umweltbundesamt
ENVIRONMENT AGENCY AUSTRIA

Proficiency Testing Scheme für die Wasseranalytik - Realproben

SP07 Summenparameter

Proficiency Testing Scheme for Water Analysis - natural water samples

SP07 Sum parameters

BERICHT / REPORT

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D1. Beschreibung des Ringversuchs

D1.1. Ausgestaltung und Durchführung

- Anzahl der Anmeldungen: 42
- Anzahl der übermittelten Datensätze: 39
- Probenversand: 17.05.2022
- Einsendeschluss der Daten: 14.06.2022

Die Ergebnisabgabe erfolgte auf elektronischem Weg mittels passwortgeschützter Online-Dateneingabe. Beim Abschluss der Dateneingabe bestätigten die Teilnehmenden die vollständige und korrekte Eingabe aller Daten und die Freigabe der Ergebnisse zur Auswertung.

Zur Anonymisierung der Ergebnisse wurde jedem Labor willkürlich ein Laborcode zugeteilt.

D1.2. Beschreibung der Prüfgegenstände

Die Probenahme von Trinkwasser erfolgte am 16.05.2022 und die Probenahme von Grundwasser erfolgte am 13.05.2022. Das Probenmaterial umfasste:

- 1 Probe Trinkwasser (SP07 A)
- 1 Probe Grundwasser (SP07 B)

Alle Proben wurden anschließend bis zur weiteren Verarbeitung gekühlt gelagert (4 +/- 3°C). Die o.a. Proben wurden bei 40 µm filtriert und im Rührkessel zusätzlich mit einzelnen Substanzen dotiert (Phenolindex) bzw. im Zuge der Abfüllung in die Flasche dotiert (KW-Index). Das Abfüllen der Proben erfolgte unter ständigem Rühren (Rührkessel).

Die KW-Index-Proben (SP07 KWIA und SP07 KWIB) wurden am 16.5.2022 hergestellt und bei 4 +/- 3°C gelagert. Die Phenolindex-Proben (SP07 PHIA und SP07 PHIB) wurden am 17.05.2022 hergestellt. Zur Stabilisierung wurden die Phenolindex-Proben mit Phosphorsäure auf pH < 4 angesäuert und 1 g/l Kupfersulfat–Pentahydrat zugesetzt.

Die homogenen Prüfgegenstände wurden am 17.05.2022 verschickt.

Jedes Teilnehmerlabor erhielt:

- 2 Proben zu je ca. 2000 ml, abgefüllt in je 2 x 1000 ml Glasflaschen zur Bestimmung des KW-Indexes

Je nach Bestellung erhielten einzelne Labore zusätzlich:

- 2 Proben zu je ca. 2000 ml, abgefüllt in je 2 x 1000 ml Glasflaschen zur Bestimmung des Phenolindexes

D1.3. Anweisungen für die Teilnehmenden

Aus Stabilitätsgründen wurde empfohlen bis spätestens 19.05.2022 mit den Analysen zu beginnen.

Den Teilnehmenden stand die Wahl der Analysenmethode bzw. der verwendeten Norm frei, welche mit ihrem Routineverfahren übereinstimmen sollte.
Für eine bessere Vergleichbarkeit der Messwerte galt als Empfehlung den Phenolindex nach Destillation (ohne Extraktion) zu ermitteln. Folgende Methoden konnten zum Beispiel für Phenolindex zur Anwendung kommen:

- ÖNORM M 6286 - Methode A: direkte spektrophotometrische Methode
- DIN 38409-H 16-3
- ÖNORM EN ISO 14402 - gemäß Abschnitt 4 (Phenolindex nach Destillation)

Eine Übersicht der angewendeten Methoden findet sich unter E9.

D1.4. Kontrollanalytik zur Bewertung der Homogenität

Im Zuge der Abfüllung wurden zu willkürlichen Zeitpunkten mehrere Aliquote pro Probe zur Kontrollanalytik entnommen.
Es wurden für die A- bzw. B-Probe jeweils n=5 Kontrollproben sowie n=1 undotierte Realprobe dem Labor zur Analyse übergeben.

Die Bestimmung der Parameter wurde an ein externes Labor (akkreditiert nach EN ISO/IEC 17025 für die o.a. Parameter) im Unterauftrag vergeben (verdeckte Vergabe, Proben anonymisiert) und erfolgte zeitnah zum Probenversand.

Im Zuge der Auswertung wurde die relative Standardabweichung zwischen den Kontrollprobenabfüllungen bewertet und mit der Vergleichsstandardabweichung beim aktuellen Ringversuch verglichen.
Die Ergebnisse der Kontrollanalytik sind in der parameterorientieren Auswertung (E7.) in Form von Mittelwerten ± Messunsicherheit als Kontrollwert (control test value) ± U gelistet (jeweils angegeben als erweiterte Messunsicherheit, k=2).

D1.5. Trendtest zur Bewertung der Stabilität

Die Bewertung der Stabilität der Prüfgegenstände (Realproben) erfolgte auf Basis der Datenstatistik aus den vergangenen Runden für Realproben im Zeitraum 2013 bis 2021.

Um die ausreichende Stabilität der Prüfgegenstände der aktuellen Eignungsprüfungsrunde bis zum Abgabetermin zu überprüfen, wurde die Darstellung der Ergebnisse der Teilnehmenden nach Analysendatum ausgewertet und auf systematische Trends geprüft (unauffällig). Durch Darstellung der Ergebnisse der Teilnehmenden nach Abfüllreihenfolge wurde auf das Vorliegen möglicher systematischer Trends der Ergebnisse geprüft (unauffällig).

Aufgrund der bisherigen Erfahrungen und aufgrund der Bewertungsgrundlagen der aktuellen Eignungsprüfungsrunde gilt die Stabilität der Prüfgegenstände im empfohlenen Zeitraum für die Analyse bis zum Abgabeschluss als gewährleistet.

D1.6. Ermittlung des zugewiesenen Wertes

Die Ergebnisse der Analysen mussten spätestens bis zum 14.06.2022 beim Veranstalter vorliegen. Später eingehende Werte wurden nicht berücksichtigt.

Im Zuge der Plausibilitätsprüfung der Daten (z.B. Check korrekte Einheiten, Messunsicherheitsangabe, …) wurden die Teilnehmenden mit auffälligen Ergebnissen zum erneuten Datencheck der Eingabe und um Rückmeldung binnen 24 h aufgefordert.

Nach Abschluss der Plausibilitätsprüfung, wurde der Ausreißertest nach Hampel durchgeführt und die Ausreißer ermittelt. Die von diesem Test auffällig eingestuften Werte wurden in der Auswertung gekennzeichnet („H“). In begründeten Fällen, z.B. wenn der Ausreißertest nach Hampel nicht anwendbar ist (z.B. Ergebnisse liegen sehr eng beieinander oder überwiegend selber Zahlenwert bzw. bei wenig abgegebenen Daten mit sehr hoher Streuung), kann eine Ausreißereliminierung nach weiteren Kriterien erfolgen (z.B. Dean- und Dixon Test bzw. manuelle Ausreißerdefinition aufgrund Expertenbefund). Diese Vorgangsweise wird nach Anwendung unter Punkt D4 des Berichts dokumentiert.

Die weitere Auswertung erfolgte gemäß ISO 5725-2. Eine statistische Auswertung der Ringversuchsdaten erfolgte erst ab zumindest 6 gültigen, nummerischen Ergebnissen pro Parameter. Ergebnisse kleiner Bestimmungs- oder Nachweisgrenze wurden bei den Berechnungen nicht berücksichtigt.

Der zugewiesene Wert wird im Normalfall jeweils als der ausreißerbereinigte Mittelwert über alle übermittelten Ergebnisse gebildet.

Bei sehr hohen Streuungen der Ergebnisse der Teilnehmenden von über 50 % oder bei mangelhafter Rückführbarkeit der statistischen Kenndaten aus den ausreißerbereinigten Ergebnissen der Teilnehmenden auf den Mittelwert des Kontrolllabores bzw. einer zu geringen Anzahl an ausreißerbereinigten Ergebnissen über die Gruppe der akkreditierten Labore, kann die Situation auftreten, dass kein zugewiesener Wert für den aktuellen Ringversuch festgelegt werden kann und daher keine Bewertung der Ergebnisse der Teilnehmenden für diesen Parameter möglich ist. Ein entsprechender Hinweis wird im Bericht unter E7 bei der informativen Auswertung angebracht. Im Rahmen der internen Qualitätssicherung der Teilnehmenden kann ein Vergleich mit den Ergebnissen des Kontrolllabors durchgeführt werden. Diese Vorgehensweise wird bei Anwendung jeweils parameter- und probenbezogen unter Punkt D4 des Berichts dokumentiert.

D2. Kriterien der Leistungsbewertung

D2.1. Leistungskriterium z-Score

Als Basis zur Berechnung der Wiederfindungsraten sowie der z-Scores wurde der ausreißerbereinigte Mittelwert über alle übermittelten Ergebnisse herangezogen.

Die Ermittlung der z-Scores erfolgte gemäß nachfolgender Formel:

$$z - score = \frac{x_i - \overline{X}}{Kriterium}$$

Dabei ist:

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Ergebnisse der Teilnehmenden. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
Kriterium	Vergleichsstandardabweichung berechnet aus den Statistiken für reale Wasserproben der vorangegangenen Runden im Zeitraum 2013 bis 2021 (RSDpooled) bzw. aus den ausreißerbereinigten Ergebnissen der Teilnehmenden (sR) des aktuellen Ringversuchs (falls noch weniger als 6 vorangegangene Runden für A und B-Proben vorlagen). In begründeten Fällen (z.B. Ergebnisse Realproben nahe an Mindestbestimmungsgrenze oder regulatorischer Vorgaben) erfolgt die Festlegung nach Expertenbefund und die Vorgangsweise wird unter Punkt D4 des Berichts beschrieben.

D2.2. Leistungskriterium E_n-Score

Für die realen Wasserproben erfolgen seit 2019 zusätzliche Bewertungen unter Einbeziehung der erweiterten Messunsicherheiten der Teilnehmenden und der erweiterten Messunsicherheit des zugewiesenen Wertes, gemäß E_n-Score. Diese Auswertungen werden für die Teilnehmenden im Bericht unter Punkt E8, jeweils im Anschluss an die z-Score Auswertung dargestellt.

Die Ermittlung der E_n-Scores erfolgte gemäß nachfolgender Formel:

$$E_n - score = \frac{x_i - \bar{X}}{\sqrt{U(x_i)^2 + U(\bar{X})^2}}$$

Dabei ist:

x_i	Messergebnis des teilnehmenden Labors
$\overline{X}$	zugewiesener Wert Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen); im Regelfall: ausreißerbereinigter Mittelwert der Ergebnisse der Teilnehmenden. Eine davon abweichende Vorgehensweise wird unter Punkt D4 des Berichts beschrieben.
U(x_i)	erweiterte Messunsicherheit des Messergebnisses (Ergebnisse der Teilnehmenden), k=2
U($\bar{X}$)	erweiterte Messunsicherheit des zugewiesenen Wertes, k=2

D2.3. Leistungsbewertung z-Score und E_n-Score

Interpretation der z-Scores:

- |z-Score| ≤ 2.0 Ergebnis gut
- 2.0 < |z-Score| < 3.0 Ergebnis fragwürdig
- |z-Score| ≥ 3.0 Ergebnis nicht zufriedenstellend

Hinweis: Bei der Bewertung mittels z-Score wird die Messunsicherheit der Teilnehmenden nicht mitberücksichtigt. Der Vergleich der Abweichung zum zugewiesenen Wert erfolgt über das Kriterium.

Interpretation der E_n-Scores:

- |E_n-Score| ≤ 1.0 zufriedenstellende Leistung
- |E_n-Score| > 1.0 nicht zufriedenstellende Leistung

Hinweis: Bei der Bewertung mittels E_n-Score erfolgt die Berücksichtigung der erweiterten Messunsicherheiten der Teilnehmenden und des zugewiesenen Wertes. $|E_n\text{-Score}| > 1.0$ können darauf hinweisen, dass die Unsicherheitsschätzungen überprüft oder ein Messproblem korrigiert werden muss.

D3. Darstellung und Interpretation der Messergebnisse

In der parameterorientierten Auswertung ist eine tabellarische Übersicht mit den Messergebnissen inklusive der Unsicherheit (± U), der Wiederfindung zum zugewiesenen Wert und dem berechneten z-Score dargestellt. Weiterhin werden unter Anmerkungen die Ausreißer gekennzeichnet. Die in der Tabelle angeführten Ergebnisse werden auch grafisch dargestellt.

In der laborientierten Auswertung werden pro Labor in anonymisierter Form die Ergebnisse der einzelnen Labore als Messergebnis ± U sowie die Wiederfindungen und die ermittelten z-Scores bezugnehmend auf das Kriterium dargestellt. Weiters werden die E_n-Scores unter Berücksichtigung der erweiterten Unsicherheiten in unabhängigen Tabellen ausgegeben. Die laborientierten Auswertungen enthalten jeweils die Bewertungsgrundlagen wie zugewiesener Wert samt erweiterter Messunsicherheit sowie das Kriterium.

Eine Erläuterung zu den Tabellen und Grafiken kann Punkt D5 entnommen werden.

D4. Anmerkungen zur Auswertung

Wie unter Punkt D2 ersichtlich, können die z-Scores auch unter Einbeziehung der Vergleichsstandardabweichung der ausreißerbereinigten Ergebnisse der Teilnehmenden des aktuellen Ringversuchs berechnet werden. Das kann zur Folge haben, dass es bei Parametern mit hoher Ergebnisstreuung dazu kommen kann, dass der Bereich z-Score - 2 bis z-Score + 2 einen ungewöhnlich hohen Wiederfindungsbereich abdeckt (vgl. KW-Index). Umgekehrt führt eine sehr geringe Streuung der Ergebnisse der Teilnehmenden dazu, dass z-Score - 2 bis z-Score + 2 einen ungewöhnlich kleinen Wiederfindungsbereich abdeckt.

Die Wiederfindungsrate wird unabhängig von der Streuung der Ergebnisse, als prozentuelle Abweichung vom zugewiesenen Wert berechnet und sollte bei der Bewertung von Ergebnissen im Rahmen des internen Qualitätsmanagementsystems der teilnehmenden Labore berücksichtigt werden.

Als Ergebnis einer Langzeitauswertung über aktuell 9 Eignungsprüfungsrunden (2013–2021) in Realproben wurden Kriterien (RSDpool) zur Ergebnisbewertung berechnet. Diese wurden im Zuge der Auswertung den relativen Vergleichs-standardabweichungen (vR) des aktuellen Ringversuchs gegenübergestellt.

Parameter Phenolindex bei Probe SP07 PHIA und bei Probe SP07 PHIB: Bei diesem Parameter erfolgt die Berechnung der Scores nach D2.

Parameter KW-Index bei Probe SP07 KWIA und bei Probe SP07 KWIB: Die auf Basis der Ergebnisse der Teilnehmenden berechneten Sollwerte lagen außerhalb der Messunsicherheit des Kontrollwertes und es ist über das Kontrolllabor keine Rückführbarkeit möglich. Der zugewiesene Wert wurde daher über die ausreißerbereinigten Mittelwerte aus der Gruppe der akkreditierten Teilnehmenden berechnet. Beim Parameter KW-Index bei Probe SP07 KWIB wurde der zugewiesene Wert nach Eliminierung der Ausreißer nach Hampel auf 95 %-Niveau anstatt 99 %-Niveau berechnet. Dies war notwendig, da mittels Hampel-Ausreißertest auf 99 %-Niveau nicht alle vorliegenden Ausreißer (Minderbefunde) identifiziert werden konnten (Hampel-Ausreißer 95 %-Niveau: LC0001, LC0005, LC0012, LC0016, LC0024, LC0032, LC0042).

D5. Erläuterung zu Tabellen und Grafiken

D5.1. Angaben und Abkürzungen in Tabellen

Parameter	Allgemeine Bezeichnung des Analysenparameters
Probe	Bezeichnung der übermittelten Probe
Einheit	Vorgegebene Einheit für Messwert und Ergebnisunsicherheit (z.B. µg/l)
Zugewiesener Wert	Sollwert für die Leistungsbewertung der Teilnehmenden (angegeben auf 3 signifikante Stellen)
U (k=2)	erweiterte Unsicherheit (k=2) des zugewiesenen Wertes, (angegeben auf 3 signifikante Stellen)
Kriterium	Vorgabewert zur Ermittlung des z-Scores in der angegebenen Einheit (angegeben auf 3 signifikante Stellen)
Kriterium [%]	Vorgabewert zur Ermittlung des z-Scores in % des zugewiesenen Wertes (angegeben auf 2 signifikante Stellen)
Mittelwert	Ausreißerbereinigter Mittelwert über die Ergebnisse der Teilnehmenden (angegeben auf 3 signifikante Stellen)
VB (99%)	99 % Vertrauensbereich (angegeben auf 3 signifikante Stellen)
Minimum	Minimales abgegebenes Messergebnis, ausreißerbereinigt (angegeben auf 3 signifikante Stellen)
Maximum	Maximales abgegebenes Messergebnis, ausreißerbereinigt (angegeben auf 3 signifikante Stellen)

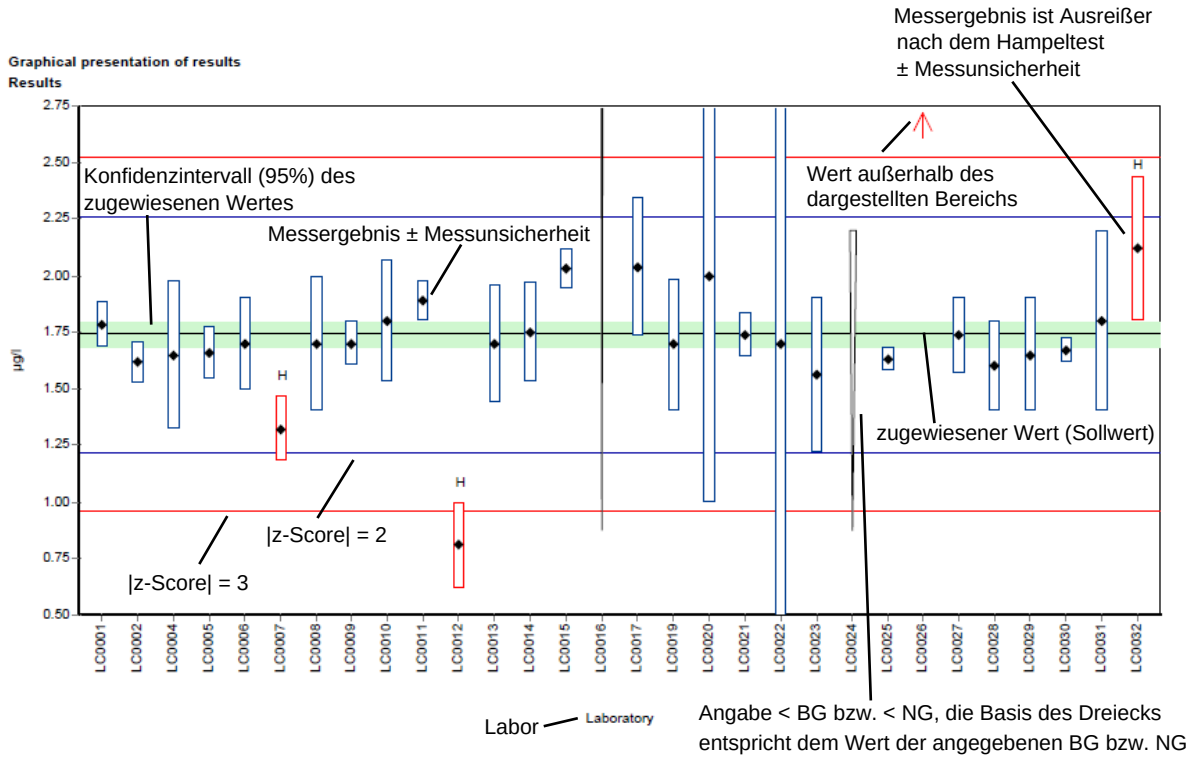
sR	Vergleichsstandardabweichung, berechnet aus den ausreißerbereinigten Ergebnissen der Teilnehmenden des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
vR	relative Vergleichsstandardabweichung in %, berechnet aus den ausreißerbereinigten Ergebnissen der Teilnehmenden des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 2 signifikante Stellen)
Kontrollwert ± U (k=2)	Mittelwert der Kontrollmessungen des Veranstalters ± erweiterte Ergebnisunsicherheit des Kontrollwertes (jeweils angegeben auf 3 signifikante Stellen)
Laborcode	anonymisierte, eindeutige Kennung des teilnehmenden Labors im jeweiligen Ringversuch
Messwert	einzelne(r) Messwert(e) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
Messergebnis	Für die Bewertung herangezogenes Ergebnis lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt). Bei Eignungsprüfungsrunden mit Vorgabe von unabhängigen Mehrfachbestimmungen, entspricht dies dem berechneten Mittelwert aus den einzelnen Messwerten der Teilnehmenden.
± U	kombinierte Messunsicherheit ohne Erweiterungsfaktor (k=1) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
BG	Bestimmungsgrenze
NG	Nachweisgrenze
WF	Wiederfindungsrate in %, bezogen auf den zugewiesenen Wert (angegeben auf 3 signifikante Stellen, dargestellt maximal 1 Nachkommastelle)
MW	Mittelwert
z-Score	Abweichung des Messergebnisses zum zugewiesenen Wert, ausgedrückt als Vielfaches des Kriteriums (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen)
E_n-Score	Abweichung des Messergebnisses zum zugewiesenen Wert, ausgedrückt als Vielfaches der kombinierten Messunsicherheiten, bestehend aus erweiterter Unsicherheit des zugewiesenen Wertes und der erweiterten Unsicherheit der Messergebnisse der Teilnehmenden (angegeben auf 3 signifikante Stellen, dargestellt maximal 2 Nachkommastellen).

	Beim E_n-Score erfolgt die Berücksichtigung der Messunsicherheit der Teilnehmenden.
-	Keine Daten übermittelt bzw. keine Berechnung möglich
Anmerkungen	Anmerkungen zum jeweiligen Messergebnis (z.B. H, FN, FP)
H	Ausreißer nach dem Hampel-Test
FN	Falsch negativ – Messergebnis kleiner Bestimmungs- bzw. Nachweisgrenze dessen Betrag die Bedingungen eines Ausreißers nach dem Hampeltest erfüllt.
FP	Falsch positiv – Falls aufgrund des geringen Analytgehalts kein zugewiesener Wert ermittelt werden kann (n < 6), wird der Median der Beträge der übermittelten Nachweis- bzw. Bestimmungsgrenzen ermittelt. Als falsch positiv wird ein Messergebnis bewertet, welches diesen Median um mehr als 100 % übersteigt.
Standardabweichung	Vergleichsstandardabweichung berechnet aus den Ergebnissen der Teilnehmenden des aktuellen Ringversuchs (angegeben auf 3 signifikante Stellen)
rel. Standardabweichung	relative Vergleichsstandardabweichung in %, berechnet aus den Ergebnissen der Teilnehmenden des aktuellen Ringversuchs bezogen auf den Mittelwert (angegeben auf 3 signifikante Stellen)
n	Anzahl der Messergebnisse
*	Kennzeichnung für Hinweise zur Erläuterung
**	Kennzeichnung für Parameter außerhalb der Akkreditierung gemäß EN ISO/IEC 17043

D5.2. Graphische Darstellung der Ergebnisse

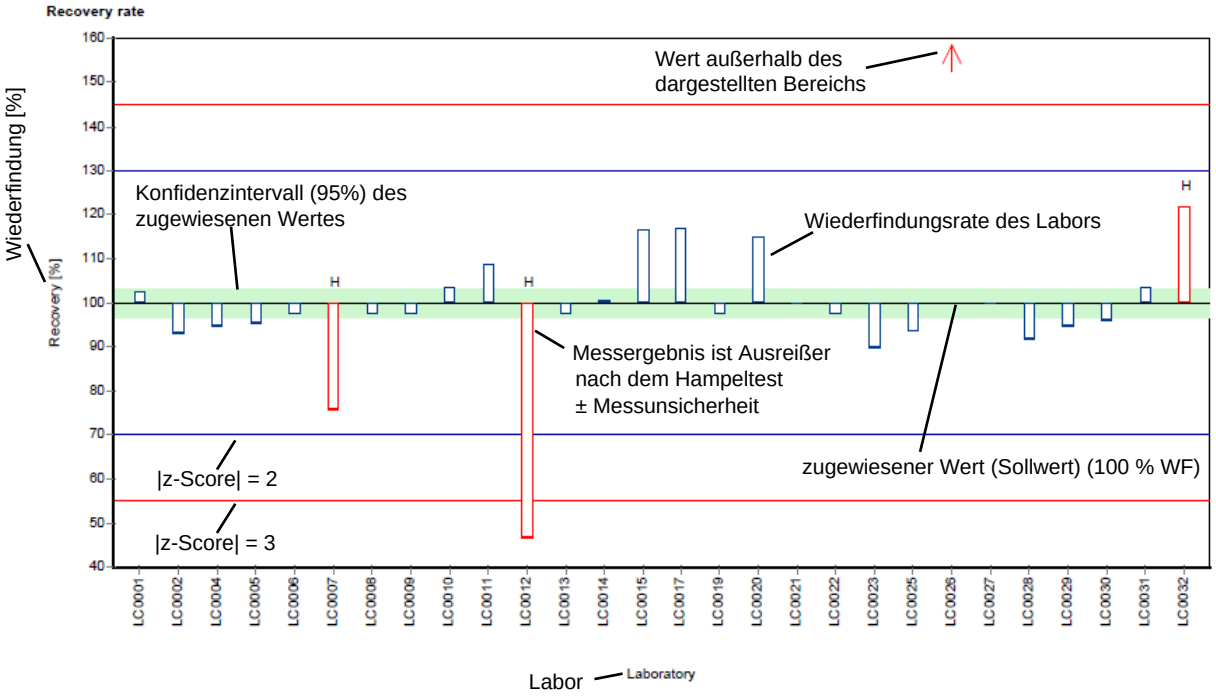
Nachfolgend wird die graphische Darstellung anhand von kommentierten Beispieldiagrammen erläutert.

Beispieldiagramm: Messwerte



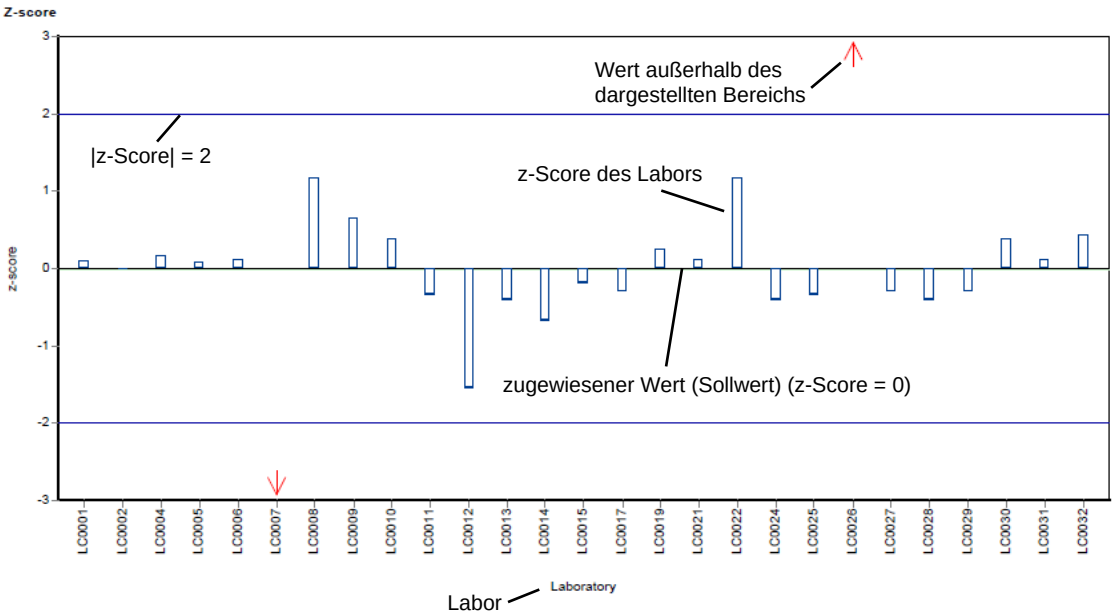
Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: Wiederfindung zum zugewiesenen Wert



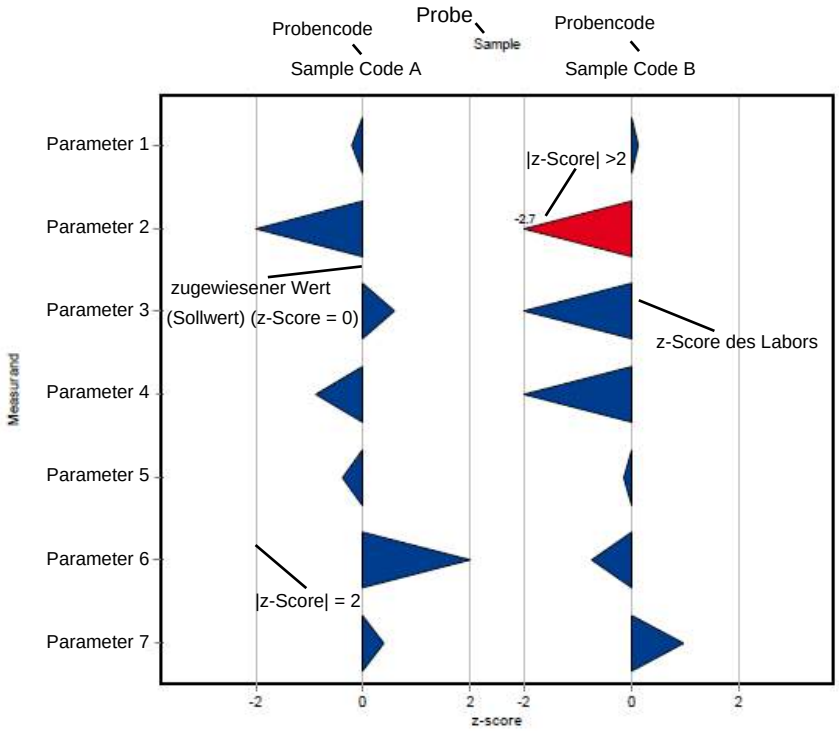
Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: z-Score

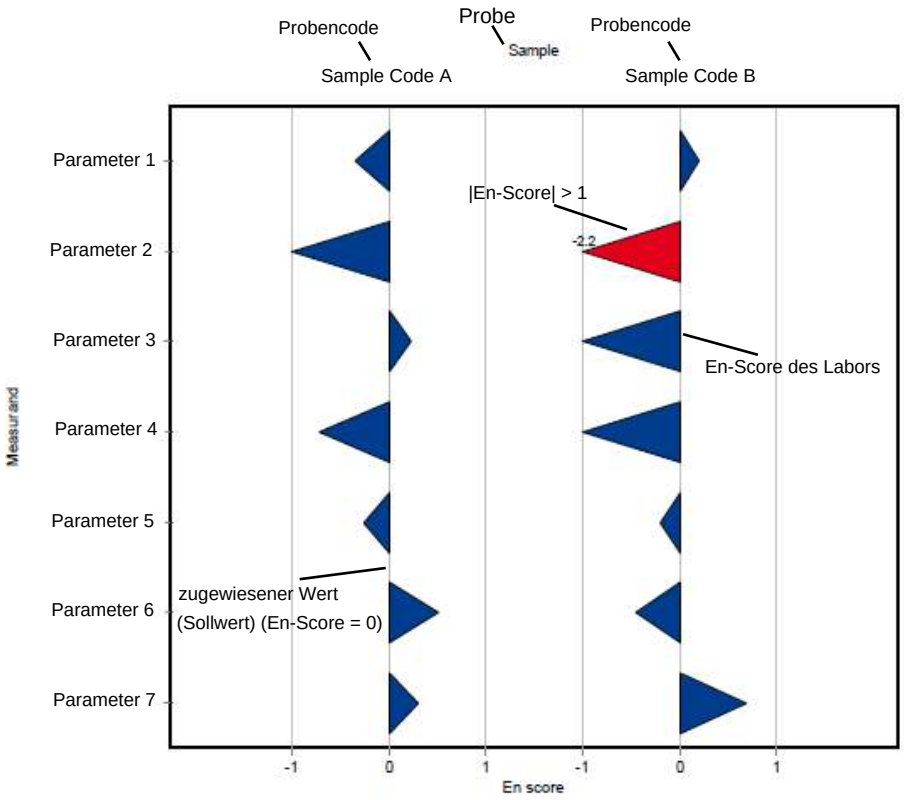


Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: z-Score (laborientierte Auswertung)



Beispieldiagramm: En-Score (laborientierte Auswertung)



D6. Zusammenfassung

D6.1. Tabelle der zugewiesenen Werte

Parameter	Probe	Einheit	zugewiesener Wert	±	U (k=2)	Kriterium	Kriterium [%]
KW-Index	SP07 A - KW-Index	mg/l	0.145	±	0.0206	0.061	42
	SP07 B - KW-Index	mg/l	1.11	±	0.112	0.465	42
Phenolindex	SP07 A - Phenolindex	mg/l	0.0702	±	0.00204	0.00772	11
	SP07 B - Phenolindex	mg/l	0.669	±	0.025	0.0736	11

D6.2. Zusammenfassung der ausreißerbereinigten Ringversuchsergebnisse

Parameter	Probe	Anzahl Labors für Berechnung	Anzahl Ausreißer Labors	Einheit	Mittelwert	± VB (99%)	Minimum	Maximum	sR	vR [%]
KW-Index	SP07 A - KW-Index	28	2	mg/l	0.15	± 0.028	0.076	0.267	0.0494	33
	SP07 B - KW-Index	31	7	mg/l	1.15	± 0.136	0.585	1.62	0.253	22
Phenolindex	SP07 A - Phenolindex	17	1	mg/l	0.0702	± 0.00307	0.0621	0.0781	0.00421	6
	SP07 B - Phenolindex	17	1	mg/l	0.669	± 0.0376	0.609	0.789	0.0516	7.7

E1. Description of the proficiency test

E1.1. Design and implementation

- Number of registrations: 42
- Number of submitted data records: 39
- Dispatch of samples: 17th May 2022
- Closing date for submission of data: 14th June 2022

The results were submitted electronically by a password-protected online data entry. Upon completion of the data entry, the participant confirmed the complete and correct entry of all data and the authorization of the results for evaluation.

To anonymize results, each laboratory was given a laboratory code on a random basis.

E1.2. Description of the proficiency test items

The sampling of drinking water and ground water was carried out on 16th May 2022 (drinking water) and on 13th May 2022 (ground water).

The following samples were made available

- 1 sample drinking water (SP07 A)
- 1 sample ground water (SP07 B)

Both samples were stored at 4 +/- 3°C until further processing. The samples were filtered (40 µm) and partly spiked with specific substances in the stirring vessel (Phenolindex) or spiked during bottling (Hydrocarbon index). The filling of the samples was carried out under continuous stirring (stirring vessel).

The Hydrocarbon index (HC-Index) samples (SP07 KWIA and SP07 KWIB) were prepared on May 16th, 2022 and stored at 4 +/- 3°C. The Phenolindex samples (SP07 PHIA and SP07 PHIB) were prepared on May 17th, 2022. For stabilization, the Phenolindex samples were acidified to pH < 4 with phosphoric acid and 1 g/l copper sulfate pentahydrate was added.

The homogeneous proficiency test items were dispatched on 17th May 2022.

Each participant received:

- 2 samples each 2000 ml, filled in 2 x 1000 ml glass bottles for the analysis of HC-Index

Depending on their order, several laboratories also received:

- 2 samples each 2000 ml, filled in 2 x 1000 ml glass bottles for the analysis of Phenolindex

E1.3. Instructions for the participants

For reasons of stability, it was recommended to start the analysis by the 19th May 2022 at the latest.

The participants are expected to use the test method or measurement method of their choice, which should be consistent with their routine procedures.
To achieve comparable data, we recommended determining the Phenole index after distillation (without extraction), e.g. according to following methods:

- ÖNORM M 6286 - Method A
- DIN 38409-H 16-3
- ÖNORM EN ISO 14402 - paragraph 4 (Phenole index after distillation)

In E9 you will find the overview of applied methods in course of the proficiency testing.

E1.4. Control testing for homogeneity evaluation

During filling of the bottles, aliquots of each sample were collected randomly for control testing. From each of the samples A and B, n=5 control test samples and n=1 unspiked real water sample were transferred to the laboratory for control testing.

The determination of the parameters was performed at an external laboratory (accredited by EN ISO/IEC 17025 for the parameters listed) in subcontract (anonymous submission) and testing was performed close to the time of sample dispatch.

During evaluation the relative standard deviation between the individual results of the control test samples was assessed for each parameter by comparison with the reproducibility standard deviation of the actual proficiency test.

In the parameter-oriented evaluation (E7), the results of the control testing are given in the form of arithmetic means of the detected concentrations ± expanded measurement uncertainty as control test value ± U (expanded uncertainty, k=2).

E1.5. Trend test for stability evaluation

The evaluation of stability of the proficiency test items was performed using the data statistics of the results of previous proficiency testing rounds for real water samples of the period from 2013 to 2021.

The assessment of the stability of the proficiency test items of the current round was carried out by evaluation of all participant results sorted by analysis date (until submission deadline): No systematic trends were identified.

Using all participants results, it was furthermore tested if systematic trends could be detected depending on the order in which the bottles were filled for the proficiency test: No systematic trends could be identified.

According to data obtained from previous rounds for real water samples from 2013 to 2021 and based on the trend test evaluation of the current round, the stability of the test items for proficiency testing of real water samples can be confirmed for the recommended analysis period until deadline for submission of data.

E1.6. Determination of the assigned values

The analytical results had to be made available to the organiser not later than 14th June 2022. Any values received at a later date were not considered.

In the course of the plausibility assessment of all received data (e.g. check for correct units, indication of measurement uncertainty, …) the participants with noticeable results were asked to perform a subsequent data check and to give a prompt feedback within 24 h.

After plausibility assessment an outlier test according to Hampel was performed to identify outliers. Values identified as conspicuous are marked specifically in the parameter-oriented evaluation (‘H’).

In justified cases, for instance, when the outlier test according to Hampel is not applicable (e.g. many similar or identical results of the participants or in case of a very limited number of highly scattering results) a different outlier identification method can be applied (e.g. Dean and Dixon outlier test or manual outlier elimination by expert judgement). In such a case, this procedure is documented in section E4 of the report.

Further data evaluation was performed in accordance with ISO 5725-2. A statistical evaluation of proficiency testing data was only carried out if at least 6 valid results per parameter were available. Results < LOQ or < LOD are not included in the calculation for the assigned value.

The assigned values are normally calculated as the mean over all submitted results, after removal of outliers.

For real water samples in some exceptional cases it might occur, that no assigned value based on participants' results can be calculated and no evaluation of the participants results can be made. E.g due to large variations in the participant results (vR > 50 %) and/or insufficient traceability of the calculated mean of all participants after outlier-clearing to the mean of control testing or if the number of results (without outliers) of the group of accredited testing laboratories is too low.

In this case, a clear statement in section E7 of the report is made and all provided statistical data are for information only. In section E4 further information is given, when applicable, for each parameter and proficiency test item. In course of the internal quality measures, the participants can compare their results with the control test values.

E2. Criteria of performance evaluation

E2.1. Performance criterion z-Score

The adjusted average value (after removal of outliers) for all submitted results was used as a basis for the calculation of recovery rates and z-scores.

z-Scores were calculated on the basis of the following formula:

$$z - score = \frac{x_i - \overline{X}}{Criteria}$$

In this context,

x_i	is the measurement value (result) of the participating laboratory;
$\overline{X}$	assigned value the target value for the assessment of the performance of the participants (3 significant digits), normally the average value of the participants' results after removal of outliers; if this approach is not applicable, the target value is assigned according to the procedure given in section E4
Criteria	is the reproducibility standard deviation calculated from previous rounds for proficiency testing for real water samples from 2013 to 2021 (as RSD pooled) or from the participants' results after removal of outliers (sR) in the current round (if less than 6 previous rounds for the parameters of real water samples A and B are available). Where justified (e.g. results for real water samples are close to minimum quantification limit or in case of regulatory requirements) the criteria is

defined by expert judgement and the procedure is clearly described in section E4 of the report.

E2.2. Performance criterion E_n-Score

Since 2019 additional assessment of the participants' results using E_n-Scores for proficiency testing of real water samples is performed. This additional assessment takes into account the expanded measurement uncertainties of the participants results and the expanded uncertainty of the assigned value and is provided in the laboratory oriented part of the report (see E8 after the z-scores evaluation).

E_n-Scores were calculated on the basis of the following formula:

$$E_n - score = \frac{x_i - \bar{X}}{\sqrt{U(x_i)^2 + U(\bar{X})^2}}$$

In this context,

x_i	is the measurement value (result) of the participating laboratory
$\overline{X}$	assigned value the target value for the assessment of the performance of the participants (3 significant digits), normally the average value of the participants' results after removal of outliers; if this approach is not applicable, the target value is assigned according to the procedure given in section E4
U(x_i)	expanded measurement uncertainty for the result of the participating laboratory, k=2
U($\bar{X}$)	expanded measurement uncertainty for the assigned value, k=2

E2.3. Performance evaluation z-Score and E_n-Score

Interpretation of z-Scores:

- |z-Score| ≤ 2.0 good result
- 2.0 < |z-Score| < 3.0 questionable result
- |z-Score| ≥ 3.0 unsatisfactory result

Note: In case of assessment of the participants' performance by z-scores the measurement uncertainty of the participants' results is not taken into account. The difference between result of participants and the assigned value is evaluated by the criteria.

Interpretation of E_n-Scores:

- $|E_n\text{-Score}| \leq 1.0$ satisfactory performance
- $|E_n\text{-Score}| > 1.0$ unsatisfactory performance

Note: In case of assessment of the participants' performance by E_n-Scores the expanded measurement uncertainties for the results and for the assigned values are taken into account. $|E_n\text{-Score}| > 1.0$ might indicate to check the measurement uncertainty estimation or might point out to correct a measurement problem.

E3. Representation and interpretation of measurement results

The parameter-oriented report provides the measurement values (results) including uncertainty (± U), recovery rate, calculated z-Score and the outliers in tabular form. The results listed in the table are also represented graphically.

The laboratory oriented report shows the results of the individual laboratories (anonymous), including the measurement uncertainty (± U), recovery rates, z-Scores and additionally evaluation of E_n-Scores on separate pages.

The tables also contain the basis for the data assessment as the assigned values and expanded measurement uncertainties and the criteria.

An annotation of the tables and graphics is given in section E5.

E4. Explanatory notes

As explained in section E2, the z-Score can also be calculated using the reproducibility standard deviation, calculated from the participants' results (after removal of outliers) in the relevant test round. It might occur that the z-Score between -2 and 2 covers a large range of measurement values when the variance of the results is high (e.g. HC-Index). On the other hand, the range of good results can be very narrow, when the variation of the participants' results is small.

The recovery rate is calculated for the individual result based on the assigned value and is thus independent of the reproducibility standard deviation. In the case of a high variance of the results, participants should also consider recovery rates as additional criteria to decide on the necessity of internal quality assurance measures.

As a result of a long-term evaluation of 9 proficiency testing rounds (2013–2021 in real samples, evaluation criteria (RSDpool) were calculated. These criteria were compared with the relative reproducibility standard deviation (vR) of the current proficiency testing.

Parameter Phenolindex sample SP07 PHIA and sample SP07 PHIB: Scores for all listed parameters were calculated according to E2.

Parameter HC-Index sample SP07 KWIA and sample SP07 KWIB: The assigned values calculated based on the participant results were outside of the measurement uncertainty of the control test value and thus traceability could not be proven by this procedure. Therefore, new assigned values were defined by the group of accredited participating laboratories after outlier-assessment. In case of HC-Index for sample SP07 KWIB, the assigned value was calculated after elimination of outliers according to Hampel at 95 % instead of 99 %. This was necessary because the Hampel outlier test at 99 % level could not identify all outliers (e.g. conspicuous low results). (Outliers according to Hampel at 95 % level: LC0001, LC0005, LC0012, LC0016, LC0024, LC0032, LC0042).

E5. Annotations on tables and charts

E5.1. Information and abbreviations in tables

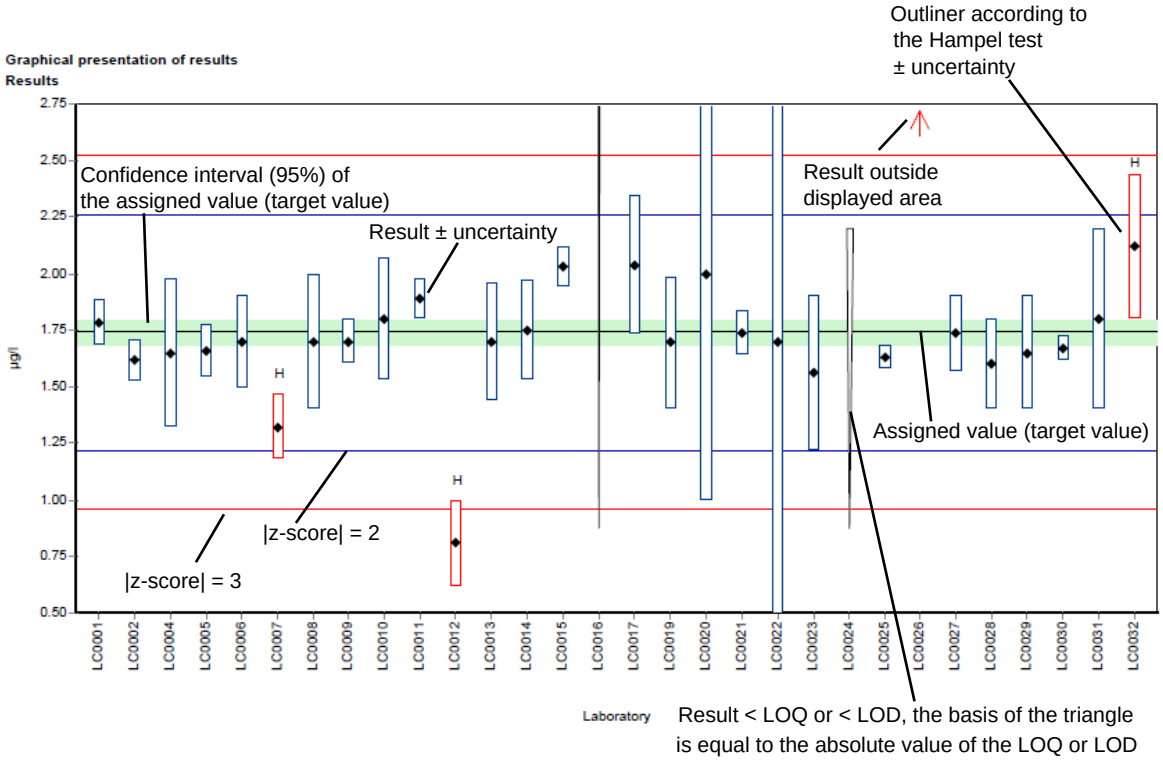
Parameter	Analyte identifier
Sample	Sample identifier
Unit	Given unit for result and uncertainty (e.g. µg/l)
Assigned value	Target value for proficiency assessment of the participants (3 significant digits)
U (k=2)	Expanded uncertainty (k=2) of the assigned value (3 significant digits)
Criteria	Specified value for the determination of the z-score in the given unit (3 significant digits)
Criteria [%]	Specified value for the determination of the z-score in % of the assigned value (2 significant digits)
Mean	Mean of the participants results, without outliers (3 significant digits)
CI (99 %)	99 % confidence interval (3 significant digits)
Minimum	Minimum of all submitted results, after removal of outliers (3 significant digits)
Maximum	Maximum of all submitted results, after removal of outliers (3 significant digits)
SD	Reproducibility standard deviation, calculated from the participants results, after removal of outliers (3 significant digits)

RSD %	Reproducibility standard deviation, calculated from the participants results relative to the target value, given in %, after removal of outliers (2 significant digits)
Control test value ± U (k=2)	Mean of control test value ± expanded measurement uncertainty (3 significant digits)
Labcode	Laboratory identifier (anonymized)
Result	Result as indicated by participant (max. 5 decimal places)
± U	combined measurement uncertainty without expansion factor (k=1), as indicated by participant (max. 5 decimal places)
LOQ	Limit of quantification
LOD	Limit of detection
Recovery	Recovery rate in % based on assigned value (target value) (3 significant digits, max. one decimal place given)
z-Score	Deviation of result based on the assigned value (target value) given as a multiple of the criteria (3 significant digits, max. 2 decimal places given)
E_n-Score	Deviation of result based on the assigned value (target value) given as a multiple of the combined expanded measurement uncertainty of the participant's results and expanded measurement uncertainty for the assigned value (3 significant digits, max. 2 decimal places given). Note: E_n-Score assessment takes into account the measurement uncertainty of the participants.
-	No data available or no calculation possible
Comments	Comment on the respective result (e.g. H, FN, FP)
H	Outlier according to Hampel-Test
FN	False negative – for a result < LOQ or result < LOD: The absolute value of the LOQ or LOD fulfils the condition of an outlier according to the Hampel test.
FP	False positive – for parameters where no target value is available because of a too low analyte content (n < 6): Result that exceeds the median of the absolute values of the transmitted LOQs or LODs by more than 100 %.
Standard deviation	Reproducibility standard deviation, calculated from the participants results (3 significant digits)
Rel. standard deviation	Reproducibility standard deviation, calculated from the participants results relative to the target value, given in %, (3 significant digits)
n	Number of results
*	mark for additional comments
**	mark for parameters outside the scope of accreditation according to EN ISO/IEC 17043

E5.2. Graphical presentation of results

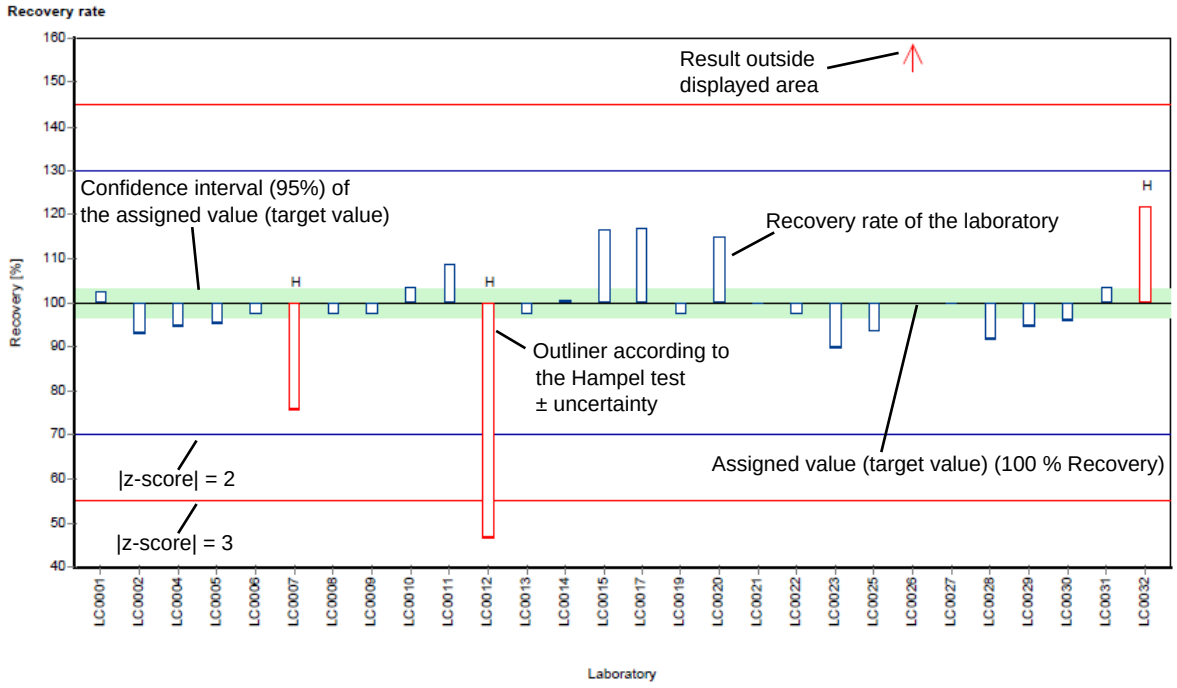
The graphic representation in the report is explained below by means of commented example diagrams:

Example chart: Results



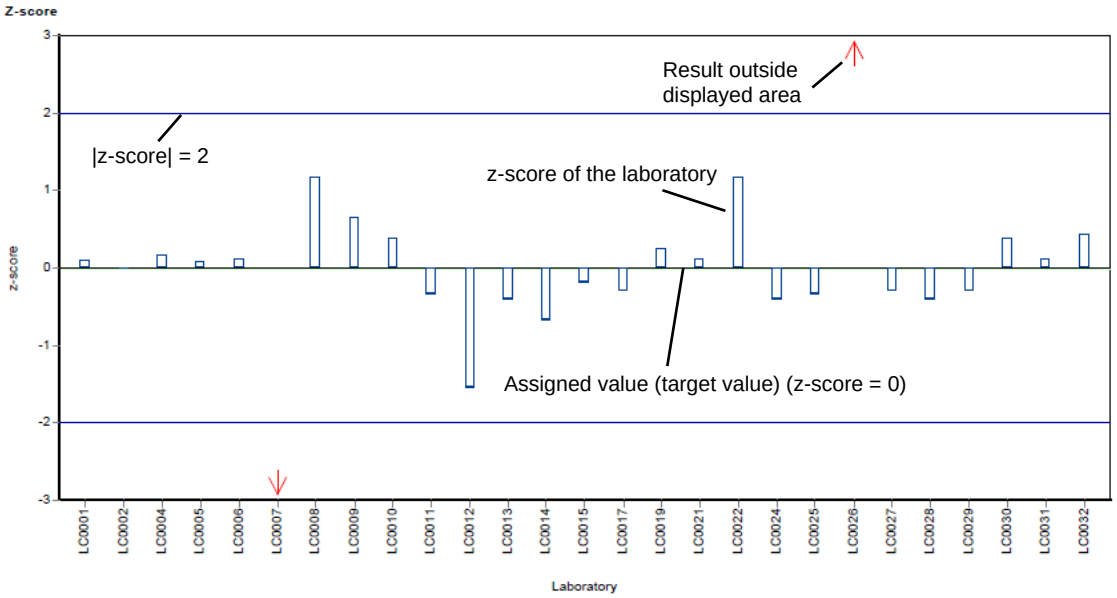
Different analysis methods are represented with different colors.

