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IMPROVED METHODS AND SYSTEMS FOR SUBTERRANEAN MULTILATERAL WELL DRILLING AND COMPLETION

ABSTRACT OF THE DISCLOSURE

Improved methods and systems for creating a multilateral well and improved multilateral well structures. In one aspect of the present invention, the method comprises the steps of: (1) setting a diverter at a prescribed position and a prescribed orientation in a main well flow conductor located within a main wellbore, (2) boring through a sidewall of the main well flow conductor and into a material surrounding the main well flow conductor, the boring creating a window having a particular shape in the sidewall, the orientation of the diverter determining a lateral position of the window in the main well flow conductor, a lateral wellbore thereby being formed in the material and extending from the main wellbore, (3) lining the lateral wellbore with a liner, the liner having an interface end, the interface end adapted to contact a periphery of the window in the sidewall and (4) cementing the liner in place within the lateral wellbore, the step of cementing creating a pressure-bearing seal between the periphery of the window and the interface end of the liner. The method allows multiple lateral wellbores to be joined to the main wellbore and provides for connectivity among main and lateral wellbores, pressure-bearing sealing of joints to allow selective isolation of one or more wellbores or portions thereof and subsequent wellbore access for rework or other purposes.

Fig. 4

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