NEEDLE FLAME TEST

CRITICAL TEST CONDITIONS IDENTIFIED	WHEN TO ACT	SUGGESTED PREVENTIVE ACTION ACTIVITIES
Gas Type	On commission	Obtain Certificate of Analysis on arrival
Dimensions of needle and apparatus parts	On commission	
Chamber background colour	On commission	
Control of air access	Each test	This is a procedural aspect that should be reinforced during staff training. Staff compliance with procedure should be monitored periodically.
Position of needle in relation to the sample	Each individual test	This can be done with gauges and stoppers. The position includes the horizontal and vertical distance as well as the angle.
Flame validation related to the gas supply	When gas bottle changed	Complete verification of performance in relation to the previous bottle. (Suggest that in addition to using copper block, using retained samples with known positive and negative results to confirm consistency of test results)
Flame validation related to copper block verification	Each testing staff to perform very frequently until confidence is gained. Afterwards, as part of normal calibration schedule, and when gas changed.	The copper block verification is intended to assist testing staff to gain assurance that the gas setting will consistently supply the appropriate amount of energy. Setting the flame height is an individual skill acquired by the testing staff. Additionally, different people have different abilities to detect certain areas of the light spectrum. Logically, testing staff should gain experience, and as confidence is increased, the need to check the test set-up by copper block decreases, then becoming an activity that is periodically performed.
Flame validation related to measurement of flame height	Each test	