



June 08, 2022

VIA ELECTRONIC MAIL to: All Accounts

Re: *Conformity Assessment Based on Measurement of Uncertainty*

To Whom It May Concern:

In response to a recent A2LA audit, Pinnacle CT (PCT) has identified that a formal statement on *how measurement of uncertainty is applied to conformities* (i.e. pass/fail thresholds) was never conveyed to our clients. Therefore, we would like to take this opportunity to explain how we determine conformity based on measurement of uncertainty. Unless otherwise stated via written communication, this letter will serve as acknowledgement and agreement to this policy.

Policy:

Our laboratory has developed measurements of uncertainties associated with all analyses. No measurement is ever exact, and it is important to consider the impacts the following variables have on the final result – the measuring system, procedure, skill of the operator, environment, etc. For instance, if the measurement of uncertainty for moisture analysis is determined to be $\pm 1\%$, then a measurement of 10.5% moisture would be expressed as:

Moisture = 14.5% \pm 1% (i.e. 13.5%-15.5% at 95% confidence interval)

Conformity pertains to whether a particular measurement falls within a permitted range. If the measurement is close to the outer limits of the range (the measurement of uncertainty) if considered, may cause the result to fall outside of the conformity range. In the example above, if the moisture conformity is <15%, then applying the measurement of uncertainty at the higher end would cause the measurement to fall outside the range of conformity.

Pinnacle CT's policy is to report all measurements without consideration of measurement of uncertainty when assessing conformity. The *only* exception to this rule is when evaluating delta-9-tetrahydrocannabinol (9-THC) concentrations for conformity based on USDA's final rule published on January 19, 2021, which states:

"This final rule requires that laboratories report the MU [measurement of uncertainty] as part of any hemp test results. The rule also includes a definition of "acceptable hemp THC level" to account for the uncertainty in the test results. The reported THC concentration of a sample may not be the actual concentration level in the sample. However, the actual THC concentration is expected to be within the distribution or range calculated when the reported THC concentration is combined with the measurement of uncertainty¹."

Please let us know if you have any questions and we appreciate your continued support.

Thank you,

Karrissa M. Miller
Director of Client Services, Pinnacle CT Inc

¹ <https://www.federalregister.gov/documents/2021/01/19/2021-00967/establishment-of-a-domestic-hemp-production-program>