Abstract

METHOD AND APPARATUS FOR CONTROLLING FLUID FLOW USING MOVABLE FLOW DIVERTER ASSEMBLY

Apparatus and methods for controlling fluid flow through an oilfield tubular positioned in a wellbore extending through a subterranean formation. Fluid flow is autonomously controlled in response to change in fluid characteristic, such as density or viscosity. In one embodiment, a fluid diverter is movable between an open and closed position in response to fluid density change and operable to restrict fluid flow through a valve assembly inlet. The diverter can be pivotable, rotatable or otherwise movable in response to fluid density change. In one embodiment, the diverter is operable to control a fluid flow ratio through two valve inlets. The fluid flow ratio is used to operate a valve member to restrict fluid flow through the valve. In other embodiments, the fluid diverter moves in response to a change in the fluid to affect fluid flow patterns in a tubular, the change in flow pattern operating a valve assembly.

Fig. 1