Example chart: Recovery



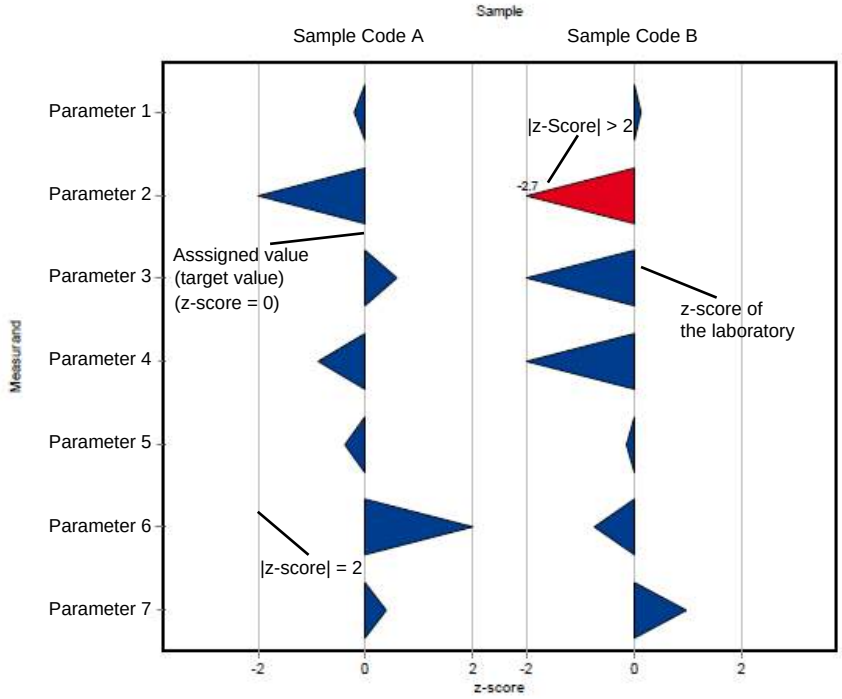
Different analysis methods are represented with different colors.

Example chart: z-score

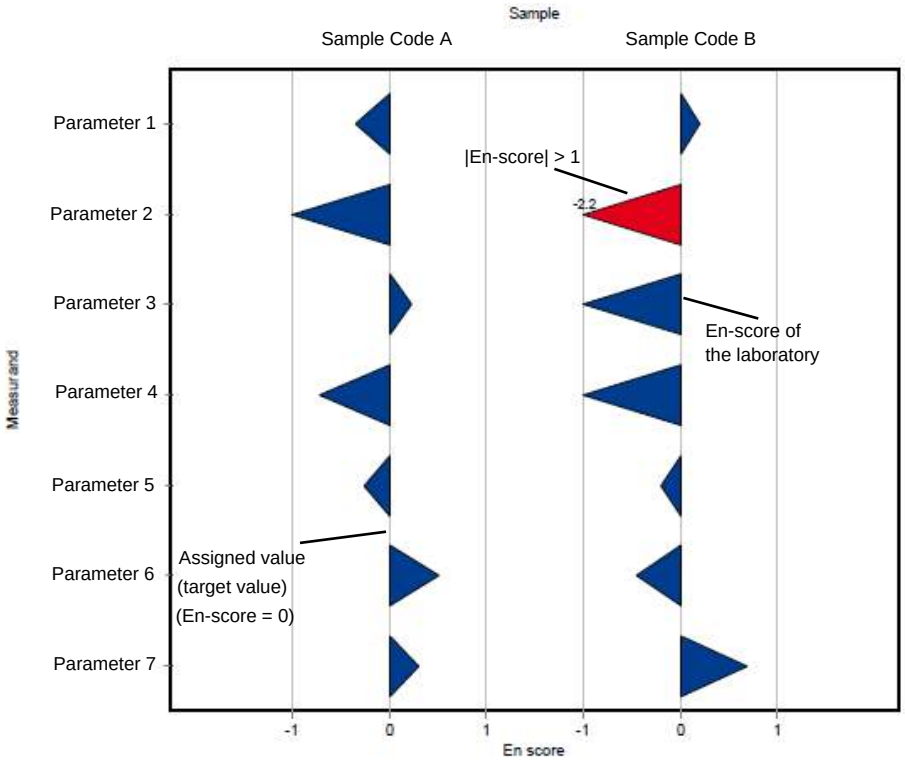


Different analysis methods are represented with different colors.

Example chart: z-score (laboratory oriented report)



Example chart: En-score (laboratory oriented report)



E6. Summary

E6.1. Table of assigned values

Parameter	Sample	Unit	Assigned value	±	U (k=2)	Criterion	Criterion [%]
HC-Index	SP07 A - HC-Index	mg/l	0.145	±	0.0206	0.061	42
	SP07 B - HC-Index	mg/l	1.11	±	0.112	0.465	42
Phenolindex	SP07 A - Phenolindex	mg/l	0.0702	±	0.00204	0.00772	11
	SP07 B - Phenolindex	mg/l	0.669	±	0.025	0.0736	11

E6.2. Summary of results, after removal of outliers

Parameter	Sample	Number of results for calculation	Number of outliers	Unit	Mean	± CI (99%)	Minimum	Maximum	sR	vR [%]
HC-Index	SP07 A - HC-Index	28	2	mg/l	0.15	± 0.028	0.076	0.267	0.0494	33
	SP07 B - HC-Index	31	7	mg/l	1.15	± 0.136	0.585	1.62	0.253	22
Phenolindex	SP07 A - Phenolindex	17	1	mg/l	0.0702	± 0.00307	0.0621	0.0781	0.00421	6
	SP07 B - Phenolindex	17	1	mg/l	0.669	± 0.0376	0.609	0.789	0.0516	7.7

E7. Parameterorientierte Auswertung / Parameter oriented report

Parameter oriented report

SP07 A - HC-Index

HC-Index

Unit	mg/l
Assigned value ± U (k=2)	0.145 ± 0.0206
Criterion	0.061 (42 %)
Minimum - Maximum	0.076 - 0.267
Control test value ± U (k=2)	0.1830 ± 0.0183

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	< 0.1 (LOQ)	-	-	-	
LC0002	< 0.1 (LOQ)	-	-	-	
LC0003	0.245	0.0637	169	1.64	
LC0004	0.133	0.024	91.6	-0.2	
LC0005	< 0.1 (LOQ)	-	-	-	
LC0006	0.2159	0.0223	149	1.16	
LC0007	0.257	0.013	177	1.83	
LC0008	0.12	0.024	82.6	-0.41	
LC0009	0.159	0.051	109	0.23	
LC0010	0.109	0.076	75.1	-0.59	
LC0011	0.158	0.005	109	0.21	
LC0012	< 0.05 (LOQ)	-	-	-	
LC0013	0.0824	0.0165	56.7	-1.03	
LC0014	0.123	0.048	84.7	-0.36	
LC0015	0.638	0.108	439	8.08	H
LC0016	0.076	0.019	52.3	-1.13	
LC0017	0.125	0.025	86.1	-0.33	
LC0018	-	-	-	-	
LC0019	< 0.1 (LOQ)	-	-	-	
LC0020	0.11	0.022	75.7	-0.58	
LC0021	-	-	-	-	
LC0022	0.142	0.014	97.8	-0.05	
LC0023	0.096	0.05	66.1	-0.81	
LC0024	< 0.025 (LOQ)	-	-	-	
LC0025	0.172	0.045	118	0.44	
LC0026	0.162	0.014	112	0.28	
LC0027	0.118	0.024	81.3	-0.45	
LC0028	0.181	0.045	125	0.59	
LC0029	0.136	0.03	93.7	-0.15	
LC0030	-	-	-	-	
LC0031	0.44	0.04	303	4.83	H
LC0032	<0.031 (LOD)	-	-	-	
LC0033	0.13	0.03	89.5	-0.25	
LC0034	0.149	0.0286	103	0.06	
LC0035	-	-	-	-	
LC0036	0.128	0.01	88.1	-0.28	
LC0037	0.267	0.029	184	2	
LC0038	0.172	0.026	118	0.44	
LC0039	0.154	0.025	106	0.14	
LC0040	0.1	0.06	68.9	-0.74	
LC0041	0.191	0.072	132	0.75	

Parameter oriented report Sum parameters SP07 Sample: SP07KWIA, Parameter: HC-Index

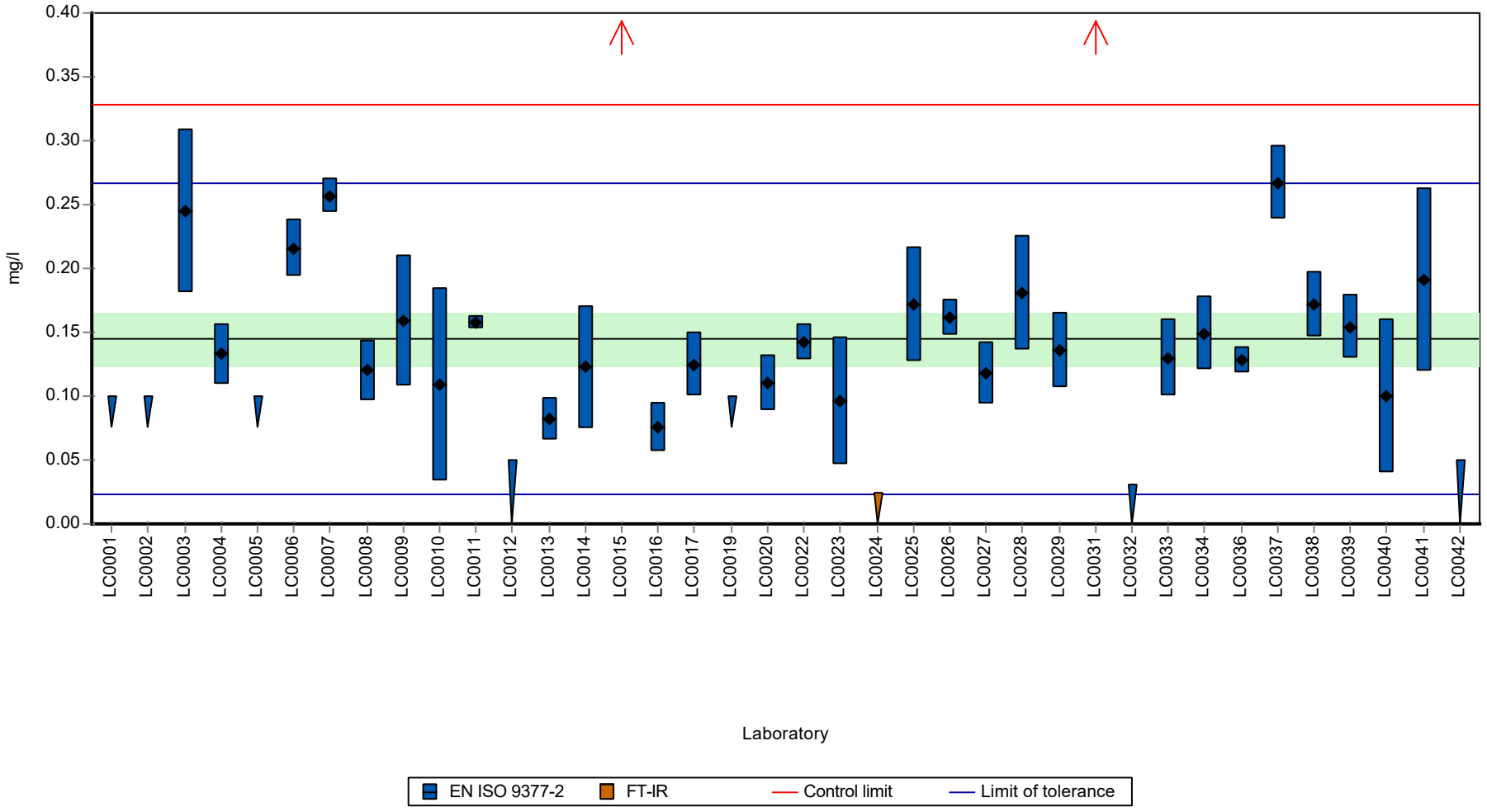
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0042	< 0.05 (LOQ)	-	-	-	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	0.176 ± 0.0616	0.15 ± 0.028	mg/l
Minimum	0.076	0.076	mg/l
Maximum	0.638	0.267	mg/l
Standard deviation	0.113	0.0494	mg/l
rel. standard deviation	63.8	32.8	%
n	30	28	-

Graphical presentation of results

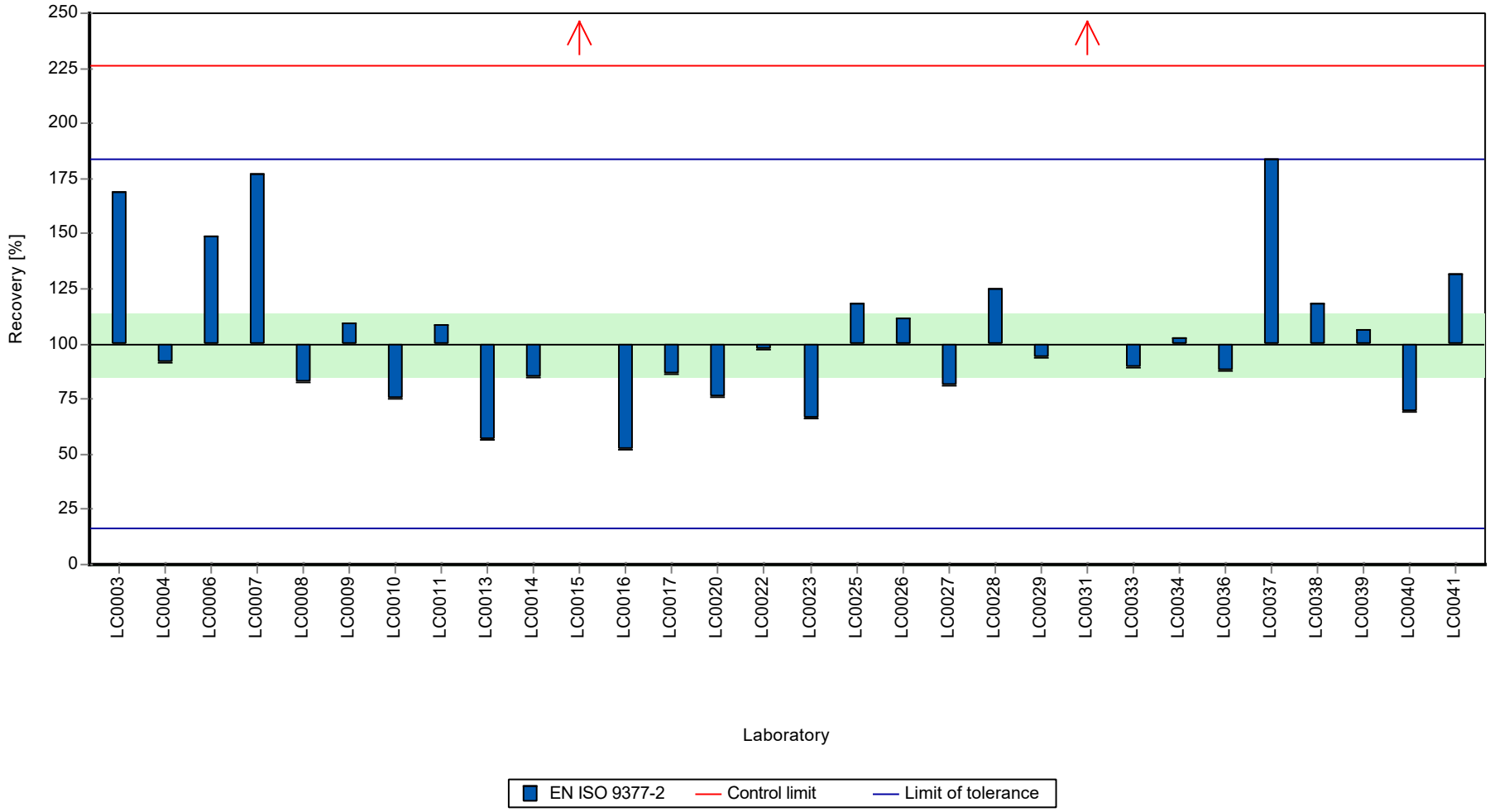
Results



Parameter oriented report Sum parameters SP07

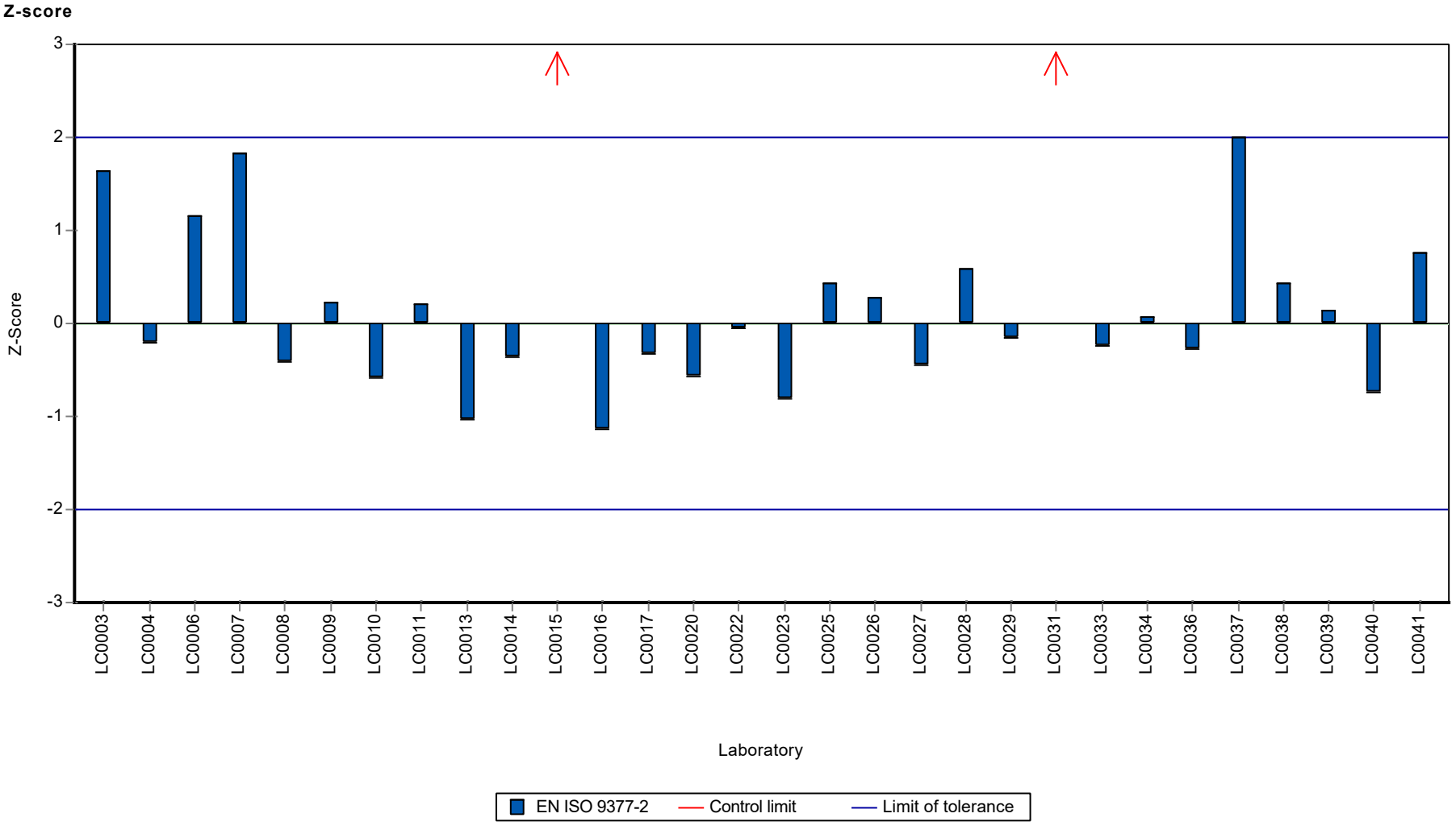
Sample: SP07KWIA, Parameter: HC-Index

Recovery rate



Parameter oriented report Sum parameters SP07

Sample: SP07KWIA, Parameter: HC-Index



Parameter oriented report

SP07 B - HC-Index

HC-Index

Unit	mg/l
Assigned value ± U (k=2)	1.11 ± 0.112
Criterion	0.465 (42 %)
Minimum - Maximum	0.585 - 1.62
Control test value ± U (k=2)	1.290 ± 0.129

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	0.2	0.06	18	-1.95	H
LC0002	0.98	0.17	88.4	-0.28	
LC0003	1.35	0.1242	122	0.52	
LC0004	1.28	0.23	116	0.37	
LC0005	0.129	0.024	11.6	-2.1	H
LC0006	1.3766	0.0215	124	0.58	
LC0007	1.481	0.074	134	0.8	
LC0008	0.585	0.117	52.8	-1.12	
LC0009	1.18	0.378	106	0.15	
LC0010	0.962	0.673	86.8	-0.31	
LC0011	1.21	0.039	109	0.22	
LC0012	0.26	0.09	23.5	-1.82	H
LC0013	0.946	0.189	85.4	-0.35	
LC0014	0.941	0.37	84.9	-0.36	
LC0015	1.137	0.193	103	0.06	
LC0016	0.152	0.038	13.7	-2.05	H
LC0017	0.91	0.182	82.1	-0.43	
LC0018	-	-	-	-	
LC0019	1.1	0.3	99.3	-0.02	
LC0020	1.22	0.24	110	0.24	
LC0021	-	-	-	-	
LC0022	0.886	0.089	80	-0.48	
LC0023	0.911	0.39	82.2	-0.42	
LC0024	0.09	0.014	8.1	-2.19	H
LC0025	1.47	0.38	133	0.78	
LC0026	1.022	0.215	92.2	-0.18	
LC0027	1.38	0.28	125	0.58	
LC0028	1.4	0.35	126	0.63	
LC0029	1.62	0.38	146	1.1	
LC0030	-	-	-	-	
LC0031	1.07	0.03	96.6	-0.08	
LC0032	0.15995	0.0142	14.4	-2.04	H
LC0033	0.7	0.15	63.2	-0.88	
LC0034	0.762	0.146	68.8	-0.74	
LC0035	-	-	-	-	
LC0036	1.06	0.011	95.7	-0.1	
LC0037	1.54	0.17	139	0.93	
LC0038	1.293	0.194	117	0.4	
LC0039	1.248	0.213	113	0.3	
LC0040	1.2	0.2	108	0.2	
LC0041	1.32	0.496	119	0.46	

Parameter oriented report Sum parameters SP07 Sample: SP07KWIB, Parameter: HC-Index

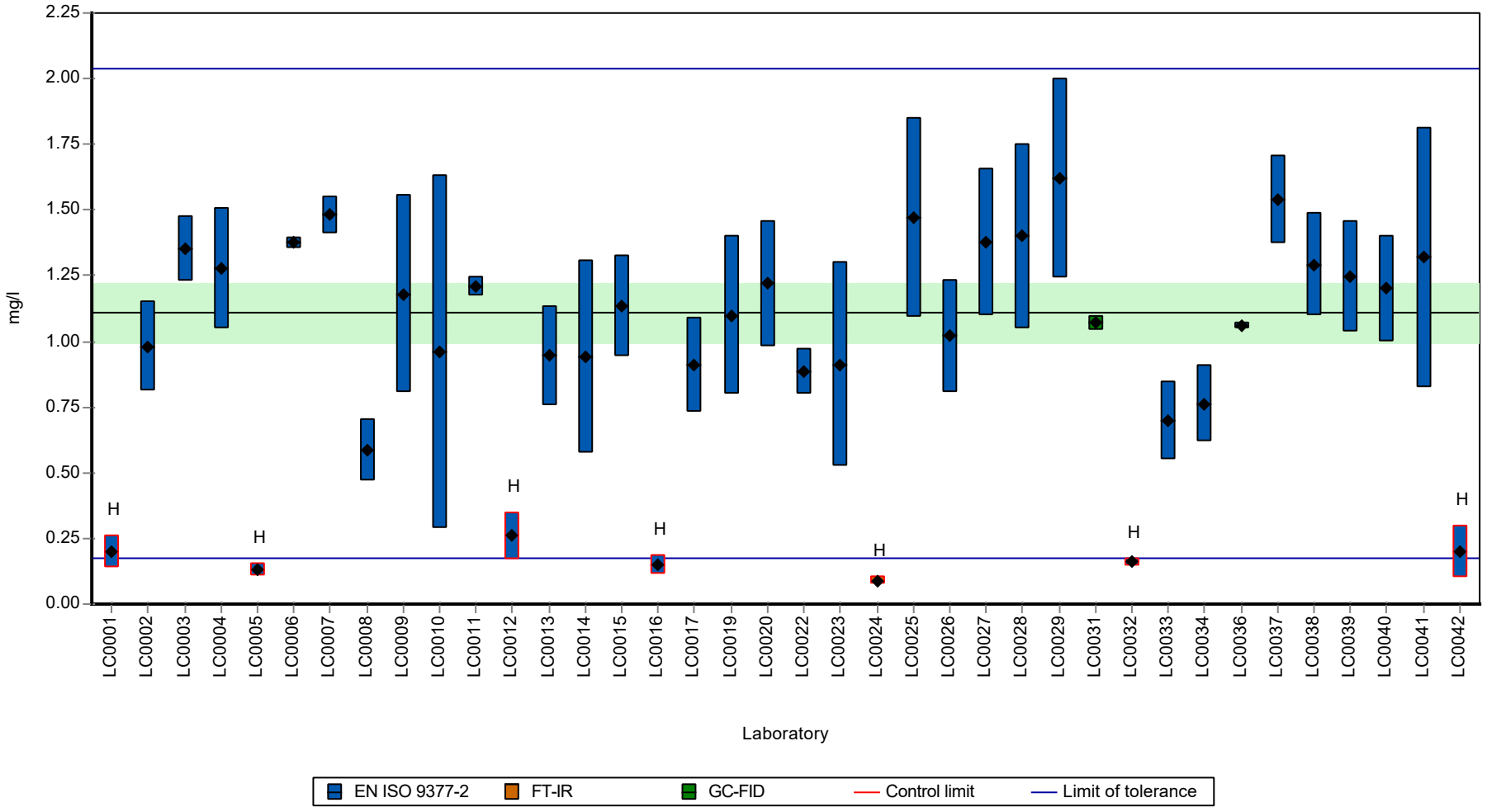
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0042	0.199	0.099	18	-1.95	H

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	0.967 ± 0.217	1.15 ± 0.136	mg/l
Minimum	0.09	0.585	mg/l
Maximum	1.62	1.62	mg/l
Standard deviation	0.447	0.253	mg/l
rel. standard deviation	46.2	22.1	%
n	38	31	-

Graphical presentation of results

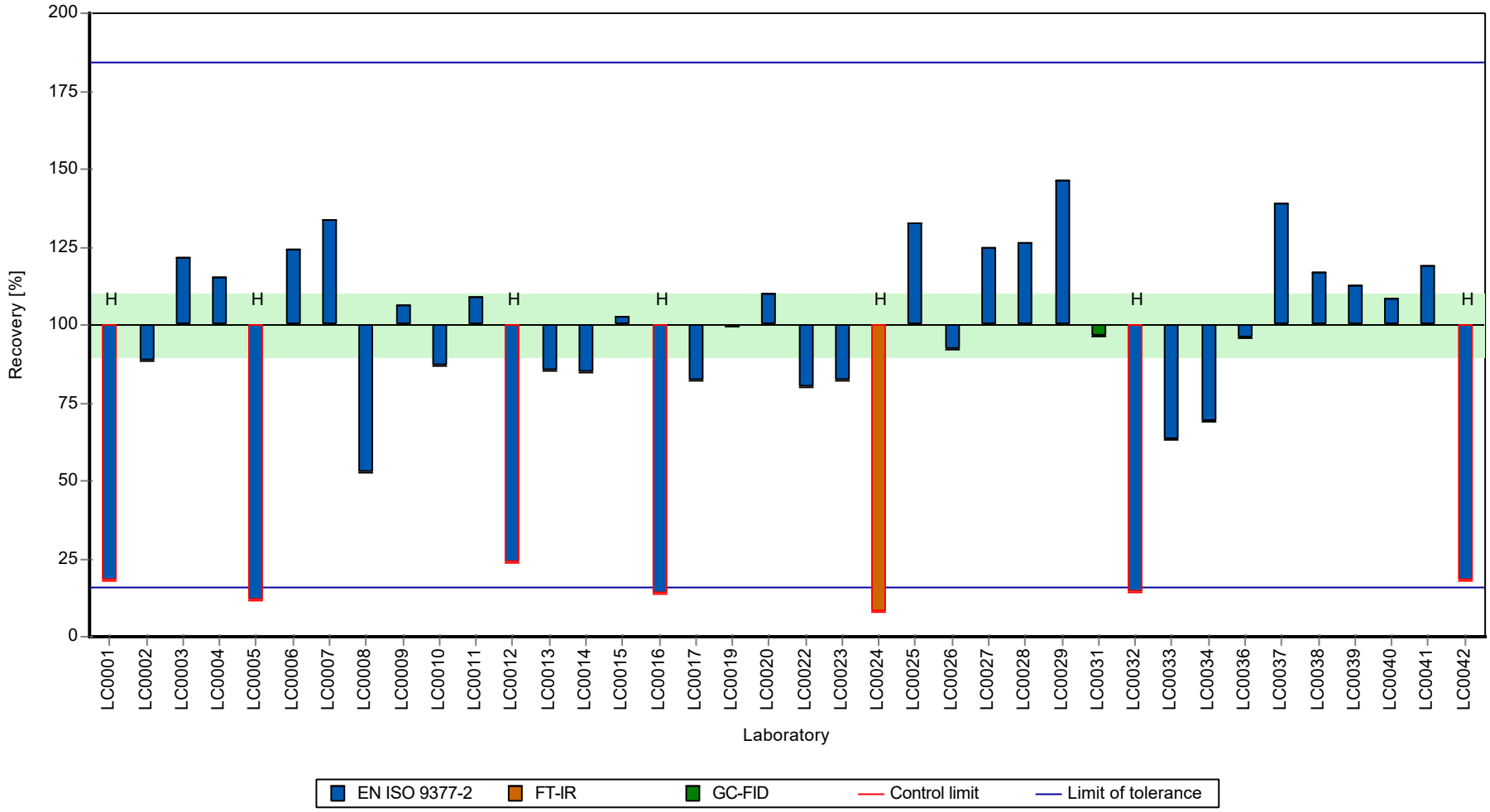
Results



Parameter oriented report Sum parameters SP07

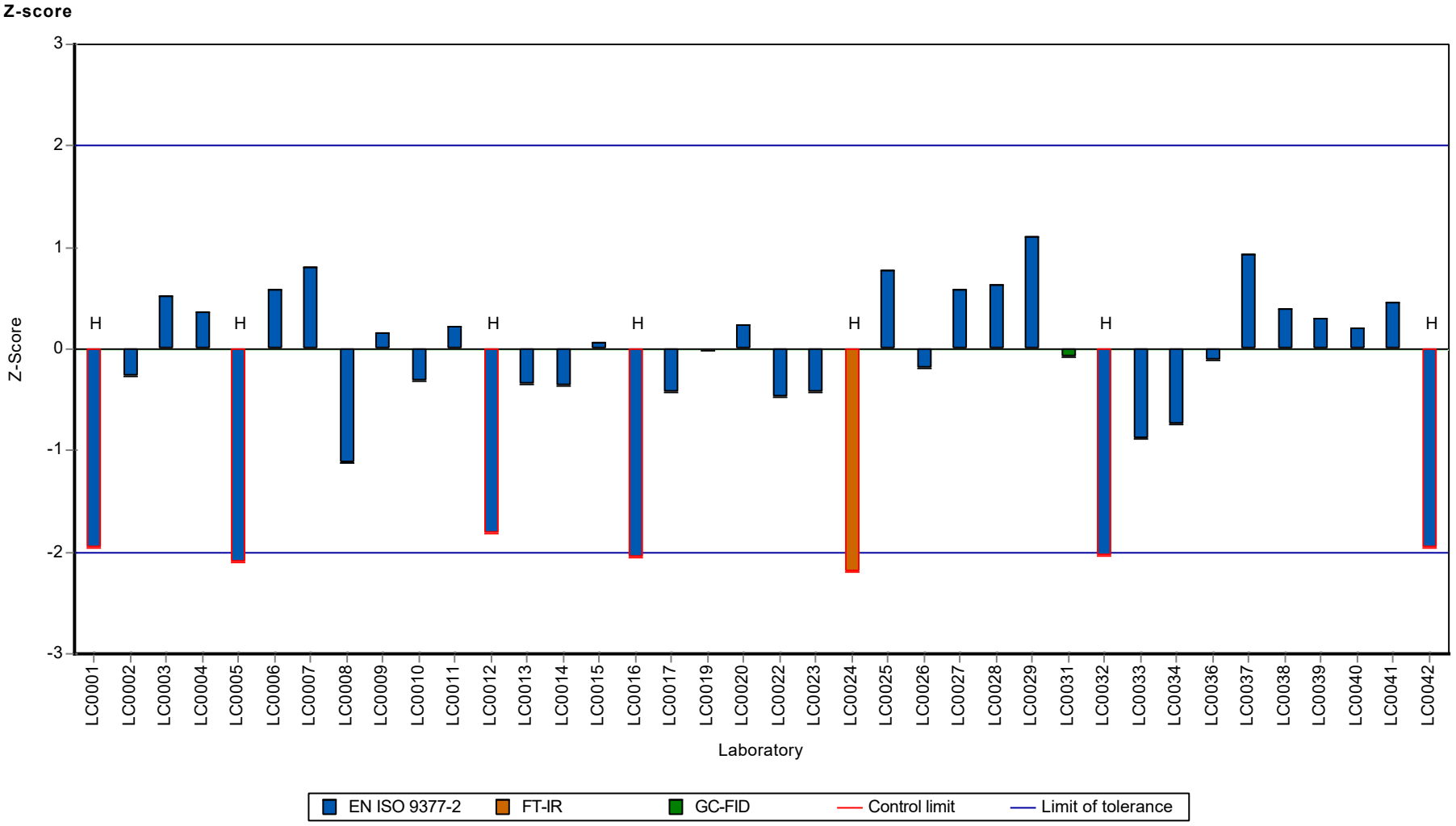
Sample: SP07KWIB, Parameter: HC-Index

Recovery rate



Parameter oriented report Sum parameters SP07

Sample: SP07KWIB, Parameter: HC-Index



Parameter oriented report

SP07 A - Phenolindex

Phenolindex

Unit	mg/l
Assigned value ± U (k=2)	0.0702 ± 0.00204
Criterion	0.00772 (11 %)
Minimum - Maximum	0.0621 - 0.0781
Control test value ± U (k=2)	0.0700 ± 0.0105

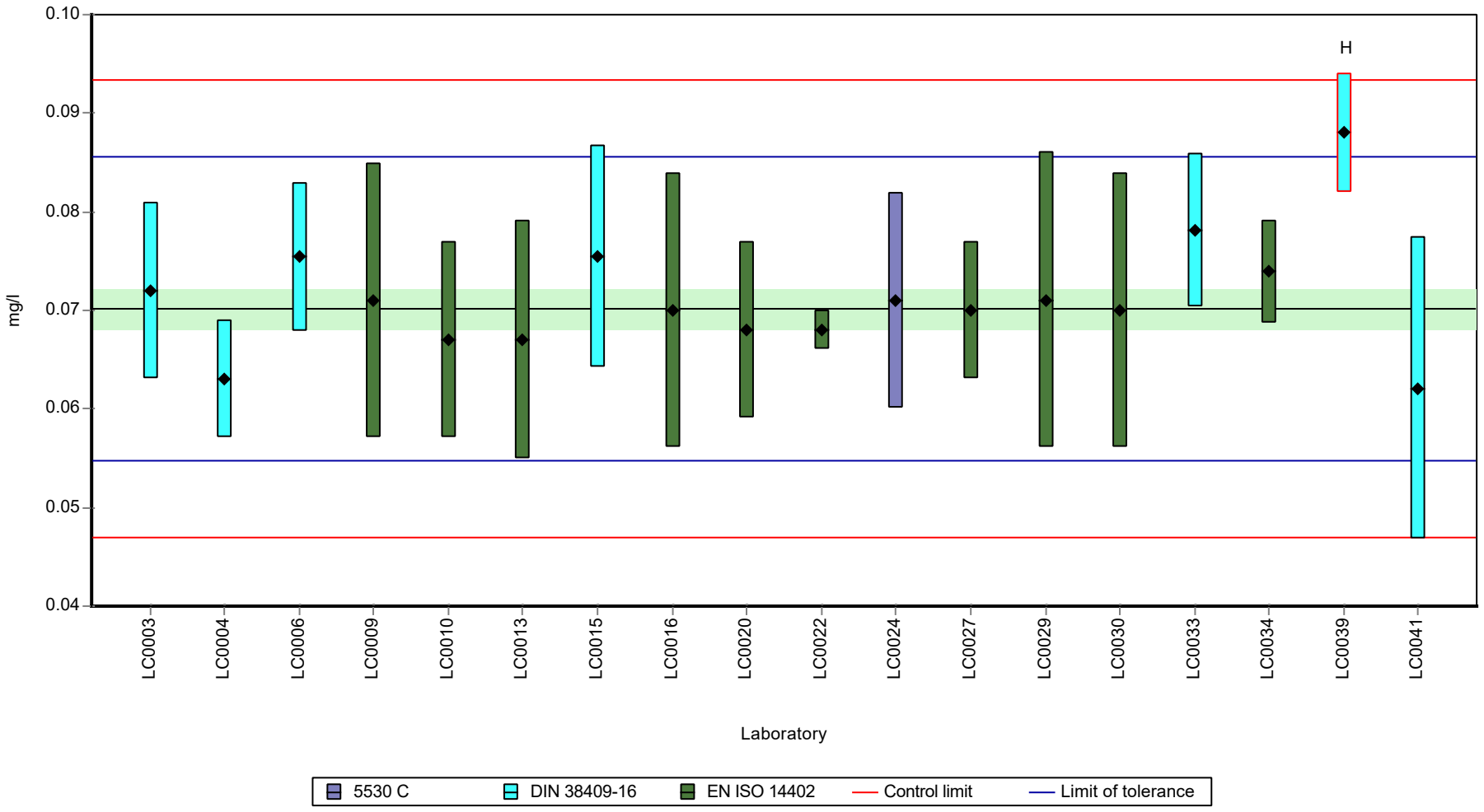
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0003	0.072	0.009	103	0.24	
LC0004	0.063	0.006	89.8	-0.93	
LC0006	0.0754	0.0075	107	0.68	
LC0009	0.071	0.014	101	0.11	
LC0010	0.067	0.01	95.5	-0.41	
LC0013	0.067	0.0121	95.5	-0.41	
LC0015	0.0755	0.0113	108	0.69	
LC0016	0.07	0.014	99.7	-0.02	
LC0020	0.068	0.009	96.9	-0.28	
LC0022	0.068	0.002	96.9	-0.28	
LC0024	0.071	0.011	101	0.11	
LC0027	0.07	0.007	99.7	-0.02	
LC0029	0.071	0.015	101	0.11	
LC0030	0.07	0.014	99.7	-0.02	
LC0033	0.0781	0.0078	111	1.03	
LC0034	0.0739	0.00517	105	0.48	
LC0039	0.088	0.006	125	2.31	H
LC0041	0.0621	0.0153	88.5	-1.05	

Characteristics of parameter

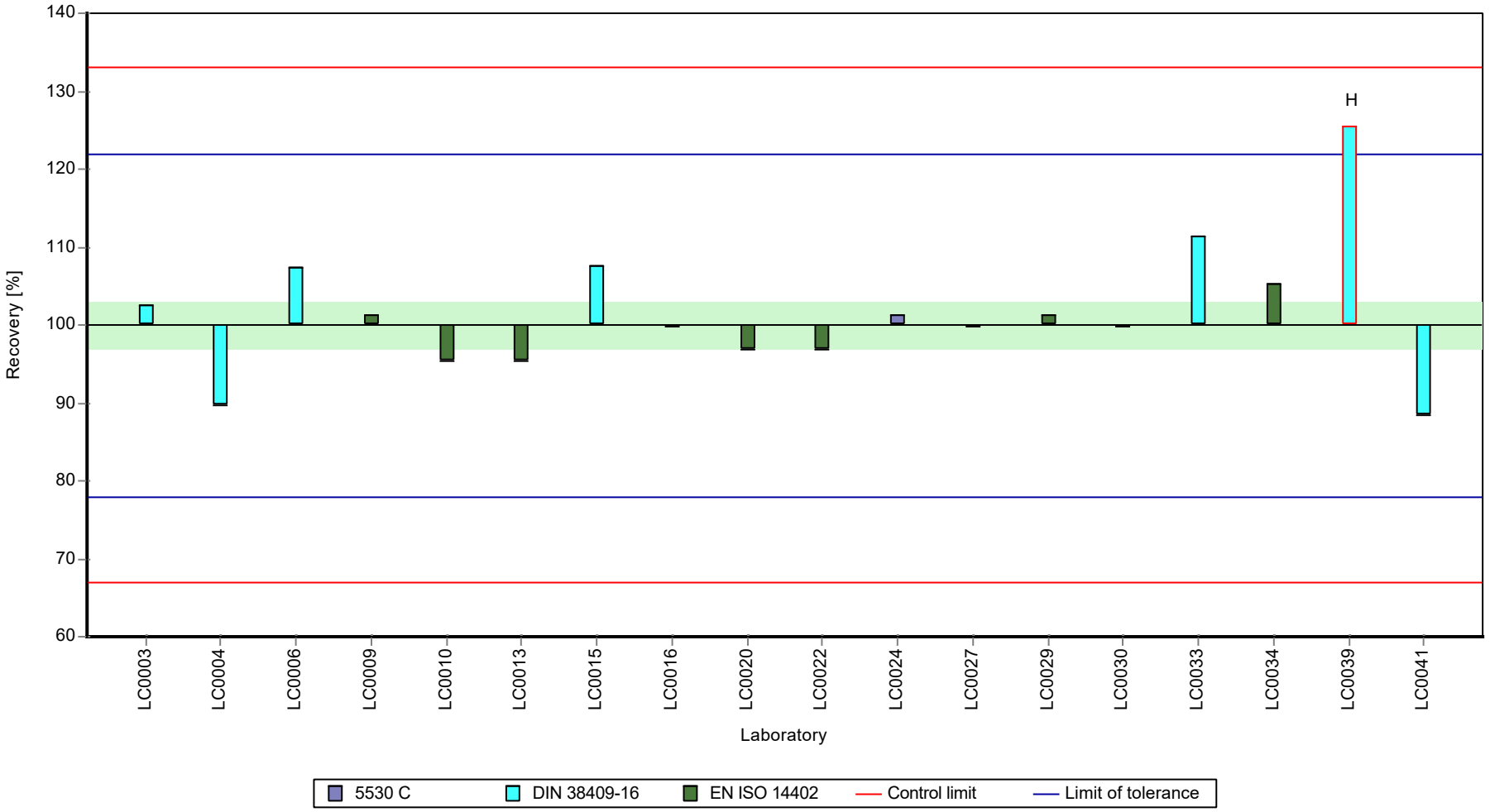
	all results	without outliers	Unit
Mean ± CI (99%)	0.0712 ± 0.00414	0.0702 ± 0.00307	mg/l
Minimum	0.0621	0.0621	mg/l
Maximum	0.088	0.0781	mg/l
Standard deviation	0.00586	0.00421	mg/l
rel. standard deviation	8.24	6	%
n	18	17	-

Graphical presentation of results

Results

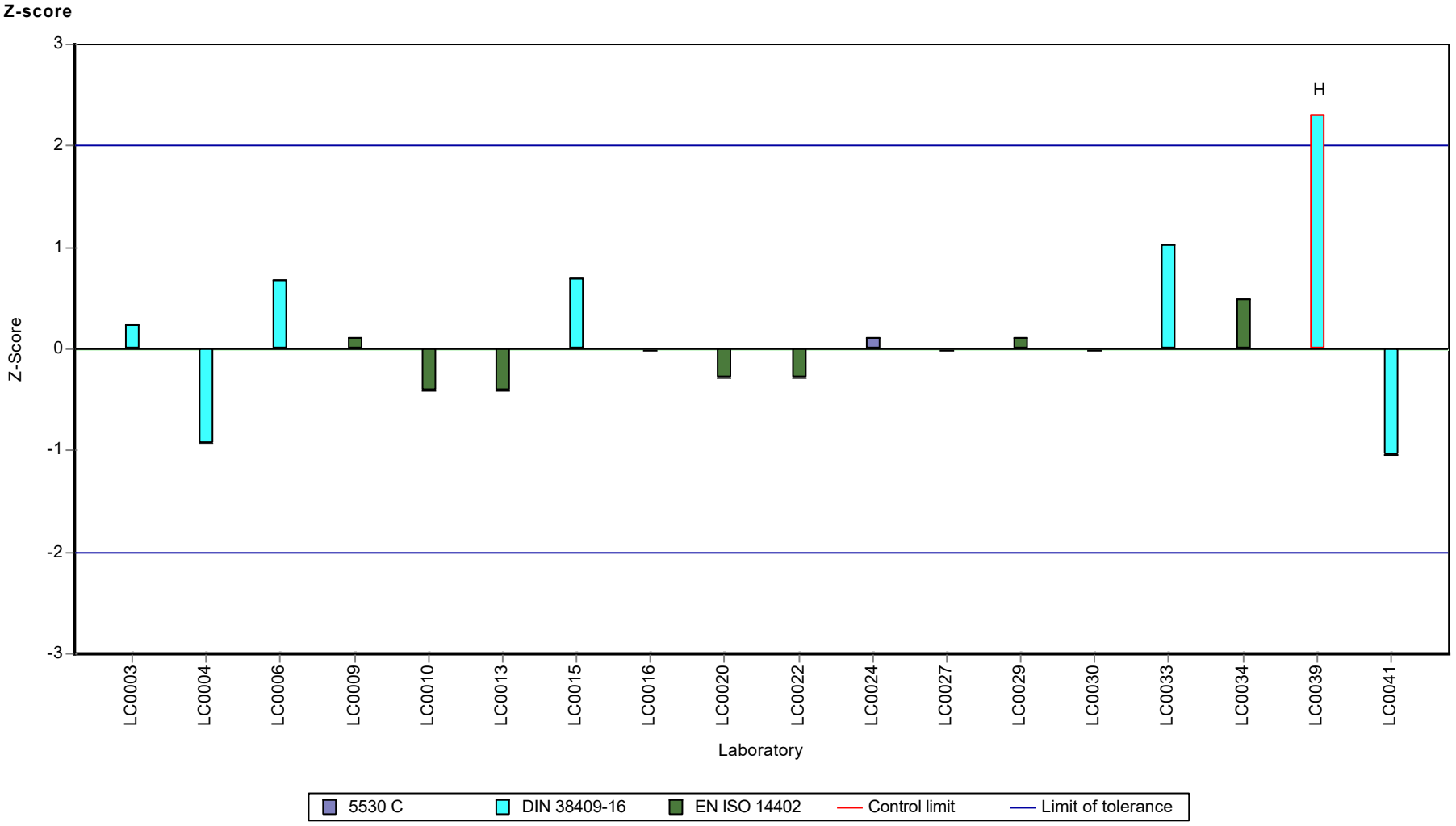


Recovery rate



Parameter oriented report Sum parameters SP07

Sample: SP07PHIA, Parameter: Phenolindex



Parameter oriented report

SP07 B - Phenolindex

Phenolindex

Unit	mg/l
Assigned value ± U (k=2)	0.669 ± 0.025
Criterion	0.0736 (11 %)
Minimum - Maximum	0.609 - 0.789
Control test value ± U (k=2)	0.6600 ± 0.0989

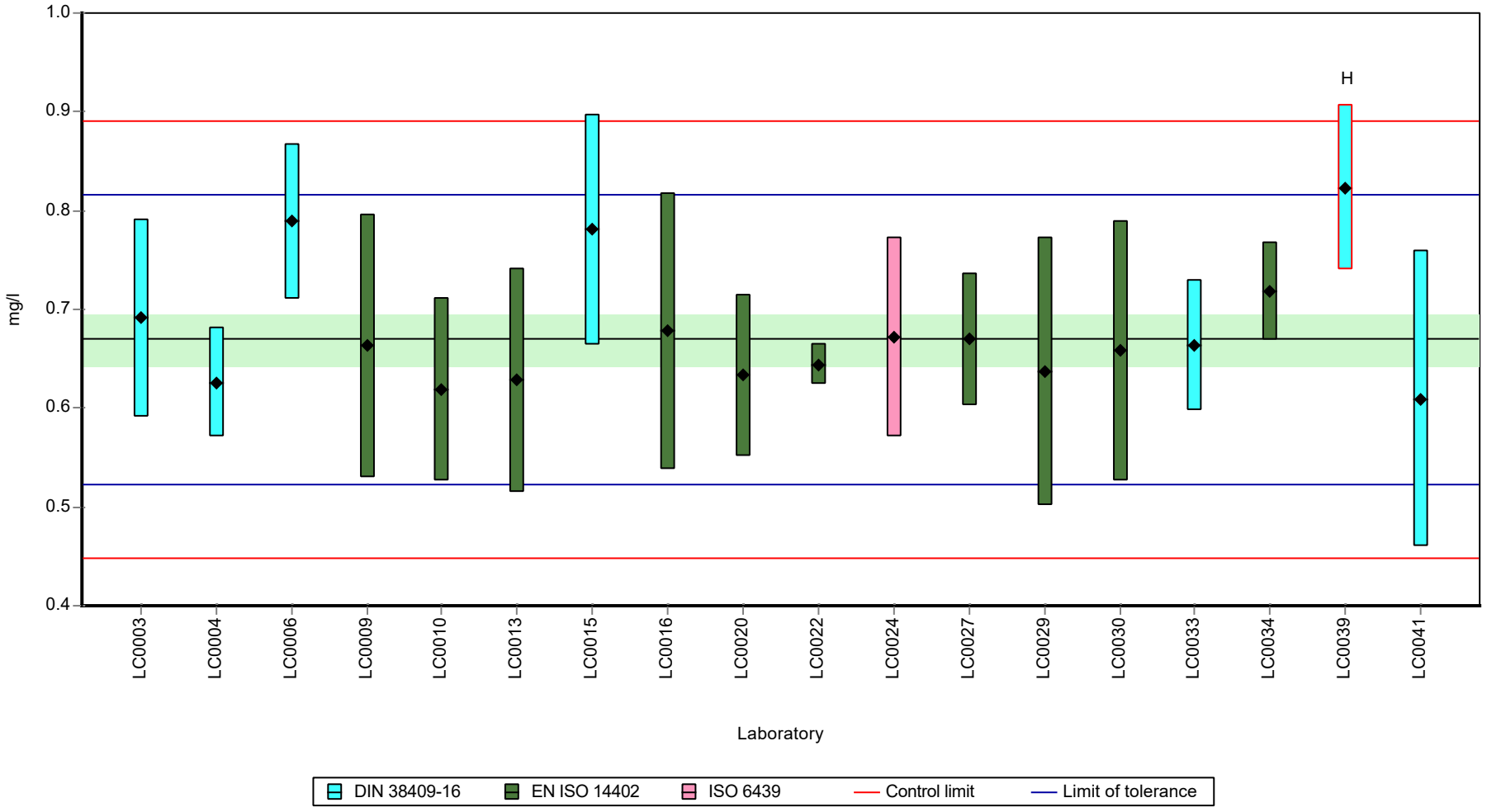
Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0003	0.691	0.1	103	0.29	
LC0004	0.626	0.056	93.5	-0.59	
LC0006	0.7891	0.0789	118	1.62	
LC0009	0.663	0.133	99	-0.09	
LC0010	0.619	0.093	92.5	-0.68	
LC0013	0.628	0.113	93.8	-0.56	
LC0015	0.781	0.117	117	1.51	
LC0016	0.678	0.14	101	0.12	
LC0020	0.633	0.082	94.6	-0.49	
LC0022	0.644	0.021	96.2	-0.35	
LC0024	0.672	0.101	100	0.03	
LC0027	0.67	0.067	100	0.01	
LC0029	0.637	0.136	95.2	-0.44	
LC0030	0.658	0.132	98.3	-0.16	
LC0033	0.664	0.066	99.2	-0.07	
LC0034	0.718	0.0503	107	0.66	
LC0039	0.823	0.084	123	2.09	H
LC0041	0.6094	0.15	91	-0.82	

