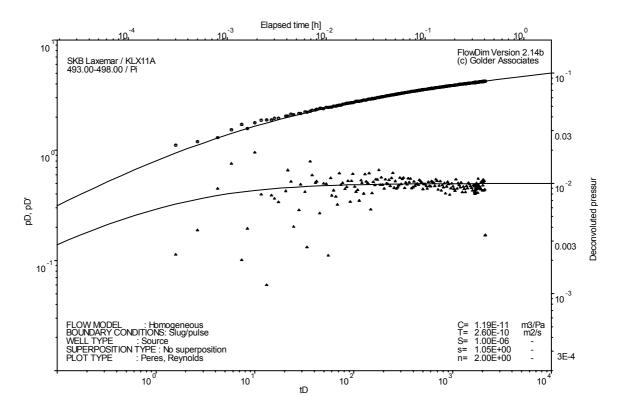
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A Page 2-72/3

Test: 493.00 – 498.0 m



Pulse injection; deconvolution match

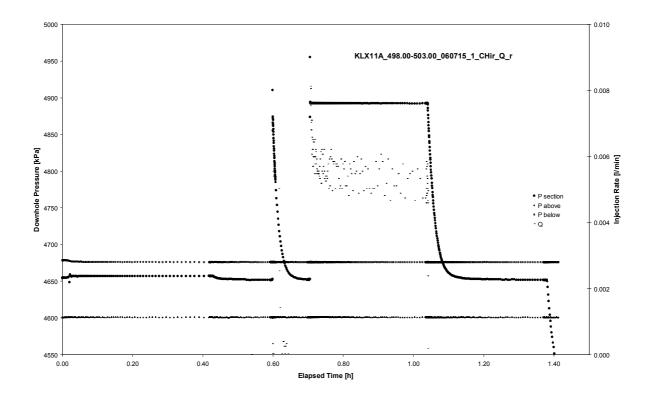
Borehole: KLX11A Page 2-73/1

Test: 498.00 – 503.00 m

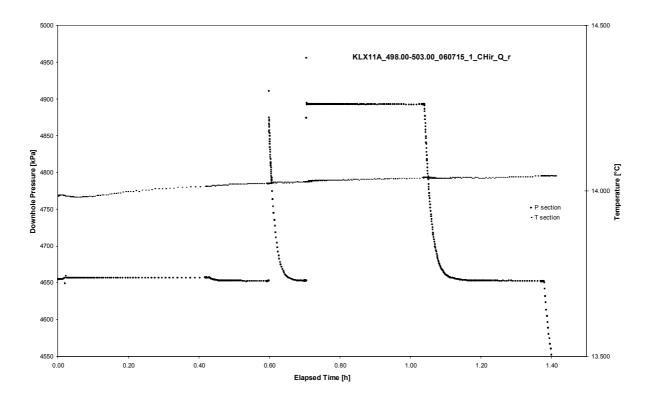
APPENDIX 2-73

Test 498.00 – 503.00 m

Test: 498.00 – 503.00 m



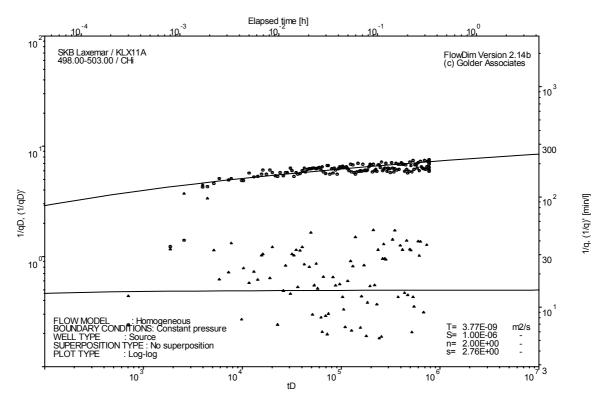
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

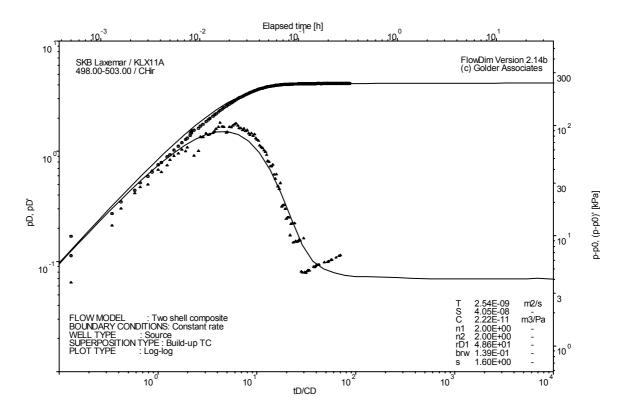
Borehole: KLX11A Page 2-73/3

Test: 498.00 – 503.00 m

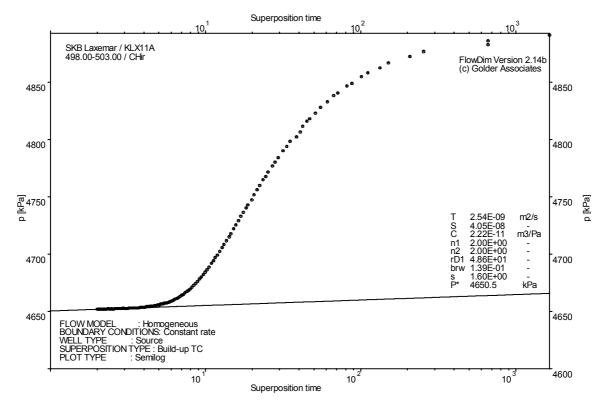


CHI phase; log-log match

Test: 498.00 - 503.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

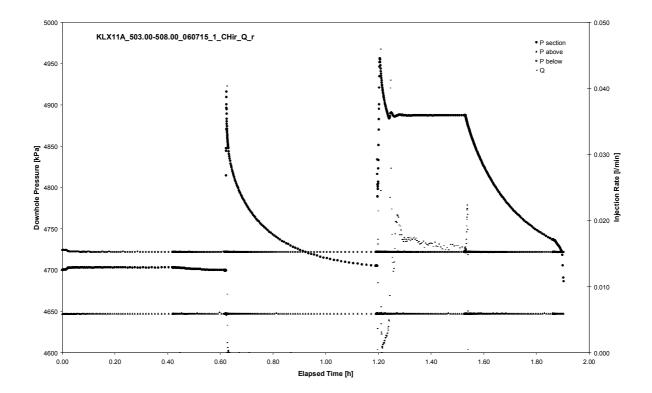
Borehole: KLX11A Page 2-74/1

Test: 503.00 – 508.00 m

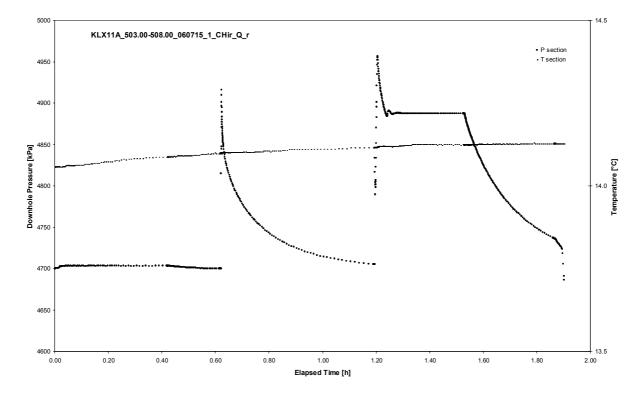
APPENDIX 2-74

Test 503.00 – 508.00 m

Test: 503.00 – 508.00 m



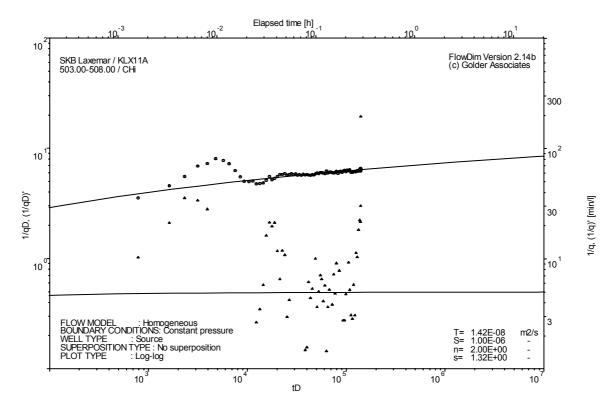
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

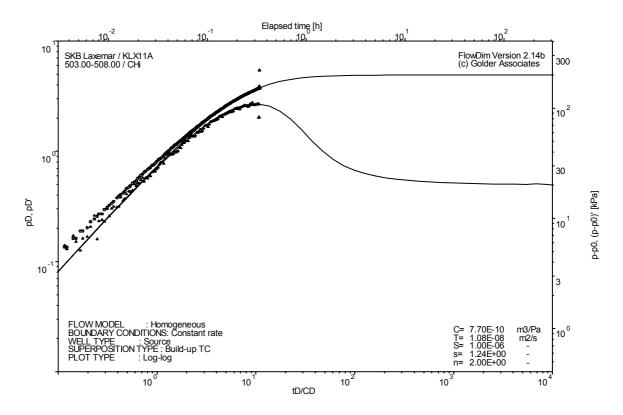
Borehole: KLX11A Page 2-74/3

Test: 503.00 – 508.00 m

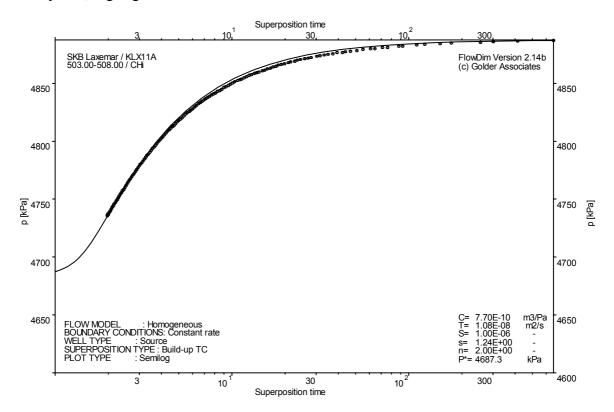


CHI phase; log-log match

Test: 503.00 – 508.00 m



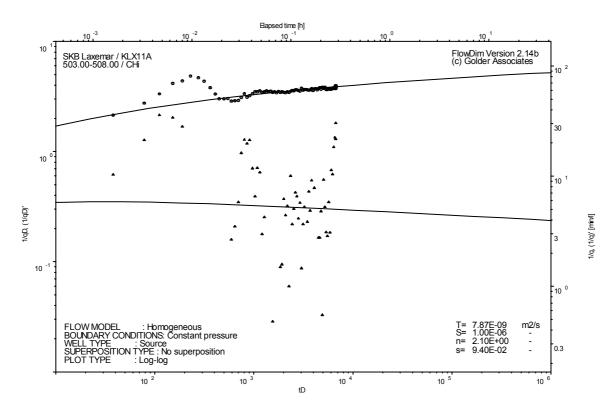
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-74/5

Test: 503.00 – 508.00 m



CHI phase; log-log match (n=2.1)

Borehole: KLX11A Page 2-75/1

Test: 508.00 - 513.00 m

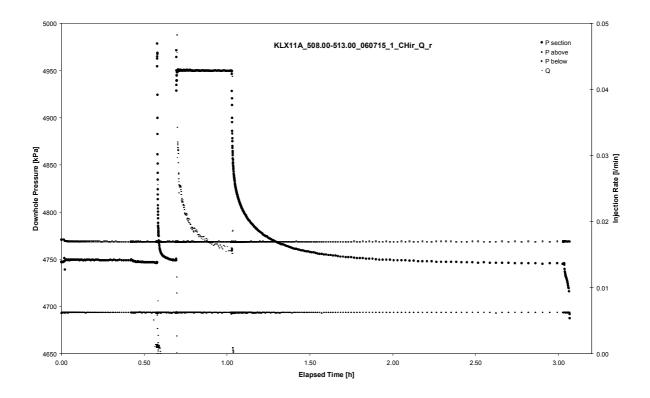
APPENDIX 2-75

Test 508.00 – 513.00 m

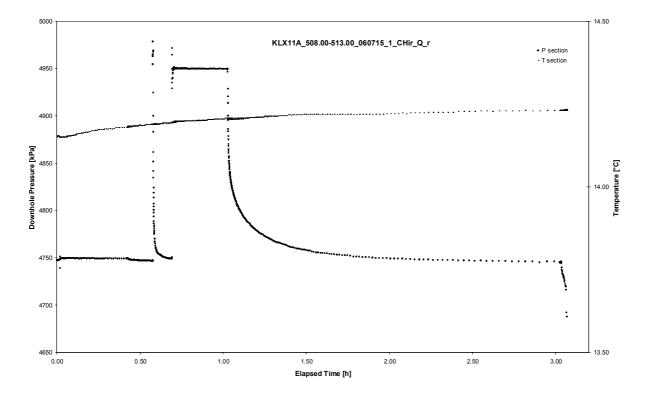
Page 2-75/2

Borehole: KLX11A

Test: 508.00 – 513.00 m



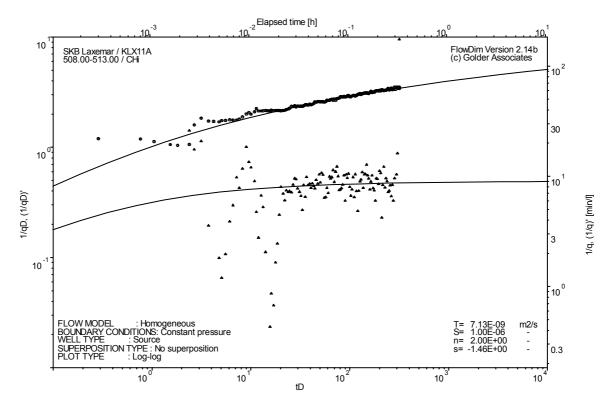
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

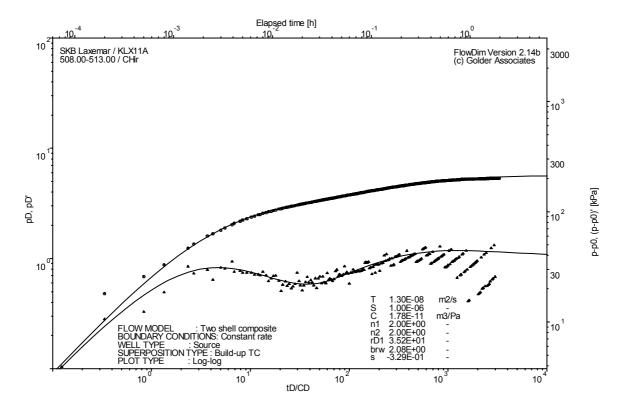
Borehole: KLX11A Page 2-75/3

Test: 508.00 – 513.00 m

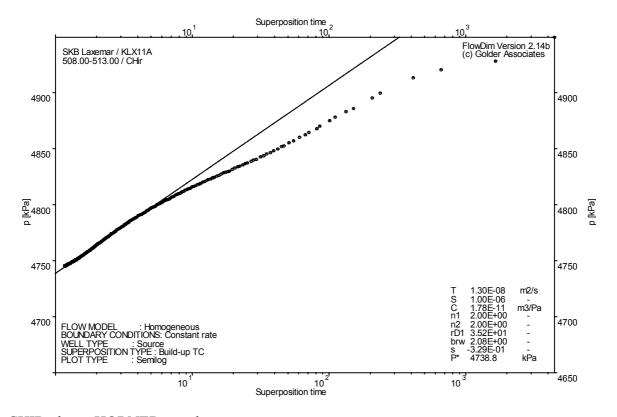


CHI phase; log-log match

Test: 508.00 – 513.00 m

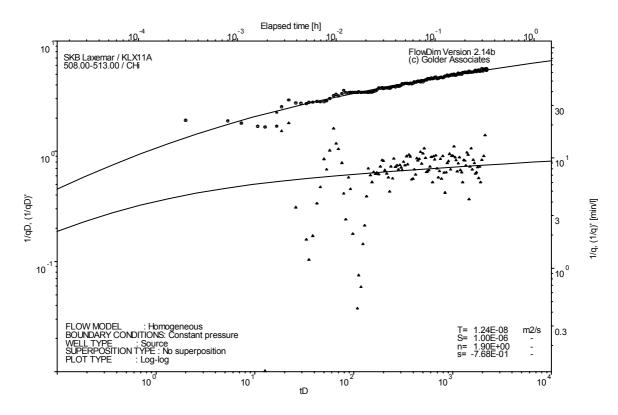


CHIR phase; log-log match

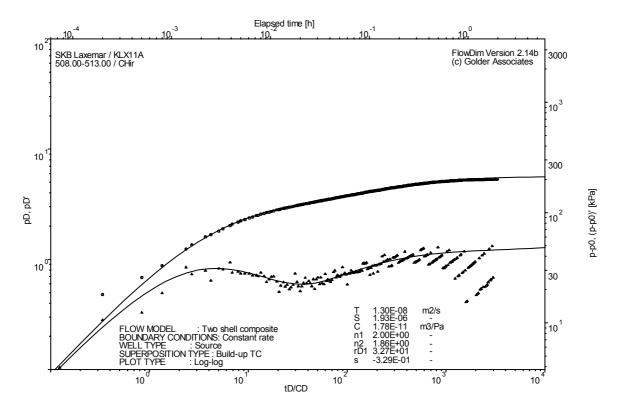


CHIR phase; HORNER match

Test: 508.00 – 513.00 m



CHI phase; log-log match (n=1.9)



CHIR phase; log-log match (n1=2, n2=1.86)

Borehole: KLX11A Page 2-76/1

Test: 513.00 – 518.00 m

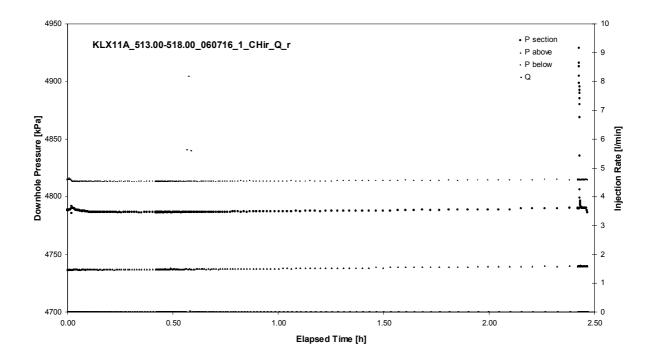
APPENDIX 2-76

Test 513.00 – 518.00 m

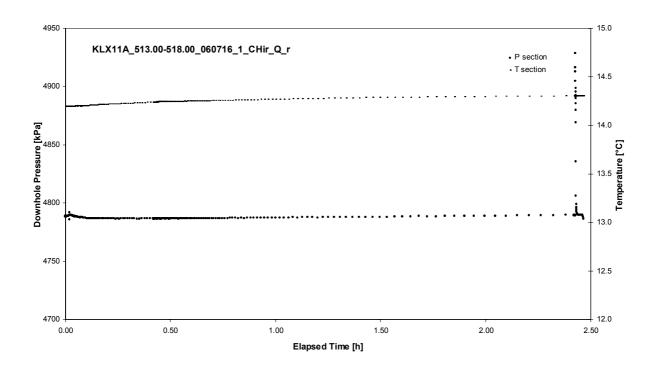
Page 2-76/2

Borehole: KLX11A

Test: 513.00 – 518.00 m



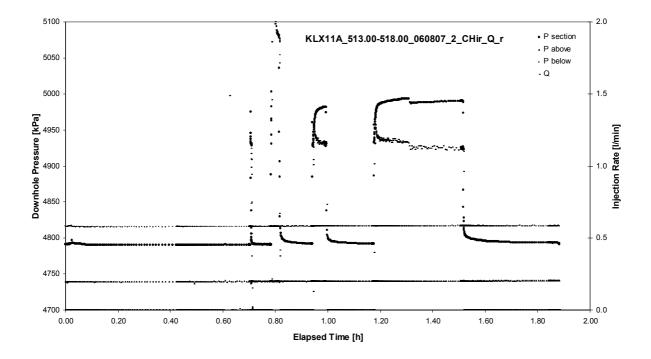
Pressure and flow rate vs. time; cartesian plot (test repeated)



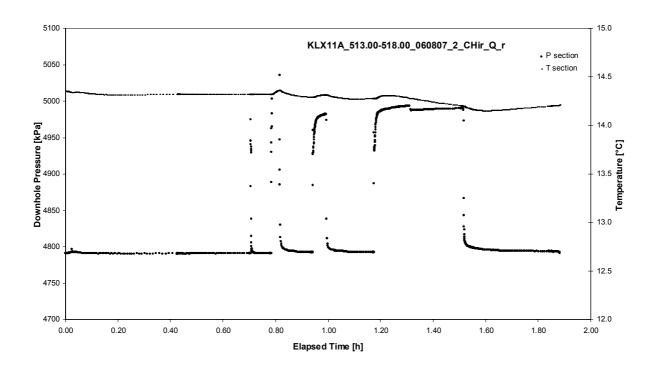
Interval pressure and temperature vs. time; cartesian plot (test repeated)

Borehole: KLX11A Page 2-76/3

Test: 513.00 – 518.00 m



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

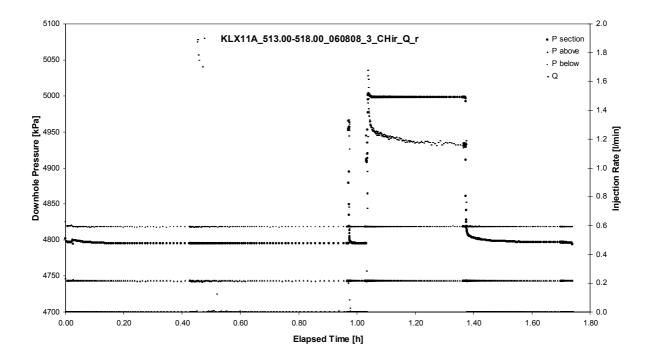


Interval pressure and temperature vs. time; cartesian plot (test repeated)

