CLAIMS

What is claimed is:

1. A system for use in a well, comprising:

a gravel packing system deployed in a wellbore and comprising:

a base pipe having a pair of base pipe joints coupled at a base pipe joint connection, the base pipe having a perforated section;

a screen disposed around the base pipe;

a plurality of solid walled tubes disposed along each base pipe joint to deliver a gravel slurry to a desired annulus region around the gravel packing system, wherein the plurality of solid walled tubes of each base pipe joint is coupled across each base pipe joint connection by a bidirectional, chambered sleeve;

a plurality of permeable dehydration tubes positioned to deliver a returning carrier fluid to the perforated section of the base pipe after delivery of the gravel slurry to the desired annulus region;

an annular slurry structure which commingles the gravel slurry received from solid walled tubes of the plurality of solid walled tubes before passing the base pipe joint connection; and

an annular clean fluid structure which commingles the returning carrier fluid received from permeable dehydration tubes of the plurality of permeable dehydration tubes before delivering the returning carrier fluid into the base pipe through the perforated section.

2. The system as recited in claim l, wherein the plurality of solid walled tubes of each base pipe joint is coupled across each base pipe joint connection by a plurality of jumper tubes.

3. The system as recited in claim 1, wherein the plurality of permeable dehydration tubes of each base pipe joint is coupled across each base pipe joint connection by a plurality of corresponding jumper tubes.

4. The system as recited in claim 1, wherein the gravel packing system further comprises an inflow control device positioned to control flow of a fluid into an interior of the base pipe after the fluid passes through the screen.

5. The system as recited in claim l, wherein the gravel packing system comprises a flow control mechanism positioned to control flow of returning carrier fluid into the base pipe through at least one of the perforated section or a flow control device.

6. The system as recited in claim 5, wherein the flow control mechanism comprises a swellable material positioned in a tubing outlet.

7. The system as recited in claim 5, wherein the flow control mechanism comprises a piston movable to selectively block fluid flow.

8. The system as recited in claim 5, wherein the flow control mechanism comprises a sliding sleeve to selectively restrict flow through the perforated section.

9. The system as recited in claim l, wherein the annular slurry structure and the annular clean fluid structure are on opposite sides of the base pipe joint connection with respect to each other.

10. A method to facilitate formation of a gravel pack, comprising:

delivering a gravel slurry through a plurality of solid walled tubes disposed externally to a base pipe positioned in a wellbore;

discharging the gravel slurry from the plurality of solid walled tubes into an annular structure disposed around the base pipe to commingle the gravel slurry;

flowing the gravel slurry from the annular structure into a plurality of downstream, solid walled tubes that extend across a base pipe joint connection, wherein

flowing comprises flowing the gravel slurry past the base pipe joint connection via a bidirectional, chambered sleeve;

discharging the gravel slurry from at least one of the downstream, solid walled tubes into a surrounding annulus within the wellbore to build the gravel pack;

positioning a plurality of permeable dehydration tubes along the base pipe to receive a returning carrier fluid;

directing the returning carrier fluid from the plurality of permeable dehydration tubes into an annular clean fluid structure;

commingling the returning carrier fluid in the annular clean fluid structure; and

communicating the commingled returning carrier fluid into the base pipe through an opening of the base pipe.

11. The method as recited in claim 10, wherein flowing comprises flowing the gravel slurry past the base pipe joint connection via a plurality of jumper tubes.

12. The method as recited in claim 10, further comprising controlling flow of returning carrier fluid through the opening and into the base pipe via a sliding sleeve.

13. The method as recited in claim 10, further comprising controlling flow of returning carrier fluid through the opening and into the base pipe via a swellable material.

14. The method as recited in claim 10, further comprising controlling flow of returning carrier fluid through the opening and into the base pipe via a piston movable to selectively restrict flow.

15. A system for use in a well, comprising:

a gravel packing system deployed in a wellbore and comprising:

a base pipe having a pair of base pipe joints coupled at a base pipe joint connection, the base pipe having a perforated section;

a screen disposed around the base pipe;

a plurality of solid walled tubes disposed along each base pipe joint to deliver a gravel slurry to a desired annulus region around the gravel packing system;

a plurality of permeable dehydration tubes positioned to deliver a returning carrier fluid to the perforated section of the base pipe after delivery of the gravel slurry to the desired annulus region;

an annular slurry structure which commingles the gravel slurry received from solid walled tubes of the plurality of solid walled tubes before passing the base pipe joint connection; and

an annular clean fluid structure which commingles the returning carrier fluid received from permeable dehydration tubes of the plurality of permeable dehydration tubes before delivering the returning carrier fluid into the base pipe through the perforated section,

wherein at least one of the solid walled tubes extends through the annular clean fluid structure, and at least one of the permeable dehydration tubes extends through the annular slurry structure.