Characteristics of parameter

	all results	without outliers	Unit
Mean ± CI (99%)	0.678 ± 0.0437	0.669 ± 0.0376	mg/l
Minimum	0.609	0.609	mg/l
Maximum	0.823	0.789	mg/l
Standard deviation	0.0618	0.0516	mg/l
rel. standard deviation	9.11	7.71	%
n	18	17	-

Graphical presentation of results

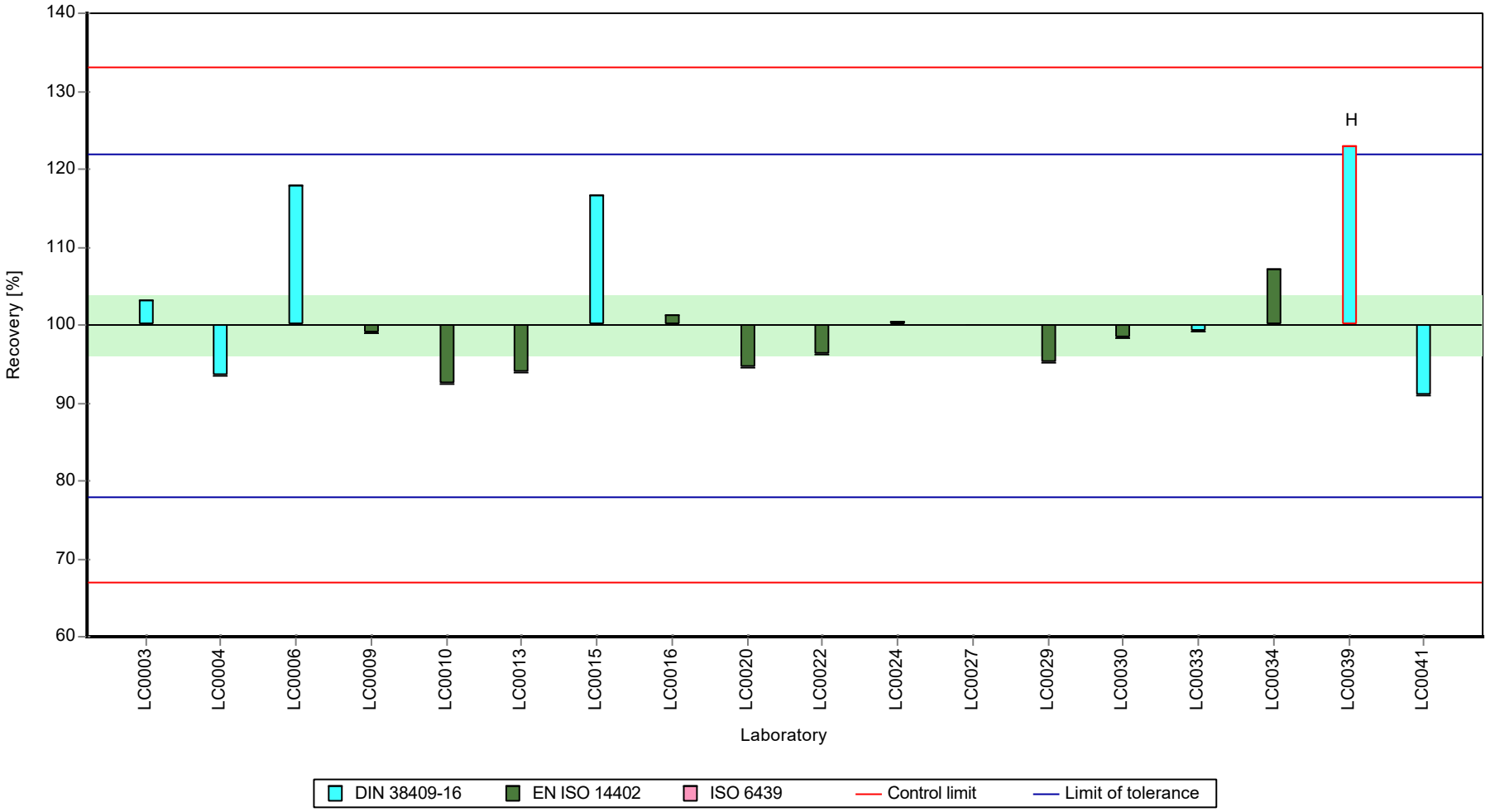
Results



Parameter oriented report Sum parameters SP07

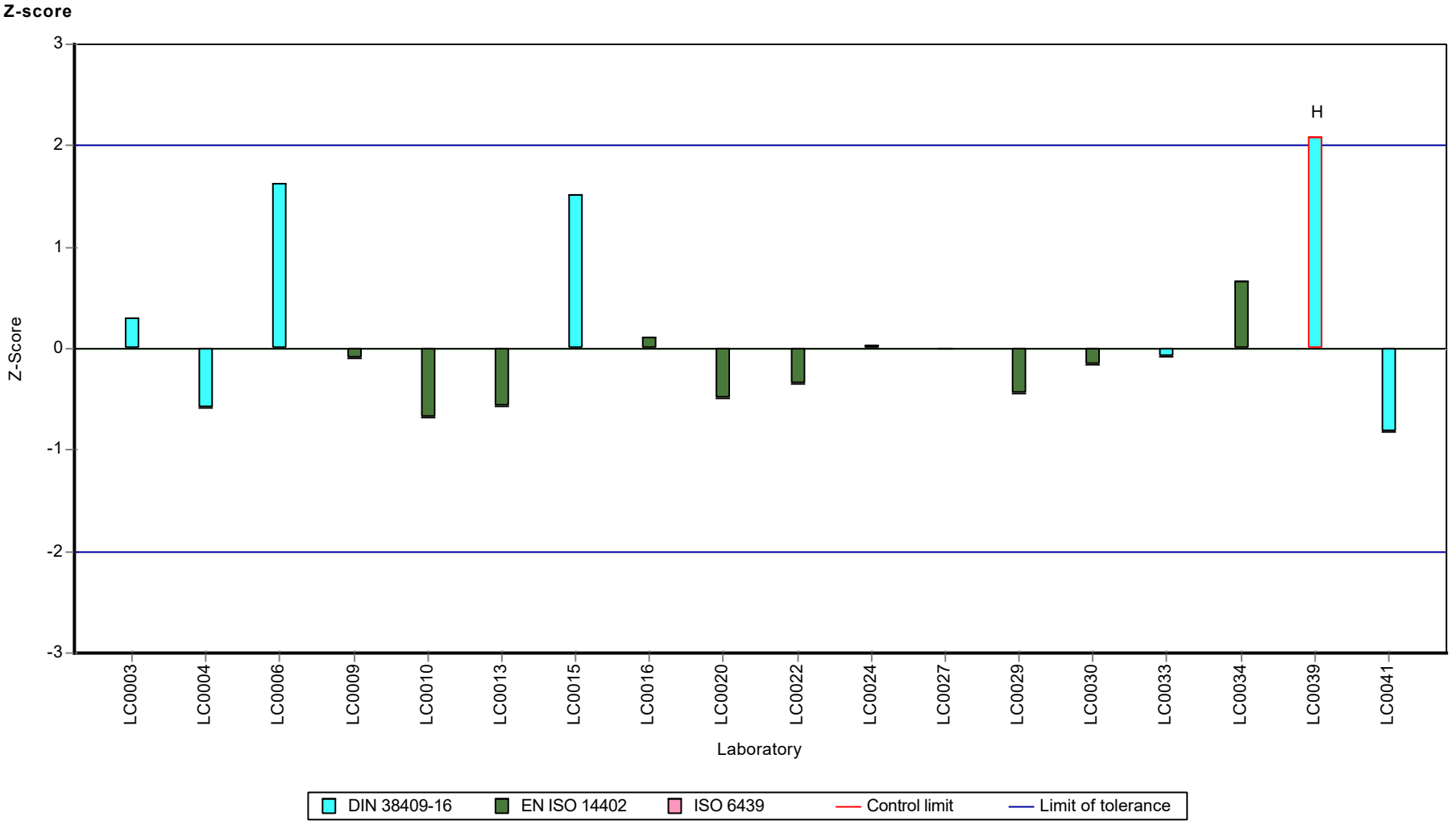
Sample: SP07PHIB, Parameter: Phenolindex

Recovery rate



Parameter oriented report Sum parameters SP07

Sample: SP07PHIB, Parameter: Phenolindex



E8. Laborорientierte Auswertung / Laboratory oriented report

Die Laborорientierte Auswertung ist nach dem Laborcode sortiert.

The laboratory oriented report is sorted by laboratory code.

Summary of results Sum parameters SP07

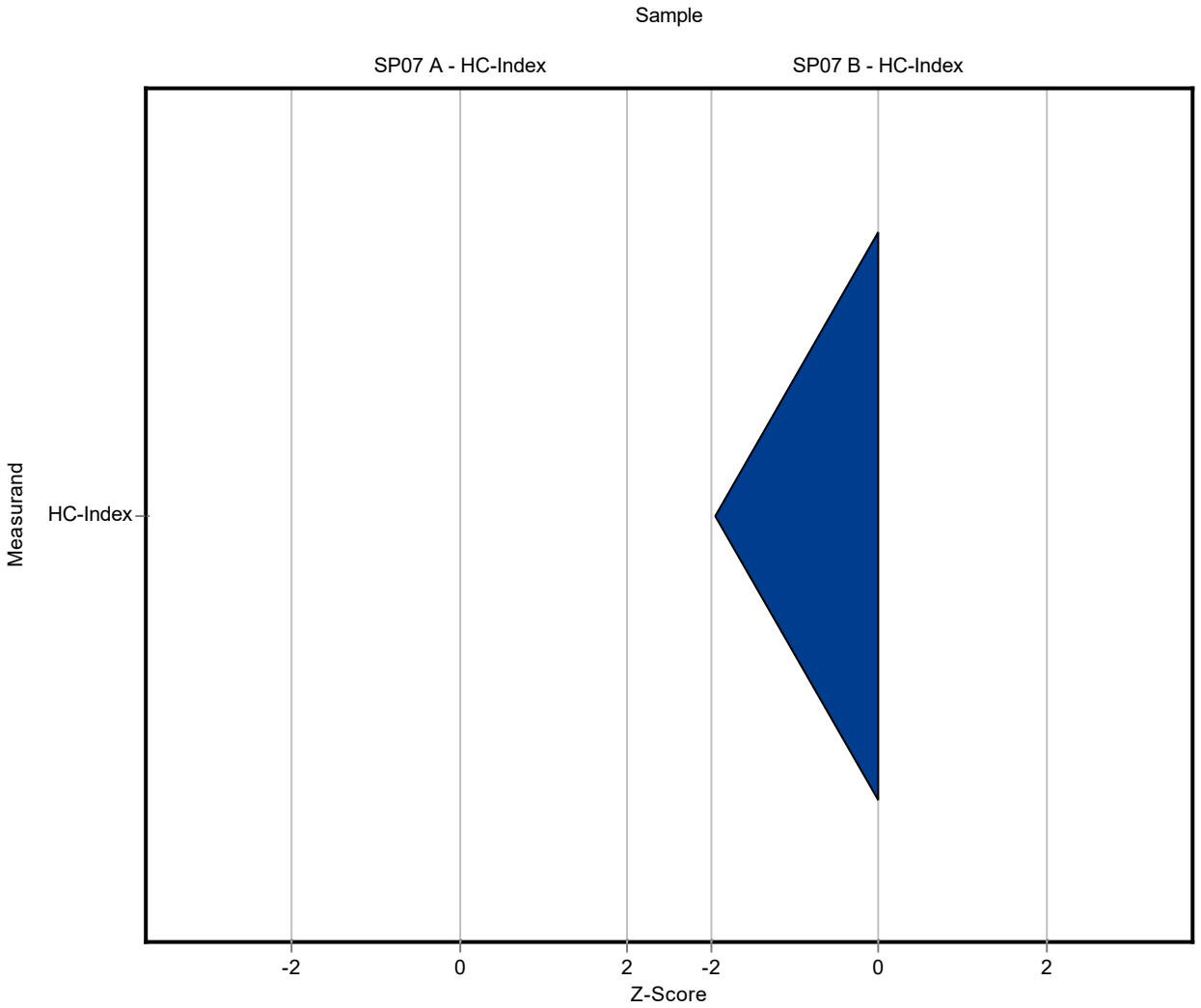
Labcode: LC0001

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.2 ± 0.06	0.465	18	-1.95



Summary of results Sum parameters SP07 - En-Score

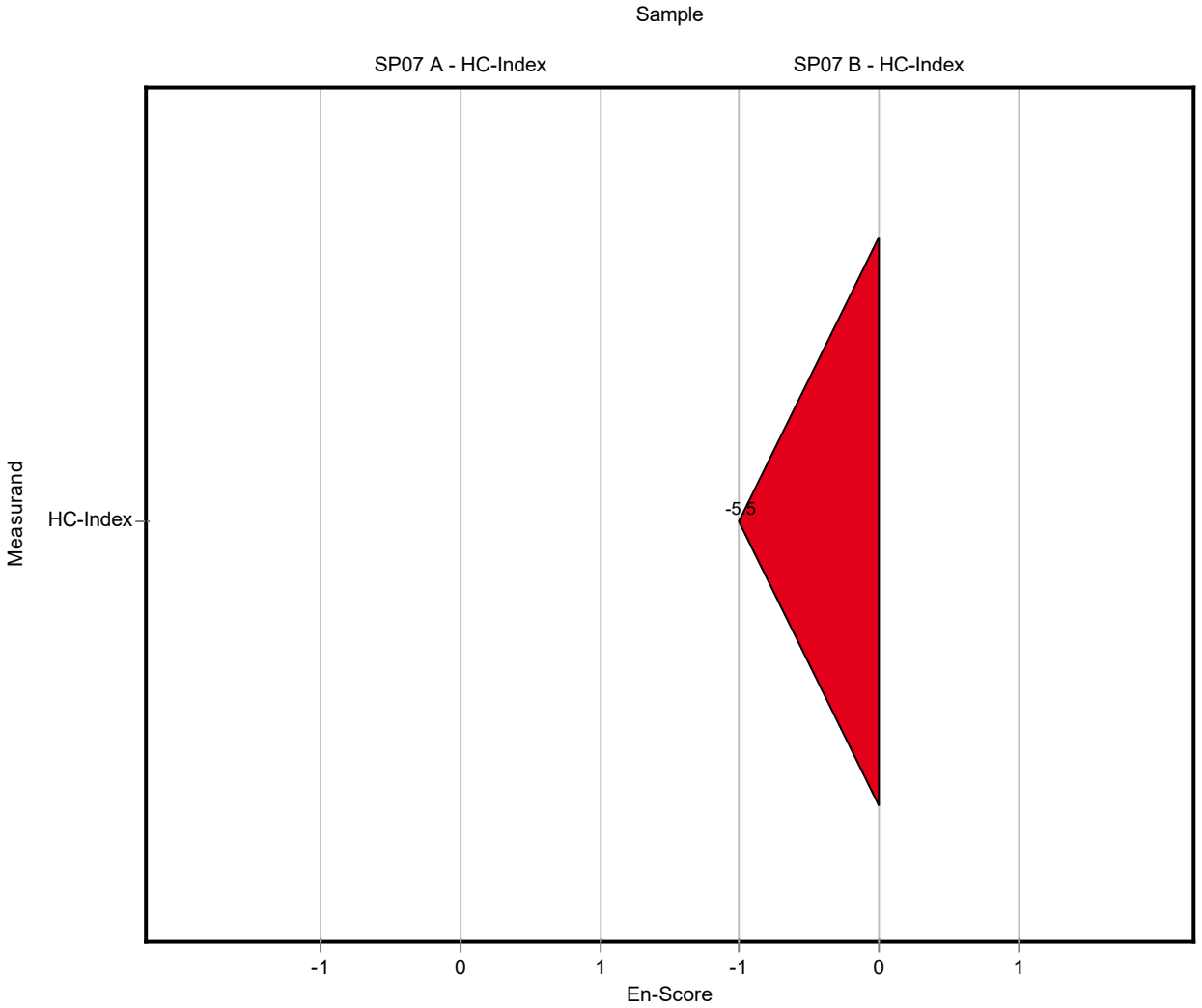
Labcode: LC0001

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.2 ± 0.06	0.465	18	-5.53



Summary of results Sum parameters SP07

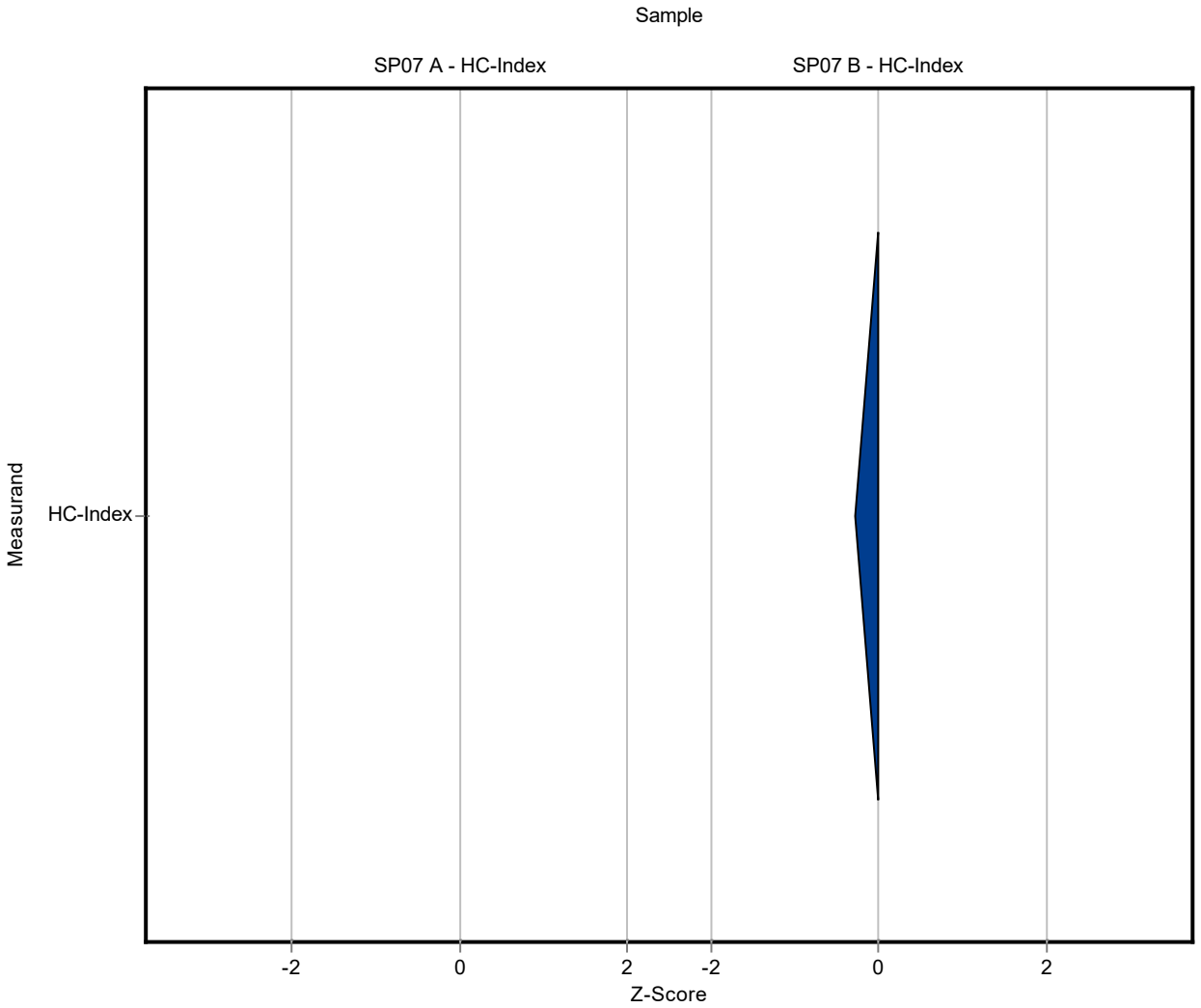
Labcode: LC0002

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.98 ± 0.17	0.465	88.4	-0.28



Summary of results Sum parameters SP07 - En-Score

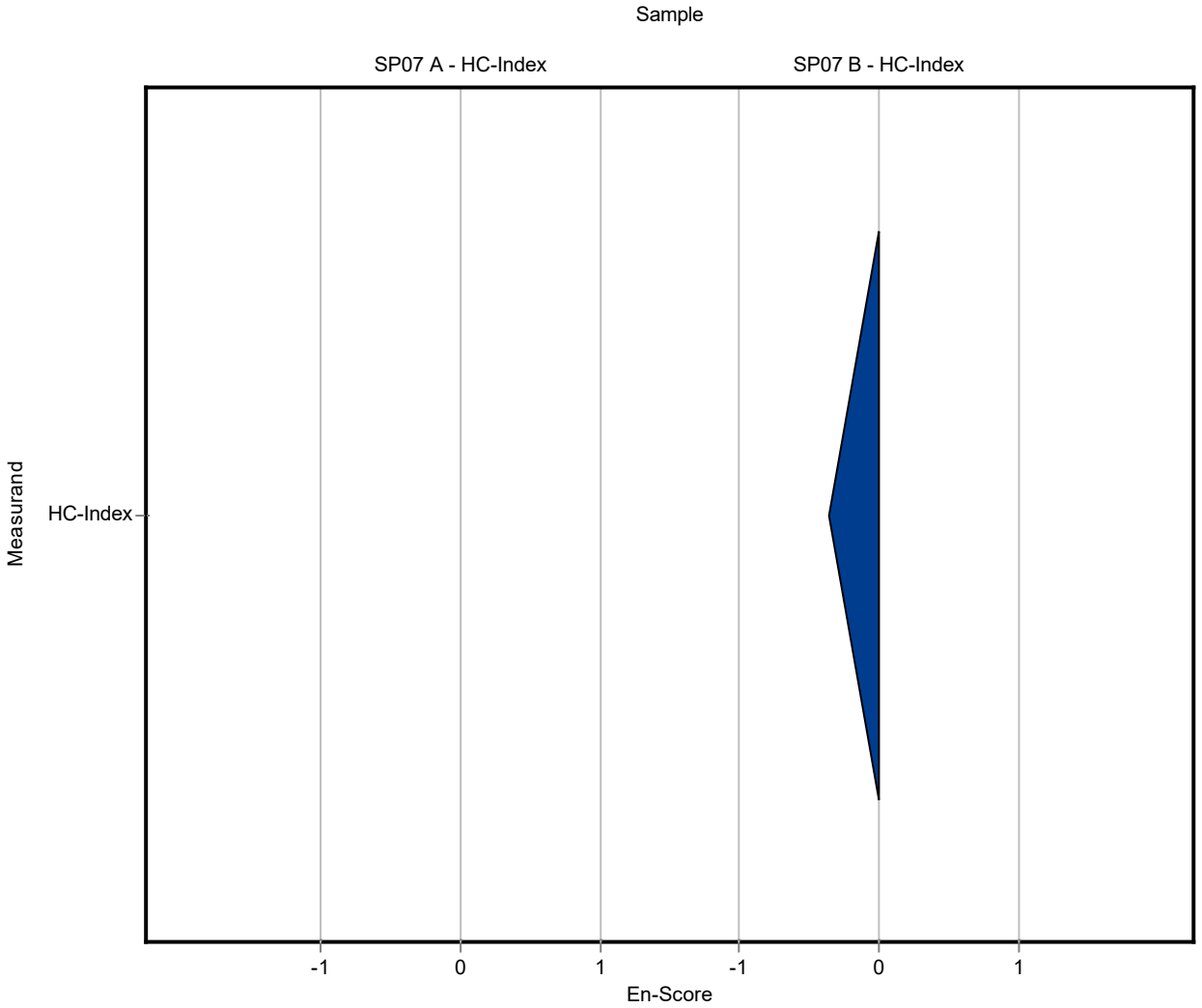
Labcode: LC0002

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.98 ± 0.17	0.465	88.4	-0.36



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.245 ± 0.0637	0.061	169	1.64

Sample: SP07KWIB

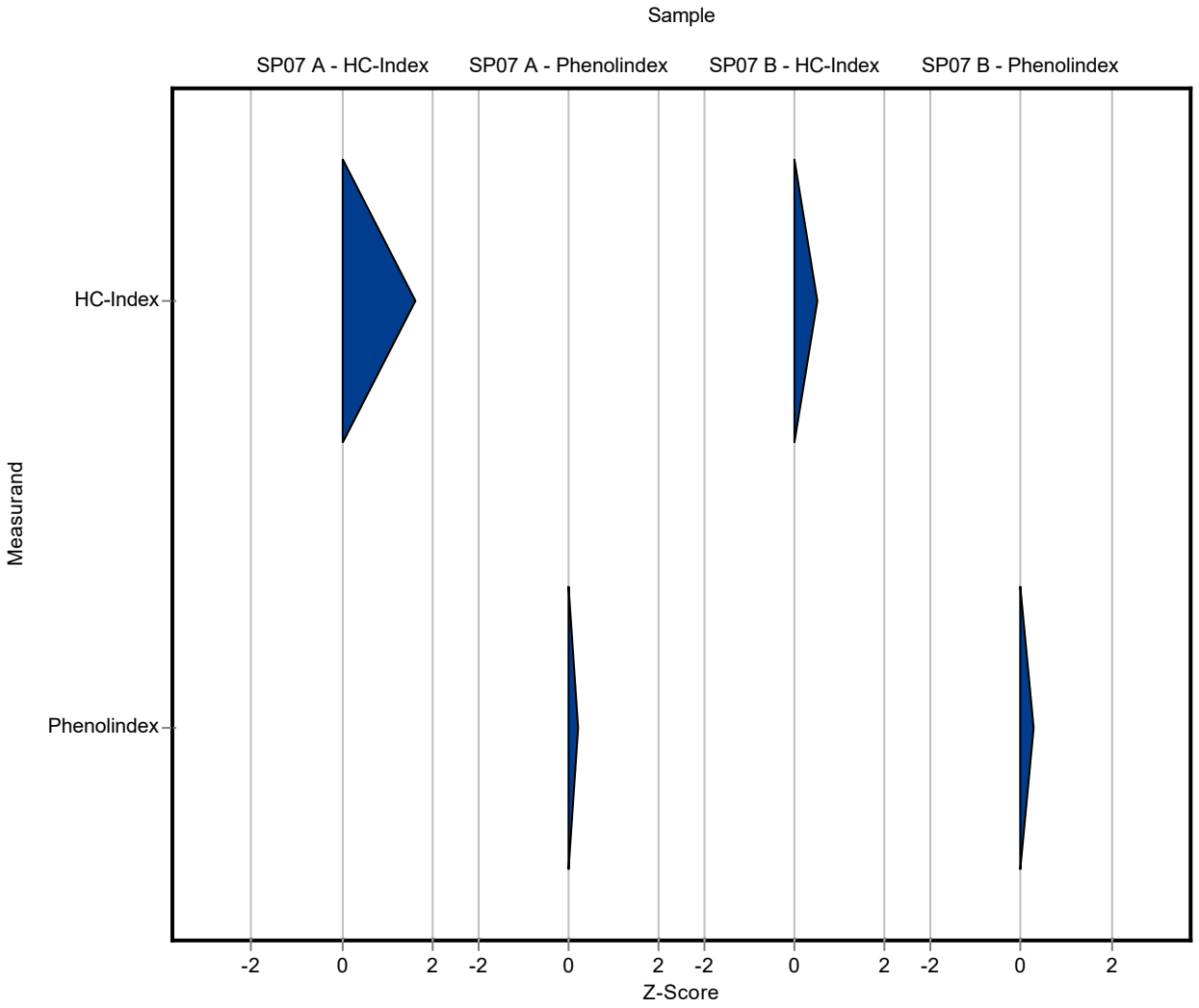
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.35 ± 0.1242	0.465	122	0.52

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.072 ± 0.009	0.00772	103	0.24

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.691 ± 0.1	0.0736	103	0.29


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.245 ± 0.0637	0.061	169	0.77

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.35 ± 0.1242	0.465	122	0.89

Sample: SP07PHIA

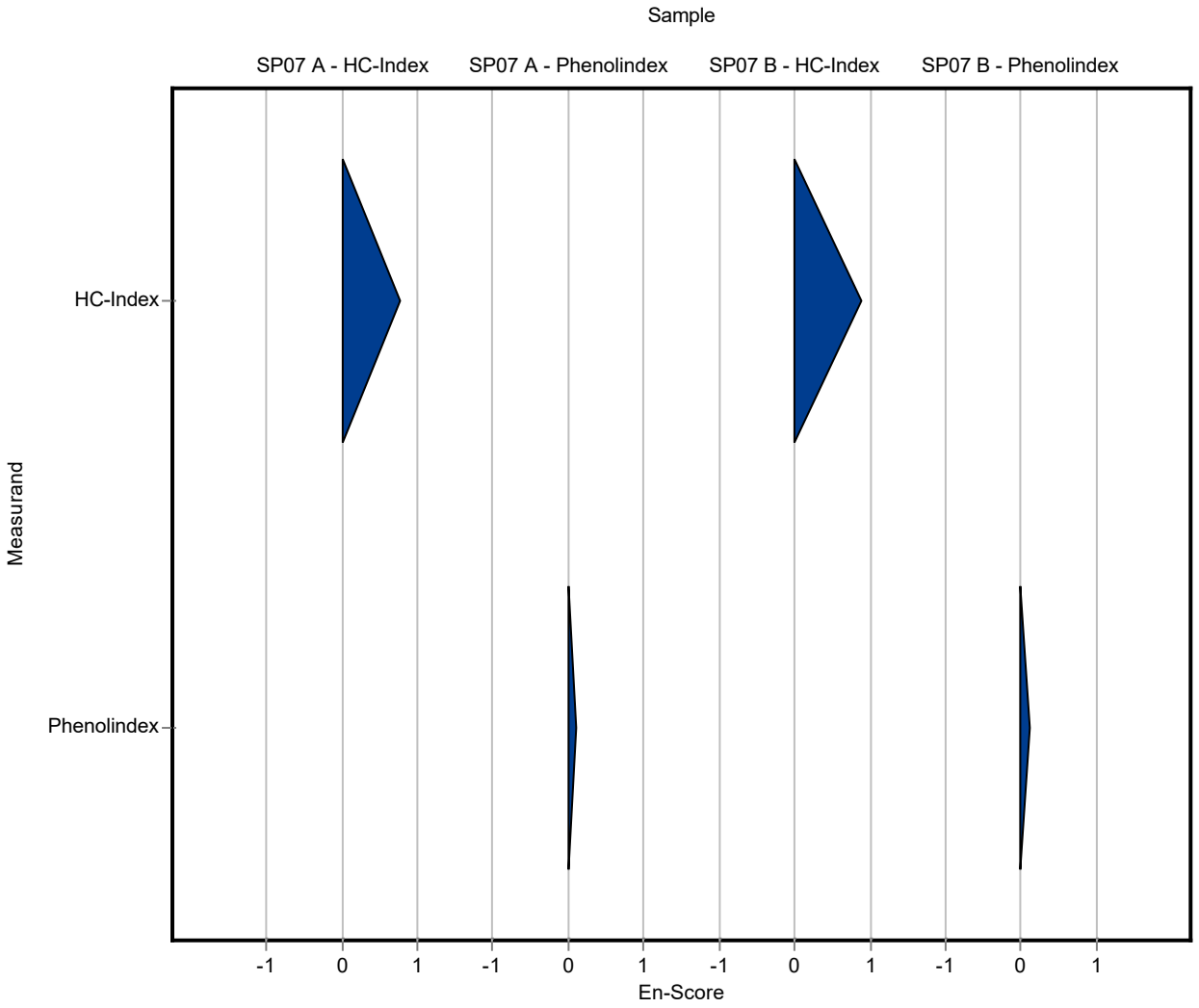
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.072 ± 0.009	0.00772	103	0.10

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.691 ± 0.1	0.0736	103	0.11

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0003



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.133 ± 0.024	0.061	91.6	-0.20

Sample: SP07KWIB

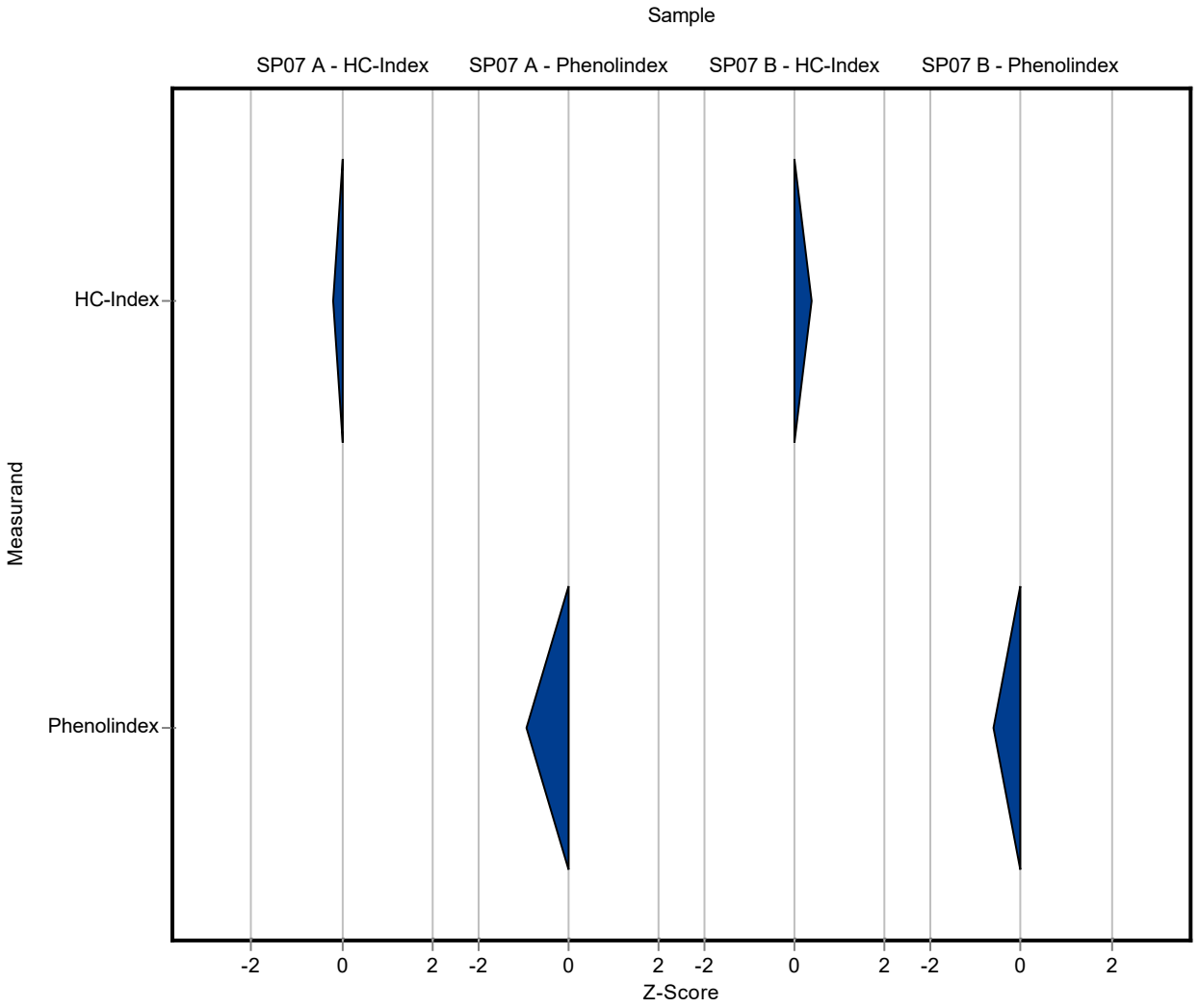
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.28 ± 0.23	0.465	116	0.37

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.063 ± 0.006	0.00772	89.8	-0.93

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.626 ± 0.056	0.0736	93.5	-0.59


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0004

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.133 ± 0.024	0.061	91.6	-0.23

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.28 ± 0.23	0.465	116	0.36

Sample: SP07PHIA

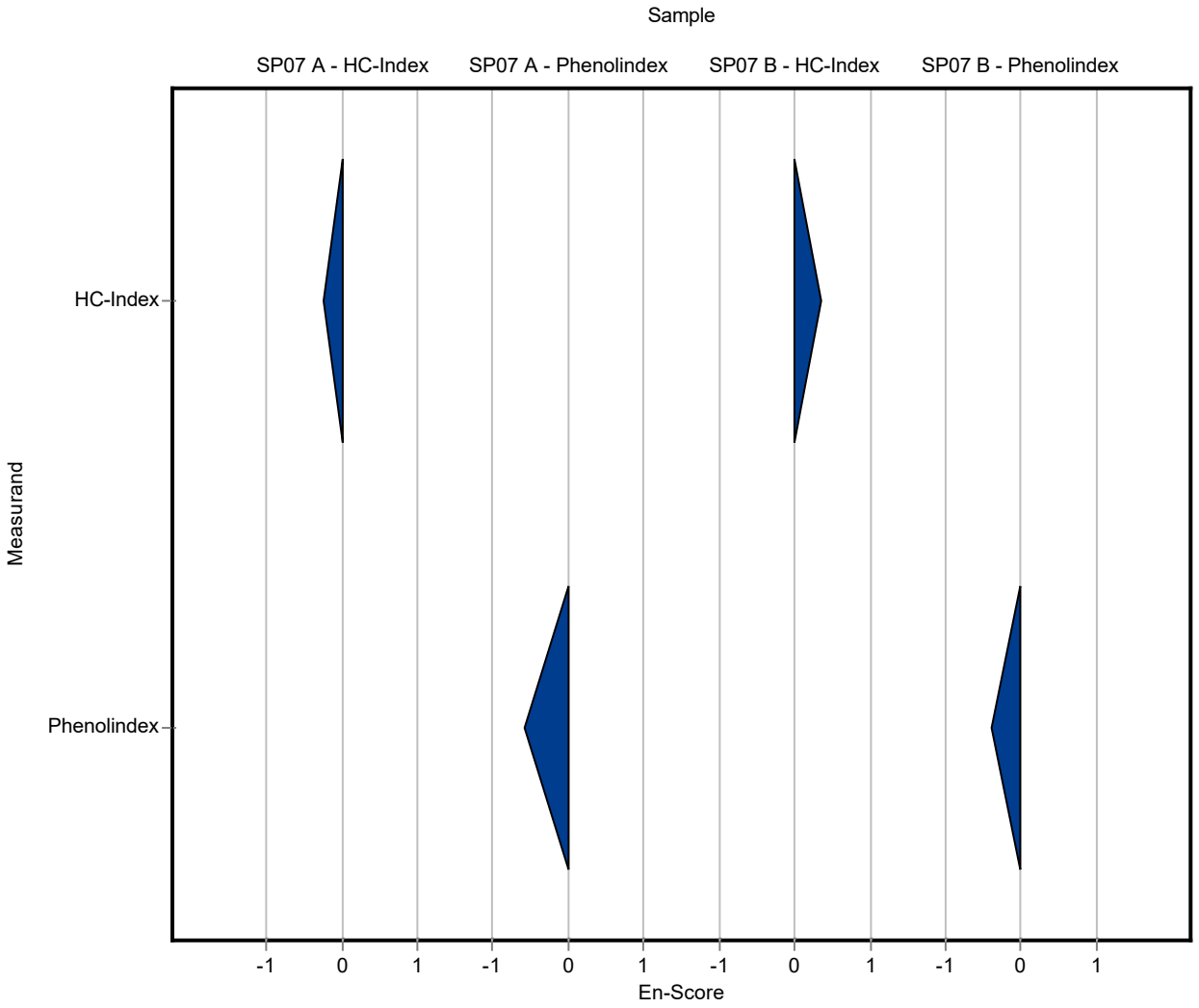
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.063 ± 0.006	0.00772	89.8	-0.59

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.626 ± 0.056	0.0736	93.5	-0.38

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0004

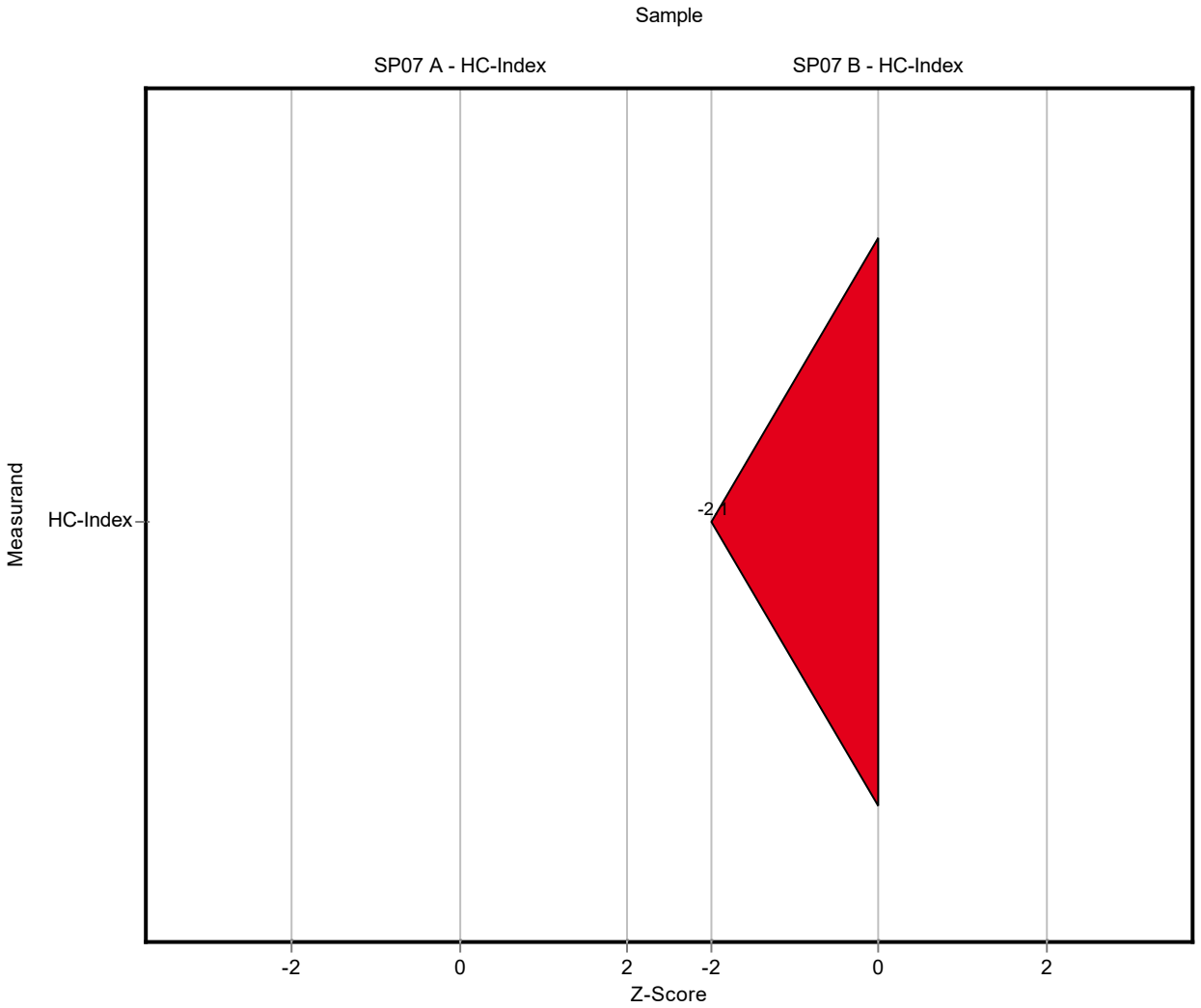


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.129 ± 0.024	0.465	11.6	-2.10



Summary of results Sum parameters SP07 - En-Score

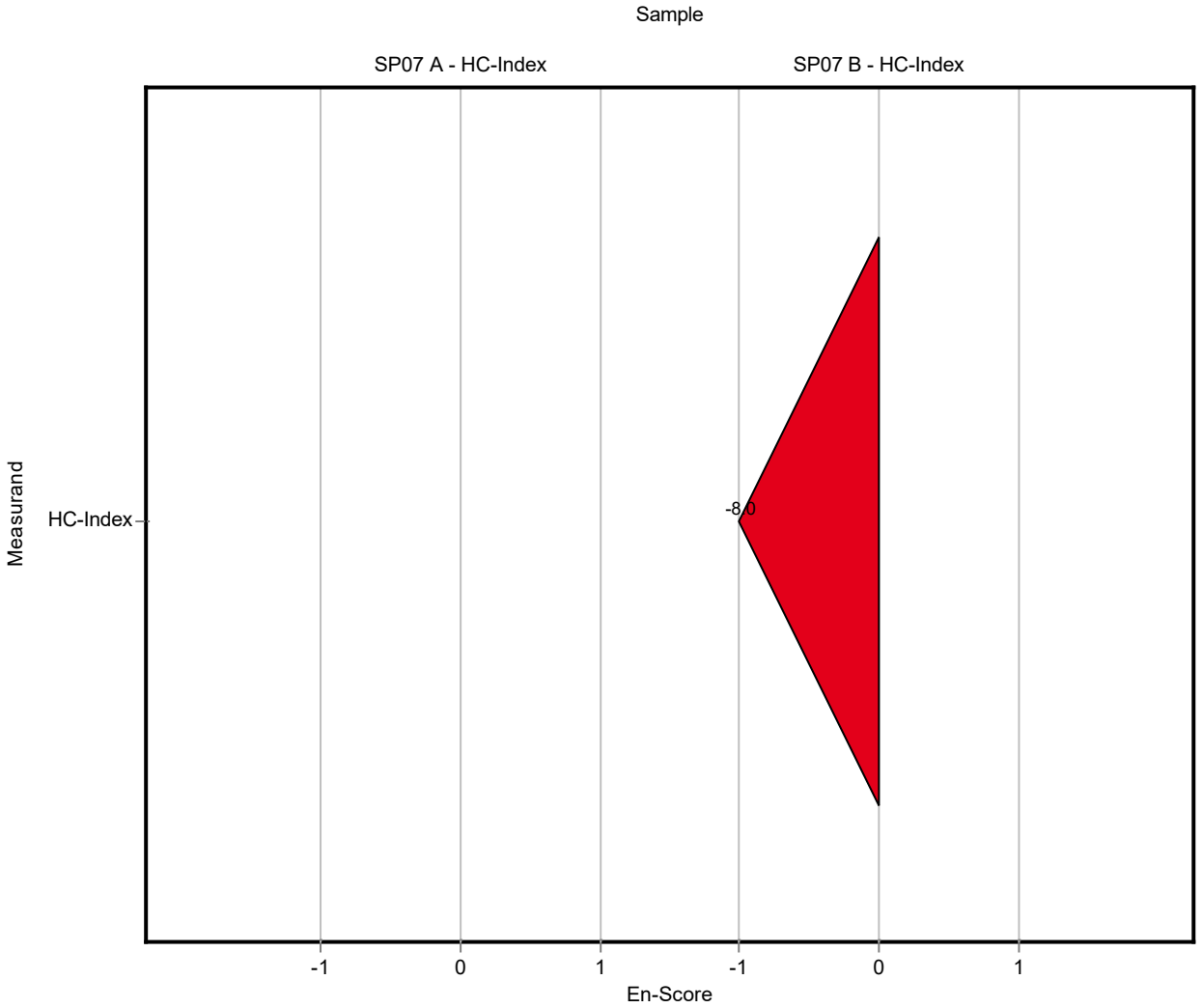
Labcode: LC0005

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.129 ± 0.024	0.465	11.6	-8.04



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.2159 ± 0.0223	0.061	149	1.16

Sample: SP07KWIB

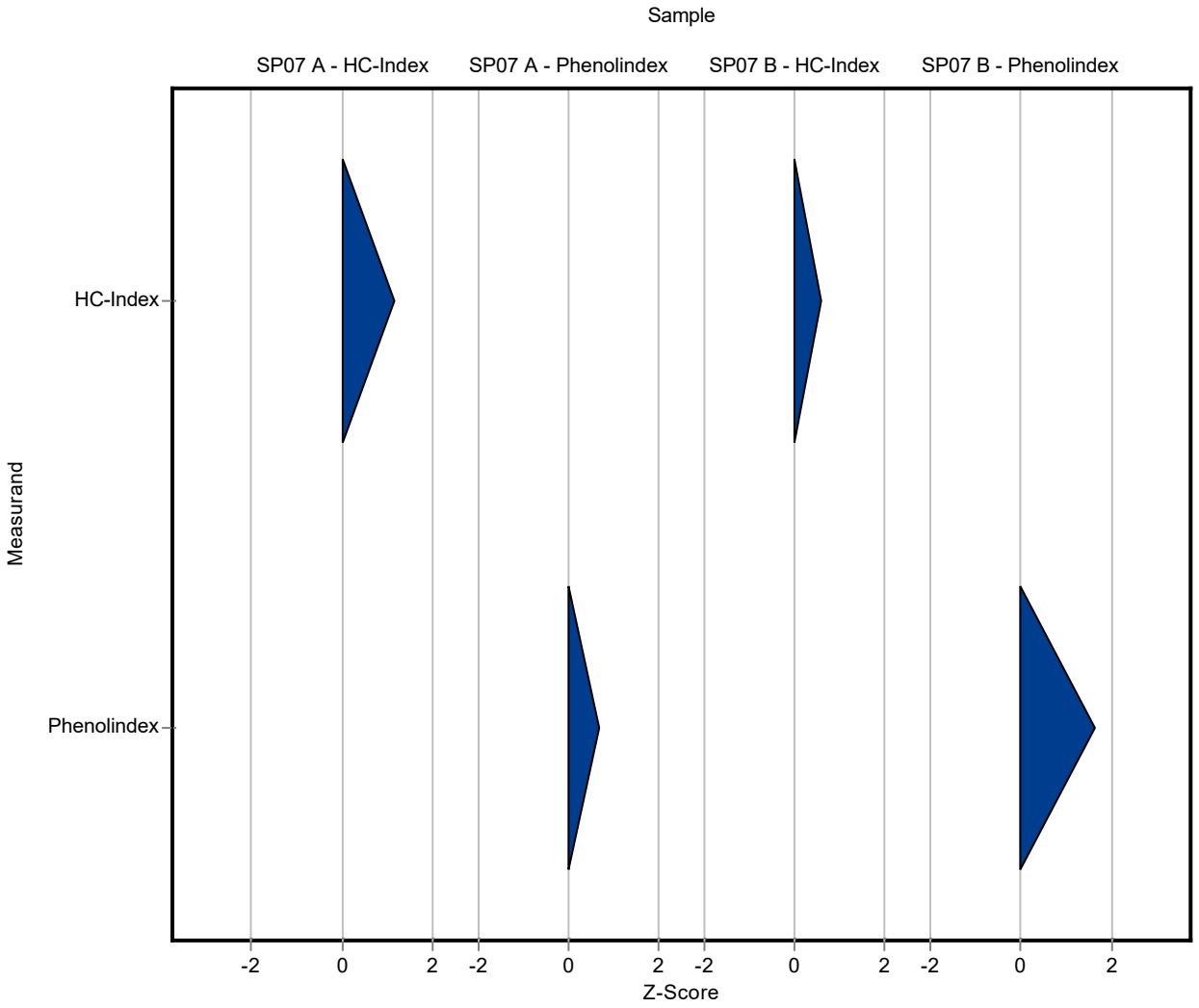
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.3766 ± 0.0215	0.465	124	0.58

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0754 ± 0.0075	0.00772	107	0.68

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.7891 ± 0.0789	0.0736	118	1.62


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.2159 ± 0.0223	0.061	149	1.44

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.3766 ± 0.0215	0.465	124	2.24

Sample: SP07PHIA

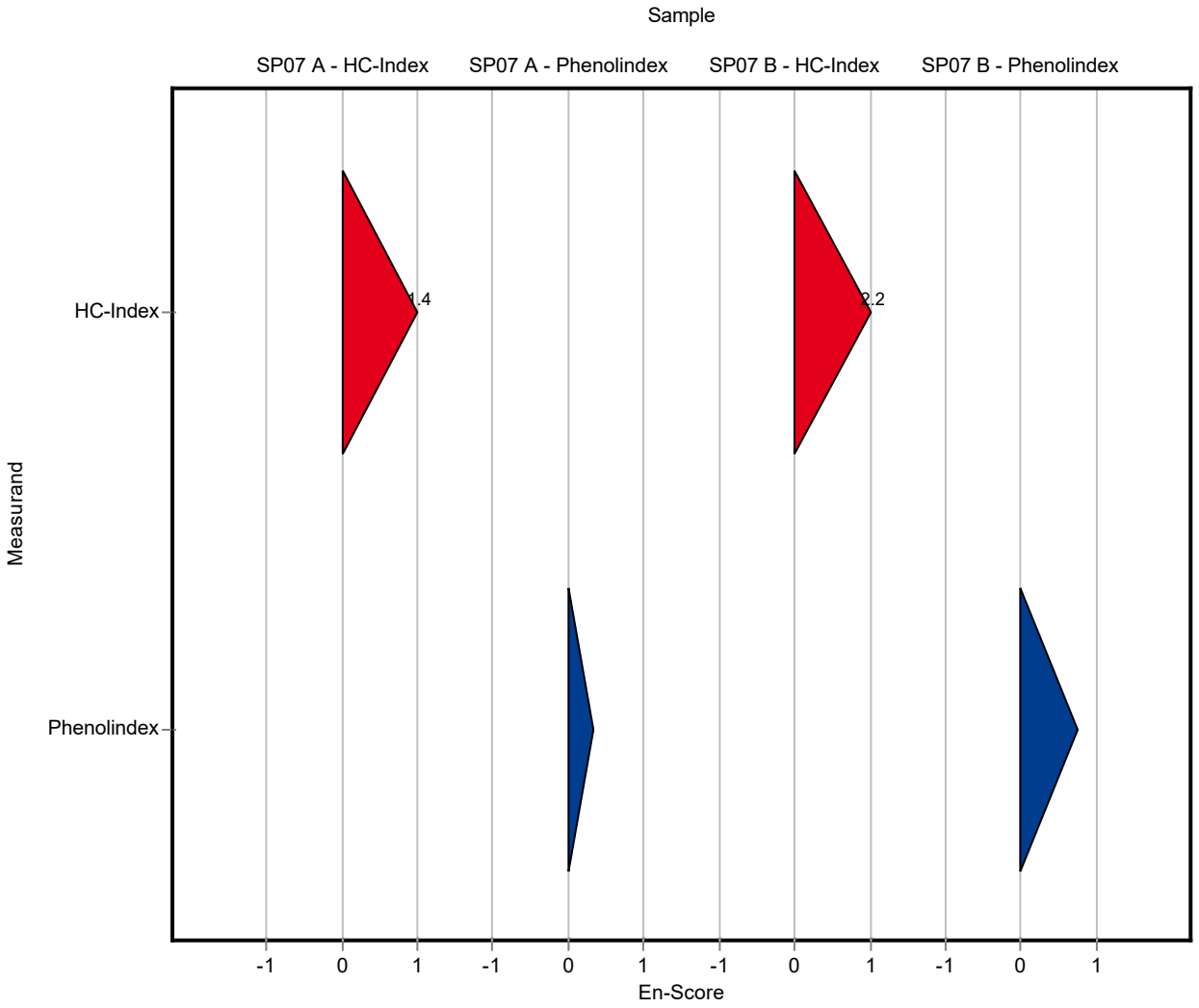
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0754 ± 0.0075	0.00772	107	0.35

