Deadline of Submission of Comments: 11-Dec-23

Document Number: ANSI/ASB Std 017e2

Document Title: Standard for Metrological Traceability in Forensic Toxicology (2nd Edition)

Comment #	Text Line # (s)	Document Section	Type of Comment E-Editorial T-Technical	Current Document Wording	Proposed Revision	Revision Justification	Final Resolution
1	Foreword	Foreword	E	The second paragraph of the foreword describes substantive changes. It does not include mention of the actual title of the standard changing, replacing "Measurement" with "Metrological."  This substitution is also made throughout the document in several sections. It may also be helpful to provide a brief statement as to why this change was made (e.g., to be in line with current references)	After the first sentence in the second paragraph of the foreword, add "Measurement Traceability" was replaced with "Metrological Traceability" in the title of this standard and throughout the document.	A change to wording in the title of a standard should be made clear in the foreword, along with the other changes deemed as substantive.	ACCEPT:
20		Foreword	Т	calibration of the thermometers was removed from the document	Unclear why removedseems pertinent to traceability as COAs specify recommended stoarge conditions for CRMs		REJECT: Thermometers were removed from this section because thermometers were being used to verify storage conditions, not to establish metrological traceability
83		Foreword	E	2nd paragraph, 3rd sentence - "Some of terms and"	Some of the terms and	Grammar	ACCEPT:
2	11	2	E	For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.	State only "The following references are documents that are indispensable for the application of this standard."	For other forensic toxicology standards currently in the drafting stage, it was recommended that specific editions or dates of publication (with the exception of ILAC/ISO standards) be removed, along with the associated language.	REJECT: The Normative References include both dated and undated standards. Therefore, both sentences are applicable. The "first edition" was removed from the Std 054 reference.
21	pg 1	Footnotes	E	#2 footnote was dropped	renumbering		ACCEPT: Footnotes will be corrected.
39	16	2	E	n/a	refresh footnote numbering	footnotes currently skip from 1 to 3	ACCEPT: Footnotes will be corrected.
85	20-21	2	Т	Standard 054	Delete and move to bibliography.	This standard is only required for a very specific case and is not required for application of the standard as a whole. In particular 054 has no relevance for breath alcohol calibration. (5.3.3)	REJECT: Section 5.3.3 requires that Std 054 be followed. Therefore, it should remain a normative reference.
15	22-90	3	E	Terms and Definitions	Consider looking at the consistency of the wording used for definitions that span multiple ASB documents.	Some definitions are not consistent with other ASB documents.	ACCEPT: A Technical Guidance document for commonly used terms and definitions is being created that will replace the use of the definitions in this document.
40	54	3.8	E	n/a	remove definition of limit of detection	term not used in the document except in the definition of 3.7; common understanding of LOD suffices	REJECT: LOD is referenced in the definition of Decision Point, which may not be a commonly understood term.
41	59	3.9	E	n/a	remove definition of lower limit of quantitation	term not used in the document except in the definition of 3.7; common understanding of LLOQ suffices	REJECT: LLOQ is referenced in the definition of Decision Point, which may not be a commonly understood term.
35	82	3.15	E	3.15 metrological traceability is out of alphabetical order in the Terms and Definitions section. Reference material should also be before Reference standard.	Metrological traceability should be 3.12, moving quantity to 3.13 and so forth on for the following definitions. Reference standard and reference material would also need to switch places making them as 3.15 and 3.16 respectively.		ACCEPT:
42	87	3.16	E	reference material	reference material RM alternatively, spell out both uses of the 'RM' abbreviation	the abbreviation is used in line 167 and footnote 12 on page 6	ACCEPT:
43	121	5.1	E	Forensic science service	5.1.1 Forensic science service	more than one requirement exists within 5.1	ACCEPT:
44	127	5.1	E	Proper handling	5.1.2 Proper handling	more than one requirement exists within 5.1	ACCEPT:
26	127-129	5.1	E	I think this bullent point is supposed to be 5.1. c). "c)" is missing.	Add "c)"		REJECT: "Proper handling and storage procedures which meet or exceed manufacturer's recommendations shall be followed for equipment, certified reference materials, and non-certified reference materials used to establish and maintain metrological traceability." Is not a process to establish Traceability as are a) and b)
88		Footnote 10, Page 4	E	Hyperlink is missing	Add hyperlink	Hyperlinks for other footnotes should also be checked as 13 on page 7 is missing as well. If not intended to be a hyperlink then remove the blue underlined font.	REJECT: All hyperlinks were checked and verified.

