umweltbundesamt
ENVIRONMENT AGENCY AUSTRIA

Proficiency Testing Scheme für die Wasseranalytik - Realproben

SP09 Summenparameter

Proficiency Testing Scheme for Water Analysis - natural water samples

SP09 sum parameters

BERICHT / REPORT

Probenversand / Sample dispatch: 14.05.2024

Ausgabe/Edition 1: 17.06.2024

Dieser Report umfasst 201 Seiten.
This report comprises 201 pages.

Durchführung gemäß Verfahren VA_1007_PT_CA (2021-01-25).

In accordance with the procedure VA_1007_PT_CA (2021-01-25).

Akkreditierung Austria
0200
ISO/IEC 17043

Anbieter der Eignungsprüfung / Provider of the proficiency test:
Anschrift / Address: Umweltbundesamt GmbH
Spittelauer Lände 5
1090 Vienna/Austria
E-Mail: ringversuche@umweltbundesamt.at
Tel: +43 (0) 1 31304 4334

Website deutsch: www.umweltbundesamt.at/ringversuche
www.ifatest.at

Website english: https://www.umweltbundesamt.at/en/proficiency-testing
www.ifatest.eu

Koordination und technische Leitung Eignungsprüfungen / coordinator and technical management:
Dipl.-Ing. Monika Denner

Verantwortlich für die Durchführung der Eignungsprüfungsrunde / Responsible for the implementation of this proficiency test:
Dipl.-Ing. Johannes Urteil, Martha Schmid MSc unter Mitarbeit von Mag. Vito Satrapa
Tel.: +43 (0) 1 31304 4334

Verantwortlich für die Freigabe des Berichts / Responsible for authorizing the report:
Dipl.-Ing. Monika Denner
Leitung Eignungsprüfungen für den Bereich chemische Analytik / Management for proficiency tests for chemical analysis

umweltbundesamt	**Unterzeichner**	Monika Christine Denner
	Datum/Zeit-UTC	2024-06-17T15:40:14+02:00
Prüfinformation	Diese Unterschrift ist gemäß EU Verordnung Nr. 910/2014 (eIDAS) der handschriftlichen Unterschrift grundsätzlich rechtlich gleichgestellt. Prüfung unter: http://www.signaturpruefung.gv.at	

Inhaltsverzeichnis / Table of Contents

D1. Beschreibung des Ringversuchs

D1.1. Ausgestaltung und Durchführung

- Anzahl der Anmeldungen: 47
- Anzahl der übermittelten Datensätze: 46
- Probenversand: 14.05.2024
- Einsendeschluss der Daten: 11.06.2024

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 und Grundwasser erfolgte am 08.05.2024. Das Probenmaterial umfasste:

- 1 Probe Trinkwasser (SP09 A)
- 1 Probe Grundwasser (SP09 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 (SP09 KWIA und SP09 KWIB) wurden am 13.05.2024 hergestellt und bei 4 +/- 3°C gelagert. Die Phenolindex-Proben (SP09 PHIA und SP09 PHIB) wurden am 14.05.2024 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 14.05.2024 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 16.05.2024 mit den Analysen zu beginnen.

Den Teilnehmenden stand die Wahl der Analysenmethode bzw. der verwendeten Norm frei, welche mit ihrem Routineverfahren übereinstimmen sollte. 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 2023.

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 11.06.2024 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 2023 (RSDpooled). 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-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. 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 11 Eignungsprüfungsrunden (2013–2023) 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 Proben SP09 A und SP09 B:
Bei diesem Parameter erfolgte die Berechnung der Scores nach D2.

Parameter KW-Index bei Proben SP09 A und SP09 B:
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 ohne Hampelausreißer berechnet. Bei Probe SP09 B wurde nach Plausibilitätsprüfung

das Ergebnis von LC0028 (Extremwert) als fachlicher Ausreißer vor Berechnung des zugewiesenen Wertes eliminiert.

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. hier mg/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, ausreißer-bereinigt (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 ±	Mittelwert der Kontrollmessungen des Veranstalters ±
U (k=2)	erweiterte Ergebnisunsicherheit des Kontrollwertes (jeweils angegeben auf 3 signifikante Stellen)
Laborcode	anonymisierte, eindeutige Kennung des teilnehmenden Labors im jeweiligen Ringversuch

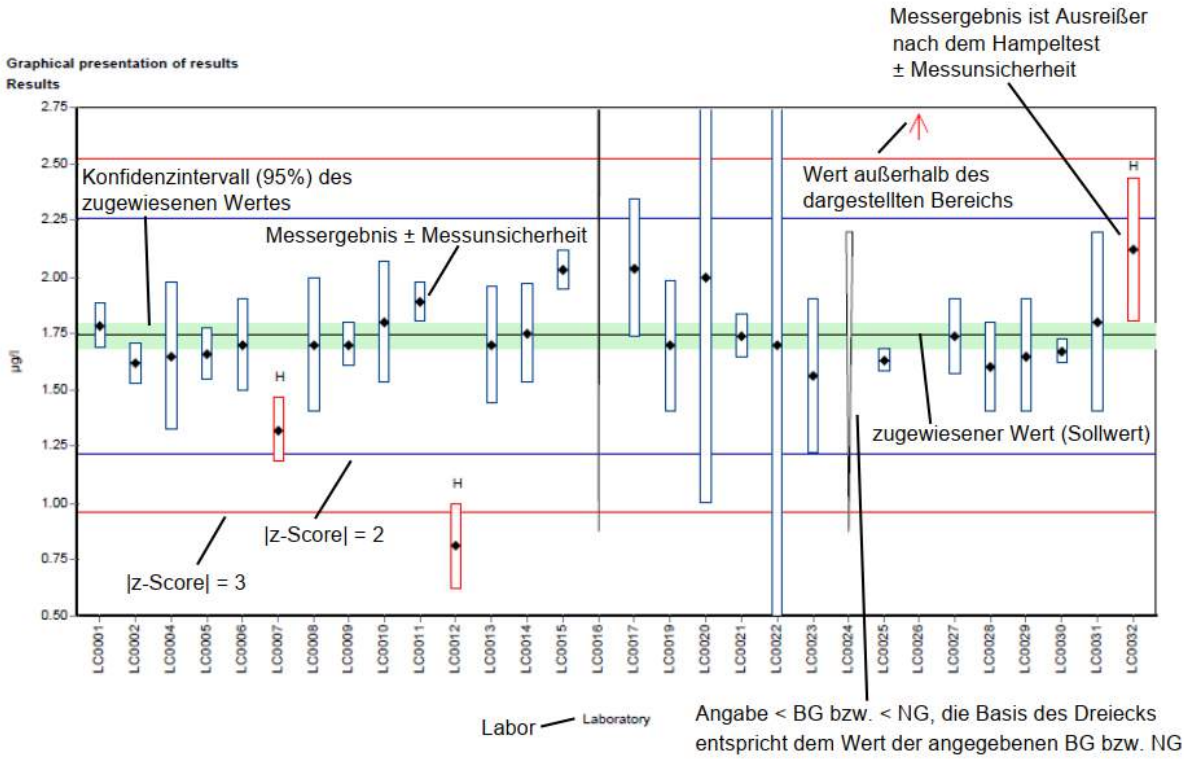
Messwert	einzelne(r) Messwert(e) lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt)
Messergebnis	Für die Bewertung herangezogenes Ergebnis lt. Angabe der Teilnehmenden (maximal 5 Nachkommastellen dargestellt). Bei Eignungsprüfungsrunden mit Vorgabe von unabhängigen Mehrfachbestimmungen, 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

D5.2. Graphische Darstellung der Ergebnisse

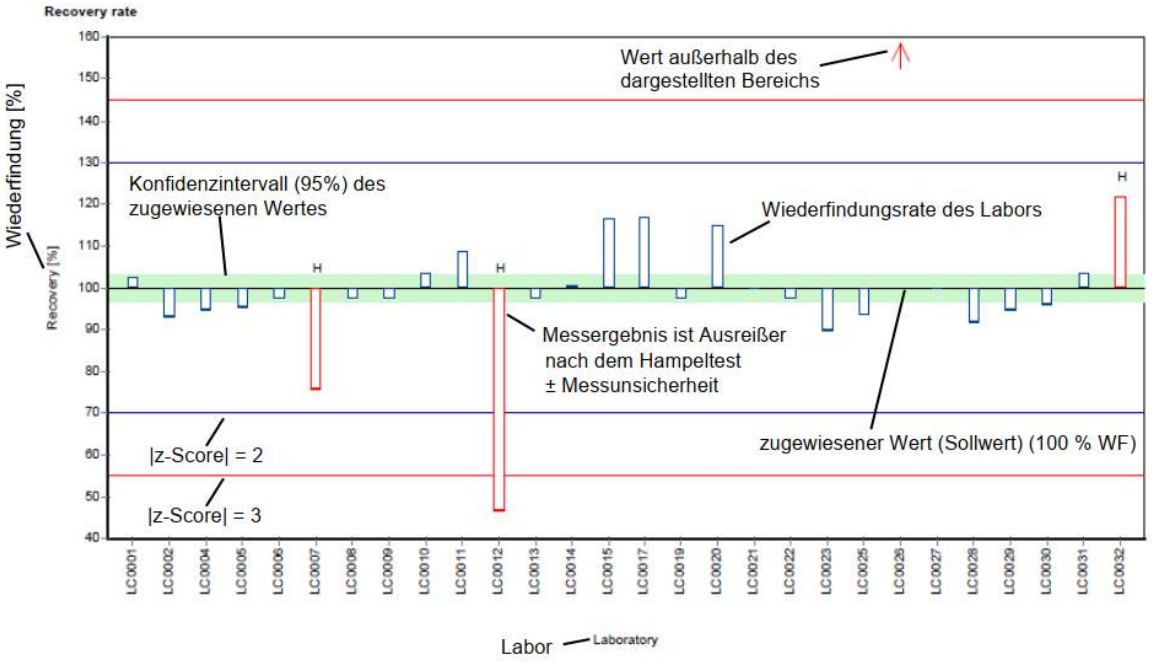
Nachfolgend wird die graphische Darstellung anhand von kommentierten Beispieldiagrammen erläutert.

Beispieldiagramm: Messwerte



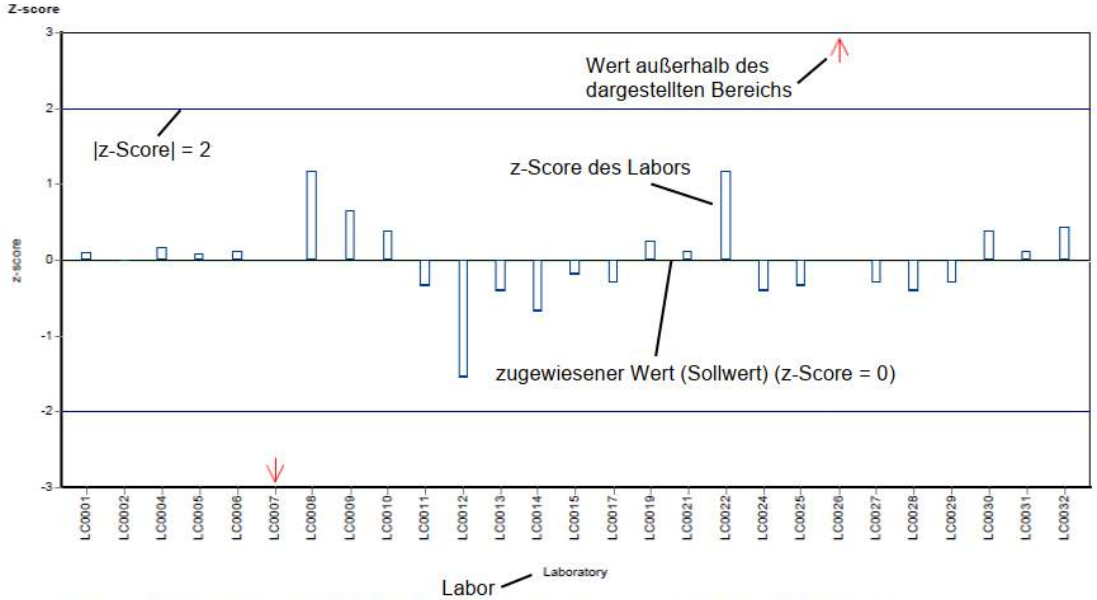
Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: Wiederfindung zum zugewiesenen Wert



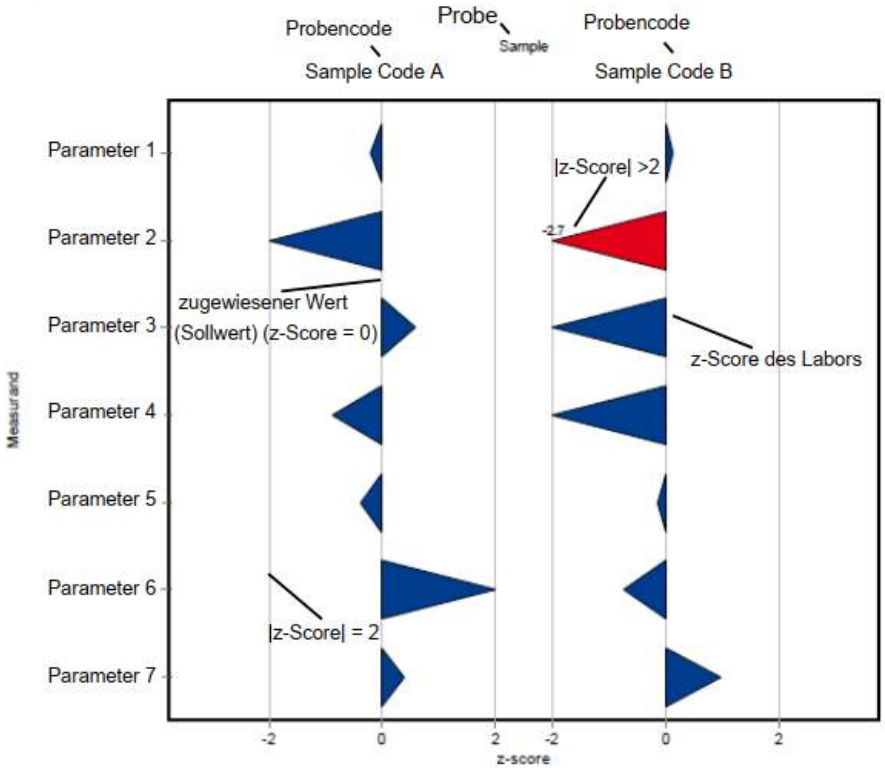
Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

Beispieldiagramm: z-Score

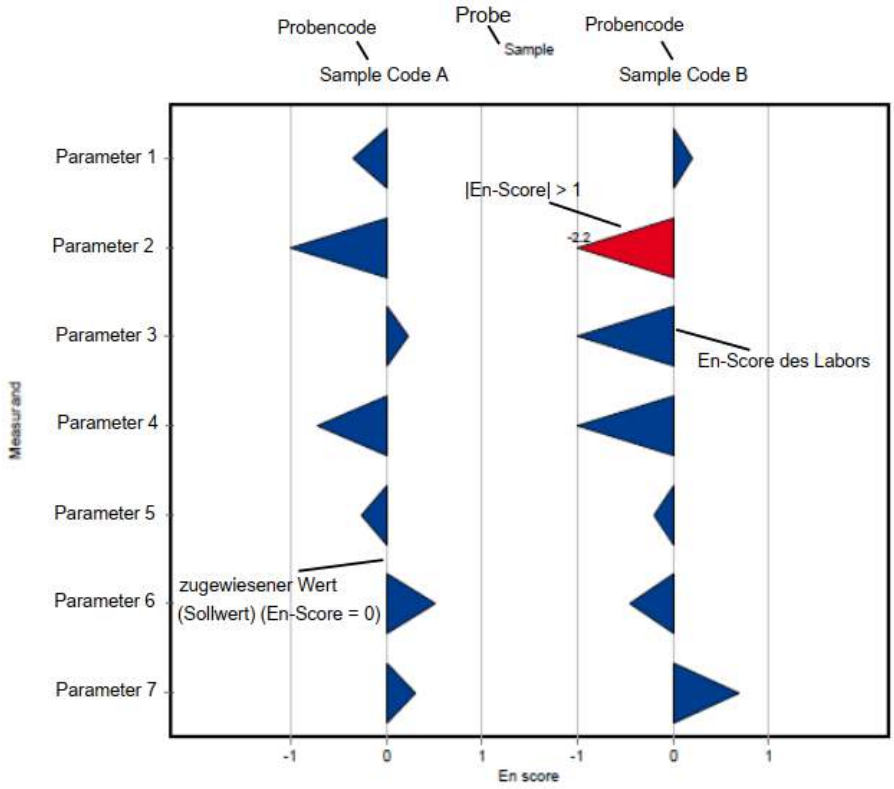


Unterschiedliche Analysenmethoden werden mit unterschiedlichen Farben kenntlich gemacht.

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	SP09 A - KW-Index	mg/l	0.167	±	0.0231	0.0667	40
	SP09 B - KW-Index	mg/l	0.917	±	0.123	0.367	40
Phenolindex	SP09 A - Phenolindex	mg/l	0.0243	±	0.00146	0.00268	11
	SP09 B - Phenolindex	mg/l	0.805	±	0.0228	0.0886	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	SP09 A - KW-Index	38	2	mg/l	0.162	± 0.0314	0.03	0.29	0.0645	40
	SP09 B - KW-Index	41	2	mg/l	0.923	± 0.176	0.12	1.63	0.376	41
Phenolindex	SP09 A - Phenolindex	21	2	mg/l	0.0243	± 0.0022	0.02	0.032	0.00335	14
	SP09 B - Phenolindex	19	4	mg/l	0.805	± 0.0342	0.75	0.914	0.0496	6.2

E1. Description of the proficiency test

E1.1. Design and implementation

- Number of registrations: 47
- Number of submitted data records: 46
- Dispatch of samples: May 14th, 2024
- Closing date for submission of data: June 11th, 2024

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 May 08th, 2024.

The following samples were made available

- 1 sample drinking water (SP09 A)
- 1 sample ground water (SP09 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 (Phenol index) 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 (SP09 KWIA and SP09 KWIB) were prepared on May 13th, 2024 and stored at 4 +/- 3°C. The Phenol index samples (SP09 PHIA and SP09 PHIB) were prepared on May 14th, 2024. For stabilization, the Phenol index 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 14th of May 2024.

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 Phenol index

E1.3. Instructions for the participants

For reasons of stability, it was recommended to start the analysis by the 16th of May 2024 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. 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 2023.

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 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 11th of June 2024. 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 2023 (as RSD pooled).
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-Score| ≤ 1.0 satisfactory performance
- |E_n-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. IE_n-ScoreI > 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. 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 11 proficiency testing rounds (2013–2023 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 Phenol Index for samples SP09 A and SP09 B:
Scores for all listed parameters were calculated according to E2.

Parameter HC-Index for samples SP09 A and SP09 B:
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 (Hampel). Before calculating the assigned value for SP09 B the result of LC0028 (extreme value) was eliminated as a technical outlier.

E5. Annotations on tables and charts

E5.1. Information and abbreviations in tables

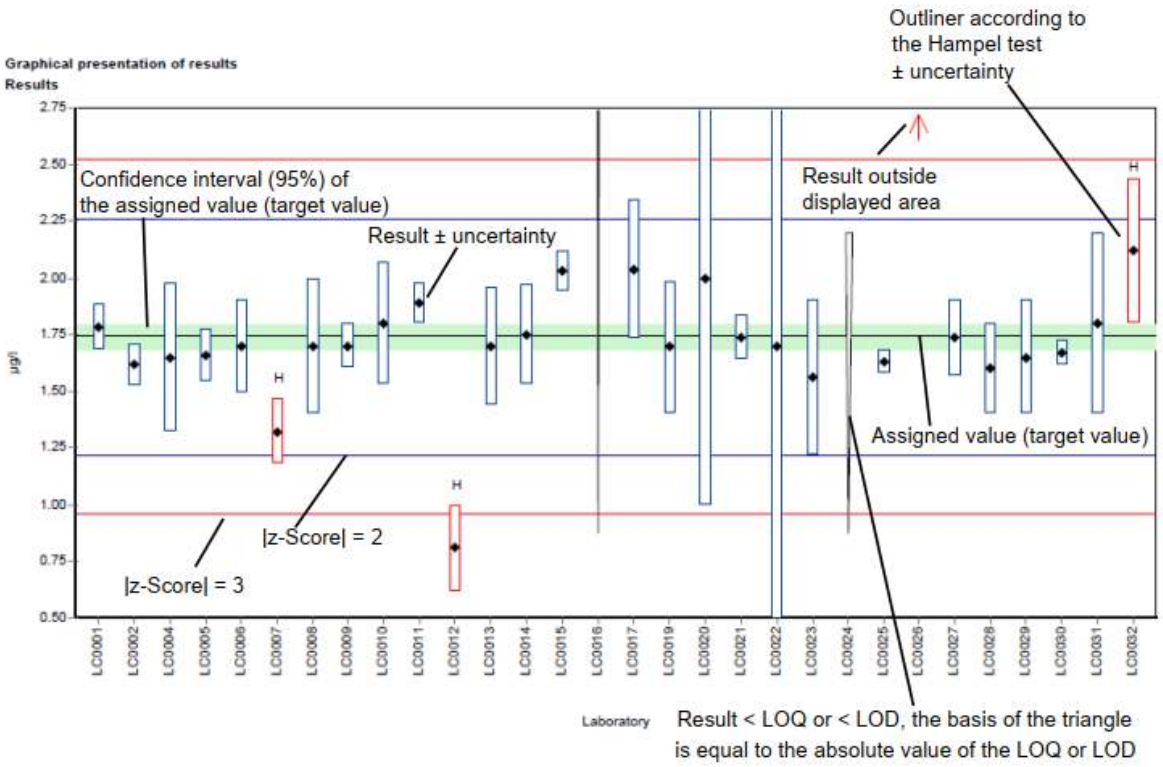
Parameter	Analyte identifier
Sample	Sample identifier
Unit	Given unit for result and uncertainty (e.g. here mg/l)
Assigned value	Target value for proficiency assessment of the participants (3 significant digits)
U (k=2)	Expanded uncertainty (k=2) of the assigned value (3 significant digits)
Criteria	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

E5.2. Graphical presentation of results

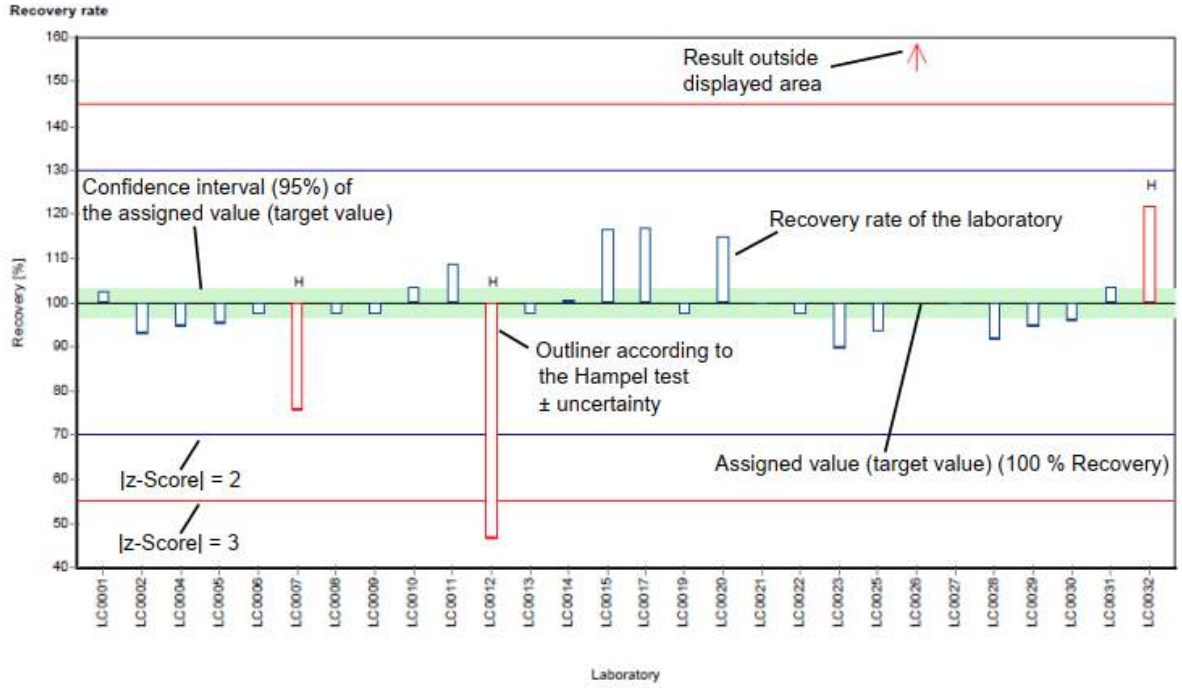
The graphic representation in the report is explained below by means of commented example diagrams:

Example chart: Results



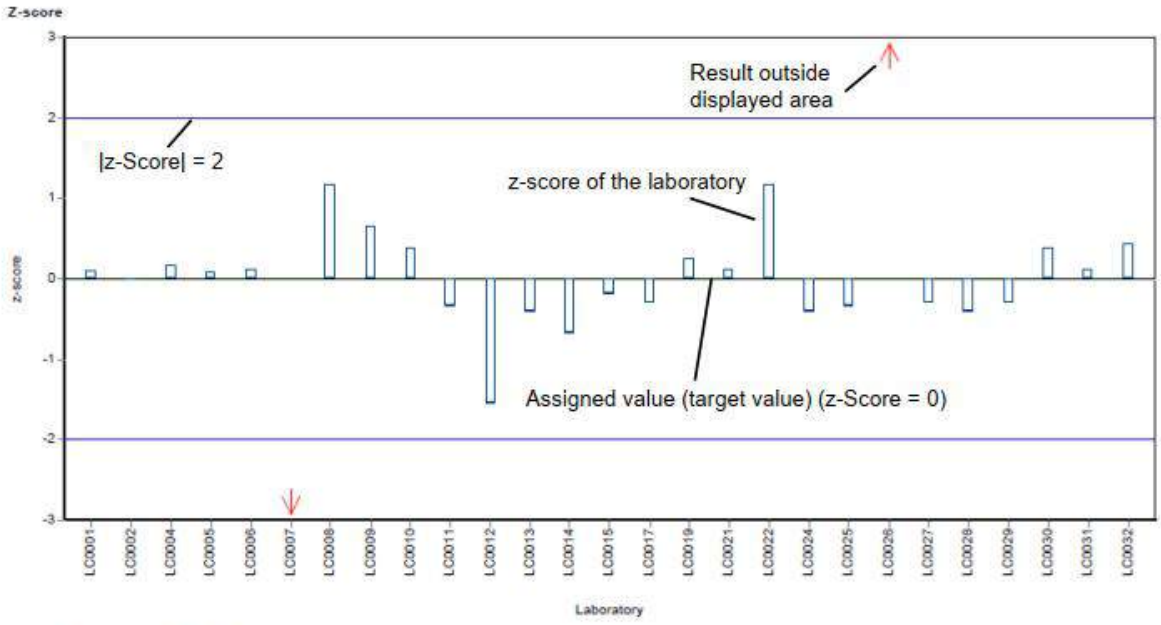
Different analysis methods are represented with different colors.

Example chart: Recovery



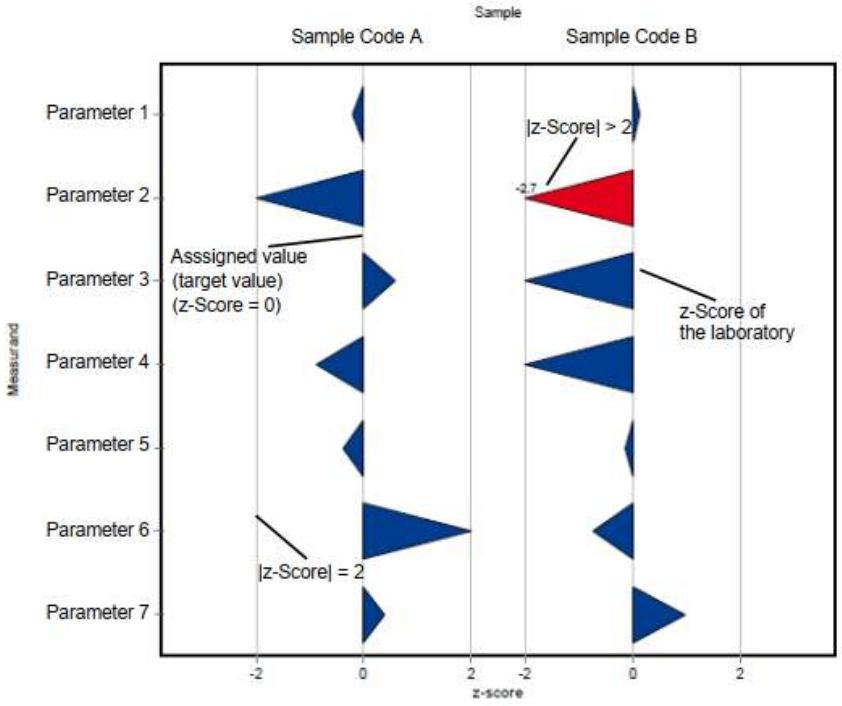
Different analysis methods are represented with different colors.