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.7891 ± 0.0789	0.0736	118	0.75

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0006



Summary of results Sum parameters SP07

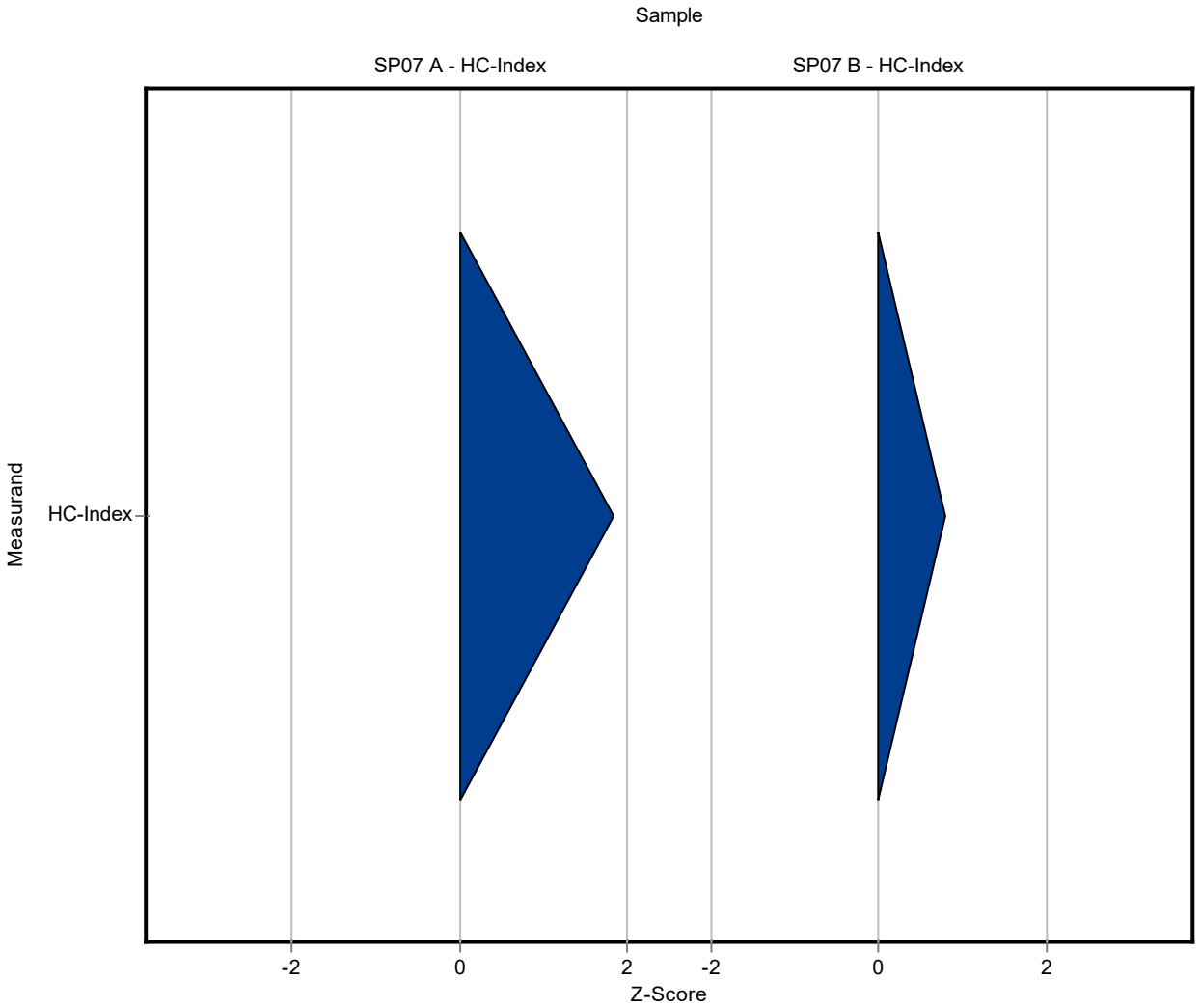
Labcode: LC0007

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.257 ± 0.013	0.061	177	1.83

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.481 ± 0.074	0.465	134	0.80



Summary of results Sum parameters SP07 - En-Score

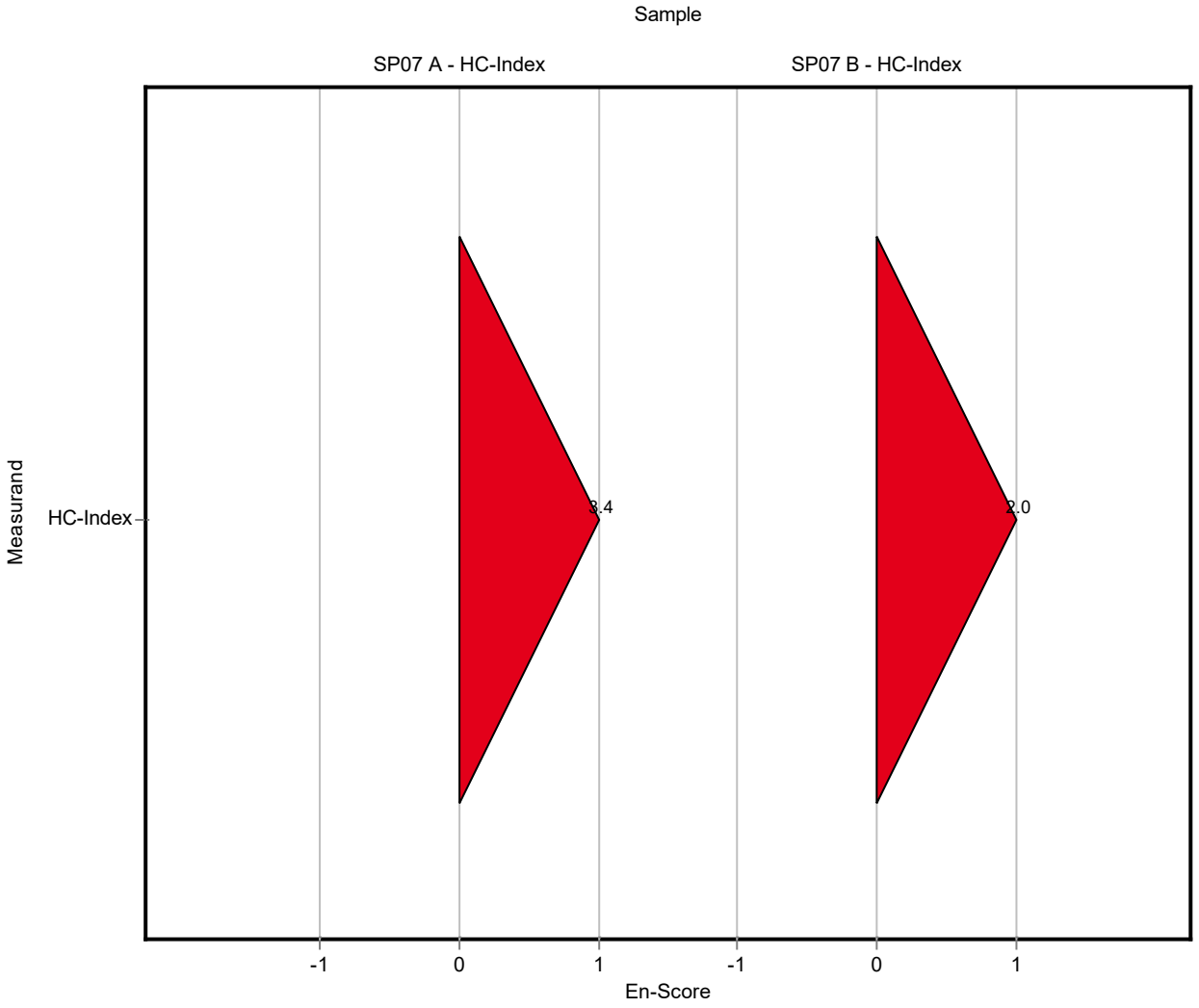
Labcode: LC0007

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.257 ± 0.013	0.061	177	3.37

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.481 ± 0.074	0.465	134	2.01

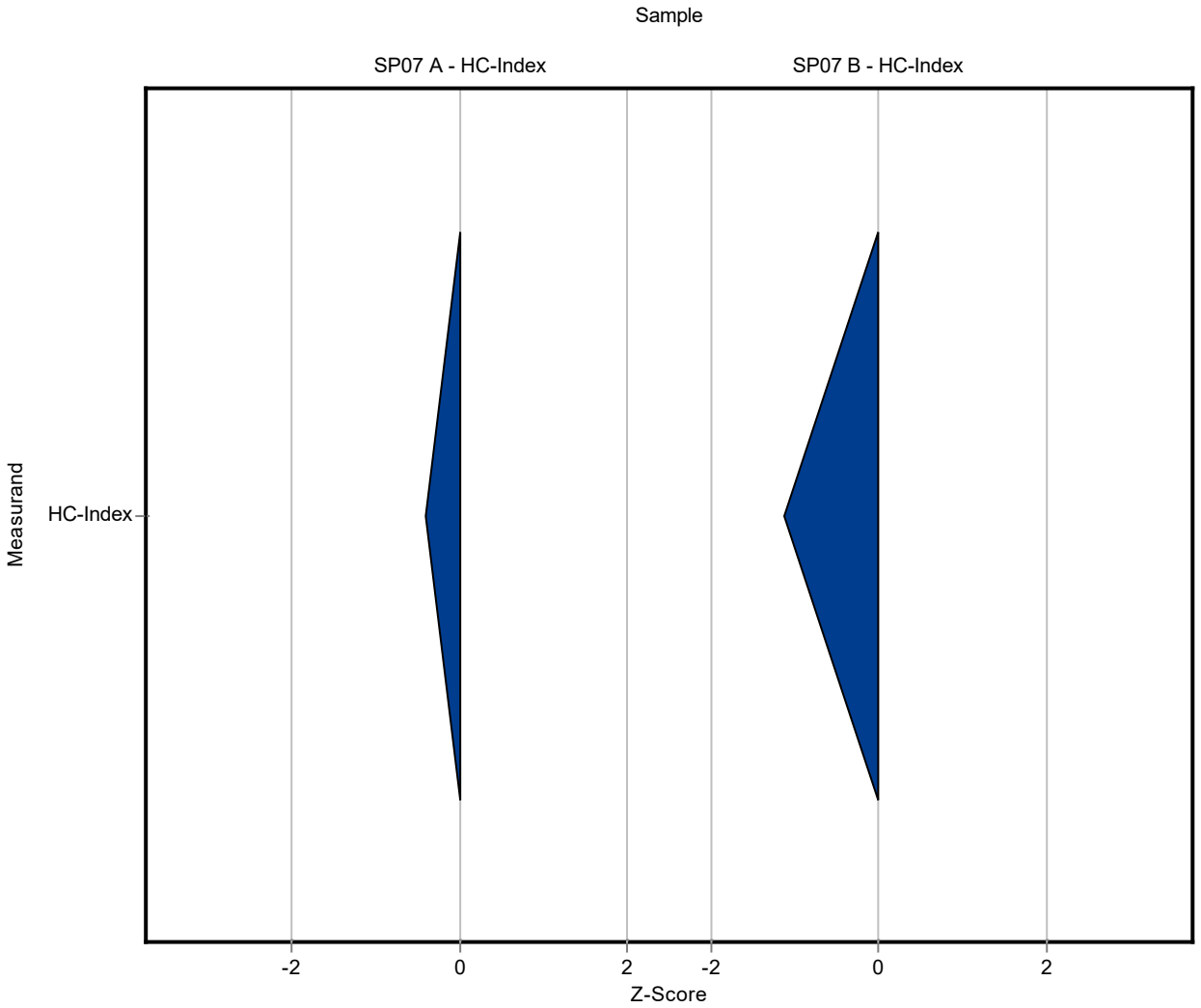


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.12 ± 0.024	0.061	82.6	-0.41

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.585 ± 0.117	0.465	52.8	-1.12



Summary of results Sum parameters SP07 - En-Score

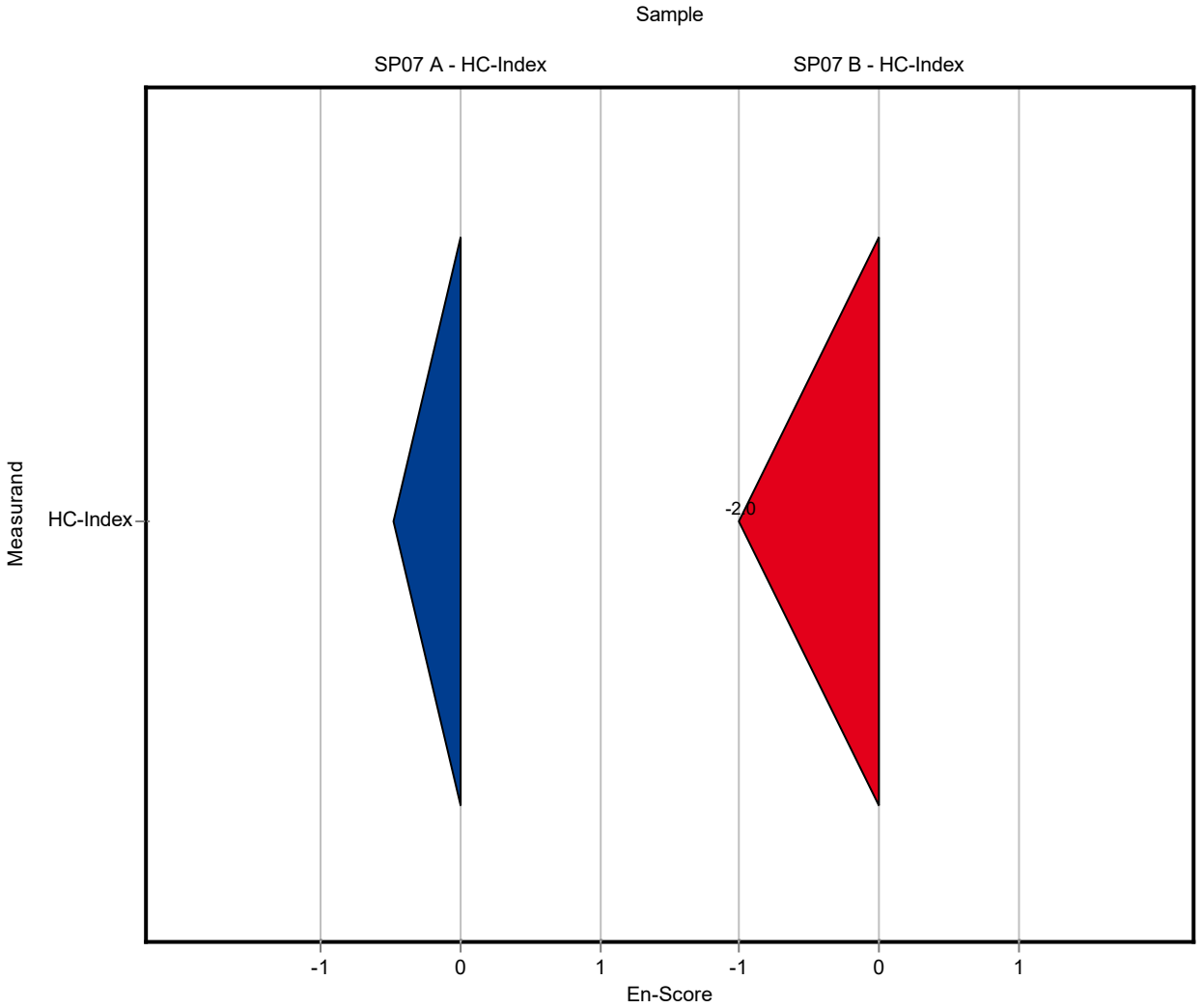
Labcode: LC0008

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.12 ± 0.024	0.061	82.6	-0.48

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.585 ± 0.117	0.465	52.8	-2.02



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.159 ± 0.051	0.061	109	0.23

Sample: SP07KWIB

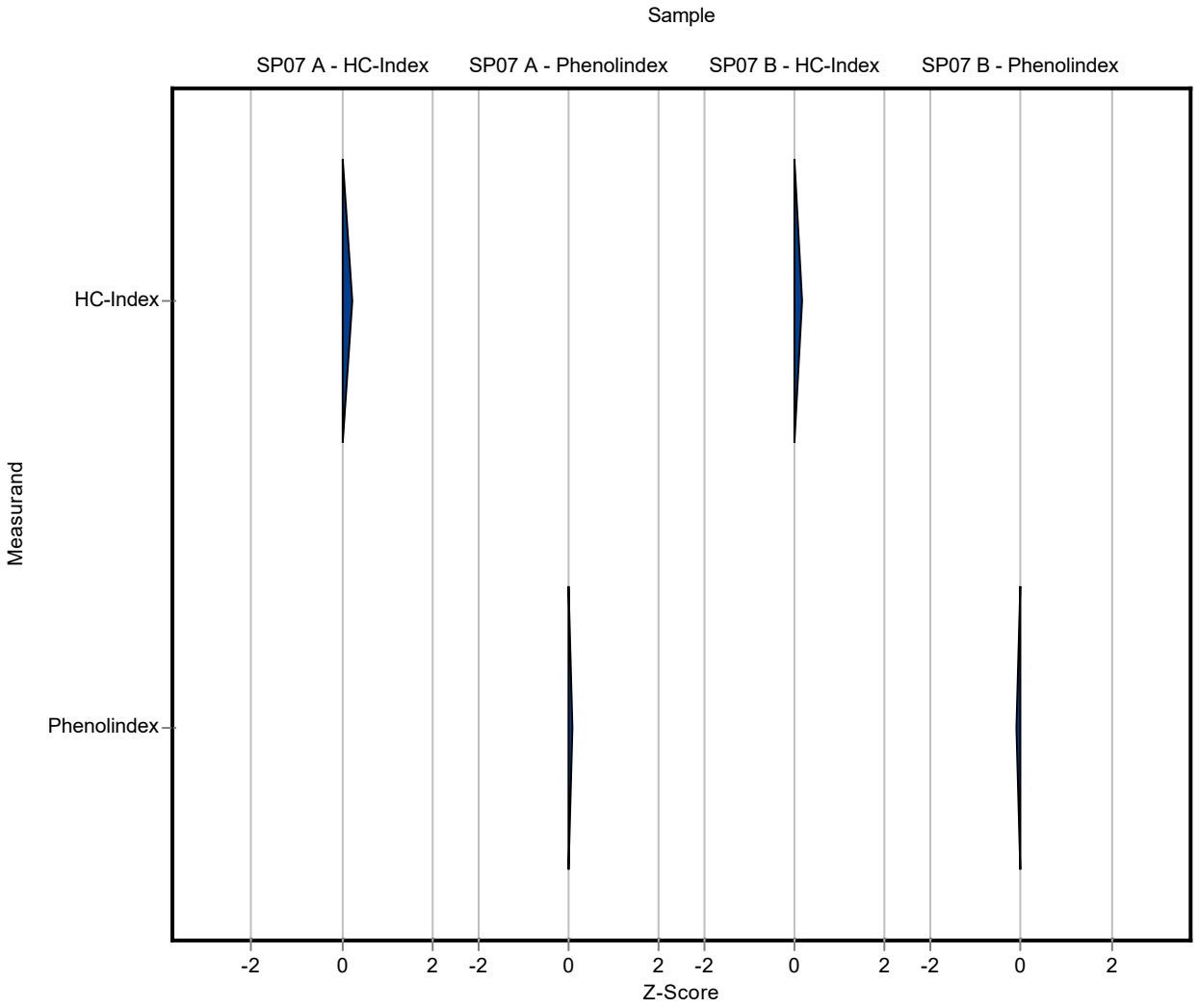
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.18 ± 0.378	0.465	106	0.15

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.071 ± 0.014	0.00772	101	0.11

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.663 ± 0.133	0.0736	99	-0.09


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.159 ± 0.051	0.061	109	0.13

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.18 ± 0.378	0.465	106	0.09

Sample: SP07PHIA

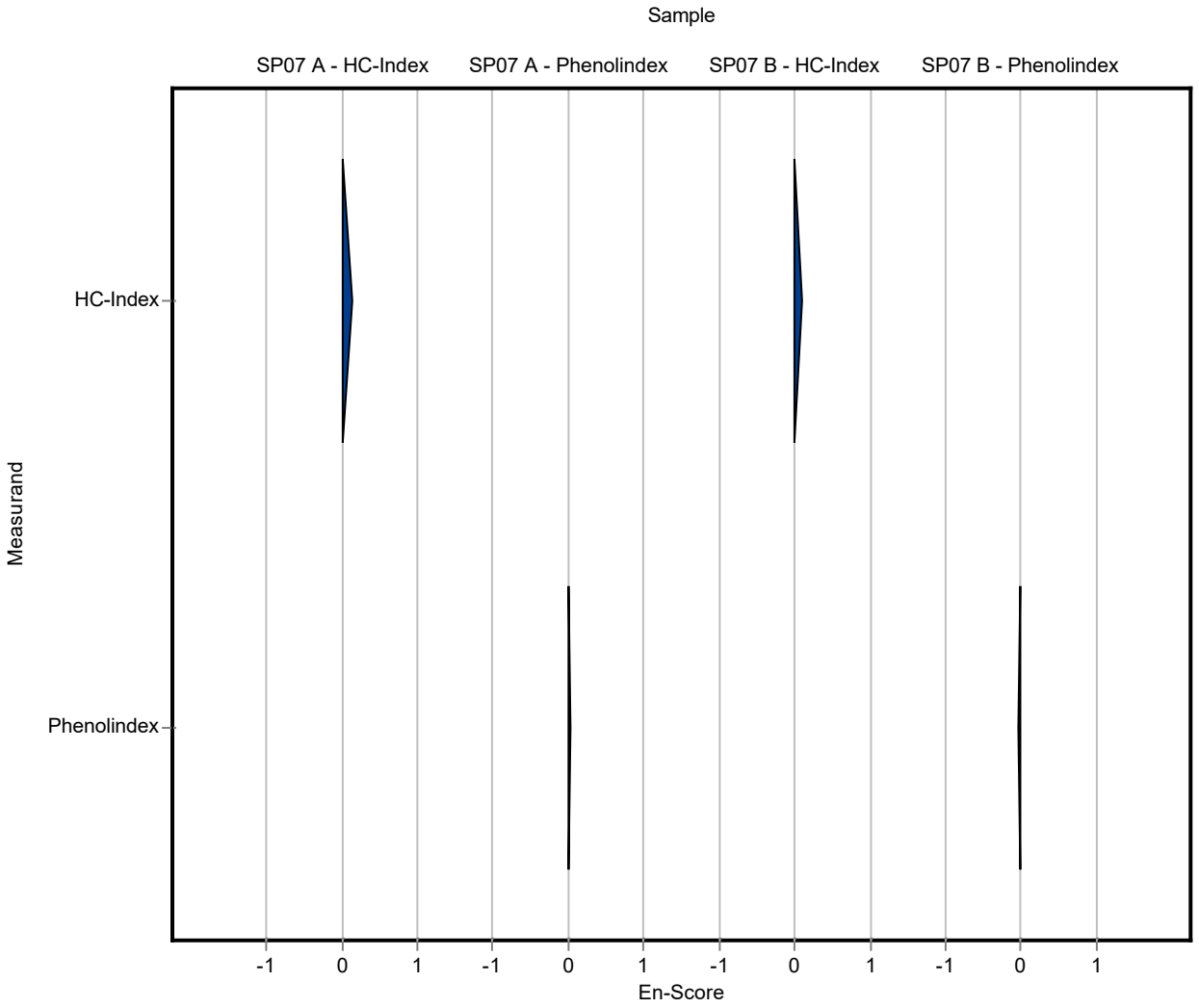
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.071 ± 0.014	0.00772	101	0.03

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.663 ± 0.133	0.0736	99	-0.02

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0009



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.109 ± 0.076	0.061	75.1	-0.59

Sample: SP07KWIB

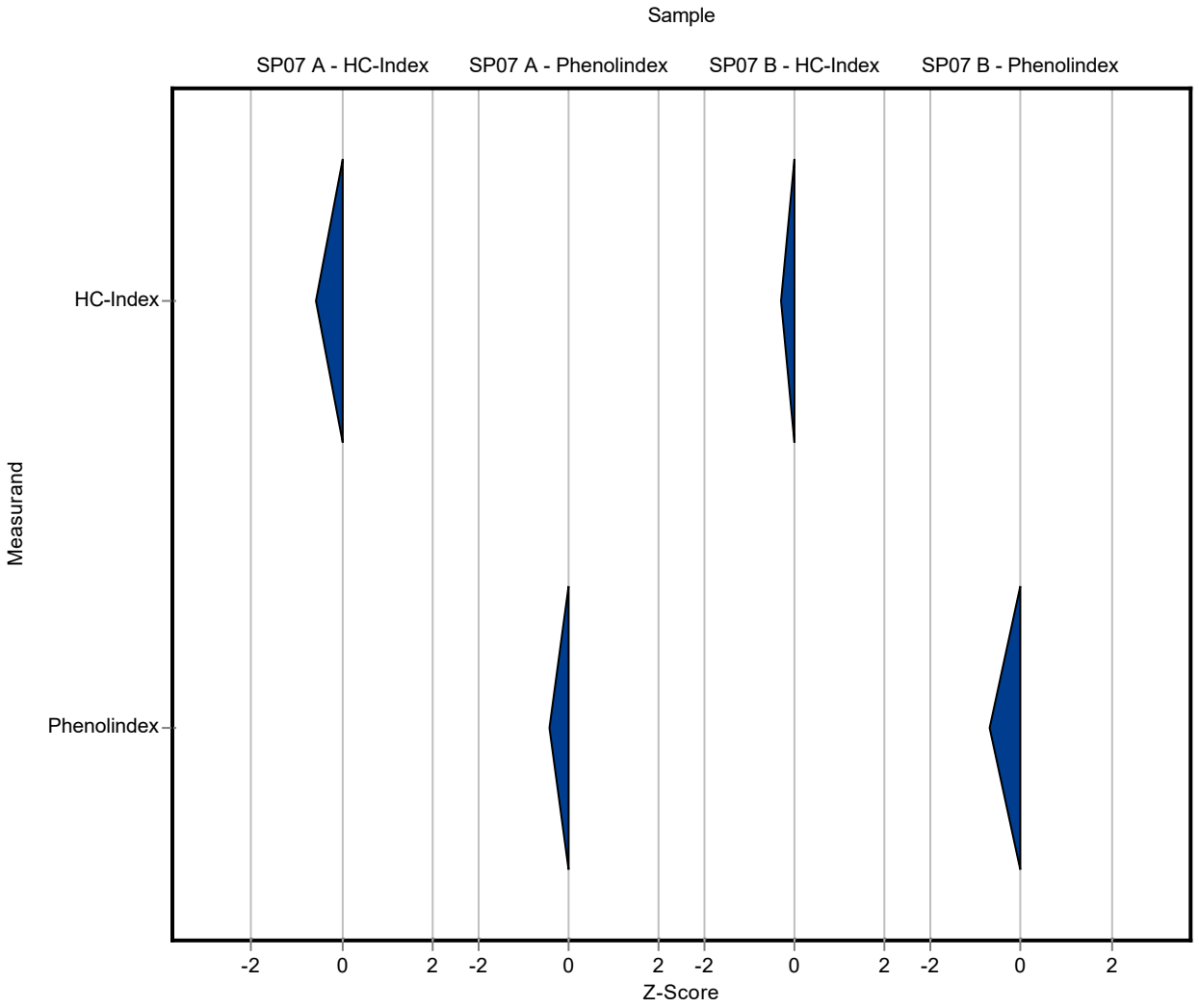
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.962 ± 0.673	0.465	86.8	-0.31

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.067 ± 0.01	0.00772	95.5	-0.41

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.619 ± 0.093	0.0736	92.5	-0.68


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.109 ± 0.076	0.061	75.1	-0.24

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.962 ± 0.673	0.465	86.8	-0.11

Sample: SP07PHIA

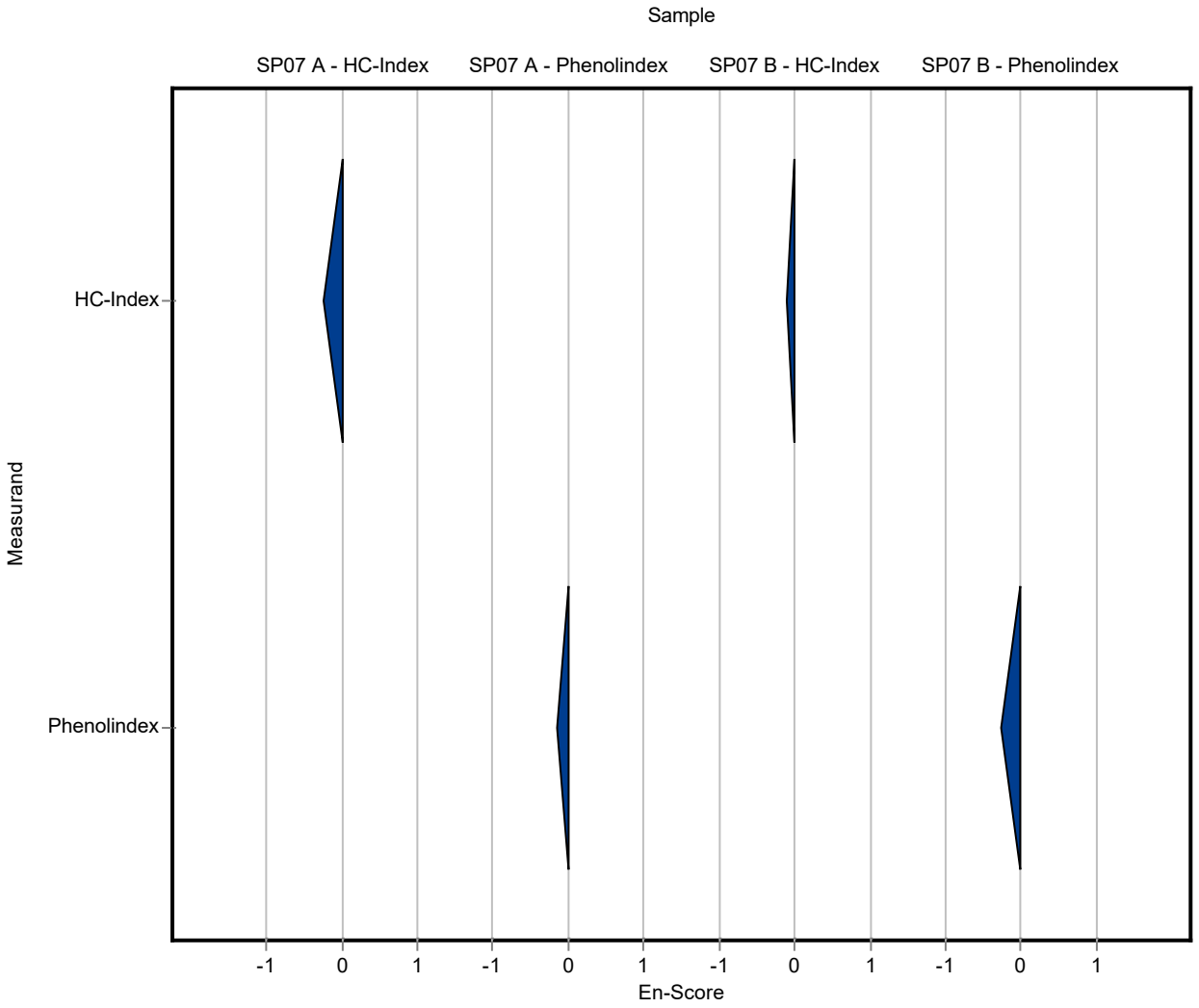
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.067 ± 0.01	0.00772	95.5	-0.16

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.619 ± 0.093	0.0736	92.5	-0.27

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0010



Summary of results Sum parameters SP07

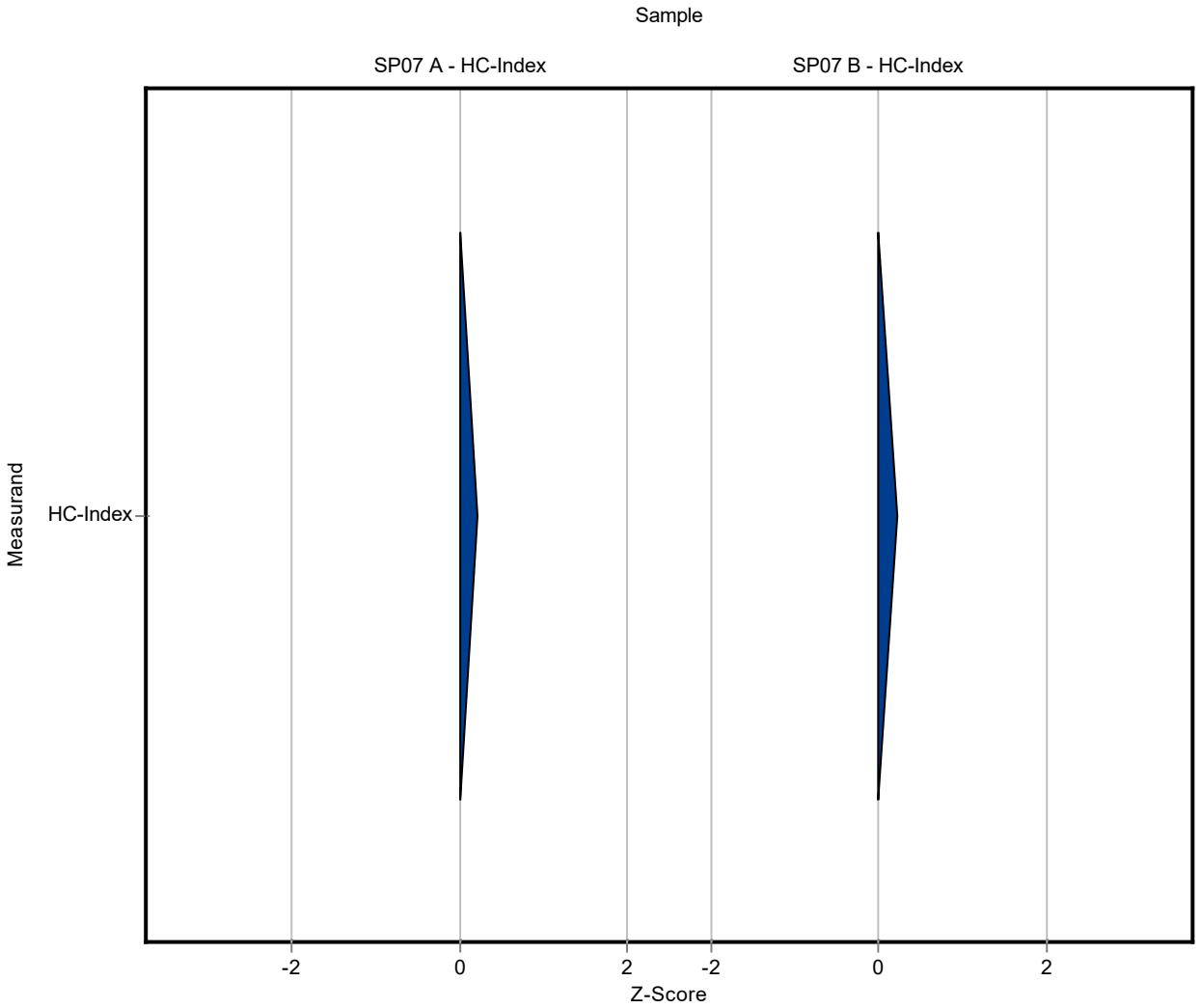
Labcode: LC0011

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.158 ± 0.005	0.061	109	0.21

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.21 ± 0.039	0.465	109	0.22



Summary of results Sum parameters SP07 - En-Score

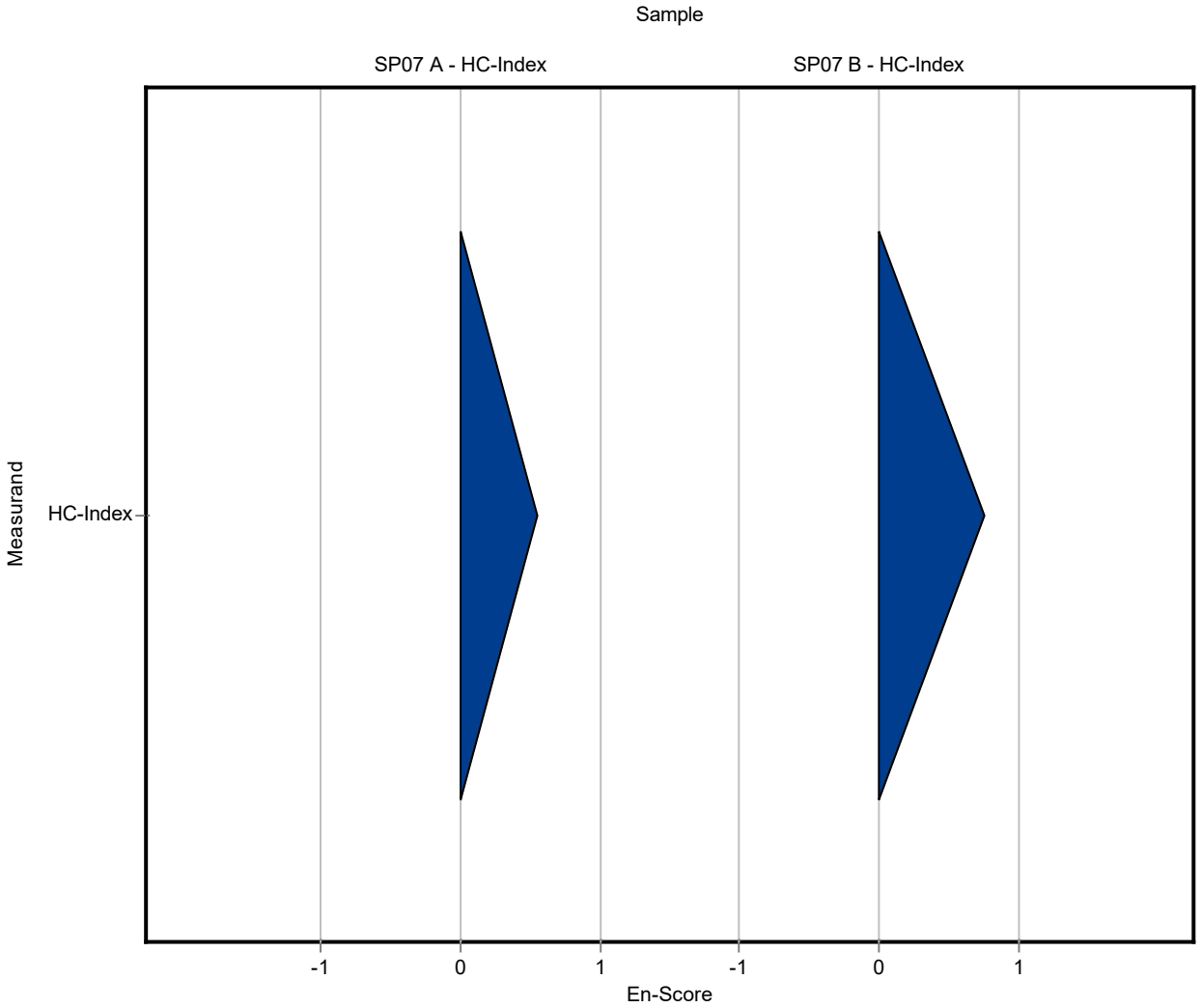
Labcode: LC0011

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.158 ± 0.005	0.061	109	0.56

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.21 ± 0.039	0.465	109	0.75



Summary of results Sum parameters SP07

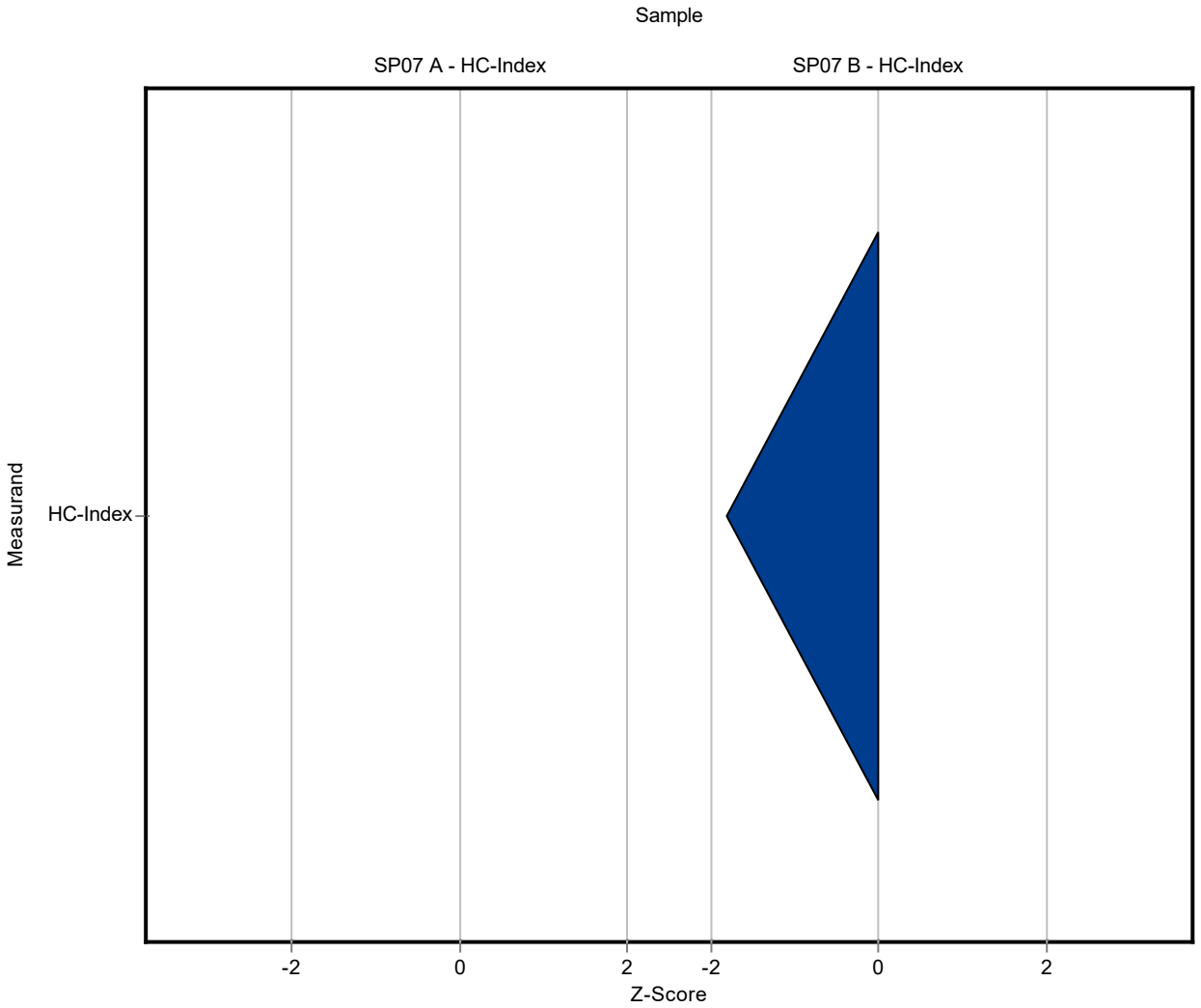
Labcode: LC0012

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.05 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.26 ± 0.09	0.465	23.5	-1.82



Summary of results Sum parameters SP07 - En-Score

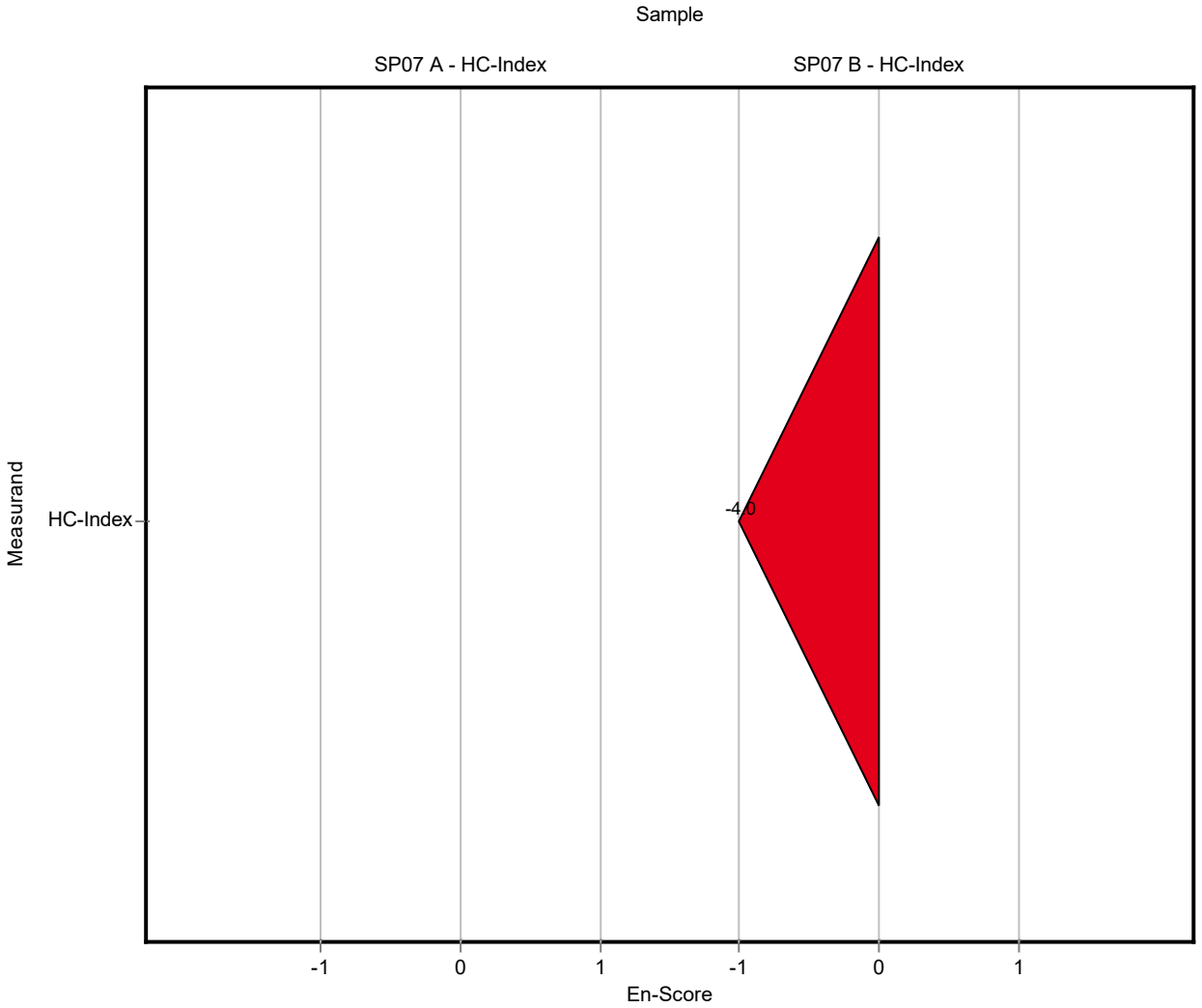
Labcode: LC0012

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.05 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.26 ± 0.09	0.465	23.5	-4.00



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.0824 ± 0.0165	0.061	56.7	-1.03

Sample: SP07KWIB

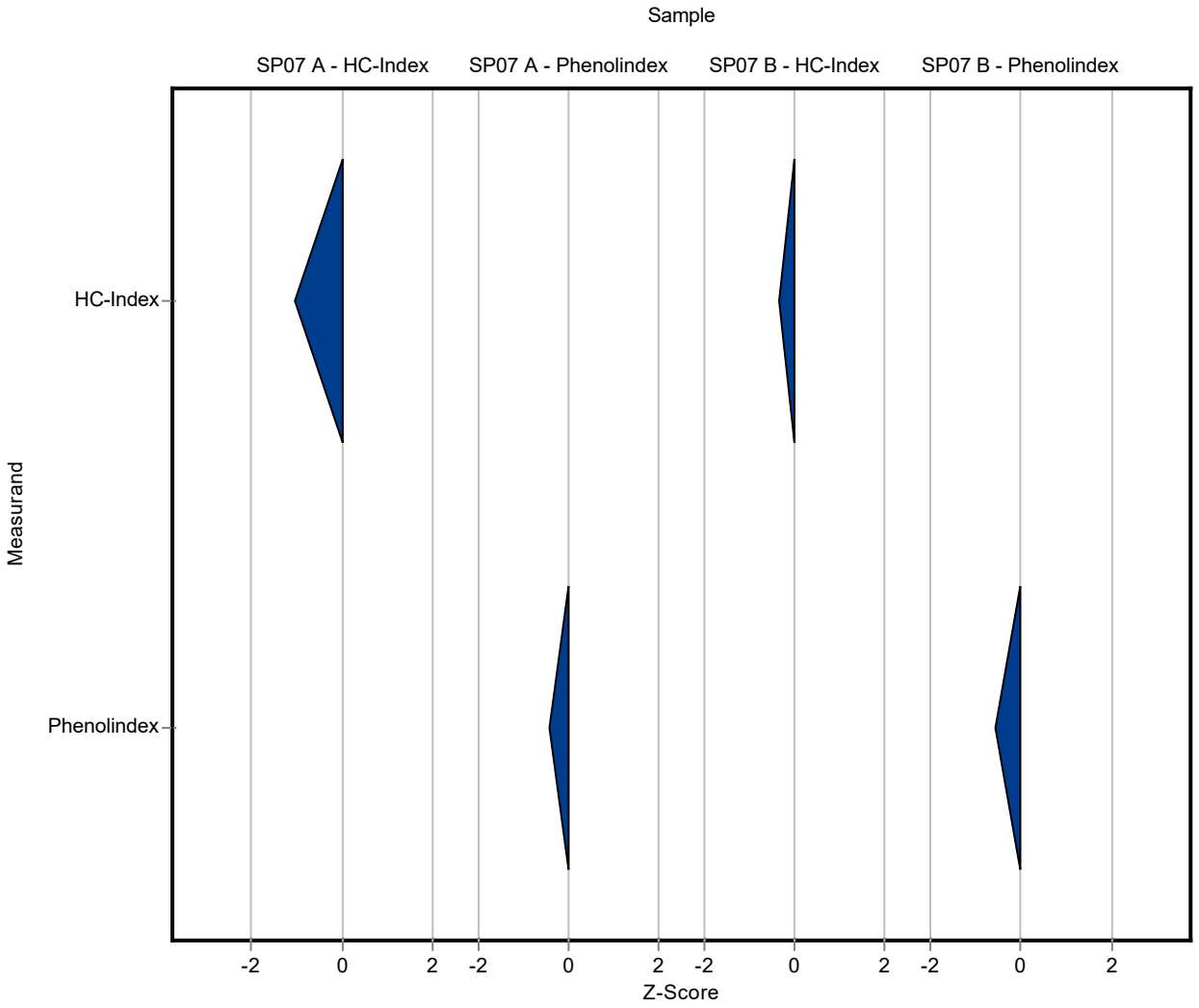
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.946 ± 0.189	0.465	85.4	-0.35

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.067 ± 0.0121	0.00772	95.5	-0.41

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.628 ± 0.113	0.0736	93.8	-0.56


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.0824 ± 0.0165	0.061	56.7	-1.61

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.946 ± 0.189	0.465	85.4	-0.41