45	131	5.2.1	E	5.2.1 If traceability then this calibration shall	5.2 Calibration Service Provider The following apply when traceability of a measurement will be established through the calibration of equipment used to make the measurement. 5.2.1 Calibration shall	both requirements within 5.2 (5.2.1 and 5.2.2) follow the condition described at the beginning of 5.2.1	ACCEPT WITH MODIFICATION: Language was clarified to address comment and align with section 5.3.
3	132	5.2.1	E	"then this calibration shall be performed by an appropriately accredited calibration service supplier"	"then this calibration shall be performed by an accredited calibration service supplier"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	ACCEPT:
16	133	5.2.1	E	calibration shall be performed by an appropriately accredited calibration service supplier that, if available, that is either:"	calibration shall be performed by an appropriately accredited calibration service supplier that, if available, is either:	The word "that" isn't needed twice. Delete one instance.	ACCEPT:
30	133	5.2.1	E	calibration service supplier that, if availalbe, that is either:	calibration service supplier that, if availabbe, is either:	extra "that" is a typo	ACCEPT:
4	140	5.2.2	E	"If an appropriately accredited calibration service supplier"	"If an accredited calibration service supplier"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	ACCEPT WITH MODIFICATION: Language was clarified to address comment and align with section 5.3.
46	140	5.2.2	E	5.2.2 If an appropriately	5.2.2 When not available (as defined above)	brevity preferred for conciseness	ACCEPT WITH MODIFICATION: Language was clarified to address comment and align with section 5.3.
47	142	5.2.2 a)	E	5.2.2 a) perform	5.2.2 a) perform	remove extra space before the word perform	ACCEPT:
48	142	5.2.2 a)	E	5.2.2 a) perform their own evaluation; 5.2.2 b) ensure the external service	5.2.2 a) perform an evaluation to ensure the external service;	combine a) and b) as a) is lacking detail to specify what the FSSP is meant to evaluate and to what criteria; further to match language and pattern of 5.3.2	ACCEPT: Also revised language in 5.2.2 (now 5.3.2) to align with 5.3.2 (now 5.4.2).
54	148	5.3	E	5.3 Reference Materials	5.3 Reference Materials The following apply when traceability of a measurement will be established through the use of reference materials.	all requirements within 5.3 (5.3.1 to 5.3.4) follow the condition described at the beginning of 5.3.4	ACCEPT WITH MODIFICATION: removed "used to establish traceability" from 5.3.4
49	149	5.3.1	E	5.3.1 If available, a CRM shall be obtained	5.3.1 A CRM, whenever available, shall be obtained	places the emphasis on the requirement rather than the conditional	ACCEPT:
36	149	5.3.1	E	It is called out that if a CRM providers isn't covered by ISO 17034 that you need to perform an evaluation. In section b) it is stated to ensure that the supplier meets 17025 requirements. Wouldn't it be acceptable to defer to their certification if they are already ISO 17025 accredited and not require the laboratory to "perform an evaluation".  17025 is an ISO which is concerned with the competence of testing and calibration laboratories. It applies for those that want to assure precision, accuracy and repeatability of results. The accreditation body ensures that all measurements are traceable, and the uncertainty budget claimed by the supplier is a true reflection of the supplier's capability. The scope from this ISO does cover that they are providing items/products that are reference materials. Sometimes 17025 may be a better fit for purpose than the scope of 17034 depending on the type of reference material being prepared. A laboratory performing an audit where an ISO 17025 accrediting agency has allicative and burdensome on the laboratory checking to see if their supplier is providing a good service. The supplier keeping accreditation is proof that they have a quality management system and are following set standards to keep this accreditation. It is best to focus time and energy on suppliers that have no type of certification.	In section 5.3.1. allow for the acceptance of ISO/IEC 17025 accreditation if they have an appropriate scope as a reference material provider.		ACCEPT:
50	158	5.3.2	E	5.3.2 If a CRM is not available	5.3.2 When not available (as defined above)	matches language and pattern of 5.2.2 proposed revision	ACCEPT WITH MODIFICATION: Language was clarified to address comment and align with section 5.2.