Example chart: z-Score

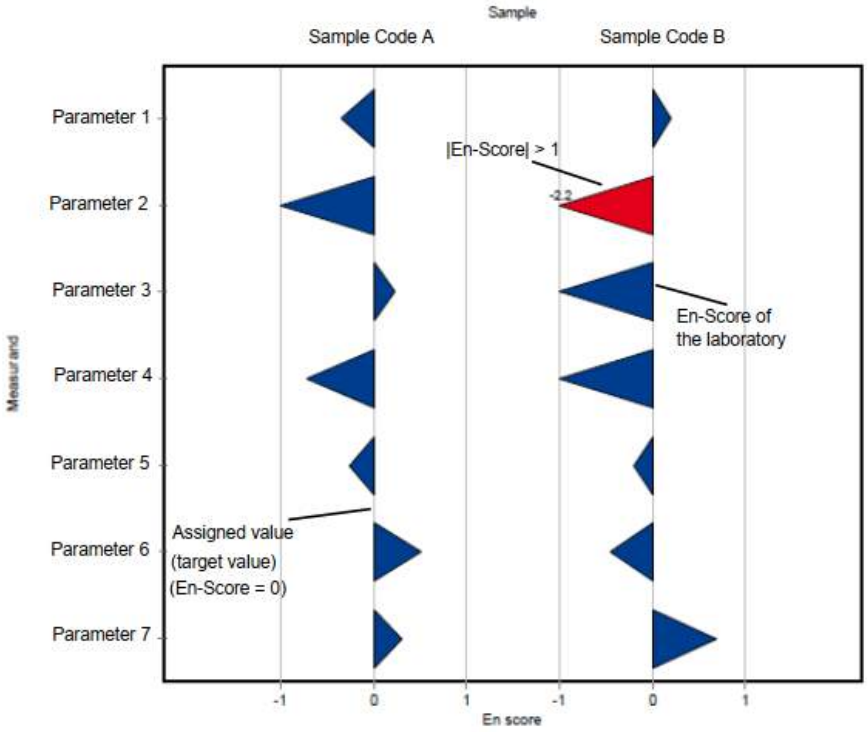


Different analysis methods are represented with different colors.

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	SP09 A - HC-Index	mg/l	0.167	±	0.0231	0.0667	40
	SP09 B - HC-Index	mg/l	0.917	±	0.123	0.367	40
Phenol index	SP09 A - Phenol index	mg/l	0.0243	±	0.00146	0.00268	11
	SP09 B - Phenol index	mg/l	0.805	±	0.0228	0.0886	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	SP09 A - HC-Index	38	2	mg/l	0.162	±	0.0314	0.03	0.29	0.0645	40
	SP09 B - HC-Index	41	2	mg/l	0.923	±	0.176	0.12	1.63	0.376	41
Phenol index	SP09 A - Phenol index	21	2	mg/l	0.0243	±	0.0022	0.02	0.032	0.00335	14
	SP09 A - Phenol index	19	4	mg/l	0.805	±	0.0342	0.75	0.914	0.0496	6.2

E7. Parameterorientierte Auswertung / Parameter oriented report

Parameter oriented report

SP09 A - HC-Index

HC-Index

Unit	mg/l
Assigned value ± U (k=2)	0.167 ± 0.0231
Criterion	0.0667 (40 %)
Minimum - Maximum	0.03 - 0.29
Control test value ± U (k=2)	0.341 ± 0.0683

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	< 0.1 (LOQ)	-	-	-	
LC0003	0.267	0.08	160	1.5	
LC0004	0.287	0.07	172	1.8	
LC0005	0.2317	0.0405	139	0.97	
LC0006	0.171	0.034	103	0.06	
LC0007	0.087	0.0174	52.2	-1.2	
LC0008	0.106	0.05	63.6	-0.91	
LC0009	0.22	0.081	132	0.8	
LC0010	0.2023	0.0465	121	0.53	
LC0011	< 0.1 (LOQ)	-	-	-	
LC0012	0.03	0.012	18	-2.05	
LC0013	0.41	0.03	246	3.65	H
LC0014	0.262	0.06	157	1.43	
LC0015	0.14	0.031	83.9	-0.4	
LC0016	0.203	0.011	122	0.54	
LC0017	0.29	0.1	174	1.85	
LC0018	0.154	0.005	92.3	-0.19	
LC0019	-	-	-	-	
LC0020	0.093	0.046	55.8	-1.11	
LC0021	0.149	0.006	89.3	-0.27	
LC0022	0.226	0.09	136	0.89	
LC0023	0.22	0.046	132	0.8	
LC0024	0.201	0.011	121	0.51	
LC0025	0.17	0.004	102	0.05	
LC0026	0.1191	0.0106	71.4	-0.71	
LC0027	0.203	0.0051	122	0.54	
LC0028	0.9986	0.075	599	12.47	H
LC0029	0.0925	0.0111	55.5	-1.11	
LC0030	0.151	0.036	90.5	-0.24	
LC0031	0.12	0.04	71.9	-0.7	
LC0032	0.16	0.032	95.9	-0.1	
LC0033	0.13	0.038	77.9	-0.55	
LC0034	0.1857	0.032	111	0.28	
LC0035	0.128	0.0032	76.7	-0.58	
LC0036	0.209	0.0106	125	0.63	
LC0037	-	-	-	-	
LC0038	0.083	0.013	49.8	-1.26	
LC0039	< 0.05 (LOQ)	-	-	-	
LC0040	< 0.5 (LOQ)	-	-	-	

Parameter oriented report Sum parameters SP09 Sample: SP09KWIA, Parameter: HC-Index

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0041	0.0358	0.00687	21.5	-1.96	
LC0042	0.151	0.021	90.5	-0.24	
LC0043	0.1	0.04	60	-1	
LC0044	0.154	0.025	92.3	-0.19	
LC0045	0.15	0.056	89.9	-0.25	
LC0046	0.202	0.0603	121	0.53	
LC0047	0.0875	0.0175	52.5	-1.19	

Characteristics of parameter

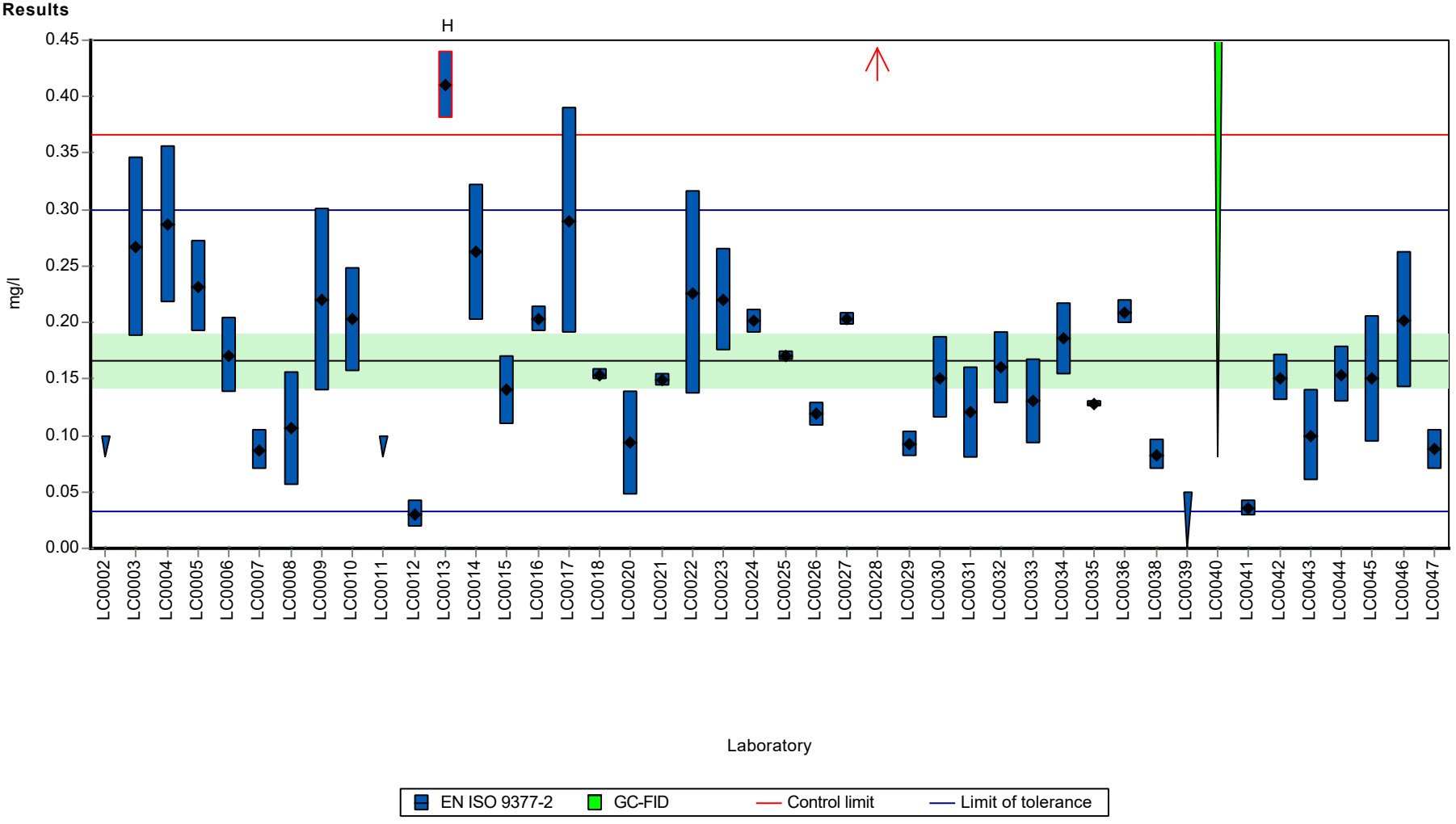
	all results	w ithout outliers	Unit
Mean ± CI (99%)	0.19 ± 0.0715	0.162 ± 0.0314	mg/l
Minimum	0.03	0.03	mg/l
Maximum	0.999	0.29	mg/l
Standard deviation	0.151	0.0645	mg/l
rel. standard deviation	79.5	39.7	%
n	40	38	-

Parameter oriented report Sum parameters SP09

Sample: SP09KWIA, Parameter: HC-Index

Graphical presentation of results

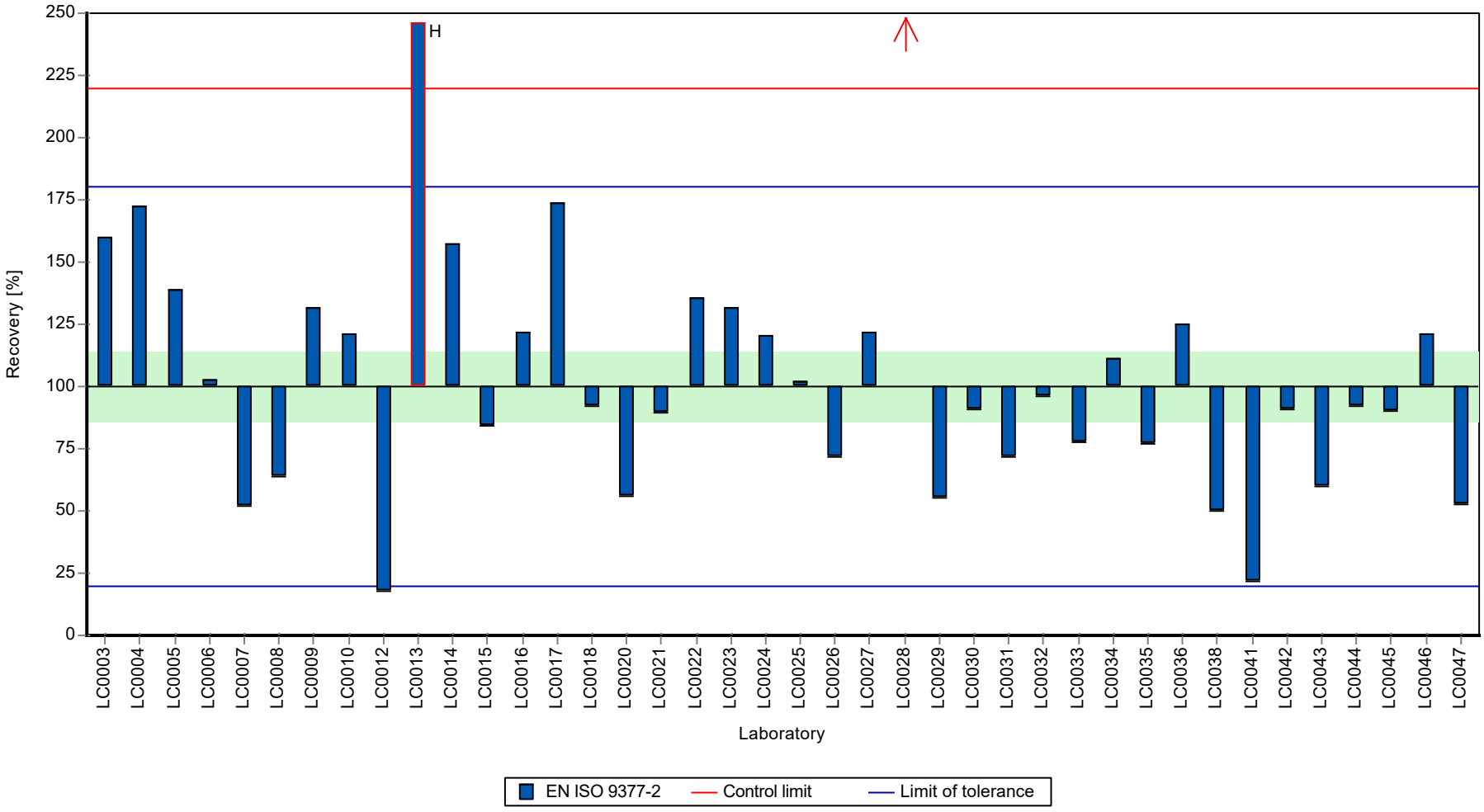
Results



Parameter oriented report Sum parameters SP09

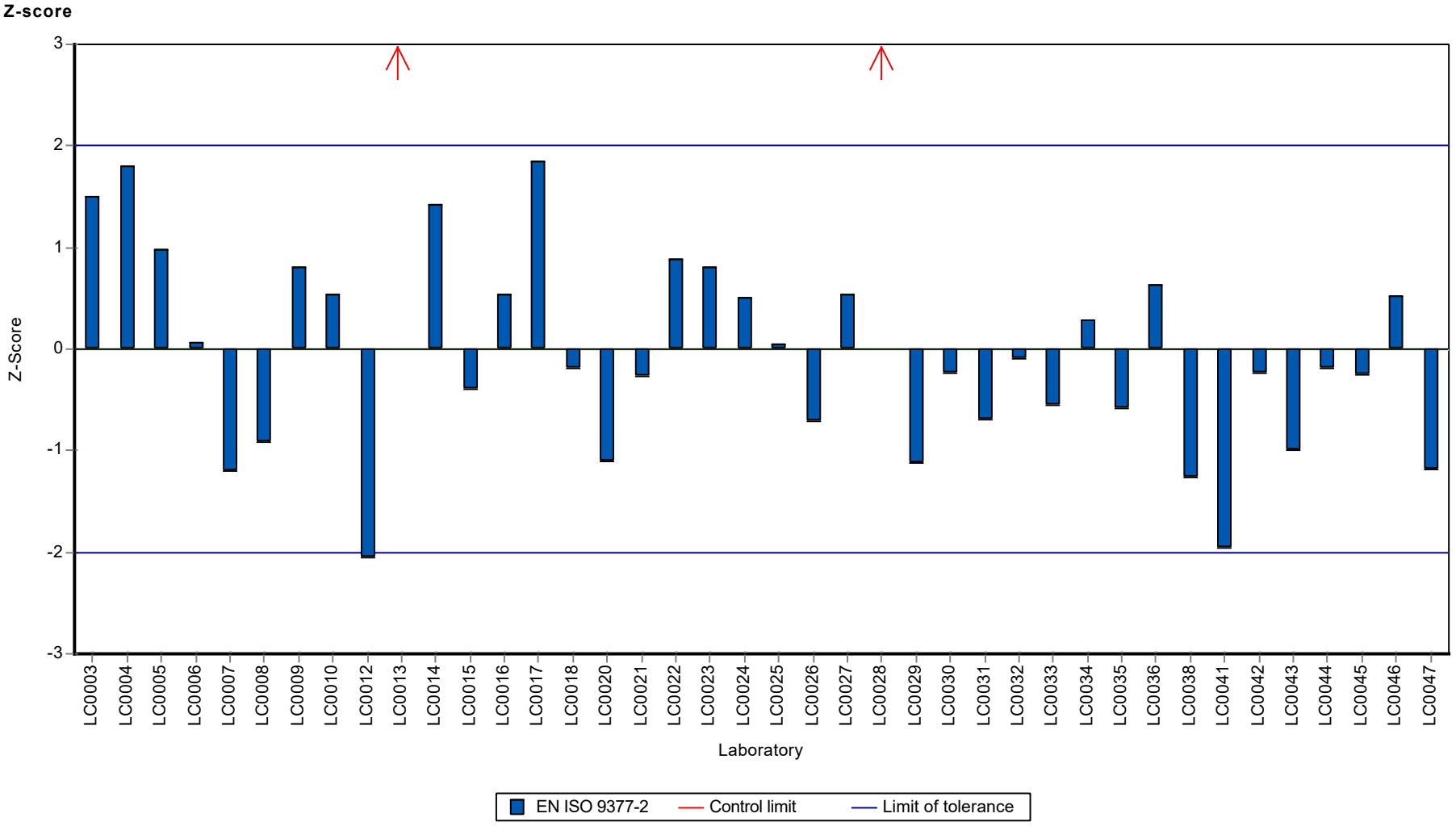
Sample: SP09KWIA, Parameter: HC-Index

Recovery rate



Parameter oriented report Sum parameters SP09

Sample: SP09KWIA, Parameter: HC-Index



Parameter oriented report

SP09 B - HC-Index

HC-Index

Unit	mg/l
Assigned value ± U (k=2)	0.917 ± 0.123
Criterion	0.367 (40 %)
Minimum - Maximum	0.12 - 1.63
Control test value ± U (k=2)	1.46 ± 0.292

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	-	-	-	-	
LC0002	0.905	0.118	98.7	-0.03	
LC0003	0.964	0.32	105	0.13	
LC0004	0.981	0.239	107	0.18	
LC0005	1.323	0.231	144	1.11	
LC0006	1.31	0.26	143	1.07	
LC0007	0.14	0.028	15.3	-2.12	
LC0008	1.08	0.46	118	0.45	
LC0009	0.792	0.293	86.4	-0.34	
LC0010	1.158	0.2663	126	0.66	
LC0011	0.243	0.07	26.5	-1.84	
LC0012	0.354	0.145	38.6	-1.53	
LC0013	1.13	0.09	123	0.58	
LC0014	2.257	0.482	246	3.66	H
LC0015	0.75	0.165	81.8	-0.45	
LC0016	-	-	-	-	
LC0017	1.63	0.24	178	1.95	
LC0018	1.3	0.005	142	1.05	
LC0019	-	-	-	-	
LC0020	0.391	0.196	42.7	-1.43	
LC0021	1.135	0.005	124	0.6	
LC0022	1.42	0.27	155	1.37	
LC0023	1.315	0.276	143	1.09	
LC0024	1.02	0.055	111	0.28	
LC0025	1.28	0.3	140	0.99	
LC0026	0.7301	0.0651	79.7	-0.51	
LC0027	1.36	0.034	148	1.21	
LC0028	0.0599	0.004	6.5	-2.34	H
LC0029	0.678	0.0814	74	-0.65	
LC0030	0.812	0.195	88.6	-0.29	
LC0031	1.04	0.37	113	0.34	
LC0032	1.2	0.24	131	0.77	
LC0033	0.989	0.014	108	0.2	
LC0034	1.0792	0.183	118	0.44	
LC0035	0.97	0.024	106	0.15	
LC0036	1.085	0.0553	118	0.46	
LC0037	-	-	-	-	
LC0038	0.592	0.09	64.6	-0.89	
LC0039	0.12	0.01422	13.1	-2.17	
LC0040	1.18	0.28	129	0.72	

Parameter oriented report Sum parameters SP09 Sample: SP09KWIB, Parameter: HC-Index

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0041	0.139	0.0266	15.2	-2.12	
LC0042	0.841	0.115	91.8	-0.21	
LC0043	0.844	0.342	92.1	-0.2	
LC0044	1.1	0.17	120	0.5	
LC0045	1.248	0.469	136	0.9	
LC0046	0.685	0.204	74.7	-0.63	
LC0047	0.517	0.103	56.4	-1.09	

Characteristics of parameter

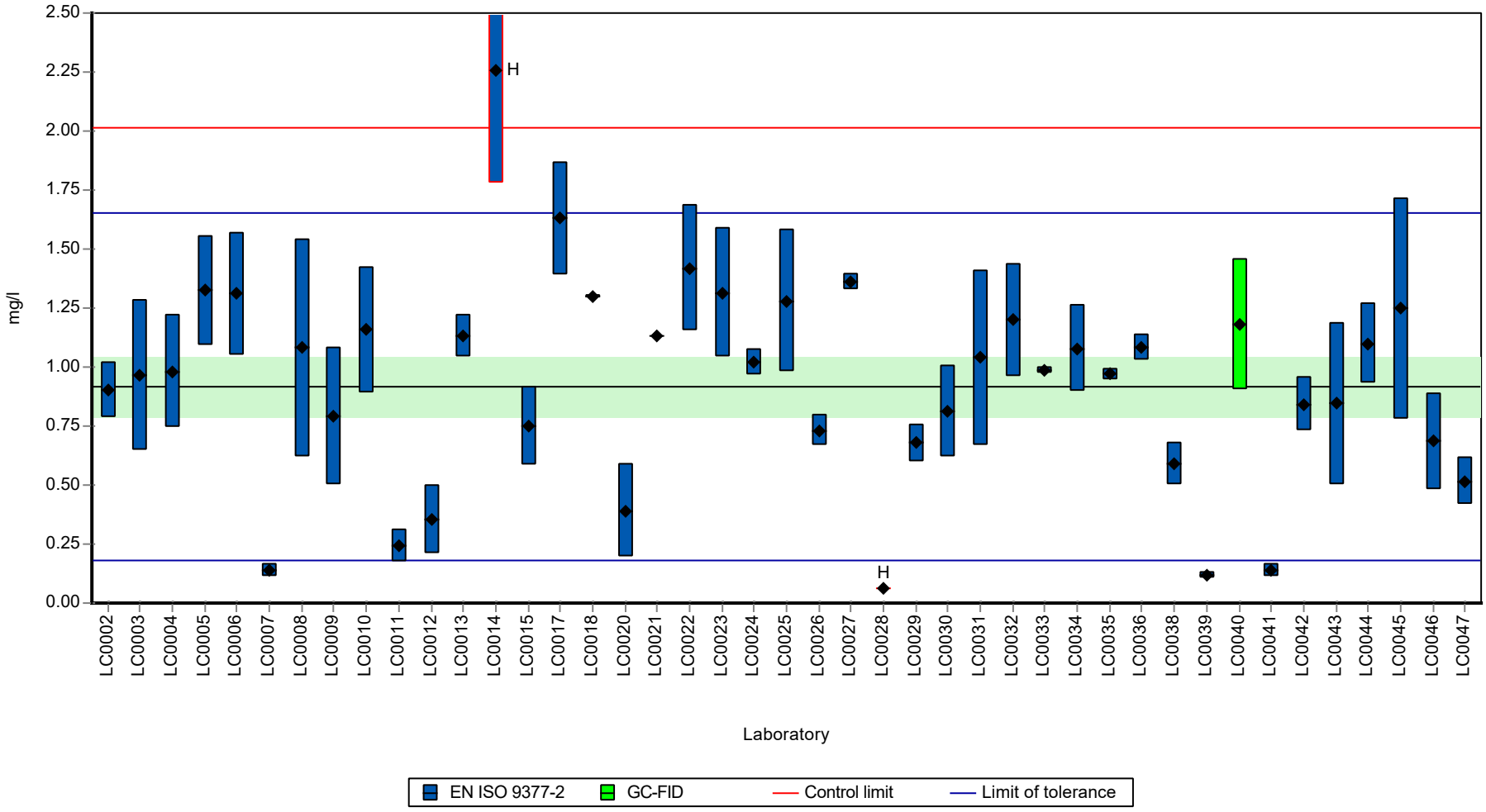
	all results	w ithout outliers	Unit
Mean ± CI (99%)	0.934 ± 0.202	0.923 ± 0.176	mg/l
Minimum	0.0599	0.12	mg/l
Maximum	2.26	1.63	mg/l
Standard deviation	0.441	0.376	mg/l
rel. standard deviation	47.2	40.7	%
n	43	41	-

Parameter oriented report Sum parameters SP09

Sample: SP09KWIB, Parameter: HC-Index

Graphical presentation of results

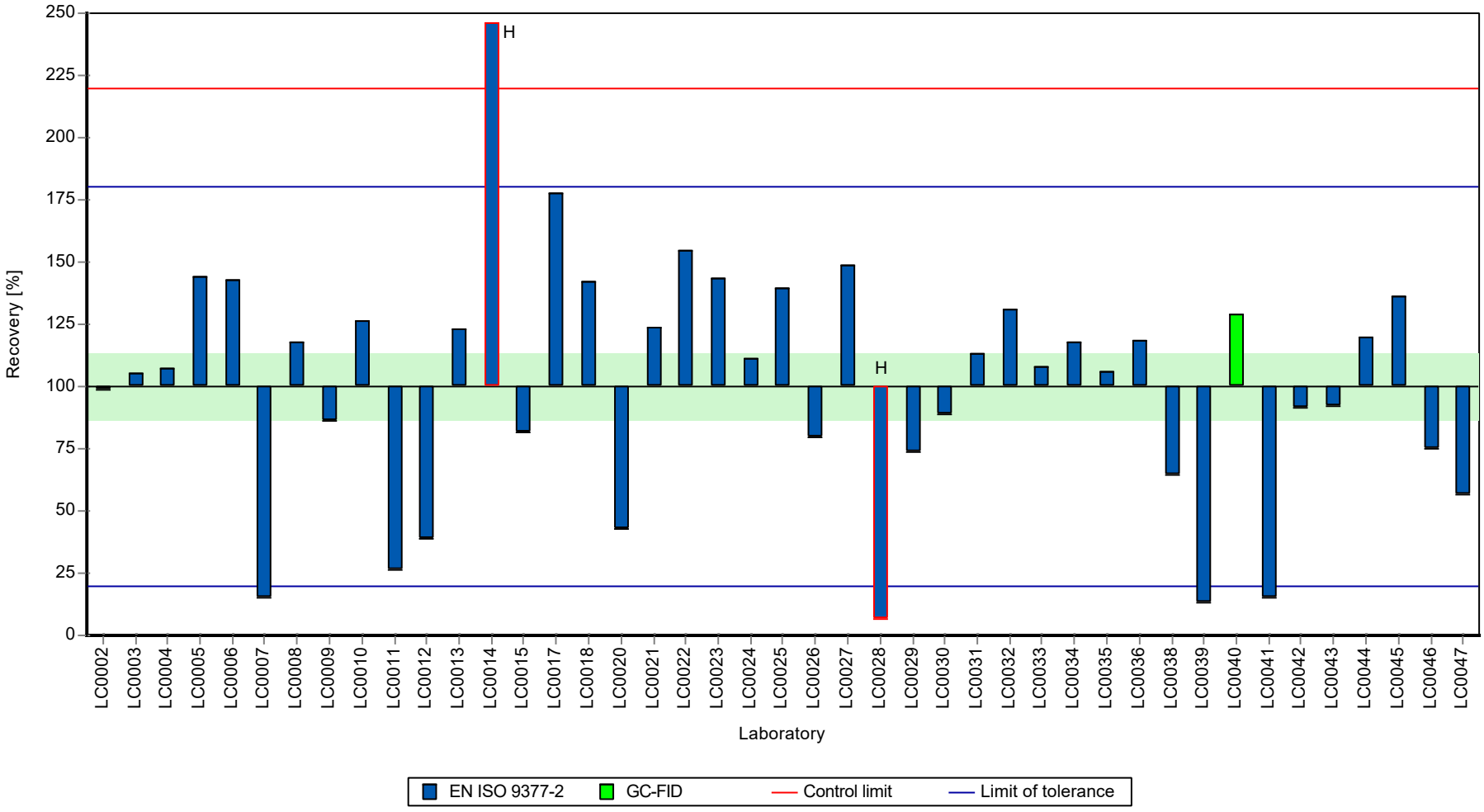
Results



Parameter oriented report Sum parameters SP09

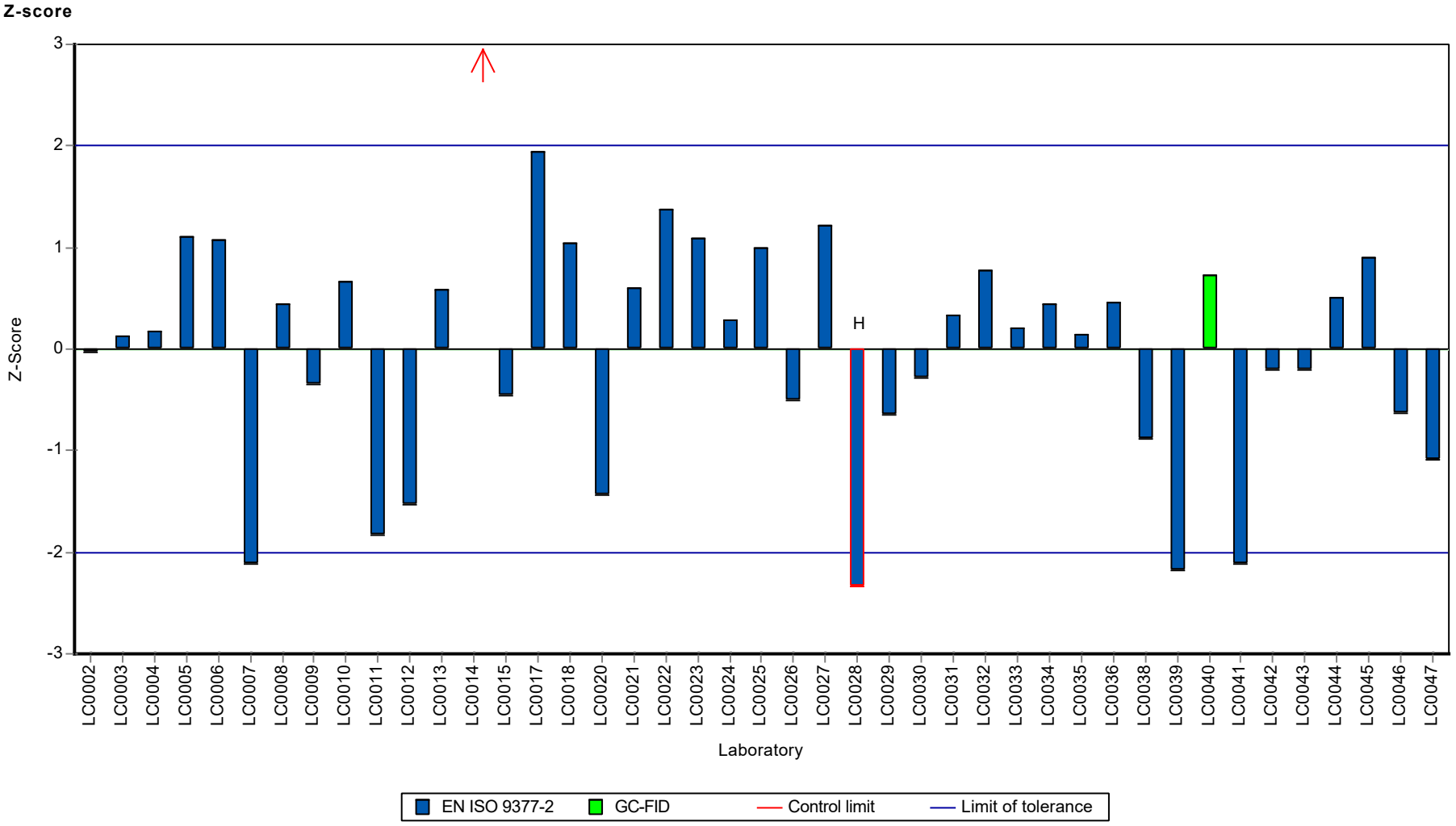
Sample: SP09KWIB, Parameter: HC-Index

Recovery rate



Parameter oriented report Sum parameters SP09

Sample: SP09KWIB, Parameter: HC-Index



Parameter oriented report

SP09 A - Phenol index

Phenol index

Unit	mg/l
Assigned value ± U (k=2)	0.0243 ± 0.00146
Criterion	0.00268 (11 %)
Minimum - Maximum	0.02 - 0.032
Control test value ± U (k=2)	0.0223 ± 0.00223