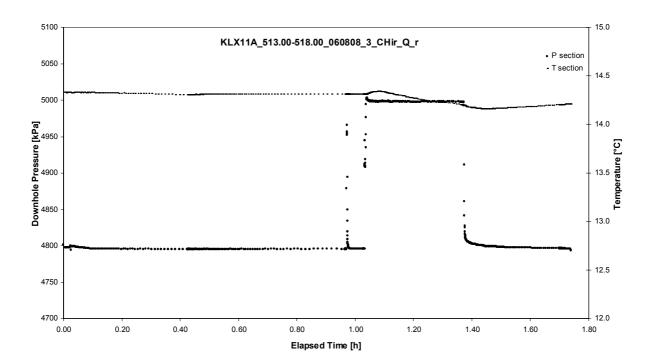
Page 2-76/4

Borehole: KLX11A

Test: 513.00 – 518.00 m



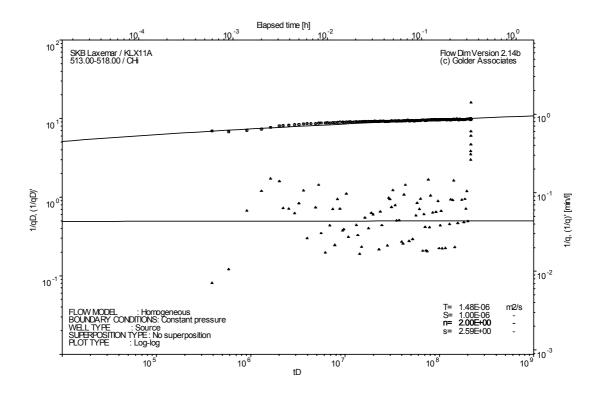
Pressure and flow rate vs. time; cartesian plot (analysed)



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

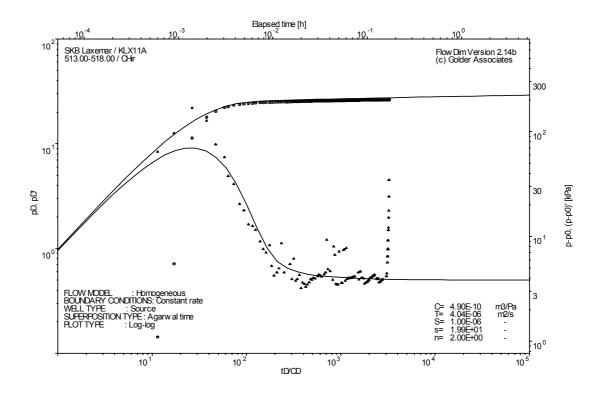
Borehole: KLX11A Page 2-76/5

Test: 513.00 – 518.00 m

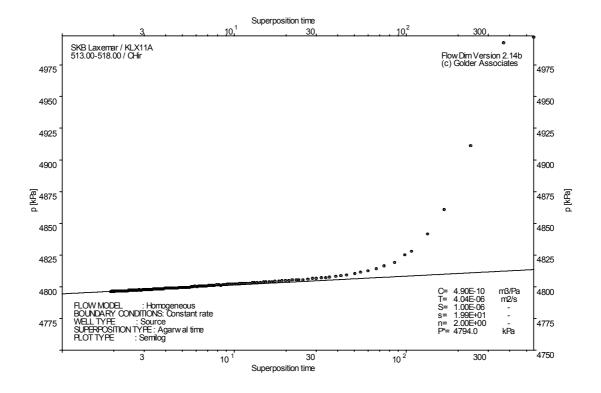


CHI phase; log-log match

Test: 513.00 – 518.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

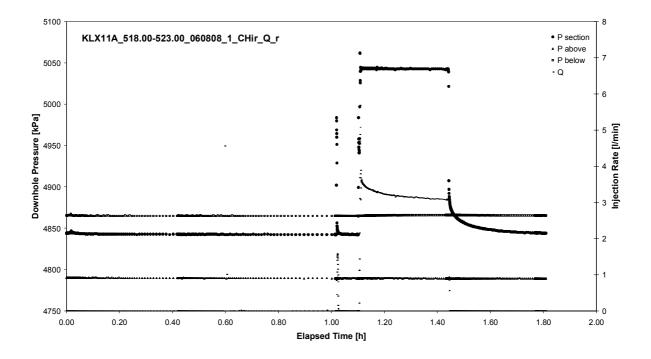
Borehole: KLX11A Page 2-77/1

Test: 518.00 – 523.00 m

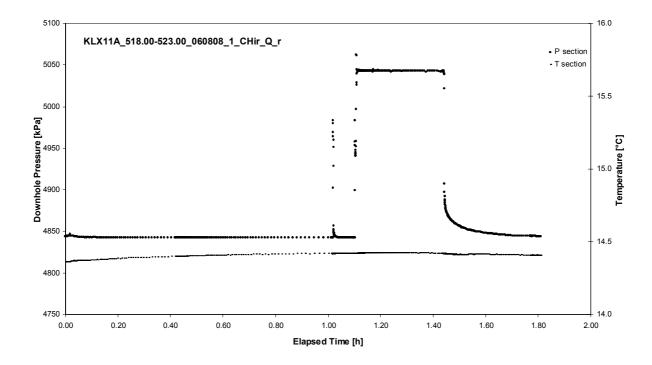
APPENDIX 2-77

Test 518.00 – 523.00 m

Test: 518.00 – 523.00 m



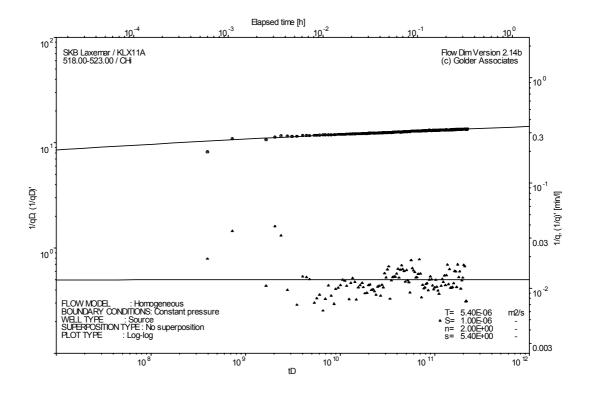
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

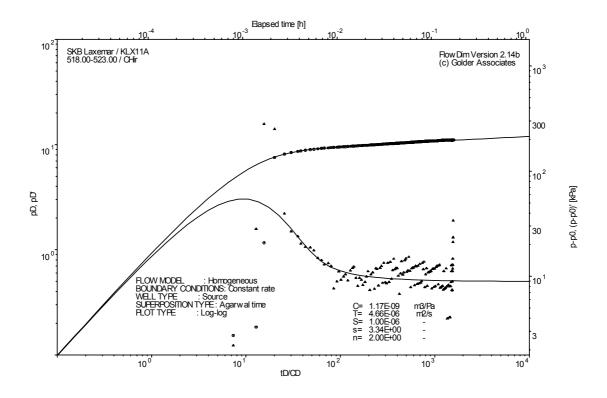
Borehole: KLX11A Page 2-77/3

Test: 518.00 – 523.00 m

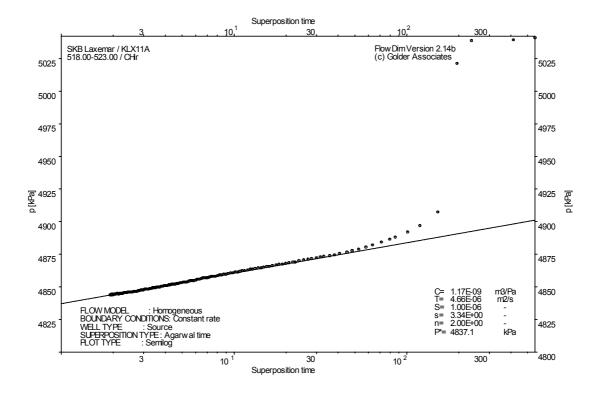


CHI phase; log-log match

Test: 518.00 – 523.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

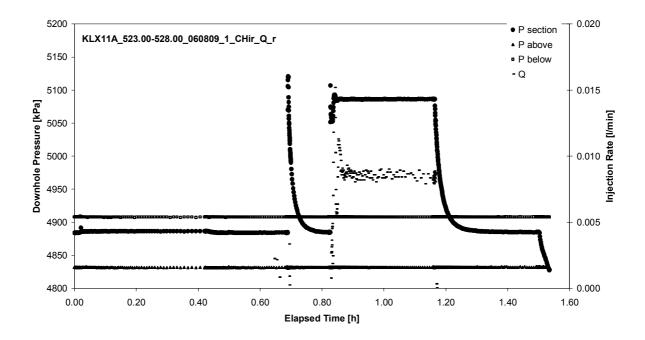
Borehole: KLX11A Page 2-78/1

Test: 523.00 – 528.00 m

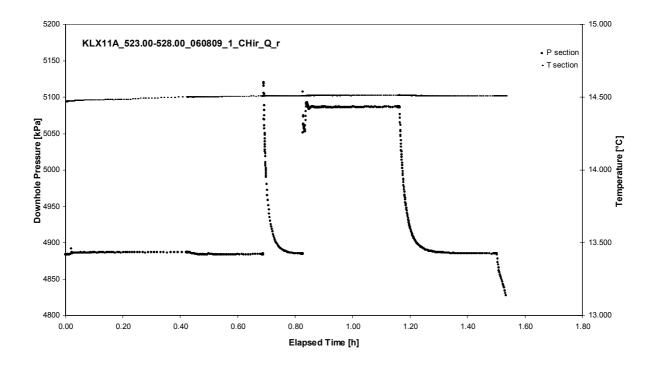
APPENDIX 2-78

Test 523.00 – 528.00 m

Test: 523.00 – 528.00 m



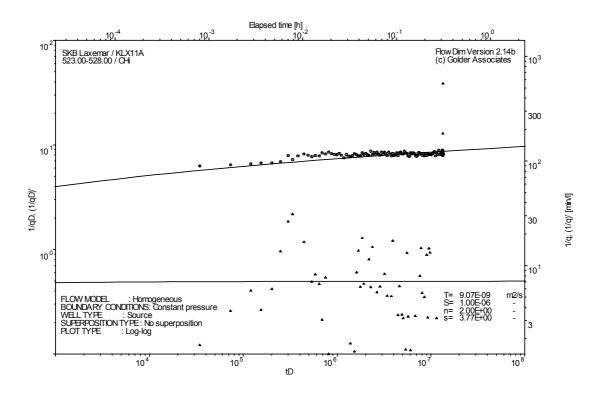
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

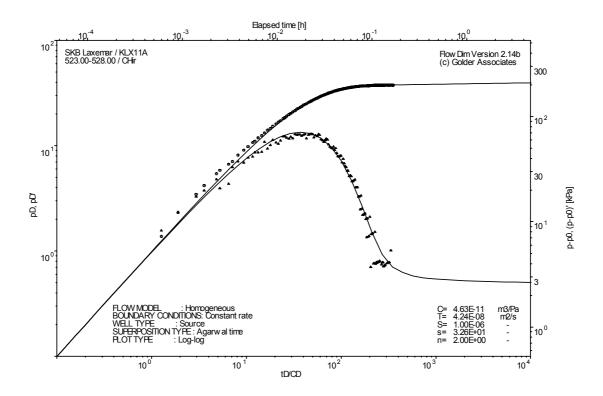
Borehole: KLX11A Page 2-78/3

Test: 523.00 – 528.00 m

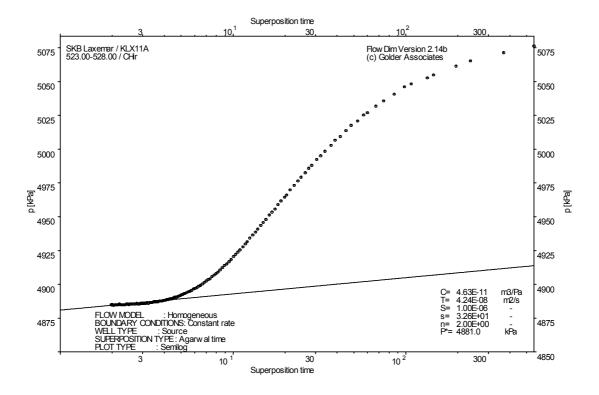


CHI phase; log-log match

Test: 523.00 – 528.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

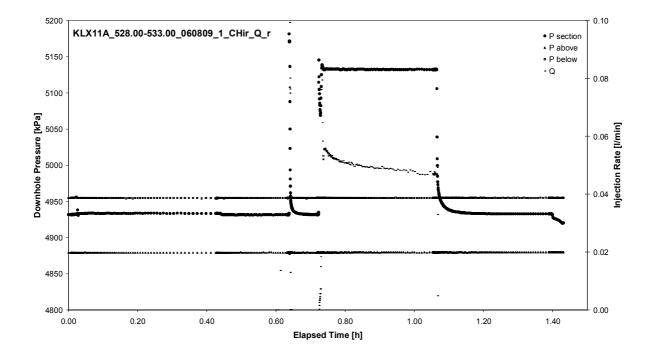
Borehole: KLX11A Page 2-79/1

Test: 528.00 – 533.00 m

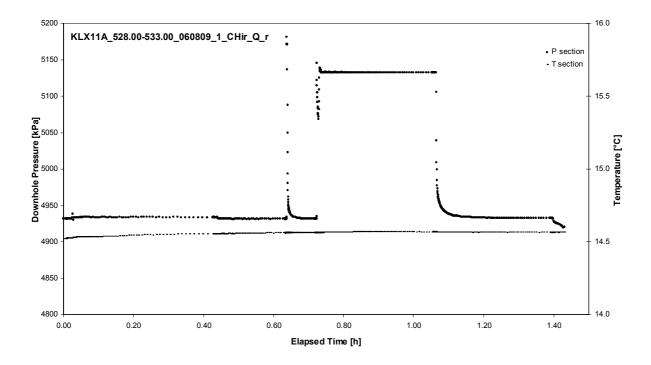
APPENDIX 2-79

Test 528.00 – 533.00 m

Test: 528.00 – 533.00 m



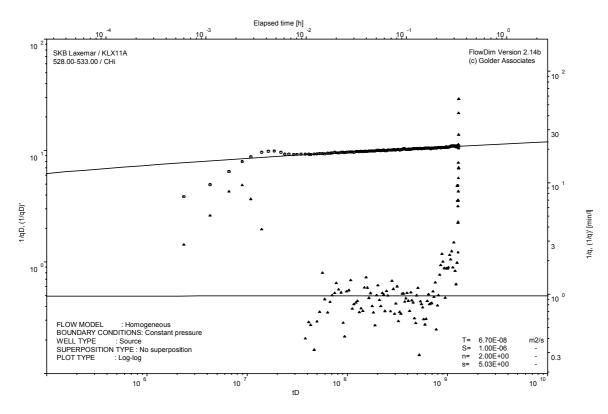
Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

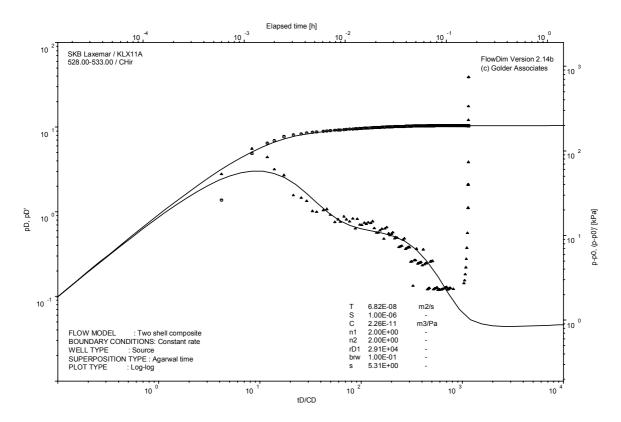
Borehole: KLX11A Page 2-79/3

Test: 528.00 – 533.00 m

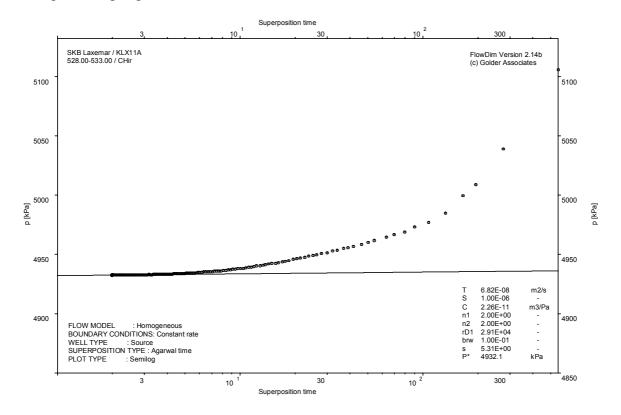


CHI phase; log-log match

Test: 528.00 – 533.00 m



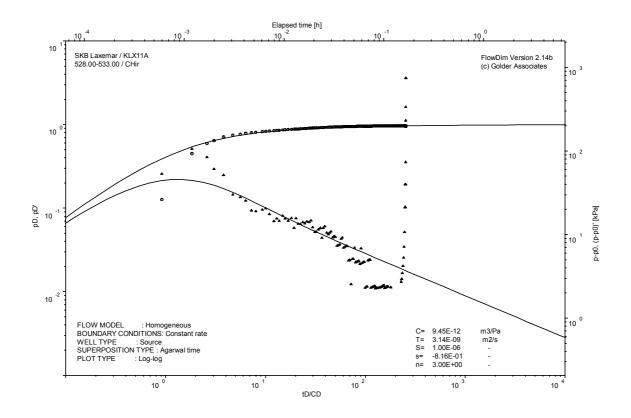
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-79/5

Test: 528.00 – 533.00 m



CHIR phase; log-log match (n=3)

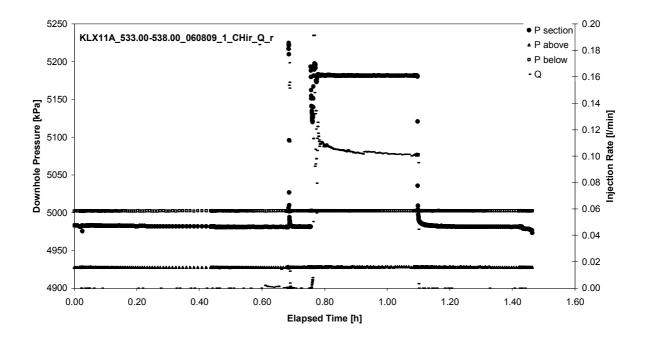
Borehole: KLX11A Page 2-80/1

Test: 533.00 – 538.00 m

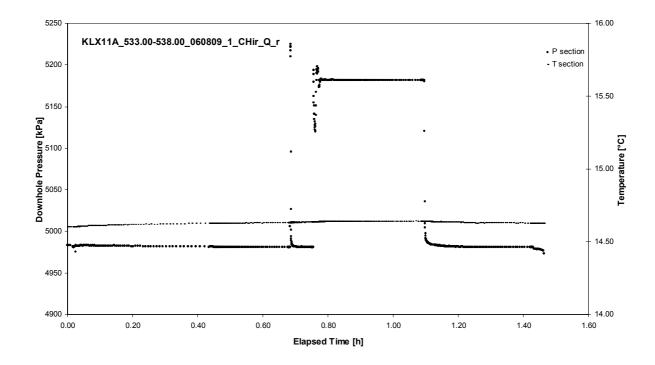
APPENDIX 2-80

Test 533.00 – 538.00 m

Test: 533.00 – 538.00 m

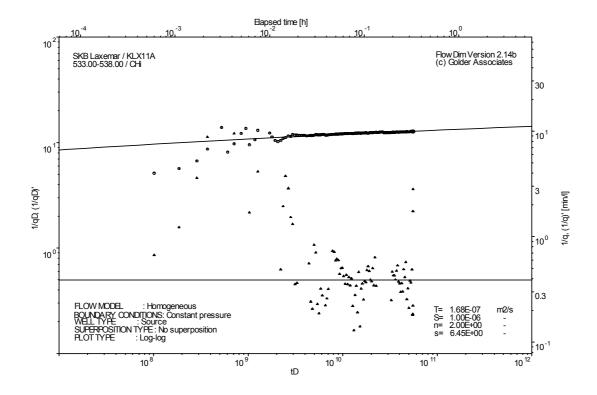


Pressure and flow rate vs. time; cartesian plot



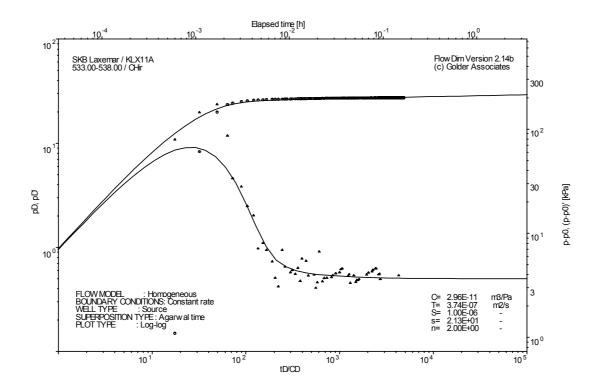
Borehole: KLX11A Page 2-80/3

Test: 533.00 – 538.00 m

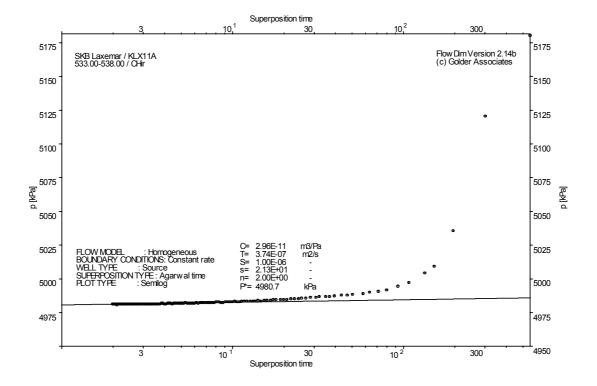


CHI phase; log-log match

Test: 533.00 – 538.00 m



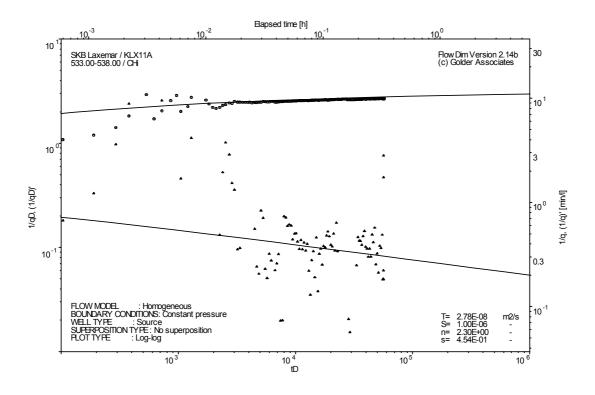
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-80/5