Sample: SP07PHIA

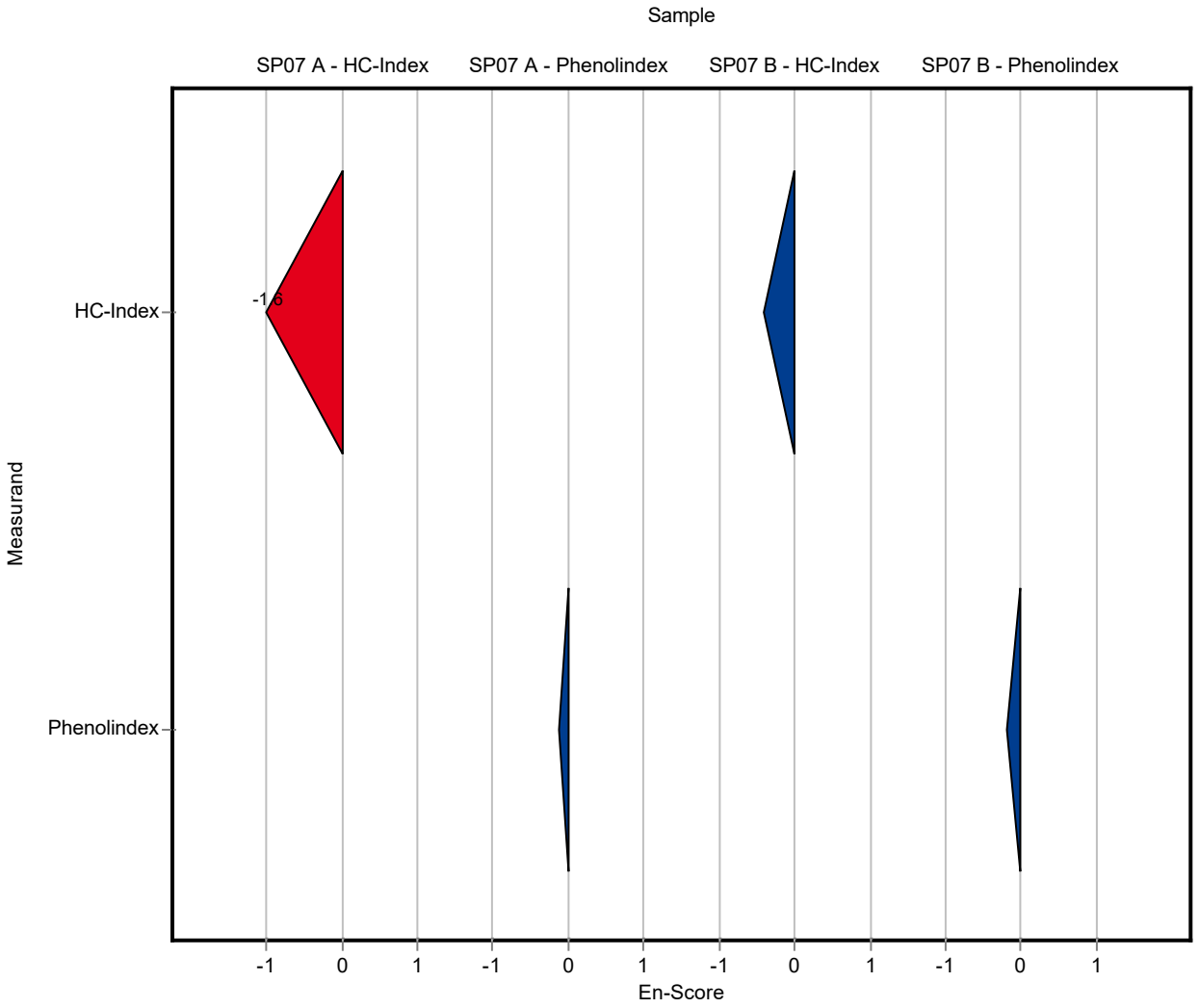
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.067 ± 0.0121	0.00772	95.5	-0.13

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.628 ± 0.113	0.0736	93.8	-0.18

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0013

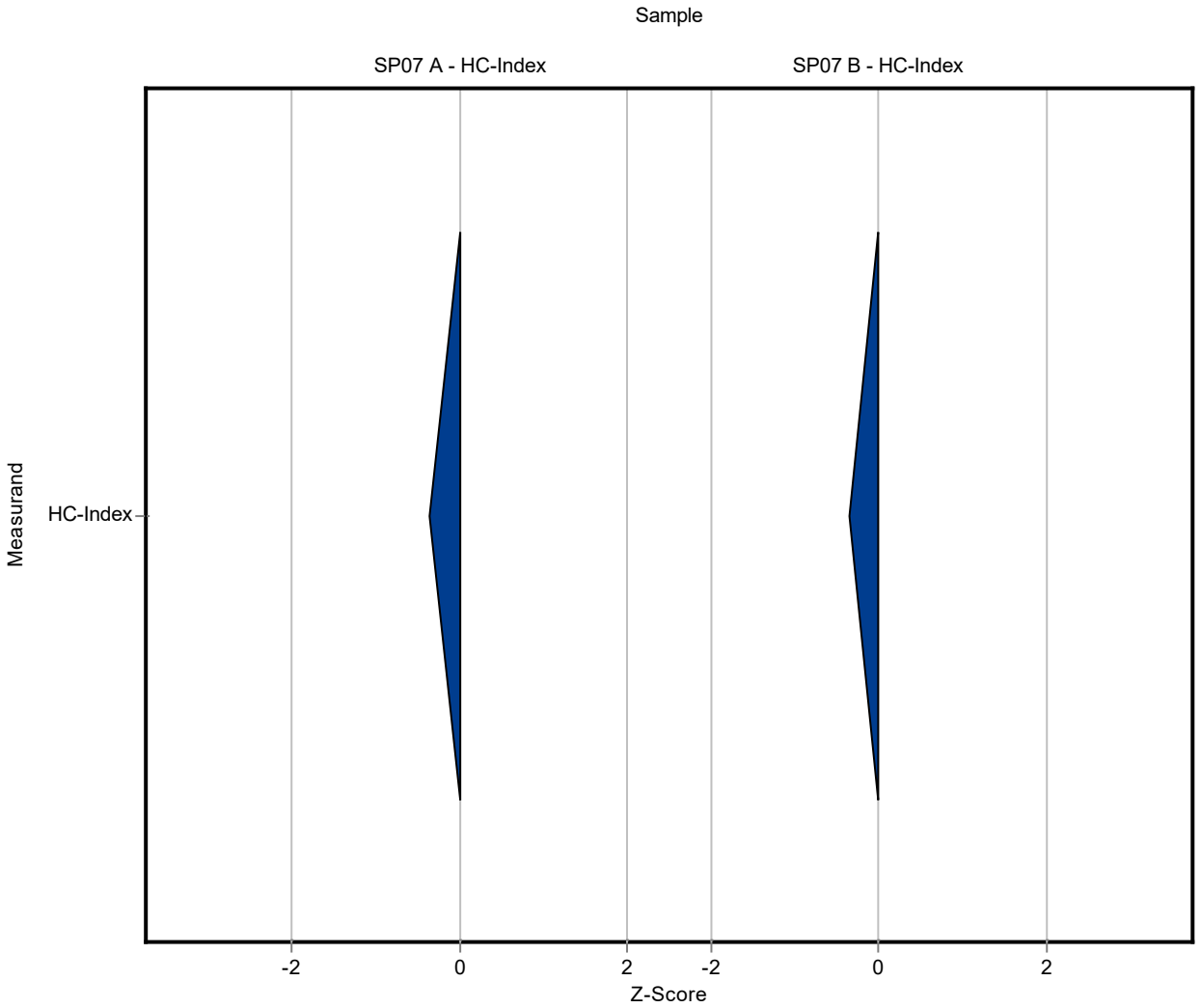


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.123 ± 0.048	0.061	84.7	-0.36

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.941 ± 0.37	0.465	84.9	-0.36



Summary of results Sum parameters SP07 - En-Score

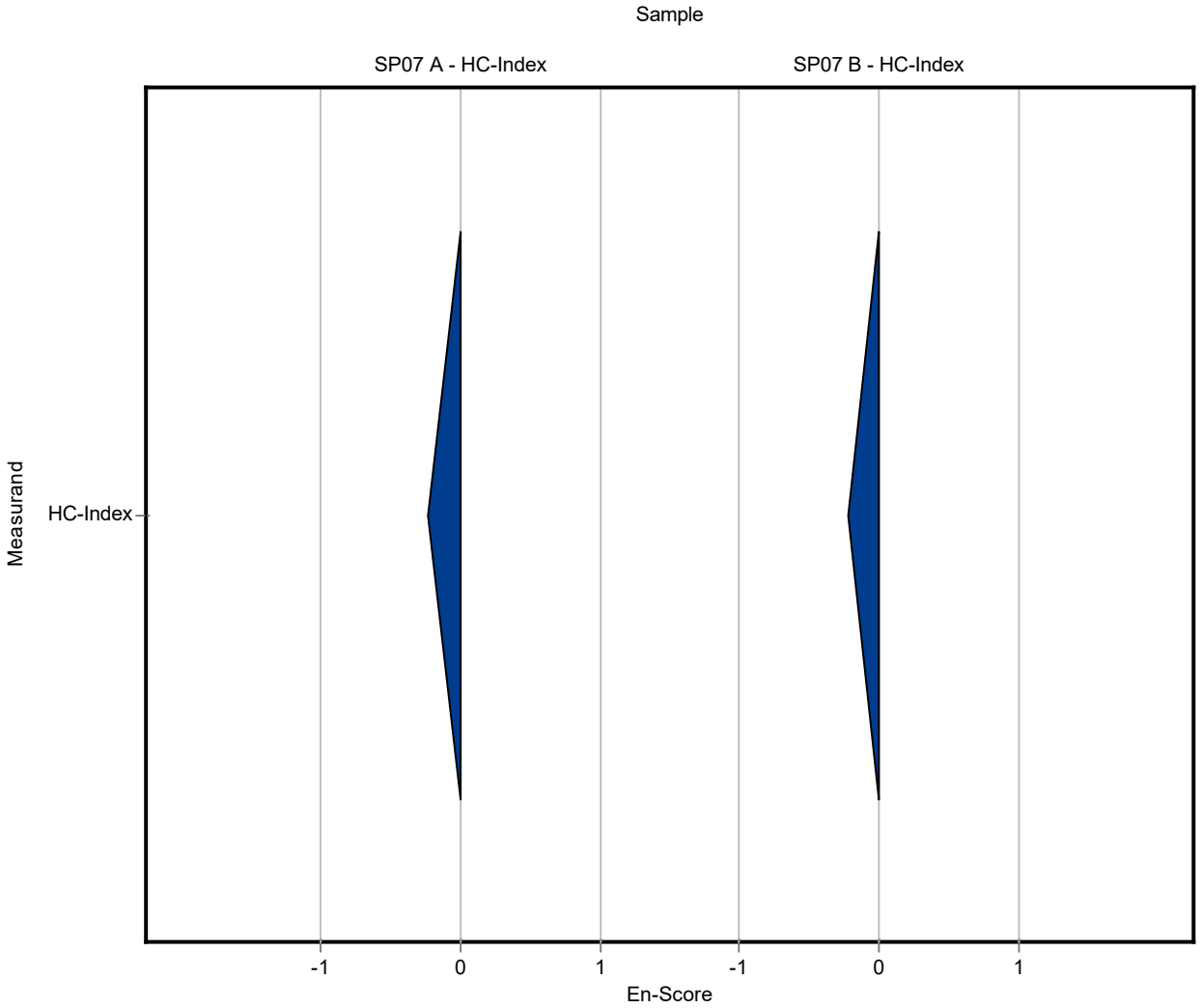
Labcode: LC0014

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.123 ± 0.048	0.061	84.7	-0.23

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.941 ± 0.37	0.465	84.9	-0.22



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.638 ± 0.108	0.061	439	8.08

Sample: SP07KWIB

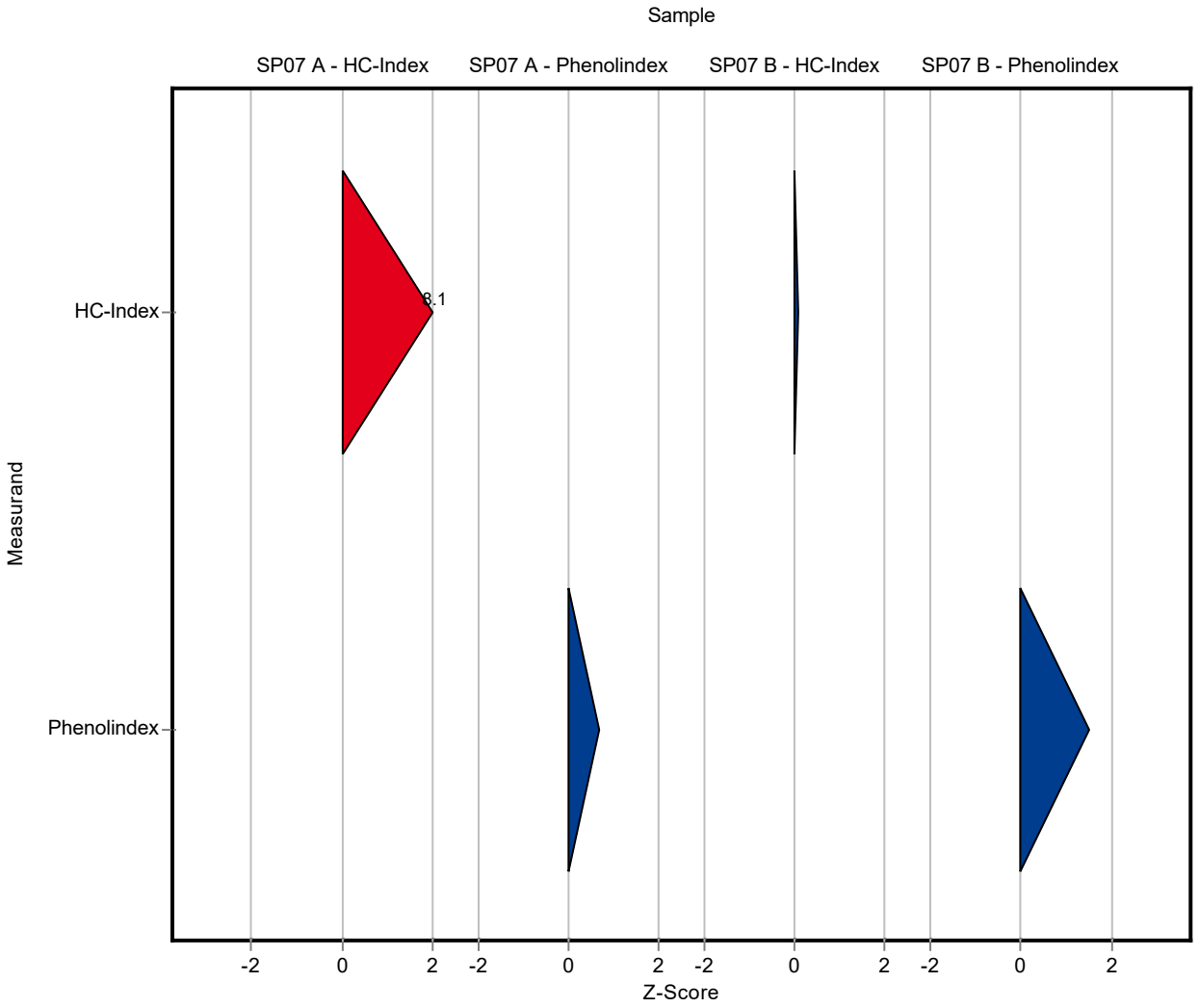
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.137 ± 0.193	0.465	103	0.06

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0755 ± 0.0113	0.00772	108	0.69

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.781 ± 0.117	0.0736	117	1.51


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
HC-Index
Phenolindex
Measurand
8.1
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.638 ± 0.108	0.061	439	2.27

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.137 ± 0.193	0.465	103	0.07

Sample: SP07PHIA

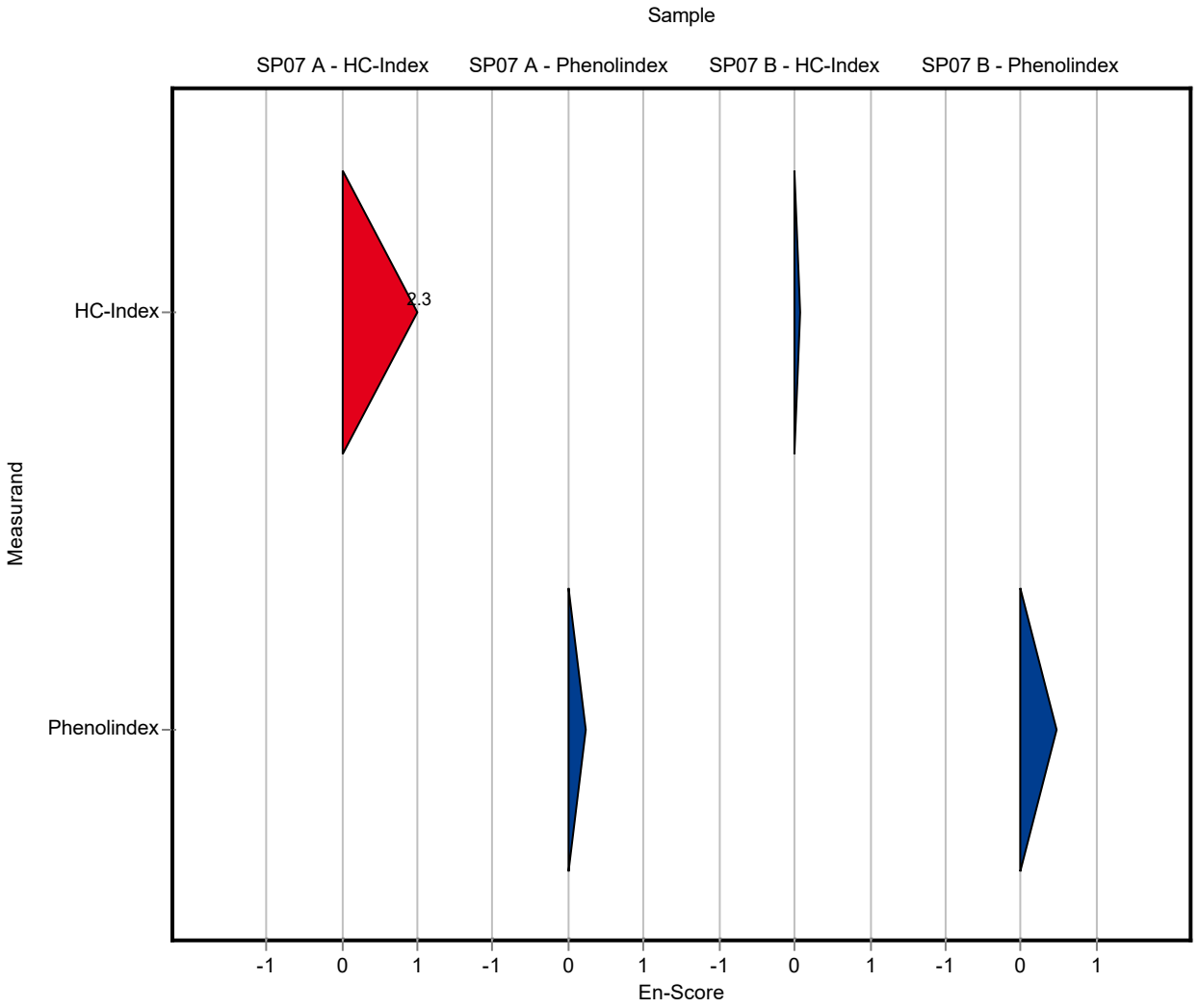
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0755 ± 0.0113	0.00772	108	0.23

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.781 ± 0.117	0.0736	117	0.47

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0015



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.076 ± 0.019	0.061	52.3	-1.13

Sample: SP07KWIB

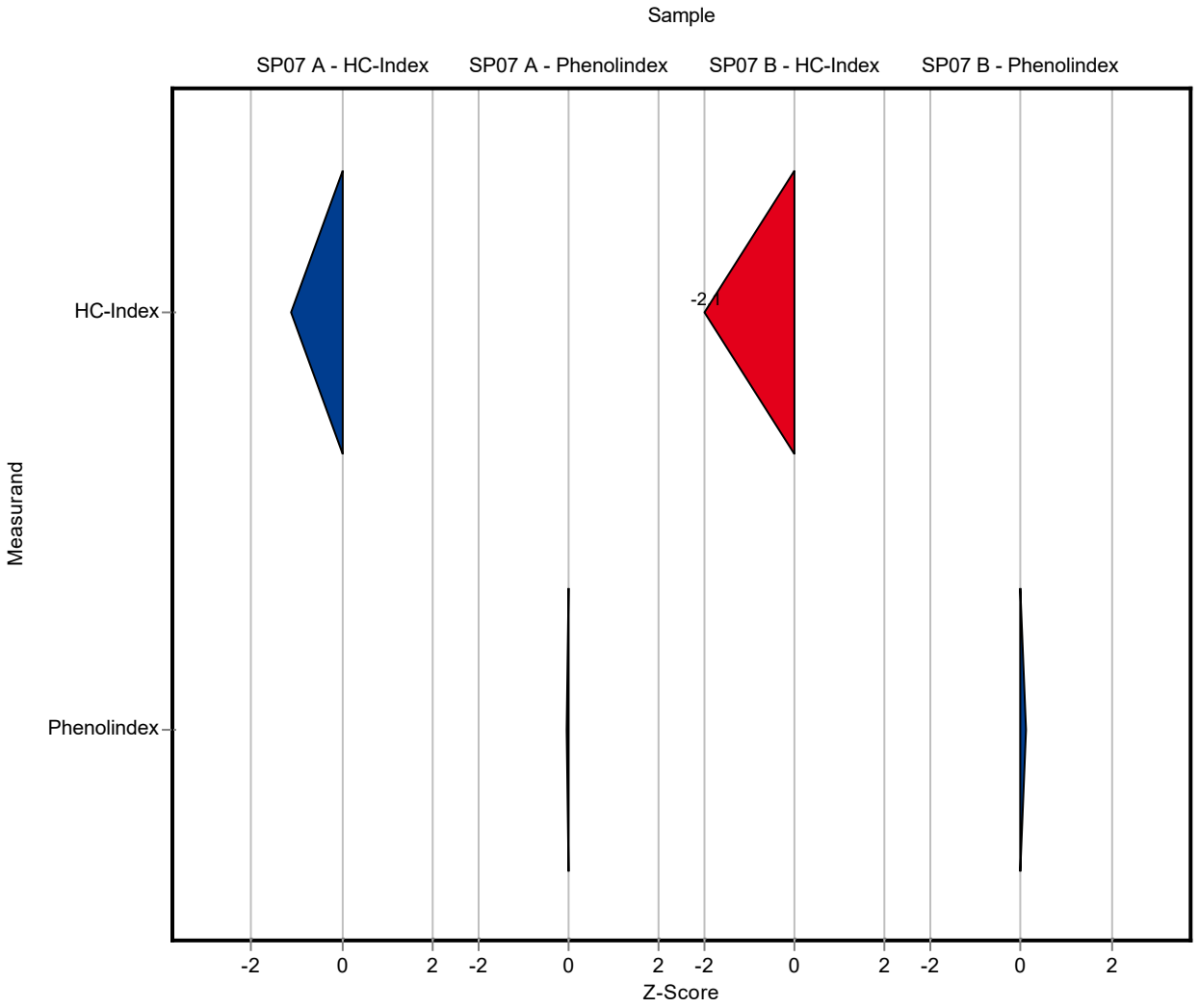
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.152 ± 0.038	0.465	13.7	-2.05

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.07 ± 0.014	0.00772	99.7	-0.02

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.678 ± 0.14	0.0736	101	0.12


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
HC-Index
Phenolindex
Measurand
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.076 ± 0.019	0.061	52.3	-1.60

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.152 ± 0.038	0.465	13.7	-7.06

Sample: SP07PHIA

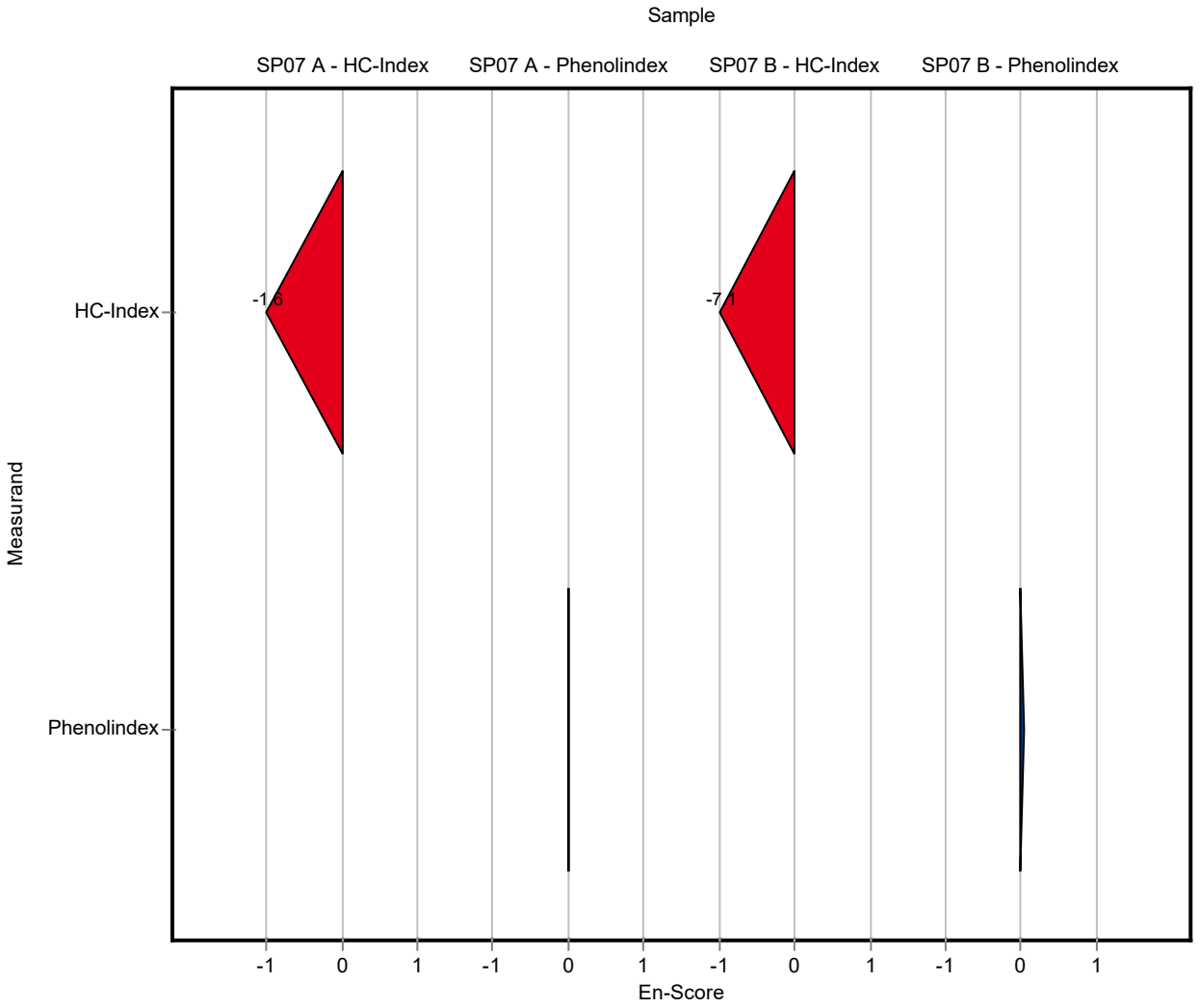
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.07 ± 0.014	0.00772	99.7	-0.01

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.678 ± 0.14	0.0736	101	0.03

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0016



Summary of results Sum parameters SP07

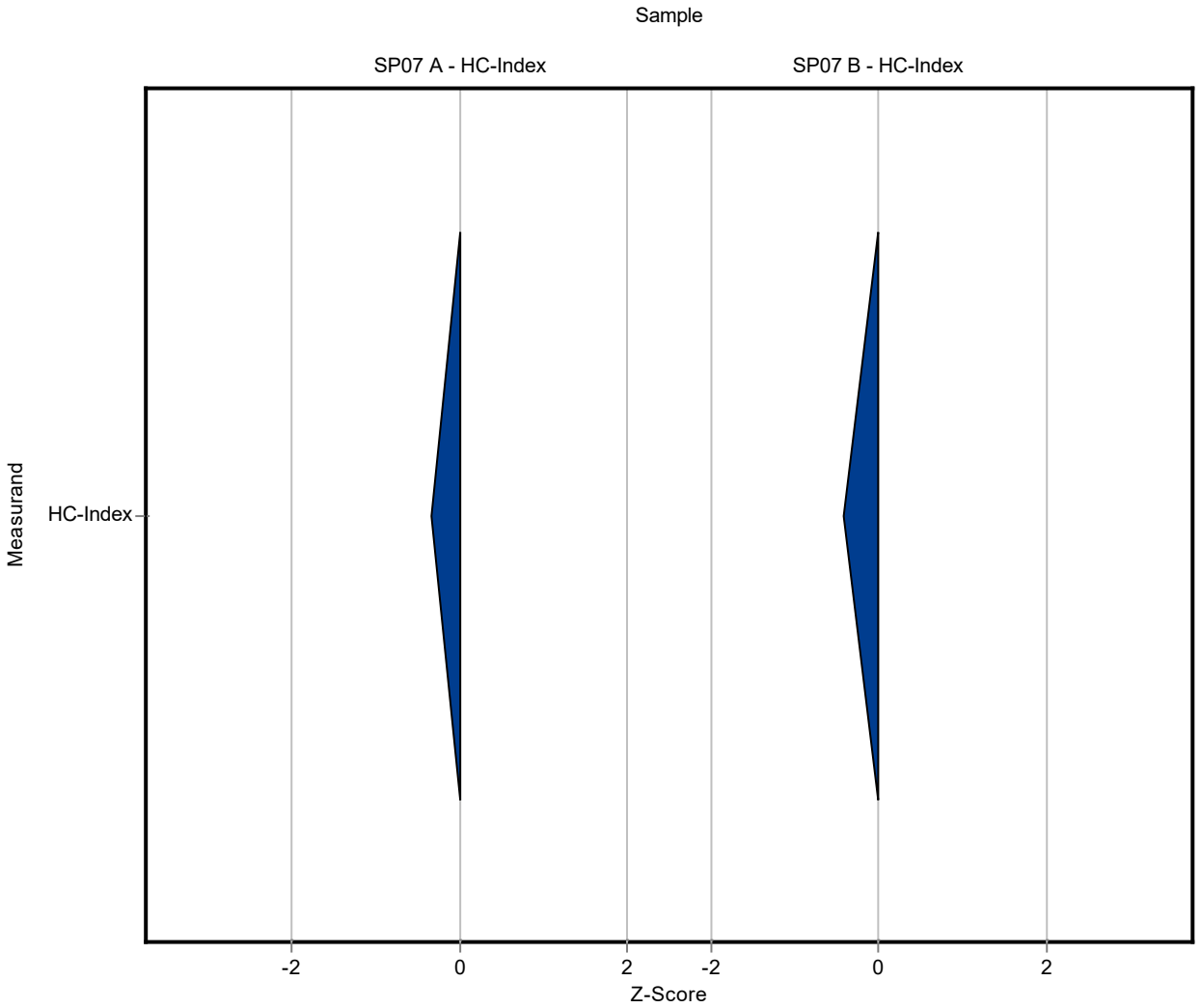
Labcode: LC0017

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.125 ± 0.025	0.061	86.1	-0.33

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.91 ± 0.182	0.465	82.1	-0.43



Summary of results Sum parameters SP07 - En-Score

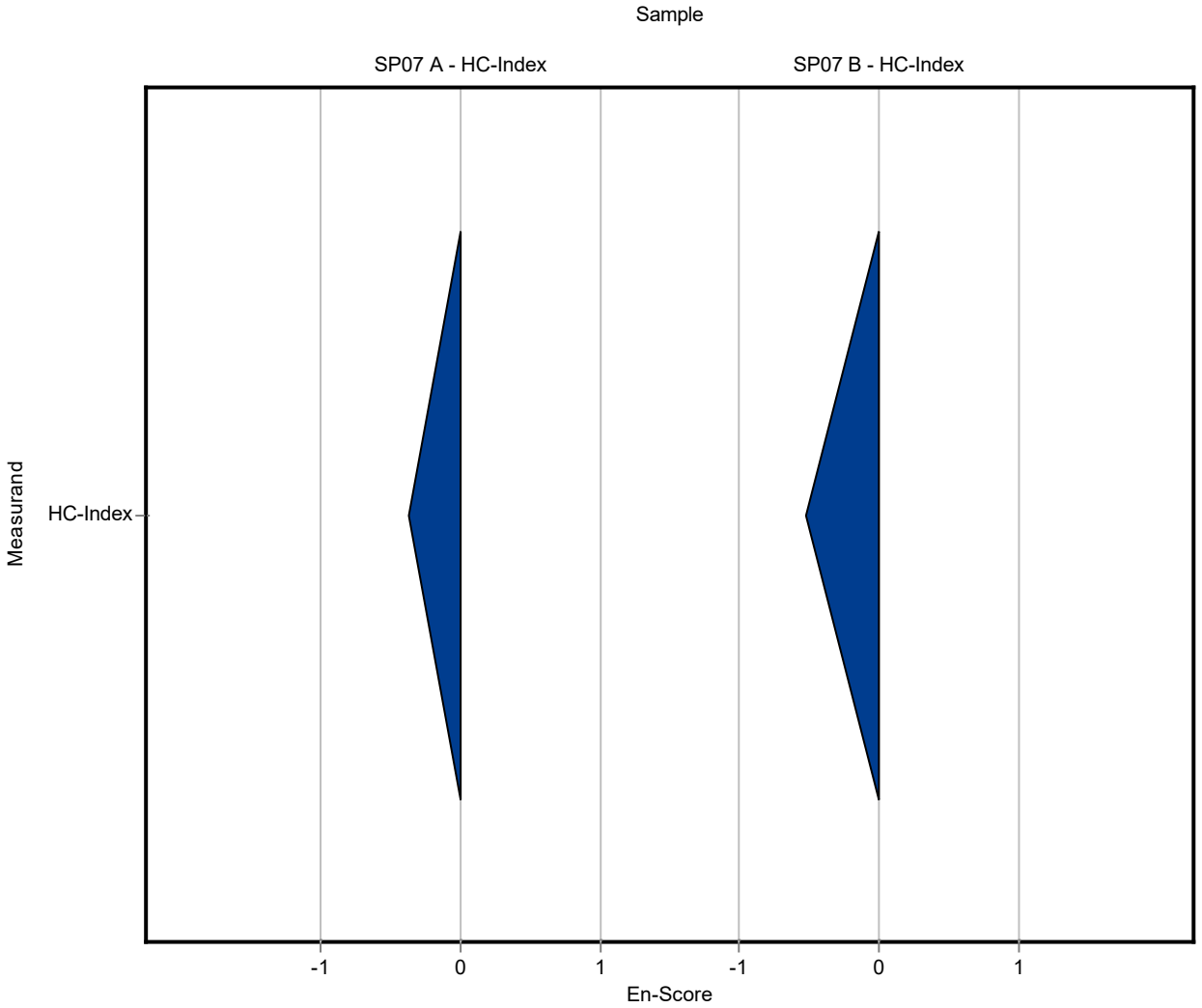
Labcode: LC0017

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.125 ± 0.025	0.061	86.1	-0.37

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.91 ± 0.182	0.465	82.1	-0.52



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0018

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

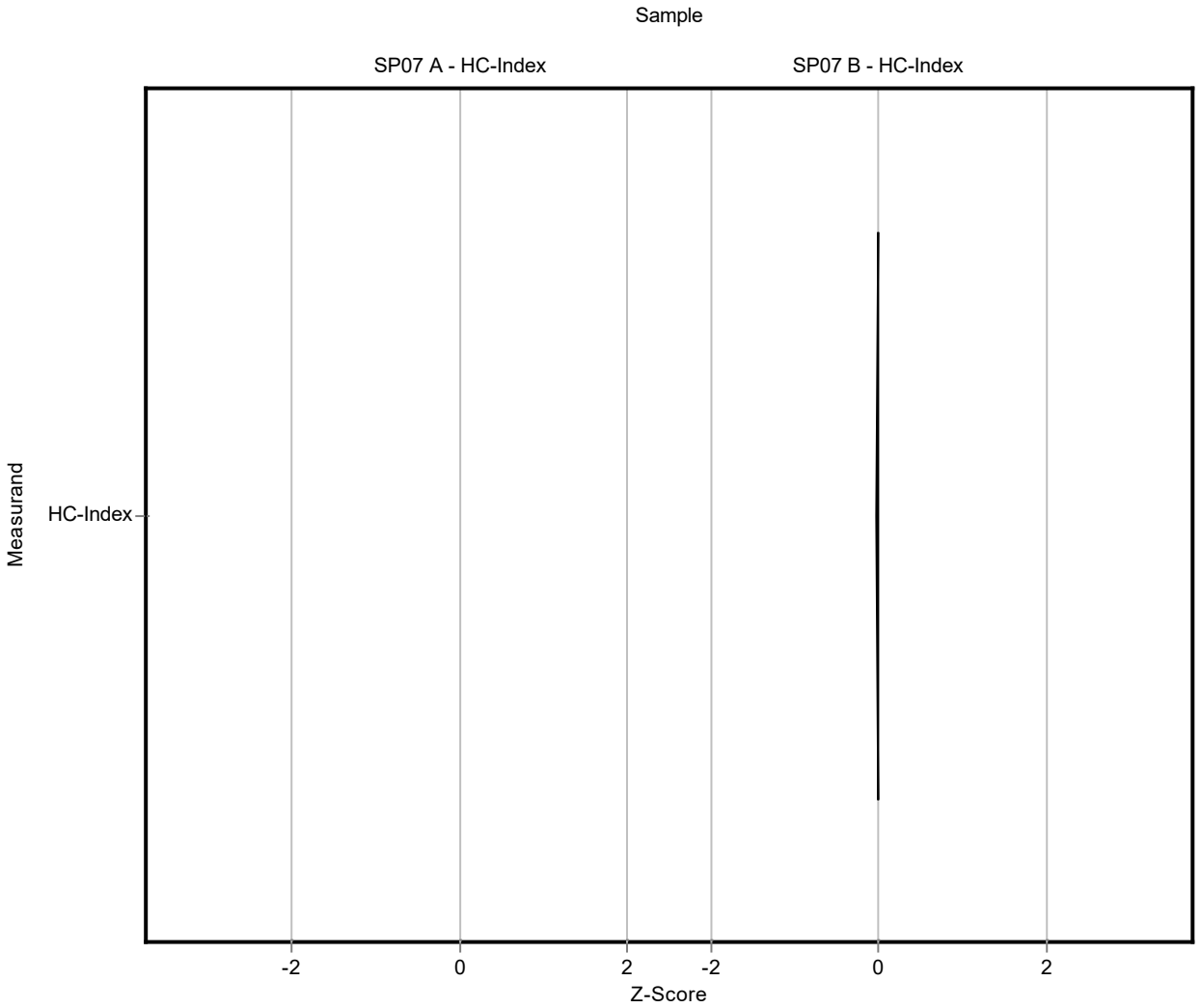
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.1 ± 0.3	0.465	99.3	-0.02

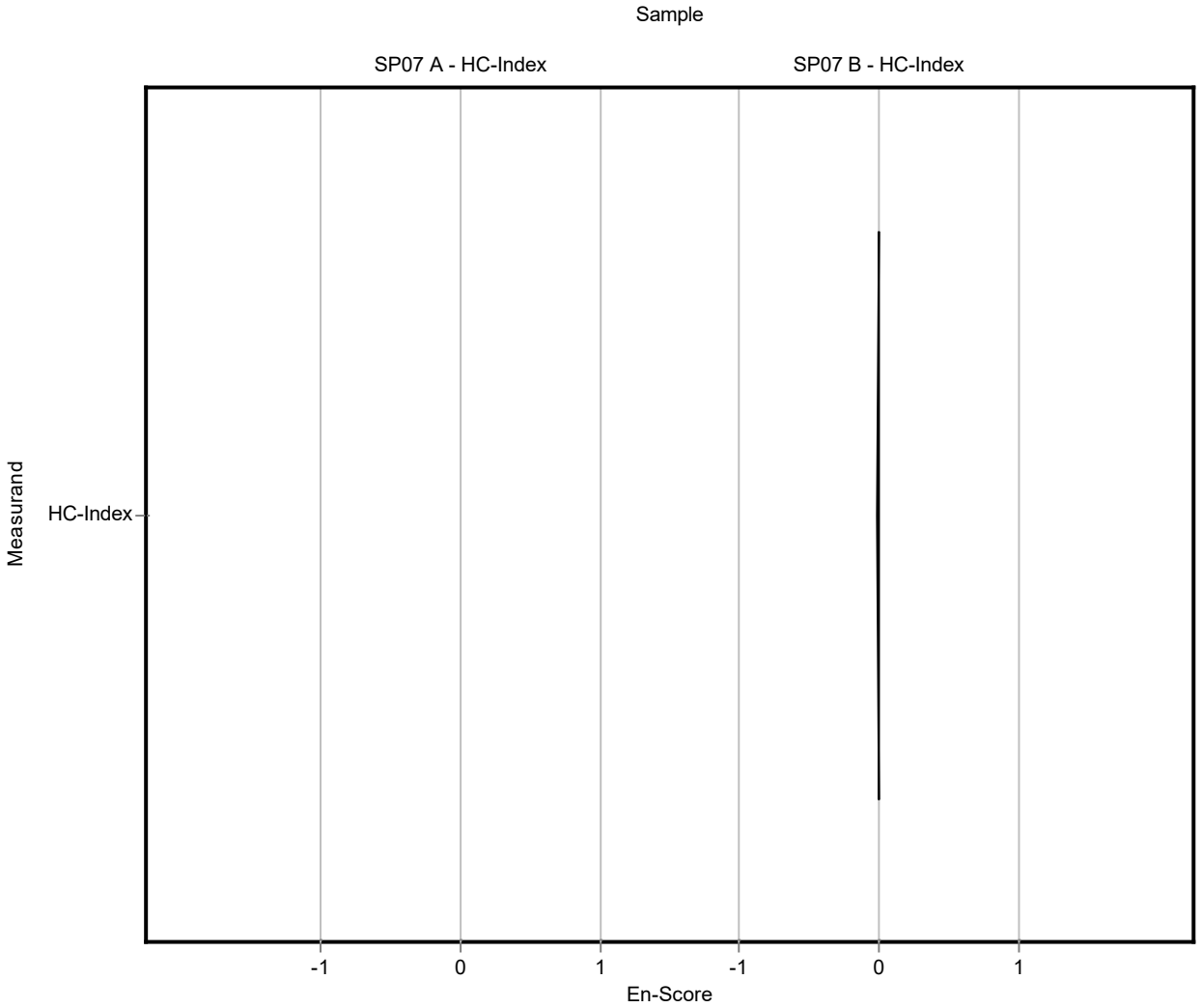


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.1 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.1 ± 0.3	0.465	99.3	-0.01



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.11 ± 0.022	0.061	75.7	-0.58

Sample: SP07KWIB

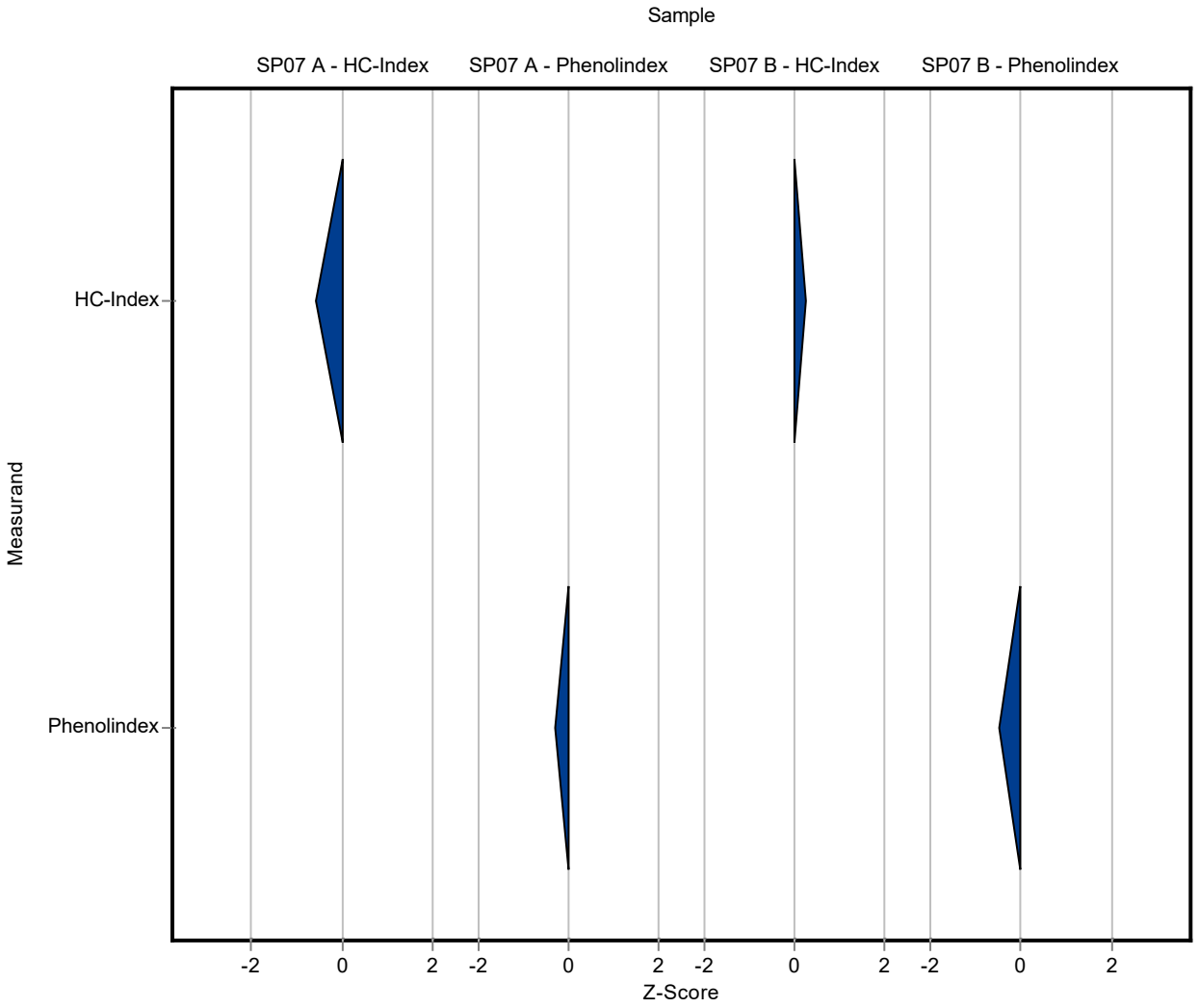
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.22 ± 0.24	0.465	110	0.24

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.068 ± 0.009	0.00772	96.9	-0.28

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.633 ± 0.082	0.0736	94.6	-0.49


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.11 ± 0.022	0.061	75.7	-0.72

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.22 ± 0.24	0.465	110	0.23

Sample: SP07PHIA

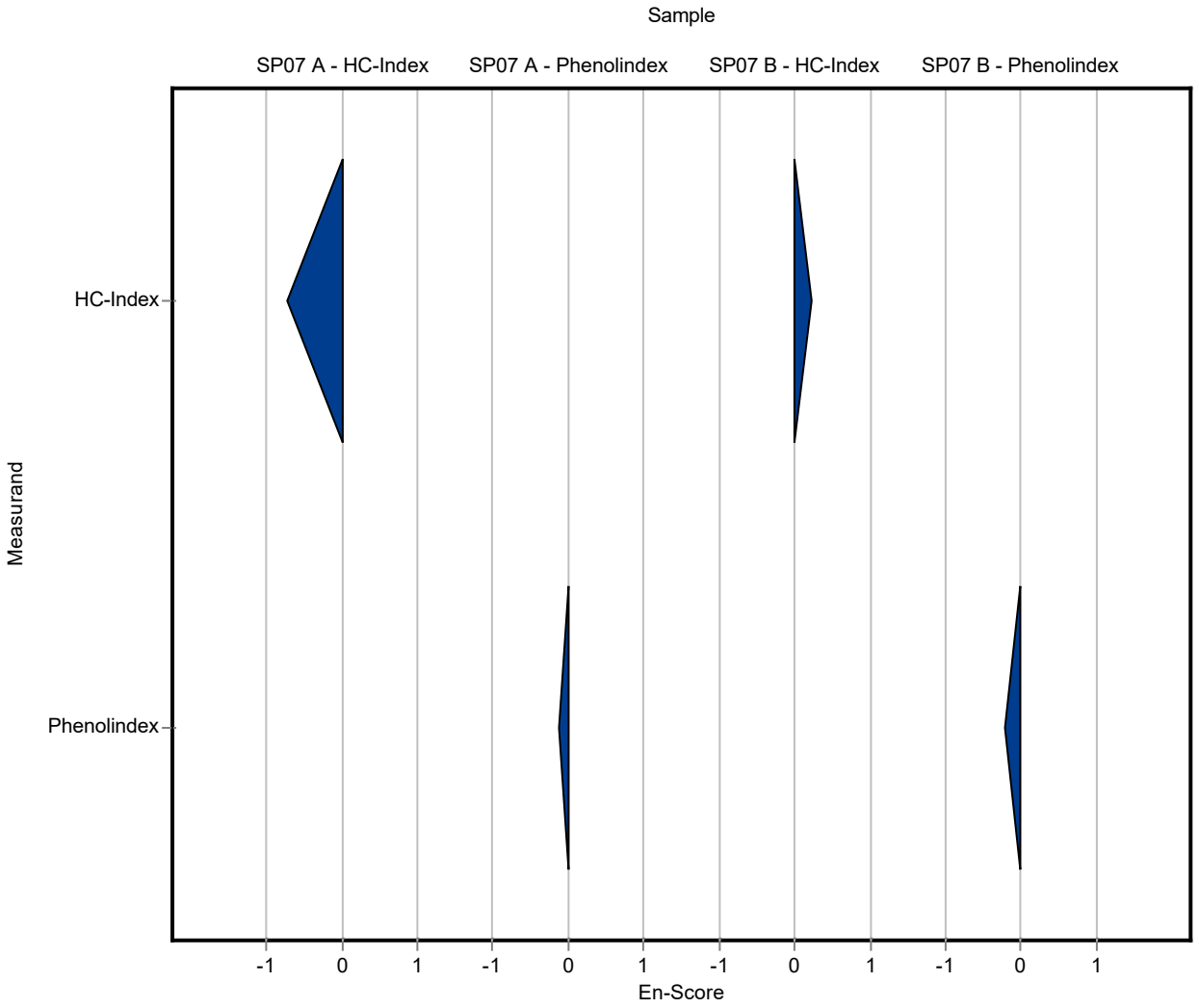
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.068 ± 0.009	0.00772	96.9	-0.12

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.633 ± 0.082	0.0736	94.6	-0.22

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0020



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.142 ± 0.014	0.061	97.8	-0.05

Sample: SP07KWIB

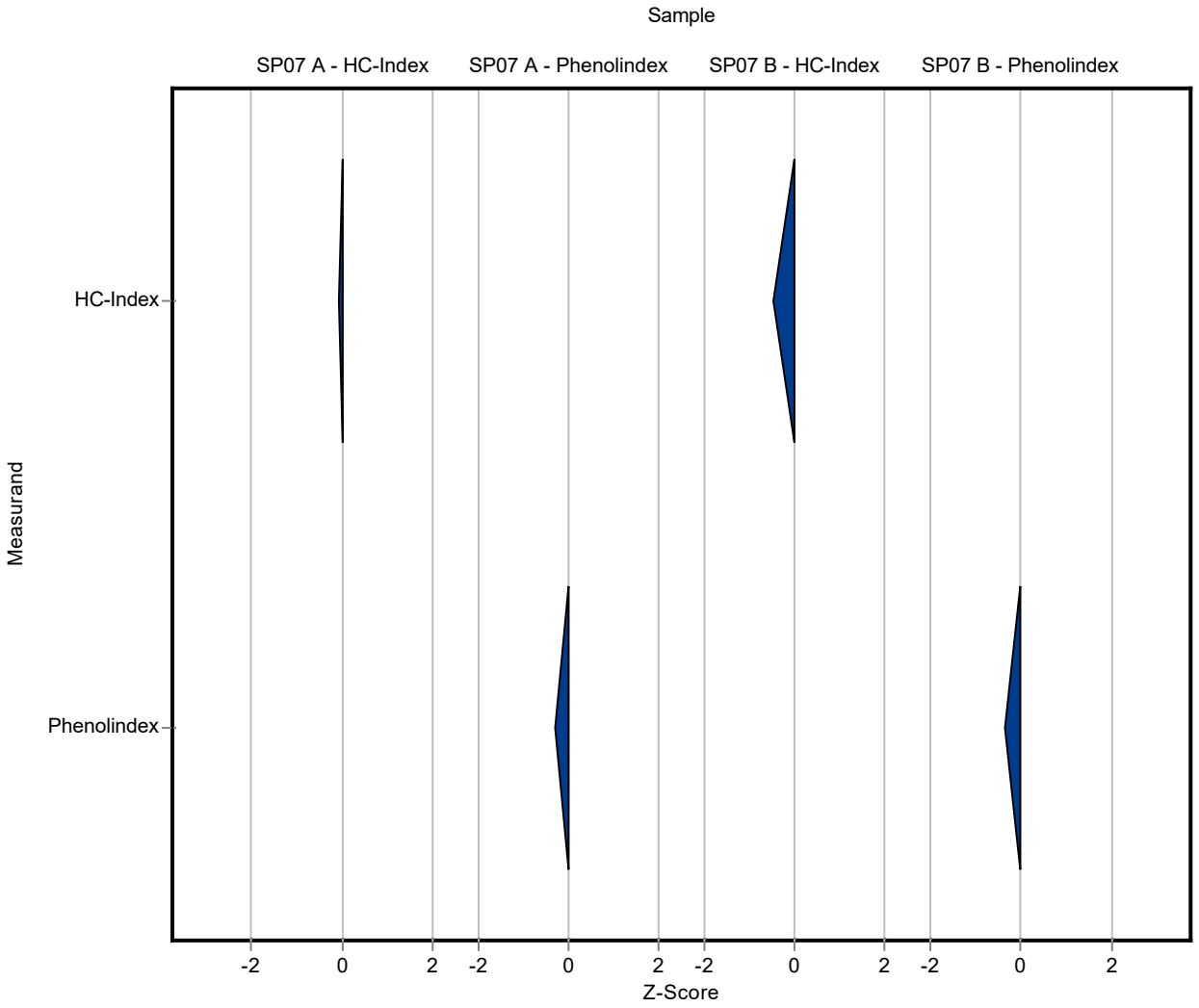
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.886 ± 0.089	0.465	80	-0.48