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	0.023	0.0046	94.5	-0.5	
LC0002	0.021	0.002	86.3	-1.25	
LC0005	0.0293	0.0044	120	1.85	
LC0006	0.032	0.0032	131	2.86	
LC0009	0.0225	0.0017	92.4	-0.69	
LC0010	0.02475	0.00545	102	0.15	
LC0013	0.02	0.002	82.1	-1.62	
LC0019	0.285	0.048	1170	97.32	H
LC0022	-	-	-	-	
LC0023	0.021	0.0016	86.3	-1.25	
LC0024	0.0211	0.0015	86.7	-1.21	
LC0025	0.02	0.004	82.1	-1.62	
LC0027	0.026	0.0018	107	0.62	
LC0029	0.022	0.003	90.4	-0.88	
LC0030	0.0259	0.002	106	0.58	
LC0032	0.023	0.004	94.5	-0.5	
LC0034	0.0253	0.002	104	0.36	
LC0035	0.0249	0.001	102	0.21	
LC0036	0.03	0.00095	123	2.11	
LC0039	0.0226	0.00472	92.8	-0.65	
LC0041	0.02304	0.0023	94.6	-0.49	
LC0042	0.805	0.044	3310	291.49	H
LC0043	0.026	0.008	107	0.62	
LC0045	0.0279	0.007	115	1.33	

Characteristics of parameter

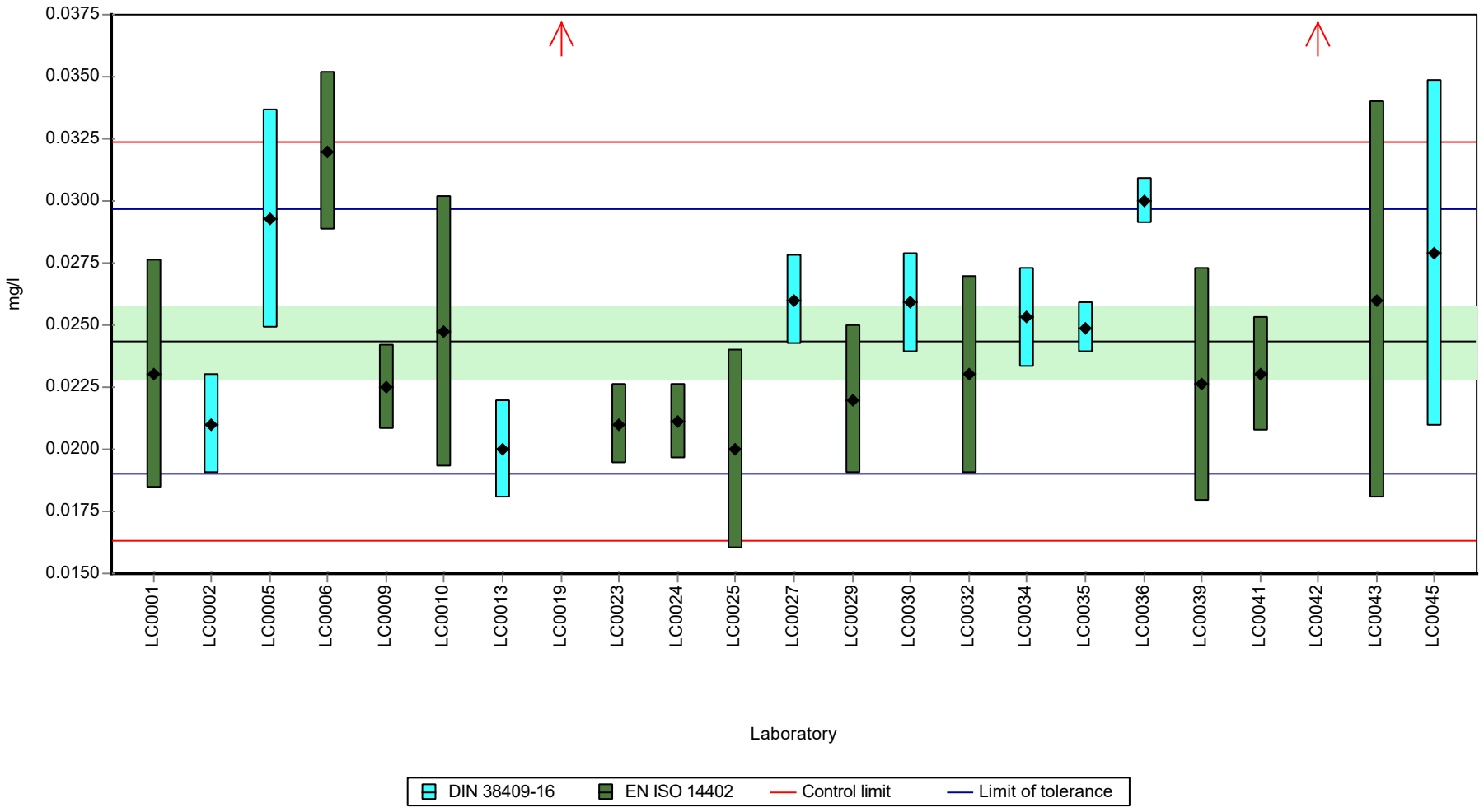
	all results	w ithout outliers	Unit
Mean ± CI (99%)	0.0696 ± 0.106	0.0243 ± 0.0022	mg/l
Minimum	0.02	0.02	mg/l
Maximum	0.805	0.032	mg/l
Standard deviation	0.169	0.00335	mg/l
rel. standard deviation	243	13.8	%
n	23	21	-

Parameter oriented report Sum parameters SP09

Sample: SP09PHIA, Parameter: Phenol index

Graphical presentation of results

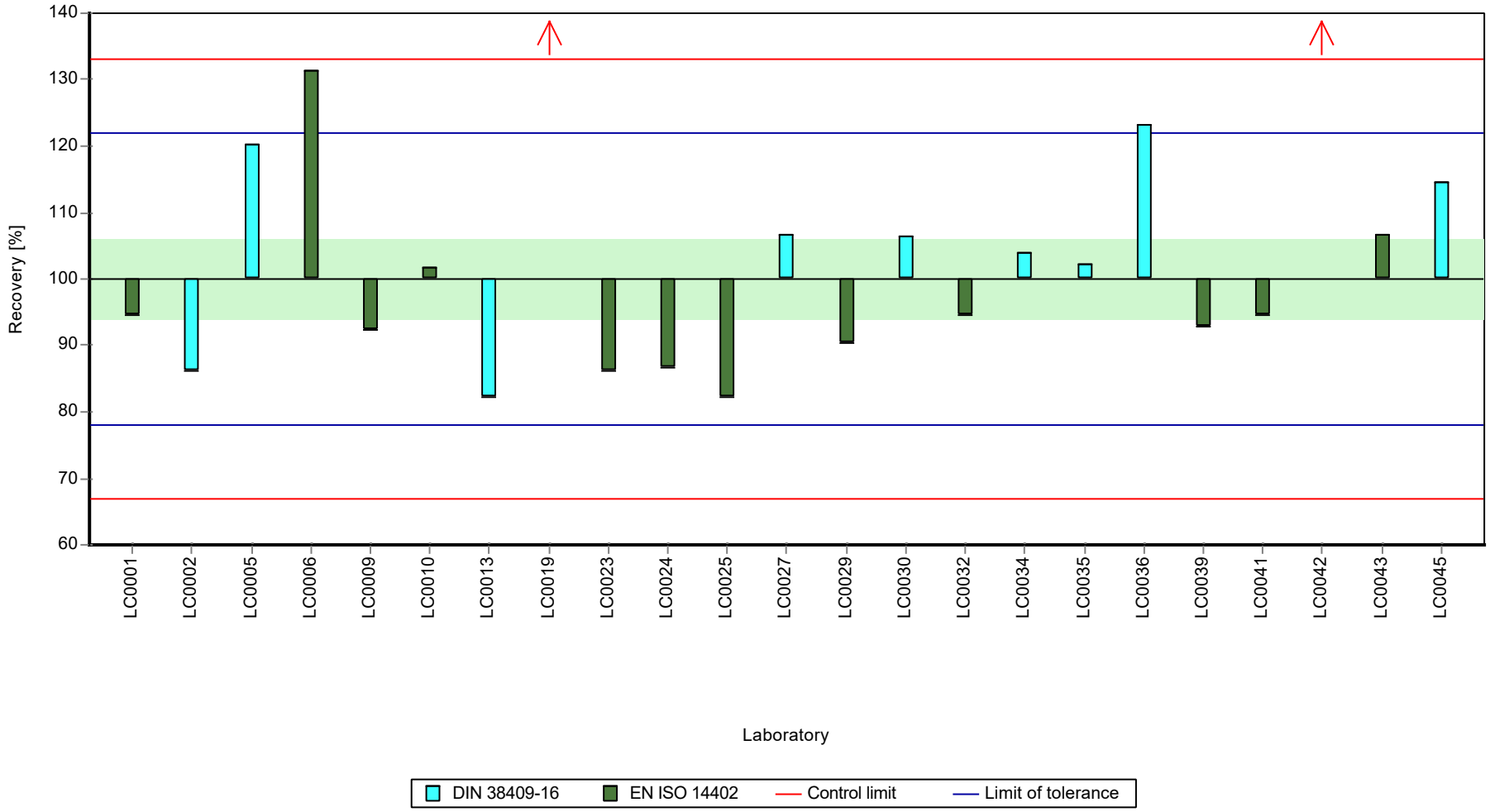
Results



Parameter oriented report Sum parameters SP09

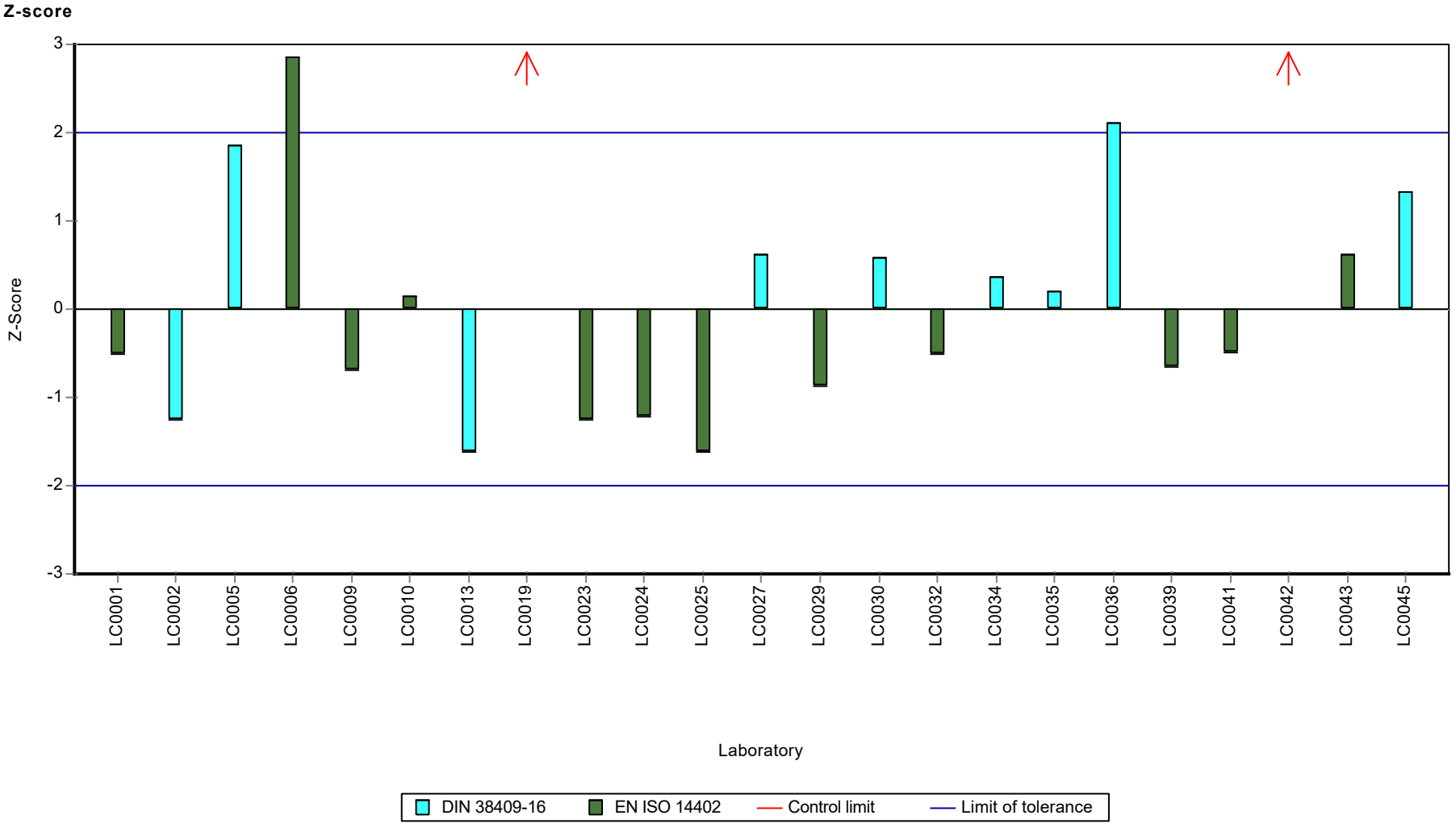
Sample: SP09PHIA, Parameter: Phenol index

Recovery rate



Parameter oriented report Sum parameters SP09

Sample: SP09PHIA, Parameter: Phenol index



Parameter oriented report

SP09 B - Phenol index

Phenol index

Unit	mg/l
Assigned value ± U (k=2)	0.805 ± 0.0228
Criterion	0.0886 (11 %)
Minimum - Maximum	0.75 - 0.914
Control test value ± U (k=2)	0.836 ± 0.0836

Labcode	Result	± U	Recovery [%]	z-score	Comments
LC0001	0.798	0.1597	99.1	-0.08	
LC0002	0.805	0.089	100	0.00	
LC0005	0.914	0.137	113	1.23	
LC0006	1.01	0.1	125	2.31	H
LC0009	0.803	0.059	99.7	-0.03	
LC0010	0.79675	0.17528	98.9	-0.1	
LC0013	0.77	0.08	95.6	-0.4	
LC0019	0.244	0.041	30.3	-6.34	H
LC0022	-	-	-	-	
LC0023	0.773	0.058	96	-0.37	
LC0024	0.75	0.054	93.1	-0.62	
LC0025	0.75	0.16	93.1	-0.62	
LC0027	0.799	0.055	99.2	-0.07	
LC0029	0.768	0.112	95.4	-0.42	
LC0030	0.793	0.071	98.5	-0.14	
LC0032	0.76	0.12	94.4	-0.51	
LC0034	0.5504	0.04	68.3	-2.88	H
LC0035	0.91	0.0379	113	1.18	
LC0036	0.895	0.0282	111	1.01	
LC0039	0.8065	0.16856	100	0.01	
LC0041	0.8142	0.0814	101	0.1	
LC0042	0.774	0.043	96.1	-0.35	
LC0043	0.939	0.287	117	1.51	H
LC0045	0.822	0.207	102	0.19	

Characteristics of parameter

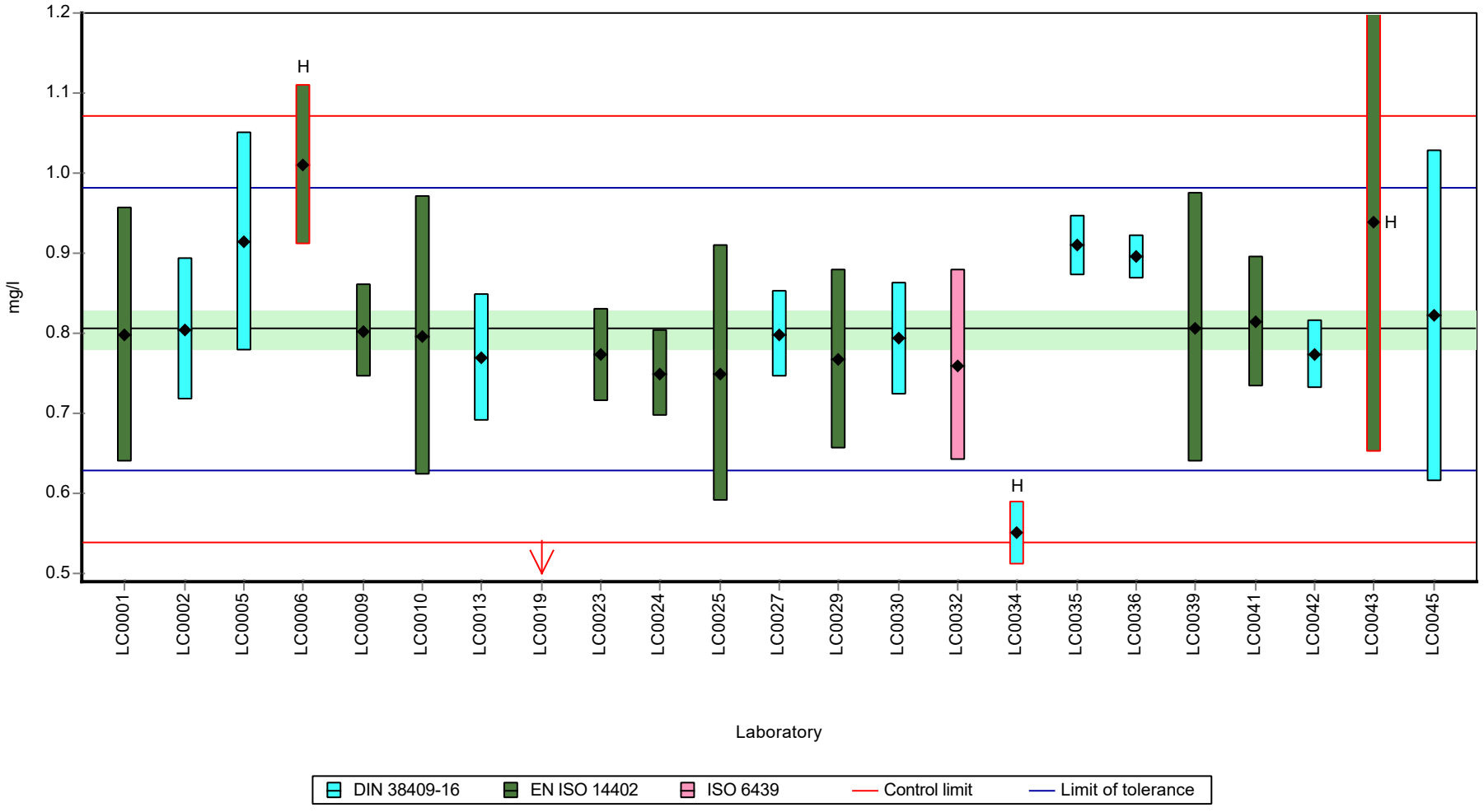
	all results	w ithout outliers	Unit
Mean ± CI (99%)	0.785 ± 0.0918	0.805 ± 0.0342	mg/l
Minimum	0.244	0.75	mg/l
Maximum	1.01	0.914	mg/l
Standard deviation	0.147	0.0496	mg/l
rel. standard deviation	18.7	6.16	%
n	23	19	-

Parameter oriented report Sum parameters SP09

Sample: SP09PHIB, Parameter: Phenol index

Graphical presentation of results

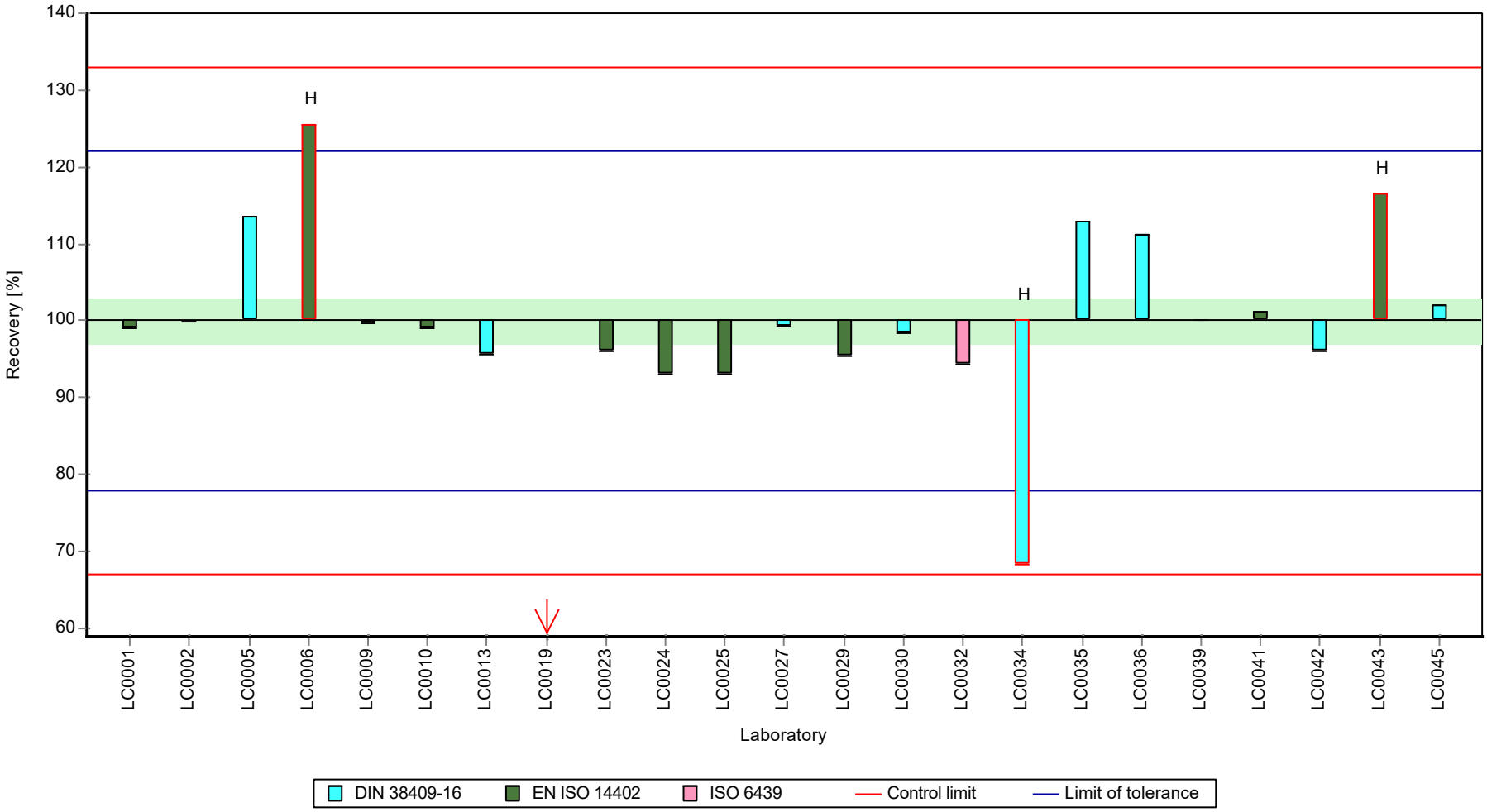
Results



Parameter oriented report Sum parameters SP09

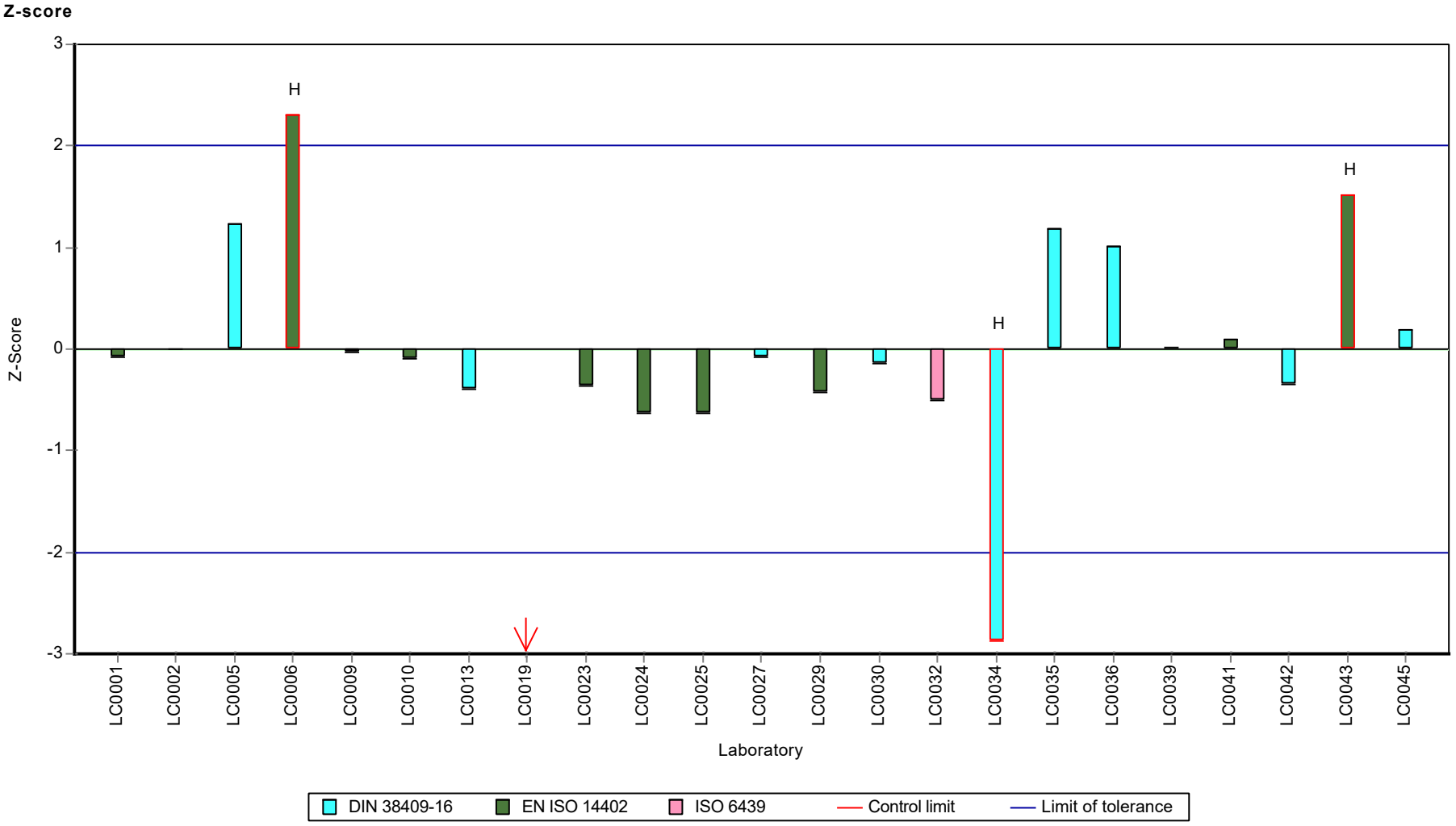
Sample: SP09PHIB, Parameter: Phenol index

Recovery rate



Parameter oriented report Sum parameters SP09

Sample: SP09PHIB, Parameter: Phenol index



E8. Laborientierte Auswertung / Laboratory oriented report

Die Laborientierte Auswertung ist nach dem Laborcode sortiert.