Test: 533.00 – 538.00 m



CHI phase; log-log match (n=2.3)

Borehole: KLX11A Page 2-81/1

Test: 538.00 – 543.00 m

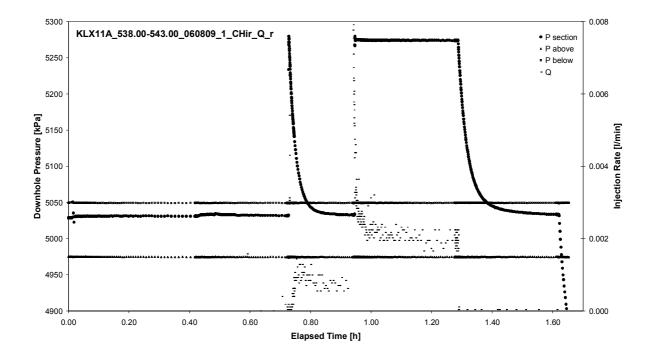
APPENDIX 2-81

Test 538.00 – 543.00 m

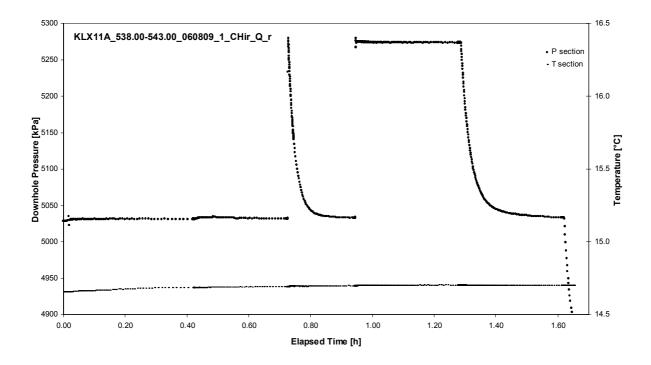
Page 2-81/2

Borehole: KLX11A

Test: 538.00 – 543.00 m

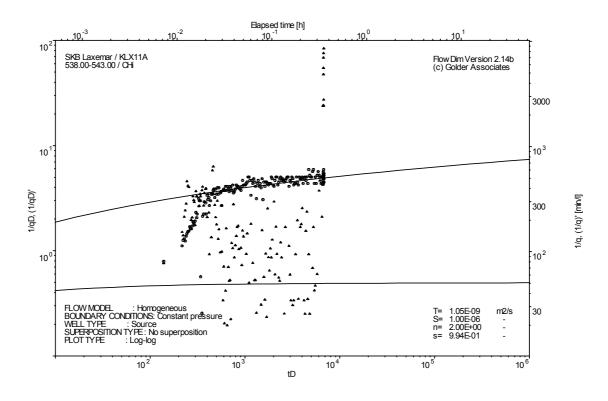


Pressure and flow rate vs. time; cartesian plot



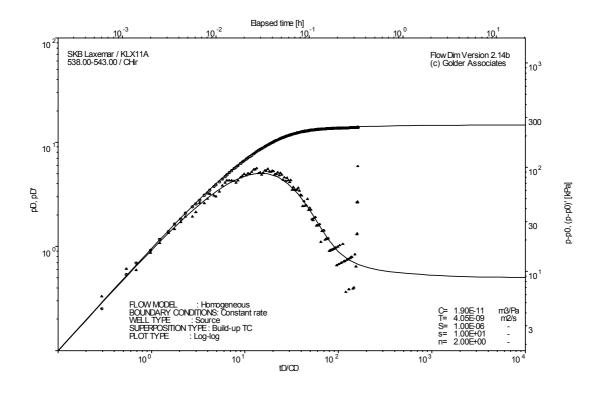
Borehole: KLX11A Page 2-81/3

Test: 538.00 – 543.00 m

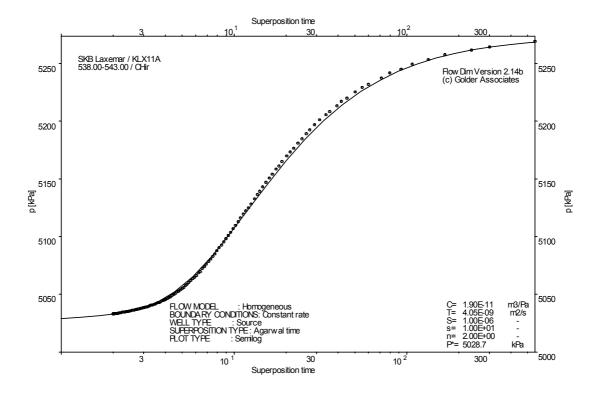


CHI phase; log-log match

Test: 538.00 – 543.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-82/1

Test: 563.00 – 568.00 m

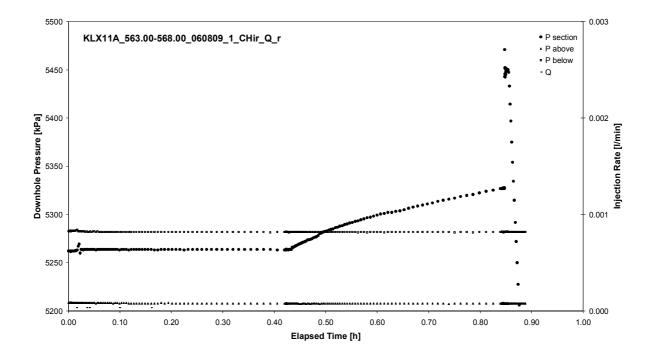
APPENDIX 2-82

Test 563.00 – 568.00 m

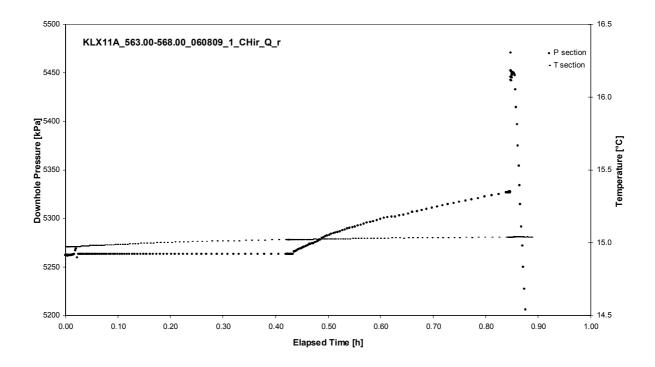
Page 2-82/2

Borehole: KLX11A

Test: 563.00 – 568.00 m



Pressure and flow rate vs. time; cartesian plot



Borehole: KLX11A Page 2-82/3

Test: 563.00 – 568.00 m

Not analysed

CHI phase; log-log match

Borehole: Test:	KLX11A 563.00 – 568.00 m		Page 2-82/4
		Not analysed	
CHIR pha	se; log-log match		
		Not analysed	

Borehole: KLX11A Page 2-83/1

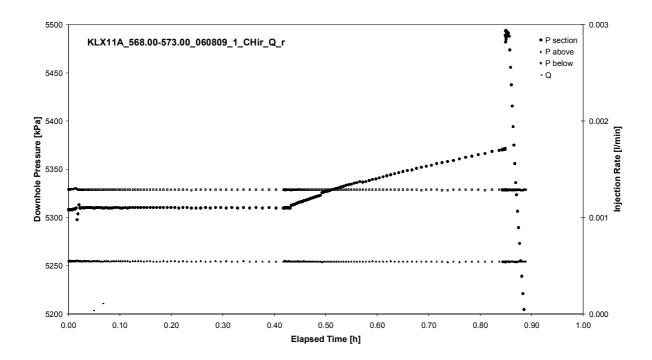
Test: 568.00 - 573.00 m

APPENDIX 2-83

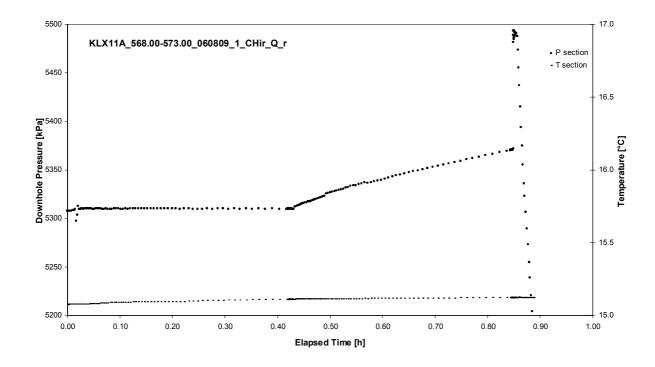
Test 568.00 – 573.00 m

Page 2-83/2

Borehole: KLX11A Test: 568.00 – 573.00 m



Pressure and flow rate vs. time; cartesian plot



Borehole: KLX11A Page 2-83/3

Test: 568.00 – 573.00 m

Not analysed

CHI phase; log-log match

Test:	568.00 – 573.00 m	
		Not analysed
CHIR pha	se; log-log match	
		Not analysed

Page 2-83/4

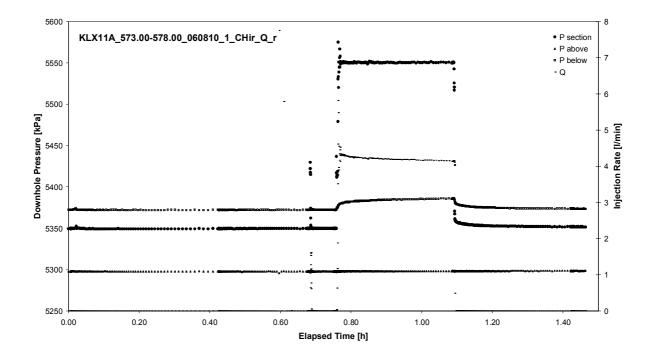
Borehole: KLX11A Page 2-84/1

Test: 573.00 – 578.00 m

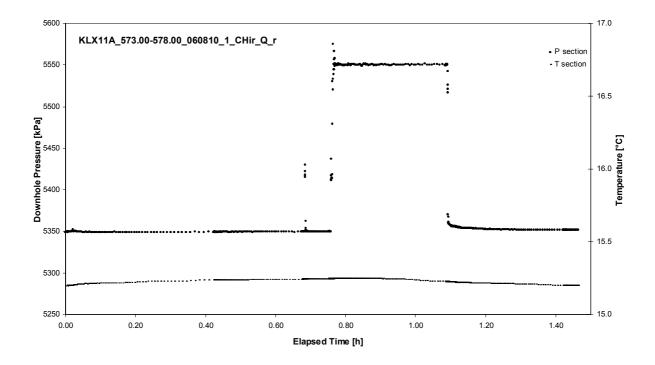
APPENDIX 2-84

Test 573.00 – 578.00 m

Test: 573.00 – 578.00 m

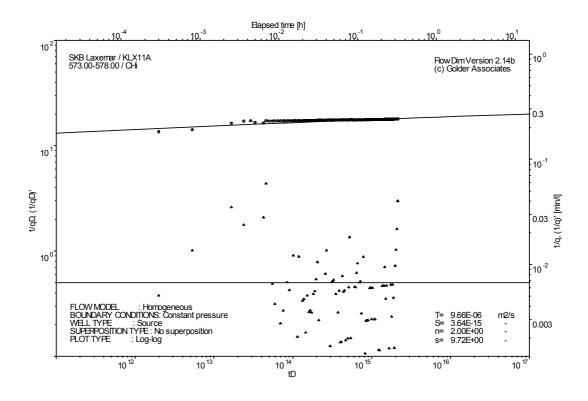


Pressure and flow rate vs. time; cartesian plot



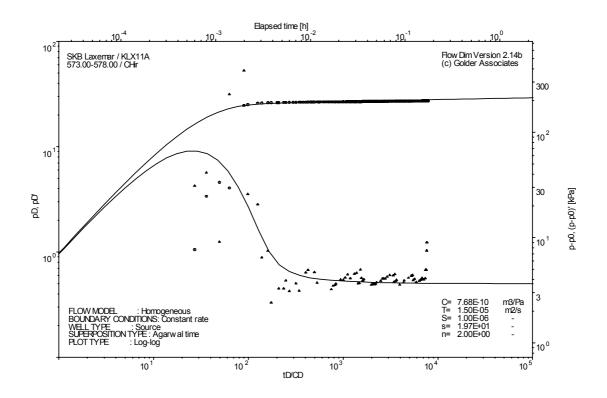
Borehole: KLX11A Page 2-84/3

Test: 573.00 – 578.00 m

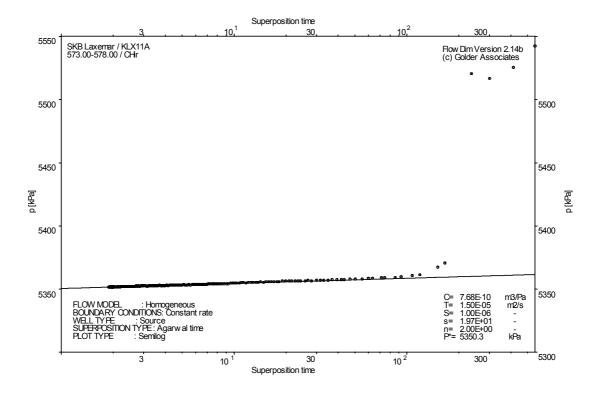


CHI phase; log-log match

Test: 573.00 – 578.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-85/1

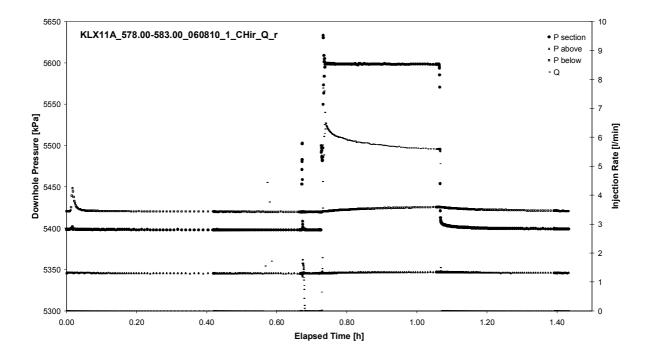
Test: 578.00 – 583.00 m

APPENDIX 2-85

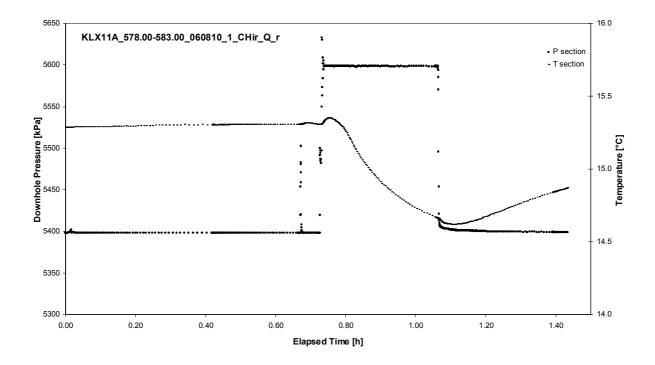
Test 578.00 – 583.00 m

Page 2-85/2

Borehole: KLX11A Test: 578.00 – 583.00 m

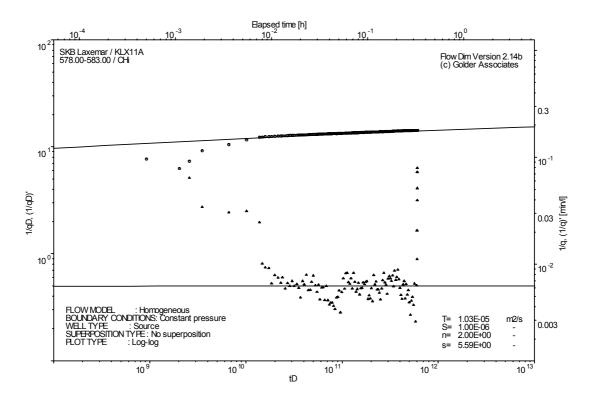


Pressure and flow rate vs. time; cartesian plot



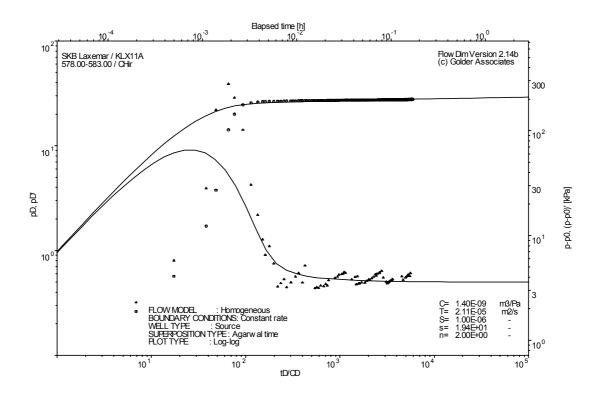
Borehole: KLX11A Page 2-85/3

Test: 578.00 – 583.00 m

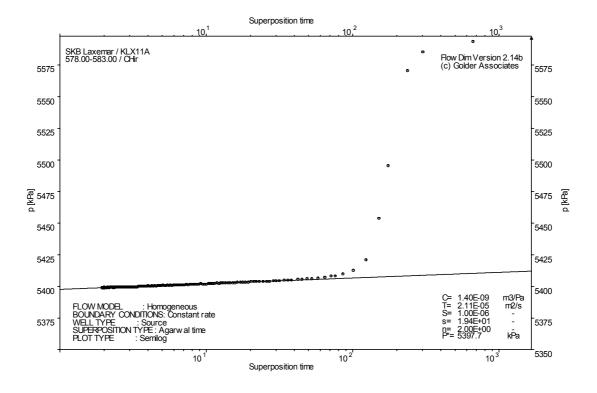


CHI phase; log-log match

Test: 578.00 – 583.00 m



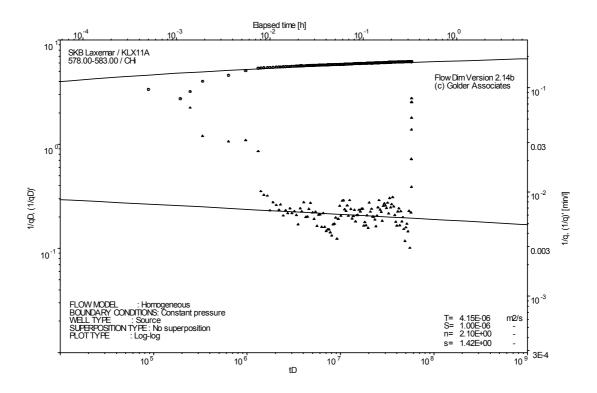
CHIR phase; log-log match



CHIR phase; HORNER match

Borehole: KLX11A Page 2-85/5

Test: 578.00 – 583.00 m



CHI phase; log-log match (n=2.1)

Borehole: KLX11A Page 2-86/1

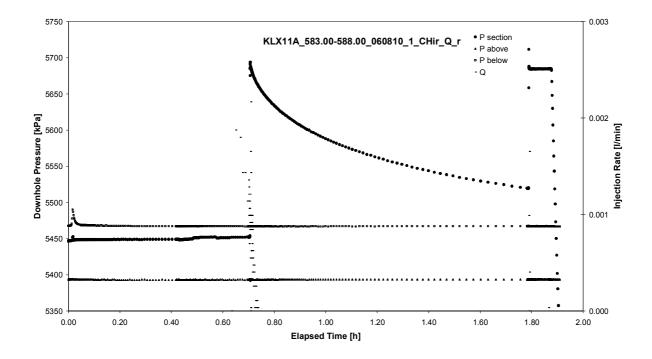
Test: 583.00 – 588.0 m

APPENDIX 2-86

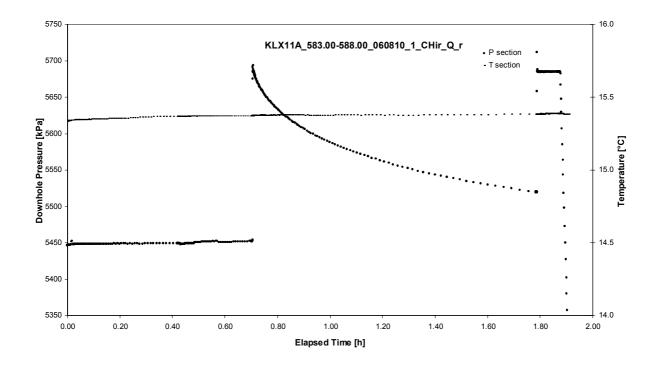
Test 583.00 – 588.00 m

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Borehole: KLX11A Test: 583.00 – 588.0 m

