swept into the production tubing by installing a sand screen on the end of the production tubing. The wellbore in an annular area between the screen and the casing is then filled with a relatively large grain sand or ceramic proppant (i.e., "gravel"). The gravel prevents the fine sand from packing off around the production tubing and screen, and the screen prevents the large grain sand from entering the production tubing.

Gravel pack systems generally include a packer that is set to seal and anchor the gravel pack system, and the production tubing, in place within the perforated wellbore. Currently, workstring tubing is plugged below the packer and pressure applied to the tubing to set the packer. The tubing is raised afterward to position the tubing for gravel pack pumping operations. Unfortunately, this raising of the gravel pack system while the tubing is plugged can lead to a pressure differential between components above and below the packer. This pressure differential can pull parts of the formation inward toward the wellbore, leading to bridging off or collapse of the formation around the screen of the gravel pack system.

SUMMARY OF INVENTION

According to a first aspect of the present invention, there is provided a completion system, comprising:

an outer completion string having at least one packer disposed thereon;

a service tool arranged within the outer completion string and releasably attached to the packer, wherein the service tool comprises an inner tube that defines a valve conduit; and

a valve disposed in the service tool, wherein the valve is movable between a first position and a second position, wherein the first position allows fluid to flow from tubing coupled to the service tool above the packer into an annulus outside the service tool below the packer, and wherein the second position prevents fluid from the tubing from entering the annulus.

According to a second aspect of the present invention, there is provided a method comprising:

directing a fluid flow from workstring tubing coupled to a completion system into a space between the service tool and an outer completion string disposed around the service tool;

directing the fluid flow from the space between the service tool and the outer completion string into an internal portion of the service tool and toward a washpipe disposed at a bottom portion of a service tool, when a valve of the service tool is in a first position; and

blocking the fluid flow from entering the internal portion of the service tool when the valve is in a second position.

According to a third aspect of the present invention, there is provided a gravel pack system, comprising:

a service tool, wherein the service tool comprises:

a washpipe disposed at an end of the service tool;

a crossover port disposed in a wall of the service tool that enables fluid to flow between workstring tubing coupled to an upper portion of the service tool and a space between the service tool and an outer completion string; and

a valve disposed in the wall of the service tool that directs fluid from the space between the service tool and the outer completion string into the service tool and toward the washpipe when the valve is open.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present disclosure and its features and advantages, reference is now made to the following description, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a schematic partial cross-sectional view of a gravel pack system in a wellbore environment, in accordance with an embodiment of the present disclosure;

FIG. 2 is a schematic view of certain components of the gravel pack system of FIG. 1, in accordance with an embodiment of the present disclosure;

FIG. 3 is a schematic cross-sectional view of the gravel pack system of FIG. 1 with an open pressure maintenance valve, in accordance with an embodiment of the present disclosure;

FIG. 4 is a close up schematic view of the gravel pack system of FIG. 3, in accordance with an embodiment of the present disclosure;

FIG. 5 is a schematic cross-sectional view of the gravel pack system of FIG. 1 with a closed pressure maintenance valve, in accordance with an embodiment of the present disclosure;

FIG. 6 is a close up schematic view of the gravel pack system of FIG. 5, in accordance with an embodiment of the present disclosure;