The laboratory oriented report is sorted by laboratory code.

Summary of results Sum parameters SP09 Labcode: LC0001

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	- ± -	0.0667	-	-

Sample: SP09KWIB

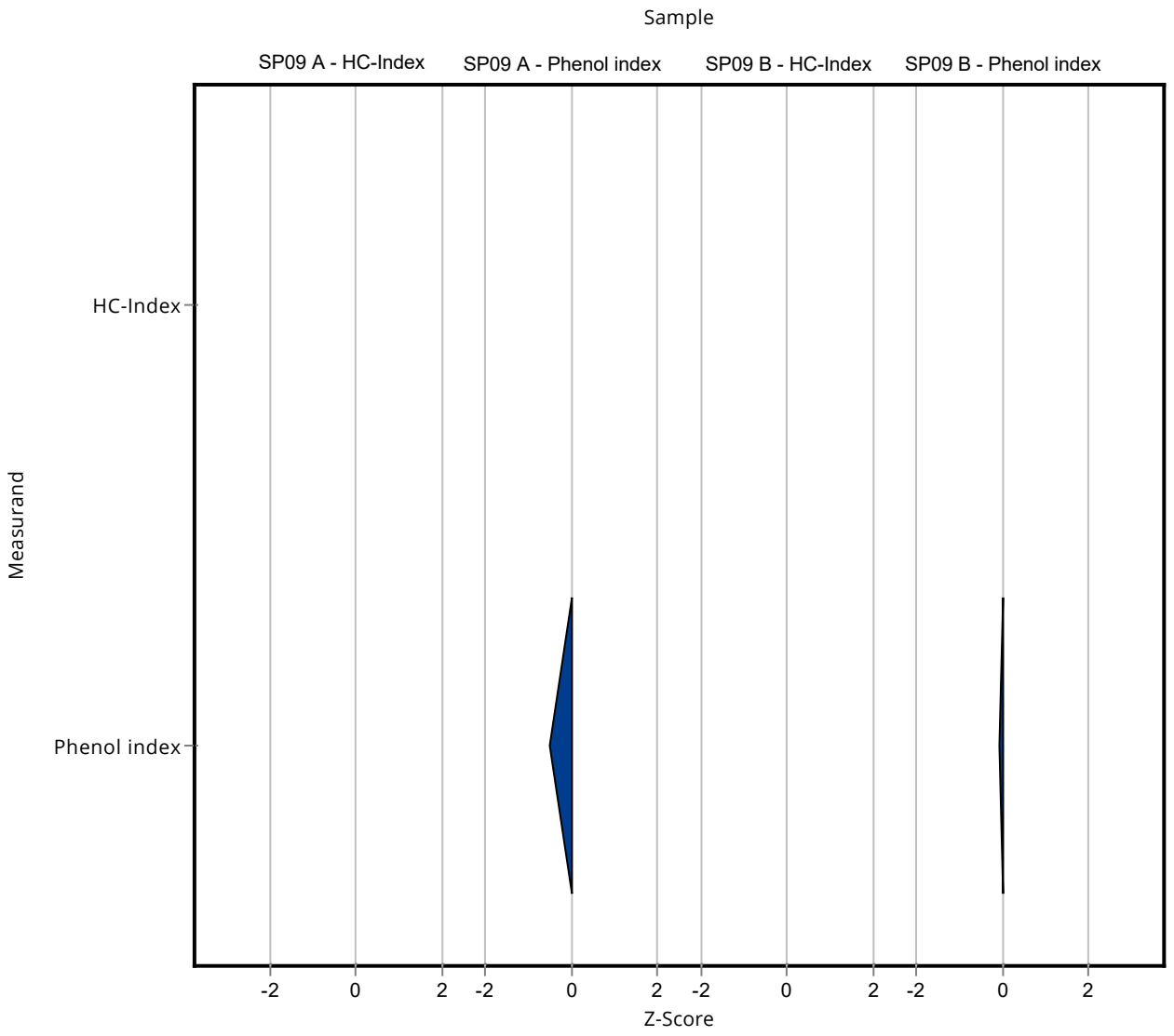
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.023 ± 0.0046	0.00268	94.5	-0.50

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.798 ± 0.1597	0.0886	99.1	-0.08


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	- ± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-

Sample: SP09PHIA

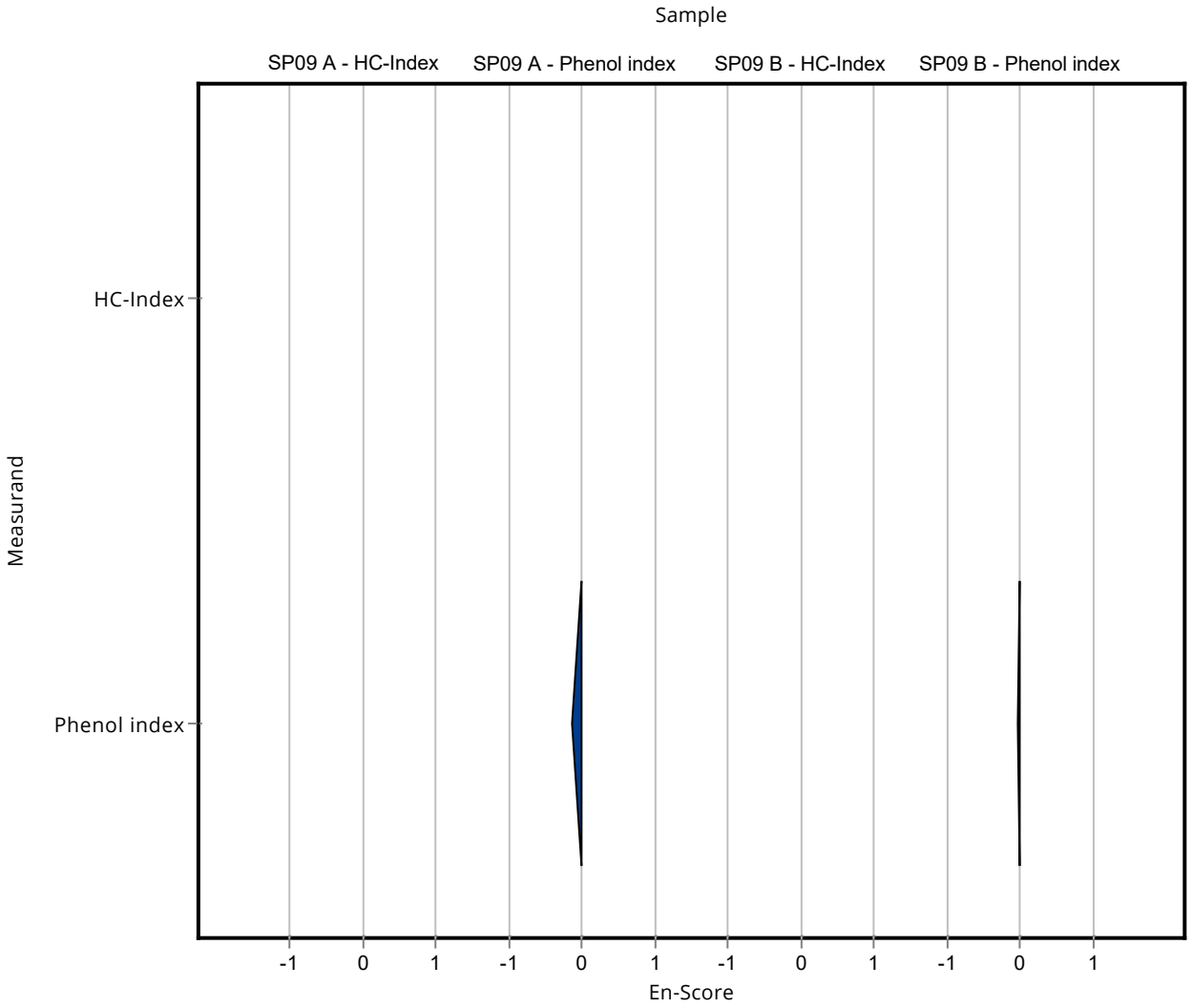
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.023 ± 0.0046	0.00268	94.5	-0.14

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.798 ± 0.1597	0.0886	99.1	-0.02

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0001



Summary of results Sum parameters SP09 Labcode: LC0002

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	<0.1 (LOQ) ± -	0.0667	-	-

Sample: SP09KWIB

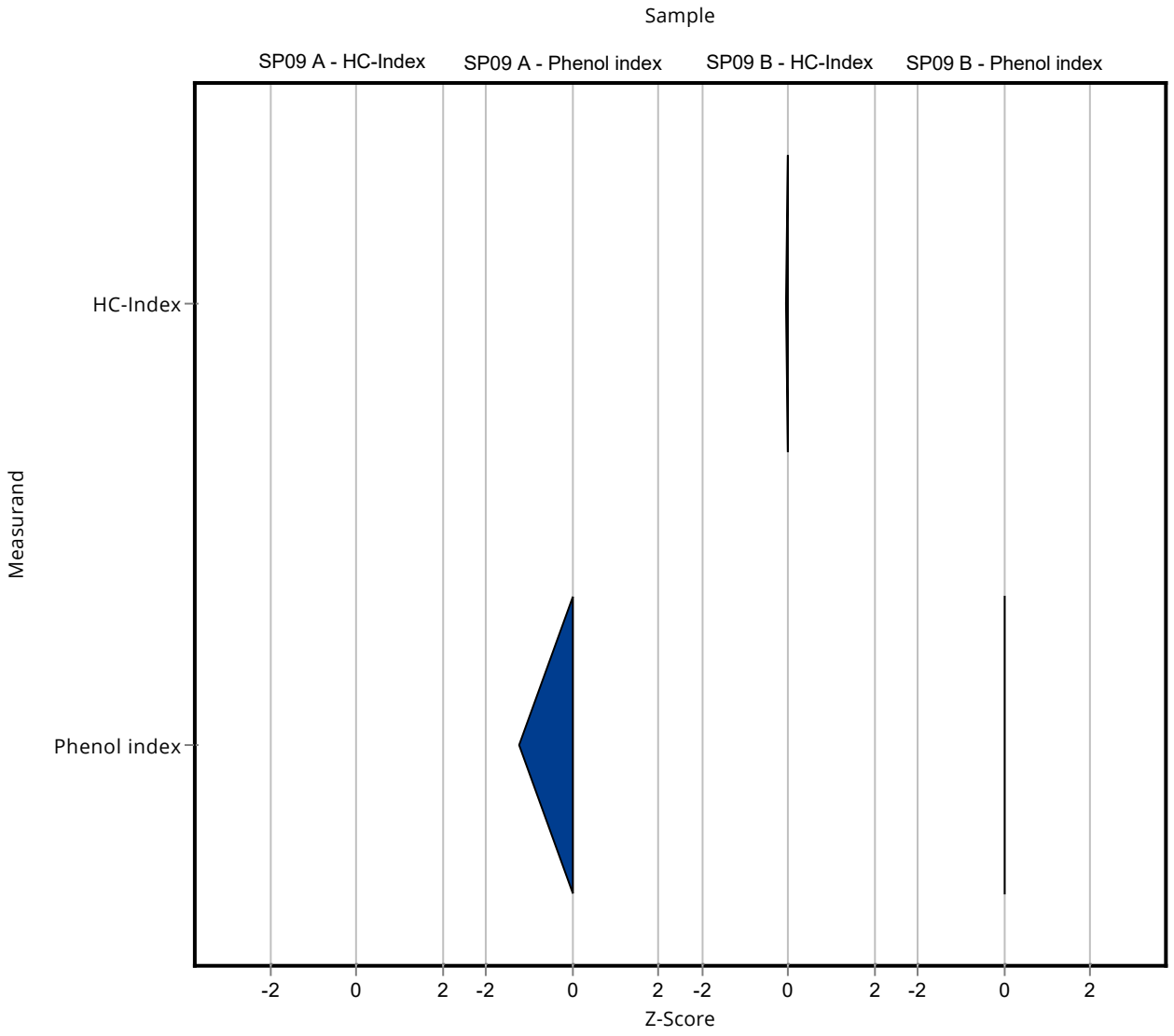
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.905 ± 0.118	0.367	98.7	-0.03

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.021 ± 0.002	0.00268	86.3	-1.25

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.805 ± 0.089	0.0886	100	0.00


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	<0.1 (LOQ)	± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.905	± 0.118	0.367	98.7	-0.04

Sample: SP09PHIA

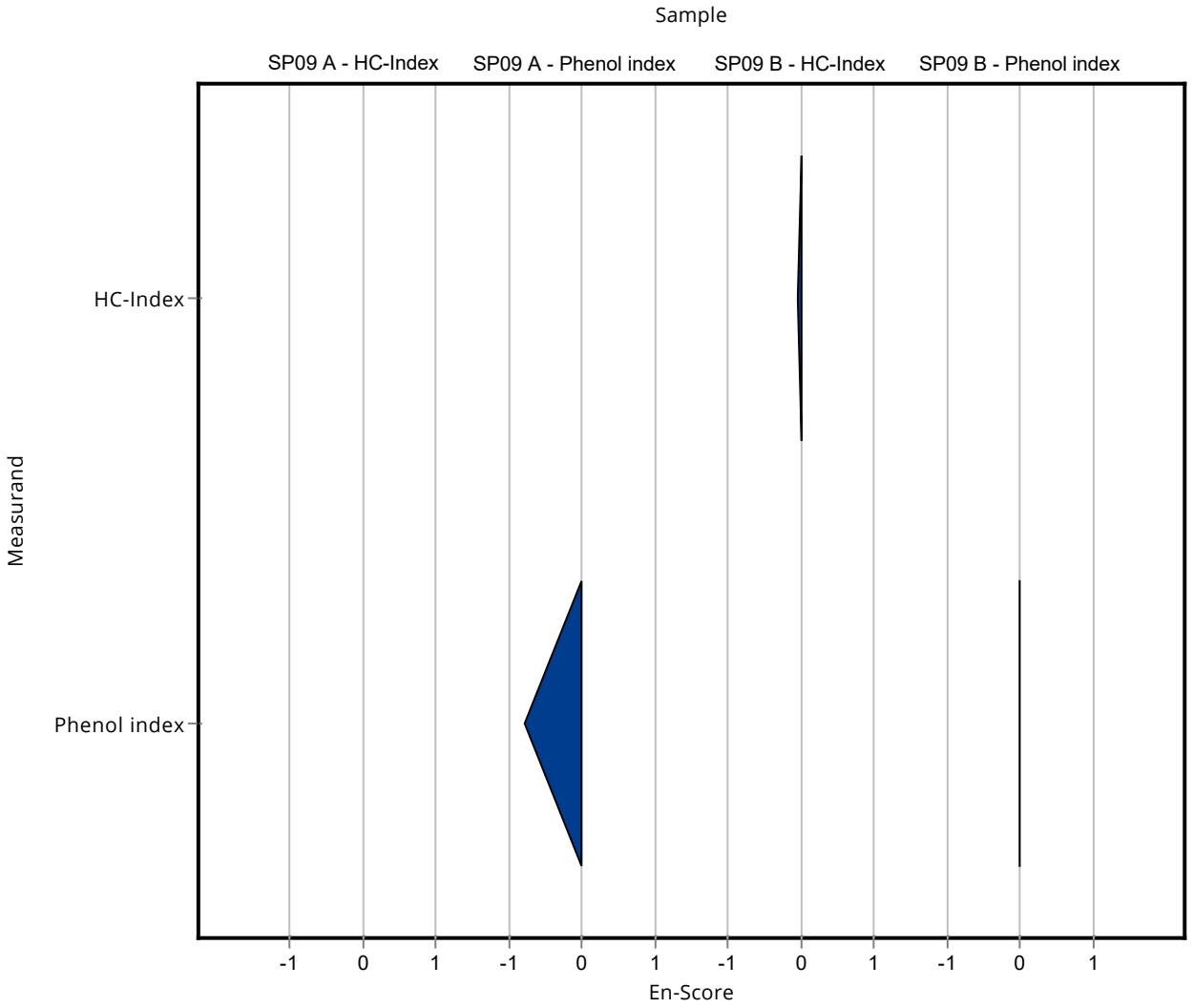
Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243	± 0.00146	0.021	± 0.002	0.00268	86.3	-0.79

Sample: SP09PHIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805	± 0.0228	0.805	± 0.089	0.0886	100	0.00