51	161	5.3.2 a)	E	5.3.2 a) perform an evaluation of the CRM supplier; 5.3.2 b) ensure the CRM supplier	5.3.2 a) perform an evaluation to ensure the CRM supplier;	combine a) and b) as a) is lacking detail to specify what the FSSP is meant to evaluate and to what criteria	ACCEPT: Also revised language in 5.2.2 (now 5.3.2) to align with 5.3.2 (now 5.4.2) also.

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52	165	5.3.2 d)	E	5.3.2 d) perform a re-evaluation of services	5.3.2 d) perform a re-evaluation of supplies	unlike 5.2.2, this requirement is discussing CRM suppliers and the supplies they provide, not calibration services	ACCEPT:
53	166	5.3.3	E	5.3.3 If a CRM is not available, a non-certified reference material	5.3.3 When not available (as defined in 5.3.1), a non- certified reference material	matches language and pattern of 5.2.2 proposed revision	ACCEPT WITH MODIFICATION: Language was clarified to address comment and align with section 5.2.
84	166-169	5.3.3	Т	If a CRM is not availableStandard 054	Delete or additional requirements need to be included for MU of the non-CRM. If deleted, then 054 should also be removed as a normative reference.	The procedure described in Standard 054 Section 5.3.3 is not sufficient to meet MT (unbroken chain of calibrations each with an associated MU). The procedure in 054 does not address the need for MU and therefore MT cannot be established (see lines 103-105 in this standard).	ACCEPT:
37	170	5.3.4	т	5.3.4. It states that the equipment used shall be calibrated as delinated in Section 5.2. The delination of how the equipment should be calibrated is in Section 5.5. Section 5.2. is that you use an appropriate provider.	Update the section to be 5.5.		ACCEPT WITH MODIFICATION: Added reference to Section 5.5. Requirements for calibration service providers in Section 5.2 must also be met.
55	170	5.3.4	E	5.3.4 If a reference material used to establish traceabilityis diluted	5.3.4 When a reference material, whether certified or not, is diluted	brevity preferred for conciseness	ACCEPT:
56	173	5.4	E	5.4 Implementation of Metrological Traceability	5.2 Implementation 5.3 Calibration Service Provider 5.4 Reference Materials	move implementation up to follow background on MT as it procedurally precedes consideration of providers of calibration service and reference material supplies; shortens header as section 5 is explicitly requirements of MT	ACCEPT:
57	174	5.4.1	E	5.4.1 A decision shall be made during the method development process regarding how metrological traceability will be established.	5.4.1 The manner in which metrological traceability will be established shall be determined during the method development process.	places the emphasis on the requirement rather than a decision about the requirement	ACCEPT:
58	176	5.4.2	Т	5.4.2 Metrological traceability shall befor: a) qualitative b) quantitative	5.4.2 Metrological traceability shall befor: a) qualitative b) quantitative c) breath alcohol calibration methods	include breath alcohol in this list of methods where traceability shall be established; additional verbiage may be needed for the new 5.4.2 c).	ACCEPT:
17	182	5.4.2.b)	Т	quantitative methods	quantitative test and calibration methods	The addition creates an explicit relationship for Breath Alcohol between ASB 017 to ASB 056.	ACCEPT WITH MODIFICATION: Added "5.2.3 c) breath alcohol instrument calibration methods"
34	184	5.4.3 Footnote 12	E	Footnote 12	Make it a NOTE within the document instead of a footnote.	Using a footnote for this comment seems inconsistent with the rest of the document. All other footnotes are citations or are a reference to where to find a citation. Additional information is typically provided as a NOTE in other sections.	ACCEPT:
31	185	5.4.3	Т	controls that are metrologically-prepared may be used.	Add wording to clarify what the controls may be used for, or remove the note	The purpose of the note is unclear because it doesn't say what the metrologically prepared controls are used for. Is it meant they can be used for measurement assurance? Or is this referring to when the controls are used in MU budgets to assess bias?	ACCEPT:
59	185	5.4.3	E	While not used	When not used	while suggests causation rather than situational	REJECT: Language was modified for clarification
5	189	5.5.1.1	E	"The equipment listed in Section 5.5.2 shall be calibrated by appropriately accredited calibration service suppliers"	"The equipment listed in Section 5.5.2 shall be calibrated by accredited calibration service suppliers"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: 5.5.1.1 was removed to address another comment