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.068 ± 0.002	0.00772	96.9	-0.28

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.644 ± 0.021	0.0736	96.2	-0.35


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0022

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.142 ± 0.014	0.061	97.8	-0.09

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.886 ± 0.089	0.465	80	-1.06

Sample: SP07PHIA

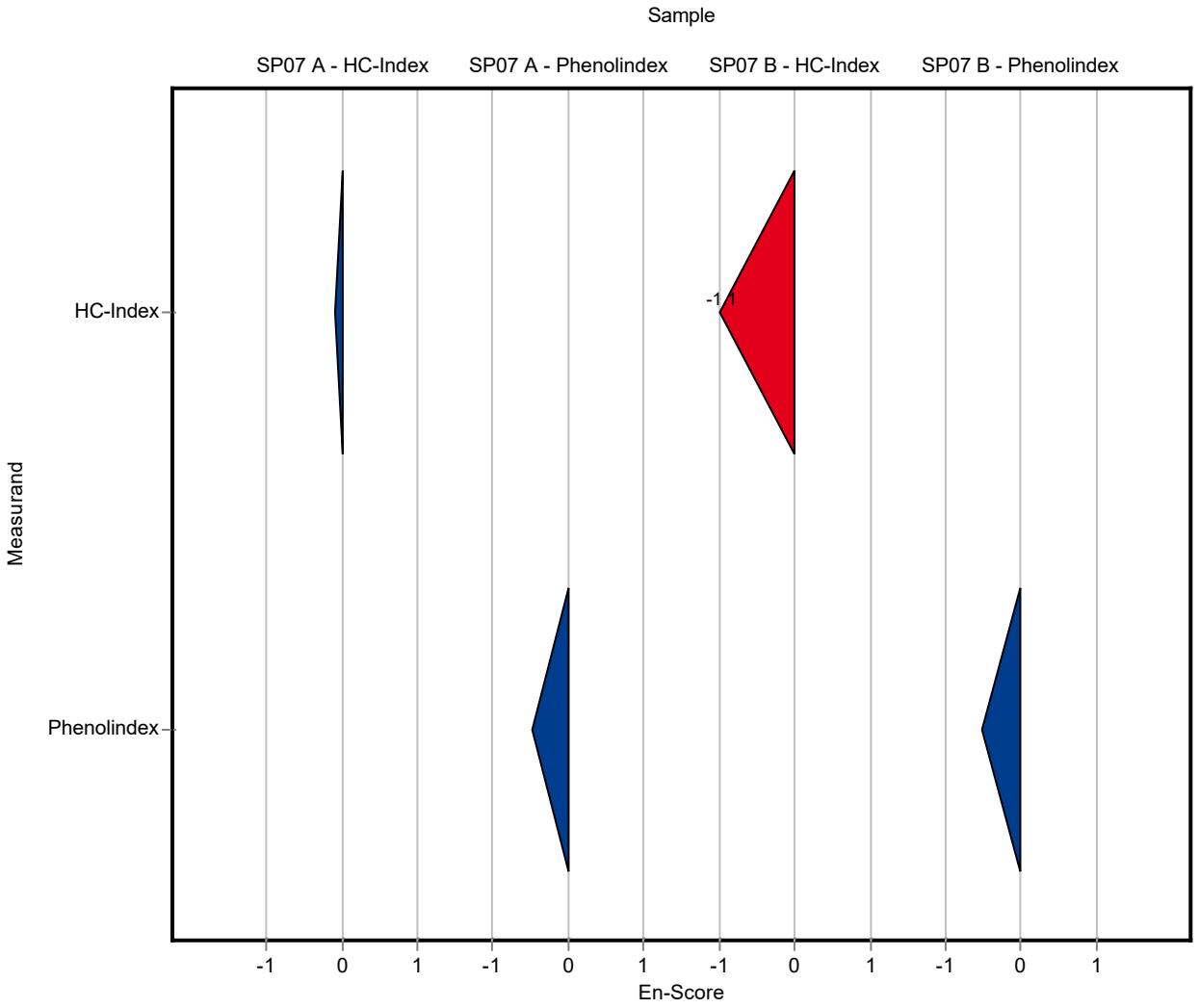
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.068 ± 0.002	0.00772	96.9	-0.48

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.644 ± 0.021	0.0736	96.2	-0.52

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0022

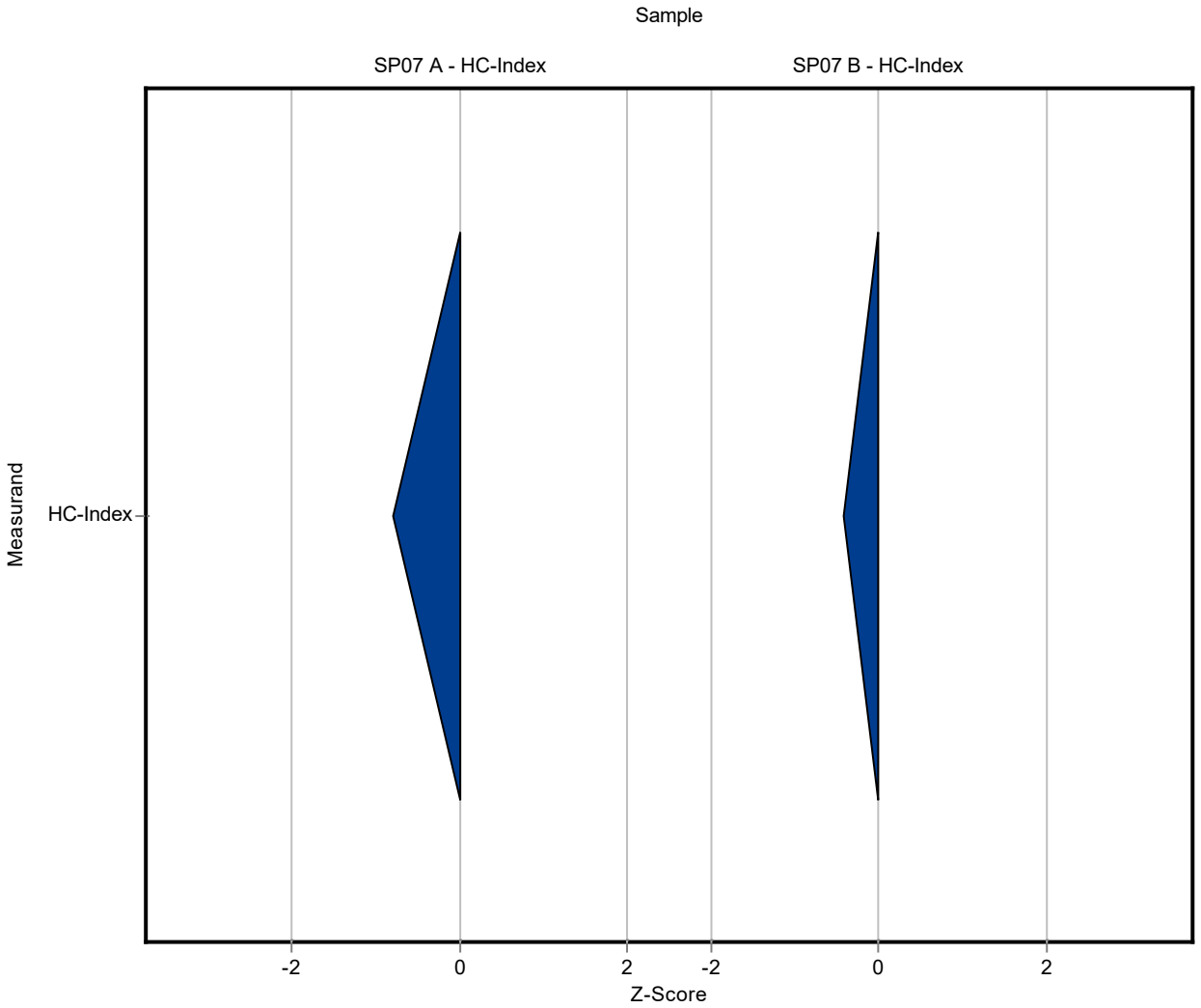


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.096 ± 0.05	0.061	66.1	-0.81

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.911 ± 0.39	0.465	82.2	-0.42



Summary of results Sum parameters SP07 - En-Score

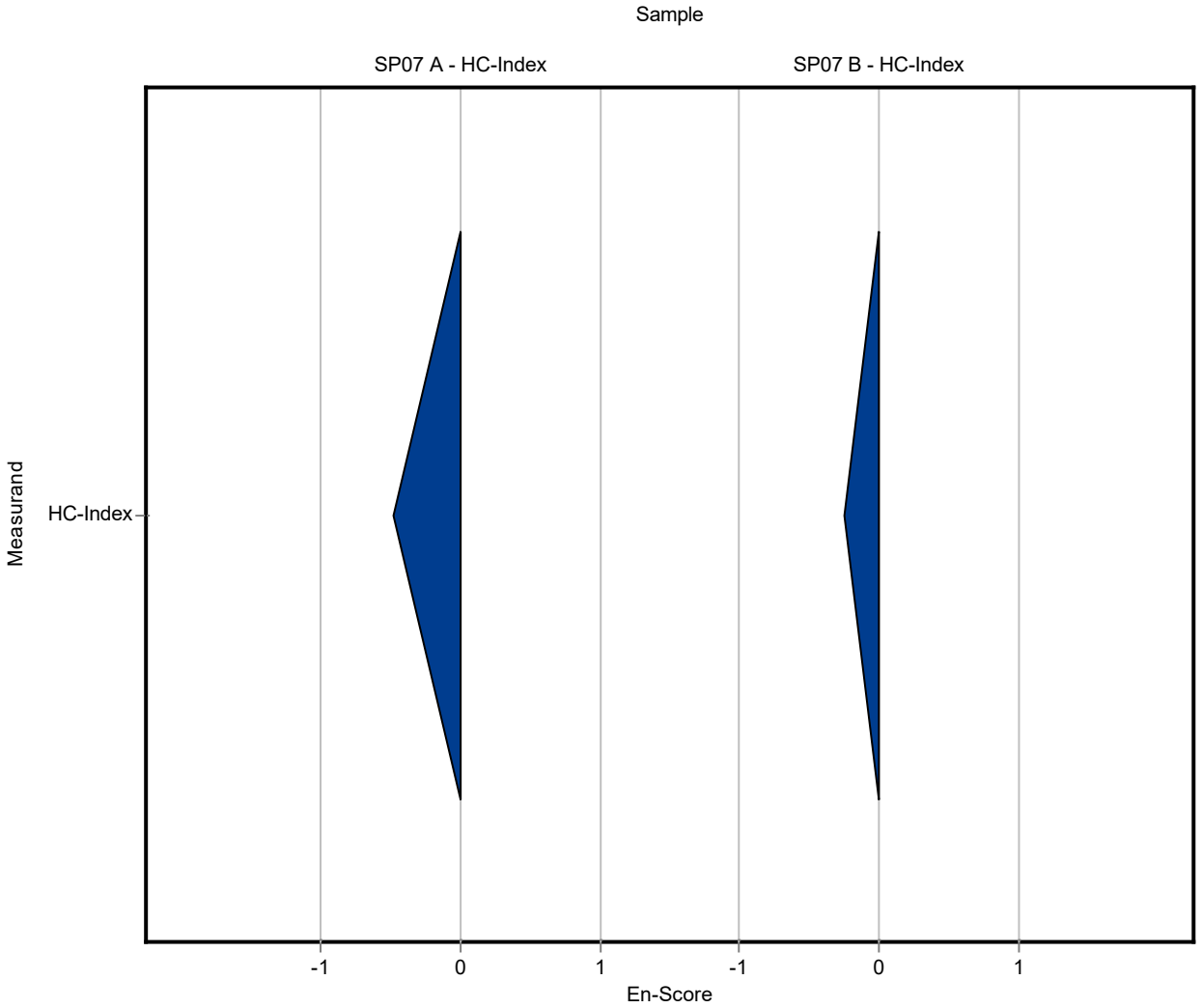
Labcode: LC0023

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.096 ± 0.05	0.061	66.1	-0.48

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.911 ± 0.39	0.465	82.2	-0.25



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.025 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

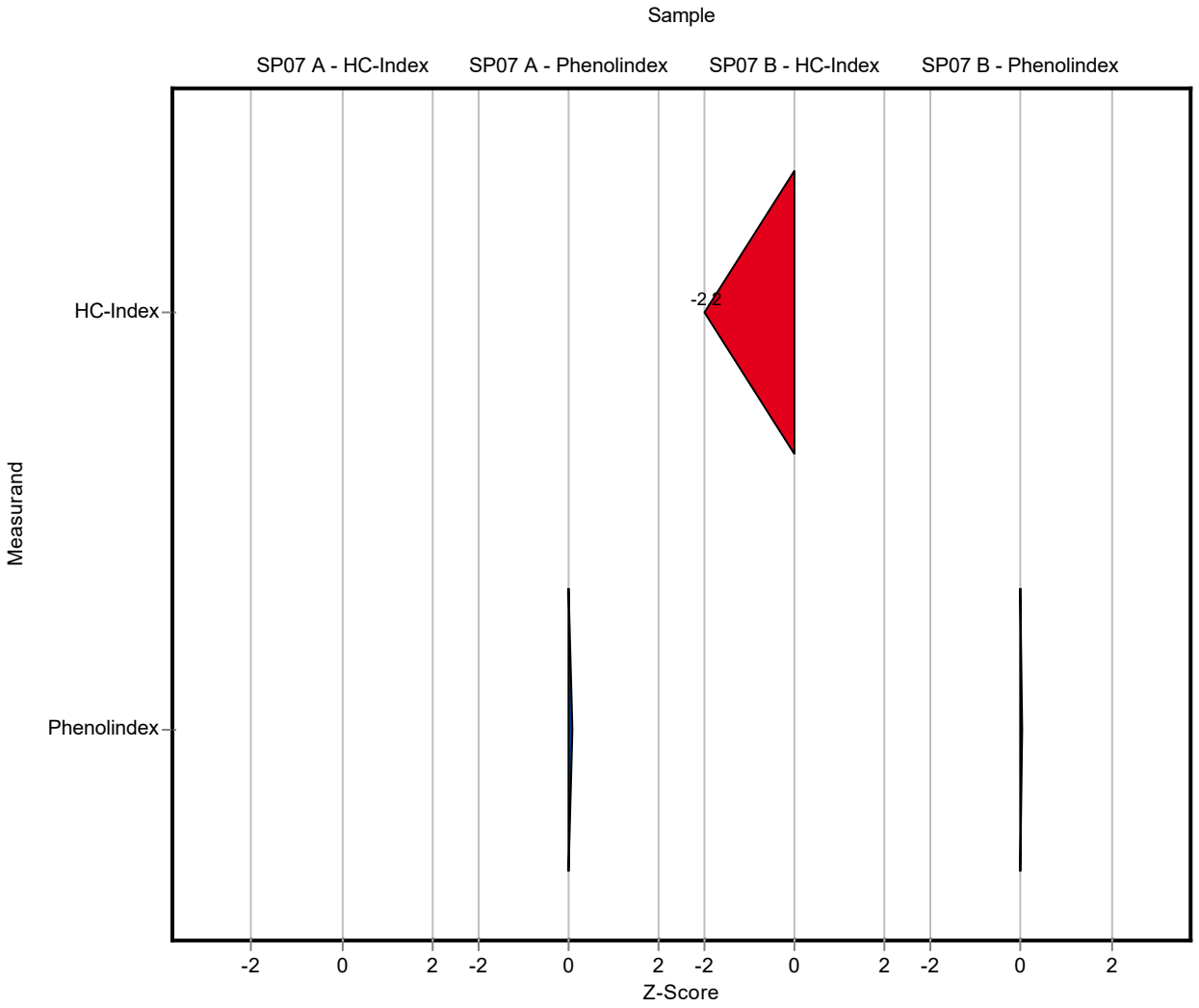
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.09 ± 0.014	0.465	8.12	-2.19

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.071 ± 0.011	0.00772	101	0.11

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.672 ± 0.101	0.0736	100	0.03


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
HC-Index
Phenolindex
Measurand
-2.2
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.025 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

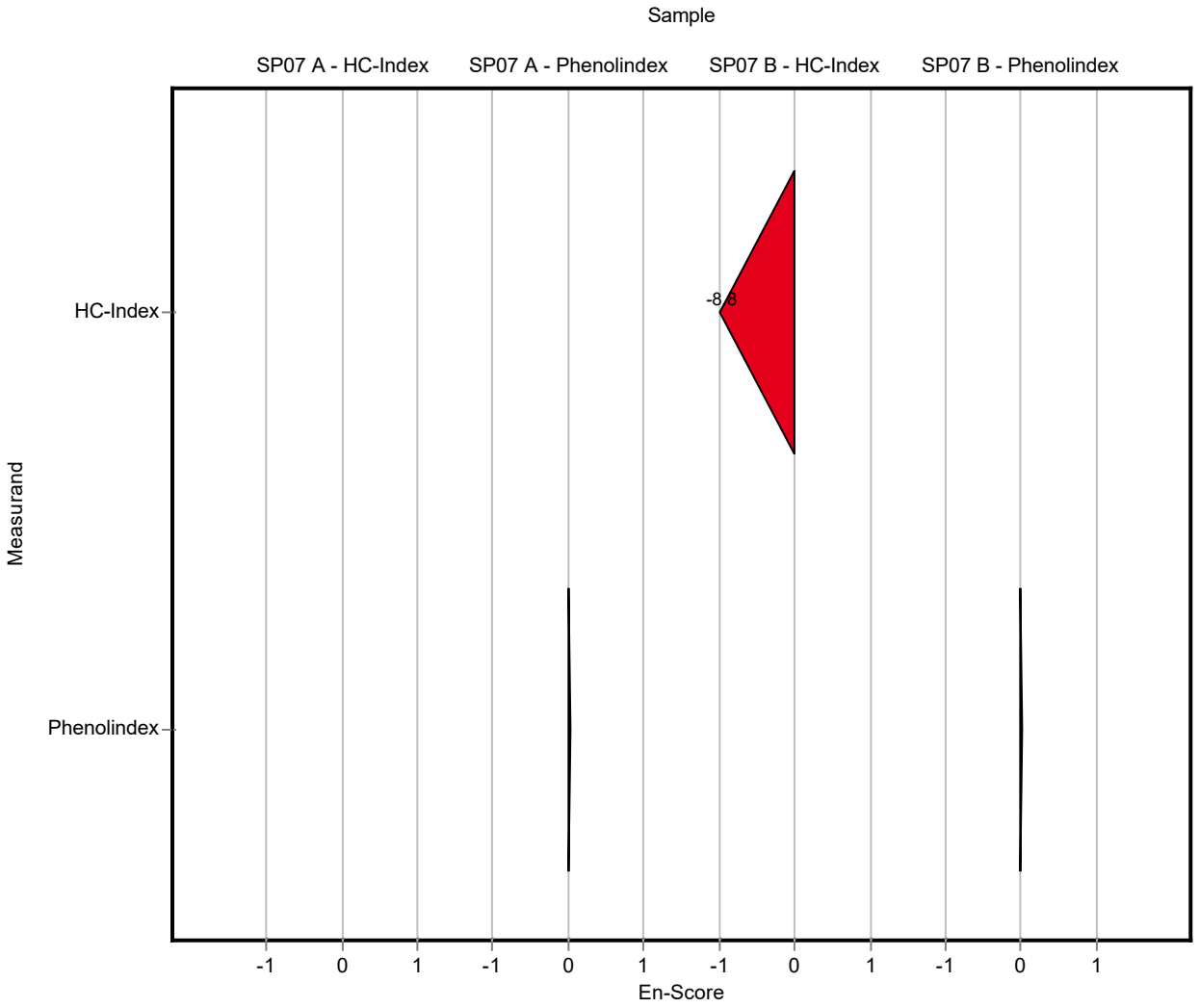
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.09 ± 0.014	0.465	8.12	-8.82

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.071 ± 0.011	0.00772	101	0.04

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.672 ± 0.101	0.0736	100	0.01

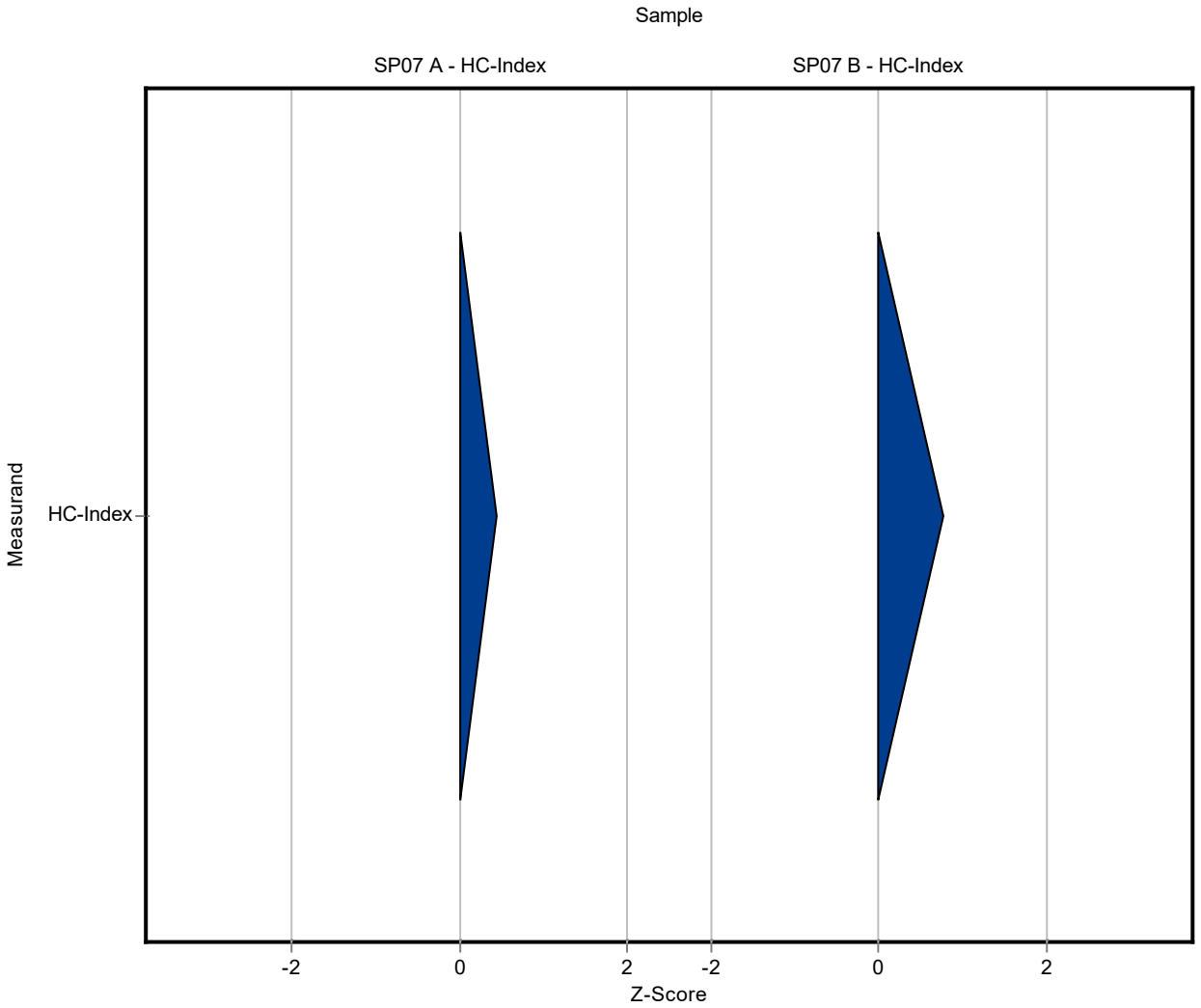

Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
HC-Index
Phenolindex
Measurand
-8.8
-1
0
1
En-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.172 ± 0.045	0.061	118	0.44

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.47 ± 0.38	0.465	133	0.78



Summary of results Sum parameters SP07 - En-Score

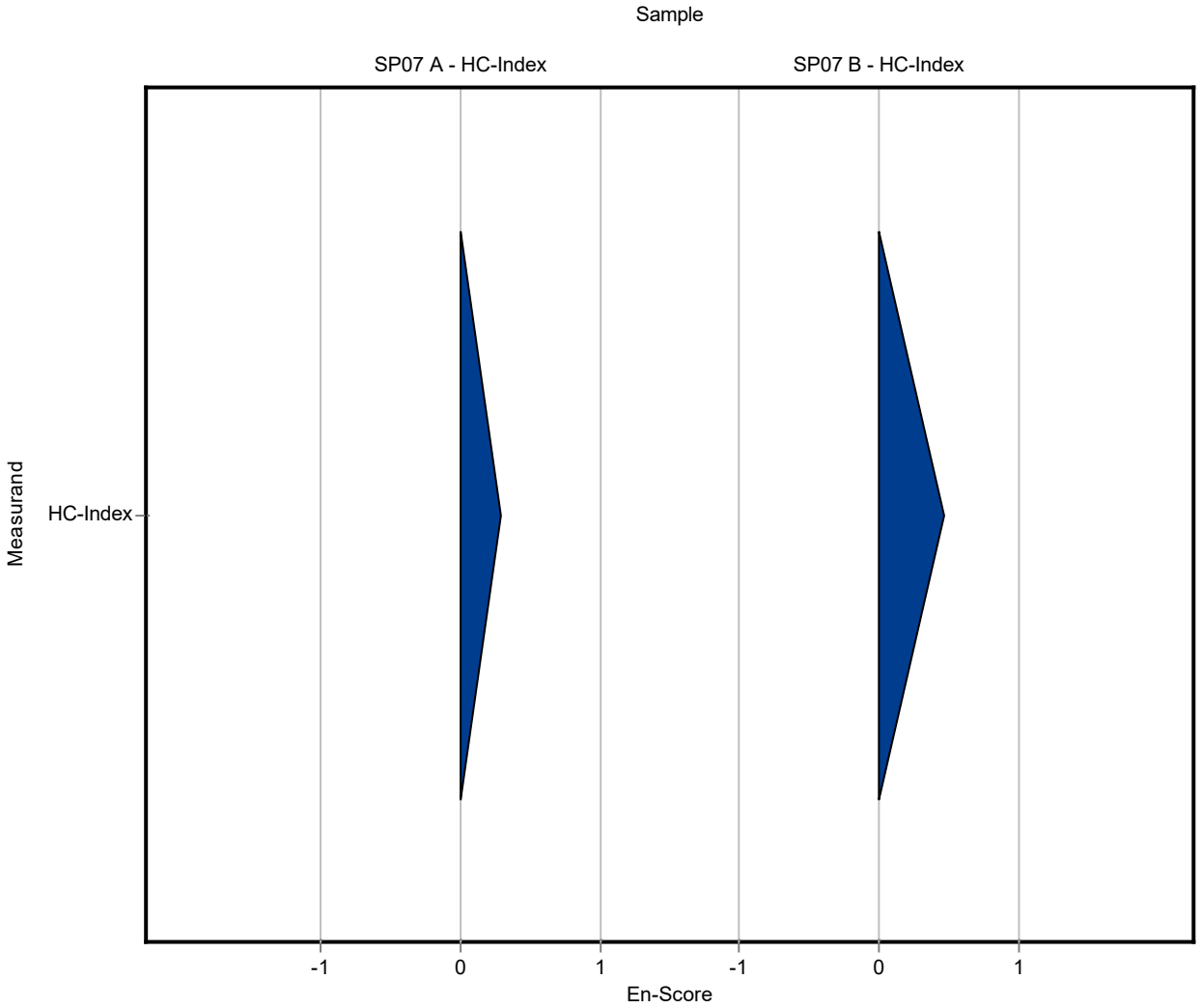
Labcode: LC0025

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.172 ± 0.045	0.061	118	0.29

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.47 ± 0.38	0.465	133	0.47



Summary of results Sum parameters SP07

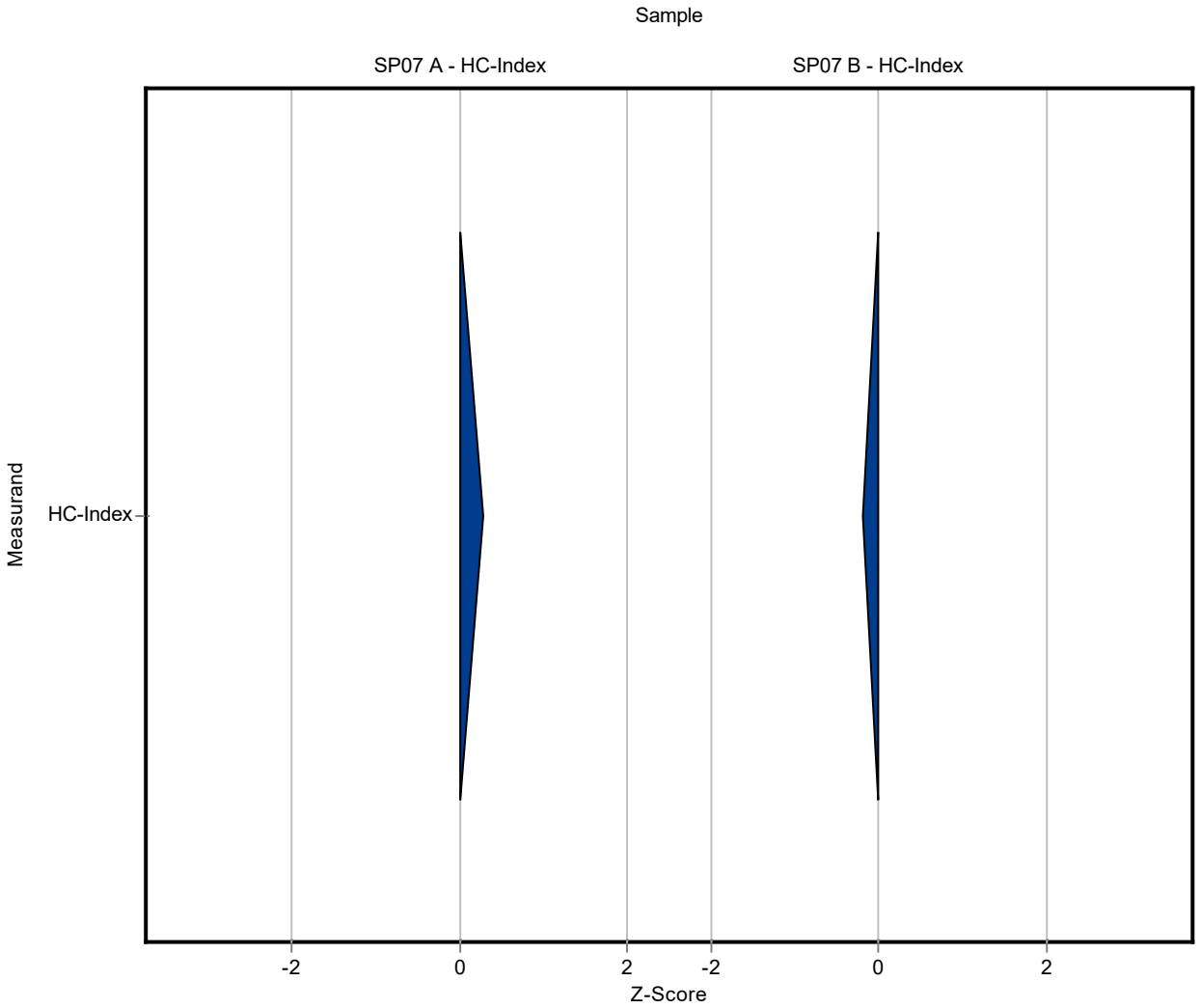
Labcode: LC0026

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.162 ± 0.014	0.061	112	0.28

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.022 ± 0.215	0.465	92.2	-0.18

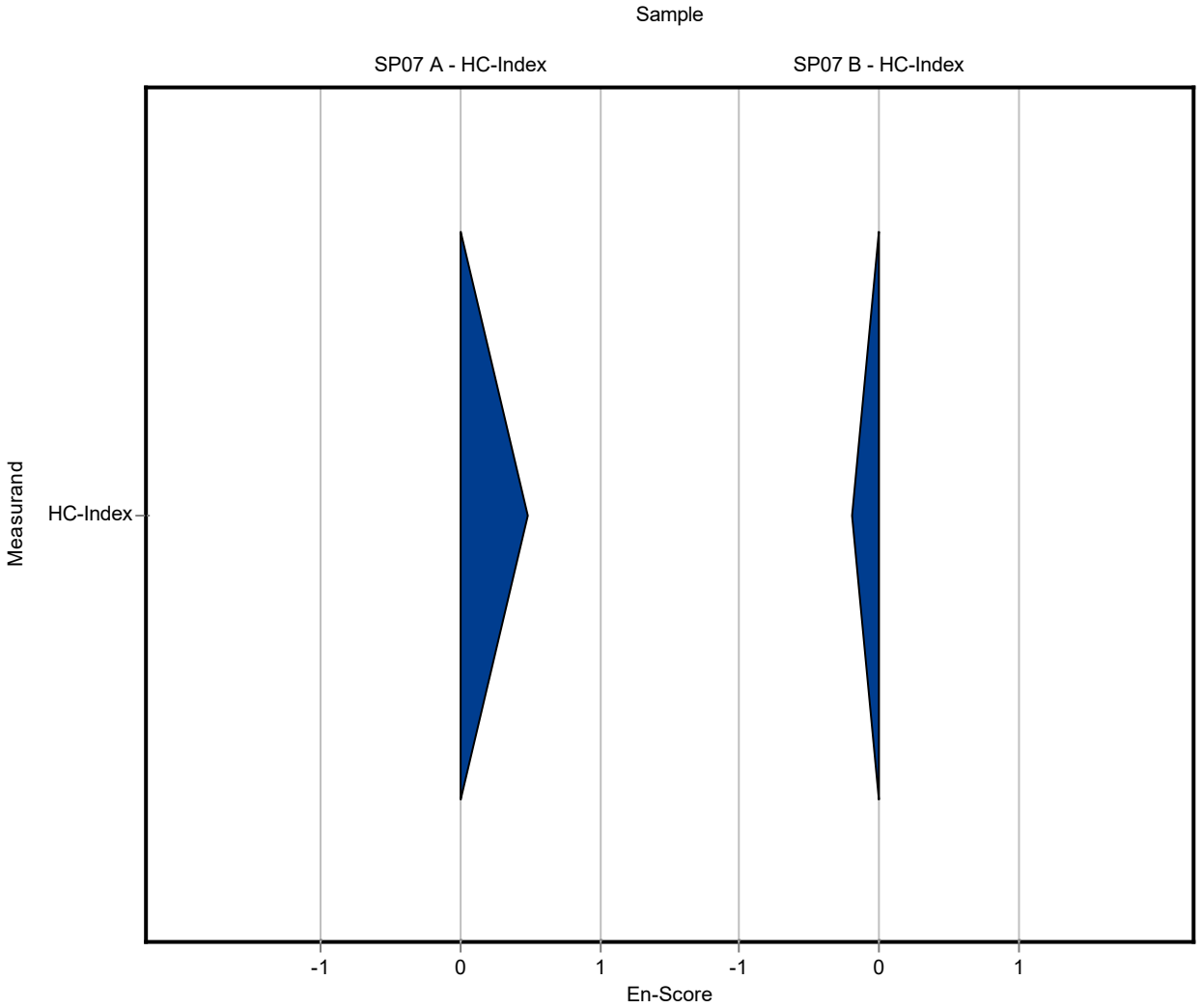


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.162 ± 0.014	0.061	112	0.48

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.022 ± 0.215	0.465	92.2	-0.19



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.118 ± 0.024	0.061	81.3	-0.45

Sample: SP07KWIB

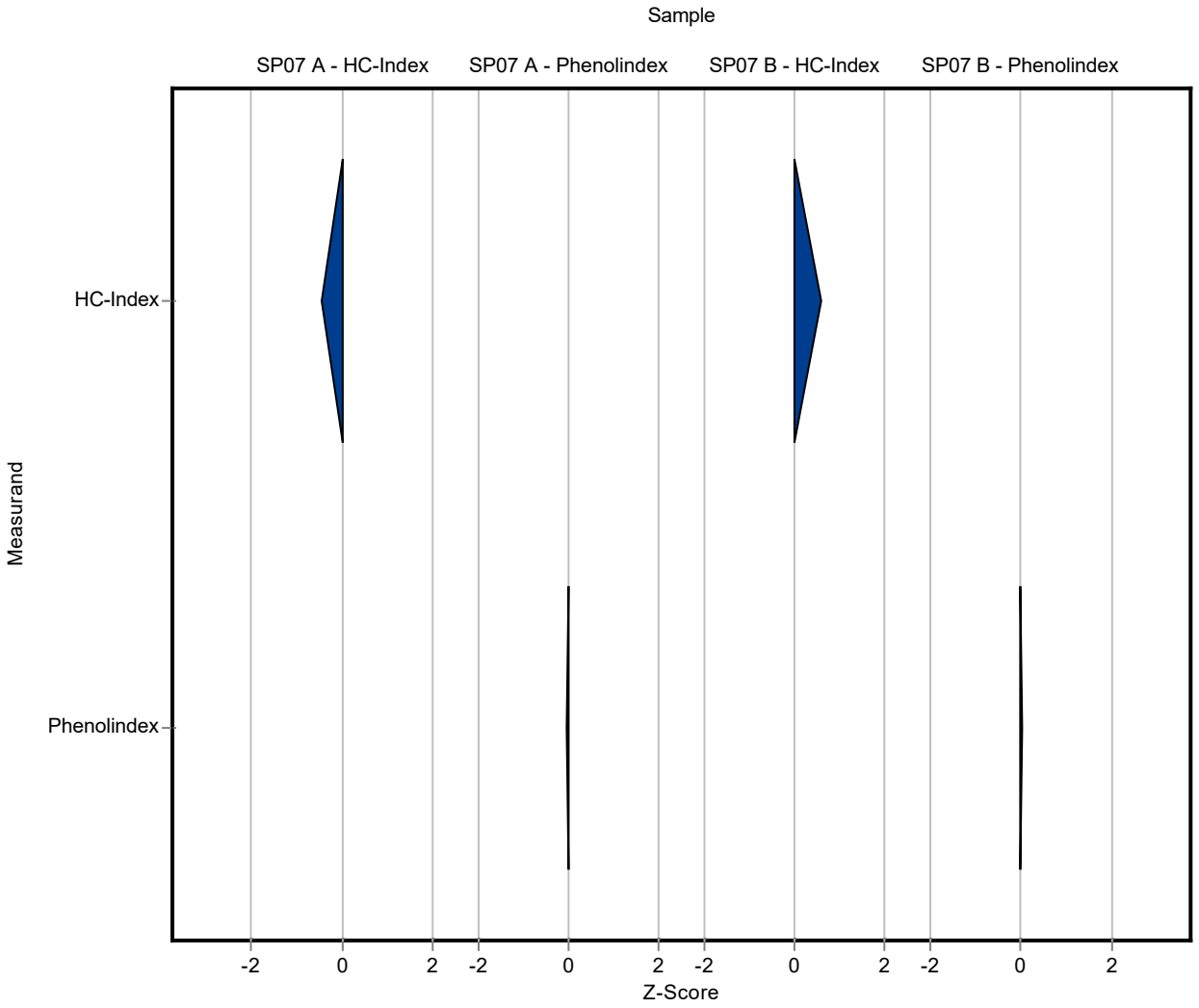
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.38 ± 0.28	0.465	125	0.58

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.07 ± 0.007	0.00772	99.7	-0.02

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.67 ± 0.067	0.0736	100	0.01


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
HC-Index
Phenolindex
Measurand
-2
0
2
Z-Score

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0027

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.118 ± 0.024	0.061	81.3	-0.52

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.38 ± 0.28	0.465	125	0.48

Sample: SP07PHIA

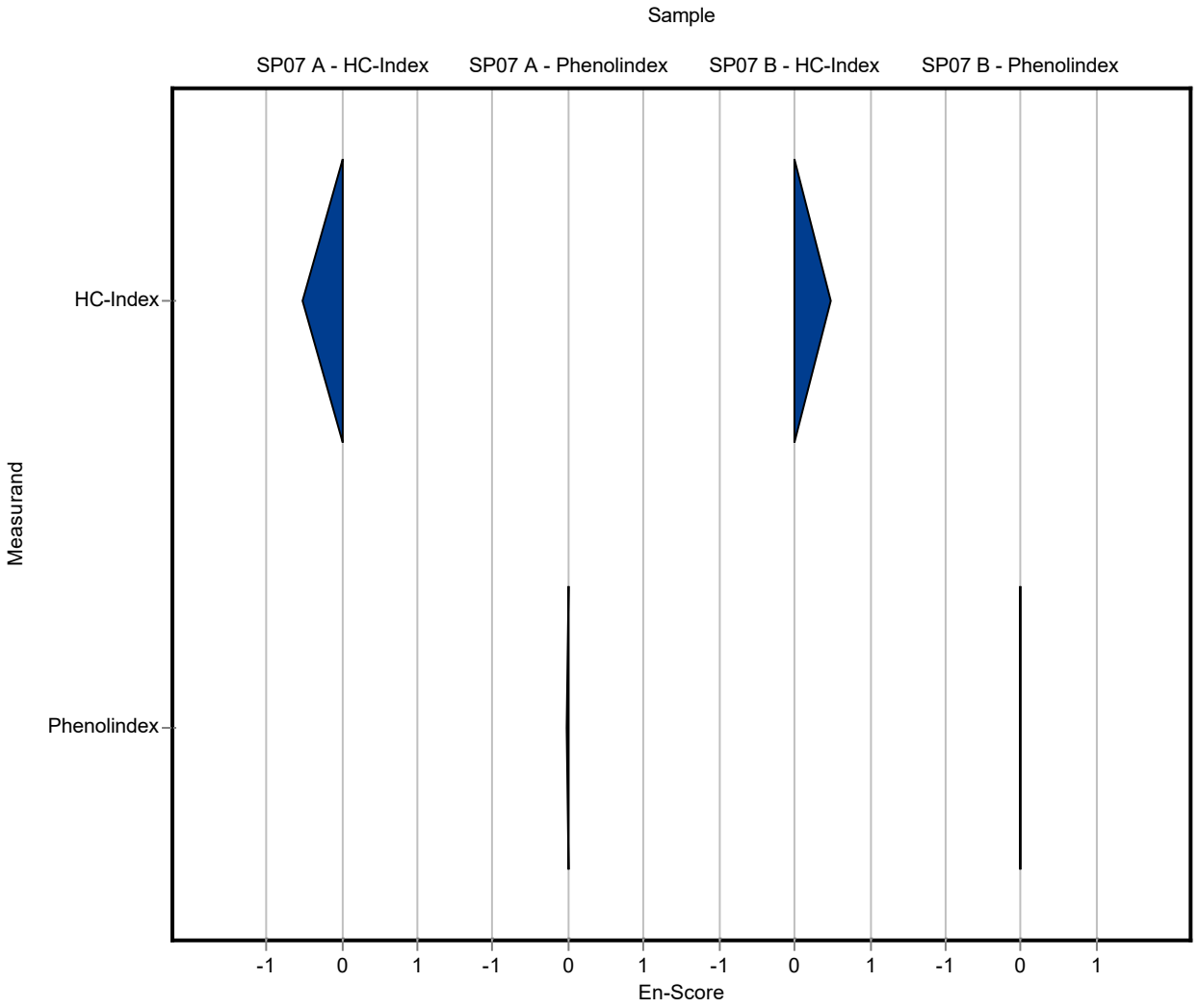
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.07 ± 0.007	0.00772	99.7	-0.01

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.67 ± 0.067	0.0736	100	0.00

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0027



Summary of results Sum parameters SP07

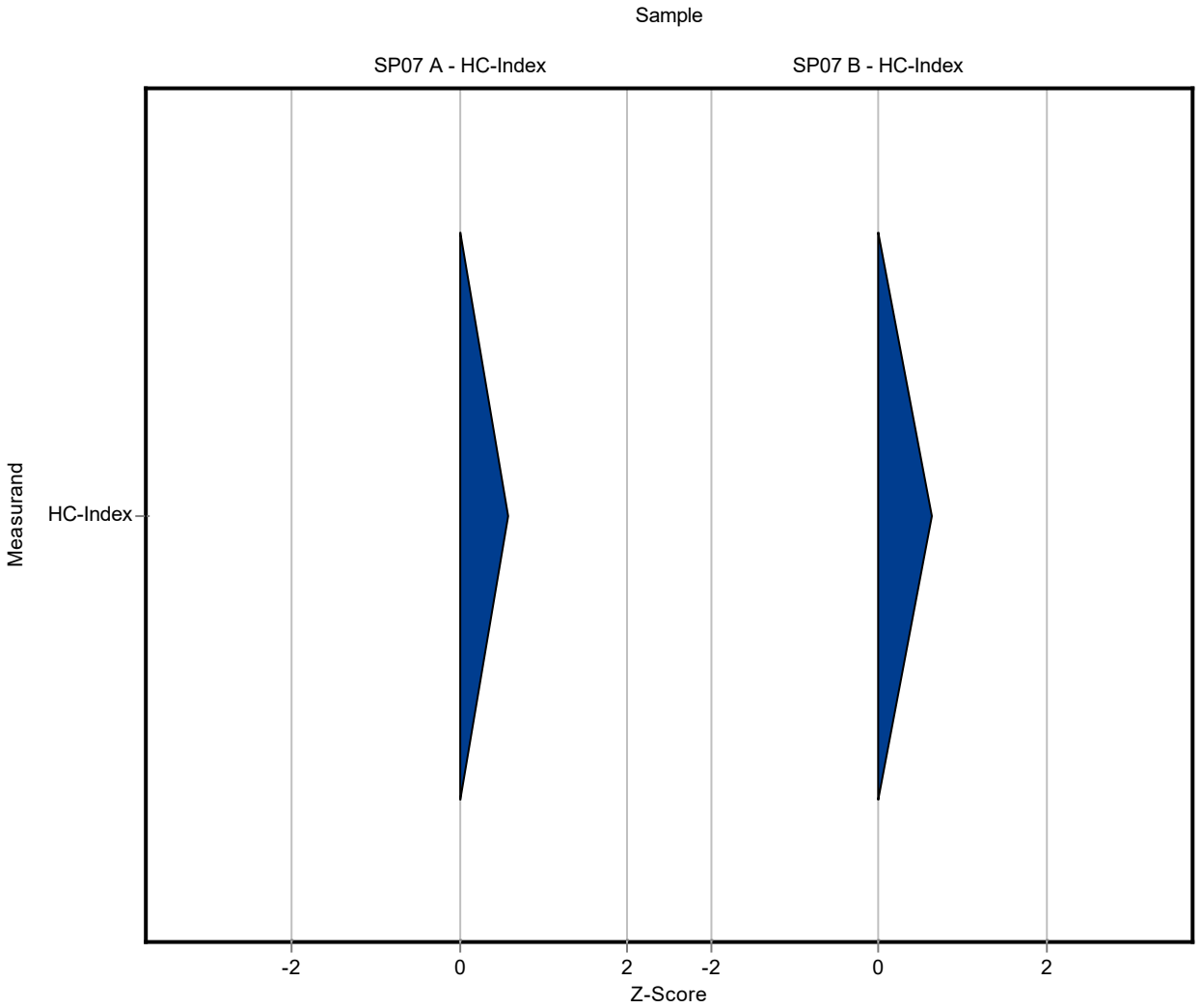
Labcode: LC0028

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.181 ± 0.045	0.061	125	0.59

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.4 ± 0.35	0.465	126	0.63



Summary of results Sum parameters SP07 - En-Score

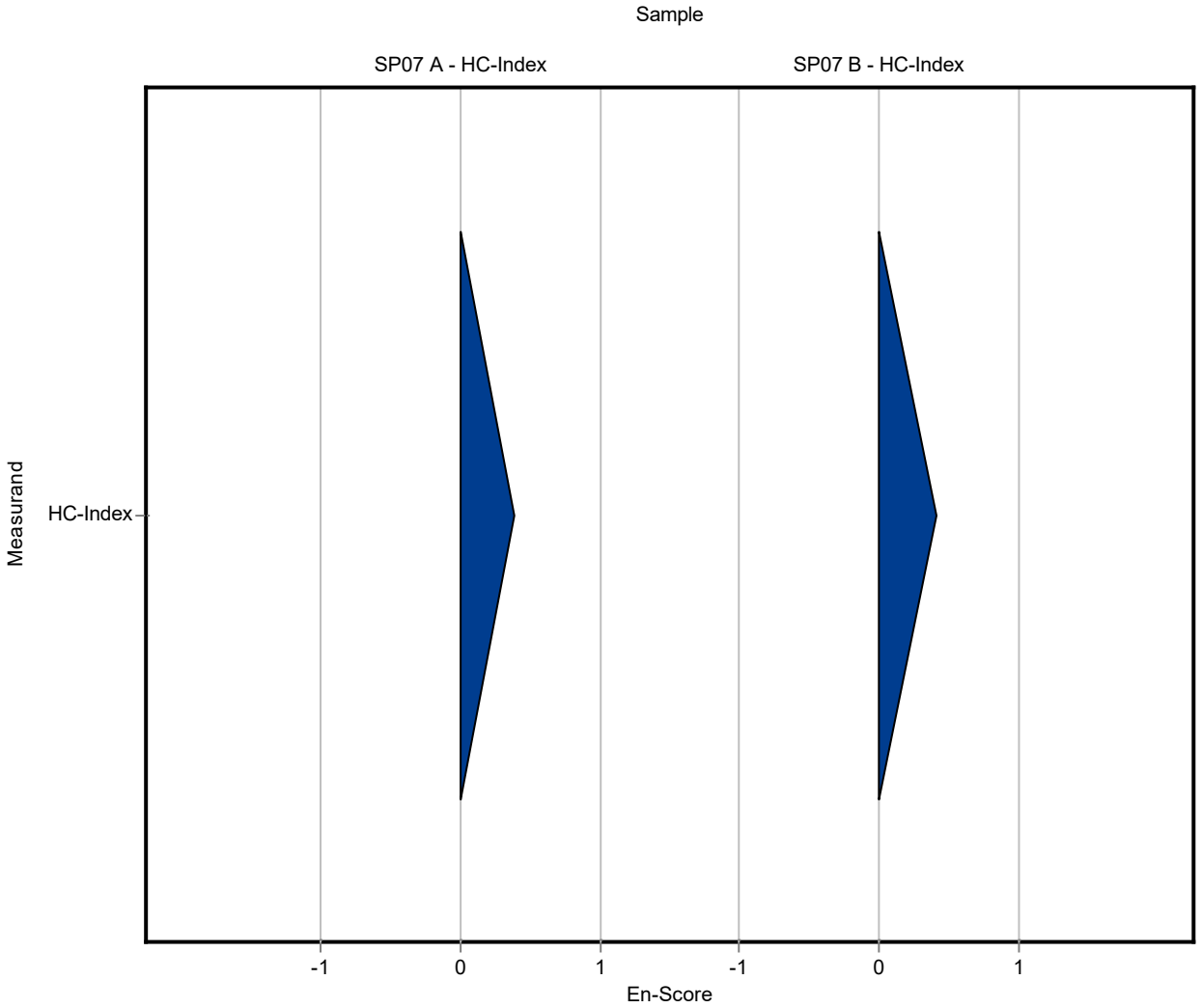
Labcode: LC0028

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.181 ± 0.045	0.061	125	0.39

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.4 ± 0.35	0.465	126	0.41



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.136 ± 0.03	0.061	93.7	-0.15