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0002



Summary of results Sum parameters SP09

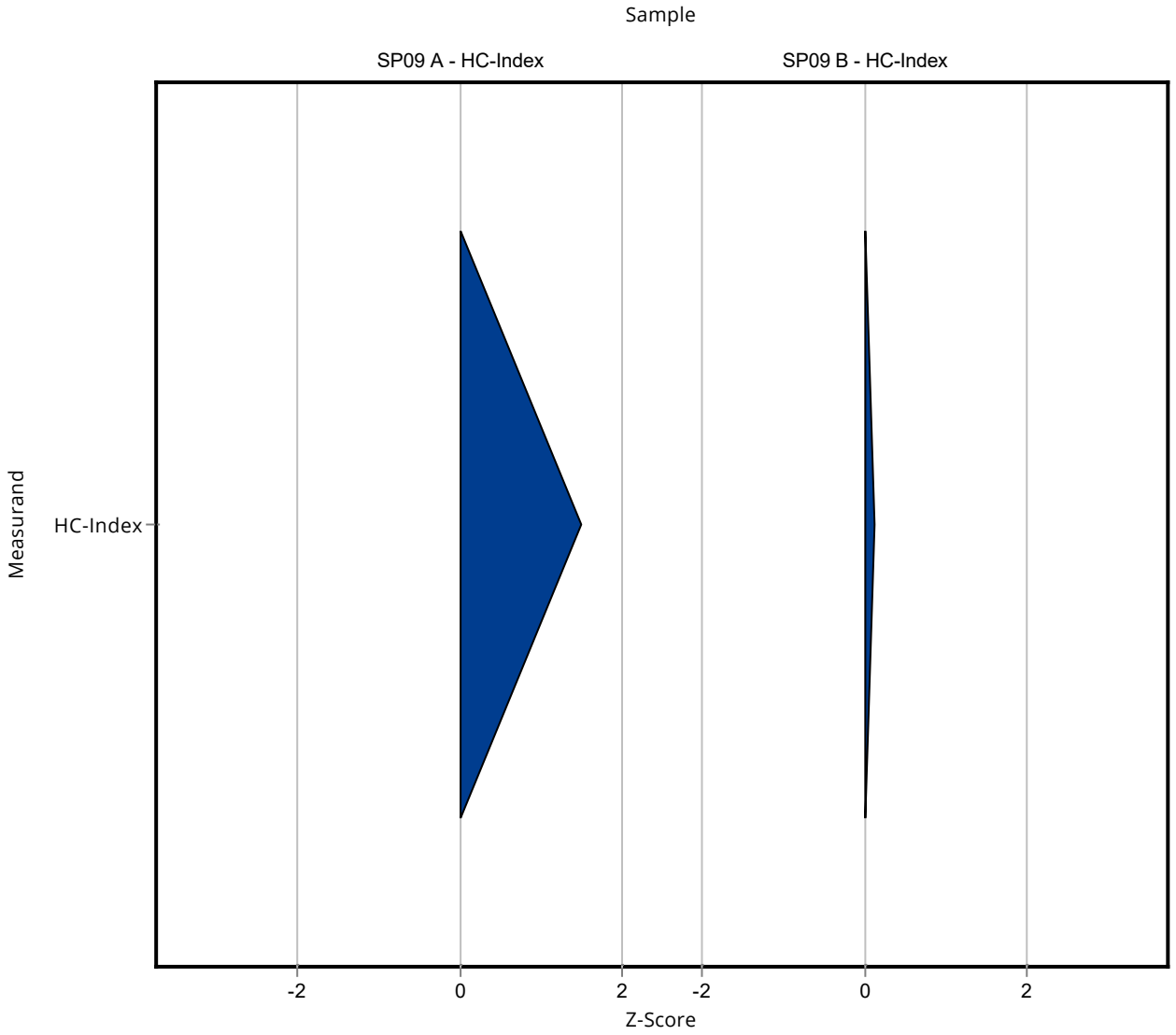
Labcode: LC0003

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.267 ± 0.08	0.0667	160	1.50

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.964 ± 0.32	0.367	105	0.13



Summary of results Sum parameters SP09 - En-Score

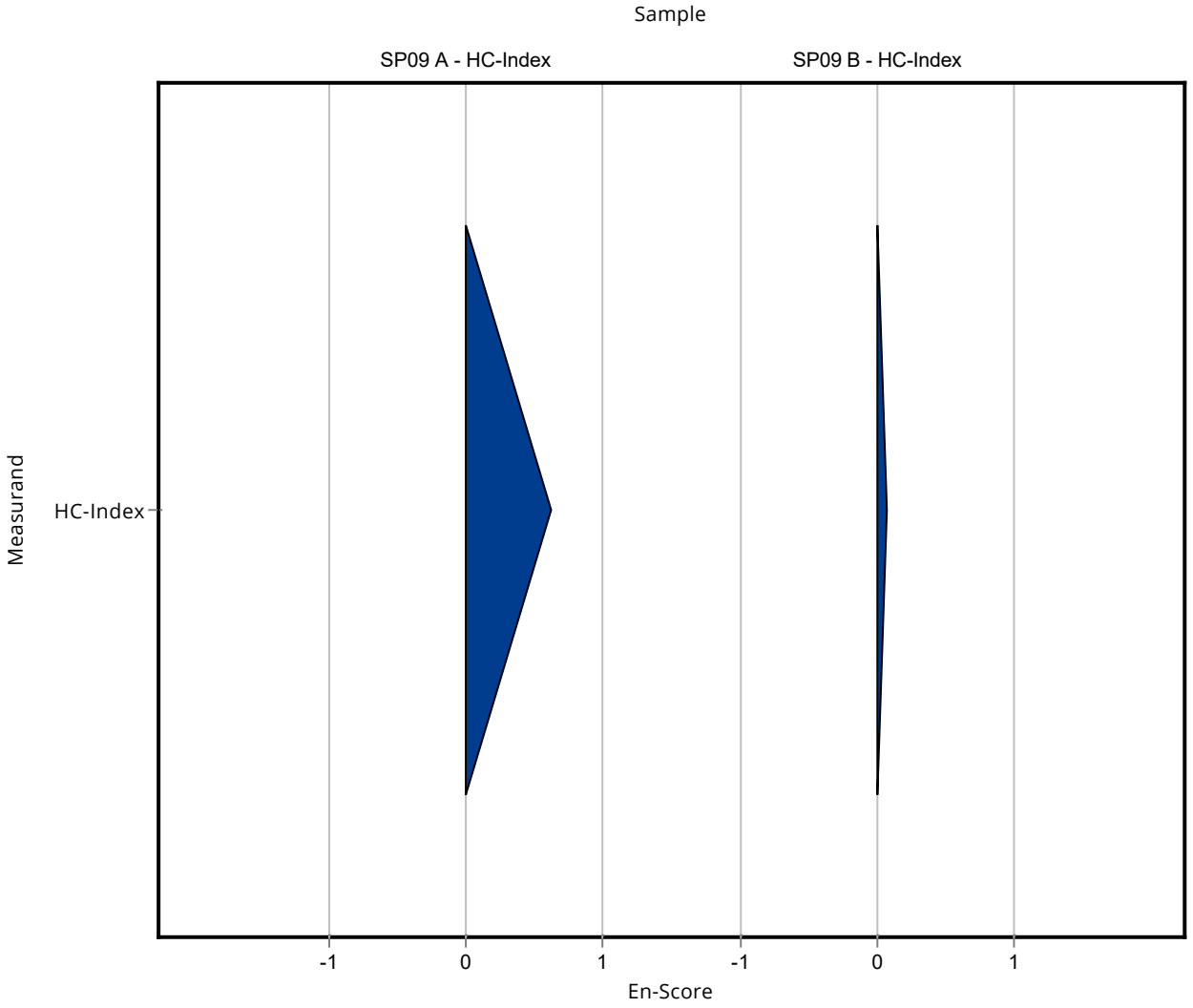
Labcode: LC0003

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.267 ± 0.08	0.0667	160	0.62

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.964 ± 0.32	0.367	105	0.07



Summary of results Sum parameters SP09

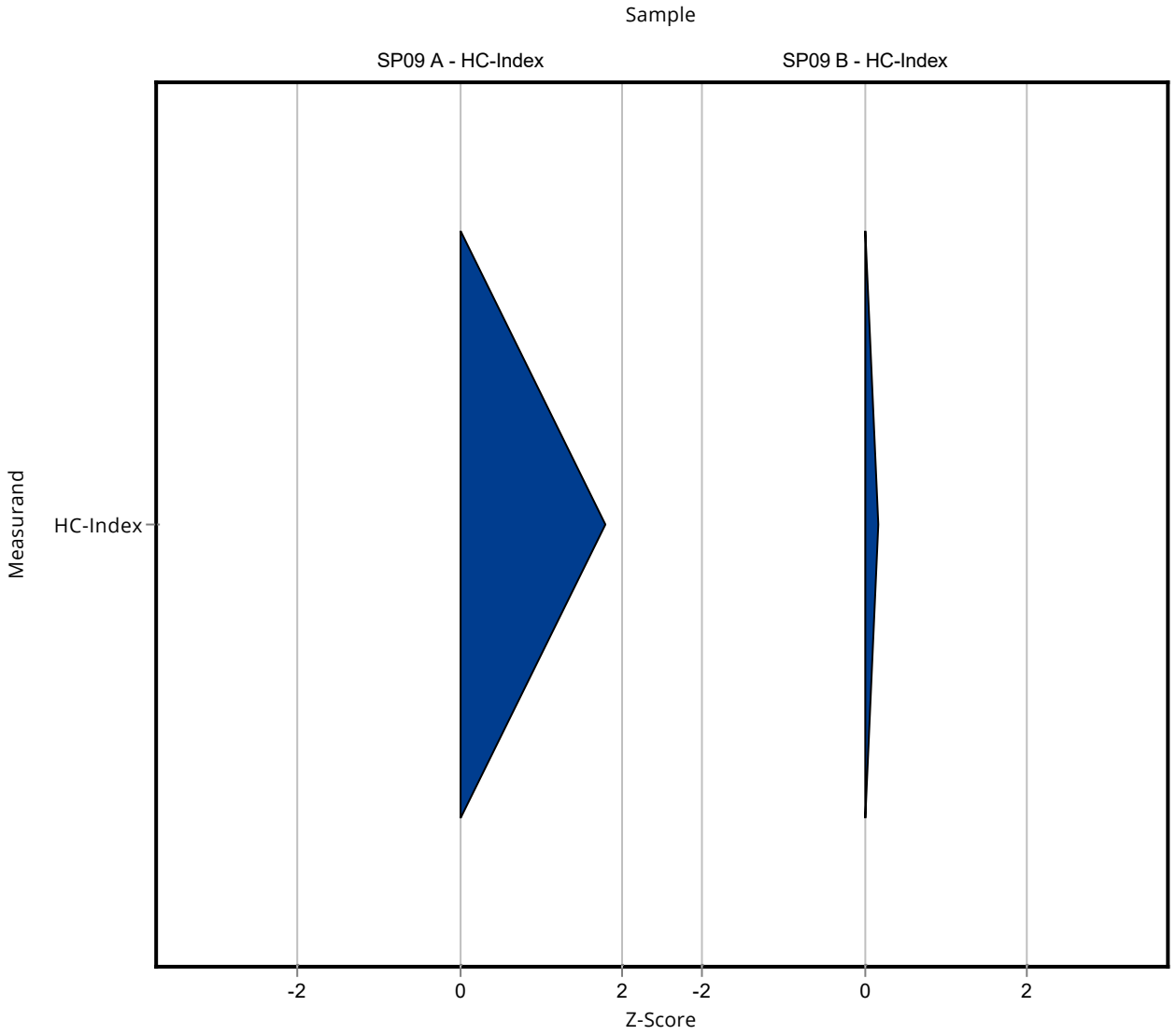
Labcode: LC0004

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.287 ± 0.07	0.0667	172	1.80

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.981 ± 0.239	0.367	107	0.18



Summary of results Sum parameters SP09 - En-Score

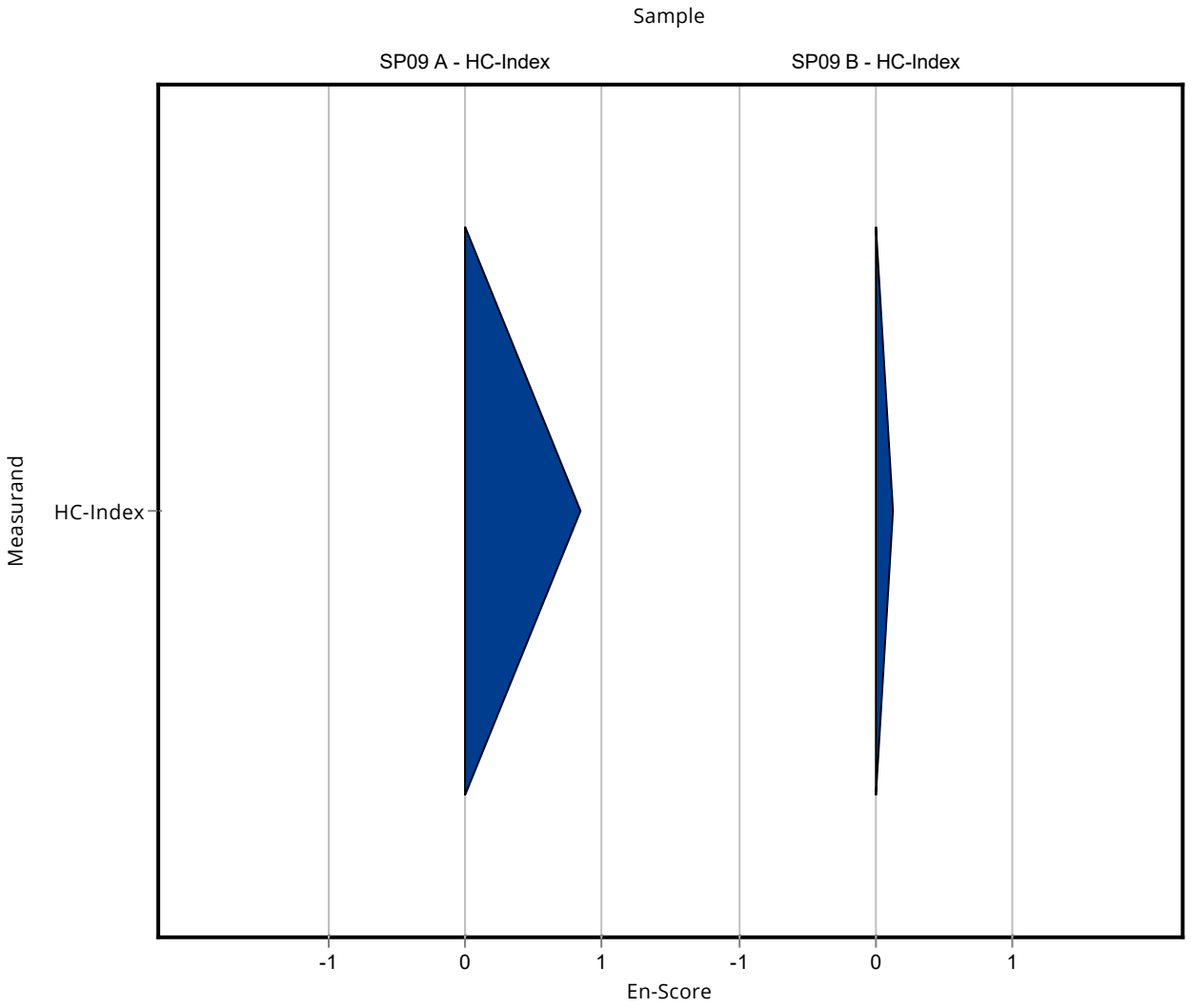
Labcode: LC0004

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.287	± 0.07	0.0667	172	0.85

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.981	± 0.239	0.367	107	0.13



Summary of results Sum parameters SP09 Labcode: LC0005

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.2317 ± 0.0405	0.0667	139	0.97

Sample: SP09KWIB

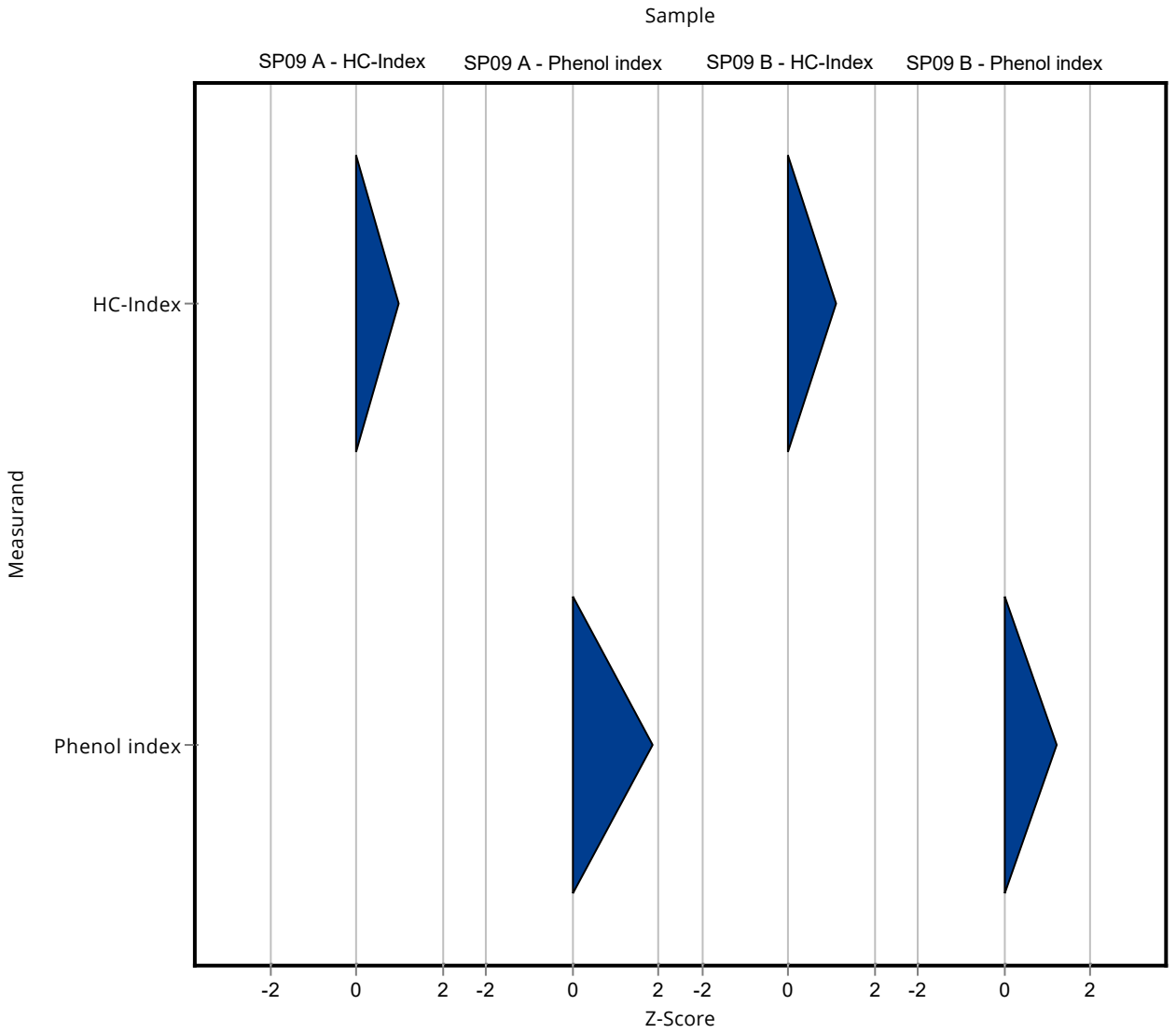
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.323 ± 0.231	0.367	144	1.11

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0293 ± 0.0044	0.00268	120	1.85

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.914 ± 0.137	0.0886	113	1.23


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0005

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.2317 ± 0.0405	0.0667	139	0.77

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.323 ± 0.231	0.367	144	0.85

Sample: SP09PHIA

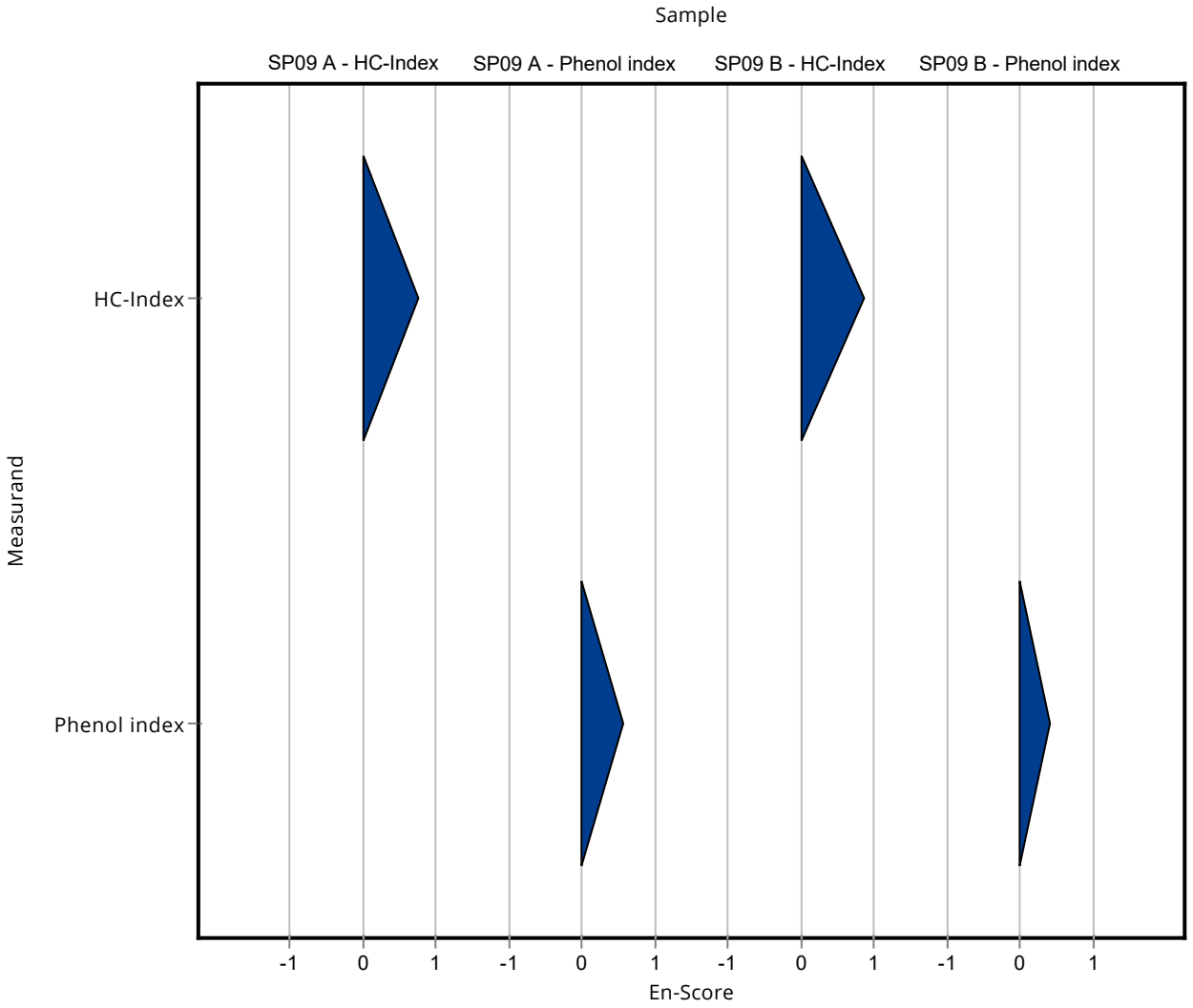
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0293 ± 0.0044	0.00268	120	0.56

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.914 ± 0.137	0.0886	113	0.40

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0005



Summary of results Sum parameters SP09 Labcode: LC0006

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.171 ± 0.034	0.0667	103	0.06

Sample: SP09KWIB

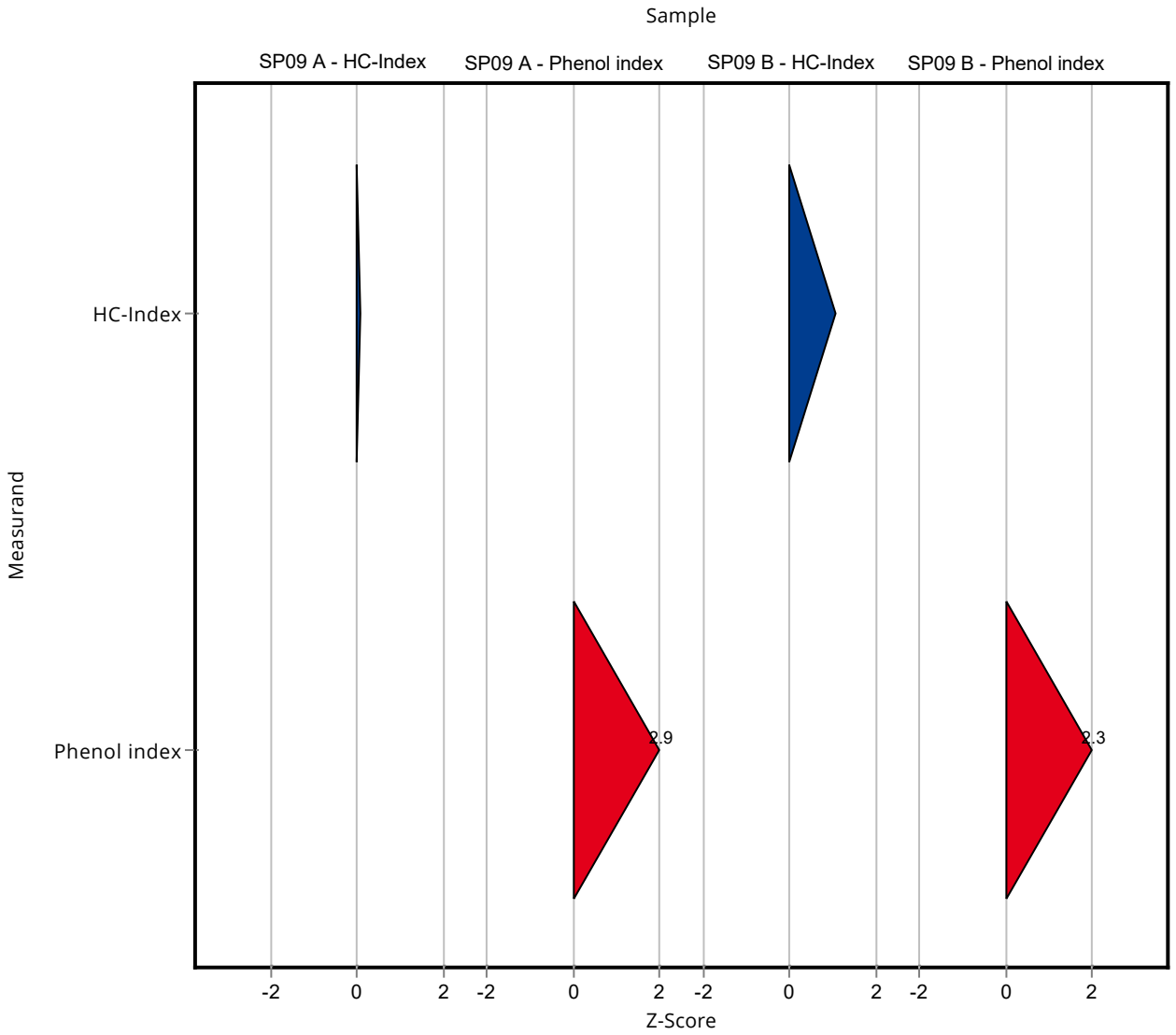
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.31 ± 0.26	0.367	143	1.07

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.032 ± 0.0032	0.00268	131	2.86

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	1.01 ± 0.1	0.0886	125	2.31


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
2.9
2.3
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.171 ± 0.034	0.0667	103	0.06

Sample: SP09KWIB

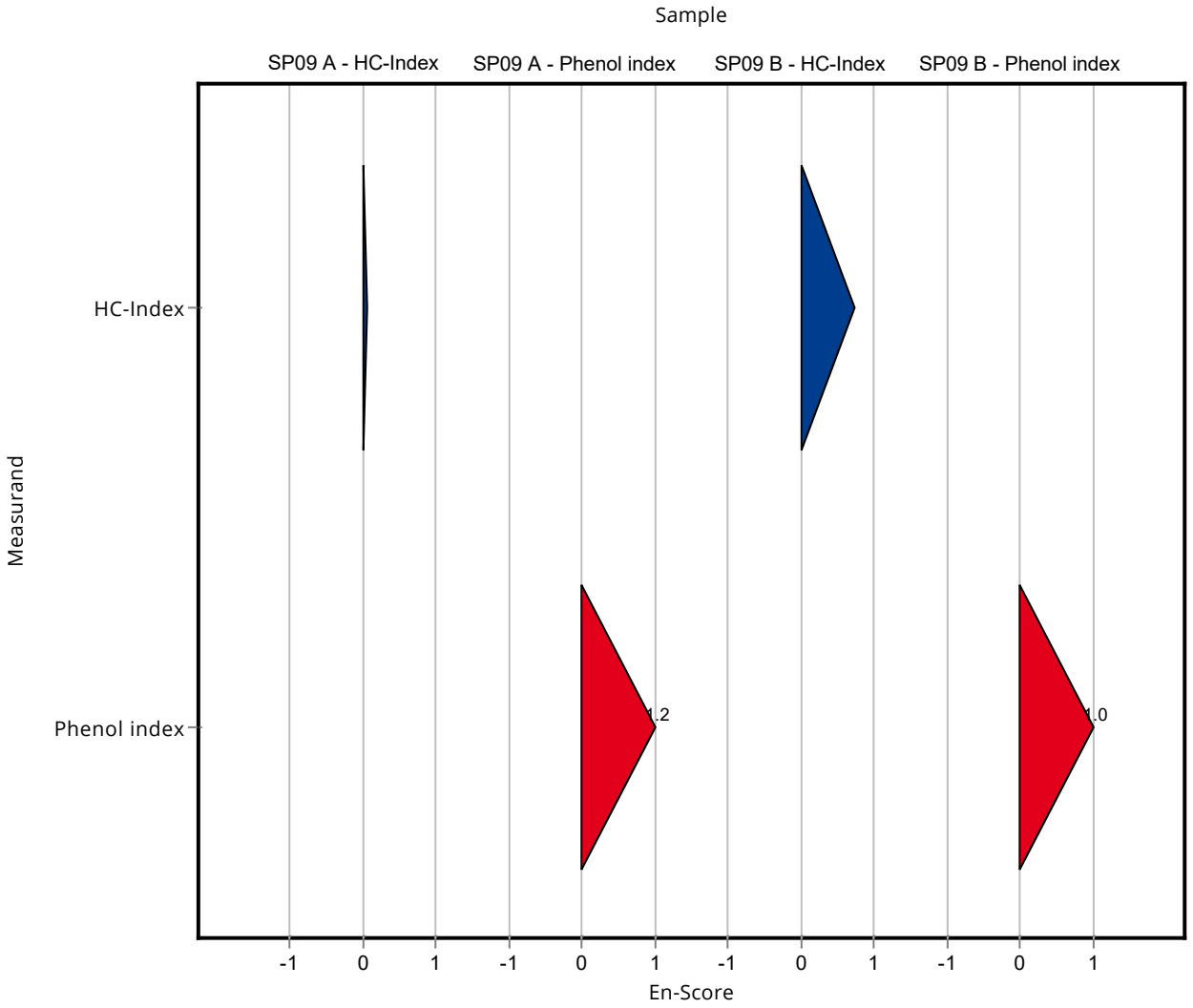
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.31 ± 0.26	0.367	143	0.74

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.032 ± 0.0032	0.00268	131	1.17

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	1.01 ± 0.1	0.0886	125	1.02


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
1.2
1.0
-1
0
1
En-Score

Summary of results Sum parameters SP09

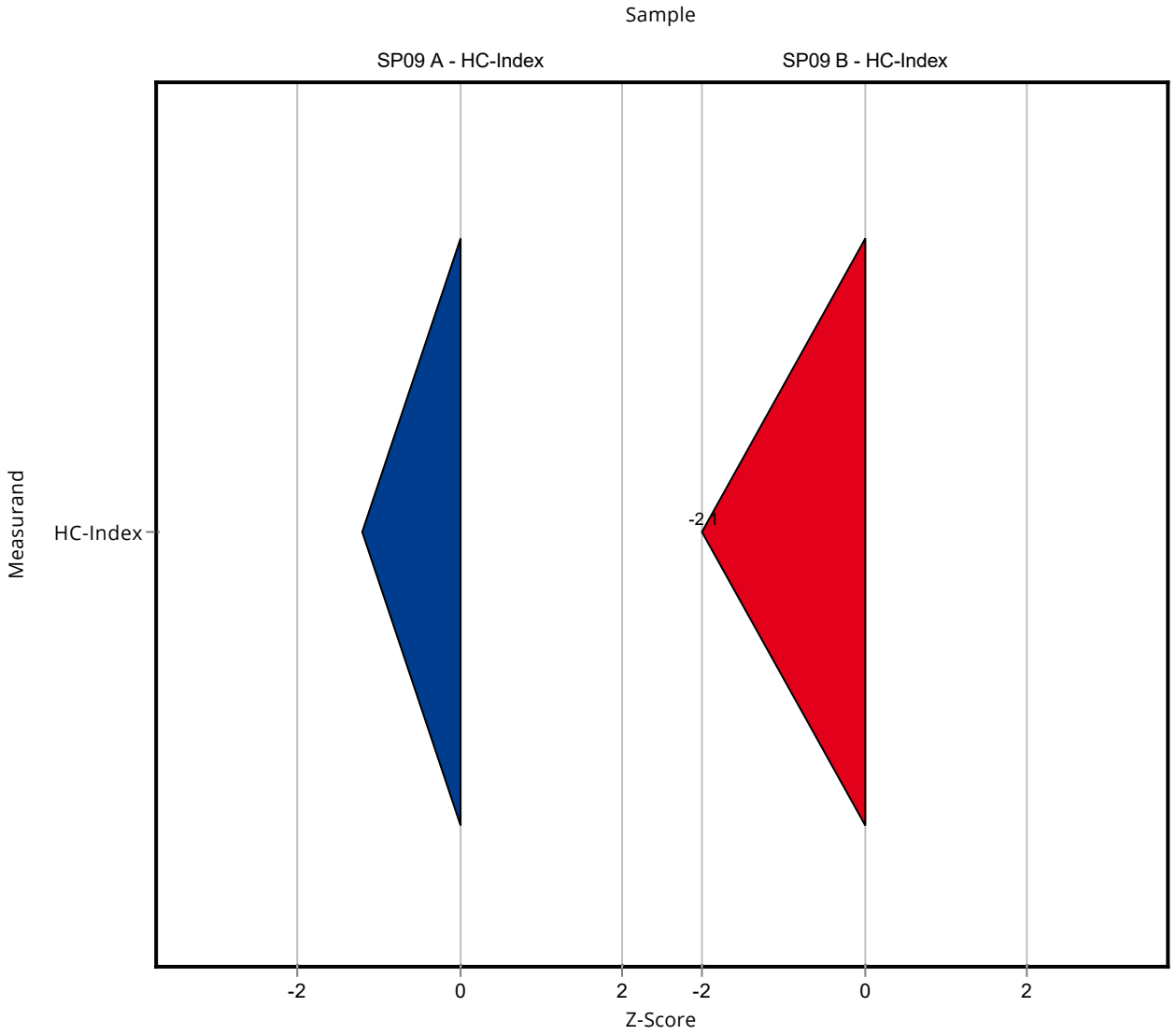
Labcode: LC0007

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.087 ± 0.0174	0.0667	52.2	-1.20

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.14 ± 0.028	0.367	15.3	-2.12



Summary of results Sum parameters SP09 - En-Score

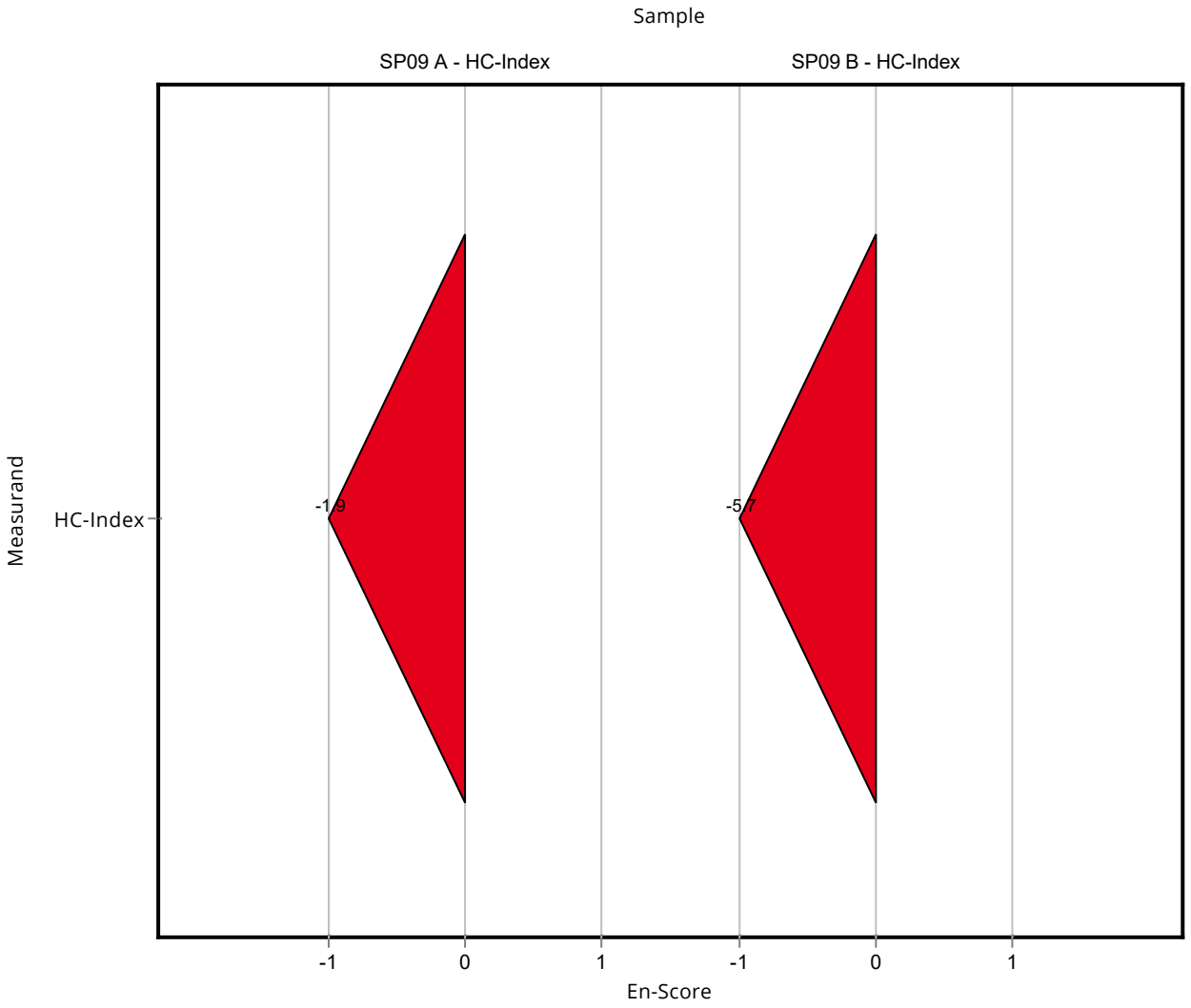
Labcode: LC0007

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.087	± 0.0174	0.0667	52.2	-1.91

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.14	± 0.028	0.367	15.3	-5.74