60	190	5.5.1.1	E	5.5.1.1 The equipment listed in Section 5.5.2 shall be calibrated by appropriately accredited calibration service suppliers that meet those requirements in Section 5.2.1.	5.5.1.1 The equipment listed in Section 5.5.2 shall be calibrated by appropriately accredited calibration service suppliers (as defined in 5.2.1).	matches language and pattern of 5.2.2 proposed revision	REJECT: 5.5.1.1 was removed to address another comment
61	190	5.5.1.1	E	5.5.1.1 The equipment listed in Section 5.5.2 shall be calibrated by appropriately accredited calibration service suppliers that meet those requirements in Section 5.2.1.	n/a	if this is intended for equipment used to establish traceability, 5.2 already addresses this and 5.5.1.1 is redundant; if it is not (as suggested in lines 209-210), suggest revising it to say "The equipment described in 5.5.2, when used to establish metrological traceability and when the measurement accuracy affects the validity of the reported result, shall be"	ACCEPT: Deleted 5.5.1.1
6	Footnote 12	5.4.3	E	"Calibrators may be undiluted CRM(s) or calibrators prepared using appropriately calibrated equipment"	"Calibrators may be undiluted CRM(s) or calibrators prepared using calibrated equipment"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	ACCEPT:

62	192	5.5.1.2 a)	E	5.5.1.2 A forensic toxicology laboratory shall have a procedure that: a) includes the frequency of calibration and acceptability/tolerance specifications for equipment;	5.5.1.2 A forensic toxicology laboratory shall have a procedure that:  a) describes which equipment require calibration and includes the calibration frequency and acceptable specifications;	adds detail to the requirement to include defining comprehensively which equipment require calibration (for traceability and accuracy that affects the validity of reported results)	ACCEPT WITH MODIFICATION: added requirement to identify which equipment requires calibration.
63	192	5.5.1.2 a)	E	a) includes the frequency; b) requiresprior to use; c) requiresat a point; and d) determines if intermediate checks	a) requiresprior to use; b) requiresat a point; c) includes the frequency; and d) determines if intermediate checks	reorder to chronological sequence of equipment calibration	ACCEPT WITH MODIFICATION: order was reviewed and revised.
64	192	5.5.1.2 d)	E	d) determines if intermediate checks of the calibration status are required between calibrations based on, but not limited to, the frequency of use, work volume, occurrence of unexpected shutdown and equipment maintenance and if so, the schedule and procedure for those intermediate checks.	d) includes the evaluation of need for intermediate checks based on, but not limited to, the frequency of use, work volume, occurrence of unexpected shutdown and equipment maintenance.	brevity preferred for conciseness; further, the policy and procedure for intermediate checks is outlined in 5.5.1.4	ACCEPT:
18	194	5.5.1.2.c)	Т	requires equipment to be calibrated at a point or within a range consistent with typical use; and	requires equipment to be calibrated at a point or within a range consistent with typical use; and  NOTE Neither Metrological Traceability nor Calibration exist outside the calibrated range.	Users of this document may benefit from seeing a note that clarifies the risks when selecting a calibration range.	REJECT: No note was added. However, the wording of the clause was revised.
32	195	5.5.1.2	Т	frequency of use, work volume, occurrence of unexpected shutdown and equipment maintenance	add risk analysis	While the list of considerations is not intended to be all inclusive, it is recommended the clause advise labs to conduct risk analysis to determine if internediate checks are needed	ACCEPT:
65	198	5.5.1.2	Т	no e) exists	e) specify the actions to be taken when the specifications are not met.	the current procedure lacks a 'what to do when calibration fails'; this is defined for intermediate checks and should also be for calibration	ACCEPT:
19	203	5.5.1.4	E	If intermediate checks are performed, the policy and procedure shall:	If intermediate checks are performed, the procedure shall:	Remove 'policy' from this requirement as the requirement can be met solely through the procedure (i.e., there appears to be no benefit to having a policy just to cover intermediate checks)	ACCEPT:
66	204	5.5.1.4 a)	Е	a) require the	a) require the	remove extra space before the word require	ACCEPT:
67	204	5.5.1.4 a)	E	a) require the intermediate checks to be carried out using calibrated equipment	a) require use of calibrated equipment	brevity preferred for conciseness	ACCEPT:
68	206	5.5.1.4 b)	E	b) include the frequency and specifications	b) include the frequency and acceptable specifications	matches language and pattern of 5.5.1.2 proposed revision	ACCEPT:
69	209	5.5.2	E	The following equipment	n/a	move it to line 189/190	REJECT: Toxicology CB feels the statement is more approriate in its current location.