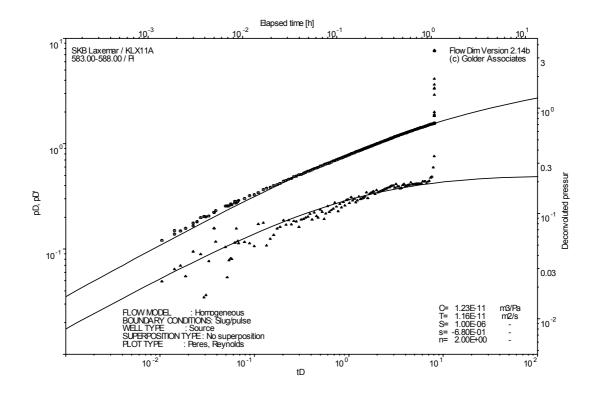


Pressure and flow rate vs. time; cartesian plot

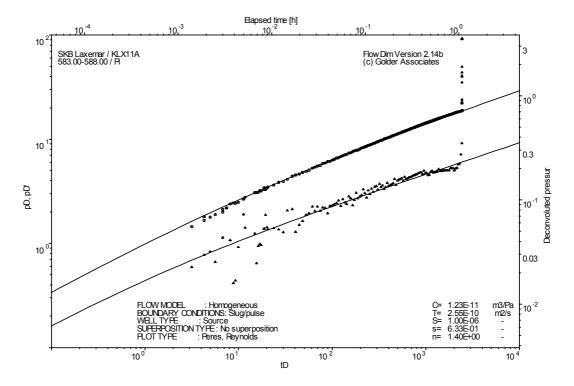


Interval pressure and temperature vs. time; cartesian plot

Test: 583.00 – 588.0 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.4)

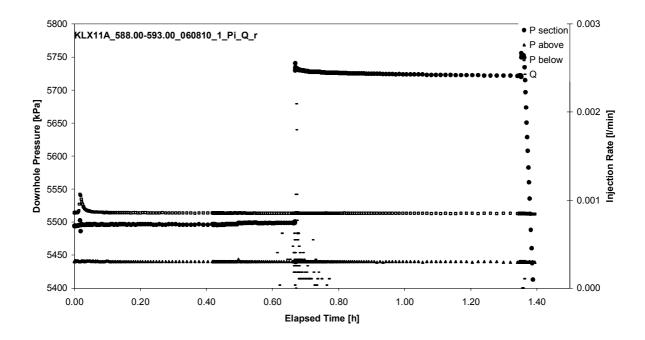
Borehole: KLX11A Page 2-87/1

Test: 588.00 – 593.00 m

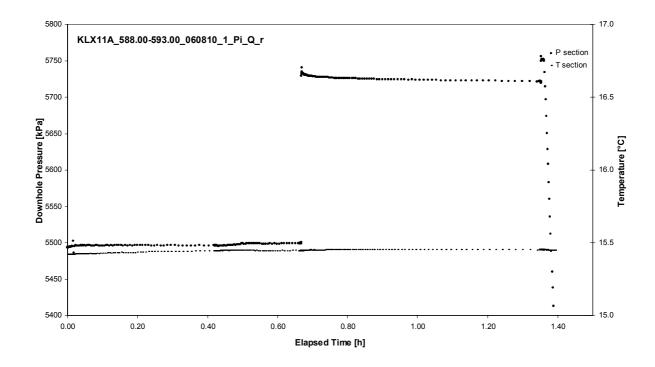
APPENDIX 2-87

Test 588.00 – 593.00 m

Test: 588.00 – 593.00 m



Pressure and flow rate vs. time; cartesian plot



Borehole: KLX11A
Test: 588.00 – 593.00 m

Page 2-87/3

Not analysed

Pulse injection; deconvolution match

Borehole: KLX11A Page 2-88/1

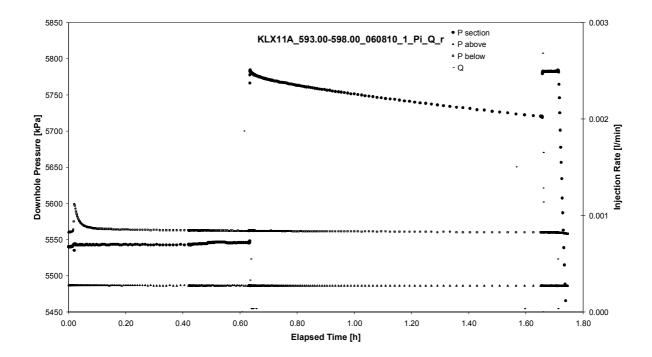
Test: 593.00 – 598.0 m

APPENDIX 2-88

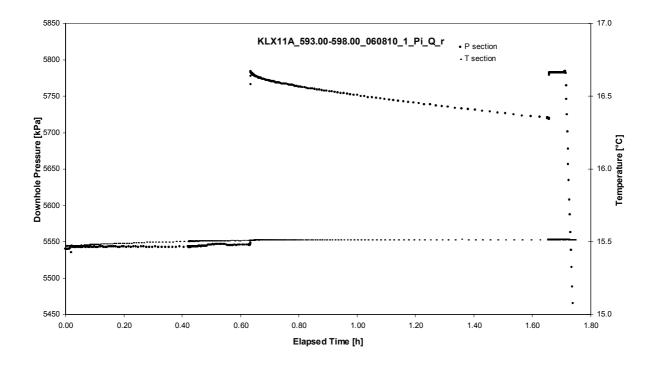
Test 593.00 – 598.00 m

Borehole: KLX11A

Test: 593.00 – 598.0 m

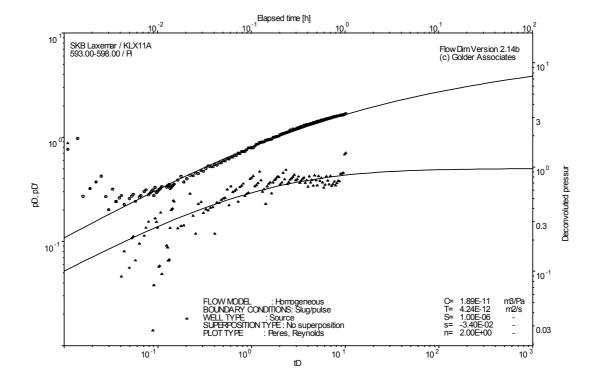


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 593.00 – 598.0 m



Pulse injection; deconvolution match

Test: 598.00 – 603.00 m

APPENDIX 2-89

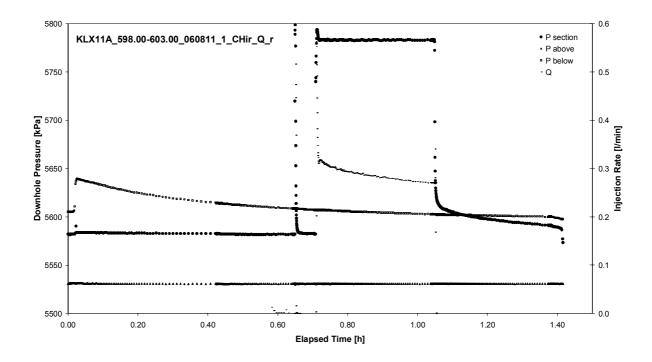
Test 598.00 – 603.00 m

Analysis diagrams

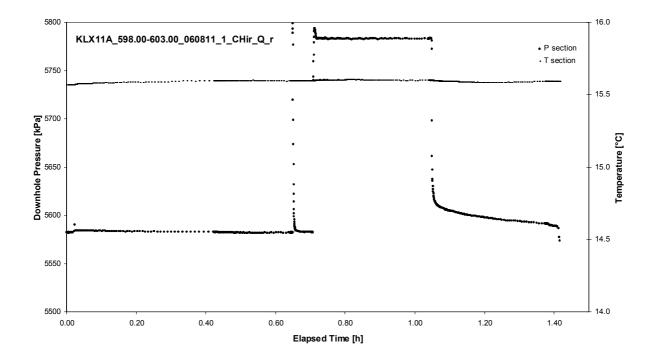
Page 2-89/2

Borehole: KLX11A

Test: 598.00 – 603.00 m

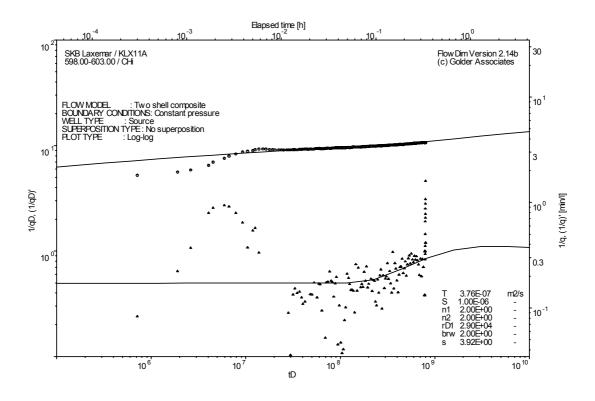


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

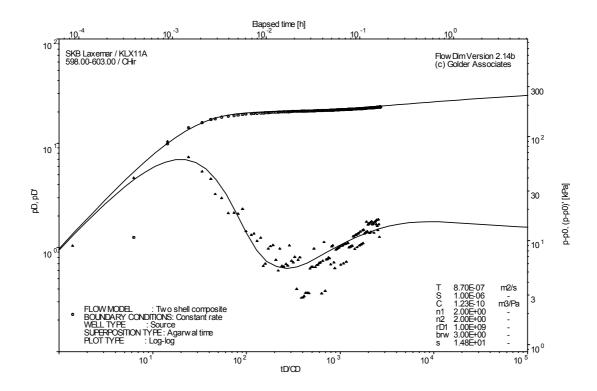
Test: 598.00 – 603.00 m



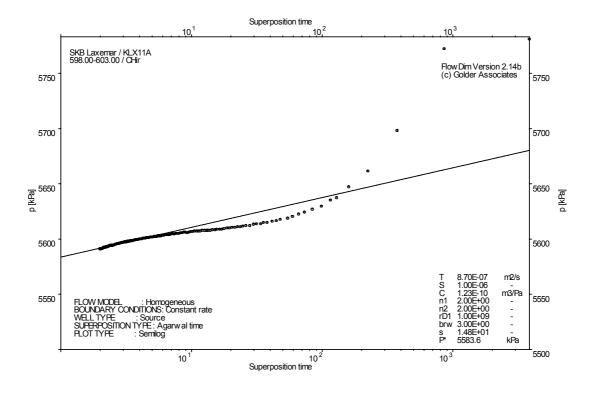
CHI phase; log-log match

Borehole: KLX11A

Test: 598.00 – 603.00 m



CHIR phase; log-log match



CHIR phase; HORNER match

Test: 663.00 – 668.00 m

APPENDIX 2-90

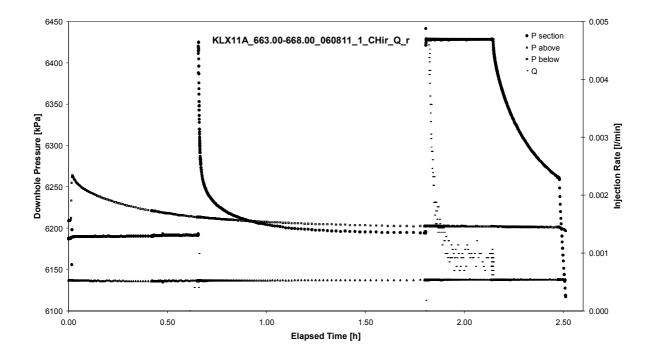
Test 663.00 – 668.00 m

Analysis diagrams

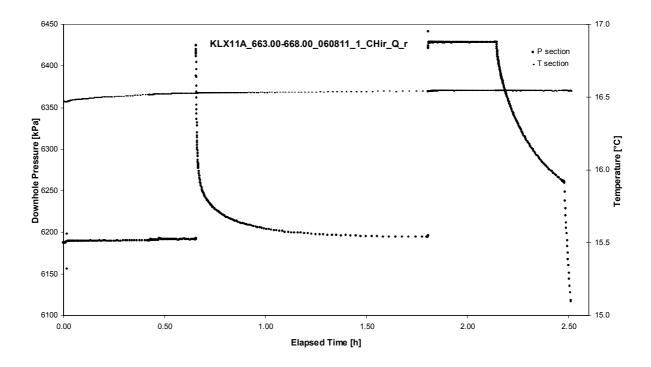
Page 2-90/2

Borehole: KLX11A

Test: 663.00 – 668.00 m

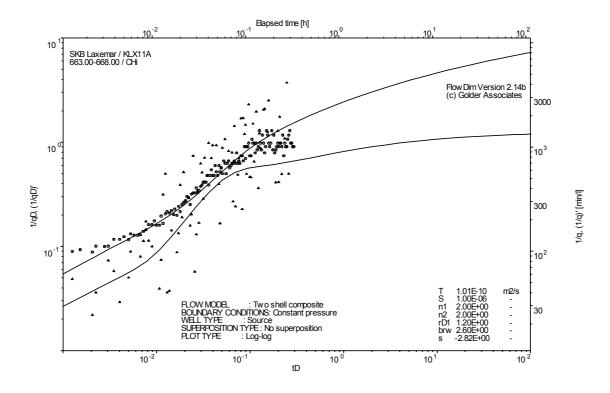


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

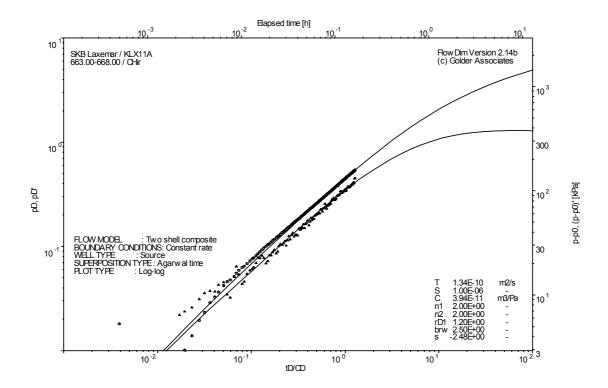
Test: 663.00 – 668.00 m



CHI phase; log-log match

Borehole: KLX11A

Test: 663.00 – 668.00 m



CHIR phase; log-log match

Not analysable

Test: 668.00 – 673.00 m

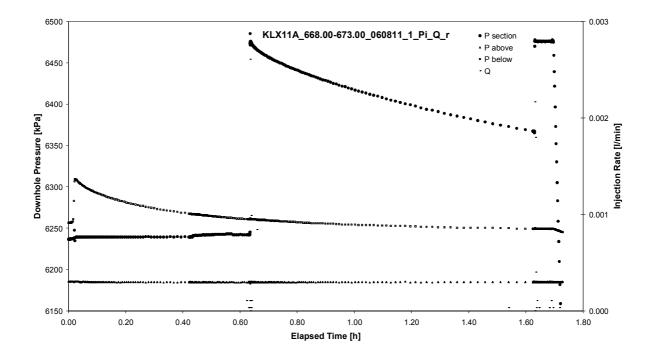
APPENDIX 2-91

Test 668.00 – 673.00 m

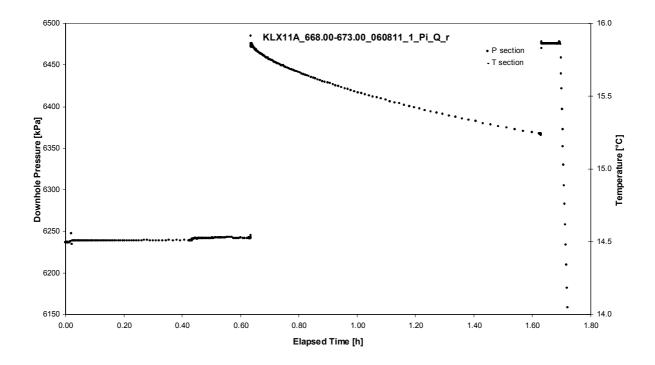
Analysis diagrams

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Borehole: KLX11A Test: 668.00 – 673.00 m



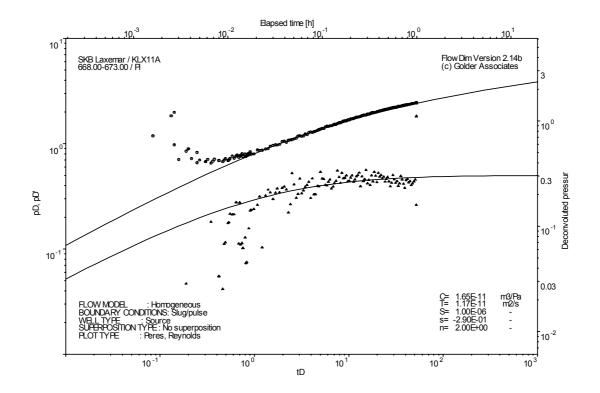
Pressure and flow rate vs. time; cartesian plot



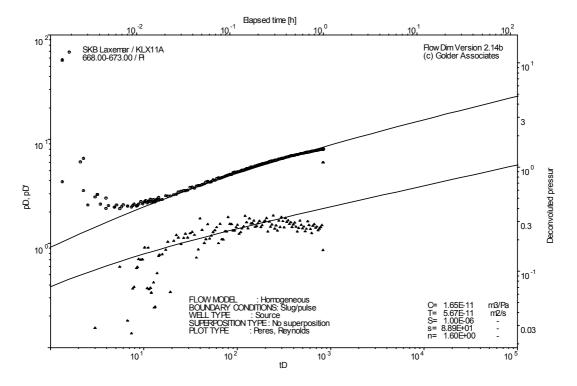
Interval pressure and temperature vs. time; cartesian plot

Borehole: KLX11A

Test: 668.00 – 673.00 m



Pulse injection; deconvolution match



Pulse injection; deconvolution match (n=1.6)