Summary of results Sum parameters SP09

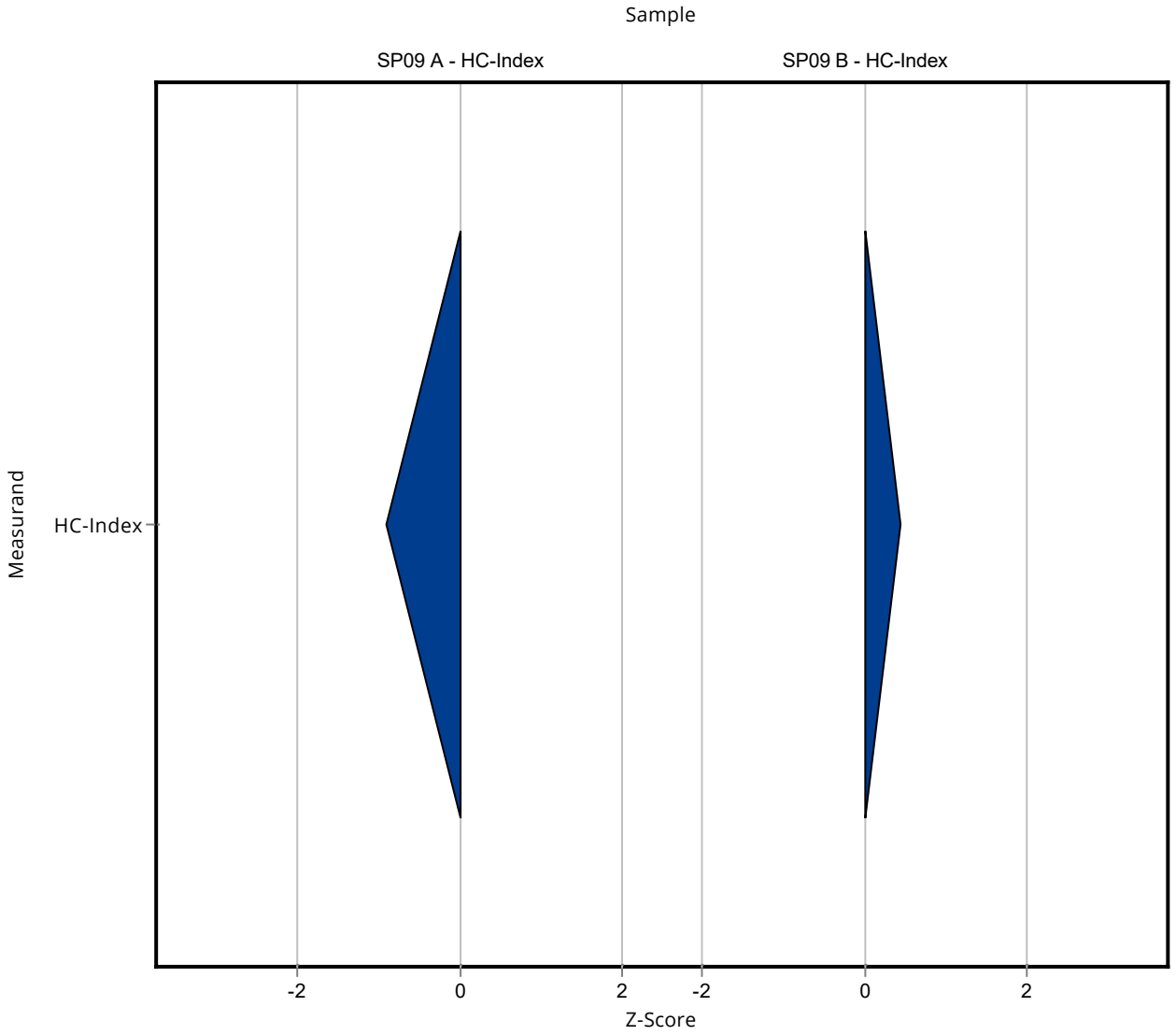
Labcode: LC0008

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.106 ± 0.05	0.0667	63.6	-0.91

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.08 ± 0.46	0.367	118	0.45



Summary of results Sum parameters SP09 - En-Score

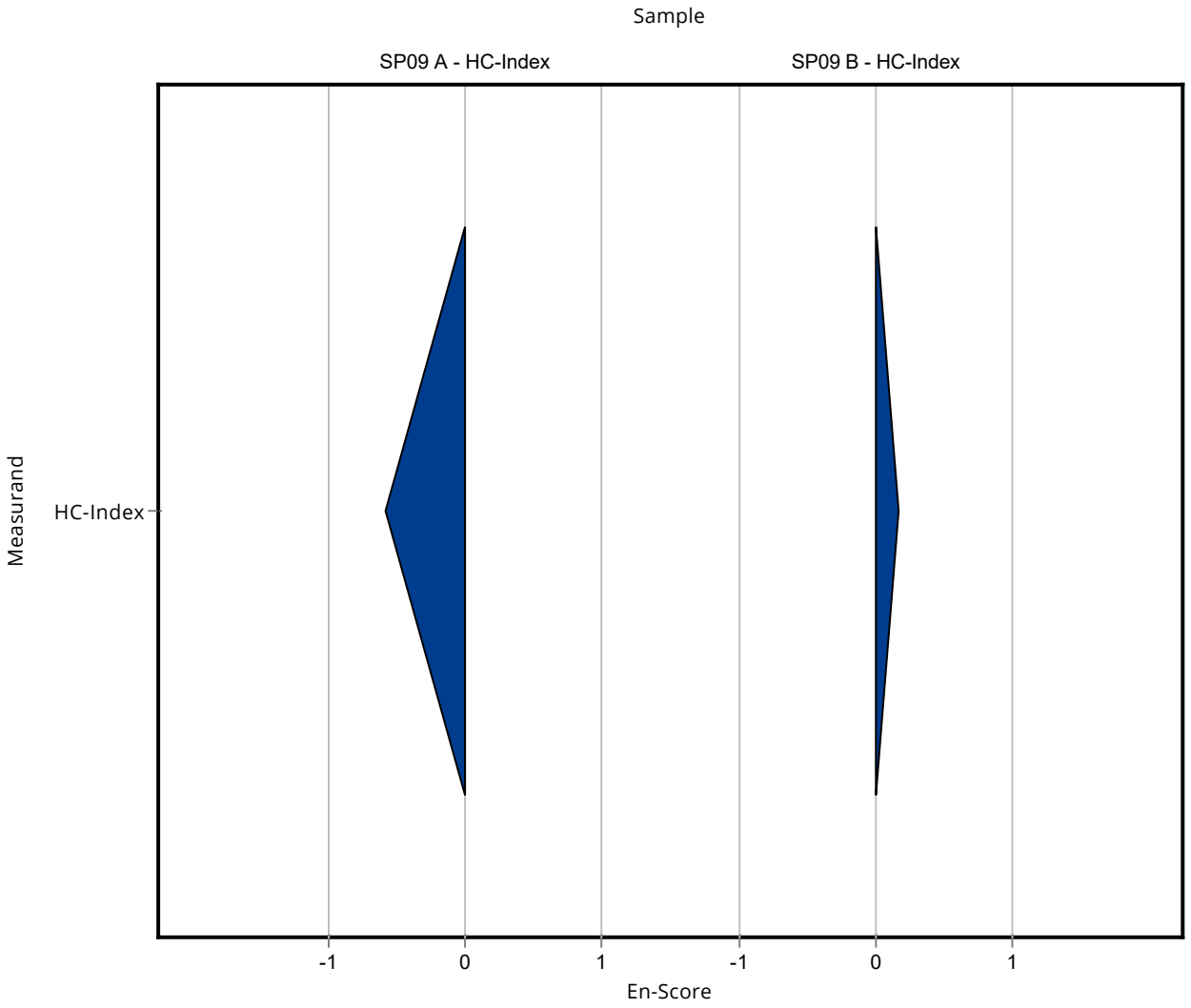
Labcode: LC0008

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.106 ± 0.05	0.0667	63.6	-0.59

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.08 ± 0.46	0.367	118	0.18



Summary of results Sum parameters SP09 Labcode: LC0009

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.22 ± 0.081	0.0667	132	0.80

Sample: SP09KWIB

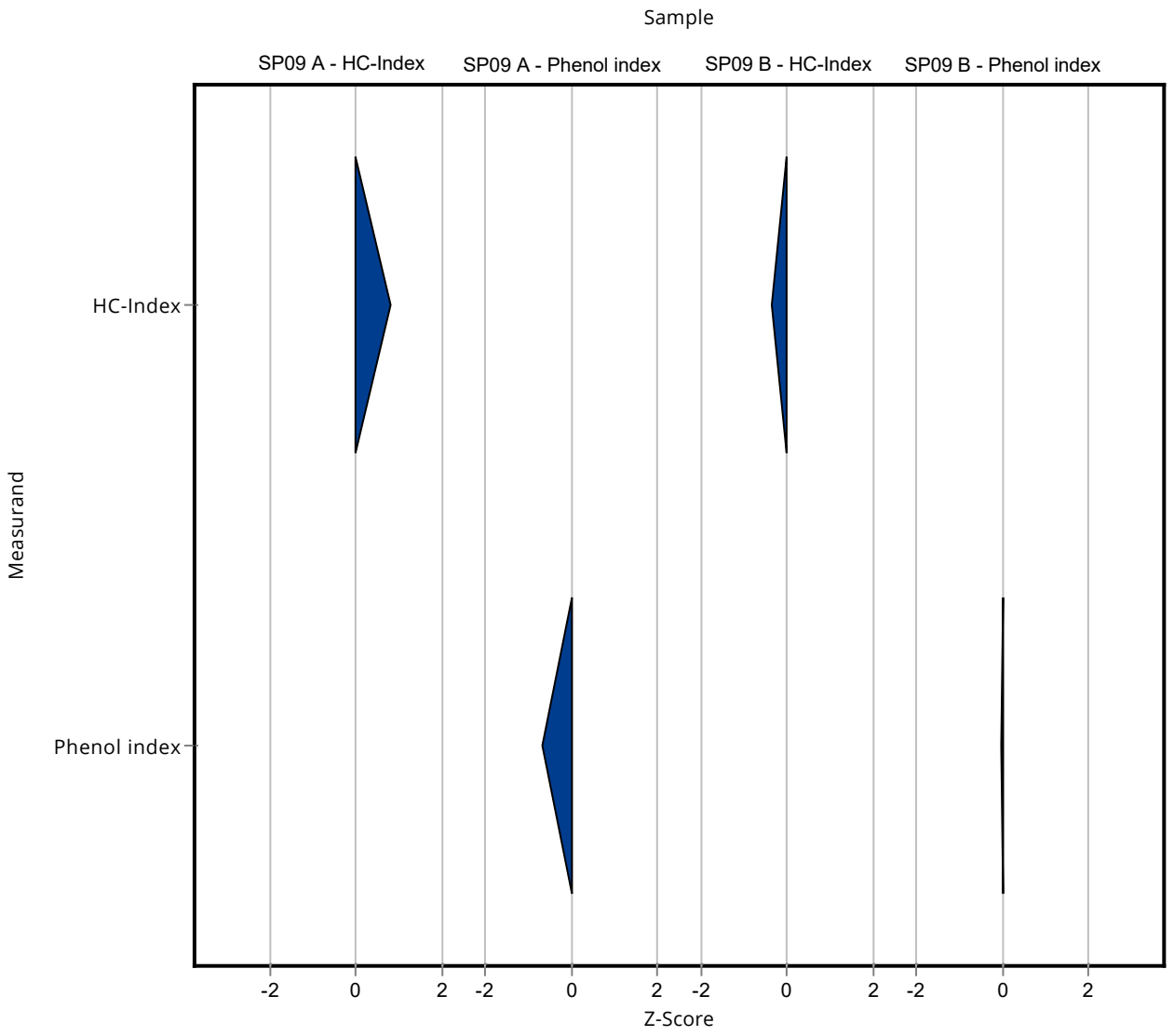
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.792 ± 0.293	0.367	86.4	-0.34

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0225 ± 0.0017	0.00268	92.4	-0.69

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.803 ± 0.059	0.0886	99.7	-0.03


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0009

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.22 ± 0.081	0.0667	132	0.33

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.792 ± 0.293	0.367	86.4	-0.21

Sample: SP09PHIA

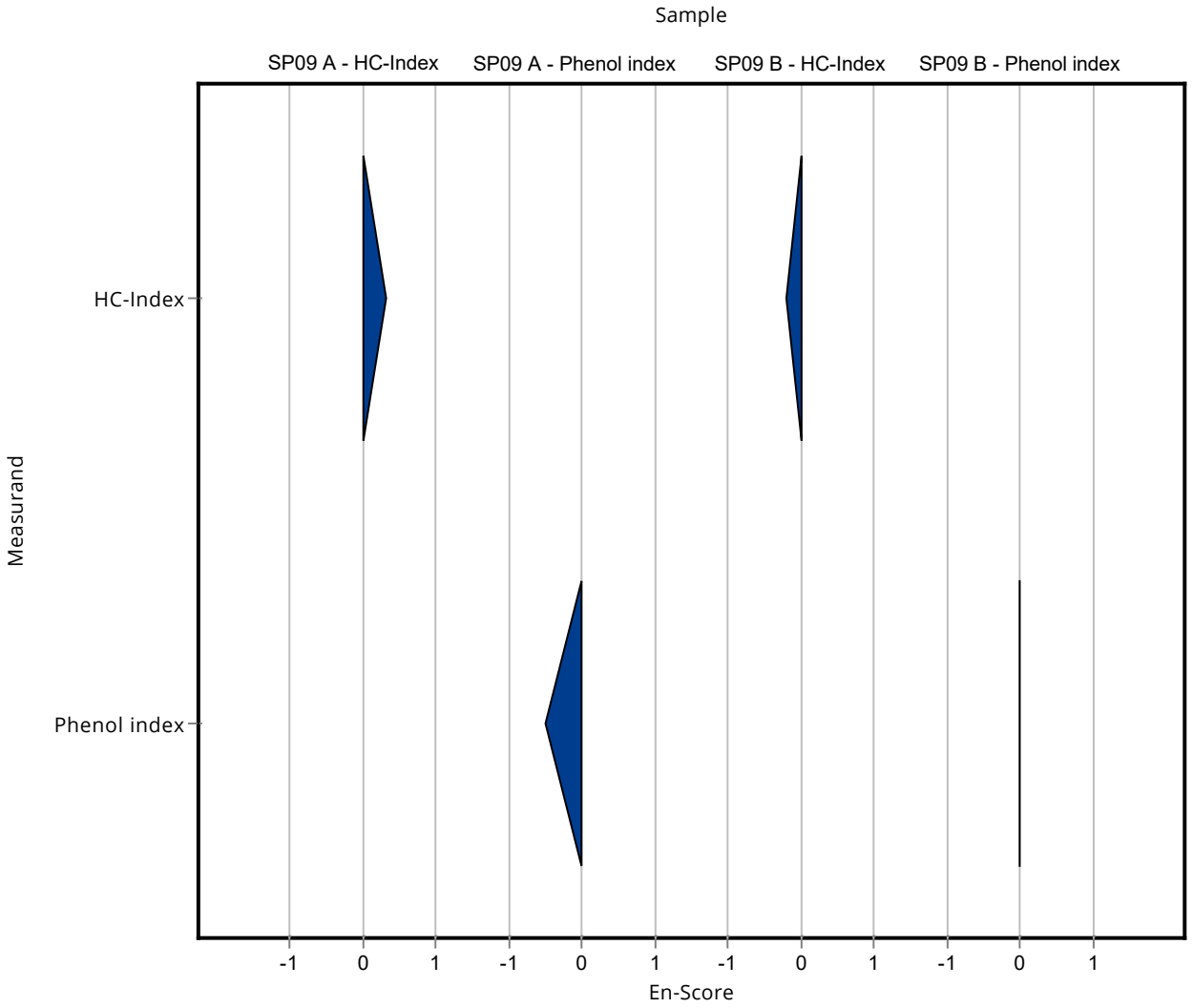
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0225 ± 0.0017	0.00268	92.4	-0.50

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.803 ± 0.059	0.0886	99.7	-0.02

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0009



Summary of results Sum parameters SP09 Labcode: LC0010

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.2023 ± 0.0465	0.0667	121	0.53

Sample: SP09KWIB

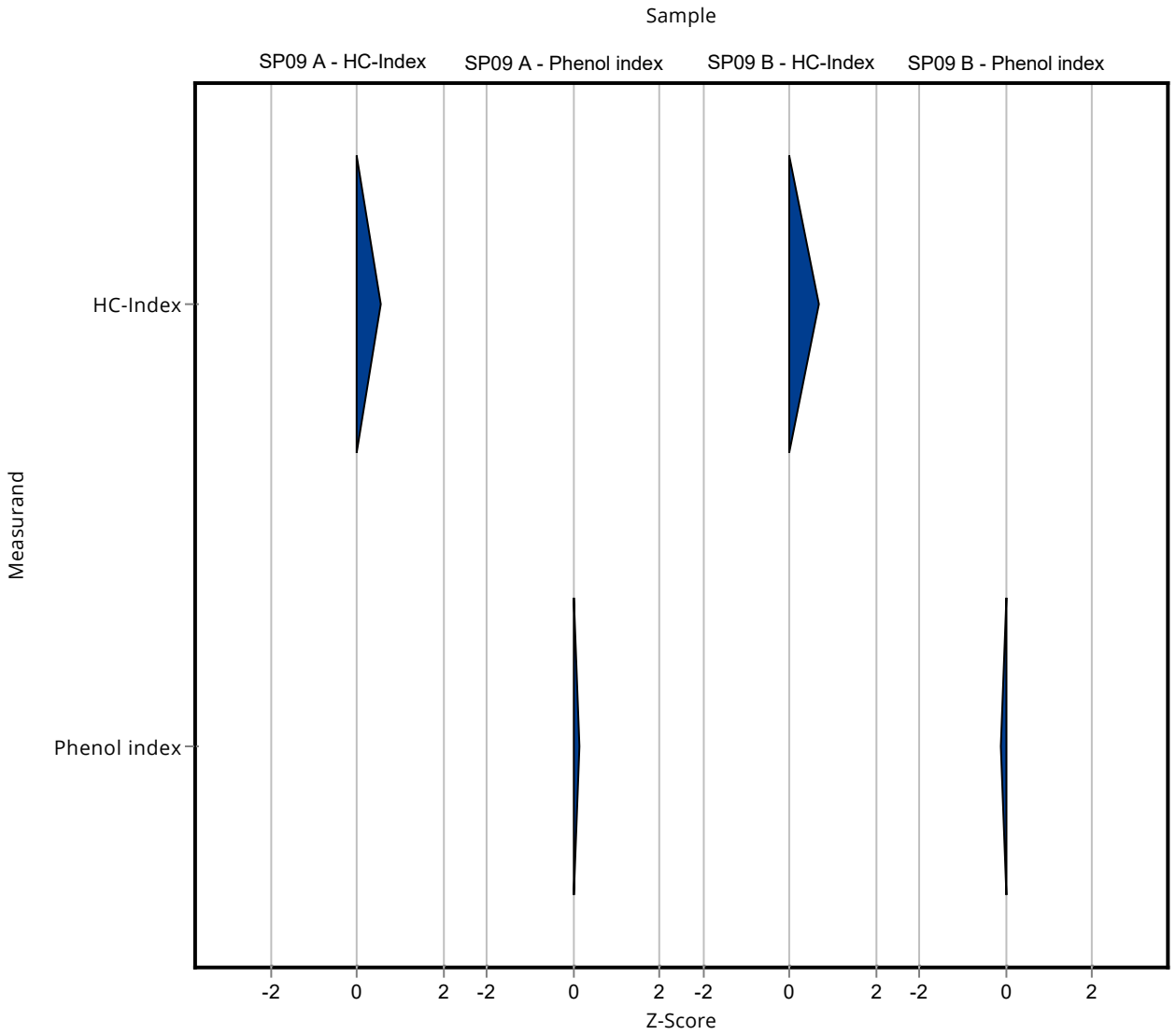
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.158 ± 0.2663	0.367	126	0.66

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.02475 ± 0.005445	0.00268	102	0.15

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.79675 ± 0.175285	0.0886	98.9	-0.10


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0010

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.2023	± 0.0465	0.0667	121	0.37

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	1.158	± 0.2663	0.367	126	0.44

Sample: SP09PHIA

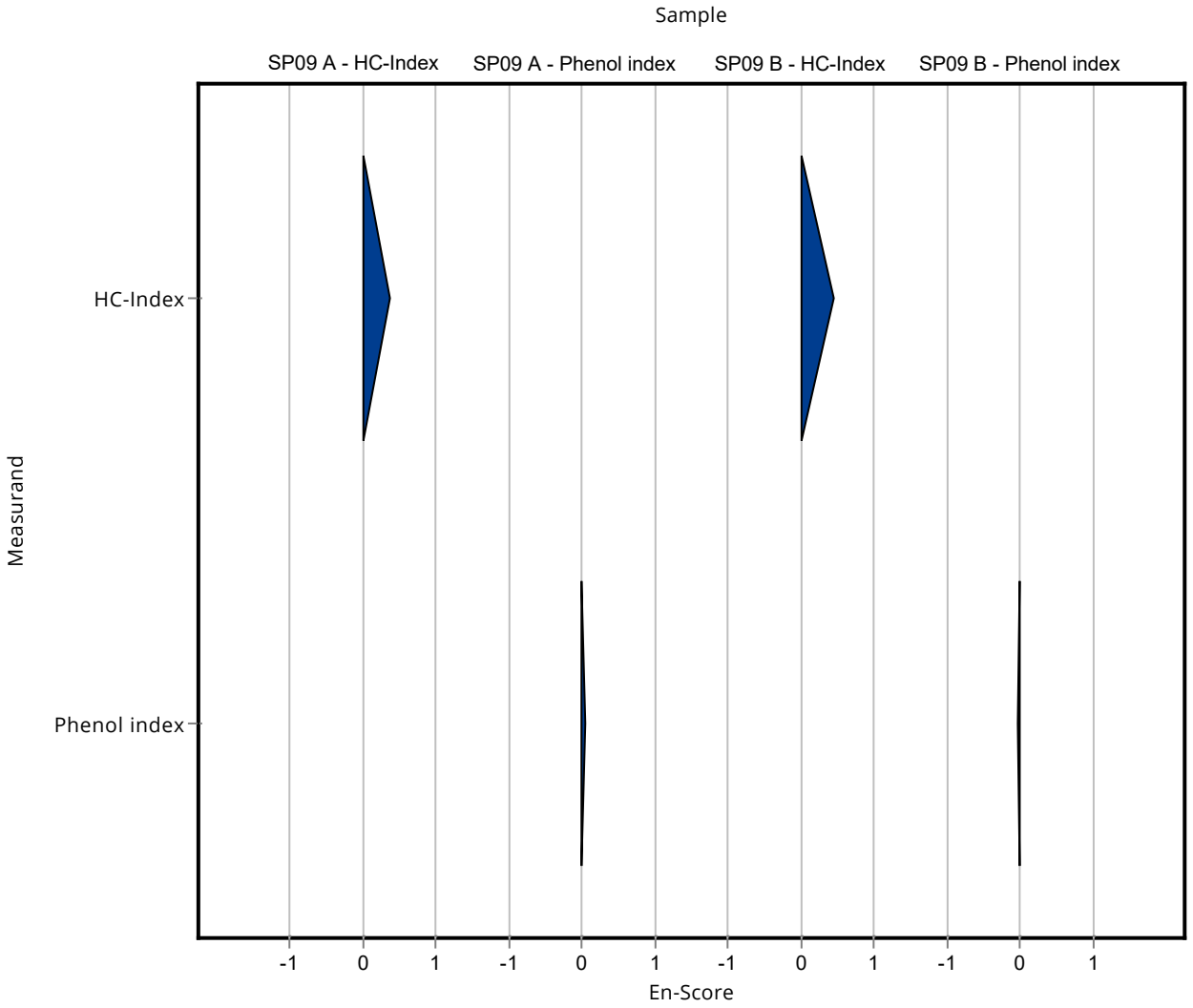
Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243	± 0.00146	0.02475	± 0.005445	0.00268	102	0.04

Sample: SP09PHIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805	± 0.0228	0.79675	± 0.175285	0.0886	98.9	-0.02

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0010



Summary of results Sum parameters SP09

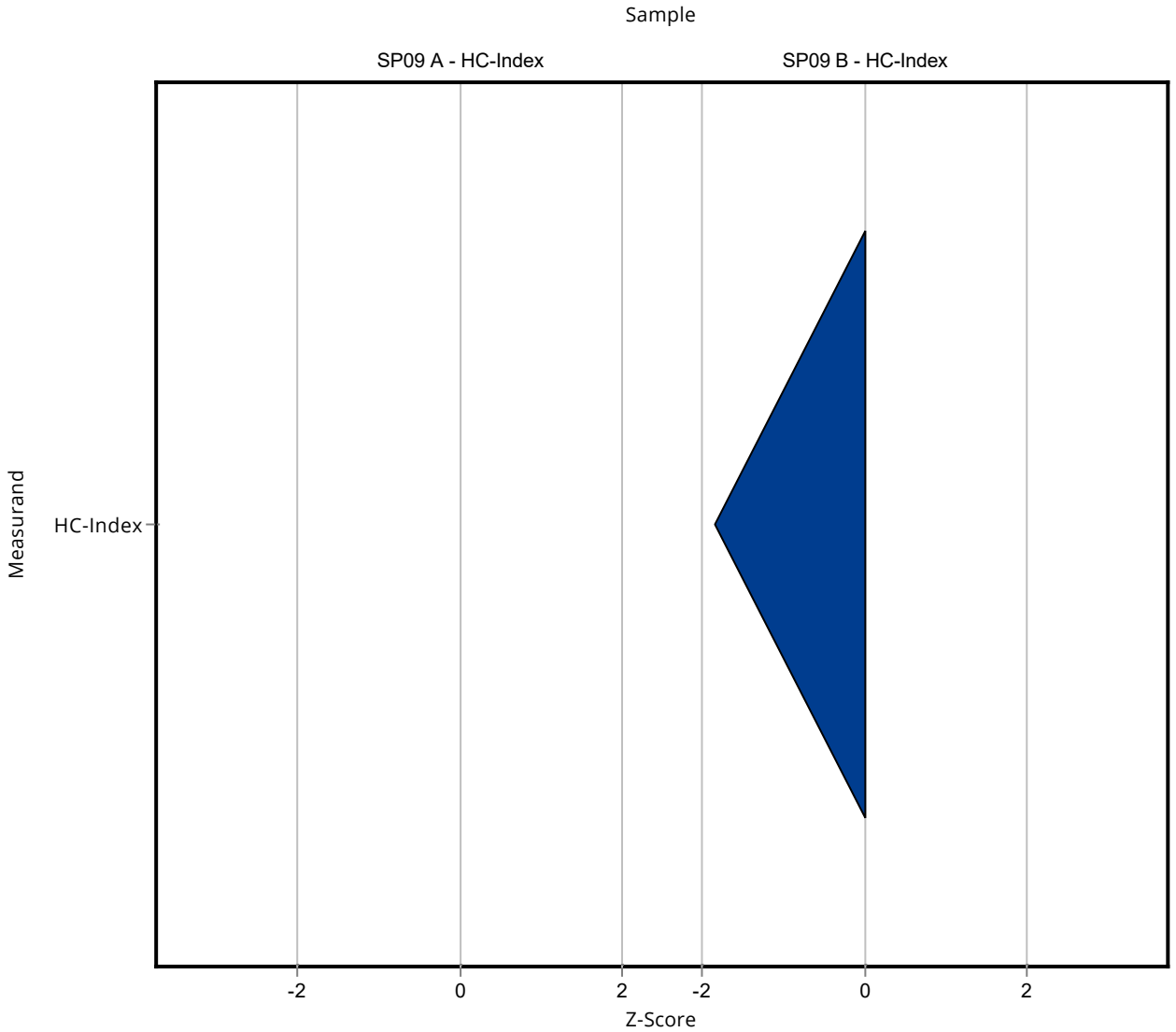
Labcode: LC0011

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	<0.1 (LOQ) ± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.243 ± 0.07	0.367	26.5	-1.84



