

Sondex

DESCRIPTION

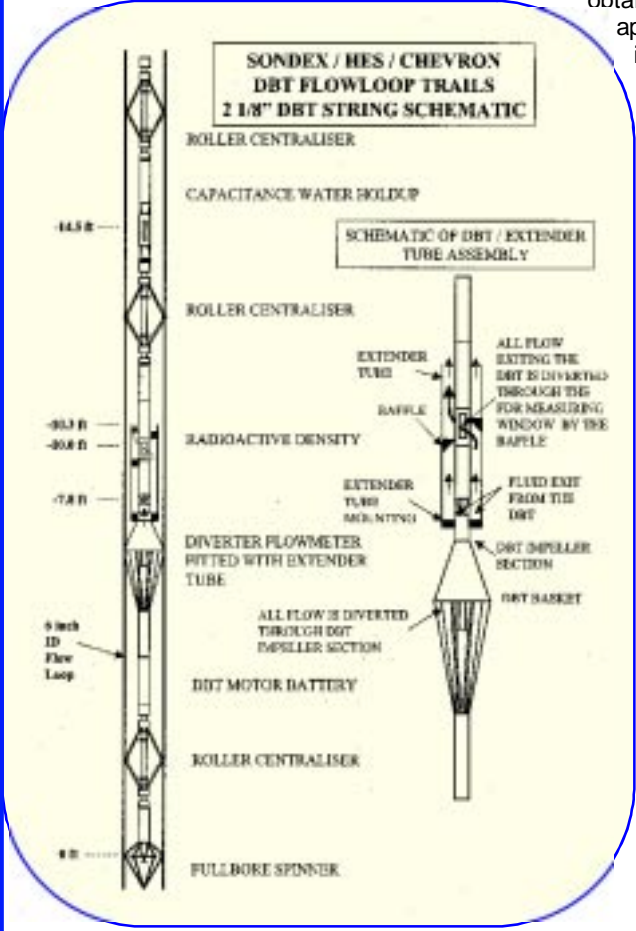
The Sondex Diverter Basket Tool is used to divert all the flow in the wellbore through a small diameter spinner section. By reducing the flow area the fluid velocity is increased which makes the flowmeter able to detect low volumetric flowrates. Another advantage of using the DBT is that by forcing all the fluid to pass through the spinner housing we can then channel it through the measuring window of a radioactive density tool by using an extender tube and baffle. In multiphase flow we can thus obtain more accurate representations of true flow. This is especially applicable to low rate and inclined wells and this has been verified in the field.

FLOW LOOP CHARACTERISATION

This combination of diverter tool and extender tube with baffle has been flow loop characterised. At flowrates above about 200 BPD slip is limited and approaches zero. In this situation apparent holdup through the density tool and water cut are the same. This means that by removing slip velocity (which is often an estimation) we can calculate zonal phase flowrates by simply multiplying total flow by water cut and making PVT corrections.

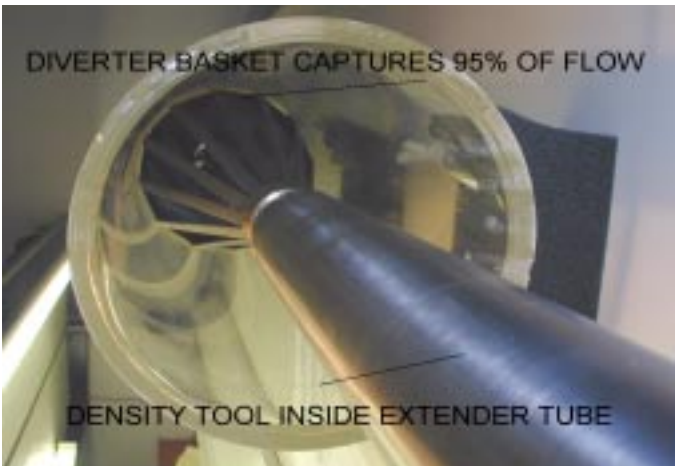
Below 200 BPD there is some slip. In this case flow loop derived characterisation charts (available from Sondex) are used to relate density tool apparent holdup to water cut.

The flowloop characterisation showed that even when there is a slight leak of the basket then the water cut measurements are valid.



SPECIFICATIONS – DBT w/Extender Tube

DBT Diameter	1 11/16"	2 1/8"
Minimum Flowrate	25bpd	40bpd
Maximum Flowrate	1500bpd	2250bpd
Water Cut accuracy <200bpd	See chart below	
Water Cut accuracy >200bpd	+/- 6%	
Water Cut accuracy >500bpd	+/- 3%	
Effect of Deviation Change	<10%	



DBT with Extender Tube during Flow Loop Characterisation