Sample: SP07KWIB

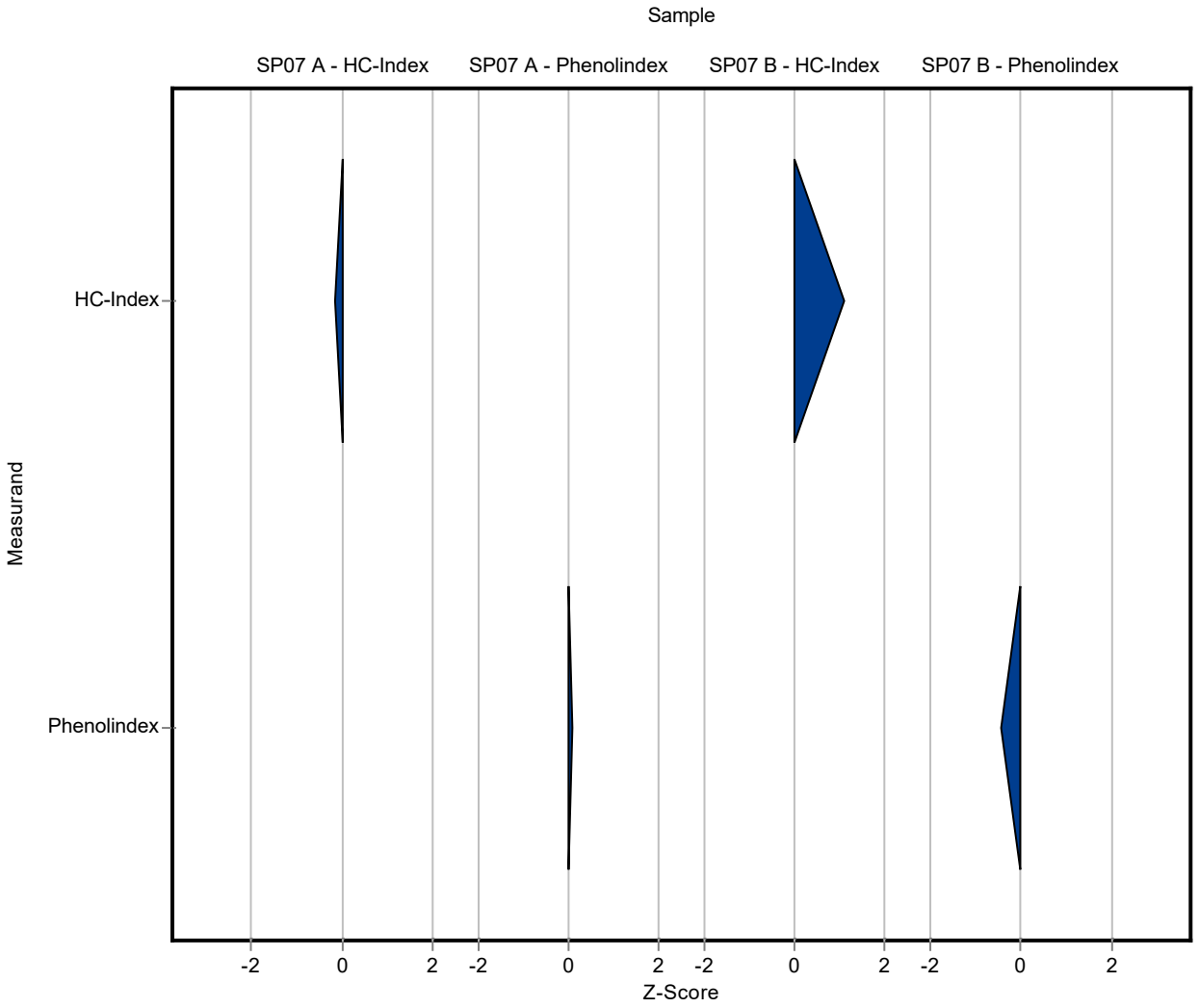
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.62 ± 0.38	0.465	146	1.10

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.071 ± 0.015	0.00772	101	0.11

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.637 ± 0.136	0.0736	95.2	-0.44


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.136 ± 0.03	0.061	93.7	-0.15

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.62 ± 0.38	0.465	146	0.67

Sample: SP07PHIA

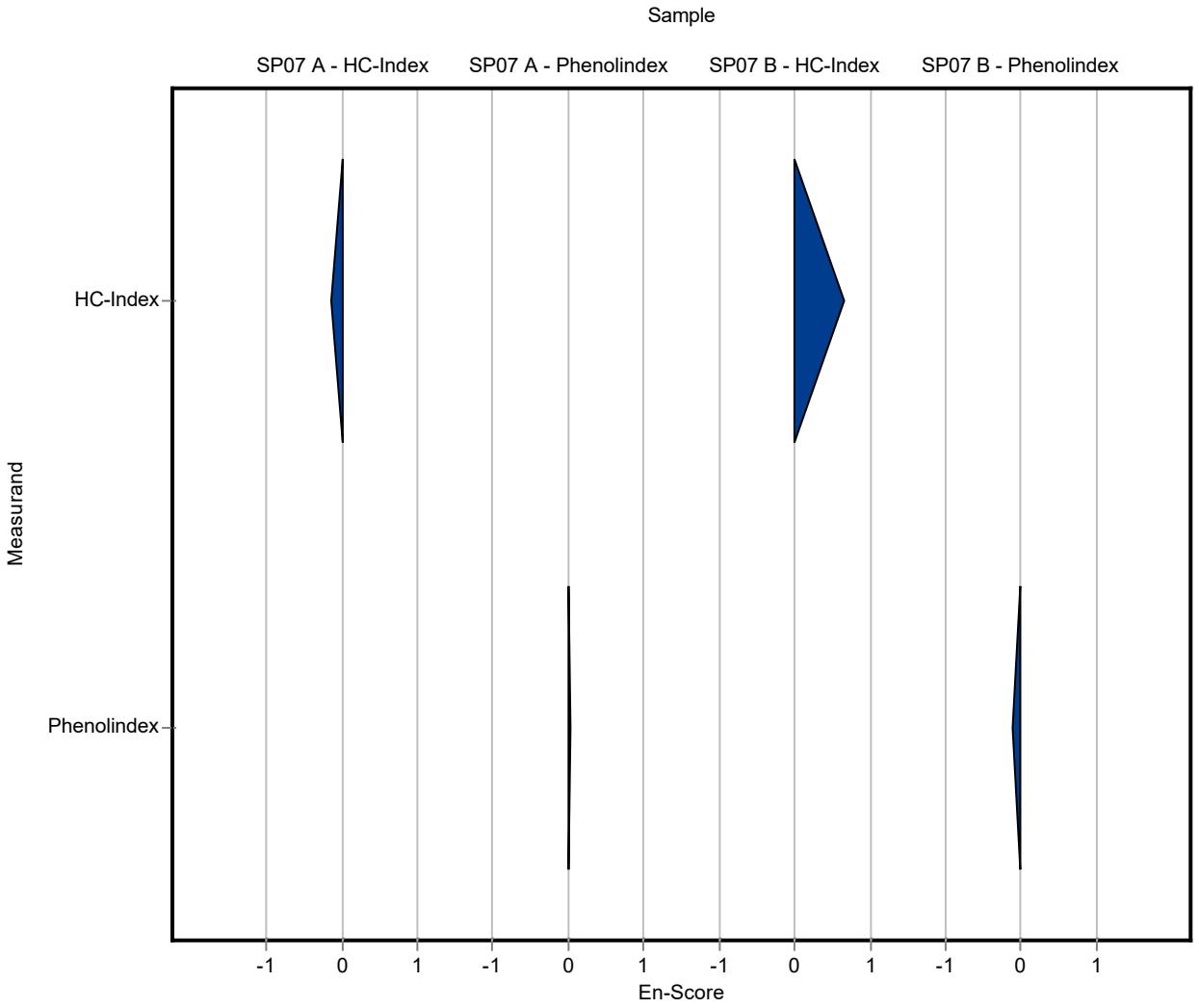
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.071 ± 0.015	0.00772	101	0.03

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.637 ± 0.136	0.0736	95.2	-0.12

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0029



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

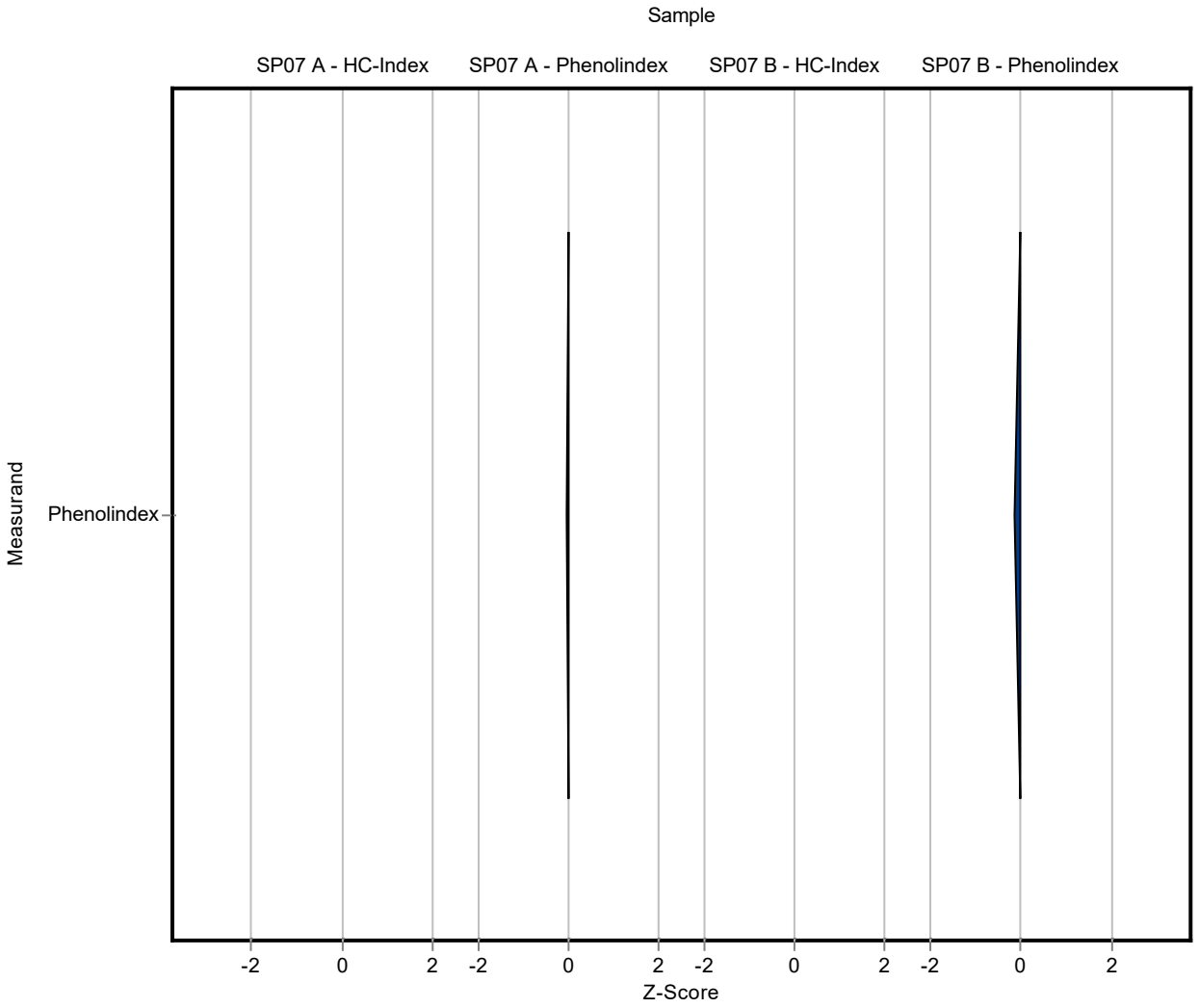
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.07 ± 0.014	0.00772	99.7	-0.02

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.658 ± 0.132	0.0736	98.3	-0.16


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Sample: SP07PHIA

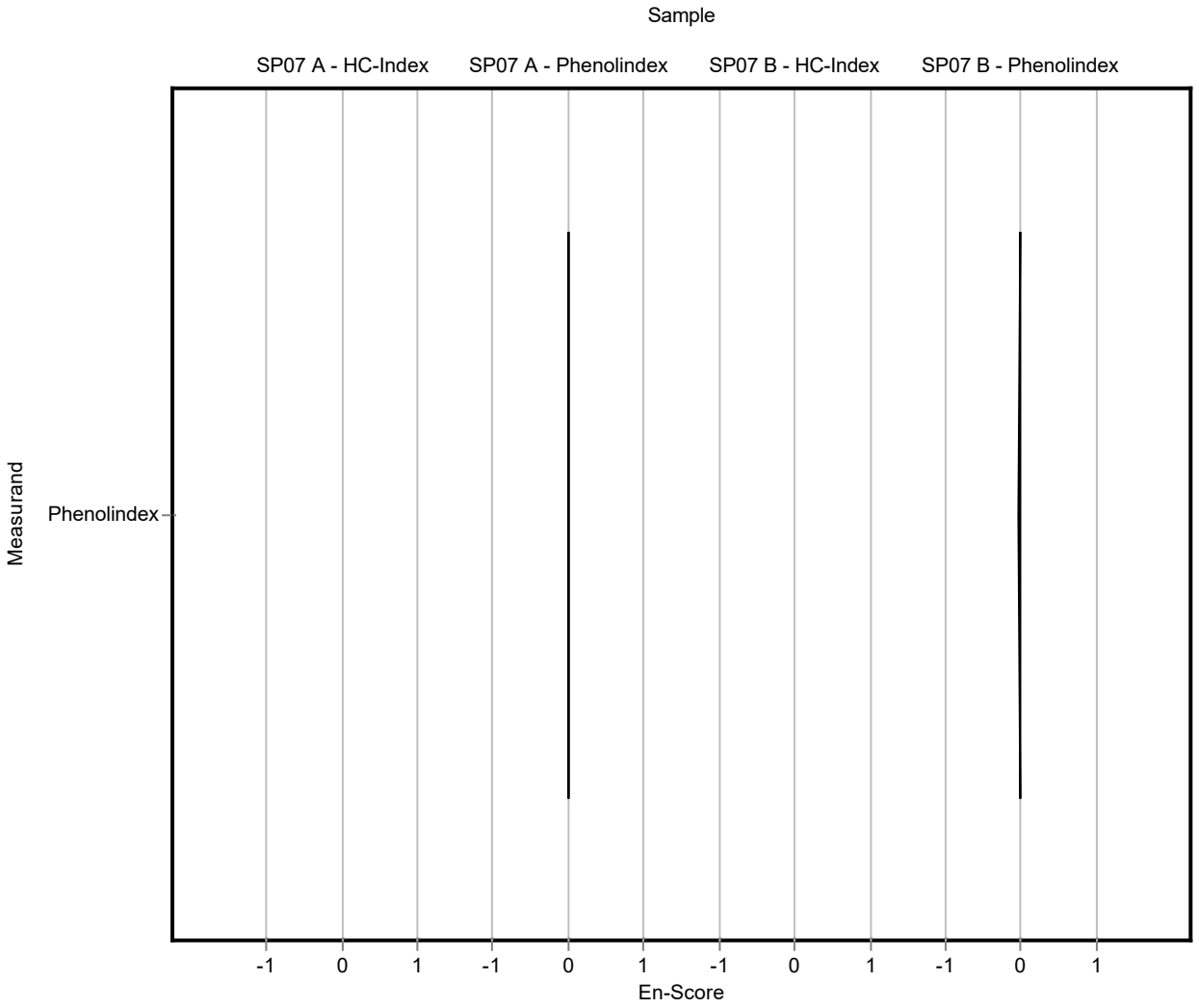
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.07 ± 0.014	0.00772	99.7	-0.01

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.658 ± 0.132	0.0736	98.3	-0.04

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0030



Summary of results Sum parameters SP07

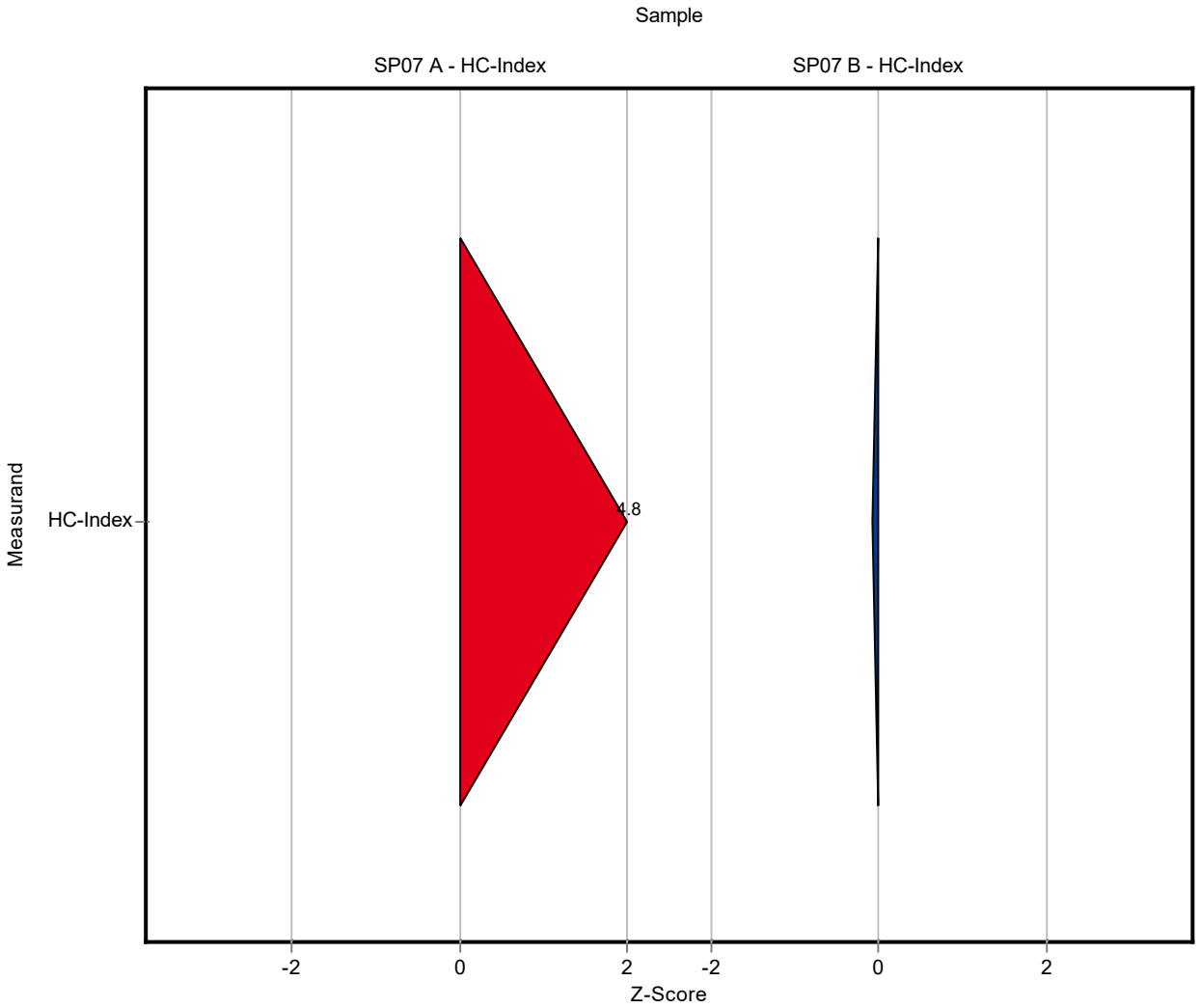
Labcode: LC0031

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.44 ± 0.04	0.061	303	4.83

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.07 ± 0.03	0.465	96.6	-0.08



Summary of results Sum parameters SP07 - En-Score

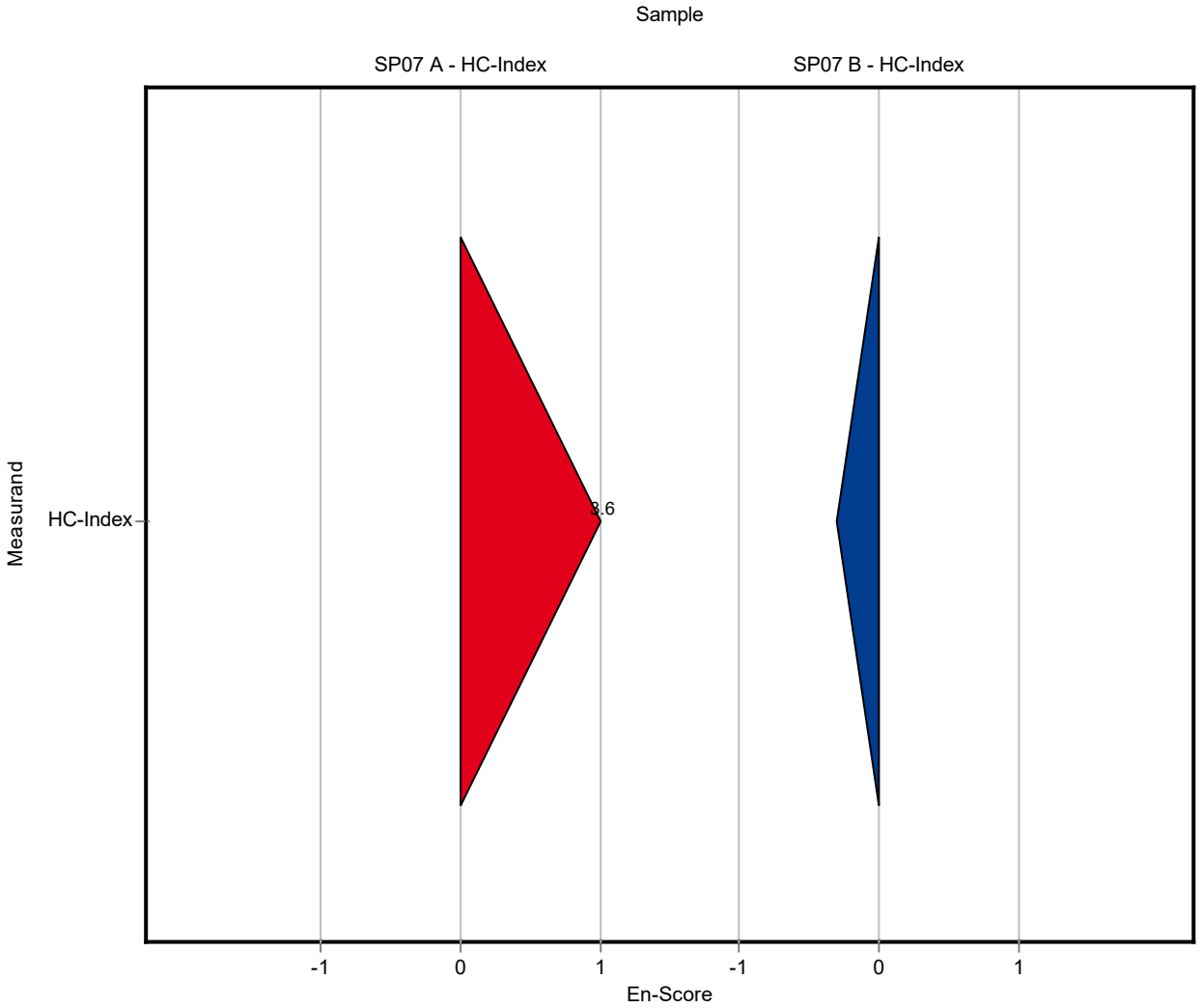
Labcode: LC0031

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.44 ± 0.04	0.061	303	3.57

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.07 ± 0.03	0.465	96.6	-0.30



Summary of results Sum parameters SP07

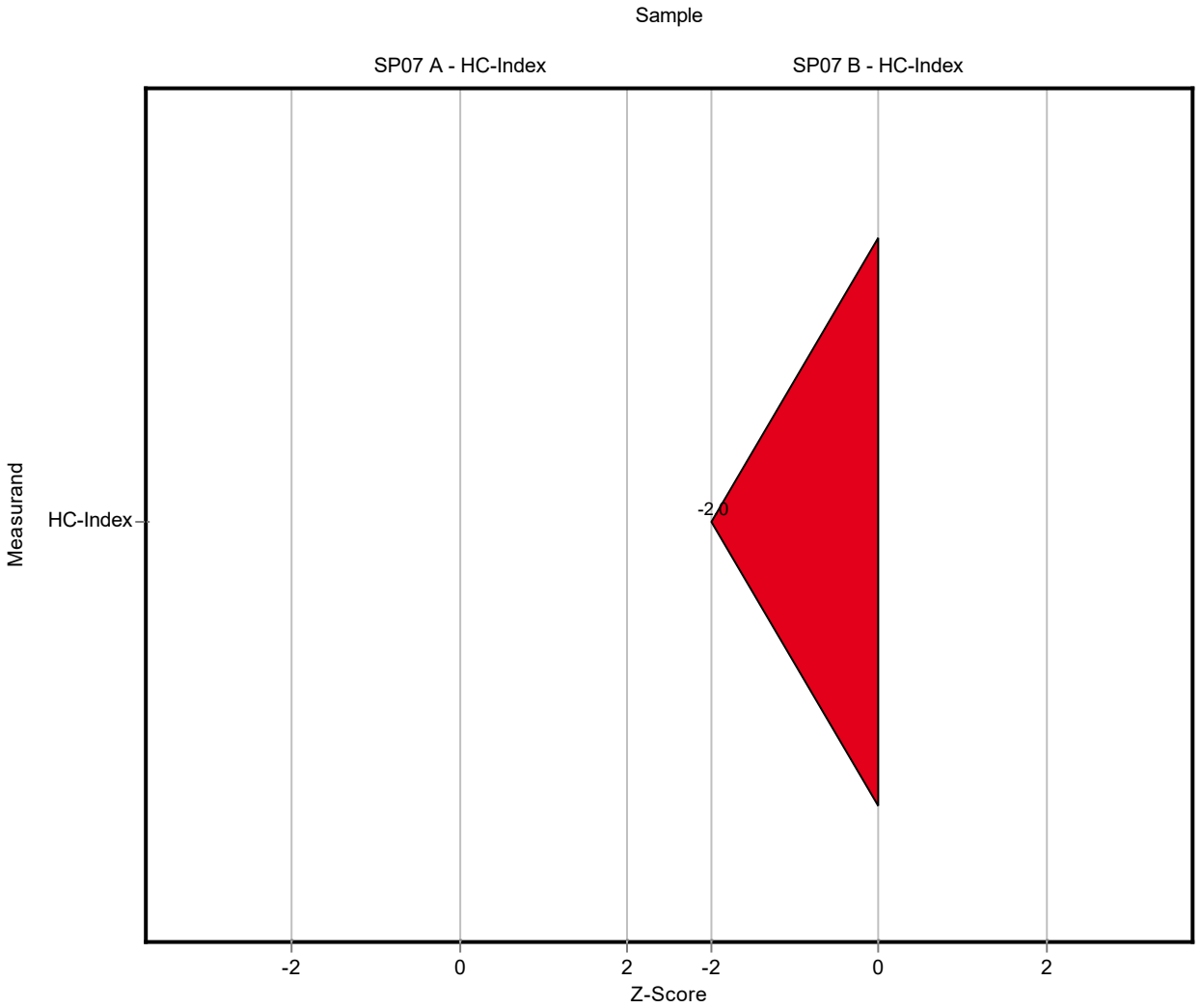
Labcode: LC0032

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.031 (LOD) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.15995 ± 0.0142	0.465	14.4	-2.04



Summary of results Sum parameters SP07 - En-Score

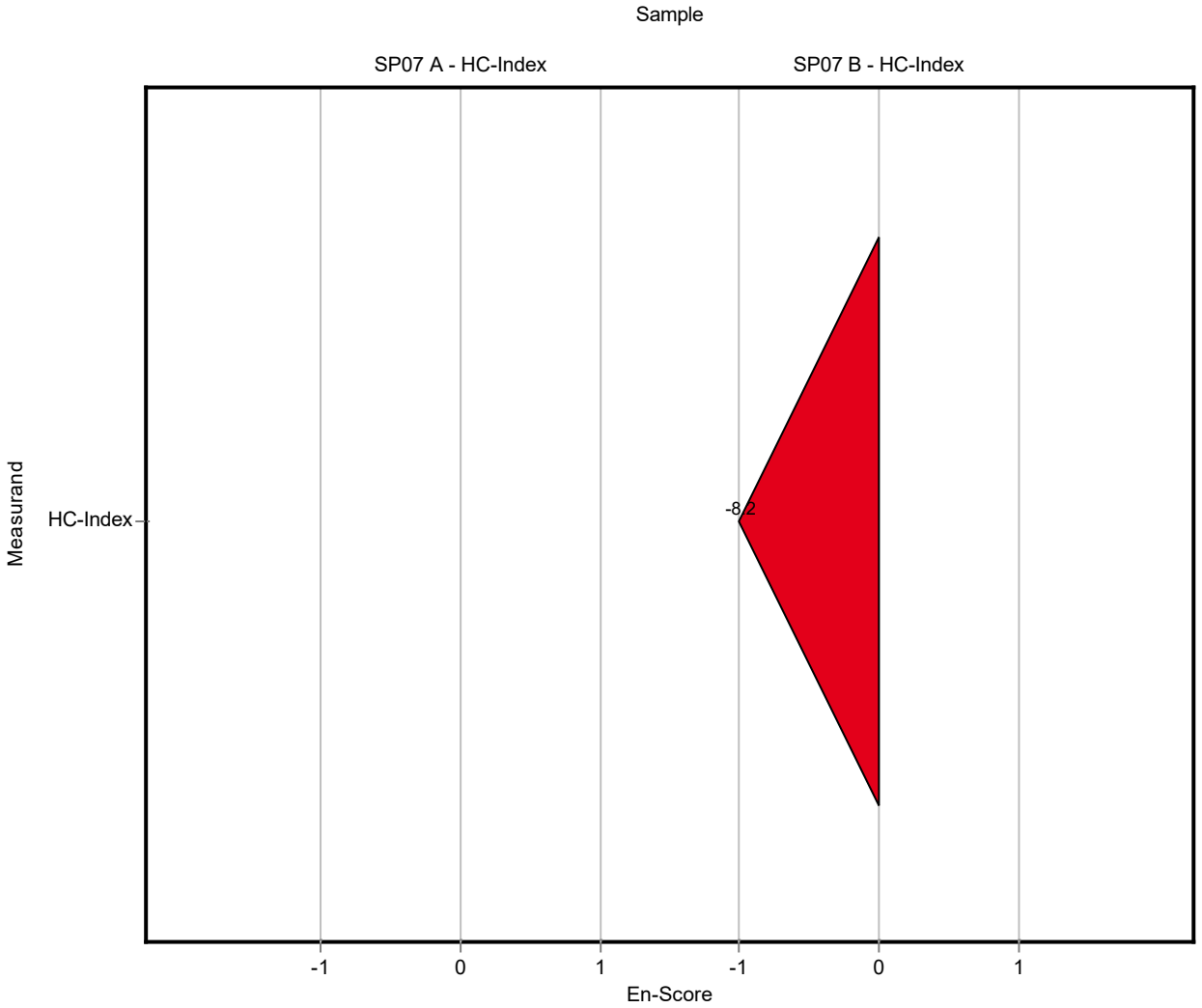
Labcode: LC0032

Sample: SP07KWIA

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145	±	0.0206	<0.031 (LOD)	±	-	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11	±	0.112	0.15995	±	0.0142	0.465	14.4	-8.21



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.13 ± 0.03	0.061	89.5	-0.25

Sample: SP07KWIB

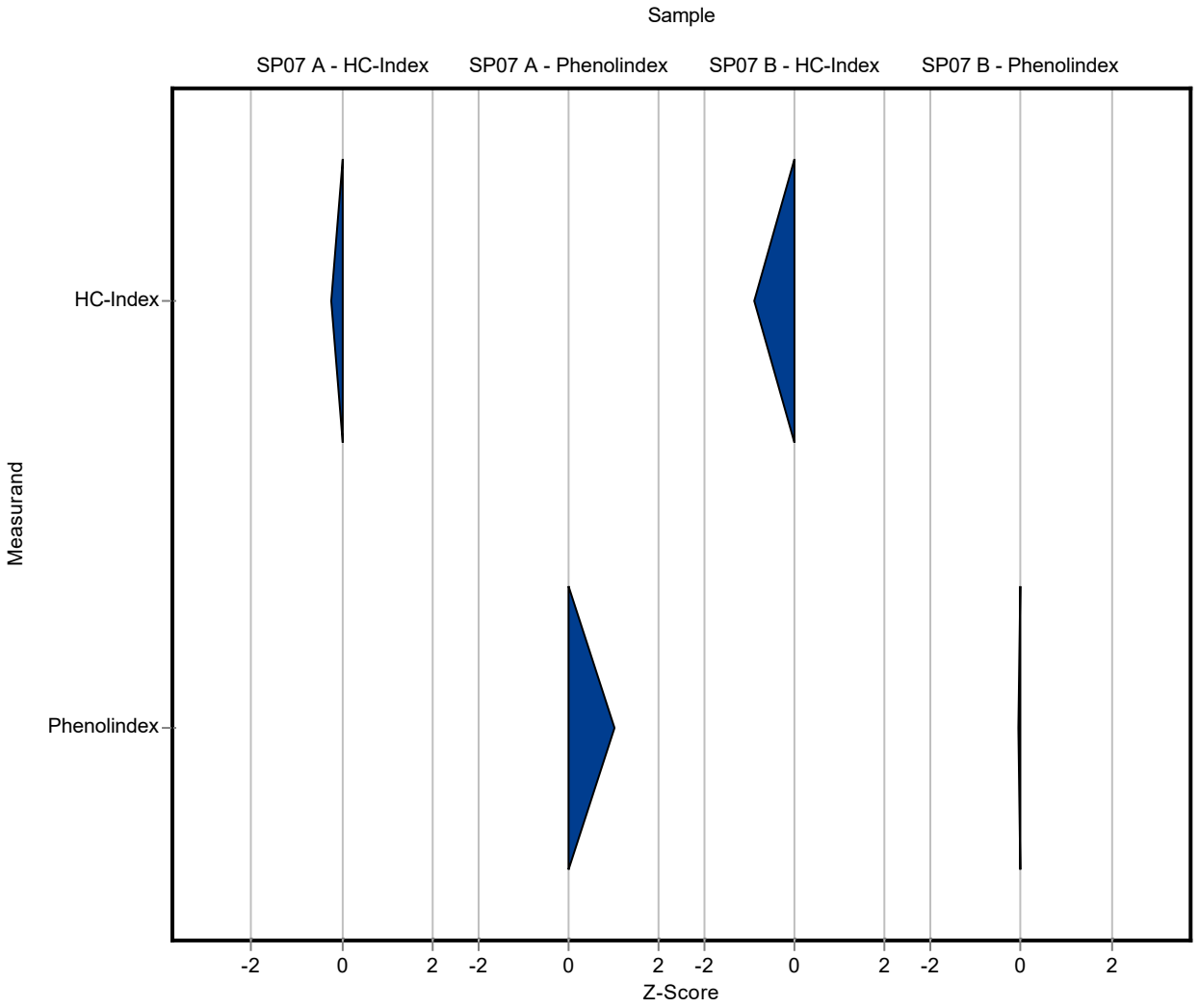
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.7 ± 0.15	0.465	63.2	-0.88

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0781 ± 0.0078	0.00772	111	1.03

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.664 ± 0.066	0.0736	99.2	-0.07


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.13 ± 0.03	0.061	89.5	-0.24

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.7 ± 0.15	0.465	63.2	-1.27

Sample: SP07PHIA

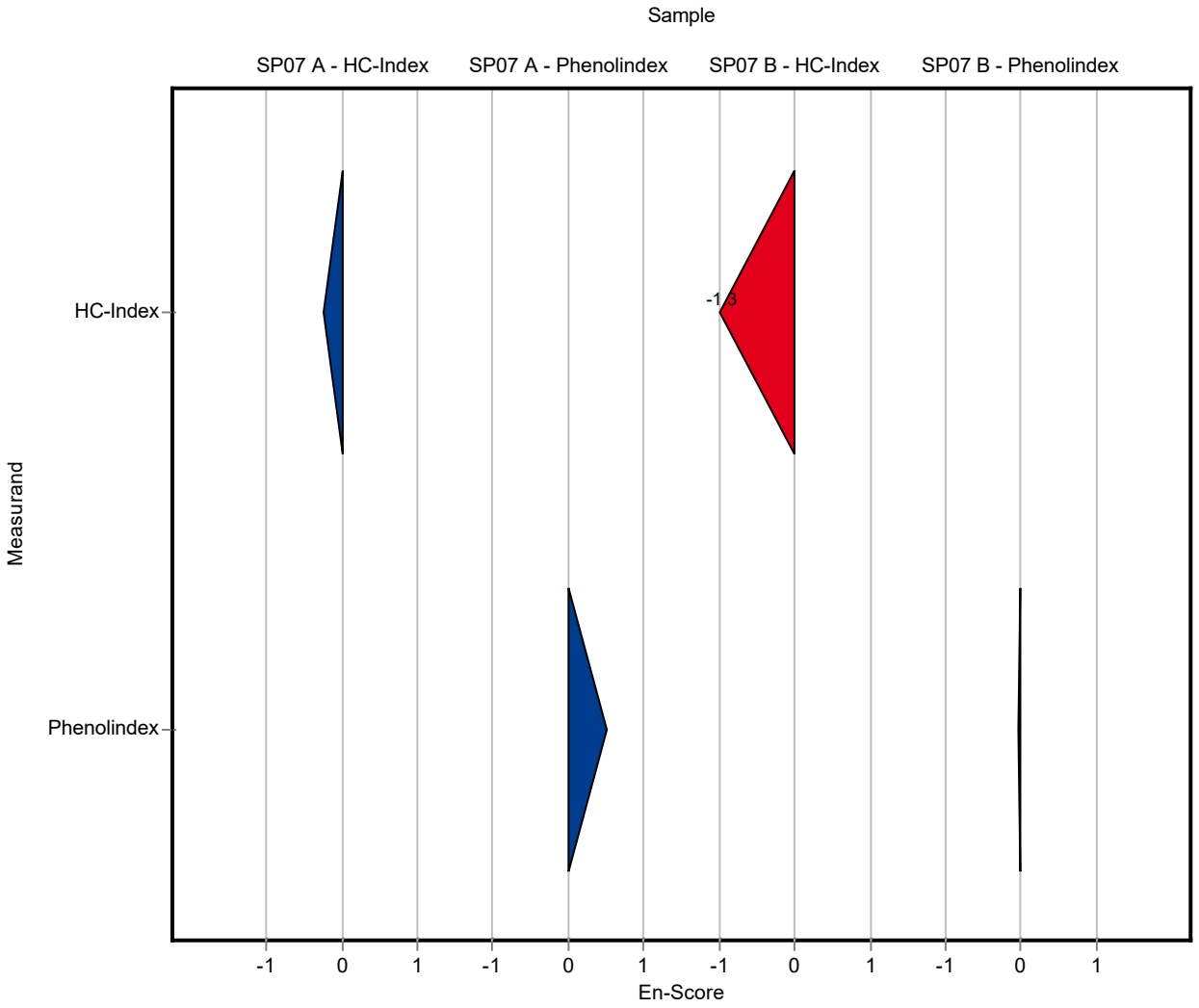
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0781 ± 0.0078	0.00772	111	0.50

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.664 ± 0.066	0.0736	99.2	-0.04

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0033



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.149 ± 0.0286	0.061	103	0.06

Sample: SP07KWIB

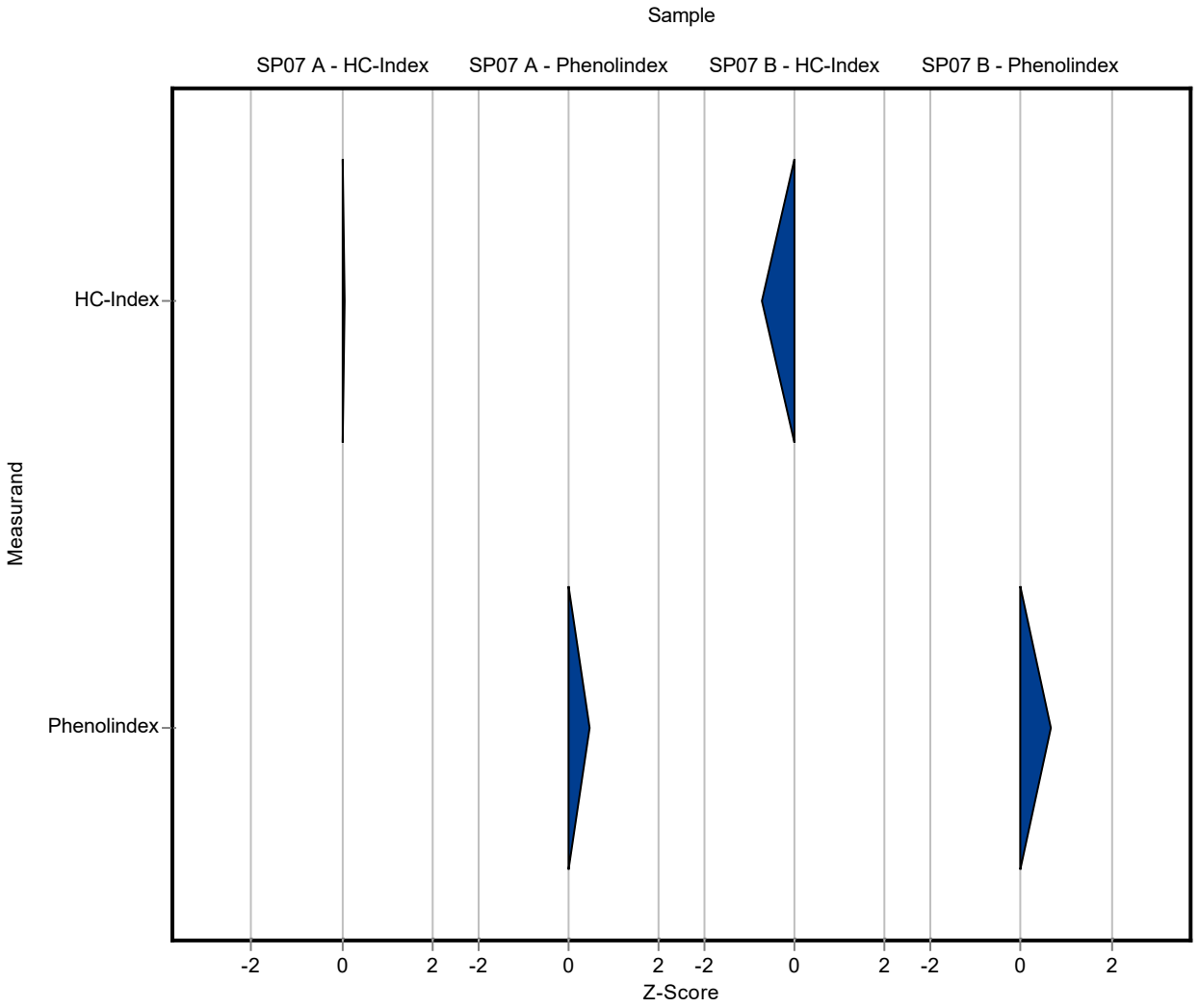
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.762 ± 0.146	0.465	68.8	-0.74

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0739 ± 0.00517	0.00772	105	0.48

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.718 ± 0.0503	0.0736	107	0.66


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0034

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.149 ± 0.0286	0.061	103	0.06

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	0.762 ± 0.146	0.465	68.8	-1.11

Sample: SP07PHIA

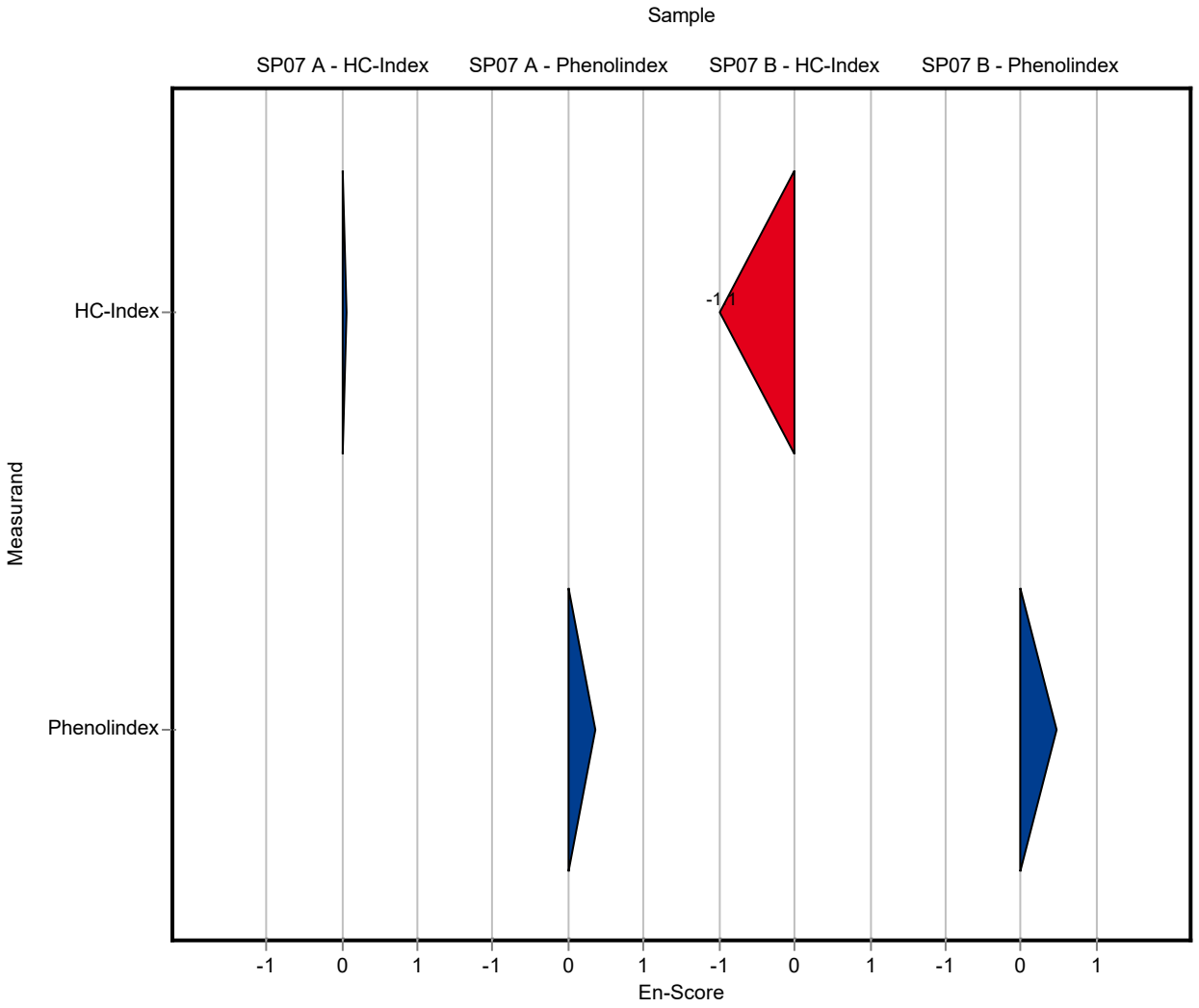
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0739 ± 0.00517	0.00772	105	0.35

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.718 ± 0.0503	0.0736	107	0.47

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0034



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0035

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	- ± -	0.061	-	-

Sample: SP07KWIB

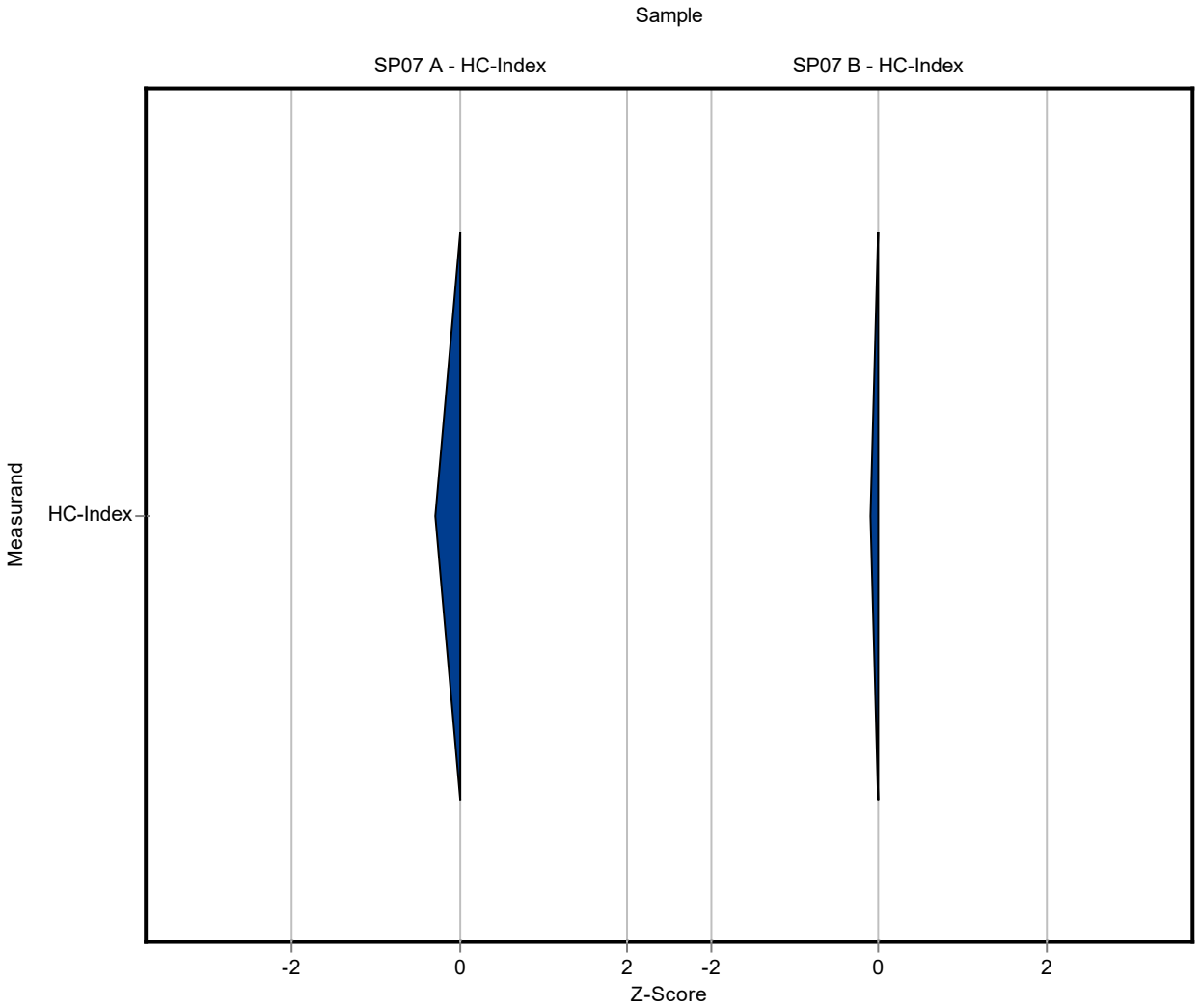
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	- ± -	0.465	-	-

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.128 ± 0.01	0.061	88.1	-0.28

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.06 ± 0.011	0.465	95.7	-0.10



Summary of results Sum parameters SP07 - En-Score

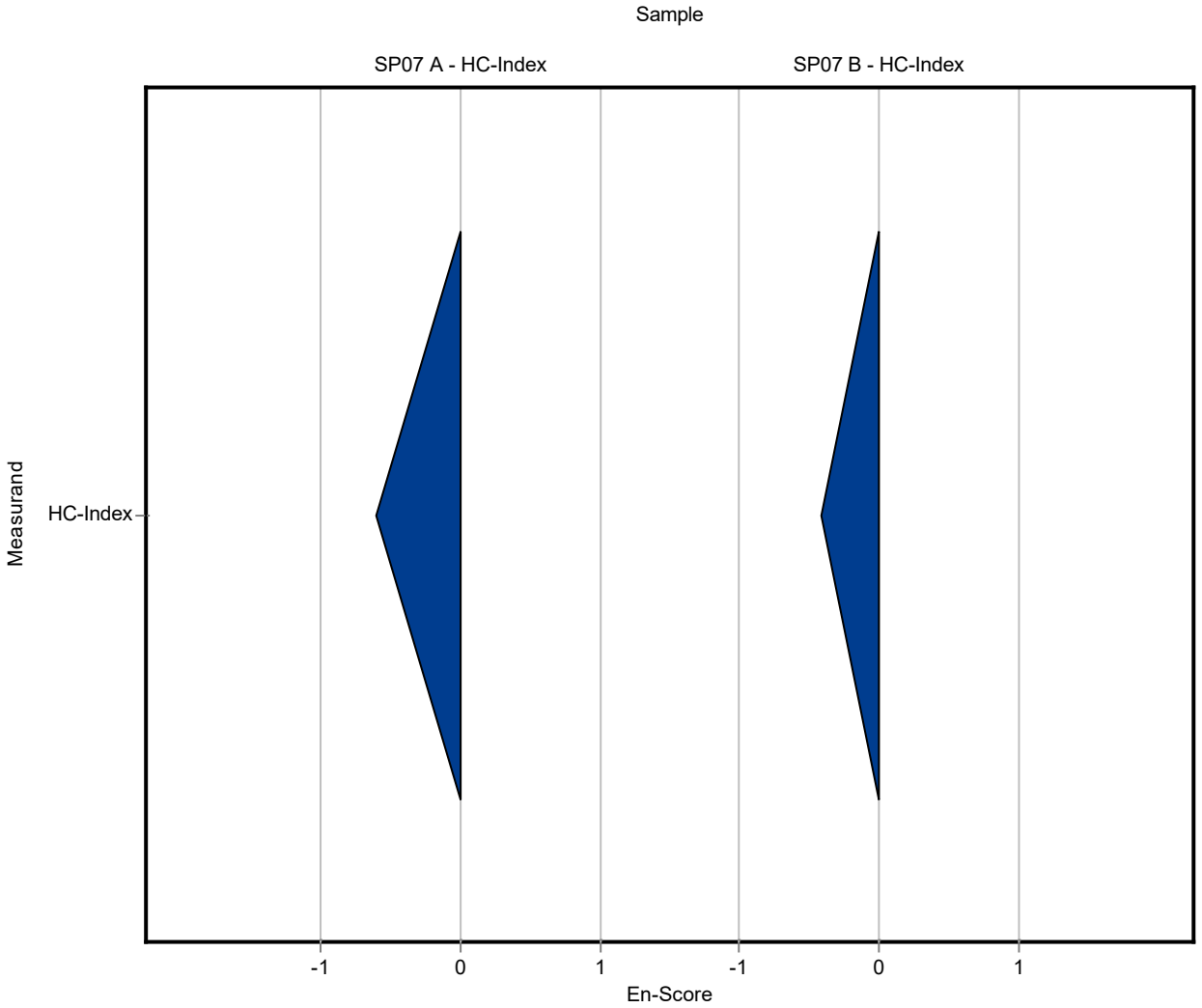
Labcode: LC0036

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.128 ± 0.01	0.061	88.1	-0.60