Summary of results Sum parameters SP09 - En-Score

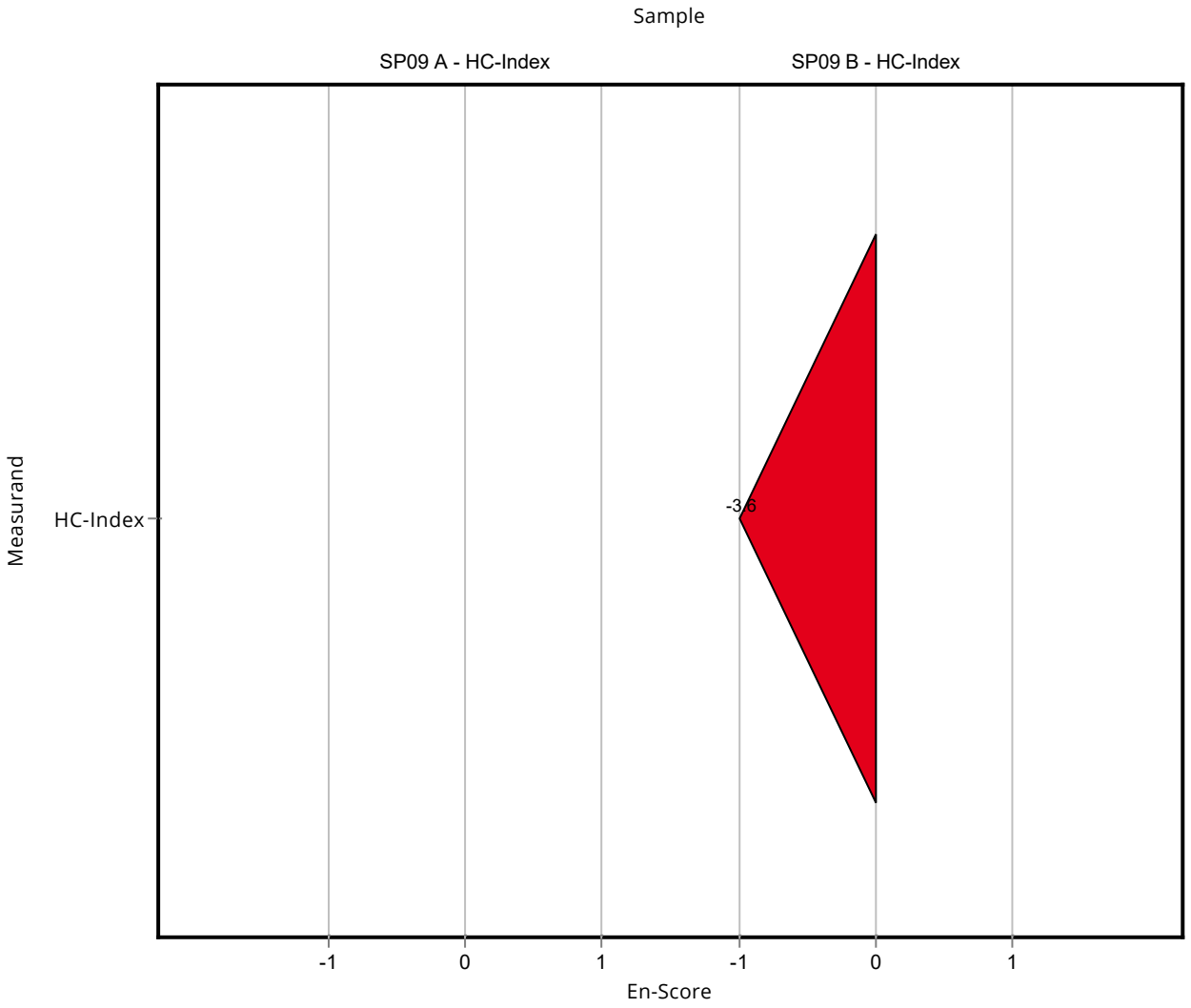
Labcode: LC0011

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	<0.1 (LOQ)	± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.243	± 0.07	0.367	26.5	-3.61



Summary of results Sum parameters SP09

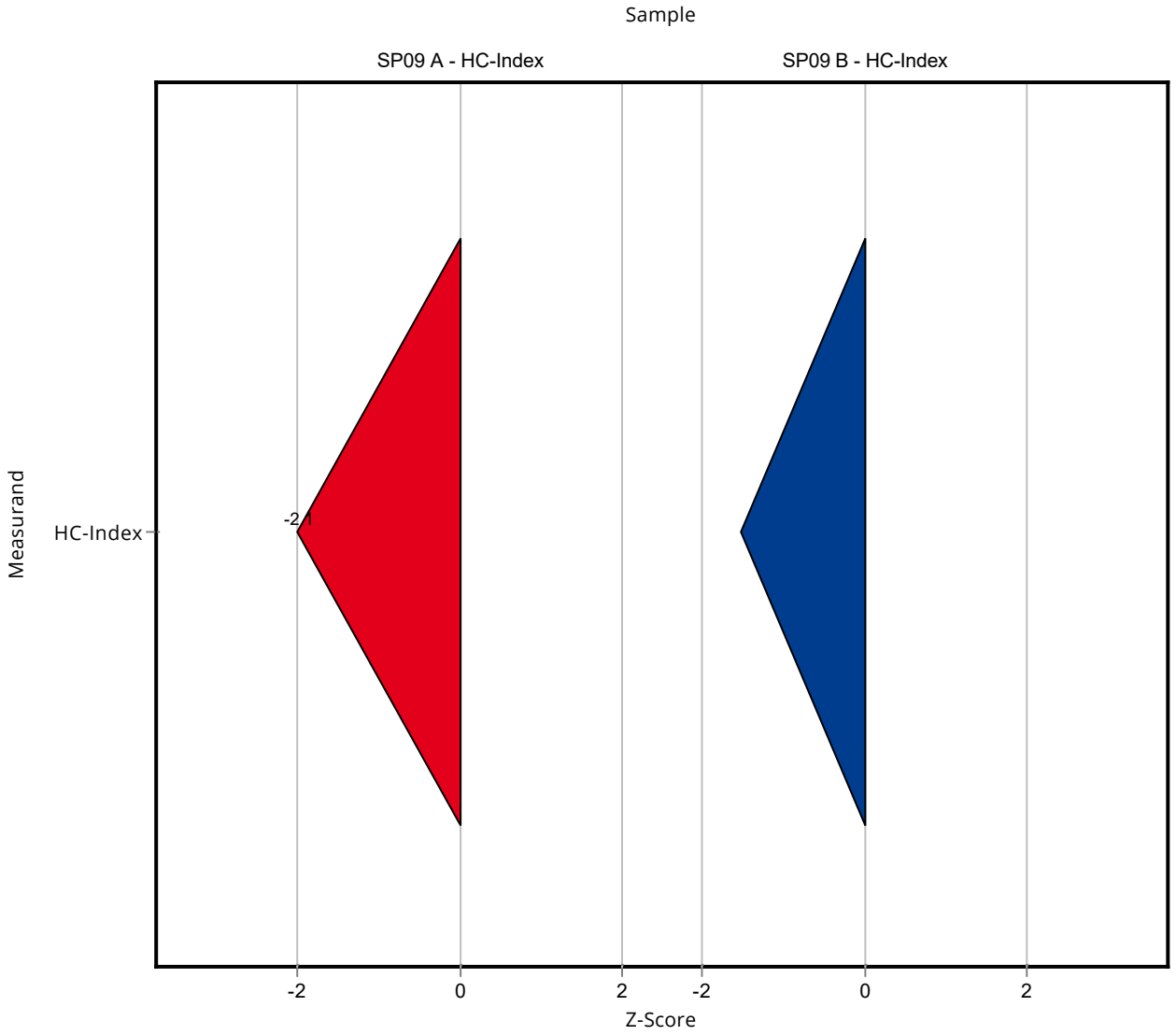
Labcode: LC0012

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.03 ± 0.012	0.0667	18	-2.05

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.354 ± 0.145	0.367	38.6	-1.53



Summary of results Sum parameters SP09 - En-Score

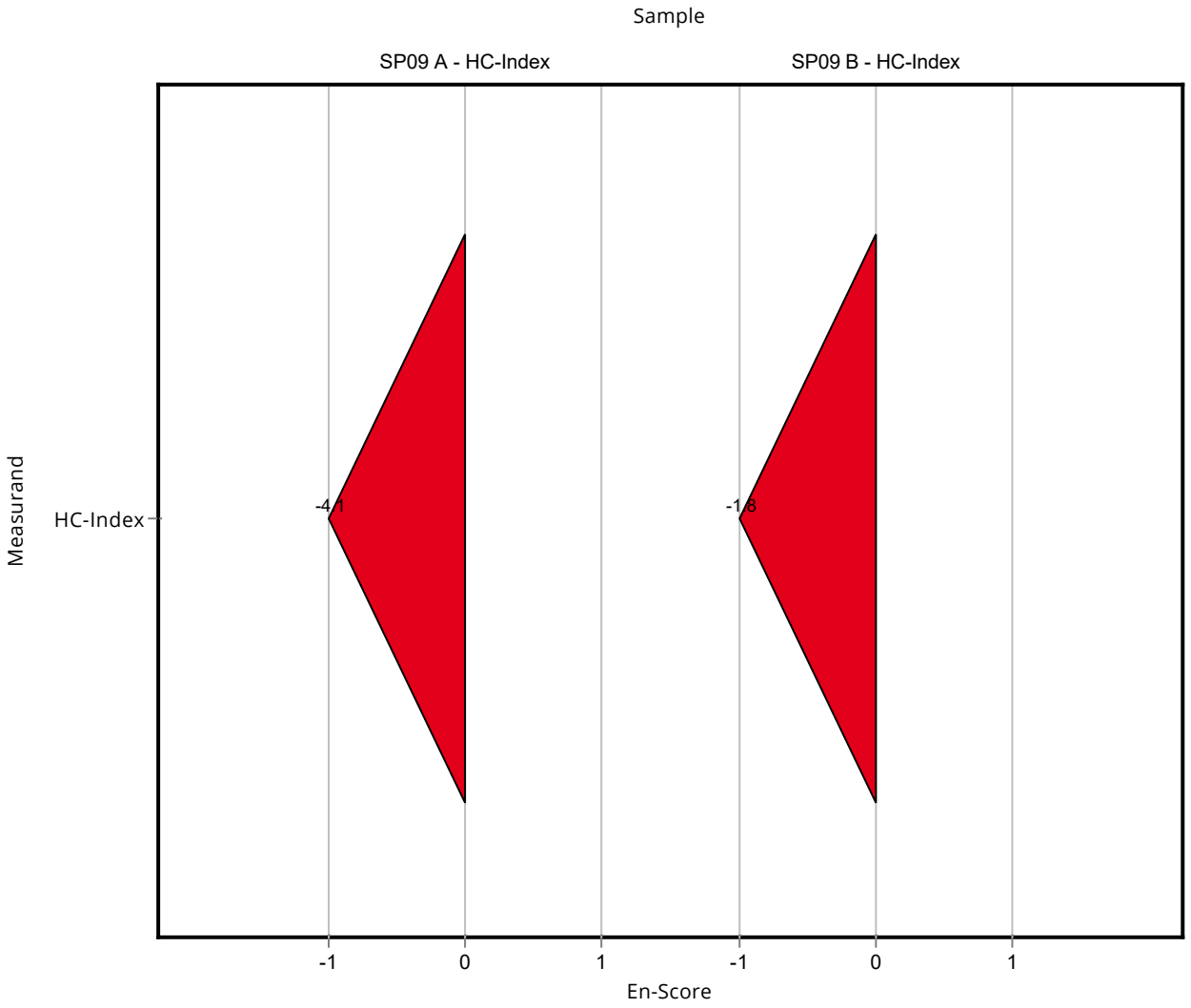
Labcode: LC0012

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.03 ± 0.012	0.0667	18	-4.10

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.354 ± 0.145	0.367	38.6	-1.79



Summary of results Sum parameters SP09 Labcode: LC0013

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.41 ± 0.03	0.0667	246	3.65

Sample: SP09KWIB

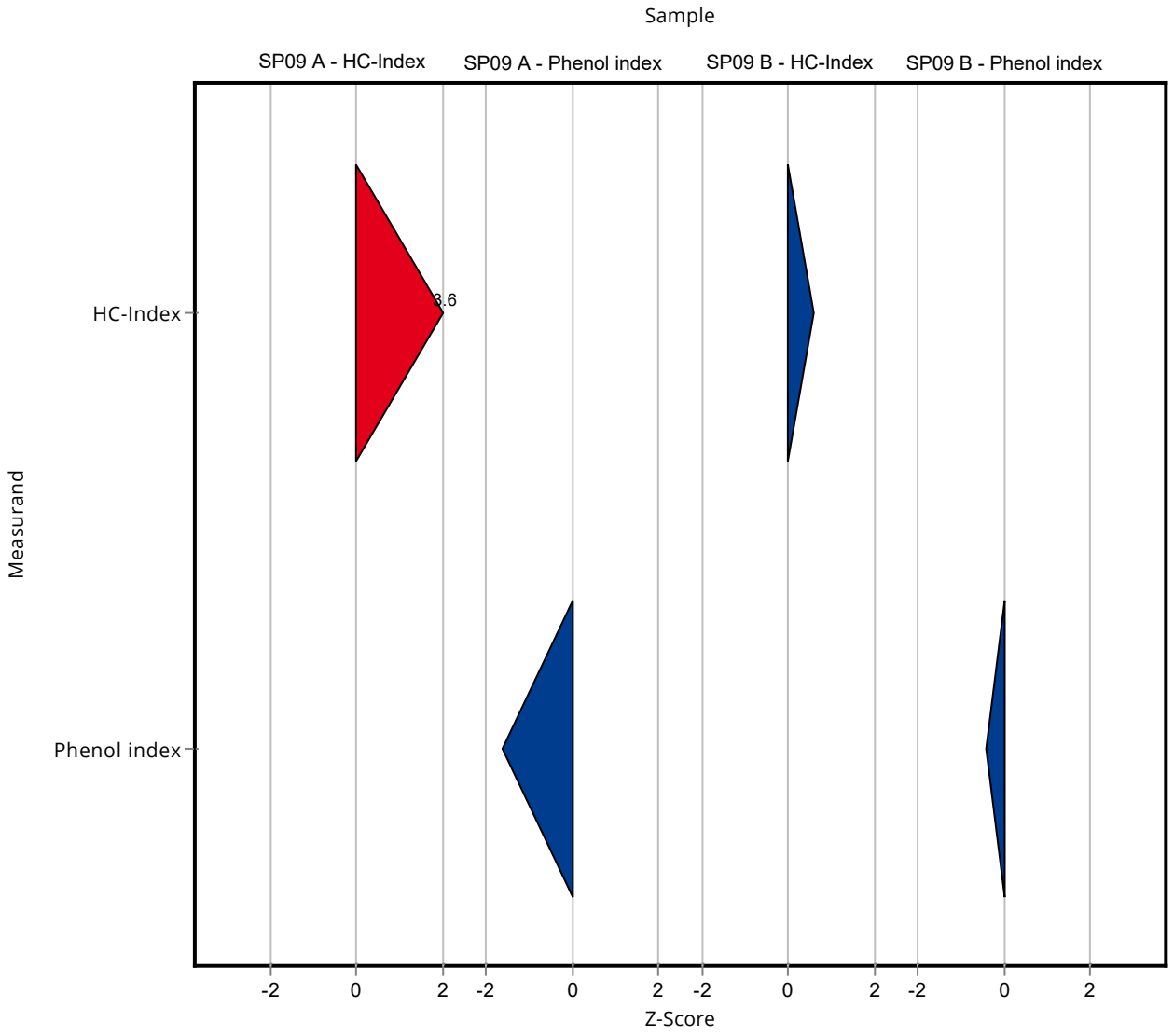
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.13 ± 0.09	0.367	123	0.58

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.02 ± 0.002	0.00268	82.1	-1.62

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.77 ± 0.08	0.0886	95.6	-0.40


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.41 ± 0.03	0.0667	246	3.78

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.13 ± 0.09	0.367	123	0.98

Sample: SP09PHIA

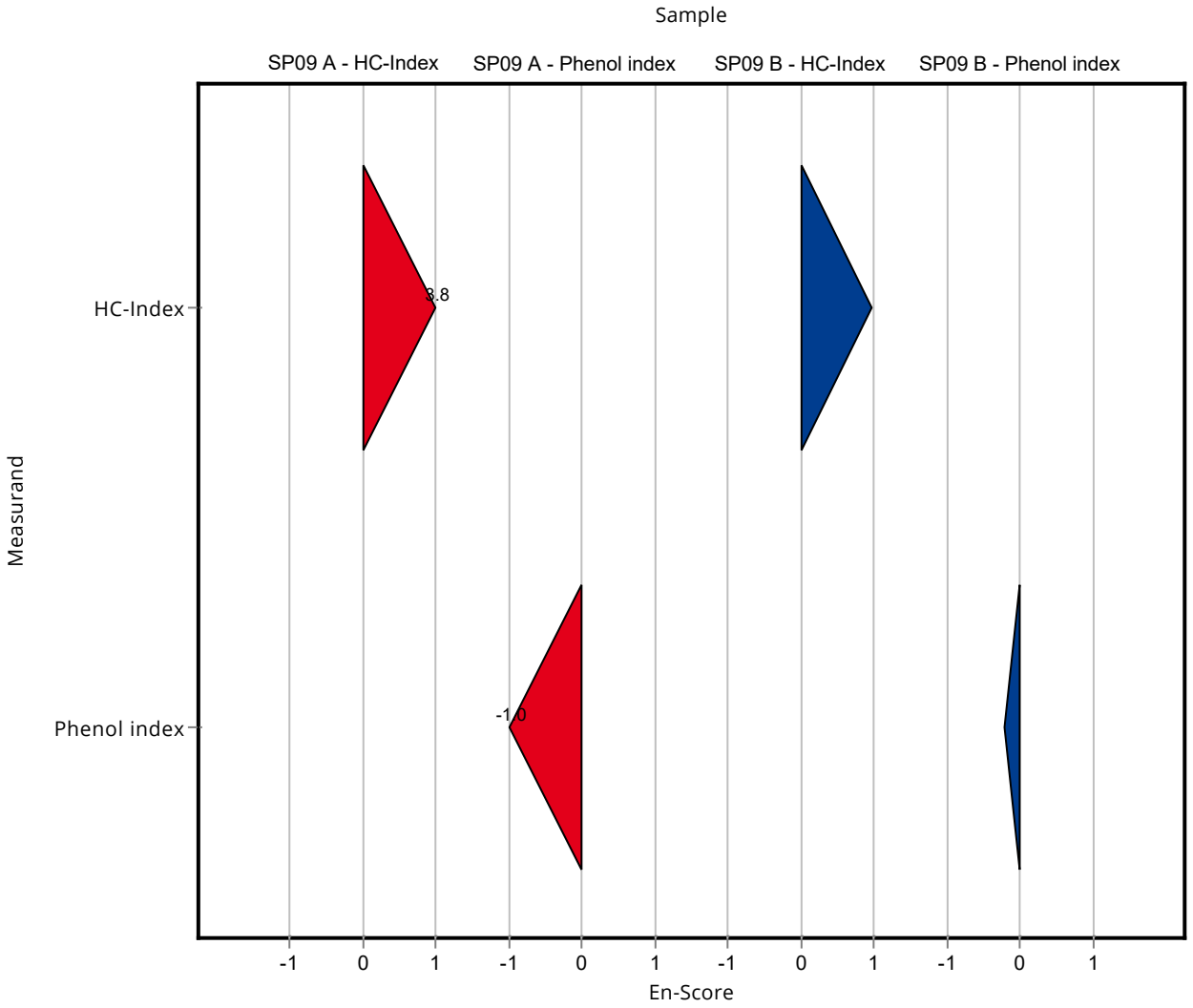
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.02 ± 0.002	0.00268	82.1	-1.02

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.77 ± 0.08	0.0886	95.6	-0.22

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0013



Summary of results Sum parameters SP09

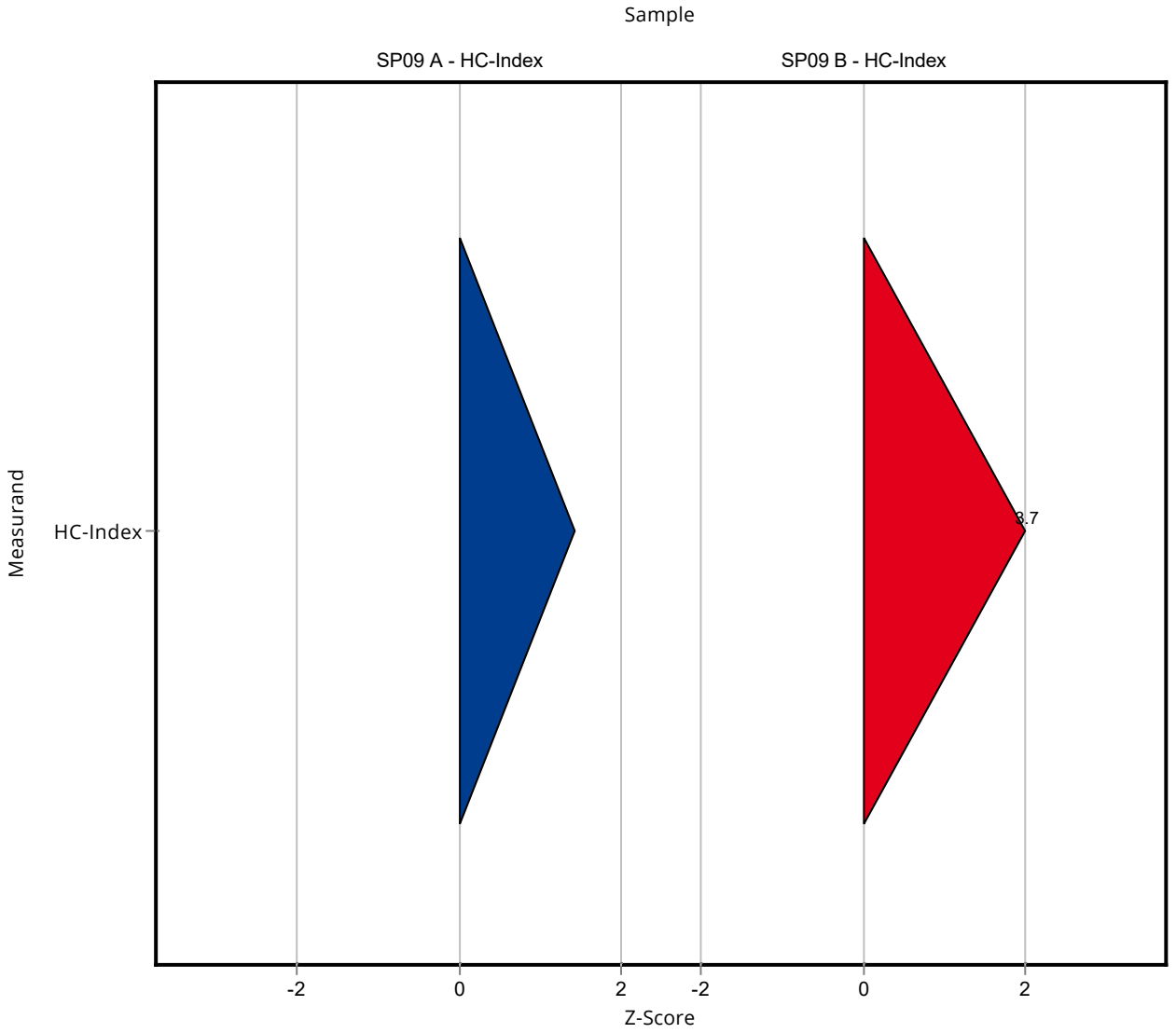
Labcode: LC0014

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.262 ± 0.06	0.0667	157	1.43

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	2.257 ± 0.482	0.367	246	3.66



Summary of results Sum parameters SP09 - En-Score

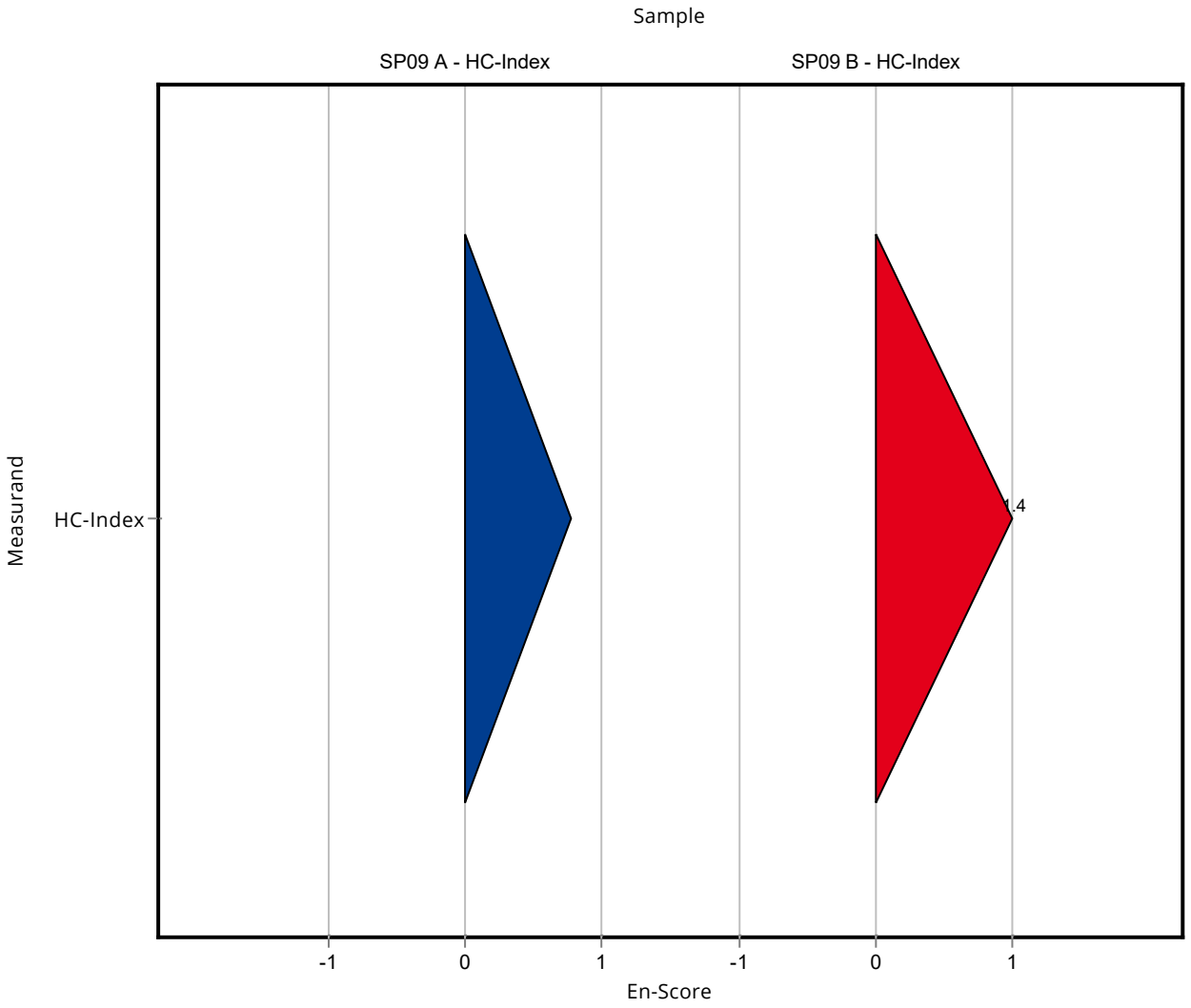
Labcode: LC0014

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.262 ± 0.06	0.0667	157	0.78

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	2.257 ± 0.482	0.367	246	1.38



Summary of results Sum parameters SP09

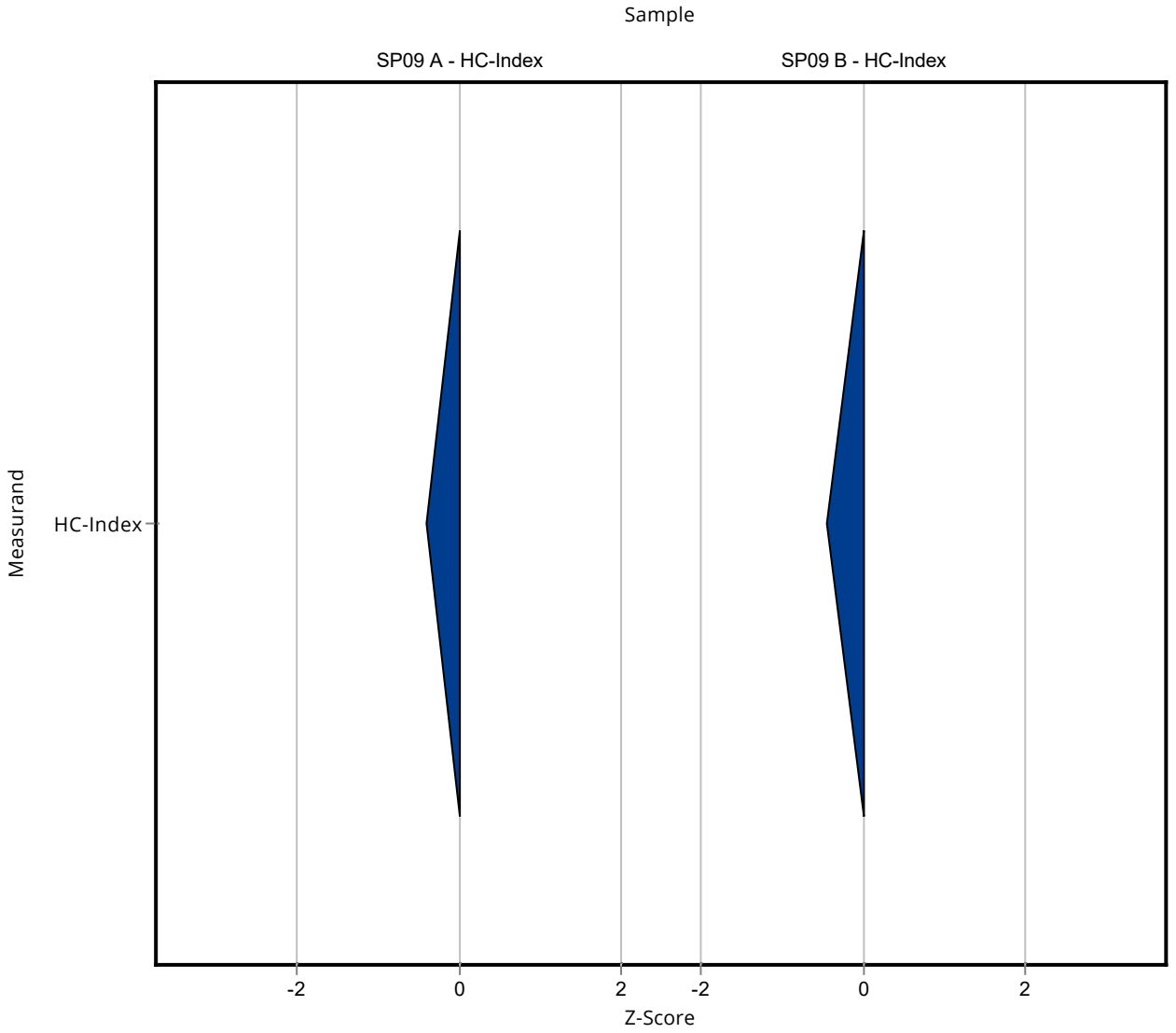
Labcode: LC0015

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.14 ± 0.031	0.0667	83.9	-0.40