7	212	5.5.2.1	E	"Analytical balances shall be calibrated at least annually by an appropriately accredited calibration service supplier."	"Analytical balances shall be calibrated at least annually by an accredited calibration service supplier."	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address another comment
70	212	5.5.2.1	E	shall be calibratedby an appropriately accredited calibration service provider.	shall be calibrated	remove 'by an appropriately accredited calibration service provider' as it is already described in 5.2 and 5.5.1.1	ACCEPT:
71	216	5.5.2.2 a)	E	by an appropriately accredited calibration service provider.	·	remove 'by an appropriately accredited calibration service provider' as it is already described in 5.2 and 5.5.1.1	ACCEPT:
8	216	5.5.2.2 a)	E	"calibrated at least once every two years by an appropriately accredited calibration service supplier;"	"calibrated at least once every two years by an accredited calibration service supplier;"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address aonther comment
14	224	5.5.2.3	E	"dedicated for this purpose;"	Change wording to "dedicated for the purpose of measurement,"	Some glassware that is used for preparation does not need to be calibrated, such as glassware used only to hold liquids temporarily for transfers or glassware used for gravimetric measurements.	another comment.
27	224	5.5.2.3	Т	Does the volumetric glassware have to be exclusively used for preparing calibrators or can it be used for preparing control solutions too?  Volumetric flasks be dedicated for the purpose of being used for	Clarify whether the use has to be exclusive to the preparation of calibrators.		REJECT: The requirement that volumetrics be dedicated for this purpose was removed to address another comment.
38	224	5.5.2.3	E	Volumetric flasks be dedicated for the purpose of being used for calibrators.  This is costly to smaller laboratories where they do not have the budget to have separate supplies for making standards and reagents. They should have SOP's regarding the proper handling and care of volumetric flasks.	Strike section a)		ACCEPT:

9	225	5.5.2.3 b)	E	"calibrated by an appropriately accredited calibration service supplier;"	"calibrated by an accredited calibration service supplier;"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address another comment
28	226	5.5.2.3	Т	Because calibration service is more expensive than replacing volumetric glassware every 10 years, I expect many labs just get new glassware after 10 years.	Suggest adding an option to replace glassware		REJECT: The wording was revised to remove reference to "recalibration," which allows for the replacement of glassware.
10	226	5.5.2.3 c)	E	"recalibrated at least once every ten years by an appropriately accredited calibration service supplier;"	"recalibrated at least once every ten years by an accredited calibration service supplier;"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address another comment
11	232	5.5.2.4	E	"appropriately accredited calibration service supplier."	"accredited calibration service supplier."	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address another comment
12	236	5.5.2.5	E	"at least once every ten years by an appropriately accredited calibration service supplier."	"at least once every ten years by an accredited calibration service supplier."	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address another comment
22	239	5.5.2.6.1	Т	Simulator thermometers	simulator thermometers or thermometers used to verify the accuracy of simulators used in breath calibration activities	suggest revising to include thermometers used to verify simulator temperatures. Many devices are electronic and manufactureres can "Calibrate" them, but not common for manufacturers of simulators to be accredited calibration providers where temperature is included in scope. Would suggest that having an external calibrated thermometer to verify proper simulator temperature would be acceptable.	REJECT: The use of a thermometer to verify simulator thermometers does not establish metrological traceability.
23	239	5.5.2.6.1	Т	at least every two years	change to annual for all equipment	bother thermometers	REJECT: Commenter did not provide a reference supporting changing to an annual requirement. Individual FSSPs may choose to calibrate annually.
