



**CALIBRATION CERTIFICATE**  
 Certificate Number: H00G83ATWV-0  
 Order Number: 222-766



**Customer** Houston Forensic Science Center **Location** 500 Jefferson St **Serial Number** 042780009  
 Jennifer O'Callaghan  
 500 Jefferson St  
 Houston, TX 77002-7300  
**Model** VWR HIGH PERFORMANCE PIPETTOR 5000 µl  
**Next Service** 31.Oct.2024  
**Service Plan** Onsite: Single Channel PM, 3x5 AR

**Inspection** Over All Condition: Good

**Preventive Maintenance:** Piston cleaned and re-greased  
**Adjustment:** No-Adjustment made

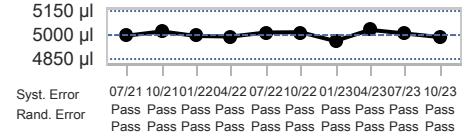
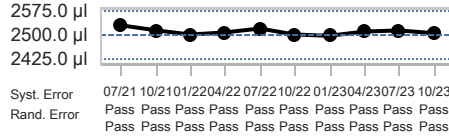
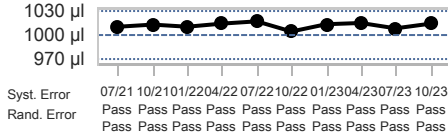
**As left-Passed** Steven Murray 30.Oct.2023

**Conditions** Humidity 47.9 % | 47.9 % **Air Temperature** 20.3 °C | 20.3 °C  
**Air Pressure** 1012.2 hPa | 1012.2 hPa **Water Temperature** 20.3 °C | 20.3 °C  
**Equipment** **Balance** C132316237Next Cal. (30.Nov.2023)Readability (0.0001 g)  
**Climate Monitor** Bar. pressure abs. air pressure (2112149)Next Cal. (01.Dec.2023) | Humidity (2112149)Next Cal. (01.Dec.2023) | Temp (2112149)Next Cal. (01.Dec.2023)  
**Z-Factor** 1.0030 µl/mg  
**Evaporation** 0 mg  
**Specification Type** Custom  
**Pipette Tip** Customer Supplied

| Test Volume (µl) | Weighings |           |           |           |           |
|------------------|-----------|-----------|-----------|-----------|-----------|
|                  | 1         | 2         | 3         | 4         | 5         |
| 1000 µl          | 1019.0 mg | 1009.8 mg | 1011.6 mg | 1008.9 mg | 1008.5 mg |
| 2500.0 µl        | 2510.2 mg | 2501.6 mg | 2488.9 mg | 2497.6 mg | 2495.2 mg |
| 5000 µl          | 4976.3 mg | 4971.5 mg | 4972.6 mg | 4968.6 mg | 4972.0 mg |

| Test Volume (µl) | Mean Volume (µl) | Systematic Error |                |           |               | Random Error |            |             |           | Expanded Uncertainty (µl) | Status |
|------------------|------------------|------------------|----------------|-----------|---------------|--------------|------------|-------------|-----------|---------------------------|--------|
|                  |                  | Error (µl)       | Limit (+/- µl) | Error (%) | Limit (+/- %) | Error (µl)   | Limit (µl) | Error (CV%) | Limit (%) |                           |        |
|                  |                  | (µl)             | (+/- µl)       | (%)       | (+/- %)       | (µl)         | (µl)       | (CV%)       | (%)       |                           |        |
| 1000             | 1015             | 14.59            | 30             | 1.459     | 3             | 4.34         | 30         | 0.4278      | 3         | 12 µl (k=2.37)            | Passed |
| 2500.0           | 2506             | 6.20             | 75             | 0.2478    | 3             | 7.93         | 75         | 0.3165      | 3         | 22 µl (k=2.65)            | Passed |
| 5000             | 4987.1           | -12.88           | 150            | -0.2577   | 3             | 2.77         | 150        | 0.05550     | 3         | 8.7 µl (k=2.16)           | Passed |

**As left History**



Authorized Signatory, Steven Murray  
 30.Oct.2023

**METTLER TOLEDO**  
 ACCREDITED LABORATORY  
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 Oakland, CA 94621