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Comments from Marlene Moore, Advanced Systems, Inc. An Assessor for ANSI for ISO 14065 GHG protocols as lead assessor and technical assessor in areas of landfill project verifications. I have performed and worked in the measurement world (testing community) since 1972 and currently am a member of the National Conference of Standards Laboratories, Inc (NCSLI) and other related organizations.

The following comments related to the measurements of methane, temperature, pressure and flow to ensure comparability of data from one year to the next.

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The following measurements are critical for short and long term data comparability as presented in Section 6.1 (page 29) indicates the monitoring of flow, temp and pressure and methane concentration.

This section also indicates that equation 5.3 is used for equipment that is internally corrected and equation 5.2 for measurement requiring correction since the equipment is not corrected. This leaves a question related to the traceability of the measurement - See 6.2 below.

section 6.2 QA/QC

footnote 29 page 31 does not correctly reflect international and national standards for measurement. Measurements must be made by a technically competent calibration laboratory. This is demonstrated by accreditation of a calibration laboratory to ensure traceability of the measurement to the SI or relevant reference material. This traceability of measurement ensures comparison of data between organizations and over time. It also requires the calibration laboratory to appropriately present the precision (repeatability) and bias (reproducibility or sometimes referred to accuracy). These terms are referred to as the total error in some documents. Therefore the QA/QC must be clearly stated to ensure consistent understanding.

Footnote 29 indicates a certified calibration laboratory which is not appropriate. An accredited calibration laboratory is the proper term. Some instrument manufacturer's have obtained accreditation status as a calibration organization (within last 5 years), but this has not been implemented in all technical disciplines to date. However it is moving in that direction. Equipment manufacturer's provide the best service for repair and ensuring equipment performance. However traceability is sometimes not well documented and they do use consistent terms with other measurement organizations as defined ISO/IEC 17025 (including: Vocabulary of international metrology - VIM ISO 98).

Section 6.2 indicates +/- 5% threshold calibration for the field check. what does this mean? How do you calculate a 5% threshold calibration? Does this mean that an external methane reference standard (with a stated uncertainty of less than 1%) is measured and found to be within 5% of the amount calculated from the instrument calibration or within 5% of the measured amount of the unit under test?

Page 35 table for DF - indicates 5% margin of error How is this calculated? Is this the bias from the continuous meters value compared to the field measurement unit? or is this a precision and bias measurement where a defined number of measurement are made (> 20) and compared to the continuous unit to calculate a margin of error? Is this a relative amount at a 90% or 95% or other confidence interval. The calculation expected should be defined in the definitions.

Page 41 table indicates T and P are to be measured but it is not stated what is acceptable performance. It also is not stated as what is done and recorded to ensure the manufacturer's units are measuring temperature and pressure correctly when performed by the manufacturer (e.g. traceability of the measurement, conformance to ISO/IEC 17025, etc.).