13	240	5.5.2.6.1	E	"at least every two years by an appropriately accredited calibration service supplier"	"at least every two years by an accredited calibration service supplier"	For other forensic toxicology standards currently in the drafting stage, it was recommended that subjective words such as "appropriate" not be used. Remove "appropriately."	REJECT: The clause was removed to address another comment
29	242	5.5.2.6.2	E	It may be viewed as Sections 5.5.2.1 to 5.5.2.6 just apply breath alcohol calibration equipment	Suggest adding "also" before "apply"		ACCEPT:
24	242	5.5.2.6.2	E	Sections 5.5.2.1 to 5.5.2.6 apply to equipment	Sections 5.5.2.1 to 5.5.2.5	no reason to ever use a ruler	ACCEPT:
25	243	5.5.2.6.2	E	measurement standard	measurement standards	typo	ACCEPT:
72	225	5.5.2.3 b)	E	by an appropriately accredited calibration service provider.		remove 'by an appropriately accredited calibration service provider' as it is already described in 5.2 and 5.5.1.1	ACCEPT:
73	226	5.5.2.3 c)	E	by an appropriately accredited calibration service provider.		remove 'by an appropriately accredited calibration service	ACCEPT:
80	226-227	5.5.2.3	E	c) at least once every ten years by an appropriately accredited calibration service supplier	c) at least once every ten years by an appropriately accredited calibration service supplier or with an inhouse performance verification.	provider' as it is already described in 5.2 and 5.5.1.1  Glassware, if stored, appropriately should not lose performance. Finding vendors to perform this service without disrupting lab operations is challenging.	REJECT: Performance verification is not a calibration. Calibrated volumetrics are available for purchase, removing the need to find a calibration vendor.
74	231	5.5.2.4	E	by an appropriately accredited calibration service provider.		remove 'by an appropriately accredited calibration service provider' as it is already described in 5.2 and 5.5.1.1	ACCEPT:
86	232	5.5.2.6.1	E	accredited calibration service supplier, as defined in 5.2.1.	accredited calibration service supplier.	Make consistent with other parts of the document, which do not include this reference. This is already defined in 5.5.1.1	ACCEPT:
75	236	5.5.2.5	E	by an appropriately accredited calibration service provider.		remove 'by an appropriately accredited calibration service provider' as it is already described in 5.2 and 5.5.1.1	ACCEPT:
81	236-237	5.5.2.5	Т	Rulers shall be calibrated at least once every ten years by an appropriately accredited calibration service supplier.	Rulers shall be calibrated at least once every ten years by an appropriately accredited calibration service supplier. Note: Other rulers that do not significantly affect the accuracy and validity of the test result (e.g., rulers used in measuring analytical columns) do not require calibration to establish	It is not clear if there are exceptions to guidelines around rulers.  Some labs may have them but are not using them for measurements that affect the accuracy or validity of the test result.	REJECT: The scope of what equipment needs calibrated is covered in 5.5.2
87	243	5.5.2.6.2	E	preparation of breath alcohol measurement standard	measurementmetrological traceabilitypreparation of breath alcohol measurement standard(s)	Grammar	ACCEPT:
82	245-246	5.5.3	E	General laboratory equipment used during sample preparation (e.g., centrifuges, rotators, shakers, water baths, evaporators, extraction manifolds, and heating blocks) that does not significantly affect the validity of the reported result	General laboratory equipment used during sample preparation (e.g., centrifuges, rotators, shakers, water baths, evaporators, extraction manifolds, heating blocks, and pH meters) that does not significantly affect the validity of the reported result	pH meters could be included in the "other equipment" section to provide guidance on the tracability of these instruments.	ACCEPT:
	246	5.5.3	E	equipmentthat does not	equipmentthat do not	plural equipment gramatically requires 'do not' instead of 'does	REJECT: Equipment is viewed as singular

77	248	5.5.3	E	may choose to use calibration or verification	may elect to use calibration or verification	increases formality by replacing choose with elect	ACCEPT:
78	251	6	E	the length of time they are required to maintain documentation	the required duration to maintain documentation	increases formality and conciseness	REJECT: Language was revised to make it more concise.
79	257	Annex A	E	14	15	footnote 14 is used for a second time here for a different reference	ACCEPT:
33	NA	Footnotes	E	Use of footnotes to cite refrences	Just reference the citation number in the bibliography	It seems unnecesary to duplicate references in the footnotes and in the bibliography.	REJECT: The current use of footnotes to cite references is consistent with other published documents.