Test: 673.00 – 678.00 m

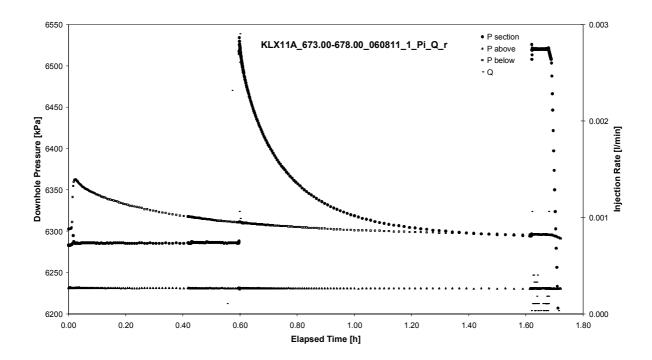
APPENDIX 2-92

Test 673.00 – 678.00 m

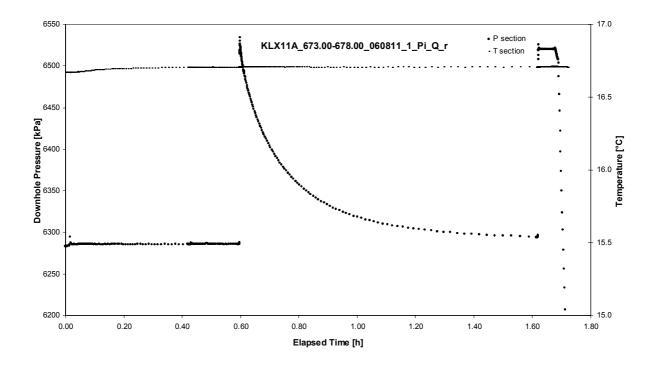
Analysis diagrams

Borehole: KLX11A

Test: 673.00 – 678.00 m

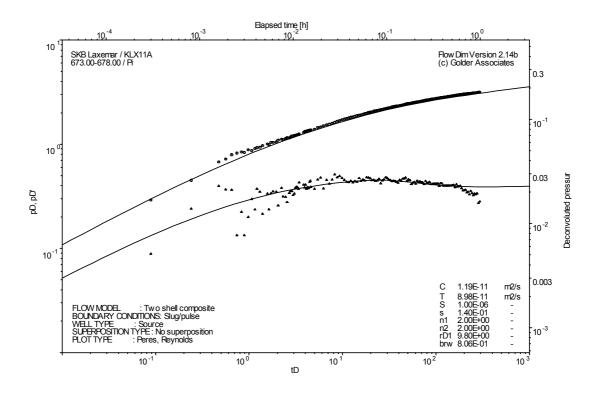


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 673.00 – 678.00 m



Pulse injection; deconvolution match

Test: 678.00 – 683.00 m

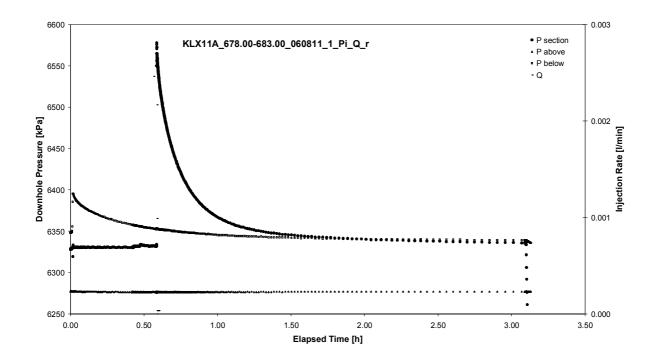
APPENDIX 2-93

Test 678.00 – 683.00 m

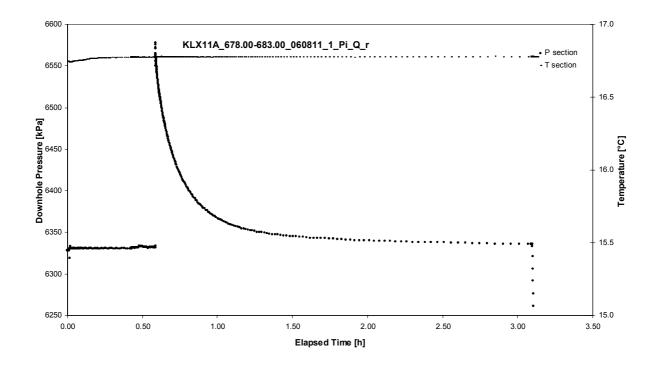
Analysis diagrams

Borehole: KLX11A

Test: 678.00 – 683.00 m

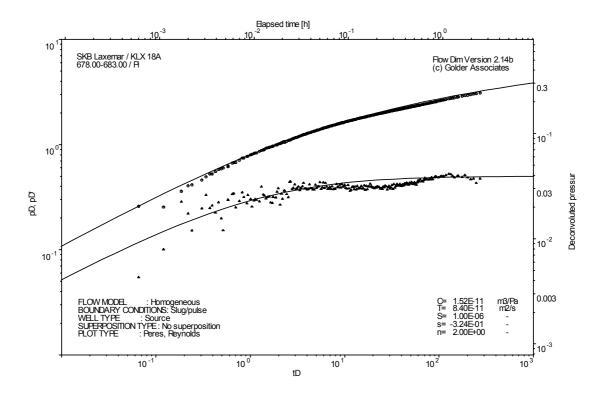


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 678.00 – 683.00 m



Pulse injection; deconvolution match

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION	NO.: F	KLX11A		
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated: 2006-06-27				
Teststart	ı	Interval boundari	es	Name	e of Datafiles	Testtype	Copied to	Plotted	Sign.
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)	
2006-06-29	14:32	103.00	203.00	KLX11A_0103.00_200606291432.ht2	KLX11A_103.00-203.00_060629_1_CHir_Q_r.csv	Chir	2006-08-12	2006-06-29	
2006-06-29	18:03	203.00	303.00	KLX11A_0203.00_200606291803.ht2	KLX11A_203.00-303.00_060629_1_CHir_Q_r.csv	Chir	2006-08-12	2006-06-29	
2006-06-30	09:15	303.00	403.00	KLX11A_0303.00_200606300915.ht2	KLX11A_303.00-403.00_060630_1_CHir_Q_r.csv	Chir	2006-08-12	2006-06-30	
2006-06-30	13:11	403.00	503.00	KLX11A_0403.00_200606301311.ht2	KLX11A_403.00-503.00_060630_1_CHir_Q_r.csv	Chir	2006-08-12	2006-06-30	
2006-07-01	08:47	503.00	603.00	KLX11A_0503.00_200607010847.ht2	KLX11A_503.00-603.00_060701_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-01	
2006-07-01	12:14	603.00	703.00	KLX11A_0603.00_200607011214.ht2	KLX11A_603.00-703.00_060701_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-01	
2006-07-01	17:09	703.00	803.00	KLX11A_0703.00_200607011709.ht2	KLX11A_703.00-803.00_060701_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-02	
2006-07-02	09:11	803.00	903.00	KLX11A_0803.00_200607020911.ht2	KLX11A_803.00-903.00_060702_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-02	
2006-07-02	14:45	876.00	976.00	KLX11A_0876.00_200607021445.ht2	KLX11A_876.00-976.00_060702_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-02	
2006-07-04	08:19	103.00	123.00	KLX11A_0103.00_200607040819.ht2	KLX11A_103.00-123.00_060704_1_CHir_Q_r.csv	CHir	2006-08-12	2006-07-04	
2006-07-04	10:31	123.00	143.00	KLX11A_0123.00_200607041031.ht2	KLX11A_123.00-143.00_060704_1_CHir_Q_r.csv	CHir	2006-08-12	2006-07-04	
2006-07-04	12:49	143.00	163.00	KLX11A_0143.00_200607041249.ht2	KLX11A_143.00-163.00_060704_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-04	
2006-07-04	15:05	163.00	183.00	KLX11A_0163.00_200607041505.ht2	KLX11A_163.00-183.00_060704_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-04	
2006-07-04	17:12	183.00	203.00	KLX11A_0183.00_200607041712.ht2	KLX11A_183.00-203.00_060704_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-04	
2006-07-04	18:50	203.00	223.00	KLX11A_0203.00_200607041850.ht2	KLX11A_203.00-223.00_060704_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-05	
2006-07-05	08:38	223.00	243.00	KLX11A_0223.00_200607050838.ht2	KLX11A_223.00-243.00_060705_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-05	

Borehole: KLX11A

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A				
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated: 2006-06-27				
Teststart	İ	Interval boundari	es	Name	e of Datafiles	Testtype	Copied to	Plotted	Sign.
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)	
2006-07-05	10:48	243.00	263.00	KLX11A_0243.00_200607051048.ht2	KLX11A_243.00-263.00_060705_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-05	
2006-07-05	13:18	263.00	283.00	KLX11A_0263.00_200607051318.ht2	KLX11A_263.00-283.00_060705_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-05	
2006-07-05	15:25	283.00	303.00	KLX11A_0283.00_200607051525.ht2	KLX11A_283.00-303.00_060705_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-05	
2006-07-05	17:25	303.00	323.00	KLX11A_0303.00_200607051725.ht2	KLX11A_303.00-323.00_060705_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-05	
2006-07-05	19:21	323.00	343.00	KLX11A_0323.00_200607051921.ht2	KLX11A_323.00-343.00_060705_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-06	
2006-07-06	08:48	343.00	363.00	KLX11A_0343.00_200607060848.ht2	KLX11A_343.00-363.00_060706_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-06	
2006-07-06	11:03	363.00	383.00	KLX11A_0363.00_200607061103.ht2	KLX11A_363.00-383.00_060706_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-06	
2006-07-06	13:34	383.00	403.00	KLX11A_0383.00_200607061334.ht2	KLX11A_383.00-403.00_060706_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-06	
2006-07-06	15:54	403.00	423.00	KLX11A_0403.00_200607061554.ht2	KLX11A_403.00-423.00_060706_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-06	
2006-07-06	17:56	423.00	443.00	KLX11A_0423.00_200607061756.ht2	KLX11A_423.00-443.00_060706_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-07	
2006-07-07	08:32	443.00	463.00	KLX11A_0443.00_200607070832.ht2	KLX11A_443.00-463.00_060707_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-07	
2006-07-07	10:33	463.00	483.00	KLX11A_0463.00_200607071033.ht2	KLX11A_463.00-483.00_060707_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-07	
2006-07-07	13:12	483.00	503.00	KLX11A_0483.00_200607071312.ht2	KLX11A_483.00-503.00_060707_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-07	
2006-07-07	15:12	503.00	523.00	KLX11A_0503.00_200607071512.ht2	KLX11A_503.00-523.00_060707_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-07	
2006-07-07	17:07	523.00	543.00	KLX11A_0523.00_200607071707.ht2	KLX11A_523.00-543.00_060707_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-07	
2006-07-07	19:07	543.00	563.00	KLX11A_0543.00_200607071907.ht2	KLX11A_543.00-563.00_060707_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-08	

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A				
TEST- A	AND	FILEP	ROTO	OCOL	Testorder dated: 2006-06-27				
Teststart		Interval boundari	es	Name	of Datafiles	Testtype	Copied to	Plotted	Sign.
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)	
2006-07-08	08:58	563.00	583.00	KLX11A_0563.00_200607080858.ht2	KLX11A_563.00-583.00_060708_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-08	
2006-07-08	10:53	583.00	603.00	KLX11A_0583.00_200607081053.ht2	KLX11A_583.00-603.00_060708_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-08	
2006-07-08	13:17	603.00	623.00	KLX11A_0603.00_200607081317.ht2	KLX11A_603.00-623.00_060708_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-08	
2006-07-08	15:12	623.00	643.00	KLX11A_0623.00_200607081512.ht2	KLX11A_623.00-643.00_060708_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-08	
2006-07-08	17:10	643.00	663.00	KLX11A_0643.00_200607081710.ht2	KLX11A_643.00-663.00_060708_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-08	
2006-07-08	19:06	663.00	683.00	KLX11A_0663.00_200607081906.ht2	KLX11A_663.00-683.00_060708_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-09	
2006-07-09	09:11	683.00	703.00	KLX11A_0683.00_200607090911.ht2	KLX11A_683.00-703.00_060709_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-09	
2006-07-09	11:08	703.00	723.00	KLX11A_0703.00_200607091108.ht2	KLX11A_703.00-723.00_060709_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-09	
2006-07-09	13:58	723.00	743.00	KLX11A_0723.00_200607091358.ht2	KLX11A_723.00-743.00_060709_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-09	
2006-07-09	15:45	743.00	763.00	KLX11A_0743.00_200607091545.ht2	KLX11A_743.00-763.00_060709_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-09	
2006-07-09	17:25	763.00	783.00	KLX11A_0763.00_200607091725.ht2	KLX11A_763.00-783.00_060709_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-09	
2006-07-09	18:43	783.00	803.00	KLX11A_0783.00_200607091843.ht2	KLX11A_783.00-803.00_060709_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-10	
2006-07-10	08:19	803.00	823.00	KLX11A_0803.00_200607100819.ht2	KLX11A_803.00-823.00_060710_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-10	
2006-07-10	09:45	823.00	843.00	KLX11A_0823.00_200607100945.ht2	KLX11A_823.00-843.00_060710_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-10	
2006-07-10	11:10	843.00	863.00	KLX11A_0843.00_200607101110.ht2	KLX11A_843.00-863.00_060710_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-10	

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION	NO.: k	KLX11A			
TEST- A	AND FILEPROTOCOL				Testorder dated : 2006-06-27					
Teststart				Name	e of Datafiles	Copied to	Plotted	Sign.		
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)		
2006-07-10	14:04	863.00	883.00	KLX11A_0863.00_200607101404.ht2	KLX11A_863.00-883.00_060710_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-10		
2006-07-12	07:38	303.00	308.00	KLX11A_0303.00_200607120738.ht2	KLX11A_303.00-308.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-12		
2006-07-12	09:30	308.00	313.00	KLX11A_0308.00_200607120930.ht2	KLX11A_308.00-313.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-12		
2006-07-12	11:13	313.00	318.00	KLX11A_0313.00_200607121113.ht2	KLX11A_313.00-318.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-12		
2006-07-12	13:09	318.00	323.00	KLX11A_0318.00_200607121309.ht2	KLX11A_318.00-323.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-12		
2006-07-12	14:31	343.00	348.00	KLX11A_0343.00_200607121431.ht2	KLX11A_343.00-348.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-12		
2006-07-12	16:38	348.00	353.00	KLX11A_0348.00_200607121638.ht2	KLX11A_348.00-353.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-12		
2006-07-12	17:56	353.00	358.00	KLX11A_0353.00_200607121756.ht2	KLX11A_353.00-358.00_060712_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	07:52	358.00	363.00	KLX11A_0358.00_200607130752.ht2	KLX11A_358.00-363.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	09:14	383.00	388.00	KLX11A_0383.00_200607130914.ht2	KLX11A_383.00-388.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	10:28	388.00	393.00	KLX11A_0388.00_200607131028.ht2	KLX11A_388.00-393.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	12:29	393.00	398.00	KLX11A_0393.00_200607131229.ht2	KLX11A_393.00-398.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	13:44	398.00	403.00	KLX11A_0398.00_200607131344.ht2	KLX11A_398.00-403.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	15:46	423.00	428.00	KLX11A_0423.00_200607131546.ht2	KLX11A_423.00-428.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-13		
2006-07-13	16:59	428.00	433.00	KLX11A_0428.00_200607131659.ht2	KLX11A_428.00-433.00_060713_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-14		

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION	NO.: ŀ	KLX11A		
TEST- A	ND	ND FILEPROTOCOL Testorder dated: 2006-06-							
Teststart		Interval boundari	es	Name	of Datafiles	Testtype	Copied to	Plotted	Sign.
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)	
2006-07-14	07:58	433.00	438.00	KLX11A_0433.00_200607140758.ht2	KLX11A_433.00-438.00_060714_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-14	
2006-07-14	09:17	438.00	443.00	KLX11A_0438.00_200607140917.ht2	KLX11A_438.00-443.00_060714_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-14	
2006-07-14	11:06	442.00	447.00	KLX11A_0442.00_200607141106.ht2	KLX11A_442.00-447.00_060714_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-14	
2006-07-14	13:16	447.00	452.00	KLX11A_0447.00_200607141316.ht2	KLX11A_447.00-452.00_060714_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-14	
2006-07-14	15:01	452.00	457.00	KLX11A_0452.00_200607141501.ht2	KLX11A_452.00-457.00_060714_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-14	
2006-07-14	16:45	457.00	462.00	KLX11A_0457.00_200607141645.ht2	KLX11A_457.00-462.00_060714_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-14	
2006-07-14	18:01	462.00	467.00	KLX11A_0462.00_200607141801.ht2	KLX11A_462.00-467.00_060714_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-15	
2006-07-15	08:16	483.00	488.00	KLX11A_0483.00_200607150816.ht2	KLX11A_483.00-488.00_060715_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-15	
2006-07-15	09:29	488.00	493.00	KLX11A_0488.00_200607150929.ht2	KLX11A_488.00-493.00_060715_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-15	
2006-07-15	10:47	493.00	498.00	KLX11A_0493.00_200607151047.ht2	KLX11A_493.00-498.00_060715_1_Pi_Q_r.csv	Pi	2006-08-12	2006-07-15	
2006-07-15	14:04	498.00	503.00	KLX11A_0498.00_200607151404.ht2	KLX11A_498.00-503.00_060715_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-15	
2006-07-15	15:53	503.00	508.00	KLX11A_0503.00_200607151553.ht2	KLX11A_503.00-508.00_060715_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-15	
2006-07-15	18:09	508.00	513.00	KLX11A_0508.00_200607151809.ht2	KLX11A_508.00-513.00_060715_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-16	
2006-07-16	08:05	513.00	518.00	KLX11A_0513.00_200607160805.ht2	KLX11A_513.00-518.00_060716_1_CHir_Q_r.csv	Chir	2006-08-12	2006-07-16	
2006-08-07	09:04	513.00	518.00	KLX11A_0513.00_200608070904.ht2	KLX11A_513.00-518.00_060807_2_CHir_Q_r.csv	Chir	2006-08-12	2006-08-07	

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION	NO.: ŀ	KLX11A		
TEST- A	AND	FILEP	ROTO	ROTOCOL Testorder dated: 2006-06-27					
Teststart		Interval boundari	es	Name	of Datafiles	Testtype	Copied to	Plotted	Sign.
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)	
2006-08-08	15:30	513.00	518.00	KLX11A_0513.00_200608081530.ht2	KLX11A 513.00-518.00 060808 3 CHir Q r.csv	Chir	2006-08-12	2006-08-08	
2006-08-08	17:47	518.00	523.00	KLX11A_0518.00_200608081747.ht2	KLX11A_518.00-523.00_060808_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-09	
2006-08-09	08:08	523.00	528.00	KLX11A_0523.00_200608090808.ht2	KLX11A_523.00-528.00_060809_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-09	
2006-08-09	10:08	528.00	533.00	KLX11A_0528.00_200608091008.ht2	KLX11A 528.00-533.00 060809 1 CHir Q r.csv	Chir	2006-08-12	2006-08-09	
2006-08-09	12:48	533.00	538.00	KLX11A_0533.00_200608091248.ht2	KLX11A_533.00-538.00_060809_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-09	
2006-08-09	14:40	538.00	543.00	KLX11A_0538.00_200608091440.ht2	KLX11A_538.00-543.00_060809_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-09	
2006-08-09	16:59	563.00	568.00	KLX11A_0563.00_200608091659.ht2	KLX11A_563.00-568.00_060809_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-09	
2006-08-09	18:17	568.00	573.00	KLX11A_0568.00_200608091817.ht2	KLX11A 568.00-573.00 060809 1 CHir Q r.csv	Chir	2006-08-12	2006-08-10	
2006-08-10	08:06	573.00	578.00	KLX11A_0573.00_200608100806.ht2	KLX11A_573.00-578.00_060810_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-10	
2006-08-10	10:02	578.00	583.00	KLX11A_0578.00_200608101002.ht2	KLX11A_578.00-583.00_060810_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-10	
2006-08-10	12:20	583.00	588.00	KLX11A_0583.00_200608101220.ht2	KLX11A 583.00-588.00 060810 1 Pi Q r.csv	Pi	2006-08-12	2006-08-10	
2006-08-10	14:41	588.00	593.00	KLX11A_0588.00_200608101441.ht2	KLX11A_588.00-593.00_060810_1_Pi_Q_r.csv	Pi	2006-08-12	2006-08-10	
2006-08-10	16:33	593.00	598.00	KLX11A_0593.00_200608101633.ht2	KLX11A 593.00-598.00 060810 1 Pi Q r.csv	Pi	2006-08-12	2006-08-11	
2006-08-11	08:01	598.00	603.00	KLX11A_0598.00_200608110801.ht2	KLX11A_598.00-603.00_060811_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-11	
2006-08-11	10:29	663.00	668.00	KLX11A_0663.00_200608111029.ht2	KLX11A_663.00-668.00_060811_1_CHir_Q_r.csv	Chir	2006-08-12	2006-08-11	

HYDRO	TES	TING	WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX11A						
TEST- AND FILEPROTOCOL					Testorder dated: 2006-06-27						
Teststart Interval boundaries			es	Name	Name of Datafiles			Plotted	Sign.		
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)			
2006-08-11	13:30	668.00	673.00	KLX11A_0668.00_200608111330.ht2	KLX11A_668.00-673.00_060811_1_Pi_Q_r.csv	Pi	2006-08-12	2006-08-11			
2006-08-11	15:38	673.00	678.00	KLX11A_0673.00_200608111538.ht2	KLX11A_673.00-678.00_060811_1_Pi_Q_r.csv	Pi	2006-08-12	2006-08-11			
2006-08-11	17:45	678.00	683.00	KLX11A_0678.00_200608111745.ht2	KLX11A_678.00-683.00_060811_1_Pi_Q_r.csv	Pi	2006-08-12	2006-08-12			

Borehole: KLX11A

APPENDIX 5

SICADA data tables



SICADA/Data Import Template

SKB & Ergodata AB 2004

File Identity	
Created By	Stephan Rohs
Created	2006-09-11

Compiled By	
Quality Check For Delivery	
Delivery Approval	

Activity Type	KLX 11A
	KLX 11A - Injection test

Project	AP PS 400-06-072

Activity Info	rmation					Additional Activity Data					
						C10	P20	P200	P220	R25	
							Field crew		evaluating		
ldcode	Start Date	Stop Date	Secup (m)	Seclow (m)	Section No	Company	manager	Field crew	data	Report	
								Stephan	Stephan	Stephan	
							Stephan	Rohs,	Rohs, Philipp	Rohs, Philipp	
KLX 11A	2006-06-29 14:32	2006-07-16 10:33	103.00	976.00		Golder Associates	Rohs	Philipp Wolf	Wolf	Wolf	
								Reinder van	Stephan	Stephan	
							Reinder van	der Wall,	Rohs, Philipp	Rohs, Philipp	
KLX 11A	2006.08.08 15:30	2006.08.11 20:53	513.00	683.00		Golder Associates	der Wall	Philipp Wolf	Wolf	Wolf	

