Both machines consist of

1. Cell Sorter Unit
2. Waste and sheath tanks
3. Server and Client Computers

Before starting these instruments, the Liquid Waste from the previous days work is emptied and the sheath fluid replenished

**Liquid Waste**

The waste generated by these machines collects by vacuum into a sealed stainless steel tank. This waste is emptied down a dedicated sink, Distel is added to the empty tank before reconnection. Ready to inactivate the next days samples

**Sheath Fluid**

Both machines use a PBS based saline buffer The Sheath Tank should be filled below the metal-seam limit

**Machine Start-up**

The various units are turned on in the following order

Cell Sorter, Server, Client Computer.

**Alignment and Operation**

The collection area should be cleared of obstruction prior to launching BD FACS software. (which initialises the collection robot.)

The pre-stream fluidics functions are applied in the order

Purge, Pulse x5, **Run**

The Purge function removes air from the nozzle volume; Purging sends fluid from the crack-pipe through parallel tubing

The Pulse function operates during Purging and aids the removal of smaller air bubbles. Run turns on the stream.

The alignment of the machine proceeds initially by the alignment of the sort streams with this test pattern on.
The gold micrometer controls align the stream to the waste pipe
The silver micrometer controls align the stream to the laser intercept

**Drop Delay Calibration**

Drop Delay is set using accudrop beads

The entire bead distribution is set to be deflected to the left, while the drop delay is varied with a 3 drop window. When the delay is found approximately, the stringency of the sort decision is changed to 1 drop purity until the correct drop delay is determined

**Blockage**

In the event of a blockage or machine malfunction, the stream and plates are turned off. All surfaces of the sample port and sorting chamber are sprayed with 70% Ethanol prior to restart

Simon McCallum

Review Date  **1st September 2021**

Scheduled review  **1st October 2022**