Accreditation: Sampling and Uncertainty of Sampling

Sampling Uncertainty and Uncertainty of Compliance Assessment

Symposium – BAM, Berlin 15th April 2008

Jeff Ruddle - Accreditation Manager

UKAS - Environment Section

Delivering Confidence

Outline

- **UKAS, EA and accreditation**

- **Should we accredit sampling**

- **How can we accredit sampling**

- **Accreditation and sampling uncertainty**

- **Accreditation and sampling proficiency testing**

Delivering Confidence

UKAS, EA and Accreditation

- **The United Kingdom Accreditation Service (UKAS) is the sole national accreditation body recognised by UK government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services.**

Delivering Confidence

UKAS, EA and Accreditation

- **EA is the European network of nationally recognised accreditation bodies based in the European geographical area.**

- **To ensure transparency of the operations and results of its members**

- **To ensure common interpretation of the standards**

- **To manage a peer evaluation system**

- **To support and promote mutual recognition.**

Delivering Confidence

UKAS, EA and Accreditation

- **Accreditation provides confidence in and organisations:**
    - **Capability**
    - **Competence**
    - **Conformity**

Delivering
  Confidence

Accreditation Process

- **Assessment Team**
- **Accreditation Cycle**
    - **Initial Assessment**
    - **Surveillance/Reassessment**
    - **Unannounced Visits**

Delivering
  Confidence

Accreditation Process

- **Can hold accreditation for sampling solely**
- **Assess Sampling Teams on Site**
    - **Live Sampling**
- **Procedures for Sampling**
- **Staff Interviews**
- **Staff Qualifications**

Delivering
 Confidence

Why Accredit Sampling?

- **High risk site (remote) based activity**
- **Significant impact on uncertainty of data**
- **Professional Judgment**

Delivering
 Confidence

How do we accredit sampling?

- **ISO/IEC 17025:2005**
  - **Usually test and calibration laboratories**
  - **Supported by standards or guidance**
  - **Concerned with how the sampling is planned, sample is taken, stored and distributed.**
- **Examples**
  - **Stack Emissions Sampling**
  - **Drinking Water Sampling**

Delivering Confidence

How do we accredit sampling?

- **ISO/IEC 17020:1998**
  - **Inspection activities**
  - **Professional Judgment**
  - **Concerned with how the decision to take the sample is arrived at and that the sample is taken, stored and distributed properly and how the results are interpreted.**
- **Examples**

Delivering Confidence
  - **Inspection of Buildings for Asbestos**

How do we accredit sampling?

- **Personnel Certification**
    - **ISO/IEC 17024:2003**
    - **Delivered by Certification Bodies**
    - **Certification Bodies can be accredited**
    - **Sector Specific Personnel Certification Schemes**
        - **Stack Sampling**

Delivering
  Confidence

Accreditation and Sampling Uncertainty

- **Is sampling uncertainty a requirement of accreditation?**

- **Is the lab measuring the properties of the sample or of the body the sample was taken from?**

- **Is the measurement technique considered to include sampling?**

Delivering
  Confidence

UKAS
UNITED
KINGDOM
ACCREDITATION
SERVICE

Accreditation and Sampling Uncertainty

- **What happens if the lab is not the sampler?**

- **Is the sampler/modeler/risk assessor responsible for estimating uncertainty of sampling?**

- **ISO/IEC 17020 – Uncertainty not a requirement.**

Delivering
Confidence

UKAS
UNITED
KINGDOM
ACCREDITATION
SERVICE

Accreditation and Sampling PT

- **Proficiency Testing – ISO/IEC 17011**
  - **Laboratories required to participate**
- **Would need to consider current policies.**

Delivering
Confidence

Are we getting ahead of ourselves

- **Awareness and understanding of uncertainty amongst labs customers is low.**

- **No drive to report UoM leads to 'basic' uncertainty budgets.**

- **Modelers and risk assessors often state they have included uncertainty in modeling systems.**

  - **Potential for misuse of guidance**

Delivering
Confidence

Summary

- **Can sampling be accredited?**

- **Should sampling be accredited?**

- **Would sampling uncertainty be a requirement of accreditation?**

- **Would sampling proficiency testing schemes be a requirement of accreditation?**

- **Are we focusing our efforts in the right direction?**

Delivering
Confidence

QUESTIONS

Delivering
Confidence