

UNHCR BOREHOLE LOG

WASH actors must ensure that a drilling log, development log, constant discharge pump test, and step drawdown pump test are completed for every borehole installed in the refugee setting. Copies should be kept by the drilling agency, the WASH partner, national regulatory authorities, and UNHCR.

A) Agency information							
Drilling Agency:				Drilling rig make and model:			
Drilling Officer:				Drilling fluid used:			
Contact details:				Drilling bit sizes:			
Name of Geologist:				Date started:			
Drilling method:				Date completed:			
B) Borehole location							
District:				Coordinates:			
Sub-district:				Latitude:			
Village / Camp:				Longitude:			
Location:				Elevation:			
Depth (m)	Time (hh: mm)	Description (geology, colour, density, hardness, gradations, angularity, odour, fragments, lamination etc.)	Acid test (reaction to 5% HCl acid)	Condu			
0m							
2m							
4m							
6m							
8m							
10m							
12m							
14m							
16m							
18m							
20m							
22m							
24m							
26m							
28m							
30m							
32m							
34m							
36m							
38m							
40m							
42m							
44m							
46m							
48m							
50m							

THIS DOCUMENT HAS BEEN SUPERSEDED.
PLEASE USE THE UNHCR WELL CONSTRUCTION (EXCEL) TOOL FOR THE WELL LOG AND PUMP TEST DATA.
<http://wash.unhcr.org/download/unhcr-well-construction/>

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C) Borehole construction details		
Borehole diameter:	<input type="text"/>	mm
Casing / screen diameter:	<input type="text"/>	mm
Screen / slot size:	<input type="text"/>	mm
Sediment formation		
Head casing length:	<input type="text"/>	m
Casing length:	<input type="text"/>	m
Screen length:	<input type="text"/>	m
Gravel pack length:	<input type="text"/>	m
Gravel pack volume	<input type="text"/>	litres
Gravel pack size:	<input type="text"/>	mm
Gravel pack type:	<input type="text"/>	
Grout seal length:	<input type="text"/>	m
Total borehole depth:	<input type="text"/>	m
Hard rock formation		
Head casing length:	<input type="text"/>	m
Casing length:	<input type="text"/>	m
Screen length:	<input type="text"/>	m
Grout seal length:	<input type="text"/>	m
Total borehole depth:	<input type="text"/>	m
Yield		
Static water level:	<input type="text"/>	m
Dynamic water level:	<input type="text"/>	m
Production yield:	<input type="text"/>	m ³ /hr
Conductivity:	<input type="text"/>	µS/cm
Equipping		
Pump type:	<input type="text"/>	
Pump setting depth:	<input type="text"/>	m
Centralizers:	<input type="text"/>	Y/N
Rising main material:	<input type="text"/>	
Rising main diameter:	<input type="text"/>	mm

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D) Remarks

E) Sketch plan of borehole location (show any nearby buildings/features and the north direction)

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F) Borehole construction sketch (show dimensions)

H) Constant duration pumping test

Boreholes that will be equipped with handpumps need only be subjected to a constant discharge pump test for 12 hours. Production boreholes that will be motorized must be tested for 48 hours.

PUMPING					RECOVERY			
Time	Pumping time (minutes)	Water level (m)	Drawdown (m)	Discharge (l/s)	Time	Recovery time (minutes)	Water level (m)	Residual drawdown (m)
	0							
	3							
	5							
	10							
	15							
	20							
	30							
	40							
	50							
	(1H) 60							
	80							
	100							
	(2H) 120							
	140							
	160							
	(3H) 180							
	210							
	(4H) 240							
	270							
	(5H) 300							
	330							
	(6H) 360							
	(7H) 420							
	(8H) 480							
	(9H) 540							
	(10H) 600							
	(11H) 660							
	(12H) 720							
	(13H) 780							
	(14H) 840							
	(16H) 960							
	(18H) 1080							
	(20H) 1200							
	(22H) 1320							
	(24H) 1440							
	(32H) 1920							
	(40H) 2400							
	(48H) 2880							
Discharge rate (l/s):					Observations:			
Duration (hours):								

I) Step drawdown pumping test

Three constant discharge steps must be selected with the third step being 20% greater than the design yield. The duration of each step is 2 hours.

STEP n° :		1			Discharge rate (l/s) :				Pumping duration :		2 hours	
PUMPING					RECOVERY							
Time	Pumping time (minutes)	Water level (m)	Drawdown (m)	Discharge (l/s)	Time	Recovery time (minutes)	Water level (m)	Residual drawdown (m)				
	0											
	1											
	2											
	3											
	5											
	10											
	15											
	20											
	30											
	40											
	50											
	(1H) 60											
	80											
	100											
	(2H) 120											

STEP n° :		2			Discharge rate (l/s) :				Pumping duration :		2 hours	
PUMPING					RECOVERY							
Time	Pumping time (minutes)	Water level (m)	Drawdown (m)	Discharge (l/s)	Time	Recovery time (minutes)	Water level (m)	Residual drawdown (m)				
	0											
	1											
	2											
	3											
	5											
	10											
	15											
	20											
	30											
	40											
	50											
	(1H) 60											
	80											
	100											
	(2H) 120											

STEP n° :		Discharge rate (l/s) :			Pumping duration :		2 hours	
PUMPING					RECOVERY			
Time	Pumping time (minutes)	Water level (m)	Drawdown (m)	Discharge (l/s)	Time	Recovery time (minutes)	Water level (m)	Residual drawdown (m)
	0							
	1							
	2							
	3							
	5							
	10							
	15							
	20							
	30							
	40							
	50							
	(1H) 60							
	80							
	100							
	(2H) 120							

Observations:

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J) Hydrogeologist's report (include graphs of constant discharge and step drawdown tests)