ABSTRACT

SUBSEA WELLHEAD APPARATUS

Subsea wellhead apparatus is disclosed in which a hanger is adapted to be lowered into and landed in a predetermined orientational and longitudinal position within the bore of a wellhead housing installed on a subsea well in order to suspend a tubing string within the well bore. The hanger has a passageway with one adapted to connect with a tube extending downwardly into the well bore for connection with an operator for a subsurface safety valve in the tubing string, and another end which connects with the outer side of the hanger opposite the bore of the housing. The housing has a passageway therethrough with one end in general alignment with the other end of the passageway in the hanger to form a continuation thereof when the hanger is landed in the housing. A body on the outer side of the housing has passageway means with one end in general alignment with the other end of the housing passageway and another end for connection with a control line external to the housing. Flow of control fluid to and from the valve operator is controlled by a valve which includes a closure member in the hanger passageways position to be opened by the inner end of a stem mounted in the body for longitudinal reciprocation within the housing passageway to open the valve and hold it open so as to form a confined flow path between the hanger passageway and the passageway means in the body which connects with the control line.

Figure 1