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		I	flow_rate_end_	value_type_	mean_flow_			
idcode	start date	stop date	secup	seclow	_	test_type	type	start_flow_period	stop flow period	qp	qp	rate_qm	g measl I	a mosel u	tot volume vp
KLX 11A		060629 16:40:00			110	test_type	type	2006-06-29 15:38:42							2.46E-01
KLX 11A		060629 10.40.00				3	1	2006-06-29 19:18:52							2.46E-01
KLX 11A		060629 20.21.00				3	_	2006-06-30 10:10:28	2006-06-29 19:49:02						1.05E-01
						3			2006-06-30 10:40:38						
KLX 11A		060630 15:20:00				3		2006-06-30 14:18:35							2.40E-03
KLX 11A		060701 10:50:00				3	•	2006-07-01 09:48:22			_				3.57E-01 9.00E-05
KLX 11A		060701 15:43:00				3		2006-07-01 14:11:12	2006-07-01 14:41:22						
KLX 11A		060702 01:32:00				3		2006-07-01 19:00:34	2006-07-01 19:30:44	3.33E-08				8.33E-04	1.20E-04
KLX 11A		060702 13:33:00				3		2006-07-02 11:01:14	2006-07-02 11:31:24						1.80E-04
KLX 11A KLX 11A		060702 16:49:00 060704 09:46:00				3		2006-07-02 15:33:25	2006-07-02 15:33:35	#NV 2.33E-05			1.67E-08 1.67E-08	8.33E-04 8.33E-04	5.60E-06 2.80E-02
						3	_	2006-07-04 09:04:05	2006-07-04 09:24:15						8.00E-02
KLX 11A		060704 11:54:00				v		2006-07-04 11:12:38	2006-07-04 11:32:48						
KLX 11A		060704 14:32:00				3		2006-07-04 13:40:34							1.00E-02
KLX 11A		060704 16:33:00				3		2006-07-04 15:51:48	2006-07-04 16:11:58						5.20E-02
KLX 11A		060704 18:14:00				3	_	#NV #NV	#NV #NV	#NV	-1 -1				#NV
KLX 11A		060704 19:46:00					-			#NV			1.67E-08		#NV
KLX 11A		060705 10:07:00				3		2000 01 00 00.20.20	2006-07-05 09:20:39	#NV	0		1.67E-08	8.33E-04	1.32E-05
KLX 11A		060705 12:22:00				3		2006-07-05 11:40:25	2006-07-05 12:00:35	6.67E-07	0				8.40E-04
KLX 11A		060705 14:44:00					-	2006-07-05 14:02:11	2006-07-05 14:22:21	1.65E-04					2.03E-01
KLX 11A		060705 16:51:00				3	-	2006-07-05 16:04:29	2006-07-05 16:04:39	#NV	0				1.33E-05
KLX 11A		060705 18:49:00				3		2006-07-05 18:07:26	2006-07-05 18:27:36						8.20E-02
KLX 11A		060706 00:42:00				3	•	2006-07-05 20:29:02	2006-07-05 20:40:12						3.30E-06
KLX 11A		060706 10:30:00				3		2006-07-06 09:48:23	2006-07-06 10:08:33	1.50E-07	0				3.60E-04
KLX 11A		060706 12:55:00				3	-	2006-07-06 11:41:39	2006-07-06 11:41:49		0		1.67E-08		7.80E-06
KLX 11A		060706 15:02:00				3	_	2006-07-06 14:40:27	2006-07-06 15:00:37	8.33E-08				8.33E-04	1.00E-04
KLX 11A		060706 17:22:00				3		2006-07-06 16:35:13	2006-07-06 16:35:23	#NV	0		1.67E-08	8.33E-04	2.20E-06
KLX 11A		060706 19:21:00	423.00			3		2006-07-06 18:39:37	2006-07-06 18:59:47	1.00E-06					1.20E-03
KLX 11A		060707 10:01:00				3	_	2006-07-07 09:19:26	2006-07-07 09:39:36		0				5.90E-04
KLX 11A		060707 12:34:00				3	_	2006-07-07 11:12:30	2006-07-07 11:12:40						1.33E-05
KLX 11A		060707 14:44:00				3		2006-07-07 14:01:52	2006-07-07 14:22:02						1.60E-04
KLX 11A		060707 16:39:00				3		2006-07-07 15:57:20	2006-07-07 16:17:30	5.83E-05				8.33E-04	7.40E-02
KLX 11A		060707 18:30:00				3	_	2006-07-07 17:48:44	2006-07-07 18:08:54						1.60E-03
KLX 11A		060708 08:26:00				3		2006-07-07 19:44:15	2006-07-07 19:44:25	#NV	0		1.67E-08	8.33E-04	2.40E-06
KLX 11A		060708 10:21:00				3		2006-07-08 09:39:14	2006-07-08 09:59:24	1.47E-04	0			8.33E-04	1.82E-01
KLX 11A		060708 12:23:00				3		2006-07-08 11:41:17	2006-07-08 12:01:27	4.33E-06					5.40E-03
KLX 11A		060708 14:41:00				3	1	2006-07-08 13:55:12	2006-07-08 13:55:22						1.33E-05
KLX 11A		060708 16:39:00				3	1	2006-07-08 15:52:56	2006-07-08 15:53:06				1.67E-08		1.31E-05
KLX 11A		060708 18:34:00				3	1	2006-07-08 17:48:39	2006-07-08 17:48:49	#NV	0		1.67E-08	8.33E-04	6.76E-06
KLX 11A		060709 08:39:00				3		2006-07-09 07:57:45	2006-07-09 08:17:55	1.67E-08					4.40E-05
KLX 11A		060709 10:40:00				3		2006-07-09 09:50:31	2006-07-09 10:32:52						1.19E-05
KLX 11A		060709 13:27:00				3	_	2006-07-09 12:25:20	2006-07-09 12:45:30	5.00E-08					1.02E-04
KLX 11A		060709 15:13:00				3	_		#NV	#NV			1.67E-08		#NV
KLX 11A		060709 16:56:00				3			#NV	#NV					#NV
KLX 11A		060709 18:10:00				3		#NV	#NV	#NV			1.67E-08		#NV
KLX 11A		060709 20:01:00				3		#NV	#NV	#NV			1.67E-08		#NV
KLX 11A		060710 09:15:00				3			#NV	#NV	-1		1.67E-08		#NV
KLX 11A		060710 10:37:00				3			#NV	#NV					#NV
KLX 11A		060710 13:24:00	843.00			3		2000 01 10 12.02.00	2006-07-10 13:02:16					8.33E-04	1.26E-04
KLX 11A		060710 14:56:00				3	_		#NV	#NV	-1		1.67E-08		#NV
KLX 11A	060712 07:38:00	060712 09:06:00	303.00	308.00		3	1	2006-07-12 08:24:00	2006-07-12 08:24:10	1.06E-05	0	1.16E-05	1.67E-08	8.33E-04	1.39E-02

			dur flow p	dur rec p	initial_head_	head at flow e final head h i	nitial press	press_at_flow_e	final press	fluid temp t	fluid elcond e	fluid_salinity_t	fluid_salinity_t			\Box
idcode	secup	seclow	hase tp	hase tf	hi		oi		pf	ew	cw	dsw	dswm	reference	comments	lp
KLX 11A	103.00	203.00		_		11.45	1837	_	1840							153.00
KLX 11A	203.00					10.70	2776		2777							253.00
KLX 11A	303.00	403.00				10.58	3712		3713							353.00
KLX 11A	403.00					12.21	4650		4650							453.00
KLX 11A	503.00	603.00				12.66	5580		5600							553.00
KLX 11A	603.00	703.00				14.05	6549		6586							653.00
KLX 11A	703.00	803.00				14.06	7477		7451	18.6						753.00
KLX 11A	803.00	903.00				13.37	8354		8352							853.00
KLX 11A	876.00					#NV	9042		9202							926.00
KLX 11A	103.00	123.00				10.46	1093		1093							113.00
KLX 11A	123.00					9.97	1275		1275							133.00
KLX 11A	143.00	163.00		1800)	8.03	1464		1469							153.00
KLX 11A	163.00	183.00		1200)	10.02	1648	1849	1651	9.2						173.00
KLX 11A	183.00	203.00		#NV	,	#NV	#NV	#NV	#NV							193.00
KLX 11A	203.00	223.00	#NV	#NV	,	#NV	#NV	#NV	#NV	9.8						213.00
KLX 11A	223.00	243.00	10	2700)	#NV	2233	2458	2255	10.0						233.00
KLX 11A	243.00	263.00	1200	1200)	10.42	2403	2616	2402	10.4						253.00
KLX 11A	263.00	283.00	1200	1200)	10.58	2588	2789	2590	10.8	3					273.00
KLX 11A	283.00	303.00	10	2700)	#NV	2797	3034	2958	11.1						293.00
KLX 11A	303.00	323.00	1200	1200)	10.24	2963	3187	2964	11.5	i					313.00
KLX 11A	323.00)	9.51	3159		3155							333.00
KLX 11A	343.00	363.00	1200	1200)	#NV	3356	3551	3443	12.1						353.00
KLX 11A	363.00	383.00	10	3960)	#NV	3536	3753	3693							373.00
KLX 11A	383.00	403.00		1200)	10.04	3715	3954	3712	12.6	;					393.00
KLX 11A	403.00	423.00	10	2460)	#NV	3908	4141	4062	12.9)					413.00
KLX 11A	423.00	443.00		1200)	11.59	4088	4290	4087							433.00
KLX 11A	443.00	463.00				11.35	4269		4269							453.00
KLX 11A	463.00	483.00				#NV	4485		4572							473.00
KLX 11A	483.00	503.00				11.84	4649		4642							493.00
KLX 11A	503.00					11.80	4837		4838							513.00
KLX 11A	523.00	543.00				12.57	5024		5023							533.00
KLX 11A	543.00					#NV	5219		5349							553.00
KLX 11A	563.00	583.00				12.47	5392		5394							573.00
KLX 11A	583.00	603.00				12.91	5585		5590							593.00
KLX 11A	603.00	623.00				#NV	5778		5930							613.00
KLX 11A	623.00	643.00				#NV	5963		6172							633.00
KLX 11A	643.00					#NV	6153		6133							653.00
KLX 11A	663.00	683.00				12.80	6327		6411							673.00
KLX 11A	683.00					#NV	6516		6556							693.00
KLX 11A	703.00	723.00				#NV	6718		6761	17.3						713.00
KLX 11A	723.00	743.00				#NV	#NV		#NV					1		733.00
KLX 11A	743.00	763.00				#NV	#NV		#NV					-		753.00
KLX 11A	763.00	783.00				#NV	#NV		#NV					-		773.00
KLX 11A	783.00	803.00				#NV	#NV	#NV	#NV			-		+	1	793.00
KLX 11A	803.00	823.00				#NV	#NV	#NV	#NV			-		+	1	813.00
KLX 11A	823.00	843.00				#NV	#NV		#NV					+	+	833.00
KLX 11A	843.00	863.00				#NV	7983		8013 #NV					+	+	853.00
KLX 11A	863.00	883.00				#NV	#NV					1		1	1	873.00
KLX 11A	303.00	308.00	1200	1200	'	10.66	2823	3024	2823	11.1		1		1		305.50

			I	l	section	1	formation			flow_rate_end_	value_type_	mean_flow_	1		
idcode	start date	stop_date	secup	seclow	no	test_type	type	start flow period	stop flow period	gp	qp	rate_qm	g measl I	g measl u t	ot volume vn
KLX 11A	060712 09:30:00		308.00		110	3		2006-07-12 10:08:49	2006-07-12 10:28:59	5.33E-05					6.73E-02
KLX 11A	060712 11:13:00		313.00			3		#NV	#NV	#NV	-1				#NV
KLX 11A	060712 13:09:00		318.00			3	•	#NV	#NV	#NV	-1				#NV
KLX 11A	060712 14:31:00		343.00			3	1	2006-07-12 15:29:26	2006-07-12 15:49:36	1.67E-07	0				4.00E-04
KLX 11A	060712 16:38:00		348.00			3	1	#NV	#NV	#NV	-1				#NV
KLX 11A	060712 17:56:00		353.00			3	1	#NV	#NV	#NV	-1	#NV	1.67E-08		#NV
KLX 11A	060713 07:52:00	060713 08:41:00	358.00	363.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060713 09:14:00	060713 10:05:00	383.00	388.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060713 10:28:00	060713 11:17:00	388.00	393.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060713 12:29:00	060713 13:20:00	393.00	398.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060713 13:44:00	060713 15:16:00	398.00	403.00		3	1	2006-07-13 14:34:34	2006-07-13 14:54:44	8.33E-08	0	8.33E-08	1.67E-08	8.33E-04	1.00E-04
KLX 11A	060713 15:46:00	060713 16:55:00	423.00	428.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060713 16:59:00		428.00	433.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060714 07:59:00	060714 08:46:00	433.00	438.00		3	1	#NV	#NV	#NV	-1	#NV	1.67E-08	8.33E-04	#NV
KLX 11A	060714 09:17:00	060714 10:39:00	438.00			3	1	2006-07-14 09:57:00	2006-07-14 10:17:10	1.17E-06	0				1.39E-03
KLX 11A	060714 11:06:00	060714 12:51:00	442.00			3	1	2006-07-14 11:42:39	2006-07-14 11:42:49	#NV	0				8.07E-06
KLX 11A	060714 13:16:00		447.00			3		2006-07-14 13:55:05	2006-07-14 14:15:15	2.17E-07	0				2.60E-04
KLX 11A	060714 15:01:00		452.00			3		2006-07-14 15:40:42	2006-07-14 16:00:52	2.83E-07	0				3.54E-04
KLX 11A	060714 16:45:00		457.00			3	•	#NV	#NV	#NV	-1				#NV
KLX 11A	060714 18:01:00		462.00	467.00		3		#1 4 V	#NV	#NV	-1				#NV
KLX 11A	060715 08:16:00		483.00	488.00		3	1	#NV	#NV	#NV	-1				#NV
KLX 11A	060715 09:29:00	060715 10:19:00	488.00			3	1	#NV	#NV	#NV	-1				#NV
KLX 11A	060715 10:47:00		493.00			3		2006-07-15 13:08:52	2006-07-15 13:09:02	#NV	0				2.69E-06
KLX 11A	060715 14:04:00		498.00			3		2006-07-15 14:47:28	2006-07-15 15:07:38	8.33E-08	0				1.20E-04
KLX 11A	060715 15:53:00	060715 17:47:00	503.00			3	1	2006-07-15 17:05:25	2006-07-15 17:25:35	2.83E-07	0			8.33E-04	3.40E-04
KLX 11A	060715 18:09:00	060715 21:14:00	508.00	513.00		3	1	2006-07-15 18:52:09	2006-07-15 19:12:19	2.67E-07	0	3.12E-07	1.67E-08	8.33E-04	3.74E-04
KLX 11A	060716 08:05:00		513.00			3		2006-08-08 16:33:36	2006-08-08 16:53:46	1.93E-05	0				2.38E-02
KLX 11A	060808 17:47:00		518.00			3		2006-08-08 18:55:36	2006-08-08 19:15:46	5.12E-05					6.40E-02
KLX 11A	060809 08:08:00		523.00			3		2006-08-09 08:59:28	2006-08-09 09:19:38	1.43E-07	0				1.72E-04
KLX 11A	060809 10:08:00		528.00			3		2006-08-09 10:52:02	2006-08-09 11:12:12	7.83E-07	0				1.00E-03
KLX 11A	060809 12:48:00		533.00			3		2006-08-09 13:34:21	2006-08-09 13:54:31	1.67E-06	0				2.10E-03
KLX 11A	060809 14:40:00		538.00			3		2006-08-09 15:37:49	2006-08-09 15:57:59	3.33E-08					5.40E-05
KLX 11A	060809 16:59:00		563.00	568.00		3	1	#NV	#NV	#NV	-1				#NV
KLX 11A	060809 18:17:00		568.00	573.00		3	1	#NV	#NV	#NV	-1		1.67E-08		#NV
KLX 11A	060810 08:06:00		573.00			3		2006-08-10 08:52:30	2006-08-10 09:12:40	6.85E-05					8.42E-02
KLX 11A	060810 10:02:00		578.00			3		2006-08-10 10:46:37	2006-08-10 11:06:47	9.33E-05	0				1.17E-01
KLX 11A	060810 12:20:00		583.00			3		2006-08-10 13:03:30	2006-08-10 13:03:40	#NV	0				2.97E-06
KLX 11A	060810 14:41:00	060810 16:05:00	588.00			3	1	#NV	#NV	#NV	-1				#NV
KLX 11A	060810 16:33:00		593.00			3		2006-08-10 17:12:19	2006-08-10 17:12:29	#NV	0				4.50E-06
KLX 11A	060811 08:01:00		598.00			3	1	2006-08-11 08:44:30	2006-08-11 09:44:40	4.48E-06	0				5.76E-03
KLX 11A	060811 10:29:00		663.00			3	1	2006-08-11 12:18:56	2006-08-11 12:39:06	1.67E-08	0				3.00E-05
KLX 11A	060811 13:30:00		668.00			3	1	2006-08-11 14:08:51	2006-08-11 14:09:01	#NV	0				3.81E-06
KLX 11A	060811 15:38:00		673.00			3	•	2006-08-11 16:15:05	2006-08-11 16:15:15	#NV	0				2.92E-06
KLX 11A	060811 17:45:00	060811 20:53:00	678.00	683.00		3	1	2006-08-11 18:21:34	2006-08-11 18:21:44	#NV	0	#NV	1.67E-08	8.33E-04	3.75E-06

			dur flow p	dur rec p	initial head	head_at_flow_e final_head_h	initial press	press at flow e	final press	fluid temp t	fluid elcond e	fluid_salinity_t	fluid_salinity_t			\top
idcode	secup	seclow		hase tf	hi	nd_hp f			pf	ew	cw	dsw	dswm	reference	comments	al
KLX 11A	308.00			_)	10.48	2871		2871							310.50
KLX 11A	313.00					#NV	#NV		#NV							315.50
KLX 11A	318.00					#NV	#NV		#NV	11.5						320.50
KLX 11A	343.00					#NV	3222		3312							345.50
KLX 11A	348.00	353.00	#NV	#NV	/	#NV	#NV	#NV	#NV	11.9						350.50
KLX 11A	353.00	358.00	#NV	#NV	/	#NV	#NV	#NV	#NV	12.0						355.50
KLX 11A	358.00			#NV	/	#NV	#NV	#NV	#NV							360.50
KLX 11A	383.00					#NV	#NV		#NV							385.50
KLX 11A	388.00					#NV	#NV		#NV							390.50
KLX 11A	393.00					#NV	#NV		#NV							395.50
KLX 11A	398.00					11.32	3717		3715							400.50
KLX 11A	423.00					#NV	#NV		#NV	13.0						425.50
KLX 11A	428.00					#NV	#NV		#NV							430.50
KLX 11A	433.00					#NV	#NV		#NV							435.50
KLX 11A	438.00					11.68	4087		4088							440.50
KLX 11A	442.00					#NV	4147		4150							444.50
KLX 11A	447.00					12.05	4176		4175							449.50
KLX 11A	452.00					12.02	4222		4221	13.4						454.50
KLX 11A	457.00					#NV	#NV		#NV							459.50
KLX 11A	462.00					#NV	#NV		#NV							464.50
KLX 11A	483.00					#NV	#NV		#NV							485.50
KLX 11A	488.00 493.00					#NV	#NV 4613		#NV							490.50 495.50
KLX 11A KLX 11A	493.00					12.35	4652		4617 4652							500.50
KLX 11A	503.00					11.38	4705		4735							505.50
KLX 11A	508.00					11.83	4705		4735							510.50
KLX 11A	513.00					12.81	4795		4740							515.50
KLX 11A	518.00					12.49	4842		4844							520.50
KLX 11A	523.00					12.24	4885		4884	14.5						525.50
KLX 11A	528.00					12.73	4932		4931	14.6						530.50
KLX 11A	533.00					12.96	4981		4981	14.6						535.50
KLX 11A	538.00					13.13	5032		5032							540.50
KLX 11A	563.00					#NV	#NV		#NV							565.50
KLX 11A	568.00					#NV	#NV		#NV	15.1						570.50
KLX 11A	573.00			1200)	12.90	5350	5550	5351	15.2						575.50
KLX 11A	578.00	583.00	1200	1200)	13.02	5397	5598	5399	15.1						580.50
KLX 11A	583.00	588.00	10	3888	3	#NV	5452	5694	5519	15.4						585.50
KLX 11A	588.00	593.00	#NV	#NV	/	#NV	#NV	#NV	#NV	15.4						590.50
KLX 11A	593.00			3679	9	#NV	5546		5719							595.50
KLX 11A	598.00					13.12	5582	5782	5586							600.50
KLX 11A	663.00	668.00				#NV	6196		6261	16.5						665.50
KLX 11A	668.00					#NV	6245		6366							670.50
KLX 11A	673.00					#NV	6288		6296							675.50
KLX 11A	678.00	683.00	10	9105	5	#NV	6332	6578	6338	16.8						680.50

Table plu_s_hole_test_ed1

PLU Single hole tests, pumping/injection. Basic evaluation

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		Formation type code. 1: Rock, 2: Soil (superficial deposits)
lp	FLOAT	m 	Hydraulic point of application for test section, see descr.
seclen_class	FLOAT FLOAT	m m**2/s	Planned ordinary test interval during test campaign. Specific capacity (Q/s) of test section, see table descript.
spec_capacity_q_s value_type_q_s	CHAR	111 2/5	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	23	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
u_measl_q_s	FLOAT	m**2/s	Estimated upper meas. limit for evaluated TT,see description
storativity_s	FLOAT		S:Storativity of formation based on 2D rad flow,see descr.
assumed_s bc_s	FLOAT FLOAT		Assumed Storativity,2D model evaluation,see table descr. 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.
С	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 m**3/a	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 CHAR		S_NLR=storativity based on None Linear Regression,see
value_type_t_nlr bc_t_nlr	CHAR		0:true value,-1:T_NLR <lower meas.limit,1:="">upper meas.limit Best choice code. 1 means T_NLR is best choice of T, else 0</lower>
c_nlr	FLOAT	m**3/pa	Wellbore storage coefficient, based on NLR, see descr.
cd_nir	FLOAT	0.pu	Dimensionless wellbore storage constant, see table descrip.
skin_nlr	FLOAT		Skin factor based on Non Linear Regression,see desc.
transmissivity_t_grf	FLOAT	m**2/s	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)

