# Audit tool for MWF quality management

This checklist aims to help audit the management of MWF quality and should be used in conjunction with the UKLA ‘Good Practice Guide for Safe Handling and Disposal of Metalworking Fluids’ (UKLA, 2023).

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| **Item** | **Question** | **Yes No** | **No** |
| **Storage and preparation of MWF** |
| Temperature | Is the MWF concentrate stored above 5oC? |[ ] [ ]
| Dilution | Is water supplied from mains? |[ ] [ ]
|  | Does the water used for dilution of the MWF concentrate meet the manufacturer’s recommendations for pH and hardness? |[ ] [ ]
| **Monitoring the MWF** |
| Concentration | Is the concentration of the MWF checked weekly in each machine? |[ ] [ ]
|  | Is the concentration of MWF recorded to track changes? |[ ] [ ]
|  | Is the concentration within the range advised by the supplier? |[ ] [ ]
| pH | Is the pH of the MWF tested each week? |[ ] [ ]
|  | Is the method used for testing pH appropriate with any equipment used being serviced and calibrated where required? |[ ] [ ]
|  | Is the pH of MWF recorded to track changes? |[ ] [ ]
|  | Is the pH within the range advised by the supplier? |[ ] [ ]
| Appearance | Is there a daily visual check of the appearance of the MWF? |[ ] [ ]
|  | Is the MWF free from unusual odour? |[ ] [ ]
|  | Are there any signs of biofilm formation, tramp oil, foaming, fines swarf and other foreign bodies? |[ ] [ ]
|  | Are the results of these visual checks recorded? |[ ] [ ]
|  | Is tramp oil checked weekly? Should be kept to a minimum (recommended below 2%). |[ ] [ ]
| Metal contamination | Are checks performed on the build-up of swarf and metal fines in the sumps of machines? |[ ] [ ]
| Circulation and flow | Is the MWF free-flowing and fully circulating? For example, if the fluid supply system includes ‘dead-ends’ and ‘dead-legs’, are these cleaned and flushed regularly? |[ ] [ ]
| Monitoring bacterial growth | Are weekly dip slide tests undertaken? |[ ] [ ]
|  | Are dip slide test results consistently below 10,000 CFU/ml (104 CFU/ml)? If so the frequency of dip slide tests can be reduced as long as evidence of the results are retained. |[ ] [ ]
|  | If weekly dip slide tests are not undertaken, are other means used to demonstrate bacteria growth is consistently below 10,000 CFU/ml (104 CFU/ml)? |[ ] [ ]
|  | Are the dip slide test results recorded to track changes? |[ ] [ ]
| Operating temperature | Is the temperature of the sumps in machines measured? |[ ] [ ]
|  | Are MWF temperatures less than 30oC unless required for the performance? |[ ] [ ]
| Procedures | Are documented procedures in place which describe the management of MWF? |[ ] [ ]
|  | Do the procedures describe the actions which need to be taken depending on the monitoring results? |[ ] [ ]
| **Machine usage** |
| Daily checks | Do operators of machines perform daily checks? |[ ] [ ]
|  | Do daily checks cover a visual examination of the MWF? |[ ] [ ]
| **Maintenance of the MWF supply** |
| Cleaning | Are machine sumps and supply lines cleaned when contaminated with biofilm and metal residues? |[ ] [ ]
|  | Are the machine MWF supply systems thoroughly cleaned when the results of dip slide tests demonstrate heavy bacteria/fungal contamination? |[ ] [ ]
|  | Are records kept when the machines are cleaned? |[ ] [ ]