CLAIMS

1. A slurry supply apparatus comprising a blend module that combines two or more flowing component streams to form a blended slurry in a pipe, wherein said blend module comprises a blend module pump and a pipe for each component stream and at least one flow controller in each of at least two of the component pipes to control the flow rate of the components and wherein said component pipes are connected and combined into a single pipe to form the blended slurry stream upstream of said blend module pump, and further comprising:

A) a distribution module comprising at least one distribution module tank and at least one distribution module pump and wherein at least a portion of the blended slurry stream from the blend module flows to the distribution module;

B) an optional feed module, said feed module comprising at least one feed tank for holding raw slurry, at least one circulation loop and a pump in the at least one circulation loop connected to the at least one feed tank, said pump for pumping said raw slurry from the feed tank through the circulation loop and back to the feed tank, wherein the circulation loop further comprises a pipe that supplies only a portion of the raw slurry from the circulation loop to said blend module when the blend module is blending slurry, said circulation loop further comprises a back pressure controller, and a pressure sensor that measures a pressure in the circulation loop that is used to regulate a valve in said back pressure controller to maintain said raw slurry circulating through all of the circulation loop; and

C) an optional analytical module in fluid communication with said blend module and wherein at least a portion of the blended slurry from the blend module flows to and is analyzed in said analytical module, said analytical module comprising one or more analytical apparatuses selected from the group consisting of in-line liquid particle counter, particle size distribution analyzer, pH sensor, hydrogen peroxide sensor, density sensor and conductivity sensor.

2. The apparatus of claim 1, wherein said blend module combines three or more component streams, said blend module comprises, three or more pipes, one pipe for each of said three or more component streams and at least one flow controller in at least three of the pipes to control the flow rate of each of the three or more component streams and wherein first and second pipes of said three or more pipes are combined into a single pipe to form a partially blended slurry stream and a third pipe of said three or more pipes is combined with said single pipe to combine a third component stream with the partially blended slurry stream into a second single pipe.

3. The apparatus of claim 1 wherein said blend module further comprises at least one filter element and wherein said at least one filter element is located downstream of said blend module pump.

4. The apparatus of claim 1 wherein said at least a portion of the blended slurry stream from the blend module flows to the distribution module tank.

5. The apparatus of claim 3 wherein said blended slurry from said at least one filter element flows to the distribution module tank.

6. The apparatus of claim 4 wherein said distribution module further comprises a pipe fluidly connecting the distribution module to the blend module upstream of the blend module pump for the flow of at least a portion of the blended slurry from the distribution module to the blend module.

7. The apparatus of claim 4 wherein said distribution module tank further comprises a pipe fluidly connecting the distribution module tank to the blend module upstream of the blend module pump for the flow of at least a portion of the blended slurry from the distribution module tank to the blend module.

8. The apparatus of claim 3 comprising C) said analytical module wherein said analytical module is in fluid communication with said blend module downstream of said blend module pump.

9. The apparatus of claim 8 wherein said analytical module is in fluid communication with said blend module downstream of said filter element.

10. The apparatus of claim 8 wherein said analytical module is in fluid communication with said blend module upstream of said filter element.

11. The apparatus of claim 8 wherein at least a portion of the blended slurry analyzed in said analytical module returns to the blend module upstream of said blend module pump via a pipe connecting said analytical module and said blend module.

12. The apparatus of claim 1 comprising at least one tank comprising one or more eductors in the bottom portion of said tank.

13. The apparatus of claim 12 wherein said at least one tank further comprises one or more side walls, and piping connected to said one or more eductors, said piping penetrates the one or more side walls in the bottom portion of said at least one tank.

14. The apparatus of claim 1 wherein said at least one distribution module tank further comprises a double exit loop.

15. The apparatus of claim 1 wherein the distribution module further comprises a global loop in fluid communication with said at least one distribution module tank and said at least one distribution module pump, wherein blended slurry in said global loop is continuously or near continuously circulating, while said apparatus is supplying blended slurry to a plurality of tools.

16. The apparatus of claim 1, wherein said distribution module tank comprises one or more tank level indicators, and said blend module blends blended slurry when one of said tank level indicators in said at least one distribution module tank indicates that the level of blended slurry in said at least one distribution module tank is below a previously defined level.

17. The apparatus of claim 16, wherein said blend module will stop blending when one of said tank level indicators in said at least one distribution module tank indicates that the level of blended slurry is at or above a previously defined level.

18. The apparatus of claim 1 wherein the blend module pump is a centrifugal pump.

19. The apparatus of claim 1 comprising B) said feed module.

20. The apparatus of claim 19 comprising one or more level indicators in said at least one feed tank.

21. The apparatus of claim 1 wherein said distribution module further comprises one or more filter elements.

22. The apparatus of claim 21 wherein said distribution module further comprises one or more global loops and wherein at least one of said one or more filter elements is located in at least one of said one or more global loops.

23. The apparatus of claim 22 wherein said distribution module further comprises one or more back pressure controllers and pressure sensors on each of the one or more global loops.

24. The apparatus of claim 23 wherein said distribution module further comprises one or more flow sensors on each of the one or more global loops.

25. The apparatus of claim 1 comprising C) said analytical module, wherein said analytical module comprises in-line dilution equipment upstream of a liquid particle counter or particle size distribution analyzer, and further wherein said liquid particle counter or said particle size distribution analyzer is connected to a downstream waste stream for a diluted sample.

26. The apparatus of claim 1, comprising C) said analytical module wherein said analytical module comprises two or more pH sensors, two or more hydrogen peroxide sensors, two or more density sensors and two or more conductivity sensors.

27. The apparatus of claim 19 wherein said feed module further comprises a liquid particle counter and/or particle size distribution analyzer.

28. The apparatus of claim 1 further comprising one or more strainer components.