

## Are There Any Studies Showing That Bladder Pumps Provide Better Quality VOC Data Than Peristaltic Pumps?

If you look at the ASTM Standard D6634 in the selection on purging and sampling devices, it cites several studies that show differences in peristaltic pumps in comparison to other devices. In general, peristaltic pumps can provide good samples under certain conditions for VOCs depending on the nature of the VOCs themselves, how readily they partition out of water and into the air (the Henry's constant for that VOC) and your lift. If the lift is fairly low and you have VOCs that do not partition out readily, you may see virtually no difference between bladder pump and peristaltic pump samples. Whereas, if the lift is greater than 15-20 feet and the VOCs partition out readily, you may see some loss of VOCs from peristaltic pumps. Some states do limit the use of peristaltic pumps for VOCs for that reason. For example, in the Florida SOPs, they limit the use of a peristaltic pump for VOCs and require that the sample be taken from the tubing by removing it from the well and getting the sample. In January 2010, US EPA Region 1 revised their guidelines and specifically included an appendix of low-flow guidelines that includes warnings about the use of peristaltic pumps for VOCs. So, take a look at the literature and your specific conditions; if in doubt, do a comparison of your application using a portable water pump and a peristaltic pump to see if there is a difference.