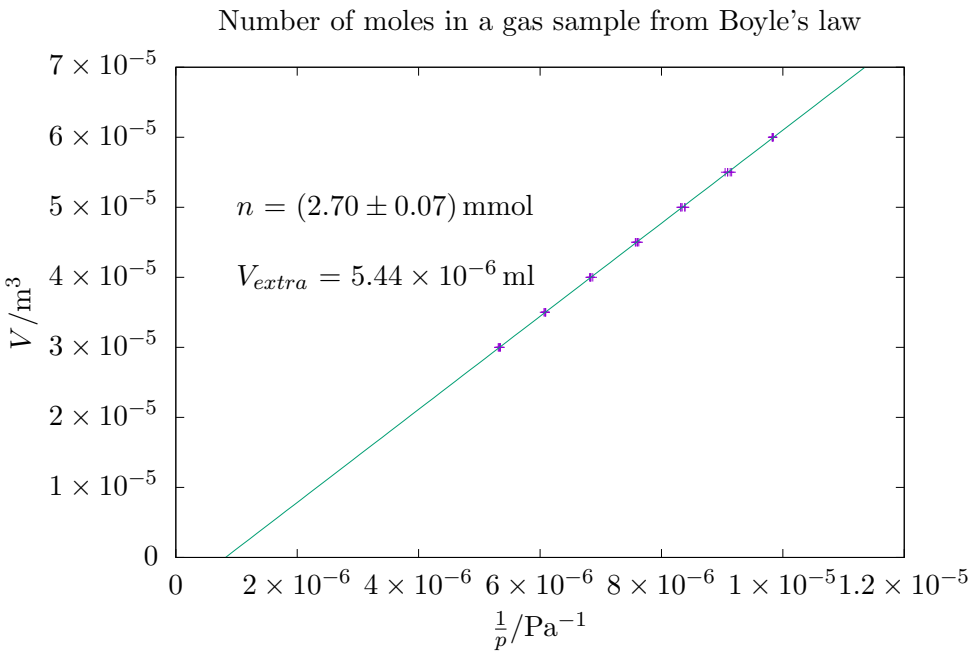

The system has a systematic extra volume V_{extra}, in the tubing outside of the syringe. This has been successfully quantified and negated.

The result for n seems reasonable: a quick back-of-the-envelope calculation, using the molar volume of air at STP as $22.4\,\mathrm{l\,mol^{-1}}$ [1], yields an expected $n \approx \frac{60 \times 10^{-3}}{22.4} = 2.5\,\mathrm{mmol}$.

References

[1] Lower, S. [2017], *General Chemistry: Properties of gases.*