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.06 ± 0.011	0.465	95.7	-0.42

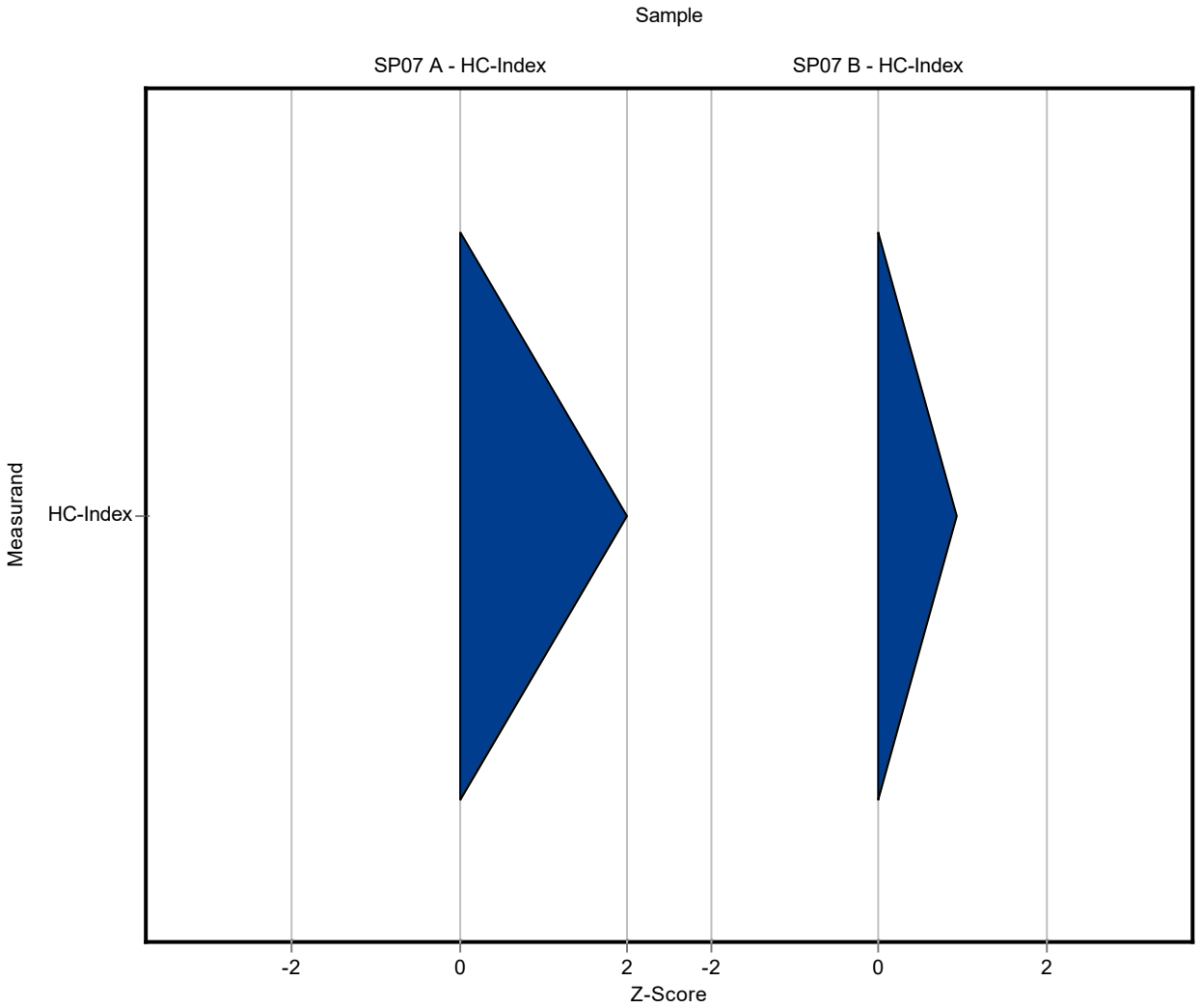


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.267 ± 0.029	0.061	184	2.00

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.54 ± 0.17	0.465	139	0.93



Summary of results Sum parameters SP07 - En-Score

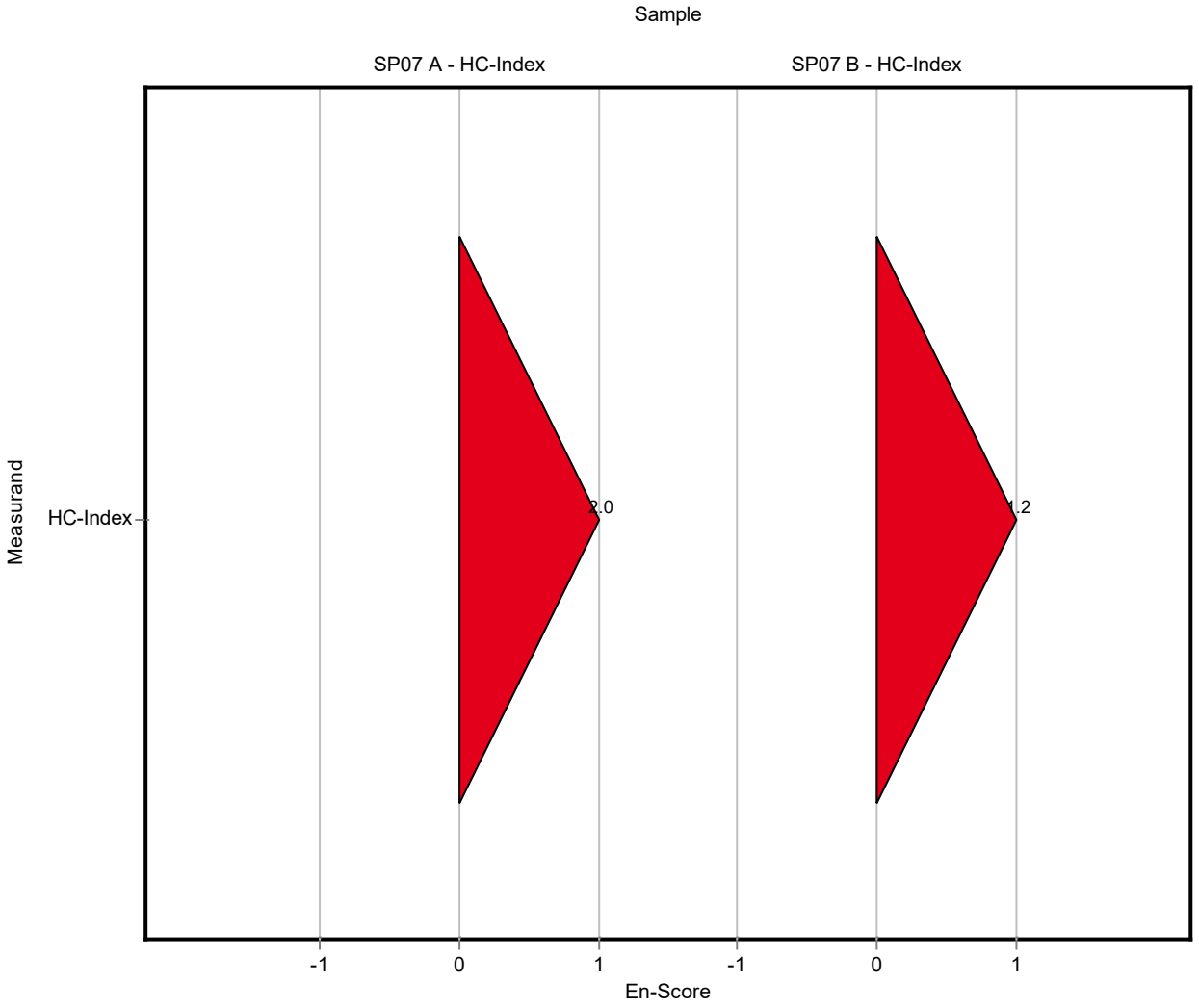
Labcode: LC0037

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.267 ± 0.029	0.061	184	1.98

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.54 ± 0.17	0.465	139	1.21

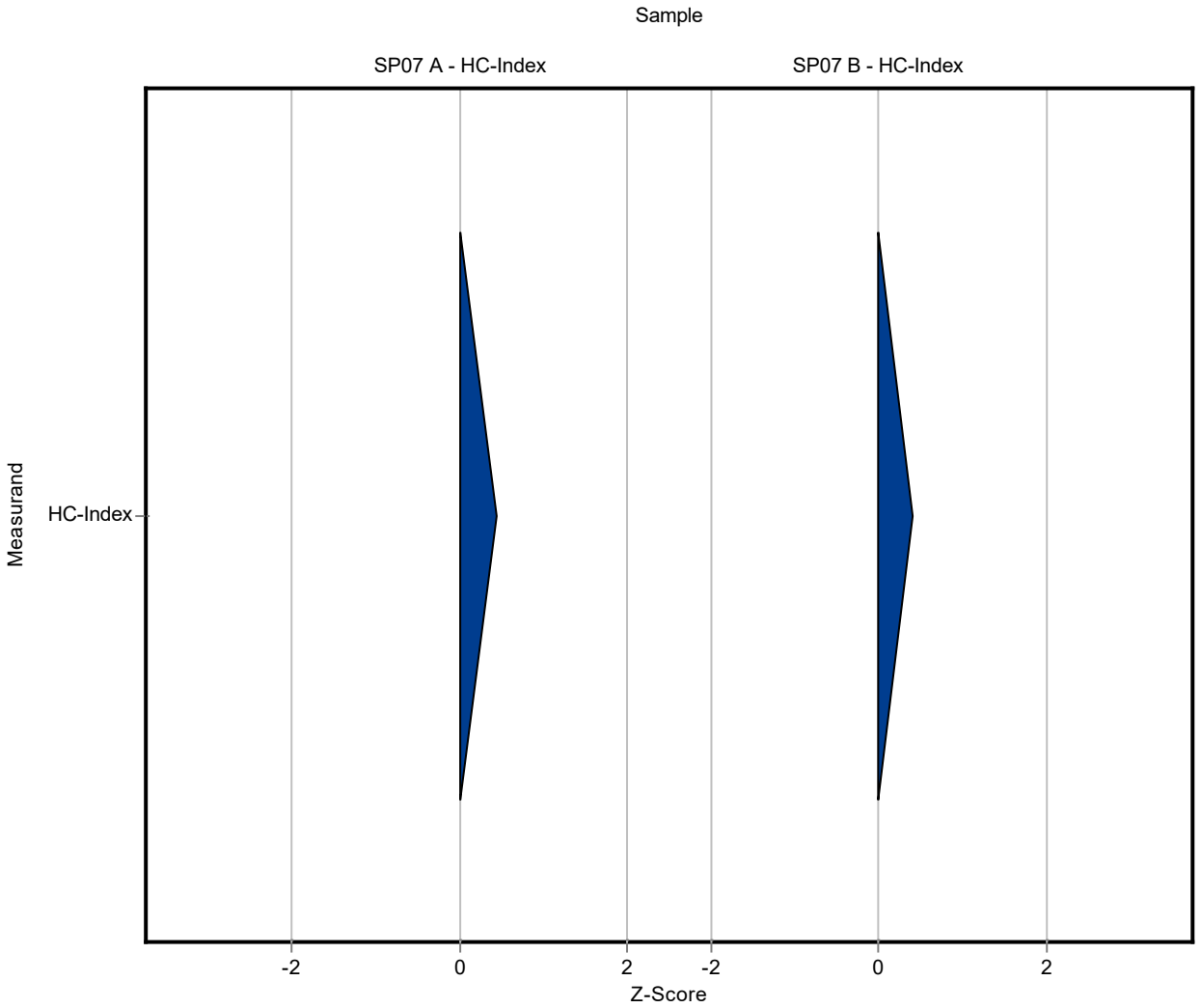


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.172 ± 0.026	0.061	118	0.44

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.293 ± 0.194	0.465	117	0.40



Summary of results Sum parameters SP07 - En-Score

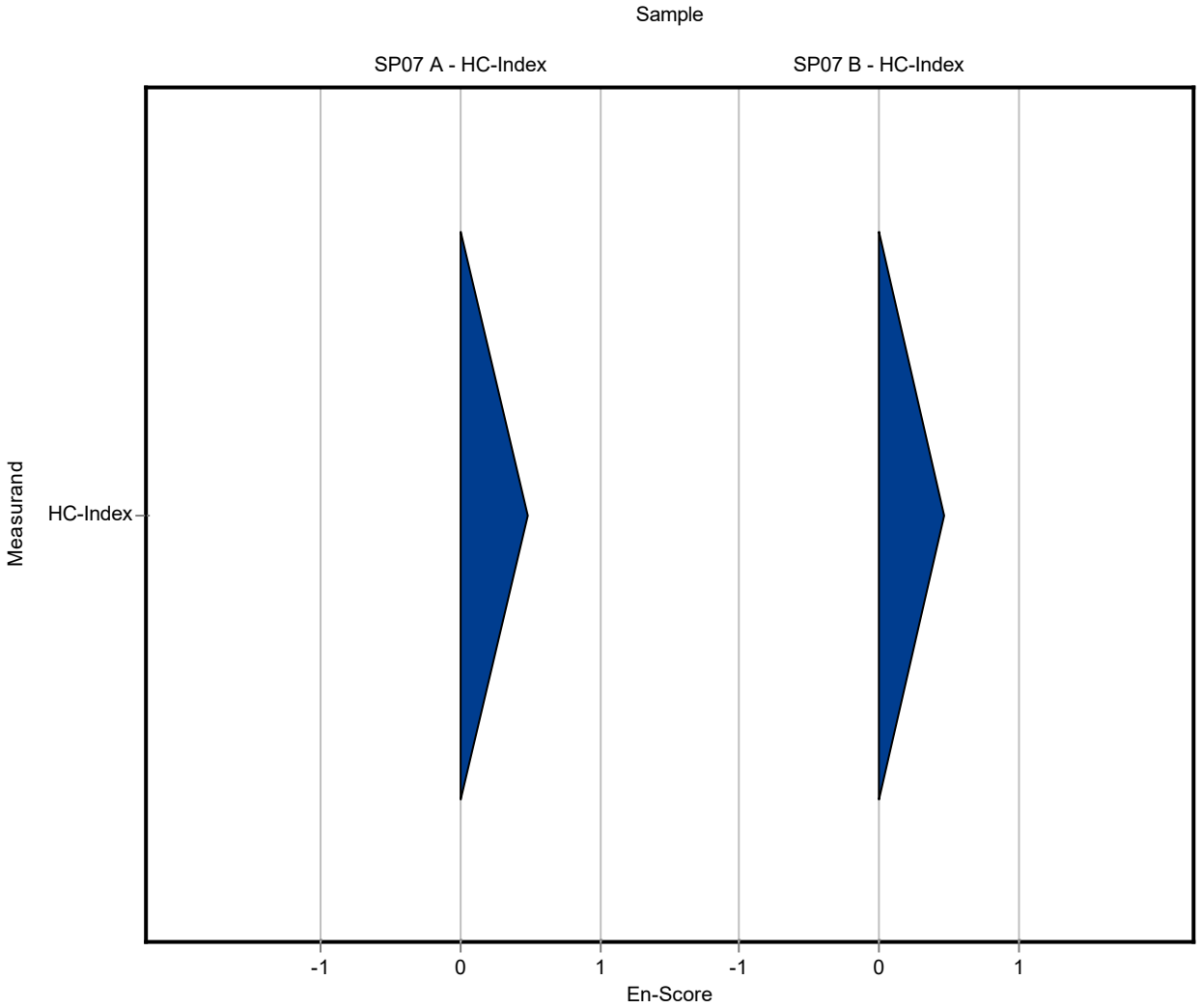
Labcode: LC0038

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.172 ± 0.026	0.061	118	0.48

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.293 ± 0.194	0.465	117	0.46



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.154 ± 0.025	0.061	106	0.14

Sample: SP07KWIB

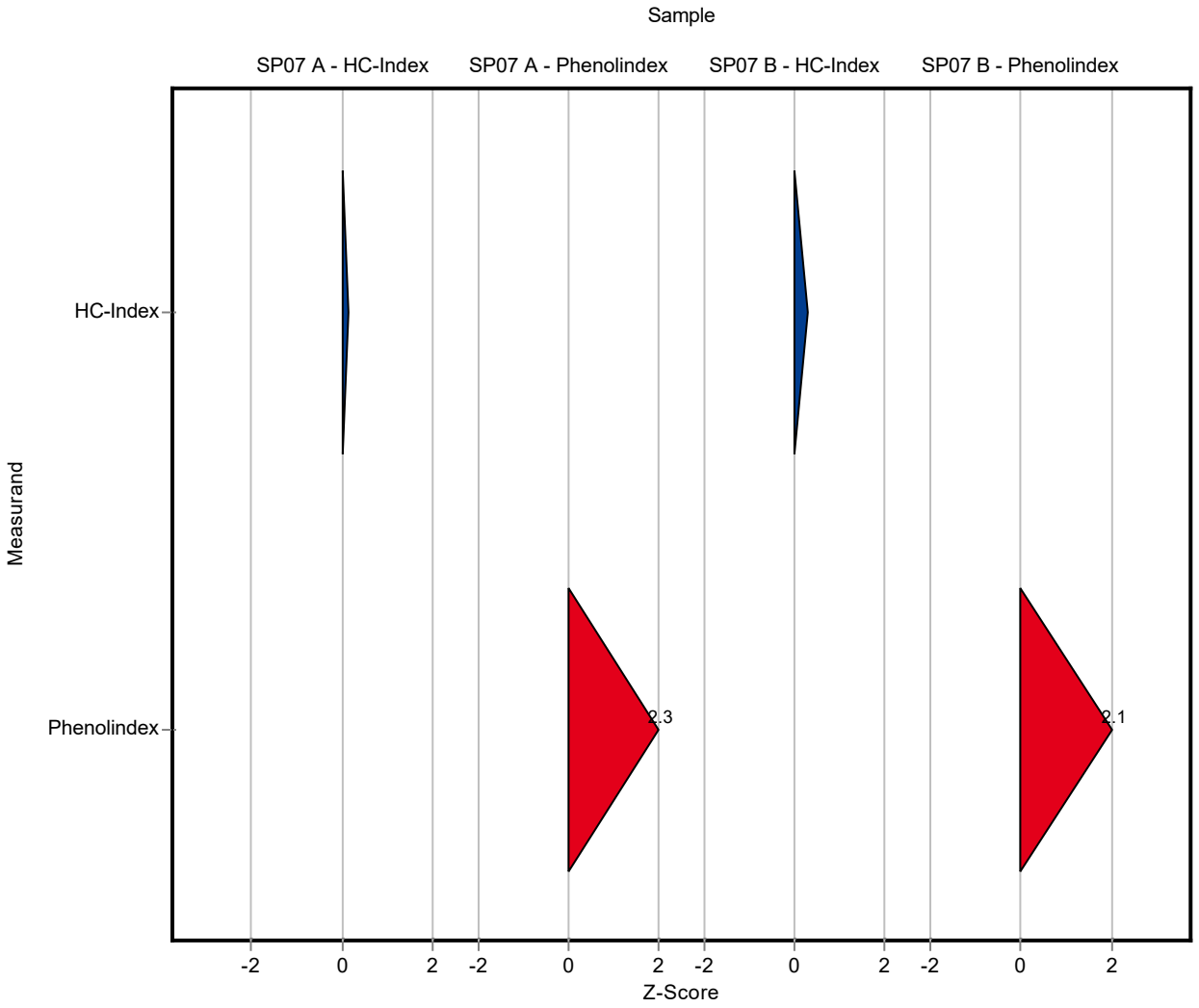
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.248 ± 0.213	0.465	113	0.30

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.088 ± 0.006	0.00772	125	2.31

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.823 ± 0.084	0.0736	123	2.09


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
HC-Index
Phenolindex
Measurand
2.3
2.1
-2
0
2
Z-Score

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.154 ± 0.025	0.061	106	0.16

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.248 ± 0.213	0.465	113	0.32

Sample: SP07PHIA

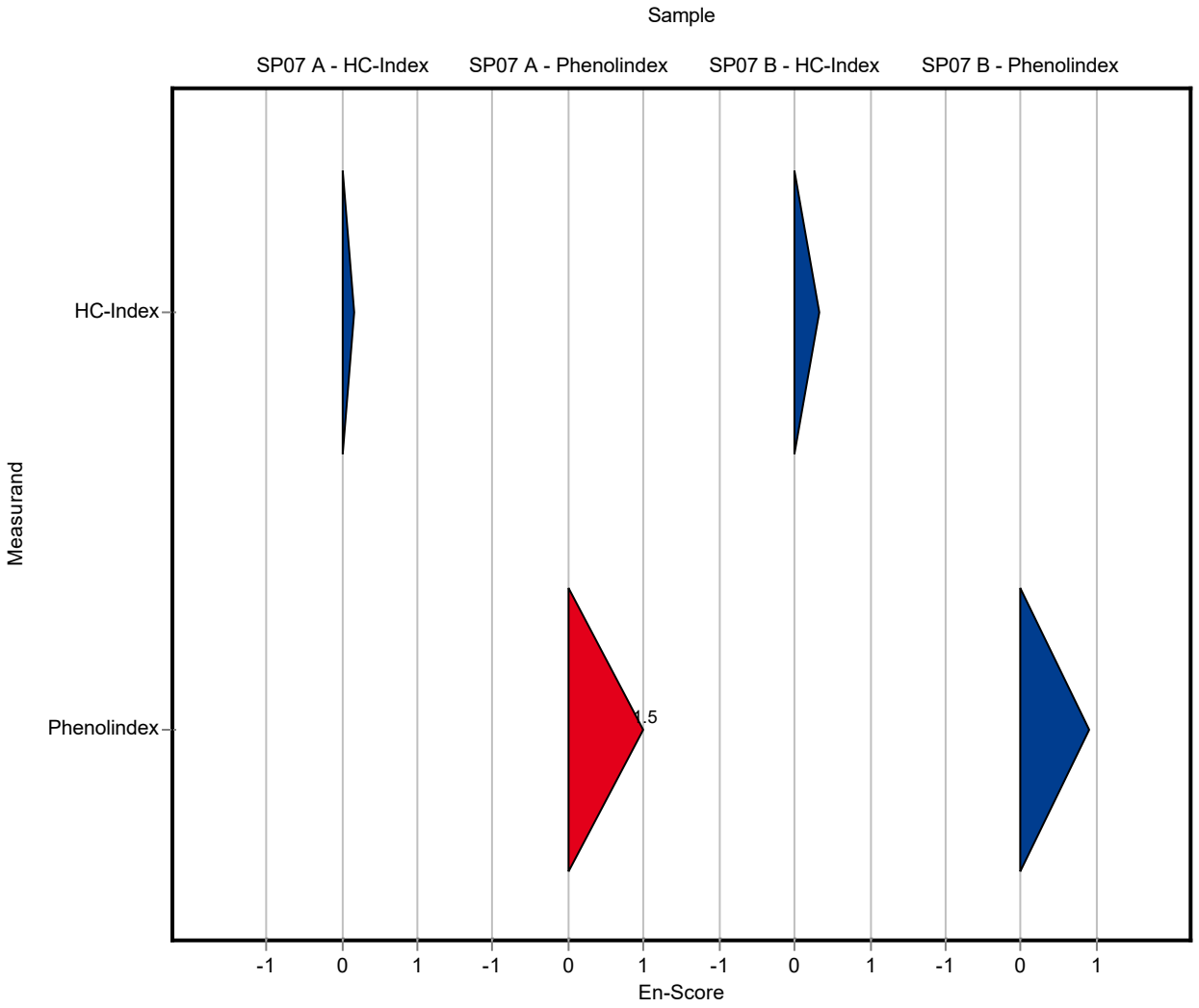
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.088 ± 0.006	0.00772	125	1.46

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.823 ± 0.084	0.0736	123	0.90

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0039

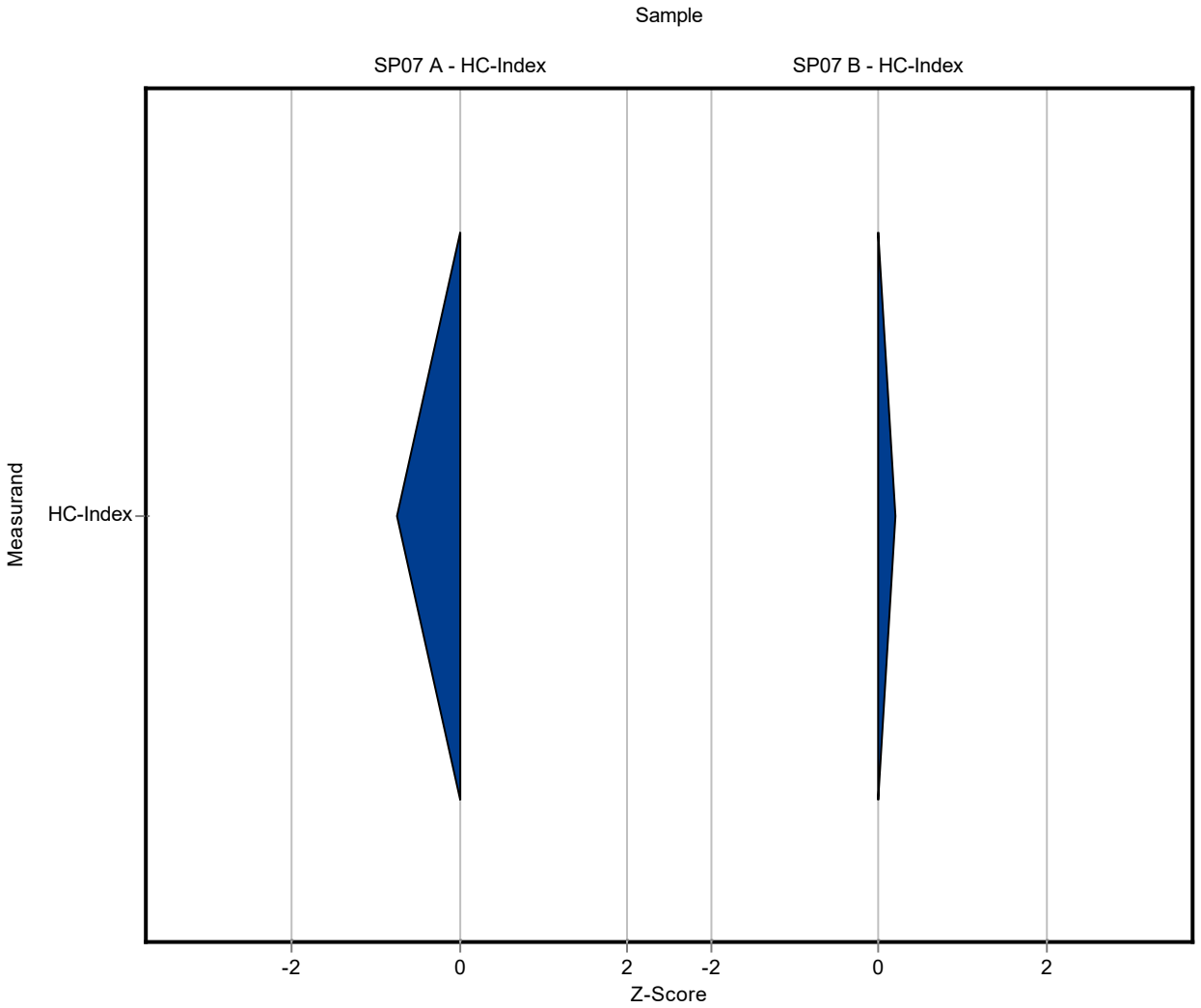


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.1 ± 0.06	0.061	68.9	-0.74

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.2 ± 0.2	0.465	108	0.20



Summary of results Sum parameters SP07 - En-Score

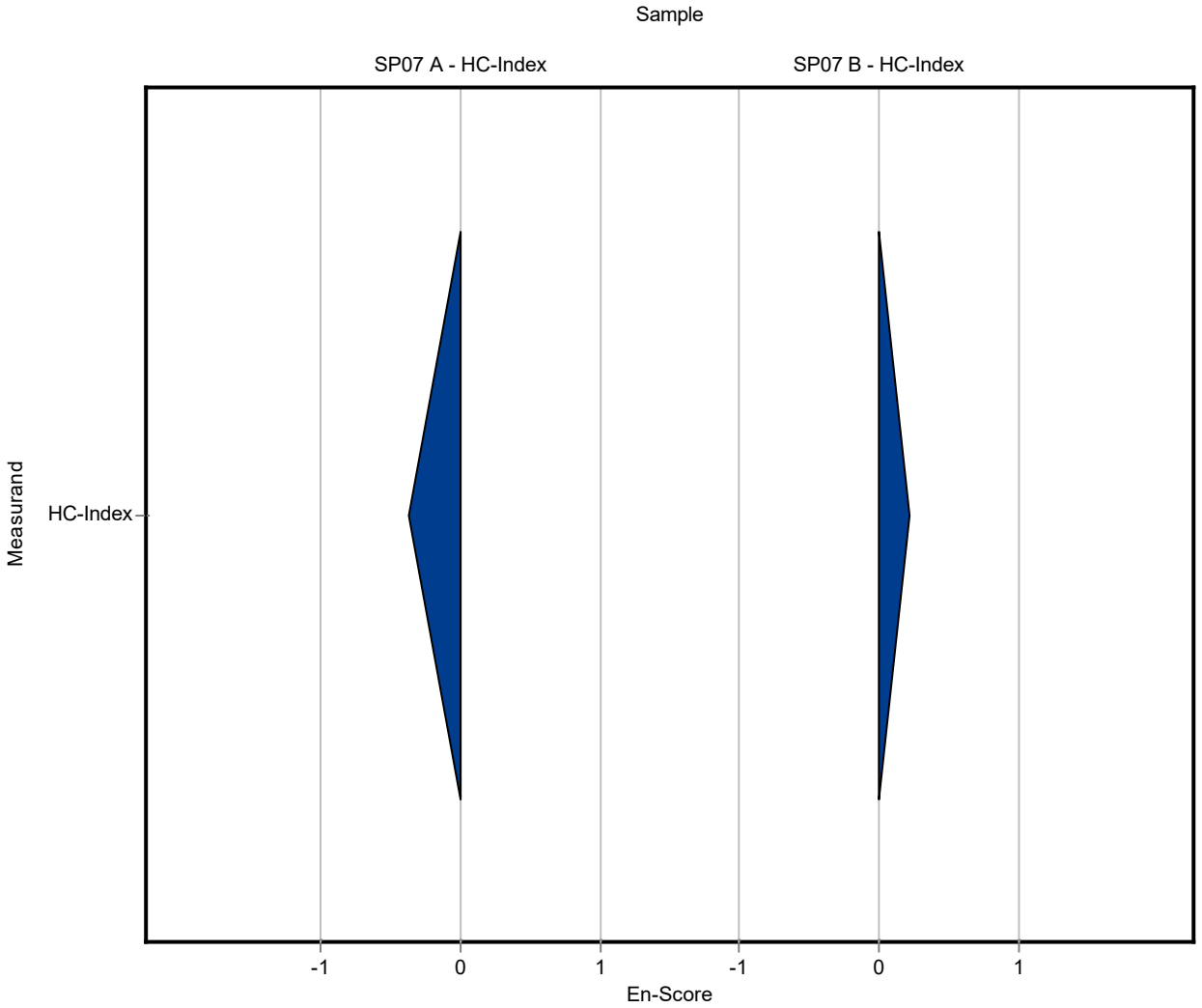
Labcode: LC0040

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.1 ± 0.06	0.061	68.9	-0.37

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.2 ± 0.2	0.465	108	0.22



Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	0.191 ± 0.072	0.061	132	0.75

Sample: SP07KWIB

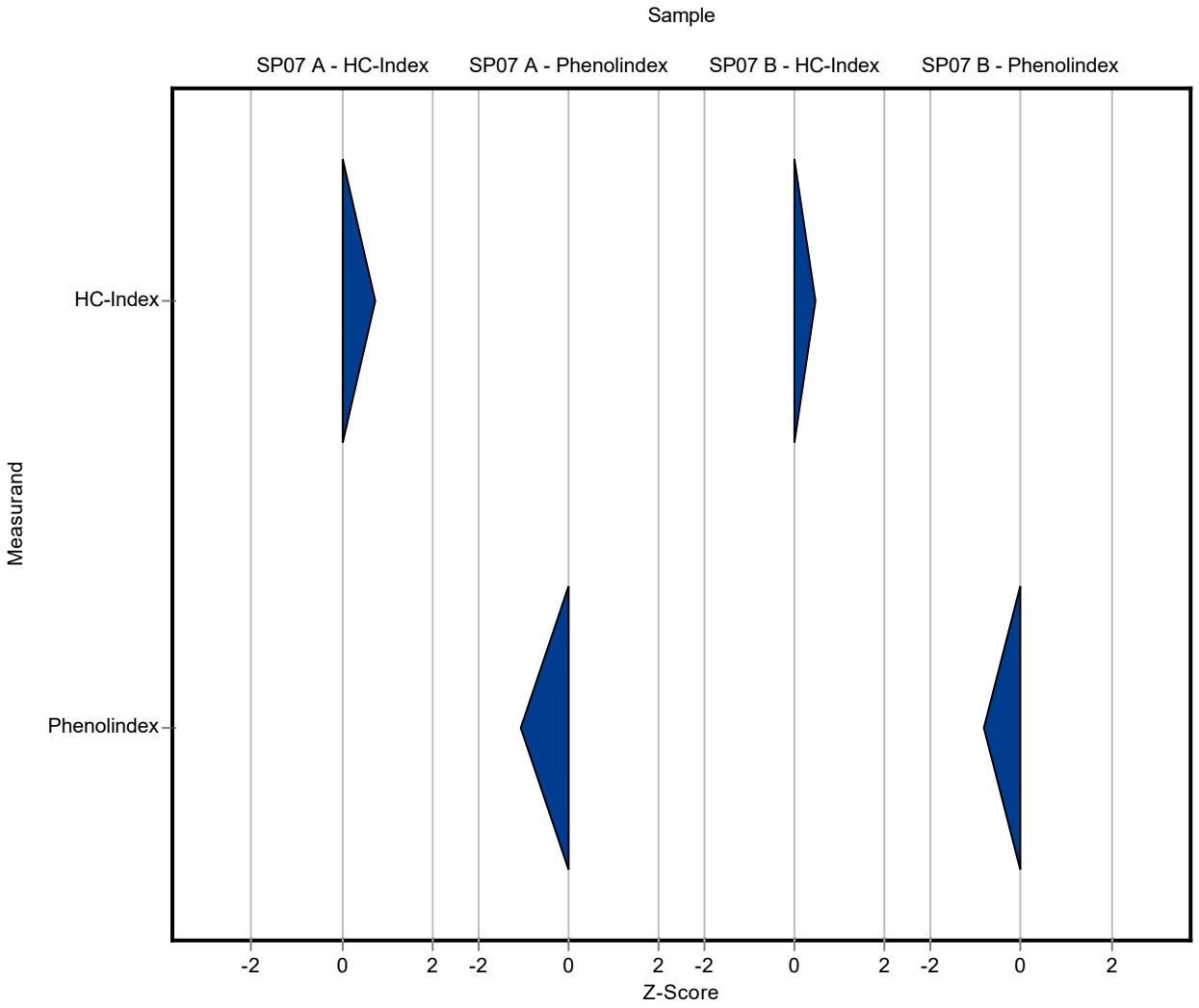
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	1.32 ± 0.496	0.465	119	0.46

Sample: SP07PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0621 ± 0.0153	0.00772	88.5	-1.05

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenolindex	mg/l	0.669 ± 0.025	0.6094 ± 0.15	0.0736	91	-0.82


Sample
SP07 A - HC-Index
SP07 A - Phenolindex
SP07 B - HC-Index
SP07 B - Phenolindex
Measurand
HC-Index
Phenolindex
-2
0
2
Z-Score

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0041

Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145 ± 0.0206	0.191 ± 0.072	0.061	132	0.31

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11 ± 0.112	1.32 ± 0.496	0.465	119	0.21

Sample: SP07PHIA

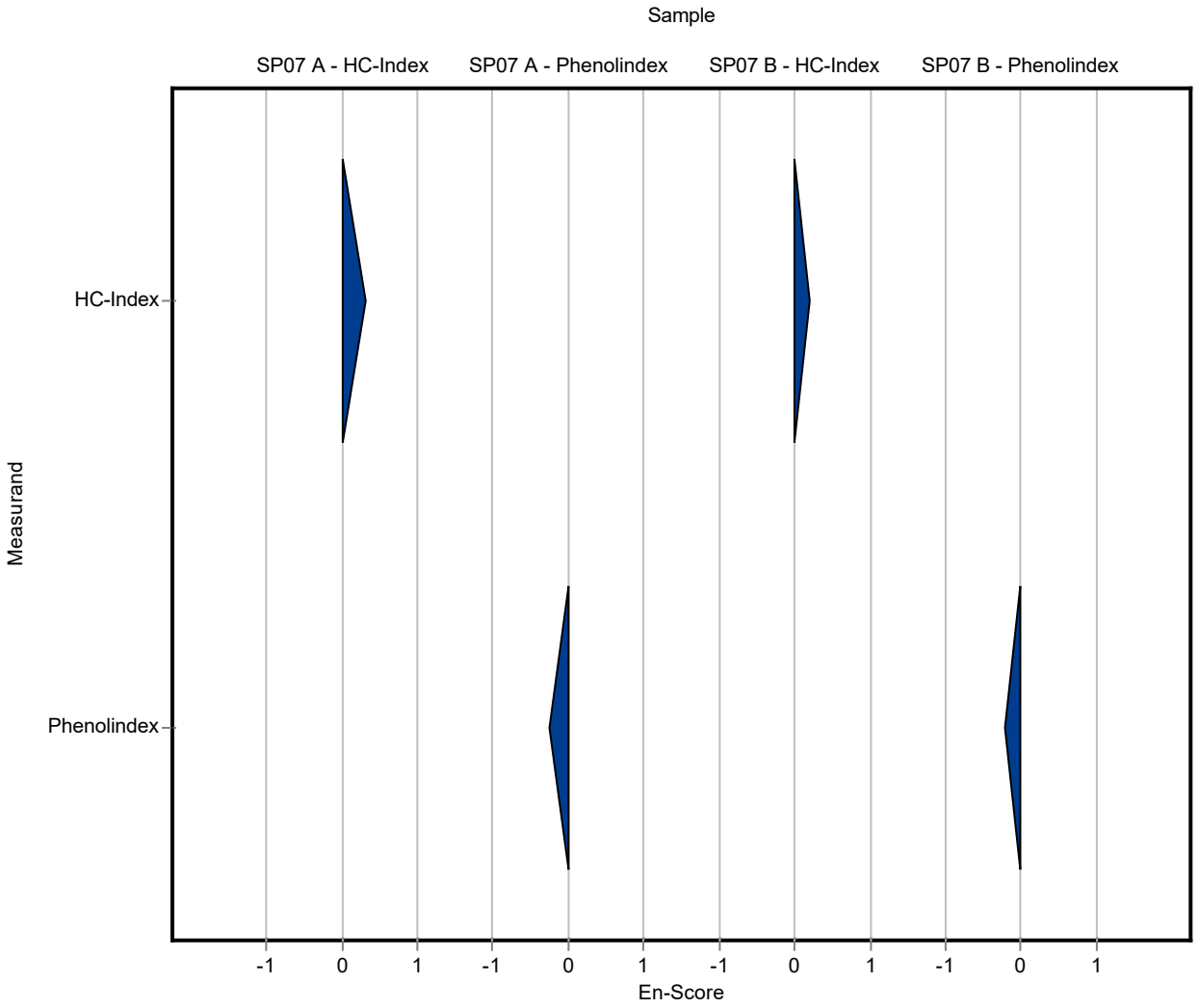
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.0702 ± 0.00204	0.0621 ± 0.0153	0.00772	88.5	-0.26

Sample: SP07PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenolindex	mg/l	0.669 ± 0.025	0.6094 ± 0.15	0.0736	91	-0.20

Summary of results Sum parameters SP07 - En-Score

Labcode: LC0041

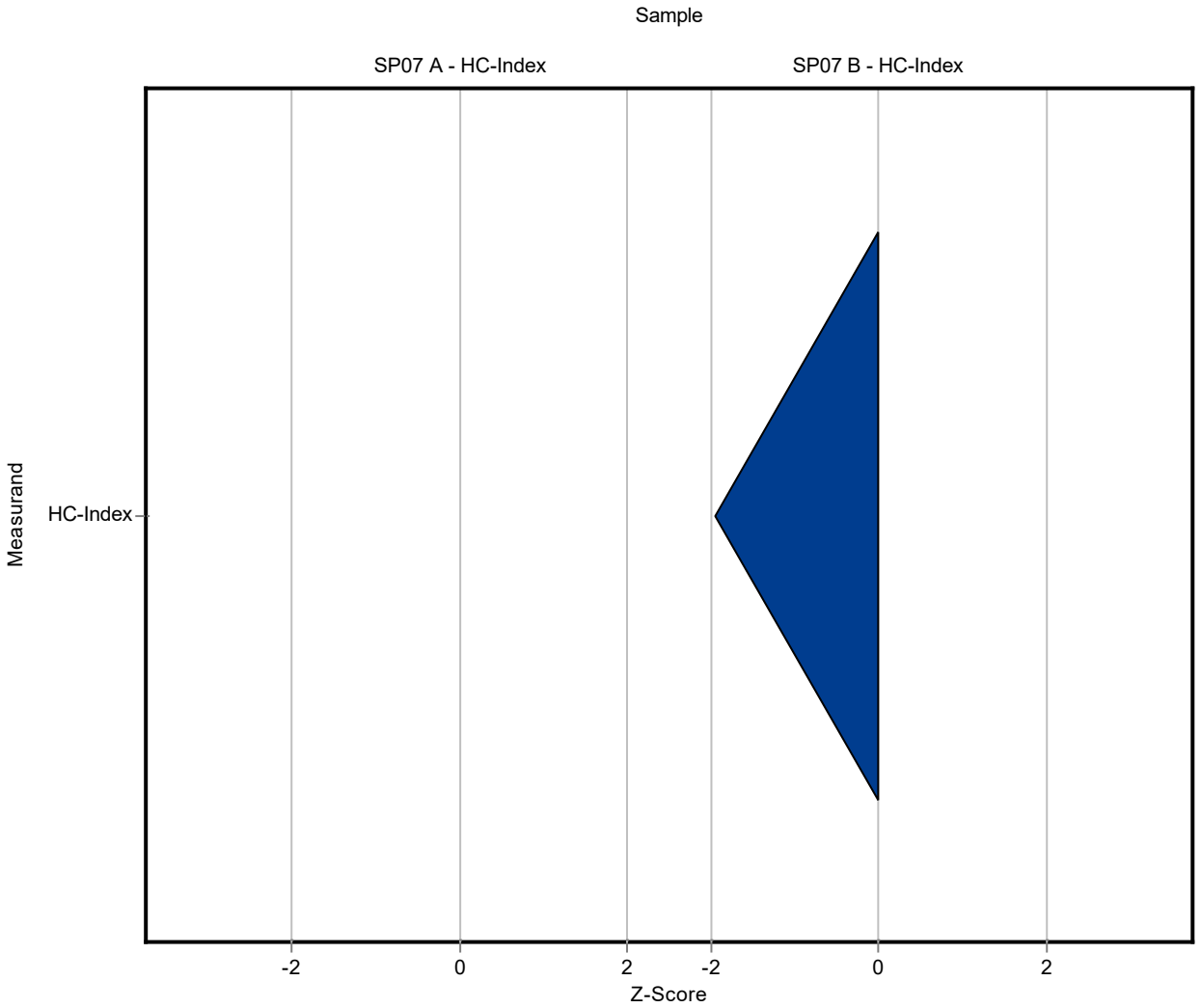


Sample: SP07KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.145 ± 0.0206	<0.05 (LOQ) ± -	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	1.11 ± 0.112	0.199 ± 0.099	0.465	18	-1.95



Summary of results Sum parameters SP07 - En-Score

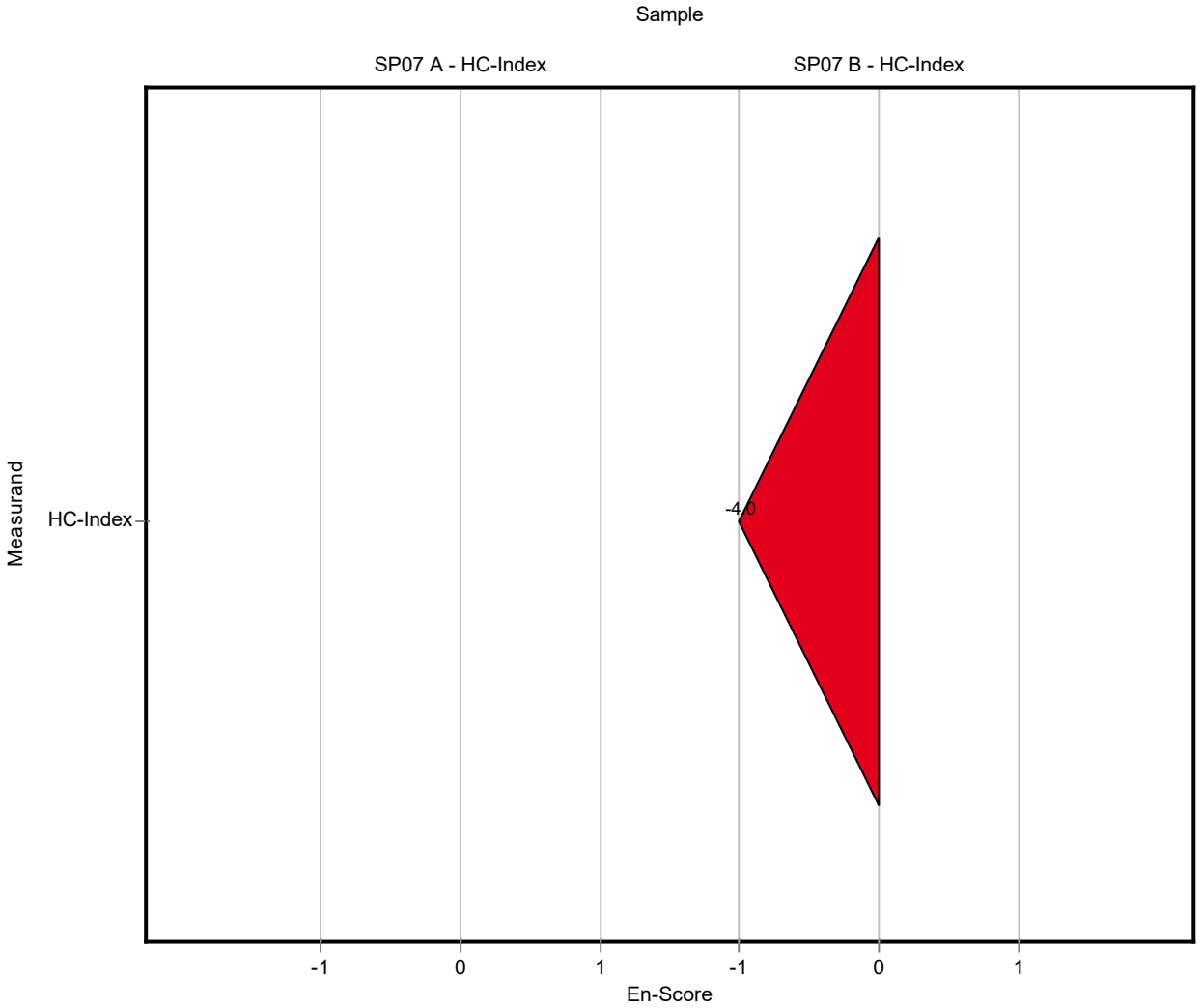
Labcode: LC0042

Sample: SP07KWIA

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.145	±	0.0206	<0.05 (LOQ)	±	-	0.061	-	-

Sample: SP07KWIB

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	1.11	±	0.112	0.199	±	0.099	0.465	18	-4.00



E9. Methodenübersicht / Overview of methods

LabCode	Sample	HC-Index	Sample	HC-Index
LC0001	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0002	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0003	SP07KWIA	EN ISO 9377-2; H53	SP07KWIB	EN ISO 9377-2; H53
LC0004	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0005	SP07KWIA	EN ISO 9377-2; H53	SP07KWIB	EN ISO 9377-2; H53
LC0006	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID
LC0007	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID
LC0008	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID
LC0009	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0010	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID
LC0011	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID
LC0012	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0013	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0014	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0015	SP07KWIA	EN ISO 9377-2; H53; GC-FID	SP07KWIB	EN ISO 9377-2; H53; GC-FID
LC0016	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0017	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0018	SP07KWIA		SP07KWIB	
LC0019	SP07KWIA	EN ISO 9377-2; modified	SP07KWIB	EN ISO 9377-2; modified
LC0020	SP07KWIA	EN ISO 9377-2; H53	SP07KWIB	EN ISO 9377-2; H53
LC0021	SP07KWIA		SP07KWIB	
LC0022	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0023	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0024	SP07KWIA	FT-IR;	SP07KWIB	FT-IR;
LC0025	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0026	SP07KWIA	EN ISO 9377-2; H53	SP07KWIB	EN ISO 9377-2; H53
LC0027	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0028	SP07KWIA	EN ISO 9377-2; H53	SP07KWIB	EN ISO 9377-2; H53
LC0029	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0030	SP07KWIA		SP07KWIB	
LC0031	SP07KWIA	GC-FID; in-house method	SP07KWIB	GC-FID; in-house method
LC0032	SP07KWIA	EN ISO 9377-2; H53	SP07KWIB	EN ISO 9377-2; H53
LC0033	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID
LC0034	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0035	SP07KWIA		SP07KWIB	
LC0036	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0037	SP07KWIA	EN ISO 9377-2; GC	SP07KWIB	EN ISO 9377-2; GC
LC0038	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0039	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0040	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0041	SP07KWIA	EN ISO 9377-2;	SP07KWIB	EN ISO 9377-2;
LC0042	SP07KWIA	EN ISO 9377-2; GC-FID	SP07KWIB	EN ISO 9377-2; GC-FID

LabCode	Sample	Phenolindex	Sample	Phenolindex
LC0001	SP07PHIA		SP07PHIB	
LC0002	SP07PHIA		SP07PHIB	
LC0003	SP07PHIA	DIN 38409-16; H16-3	SP07PHIB	DIN 38409-16; H16-3
LC0004	SP07PHIA	DIN 38409-16; H16-1	SP07PHIB	DIN 38409-16; H16-1
LC0005	SP07PHIA		SP07PHIB	
LC0006	SP07PHIA	DIN 38409-16; photometer	SP07PHIB	DIN 38409-16; photometer
LC0007	SP07PHIA		SP07PHIB	
LC0008	SP07PHIA		SP07PHIB	
LC0009	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0010	SP07PHIA	EN ISO 14402; FIA	SP07PHIB	EN ISO 14402; FIA
LC0011	SP07PHIA		SP07PHIB	
LC0012	SP07PHIA		SP07PHIB	
LC0013	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0014	SP07PHIA		SP07PHIB	
LC0015	SP07PHIA	DIN 38409-16; H16-3, photometer	SP07PHIB	DIN 38409-16; H16-3, photometer
LC0016	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0017	SP07PHIA		SP07PHIB	
LC0018	SP07PHIA		SP07PHIB	
LC0019	SP07PHIA		SP07PHIB	
LC0020	SP07PHIA	EN ISO 14402; H37	SP07PHIB	EN ISO 14402; H37
LC0021	SP07PHIA		SP07PHIB	
LC0022	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0023	SP07PHIA		SP07PHIB	
LC0024	SP07PHIA	5530 C; SMEWW20; spectrophotometry	SP07PHIB	ISO 6439; spectrophotometry
LC0025	SP07PHIA		SP07PHIB	
LC0026	SP07PHIA		SP07PHIB	
LC0027	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0028	SP07PHIA		SP07PHIB	
LC0029	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0030	SP07PHIA	EN ISO 14402; part 2	SP07PHIB	EN ISO 14402; part 2
LC0031	SP07PHIA		SP07PHIB	
LC0032	SP07PHIA		SP07PHIB	
LC0033	SP07PHIA	DIN 38409-16;	SP07PHIB	DIN 38409-16;
LC0034	SP07PHIA	EN ISO 14402;	SP07PHIB	EN ISO 14402;
LC0035	SP07PHIA		SP07PHIB	
LC0036	SP07PHIA		SP07PHIB	
LC0037	SP07PHIA		SP07PHIB	
LC0038	SP07PHIA		SP07PHIB	
LC0039	SP07PHIA	DIN 38409-16;	SP07PHIB	DIN 38409-16;
LC0040	SP07PHIA		SP07PHIB	
LC0041	SP07PHIA	DIN 38409-16; H16-1	SP07PHIB	DIN 38409-16; H16-1
LC0042	SP07PHIA		SP07PHIB	