							formation_t	t		spec_capacity	value_type_	transmissivity	value_type_		transmissivity_
idcode	start_date	stop_date	secup	seclow	section_no	test_type	ype	lp	seclen_class	q_s	q_s	_tq		bc_tq	moye
KLX 11A	060629 14:32:00	060629 16:40:00	103.00	203.00		3	1	153.00	100	6.51E-06	6 0				8.47E-06
KLX 11A	060629 18:03:00	060629 20:21:00	203.00	303.00		3	1	253.00	100	7.48E-06	3 0				9.74E-06
KLX 11A	060630 09:15:00	060630 11:12:00	303.00	403.00		3	1	353.00	100	2.85E-06	3 0				3.71E-06
KLX 11A	060630 13:11:00	060630 15:20:00	403.00	503.00		3	1	453.00	100	5.61E-08	3 0				7.31E-08
KLX 11A	060701 08:47:00	060701 10:50:00	503.00	603.00		3		553.00							1.14E-05
KLX 11A	060701 12:14:00	060701 15:43:00	603.00	703.00		3	1	653.00	100	1.60E-09	9 0				2.08E-09
KLX 11A	060701 17:09:00	060702 01:32:00	703.00	803.00		3	1	753.00	100	1.61E-09	9 0				2.10E-09
KLX 11A	060702 09:11:00	060702 13:33:00	803.00	903.00		3	1	853.00	100	3.62E-09	9 0				2.78E-09
KLX 11A	060702 14:45:00	060702 16:49:00	876.00	976.00		4B	1	926.00	100	#N\	/ -1				#NV
KLX 11A	060704 08:19:00	060704 09:46:00	103.00	123.00		3	1	113.00	20	1.14E-06	3 0				1.20E-06
KLX 11A	060704 10:31:00	060704 11:54:00	123.00	143.00		3	1	133.00	20	3.19E-06	3 0				3.34E-06
KLX 11A	060704 12:49:00	060704 14:32:00	143.00	163.00		3		153.00							3.31E-07
KLX 11A	060704 15:05:00	060704 16:33:00	163.00	183.00		3	1	173.00	20	2.03E-06	3 0				2.13E-06
KLX 11A	060704 17:12:00	060704 18:14:00	183.00	203.00		3	1	193.00	20	#N\	/ -1				#NV
KLX 11A	060704 18:50:00	060704 19:46:00	203.00	223.00		3		213.00							#NV
KLX 11A	060705 08:38:00	060705 10:07:00	223.00			4B		233.00							#NV
KLX 11A	060705 10:48:00	060705 12:22:00	243.00	263.00		3	1	253.00			3 0				3.21E-08
KLX 11A	060705 13:18:00	060705 14:44:00	263.00	283.00		3	1	273.00	20	8.05E-06	3 0				8.42E-06
KLX 11A	060705 15:25:00	060705 16:51:00	283.00	303.00		4B	1	293.00	20	#N\	/ -1				#NV
KLX 11A	060705 17:25:00	060705 18:49:00	303.00	323.00		3		313.00							2.98E-06
KLX 11A	060705 19:21:00	060706 00:42:00	323.00	343.00		3		333.00							1.57E-10
KLX 11A	060706 08:48:00	060706 10:30:00	343.00	363.00		3		353.00							7.89E-09
KLX 11A	060706 11:03:00	060706 12:55:00	363.00	383.00		4B		373.00							#NV
KLX 11A	060706 13:34:00	060706 15:02:00	383.00	403.00		3		393.00							3.58E-09
KLX 11A	060706 15:54:00	060706 17:22:00	403.00			4B		413.00							#NV
KLX 11A	060706 17:56:00	060706 19:21:00	423.00	443.00		3		433.00							5.08E-08
KLX 11A	060707 08:32:00	060707 10:01:00	443.00	463.00		3		453.00							2.10E-08
KLX 11A	060707 10:33:00	060707 12:34:00	463.00	483.00		4B		473.00							#NV
KLX 11A	060707 13:12:00	060707 14:44:00	483.00	503.00		3		493.00							4.79E-09
KLX 11A	060707 15:12:00	060707 16:39:00	503.00			3		513.00							2.99E-06
KLX 11A	060707 17:07:00	060707 18:30:00	523.00	543.00		3		533.00							6.71E-08
KLX 11A	060707 19:07:00	060708 08:26:00	543.00	563.00		4B		553.00			/ -1				#NV
KLX 11A	060708 08:58:00	060708 10:21:00	563.00			3		573.00							7.60E-06
KLX 11A	060708 10:53:00	060708 12:23:00	583.00			3		593.00							2.21E-07
KLX 11A	060708 13:17:00	060708 14:41:00	603.00	623.00		4B		613.00							#NV
KLX 11A	060708 15:12:00	060708 16:39:00	623.00	643.00		4B		633.00							#NV
KLX 11A	060708 17:11:00	060708 18:34:00	643.00			4B		653.00							#NV
KLX 11A	060708 19:06:00	060709 08:39:00	663.00			3		673.00							6.68E-10
KLX 11A	060709 09:11:00	060709 10:40:00	683.00	703.00		4B	1	693.00	20	#N\	/ -1				#NV
KLX 11A	060709 11:08:00	060709 13:27:00	703.00	723.00		3		713.00			9 0				2.44E-09
KLX 11A	060709 13:58:00	060709 15:13:00	723.00	743.00		4B	1	733.00	20	#N\	/ -1				#NV
KLX 11A	060709 15:45:00	060709 16:56:00	743.00	763.00		4B	1	753.00			/ -1				#NV
KLX 11A	060709 17:25:00	060709 18:10:00	763.00	783.00		4B		773.00							#NV
KLX 11A	060709 18:43:00	060709 20:01:00	783.00	803.00		4B		793.00			/ -1				#NV
KLX 11A	060710 08:19:00	060710 09:15:00	803.00			3		813.00							#NV
KLX 11A	060710 09:45:00	060710 10:37:00	823.00	843.00		3		833.00			/ -1				#NV
KLX 11A	060710 11:10:00	060710 13:24:00	843.00	863.00		3		853.00							2.85E-09
KLX 11A	060710 14:04:00	060710 14:56:00	863.00	883.00		3		873.00			-				#NV
KLX 11A	060712 07:38:00	060712 09:06:00	303.00	308.00		3		305.50			7 0				4.26E-07

					value_type_t	hydr_cond_	formation	width of channe	ı			assumed	leakage f	transmissivity	value type			
KLY11A 293.00 303.00 0 0 974E-94 3.21E-35 0 1 9.00E-06 5.00E-06 KLY11A 403.00 0 0 7.31E-06 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6.00E-07 6	idcode	secup	seclow	bc_tm					_	l_measl_tb	u_measl_tb	_				bc_tt	l_measl_q_s	u_measl_q_s
KLY 11A \$30.00 403.00 0 0 3.71E.04 5.98E.06 0 1 3.00E.06 9.00E.06 KLY 11A 403.00 633.00 0 0 1.14E.32	KLX 11A	103.00	203.00	0	0	8.47E-08								1.62E-05	0	1	8.00E-06	3.00E-05
KLY 11A \$30.00 403.00 0 0 3.71E.04 5.98E.06 0 1 3.00E.06 9.00E.06 KLY 11A 403.00 633.00 0 0 1.14E.32	KLX 11A	203.00	303.00	0	0	9.74E-04								3.21E-05	0	1	9.00E-06	5.00E-05
KLX 11A 933.00 903.00 0		303.00	403.00	0	0	3.71E-04										1		
KLX 11A 933.00 903.00 0					0											1		
KLX 11A					-													
KLX 11A					0											1		
KLX 11A					0											1		
KLX 11A					0											1		
KLX 11A 103.00 123.00 0 0 2.40E.05					-1											1		
KLX 11A 123 00 143 00 0 0 6 68E-05					0											1		
KLX 11A					0	6.68E-05								8.11E-06	0	1	7.00E-06	
KLX 11A					0											1		
KLX 11A					0											1		
KLX 11A 203.00 223.00 0 -1 #WV					-1											1		
KLX 11A 223.00 243.00 0 -1					-1											1		
KLX 11A 243.00 263.00 0 0 6.42E-07 3.68E-08 0 1 8.00E-09 8.00E-08 KLX 11A 263.00 283.00 0 0 1.68E-04					-1											1		
KLX 11A 283.00 283.00 0 0 1.08E-04					0											1		
KLX 11A 283.00 303.00 0 -1 #WV					0											1		
KLX 11A 303.00 323.00 0 0 5.96E.05 5.77E.06 0 1 3.00E.06 9.00E.06					-1											1		
KLX 11A 323.00 343.00 0 0 3.14E-09					0										0	1		
KLX 11A					0										0	1		
KIX 11A 983.00 0 383.00 0 -1 #WV					0										0	1		
KLX 11A 383.00 403.00 0 0 7.16E-08					-1											1		
KLX 11A					0											1		
KLX 11A					-1											1		
KIX 11A																		
KLX 11A																		
KLX 11A																		
KLX 11A 503.00 523.00 0 0 5.98E-05					0											1		
KLX 11A 523.00 543.00 0 0 1.34E-06					0											1		
KLX 11A 543.00 563.00 0 -1 #NV					0													
KLX 11A 563.00 583.00 0 0 1.52E-04																		
KLX 11A 583.00 603.00 0 4.42E-06 7.93E-07 0 1 5.00E-07 1.00E-06 KLX 11A 603.00 623.00 0 -1 #NV 4.37E-11 0 1 1.00E-11 9.00E-12 9.00E-11 9.00E-11 9.00E-11 9.00E-11 9.00E-12 9.00E-11 9.00E-11 9.00E-12 9.00E-11 9.00E-11 9.00E-11 9.00E-12 9.00E-11 9.00E-12					0											1		
KLX 11A 603.00 623.00 0 -1 #NV 4.37E-11 0 1 1.00E-11 9.00E-11 KLX 11A 623.00 643.00 0 -1 #NV 1.31E-11 0 1 9.00E-12 4.00E-11 KLX 11A 643.00 663.00 0 -1 #NV 2.12E-12 0 1 9.00E-13 6.00E-12 KLX 11A 663.00 683.00 0 0 1.34E-08 1.98E-10 0 1 9.00E-11 7.00E-10 KLX 11A 683.00 703.00 0 -1 #NV 1.55E-10 0 1 6.00E-11 3.00E-10 KLX 11A 703.00 723.00 0 0 4.88E-08 2.57E-10 0 1 8.00E-11 6.00E-10 KLX 11A 723.00 743.00 0 -1 #NV 1.00E-11 -1 1 1.00E-13 1.00E-11 KLX 11A 763.0					0													
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KLX 11A 823.00 843.00 0 -1 #NV 1.00E-11 -1 1 1.00E-13 1.00E-11 KLX 11A 843.00 863.00 0 0 5.70E-08 8.20E-10 0 1 5.00E-10 1.00E-09 KLX 11A 863.00 883.00 0 -1 #NV 1.00E-11 -1 1 1.00E-13 1.00E-11																1		
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KLX 11A 863.00 883.00 0 -1 #NV 1.00E-11 -1 1 1.00E-13 1.00E-11																		
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	KLX 11A	303.00			0	2.13E-06						+ + -		6.00E-07				

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idcode	secup	seclow	storativity_s				ri_index	oeff	ksf	ksf	sf	ksf	ssf	sf	С	cd	skin	dt1	dt2
KLX 11A	103.00					192.28									3.08E-09				
KLX 11A	203.00					228.13	(2.34E-09		19.11	0.40	
KLX 11A	303.00					42.22	1								4.38E-10				
KLX 11A	403.00					69.34	(2.40E-10				
KLX 11A	503.00					211.02	(3.25E-09				
KLX 11A	603.00					16.75	-1								1.94E-10				
KLX 11A	703.00					39.38	(2.35E-10				
KLX 11A	803.00					44.63	-1								3.08E-10				
KLX 11A	876.00					11.34	(2.57E-10				
KLX 11A	103.00					116.43	(6.32E-10				
KLX 11A	123.00					37.35	-1								1.23E-09		7.92		
KLX 11A	143.00					40.13	1								9.52E-11				
KLX 11A	163.00					124.85	(4)								6.67E-10				
KLX 11A	183.00					#NV	#N\								#NV		#NV		
KLX 11A	203.00					#NV	#N\								#NV		#NV		
KLX 11A	223.00					15.81 #NV	-1							-	5.84E-11				
KLX 11A KLX 11A	243.00 263.00					191.15	- (-	5.85E-11 3.17E-09				
KLX 11A	283.00					8.04	(5.62E-11		19.00		
KLX 11A	303.00					17.70									4.83E-10				
KLX 11A	323.00					23.29	1								1.15E-11				
KLX 11A	343.00					#NV	-								2.49E-10				
KLX 11A	363.00					8.09	(·							3.59E-11				
KLX 11A	383.00					#NV	-1								6.14E-11			#NV	
KLX 11A	403.00					8.24	(6.80E-11			#NV	
KLX 11A	423.00					52.27	(4.62E-11				
KLX 11A	443.00					32.89	(5.04E-11				
KLX 11A	463.00					13.16	(6.25E-11				
KLX 11A	483.00					#NV									5.96E-11				
KLX 11A	503.00					111.42	(1.16E-09		1.04		
KLX 11A	523.00					53.41	(8.54E-11				
KLX 11A	543.00					#NV	-								1.10E-11			#NV	
KLX 11A	563.00					178.87	()							1.62E-09		13.54		
KLX 11A	583.00				i	#NV									1.61E-10				
KLX 11A	603.00	623.00	1.00E-06	1.00E-06	6	9.11	()							5.49E-11	6.1E-03	-0.74	2.90	35.22
KLX 11A	623.00	643.00	1.00E-06	1.00E-06	6	#NV	,								5.95E-11	6.6E-03	-1.49	#NV	/ #NV
KLX 11A	643.00	663.00	1.00E-06	1.00E-06	6	#NV	()							3.10E-11	3.4E-03	-0.96	#NV	/ #NV
KLX 11A	663.00	683.00	1.00E-06	1.00E-06	6	4.58	1								4.63E-11	5.1E-03	-1.64	2.68	15.04
KLX 11A	683.00	703.00	1.00E-06	1.00E-06	6	#NV	1								5.33E-11	5.9E-03	-0.13	#NV	/ #NV
KLX 11A	703.00	723.00	1.00E-06	1.00E-06	i	14.01	()							1.42E-10	1.6E-02	-3.12	#NV	/ #NV
KLX 11A	723.00	743.00	1.00E-06	1.00E-06	i	#NV	#N\	1							#NV	#NV	#NV	#NV	/ #NV
KLX 11A	743.00	763.00	1.00E-06	1.00E-06	i	#NV	#N\	1							#NV	#NV	#NV	#NV	/ #NV
KLX 11A	763.00	783.00			i	#NV	#N\	/							#NV	#NV	#NV	#NV	/ #NV
KLX 11A	783.00	803.00	1.00E-06			#NV	#N\	/							#NV	#NV	#NV	#NV	/ #NV
KLX 11A	803.00	823.00	1.00E-06	1.00E-06	i	#NV	#N\	1							#NV	#NV	#NV	#NV	/ #NV
KLX 11A	823.00					#NV	#N\	/							#NV		#NV	#NV	
KLX 11A	843.00					13.24	()							8.79E-11	9.7E-03	-2.28		
KLX 11A	863.00					#NV	#N\								#NV		#NV		
KLX 11A	303.00	308.00	1.00E-06	1.00E-06	6	68.87	()							3.62E-11	4.0E-03	0.25	0.50	17.83

							transmissivity_t	storativity_s	value_type_t	t				transmissivity_t	value_type_t		storativity_s_ flow	_dim_	
idcode	secup	seclow	t1 t2	dte	1 dte2	p_horner	_nlr	_nlr	_nlr	bc_t_nlr	c_nlr	cd_nlr	skin_nlr	_grf	_grf	bc_t_grf	grf grf		comment
KLX 11A	103.00	203.00				1838.6								6.21E-06	0	0	1.00E-06	2.1	
KLX 11A	203.00	303.00				2776.6								8.10E-06	0	0	1.00E-06	2.1	
KLX 11A	303.00	403.00				3705.2								1.50E-06	0	0	1.00E-06	2.2	
KLX 11A	403.00	503.00				4649.1								#NV	0	0	1.00E-06	#NV	
KLX 11A	503.00					5579.0								9.04E-06		0	1.00E-06	2.1	
KLX 11A	603.00					6513.4								1.62E-09	0	0	1.00E-06	1.58	
KLX 11A	703.00	803.00				7429.3								6.04E-10	0	0	1.00E-06	1.5	
KLX 11A	803.00	903.00				8333.1								1.82E-09	0	0	1.00E-06	1.7	
KLX 11A	876.00					#NV	1							6.24E-10		0	1.00E-06	1.33	
KLX 11A	103.00					1092.9								#NV		0	1.00E-06	#NV	
KLX 11A	123.00	143.00				1275.5								1.20E-06	0	0	1.00E-06	2.3	
KLX 11A	143.00					1443.8								6.65E-08		0	1.00E-06	2.3	
KLX 11A	163.00					1650.5								#NV		0	1.00E-06	#NV	
KLX 11A	183.00					#NV								1.00E-11	-1		1.00E-06	#NV	
KLX 11A	203.00					#NV								1.00E-11	-1		1.00E-06	#NV	
KLX 11A	223.00					#NV	,							8.49E-10		0	1.00E-06	1.79	
KLX 11A	243.00					2401.2								#NV		0	1.00E-06	#NV	
KLX 11A	263.00					2589.2								#NV		0	1.00E-06	#NV	
KLX 11A	283.00					#NV	,							1.01E-10		0	1.00E-06	1.49	
KLX 11A	303.00					2958.2								9.73E-07		0	1.00E-06	2.3	
KLX 11A	323.00					3137.1								#NV		0	1.00E-06	#NV	
KLX 11A	343.00					#NV	,							4.25E-09		0	1.00E-06	1.6	
KLX 11A	363.00					#NV								3.21E-11		0	1.00E-06	1.75	
KLX 11A	383.00					3699.9								#NV		0	1.00E-06	#NV	
KLX 11A	403.00					#NV								1.81E-10		0	1.00E-06	1.45	
KLX 11A	423.00					4086.5								#NV		0	1.00E-06	#NV	
KLX 11A	443.00					4269.7								#NV		0	1.00E-06	#NV	
KLX 11A	463.00					#NV								1.59E-10		0	1.00E-06	1.7	
KLX 11A	483.00					4645.5								#NV		0	1.00E-06	#NV	
KLX 11A	503.00					4830.4								#NV		0	1.00E-06	#NV	
KLX 11A	523.00					5023.2								#NV		0	1.00E-06	#NV	
KLX 11A	543.00					#NV								1.74E-11		0	1.00E-06	1	
KLX 11A	563.00					5392.3								8.24E-06		0	1.00E-06	2.1	
KLX 11A	583.00					5581.5								7.93E-07		0	1.00E-06	1.95	
KLX 11A	603.00					#NV								1.09E-09		0	1.00E-06	1.5	
KLX 11A	623.00					#NV	,							#NV		0	1.00E-06	#NV	
KLX 11A KLX 11A	643.00					#NV	,							5.34E-12		0	1.00E-06	1.6	
KLX 11A	663.00					6317.5					1			5.34E-12 #NV		0	1.00E-06	#NV	
KLX 11A KLX 11A	683.00					#NV	,	 						2.60E-10		0	1.00E-06	1.87	
KLX 11A KLX 11A	703.00					#NV	,							#NV		0	1.00E-06	#NV	
KLX 11A	703.00					#NV	,							#NV		0	1.00E-06	#NV	
KLX 11A KLX 11A	743.00					#NV	,							#NV		0	1.00E-06	#NV	
KLX 11A KLX 11A	743.00					#NV	,				1			#NV	-1 -1		1.00E-06	#NV	
KLX 11A KLX 11A	783.00					#NV	,				1			#NV	-1 -1		1.00E-06	#NV	
KLX 11A KLX 11A	803.00			_		#NV	,	-			1			#NV	-1 -1		1.00E-06	#NV	
	803.00					#NV	,				1			#NV	-1 -1			#NV	
KLX 11A KLX 11A	843.00					#NV	,				1			#NV		0	1.00E-06 1.00E-06	#NV	
KLX 11A KLX 11A	843.00					#NV	,				1			#NV		0		#NV	
											1						1.00E-06		ļ
KLX 11A	303.00	308.00				2822.7								1.47E-06	0	0	1.00E-06	1.9	

			1			1	formation		1	spec_capacity_	value_type_	transmissivity	value type		transmissivity_
idcode	start date	stop date	secup	seclow	section no	test_type	type	lp	seclen class	q_s	q_s	_tq	tq	bc_tq	move
KLX 11A	060712 09:30:00	·-			_	3	1	310.50			-				2.16E-06
KLX 11A	060712 11:13:00	060712 12:03:00	313.00			3		315.50							#NV
KLX 11A	060712 13:09:00		318.00			3		320.50							#NV
KLX 11A	060712 14:31:00		343.00			3		345.50							6.43E-09
KLX 11A	060712 16:38:00	060712 17:38:00	348.00			3		350.50							#NV
KLX 11A	060712 17:56:00	060712 18:45:00	353.00	358.00		3		355.50		5 #NV	-1				#NV
KLX 11A	060713 07:52:00	060713 08:41:00	358.00	363.00		3		360.50		#NV	-1				#NV
KLX 11A	060713 09:14:00	060713 10:05:00	383.00	388.00		3	1	385.50	5	#NV	-1				#NV
KLX 11A	060713 10:28:00	060713 11:17:00	388.00	393.00		3	1	390.50	5	#NV	-1				#NV
KLX 11A	060713 12:29:00	060713 13:20:00	393.00	398.00		3	1	395.50	5	5 #NV	-1				#NV
KLX 11A	060713 13:44:00	060713 15:16:00	398.00	403.00		3	1	400.50	5	3.49E-09	0				2.88E-09
KLX 11A	060713 15:46:00	060713 16:55:00	423.00	428.00		3	1	425.50	5	5 #NV	-1				#NV
KLX 11A	060713 16:59:00	060713 17:47:00	428.00	433.00		3	1	430.50	5	5 #NV	-1				#NV
KLX 11A	060714 07:59:00	060714 08:46:00	433.00	438.00		3	1	435.50	5	5 #NV	-1				#NV
KLX 11A	060714 09:17:00	060714 10:39:00	438.00			3	1	440.50	5						4.70E-08
KLX 11A	060714 11:06:00	060714 12:51:00	442.00	447.00		4B	1	444.50	5	5 #NV	-1				#NV
KLX 11A	060714 13:16:00	060714 14:37:00	447.00	452.00		3	1	449.50	5	8.78E-09	0				1.06E-08
KLX 11A	060714 15:01:00	060714 16:22:00	452.00			3		454.50		1.34E-08	0				1.10E-08
KLX 11A	060714 16:45:00	060714 17:35:00	457.00	462.00		3	1	459.50	5	#NV	-1				#NV
KLX 11A	060714 18:01:00	060714 18:50:00	462.00	467.00		3	1	464.50	5	#NV	-1				#NV
KLX 11A	060715 08:16:00	060715 09:05:00	483.00	488.00		3	1	485.50	5	#NV	-1				#NV
KLX 11A	060715 09:29:00	060715 10:19:00	488.00	493.00		3	1	490.50	5	5 #NV	-1				#NV
KLX 11A	060715 10:47:00	060715 13:39:00	493.00	498.00		4B	1	495.50	5	5 #NV	-1				#NV
KLX 11A	060715 14:04:00	060715 15:29:00	498.00	503.00		3	1	500.50	5	3.90E-10	0				2.80E-09
KLX 11A	060715 15:53:00	060715 17:47:00	503.00	508.00		3	1	505.50	5	1.53E-08	0				1.26E-08
KLX 11A	060715 18:09:00	060715 21:14:00	508.00	513.00		3		510.50							1.09E-08
KLX 11A	060808 15:30:00	060808 17:15:00	513.00			3		515.50		9.44E-07	0				7.79E-07
KLX 11A	060808 17:47:00	060808 19:37:00	518.00	523.00		3		520.50		2.51E-06	0				2.07E-06
KLX 11A	060809 08:08:00	060809 09:41:00	523.00	528.00		3	1	525.50	5	7.00E-09	0				5.77E-09
KLX 11A	060809 10:08:00	060809 11:34:00	528.00	533.00		3	1	530.50	5	3.84E-08	0				3.17E-08
KLX 11A	060809 12:48:00	060809 14:16:00	533.00			3		535.50							6.78E-08
KLX 11A	060809 14:40:00	060809 16:19:00	538.00			3		540.50		1.35E-09	0				1.12E-09
KLX 11A	060809 16:59:00	060809 17:53:00	563.00			3	1	565.50	5	#NV	-1				#NV
KLX 11A	060809 18:17:00		568.00			3		570.50							#NV
KLX 11A	060810 08:06:00	060810 09:34:00	573.00			3		575.50		3.36E-06					2.77E-06
KLX 11A	060810 10:02:00	060810 11:28:00	578.00	583.00		3		580.50		4.56E-06	0				3.76E-06
KLX 11A	060810 12:20:00	060810 14:15:00	583.00			4B		585.50		#NV	-1				#NV
KLX 11A	060810 14:41:00	060810 16:05:00	588.00			4B		590.50							#NV
KLX 11A	060810 16:33:00	060810 18:19:00	593.00			4B		595.50							#NV
KLX 11A	060811 08:01:00	060811 09:26:00	598.00			3		600.50							1.82E-07
KLX 11A	060811 10:29:00	060811 13:01:00	663.00			3		665.50							5.82E-10
KLX 11A	060811 13:30:00	060811 15:14:00	668.00			4B		670.50	5	#NV					#NV
KLX 11A	060811 15:38:00	060811 17:22:00	673.00			4B	1	675.50	5	#NV	-1				#NV
KLX 11A	060811 17:45:00	060811 20:53:00	678.00	683.00		4B	1	680.50	5	#NV	-1				#NV

				value_type_t	hydr cond	formation	width of channe	ı				assumed	leakage f	transmissivity_	value type			
idcode	secup	seclow			move	width b	b	'- tb	I measl tb	u measl tb		sb		tt		c_tt	l_measl_q_s	u_measl_q_s
KLX 11A	308.00	313.00			1.08E-05					uouots	-	-	######################################	6.46E-06		1	2.00E-06	
KLX 11A	313.00	318.00		-1	#NV									1.00E-11		1	1.00E-13	
KLX 11A	318.00	323.00		-1	#NV									1.00E-11		1	1.00E-13	
KLX 11A	343.00	348.00		0	3.22E-08									3.58E-09		1	1.00E-09	
KLX 11A	348.00	353.00		-1	#NV									1.00E-11		1		
KLX 11A	353.00	358.00		-1	#NV									1.00E-11		1		
KLX 11A	358.00	363.00		-1	#NV									1.00E-11	-1	1	1.00E-13	
KLX 11A	383.00	388.00	0	-1	#NV									1.00E-11	-1	1	1.00E-13	1.00E-11
KLX 11A	388.00	393.00	0	-1	#NV									1.00E-11	-1	1	1.00E-13	1.00E-11
KLX 11A	393.00	398.00	0	-1	#NV									1.00E-11	-1	1	1.00E-13	1.00E-11
KLX 11A	398.00	403.00		0	1.44E-08									2.96E-09	0	1	0.002 .0	
KLX 11A	423.00	428.00		-1	#NV									1.00E-11	-1	1		
KLX 11A	428.00	433.00		-1	#NV									1.00E-11	-1	1	1.00E-13	
KLX 11A	433.00	438.00		-1	#NV									1.00E-11	-1	1	1.00E-13	
KLX 11A	438.00	443.00		0	2.35E-07									1.89E-07		1	9.00E-08	
KLX 11A	442.00	447.00		-1	#NV									1.22E-10		1		
KLX 11A	447.00	452.00		0	5.30E-08									1.37E-08		1	0.002 00	
KLX 11A	452.00	457.00		0	5.50E-08									2.20E-08		1	8.00E-09	
KLX 11A	457.00	462.00		-1	#NV									1.00E-11	-1	1	1.00E-13	
KLX 11A	462.00	467.00		-1	#NV									1.00E-11	-1	1	1.00E-13	
KLX 11A	483.00	488.00		-1	#NV									1.00E-11	-1	1	1.00E-13	
KLX 11A	488.00	493.00		-1	#NV									1.00E-11	-1	1		
KLX 11A	493.00	498.00		-1	#NV									2.60E-10		1	0.00=	
KLX 11A	498.00	503.00		0	1.40E-08									2.54E-09		1	8.00E-10	
KLX 11A	503.00	508.00		0	6.30E-08 5.45E-08									1.08E-08 1.30E-08		1	7.00E-09 7.00E-09	
KLX 11A	508.00	513.00		U												1		
KLX 11A KLX 11A	513.00 518.00	518.00 523.00		0	3.90E-06 1.04E-05									4.04E-06 4.66E-06		1	2.00E-06 2.00E-06	
KLX 11A KLX 11A	523.00	528.00		0	2.89E-08									4.24E-08		<u>!</u> 1		
KLX 11A KLX 11A	528.00	533.00		0	1.59E-07									6.70E-08		1		
KLX 11A KLX 11A	533.00	538.00		0	3.39E-07									3.74E-07		1		
KLX 11A	538.00	543.00		0	5.60E-09									4.05E-09		1	1.00E-09	
KLX 11A	563.00	568.00		-1	#NV									1.00E-11	-1	1	1.00E-03	
KLX 11A	568.00	573.00		-1	#NV									1.00E-11	-1	1		
KLX 11A	573.00	578.00		0	1.39E-05									1.50E-05		1		
KLX 11A	578.00	583.00		0	1.88E-05									1.03E-05		1		
KLX 11A	583.00	588.00		-1	#NV									1.16E-11	0	1	9.00E-12	
KLX 11A	588.00	593.00		-1	#NV						1			1.00E-11	-1	1	1.00E-13	
KLX 11A	593.00	598.00		-1	#NV									4.24E-12	0	1		
KLX 11A	598.00	603.00		0	9.10E-07									3.76E-07		1		
KLX 11A	663.00	668.00		0	2.91E-09									1.34E-10		1	8.00E-11	
KLX 11A	668.00	673.00		-1	#NV									1.17E-11	0	1	9.00E-12	
KLX 11A	673.00	678.00	0	-1	#NV									8.98E-11	0	1	5.00E-11	2.00E-10
KLX 11A	678.00	683.00	0	-1	#NV									8.40E-11	0	1	6.00E-11	1.00E-10

							le	eakage_c	hydr_cond_	value_type_	I_measl_k	u_measl_	spec_storage_	assumed_s					
idcode	secup	seclow	storativity_s	assumed_s	bc_s	ri	ri_index o	eff	ksf	ksf	sf	ksf	ssf	sf	С	cd	skin	dt1	dt2
KLX 11A	308.00	313.00	1.00E-06	1.00E-06		60.40	1								3.46E-10	3.8E-02	20.10	3.33	12.15
KLX 11A	313.00	318.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	#NV
KLX 11A	318.00	323.00		1.00E-06		#NV	#NV								#NV	#NV	#NV	#NV	
KLX 11A	343.00	348.00	1.00E-06	1.00E-06		#NV	1								1.29E-10	1.4E-02		#NV	
KLX 11A	348.00	353.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	353.00	358.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	358.00	363.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	383.00	388.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	388.00	393.00	1.00E-06	1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	393.00	398.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	398.00	403.00		1.00E-06		#NV	-1								1.95E-11	2.1E-03			
KLX 11A	423.00	428.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	428.00	433.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	433.00	438.00	1.00E-06	1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	438.00	443.00		1.00E-06		51.60	0								2.35E-11	2.6E-03			
KLX 11A	442.00	447.00		1.00E-06		4.25	-1								3.83E-11	4.2E-03		0.95	
KLX 11A	447.00	452.00		1.00E-06		26.77	0								1.32E-11	1.5E-03			
KLX 11A	452.00	457.00		1.00E-06		30.14	0								1.10E-11	1.2E-03			
KLX 11A	457.00	462.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	462.00	467.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	483.00	488.00		1.00E-06		#NV	#NV								#NV	#NV		#NV	
KLX 11A	488.00	493.00		1.00E-06		#NV	#NV								#NV	#NV	#NV	#NV	
KLX 11A	493.00	498.00		1.00E-06		11.11	0								1.19E-11	1.3E-03			
KLX 11A	498.00	503.00		1.00E-06		#NV	-1								2.22E-11	2.4E-03		#NV	
KLX 11A	503.00	508.00	1.00E-06	1.00E-06		25.23	1								7.70E-10	8.5E-02			
KLX 11A	508.00	513.00		1.00E-06		8.52	1								1.78E-11	2.0E-03		0.70	
KLX 11A	513.00	518.00		1.00E-06		110.94	0								4.90E-10	5.4E-02		1.15	
KLX 11A	518.00	523.00 528.00		1.00E-06		114.97	0								1.17E-09	1.3E-01			
KLX 11A	523.00			1.00E-06		35.51	-1								4.63E-11	5.1E-03			
KLX 11A	528.00 533.00	533.00 538.00		1.00E-06 1.00E-06		39.81 61.20	0								2.26E-11 2.96E-11	2.5E-03		1.09 #NV	
KLX 11A KLX 11A	533.00	538.00		1.00E-06 1.00E-06		19.74	-1								1.90E-11	3.3E-03 2.1E-03		#NV	
KLX 11A KLX 11A	563.00	568.00		1.00E-06		#NV	#NV				1				#NV	2.1E-03 #NV		#NV	
KLX 11A KLX 11A	568.00	573.00		1.00E-06 1.00E-06		#NV	#NV				1				#NV	#NV #NV		#NV	
KLX 11A	573.00	578.00		1.00E-06		154.00	#14.0				1				7.68E-10	8.5E-02			
KLX 11A KLX 11A	578.00	583.00	1.00E-06	1.00E-06		140.19	0								1.40E-09	1.5E-01	5.59	0.33	
KLX 11A KLX 11A	583.00	588.00		1.00E-06		8.22	1				1				1.40E-09 1.23E-11	1.4E-03			
KLX 11A KLX 11A	588.00	593.00		1.00E-06		#NV	#NV				1				#NV	#NV	-0.00 #NV	#NV	
KLX 11A KLX 11A	593.00	598.00		1.00E-06		6.22	0				+				1.89E-11	2.1E-03			
KLX 11A KLX 11A	598.00	603.00		1.00E-06		29.55	1				+				1.23E-10	1.4E-02			
KLX 11A KLX 11A	663.00	668.00		1.00E-06		8.42	1								3.94E-11	4.3E-02			
KLX 11A	668.00	673.00		1.00E-06		7.91	0								1.65E-11	1.8E-03		6.71	
KLX 11A KLX 11A	673.00	678.00		1.00E-06		13.36	0				1				1.19E-11	1.3E-03		2.36	
KLX 11A KLX 11A	678.00	683.00		1.00E-06		20.64	0								1.19E-11	1.7E-03			
NLA LIA	078.00	003.00	1.00E-06	1.00⊑-06		20.04	U						1	1	1.5∠⊑-11	1.7⊑-03	-0.32	1.95	10.97

	1	1		T			1	tranamiaaivitu t	otorotivity o	value tune t					transmissivity t	valua tuna t		storativity_s_	flour dim	
idcode		seclow	t1	t2	dtod	4400	p horner	transmissivity_t nlr	nlr	nlr		a nl=	سام اما	akin nir	transmissivity_t					comment
				ιz	ater	atez		-		_mr	bc_t_nlr	c_nir	ca_nir	SKIII_IIII	_grf		c_t_grf			Jonnent
KLX 11A	308.00						2867.5								1.49E-06	0 0		1.00E-06	2.2	
KLX 11A	313.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	318.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	343.00						#NV								3.58E-09	0 0		1.00E-06	1.76	
KLX 11A	348.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	353.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	358.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	383.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	388.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	393.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	398.00						3712.4								#NV	0 0		1.00E-06	#NV	
KLX 11A	423.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	428.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	433.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	438.00						4087.3								2.77E-08	0 0		1.00E-06	2.2	
KLX 11A	442.00						#NV								1.20E-10	0 0		1.00E-06	2.23	
KLX 11A	447.00						4174.5								#NV	0 0		1.00E-06	#NV	
KLX 11A	452.00						4220.6								#NV	0 0		1.00E-06	#NV	
KLX 11A	457.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	462.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	483.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	488.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	493.00						#NV								#NV	0 0		1.00E-06	#NV	
KLX 11A	498.00						4650.5								#NV	0 0		1.00E-06	#NV	
KLX 11A	503.00						4687.3								7.87E-09	0 0		1.00E-06	2.1	
KLX 11A	508.00						4738.0								1.30E-08	0 0		1.00E-06	1.86	
KLX 11A	513.00						4794.0								#NV	0 0		1.00E-06	#NV	
KLX 11A	518.00						4837.1								#NV	0 0		1.00E-06	#NV	
KLX 11A	523.00						4881.0								#NV	0 0		1.00E-06	#NV	
KLX 11A	528.00						4932.1								3.14E-09	0 0		1.00E-06	3.0	
KLX 11A	533.00						4980.7								2.78E-08	0 0		1.00E-06	2.3	
KLX 11A	538.00						5028.7								#NV	0 0		1.00E-06	#NV	
KLX 11A	563.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	568.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	573.00						5350.3								#NV	0 0		1.00E-06	#NV	
KLX 11A	578.00						5397.7								4.15E-06	0 0		1.00E-06	2.1	
KLX 11A	583.00						#NV								2.55E-10	0 0		1.00E-06	1.4	
KLX 11A	588.00						#NV								#NV	-1 0		1.00E-06	#NV	
KLX 11A	593.00						#NV								#NV	0 0		1.00E-06	#NV	
KLX 11A	598.00						5583.6								#NV	0 0		1.00E-06	#NV	
KLX 11A	663.00						#NV								#NV	0 0		1.00E-06	#NV	
KLX 11A	668.00						#NV								5.67E-11	0 0		1.00E-06	1.6	
KLX 11A	673.00						#NV								#NV	0 0		1.00E-06	#NV	
KLX 11A	678.00	683.0	0				#NV								#NV	0 0		1.00E-06	#NV	

Tal	ble		ole_test_obs sections of single hole test
Column	Datatype	Unit	Column Description
site	CHAR	Onit	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)

idcode	start date	stop_date	secup	seclow	section no ob	s_secup	obs seclow	pi above	pp_above	pf above	pi below	pp_below	pf below	comments
KLX 11A	060629 14:32:00	060629 16:40:00	103.00	203.00		204.00	992.29	915		917	1872		1872	
KLX 11A	060629 18:03:00	060629 20:21:00	203.00			304.00		1846	1846			2807	2807	
KLX 11A	060630 09:15:00	060630 11:12:00	303.00			404.00		2777	2777	2778	3741	3741	3741	
KLX 11A	060630 13:11:00	060630 15:20:00	403.00	503.00		504.00		3712	3712			4675		
KLX 11A	060701 08:47:00	060701 10:50:00	503.00			604.00	992.29	4641	4641	4642		5604	5599	
KLX 11A	060701 12:14:00	060701 15:43:00	603.00	703.00		704.00	992.29	5577	5578		6532	6531	6530	
KLX 11A	060701 17:09:00	060702 01:32:00	703.00	803.00		804.00	992.29	6507	6506	6502	7453	7452		
KLX 11A	060702 09:11:00	060702 13:33:00	803.00	903.00		904.00	992.29	7425	7426		8452	8445		
KLX 11A	060702 14:45:00	060702 16:49:00	876.00	976.00		977.00	992.29	8100	8100			9487		
KLX 11A	060704 08:19:00	060704 09:46:00	103.00	123.00		124.00	992.29	918			1123	1123		
KLX 11A	060704 10:31:00	060704 11:54:00	123.00	143.00		144.00	992.29	1106	1110					
KLX 11A	060704 12:49:00	060704 14:32:00	143.00	163.00		164.00	992.29	1293	1294					
KLX 11A	060704 15:05:00	060704 16:33:00	163.00	183.00		184.00	992.29	1480	1482	1483	1686	1686		
KLX 11A	060704 17:12:00	060704 18:14:00	183.00	203.00		204.00	992.29	#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060704 18:50:00	060704 19:46:00	203.00	223.00		224.00	992.29	#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060705 08:38:00	060705 10:07:00	223.00	243.00		244.00	992.29	2034	2034	2036	2246	2246		
KLX 11A	060705 10:48:00	060705 12:22:00	243.00	263.00		264.00		2221	2221	2221	2434	2434		
KLX 11A	060705 13:18:00	060705 14:44:00	263.00			284.00		2406	2407	2407	2622	2622		
KLX 11A	060705 15:25:00	060705 16:51:00	283.00	303.00		304.00		2588	2588	2588	2809	2809		
KLX 11A	060705 17:25:00	060705 18:49:00	303.00	323.00		324.00	992.29	2775	2775			2995		
KLX 11A	060705 19:21:00	060706 00:42:00	323.00	343.00		344.00	992.29	2961	2961	2961	3182	3182		
CLX 11A	060706 08:48:00	060706 10:30:00	343.00	363.00		364.00	992.29	3148	3148		3367	3367	3368	
CLX 11A	060706 11:03:00	060706 12:55:00	363.00	383.00		384.00	992.29	3335	3335	3335		3555		
KLX 11A	060706 13:34:00	060706 15:02:00	383.00	403.00		404.00	992.29	3522	3522	3522	3742	3742		
KLX 11A	060706 15:54:00	060706 17:22:00	403.00			424.00		3708			3928			
KLX 11A	060706 17:56:00	060706 19:21:00	423.00	443.00		444.00		3894	3894	3894	4114	4114		
KLX 11A	060707 08:32:00	060707 10:01:00	443.00	463.00		464.00		4078	4078		4297	4297	4297	
CLX 11A	060707 10:33:00	060707 12:34:00	463.00	483.00		484.00	992.29	4265	4265	4265		4485		
KLX 11A	060707 13:12:00	060707 14:44:00	483.00	503.00		504.00	992.29	4455	4455	4455	4673	4673		
KLX 11A	060707 15:12:00	060707 16:39:00	503.00	523.00		524.00	992.29	4642	4642		4859			
KLX 11A	060707 17:07:00	060707 18:30:00	523.00	543.00		544.00	992.29	4829	4829	4829	5046	5046		
KLX 11A	060707 19:07:00	060707 10:00:00	543.00	563.00		564.00	992.29	5015	5015		5231	5231	5229	
CLX 11A	060708 08:58:00	060708 10:21:00	563.00	583.00		584.00	992.29	5201	5202		5416			
CLX 11A	060708 10:53:00	060708 12:23:00	583.00			604.00		5388	5389	5389	5610			
CLX 11A	060708 13:17:00	060708 14:41:00	603.00			624.00	992.29	5576						
CLX 11A	060708 15:12:00	060708 16:39:00	623.00	643.00		644.00	992.29	5762	5762		5985	5986		
CLX 11A	060708 17:11:00	060708 18:34:00	643.00			664.00	992.29	5949						
KLX 11A	060708 19:06:00	060709 08:39:00	663.00	683.00		684.00	992.29	6135				6338		
KLX 11A	060709 09:11:00	060709 10:40:00	683.00	703.00		704.00	992.29	6319	6319			6541	6536	
KLX 11A	060709 11:08:00	060709 13:27:00	703.00	723.00		724.00	992.29	6506	6506			6712		
KLX 11A	060709 13:58:00	060709 15:13:00	723.00	743.00		744.00		#NV	#NV	#NV	#NV	#NV		
KLX 11A	060709 15:45:00	060709 16:56:00	743.00	763.00		764.00	992.29	#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060709 17:25:00	060709 18:10:00	763.00	783.00		784.00		#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060709 18:43:00	060709 20:01:00	783.00	803.00		804.00	992.29	#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060710 08:19:00	060710 09:15:00	803.00	823.00		824.00	992.29	#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060710 09:45:00	060710 03:13:00	823.00	843.00		844.00	992.29	#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A KLX 11A	060710 09:45:00	060710 10:37:00	843.00	863.00		864.00	992.29	7800	7801	7801	8092	8086		
KLX 11A	060710 11:10:00	060710 13:24:00	863.00	883.00		884.00		#NV	#NV	#NV	#NV	#NV	#NV	
KLX 11A	060710 14:04:00	060710 14:30:00	303.00			309.00		2778						
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KLX 11A	KLX 11A	060808 17:47:00	060808 19:37:00	518.00	523.00		524.00	992.29	4789	4789	4789	4864	4866	4865	
KLX 11A	KLX 11A			523.00			529.00	992.29	4831	4831	4831	4907	4907	4907	
KLX 11A	KLX 11A	060809 10:08:00	060809 11:34:00	528.00			534.00	992.29	4879	4879	4879	4954	4954	4955	
KLX 11A	KLX 11A	060809 12:48:00	060809 14:16:00	533.00	538.00		539.00	992.29	4927	4927	4927	5002	5002	5002	
KLX 11A	KLX 11A	060809 14:40:00	060809 16:19:00	538.00	543.00		544.00	992.29	4974	4974	4974	5049	5049	5049	
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