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.75 ± 0.165	0.367	81.8	-0.45



Summary of results Sum parameters SP09 - En-Score

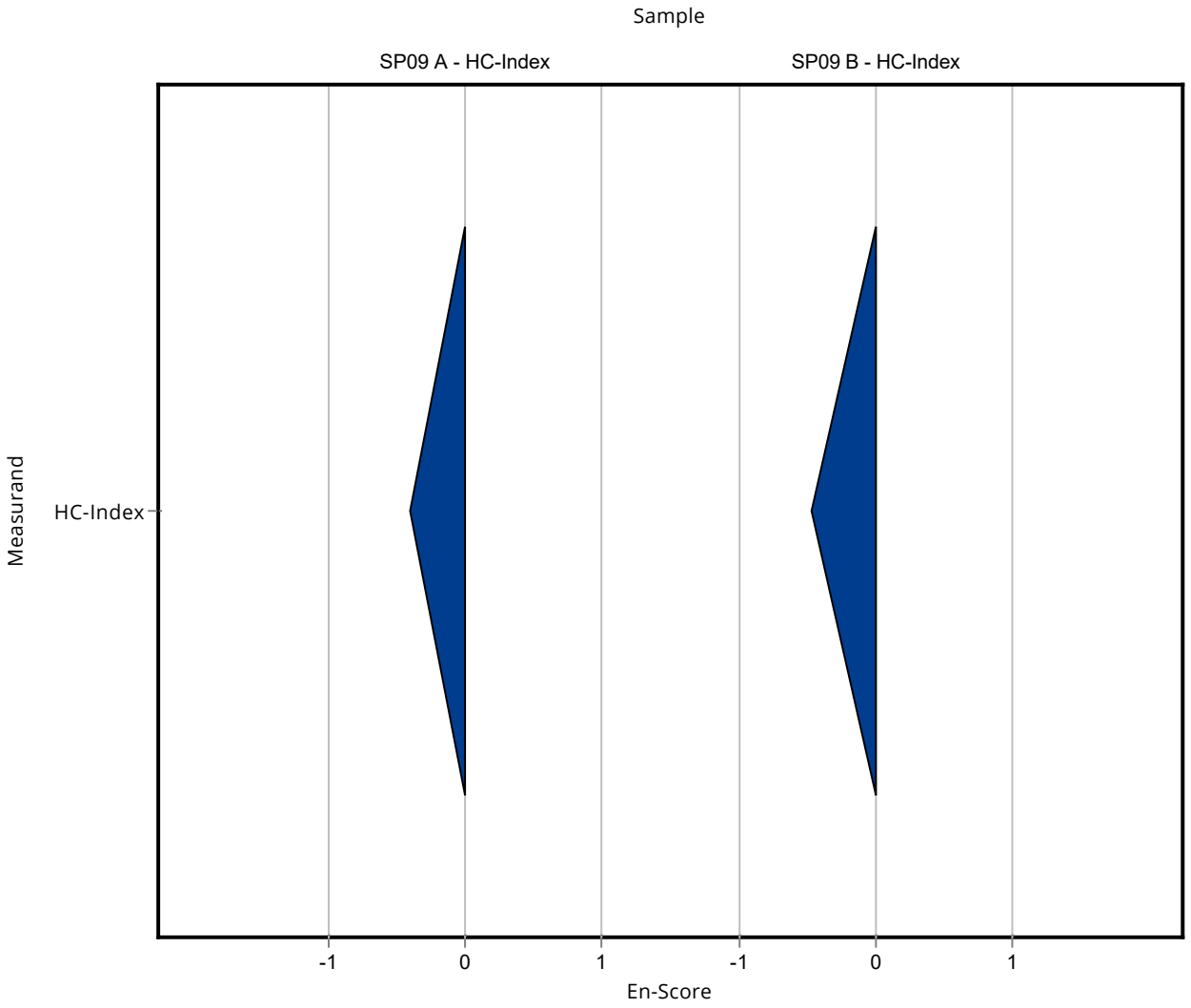
Labcode: LC0015

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.14	± 0.031	0.0667	83.9	-0.40

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.75	± 0.165	0.367	81.8	-0.47



Summary of results Sum parameters SP09

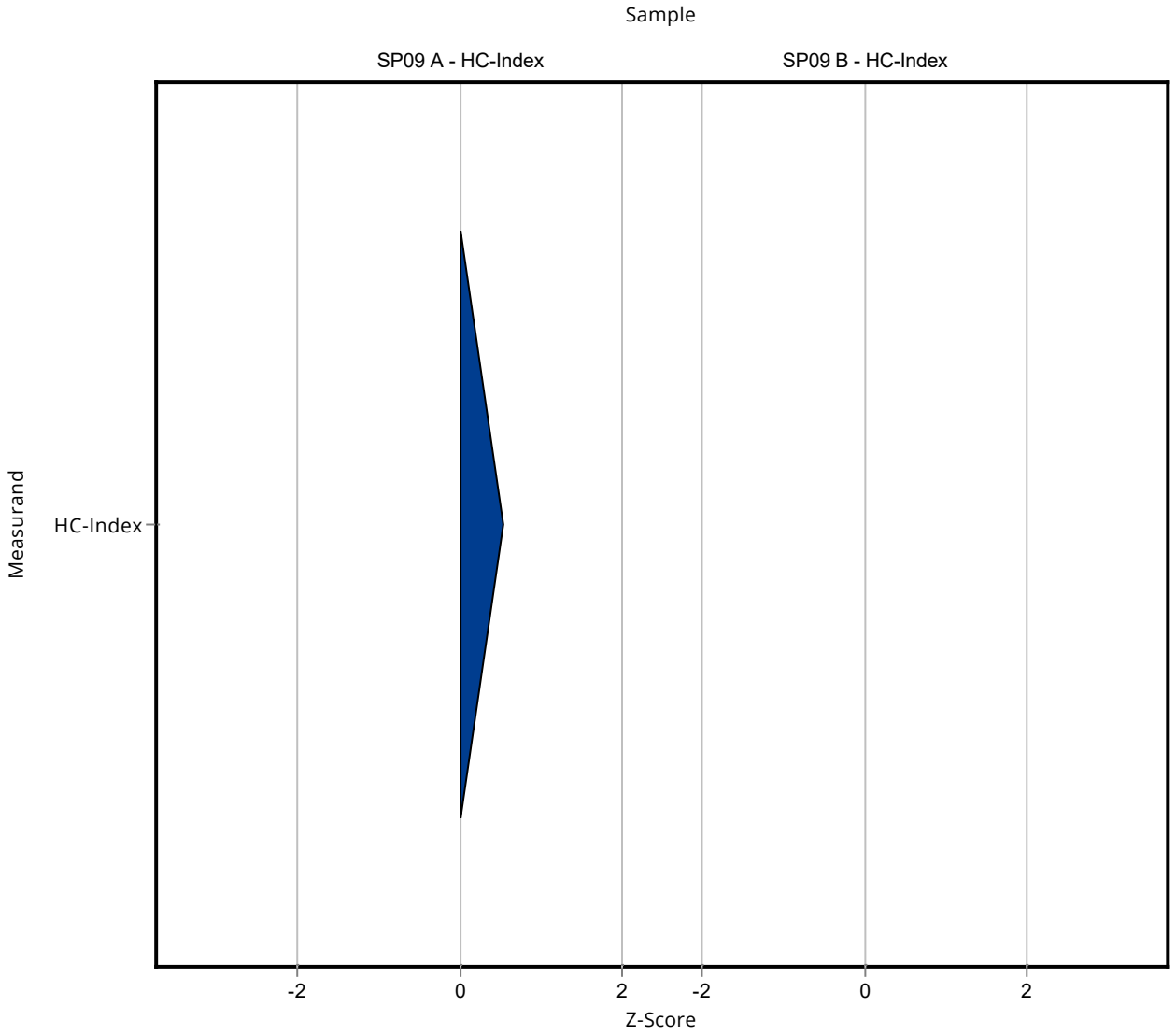
Labcode: LC0016

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.203 ± 0.011	0.0667	122	0.54

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-



Summary of results Sum parameters SP09 - En-Score

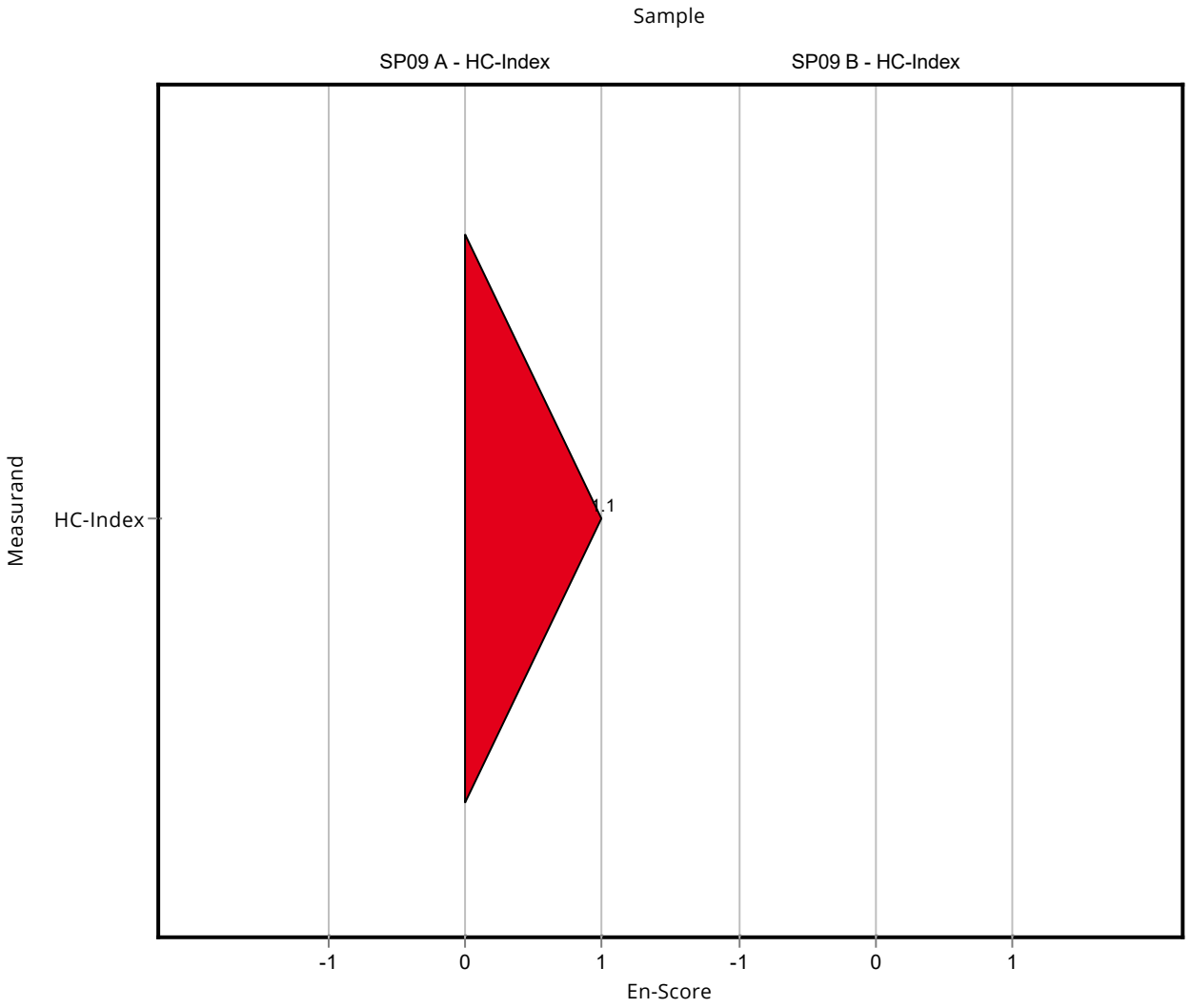
Labcode: LC0016

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.203 ± 0.011	0.0667	122	1.13

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-



Summary of results Sum parameters SP09

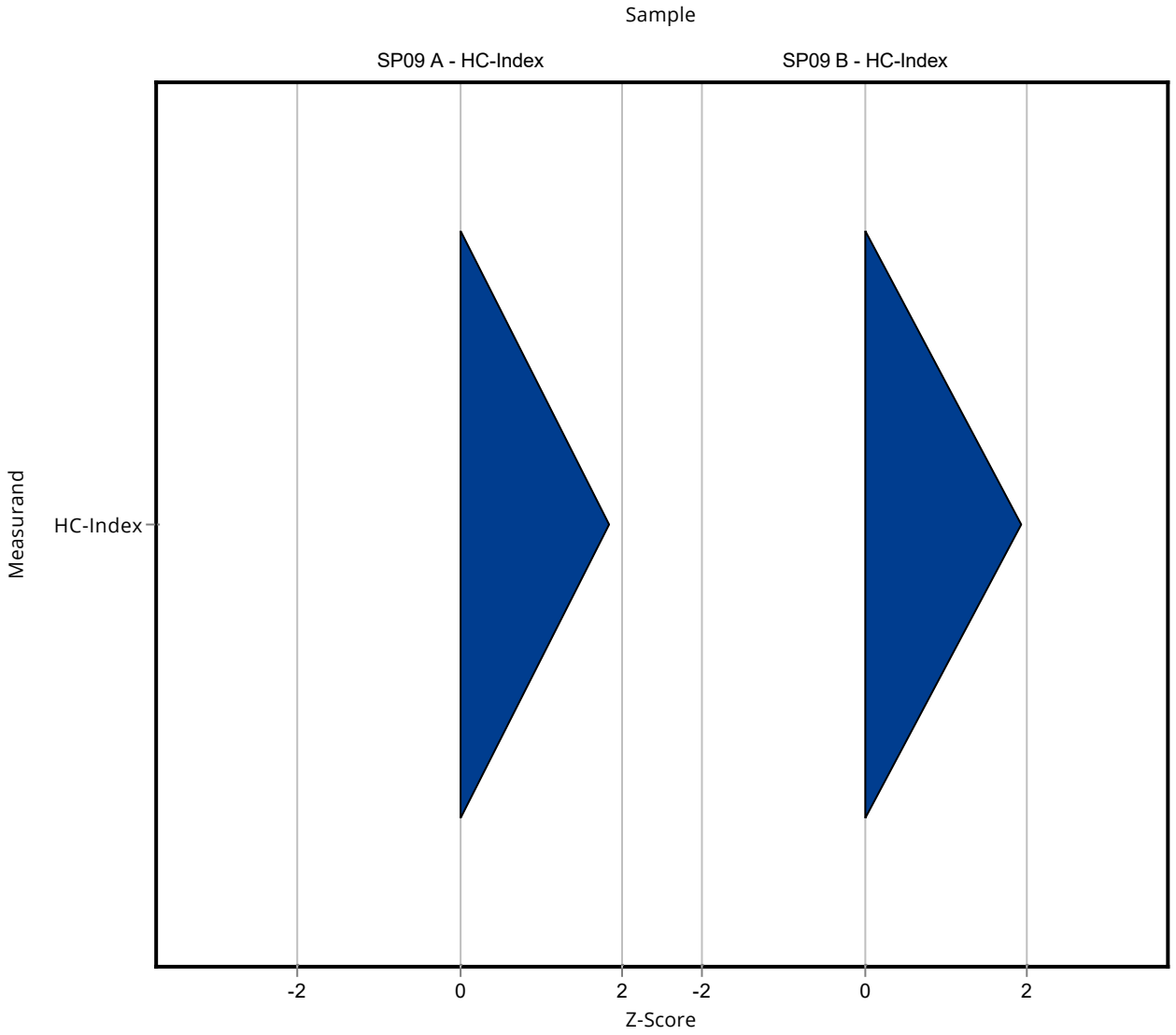
Labcode: LC0017

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.29 ± 0.1	0.0667	174	1.85

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.63 ± 0.24	0.367	178	1.95



Summary of results Sum parameters SP09 - En-Score

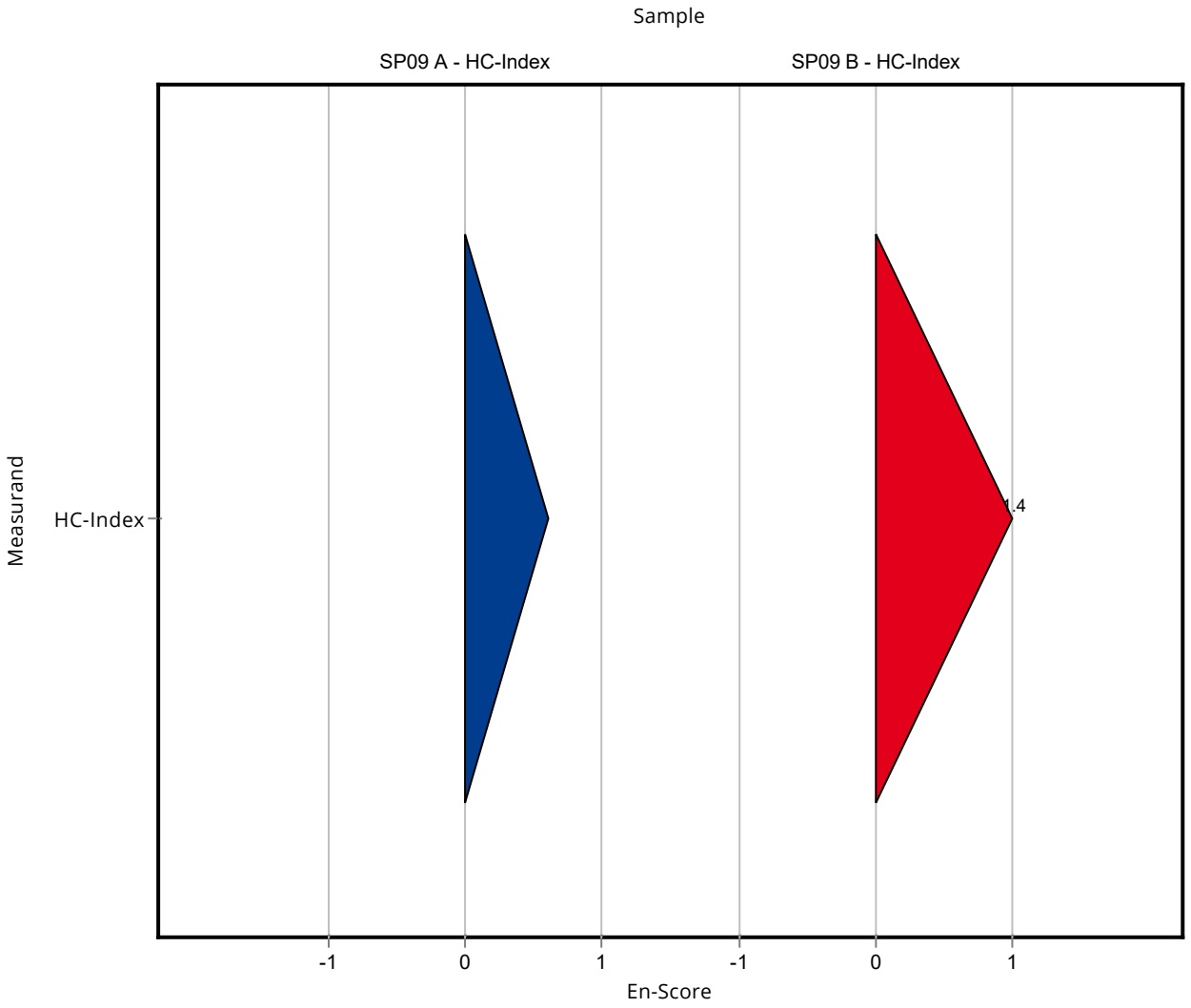
Labcode: LC0017

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.29 ± 0.1	0.0667	174	0.61

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.63 ± 0.24	0.367	178	1.44



Summary of results Sum parameters SP09

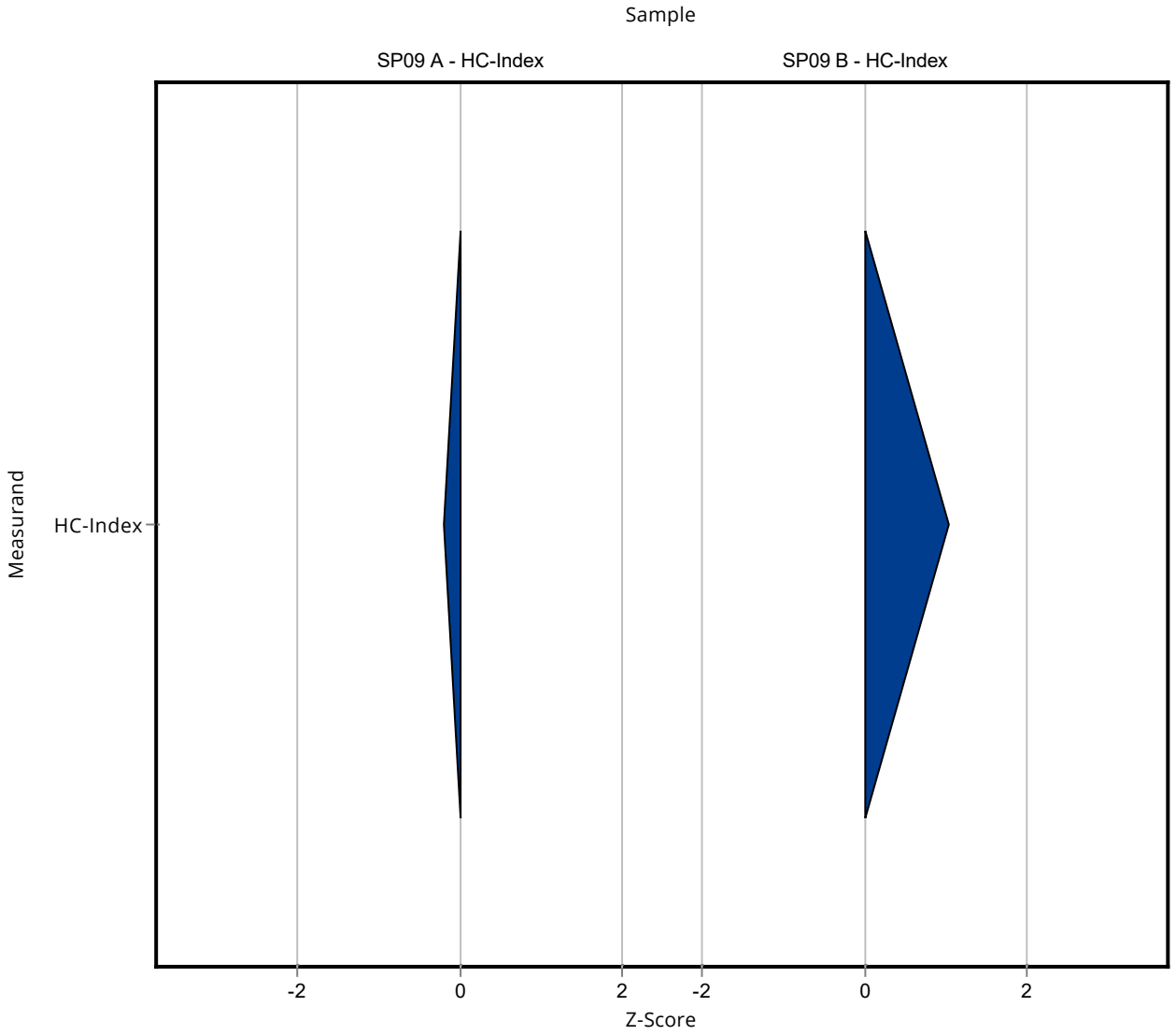
Labcode: LC0018

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.154 ± 0.005	0.0667	92.3	-0.19

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.3 ± 0.005	0.367	142	1.05



Summary of results Sum parameters SP09 - En-Score

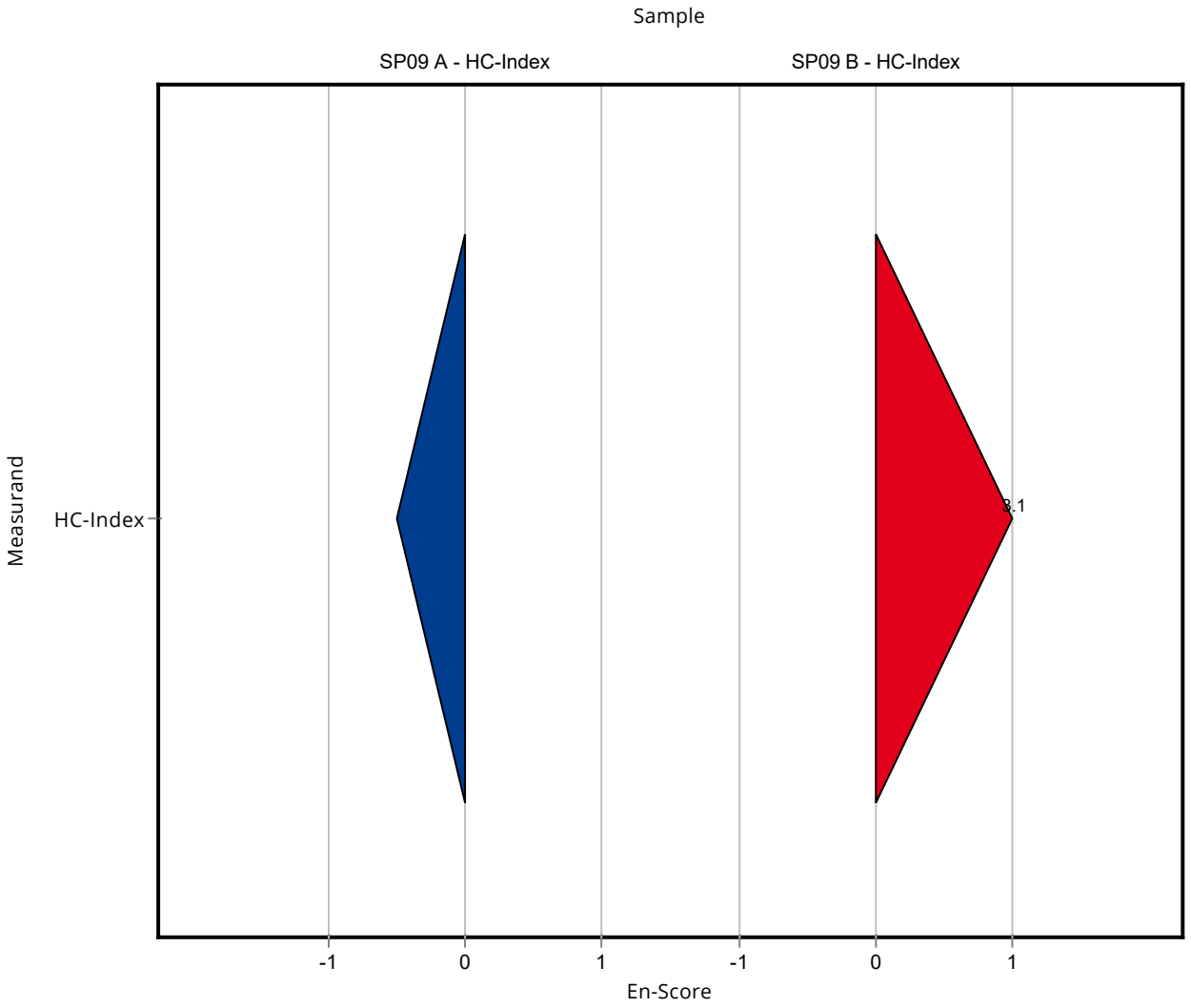
Labcode: LC0018

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.154	± 0.005	0.0667	92.3	-0.51

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	1.3	± 0.005	0.367	142	3.11



Summary of results Sum parameters SP09 Labcode: LC0019

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	- ± -	0.0667	-	-

Sample: SP09KWIB

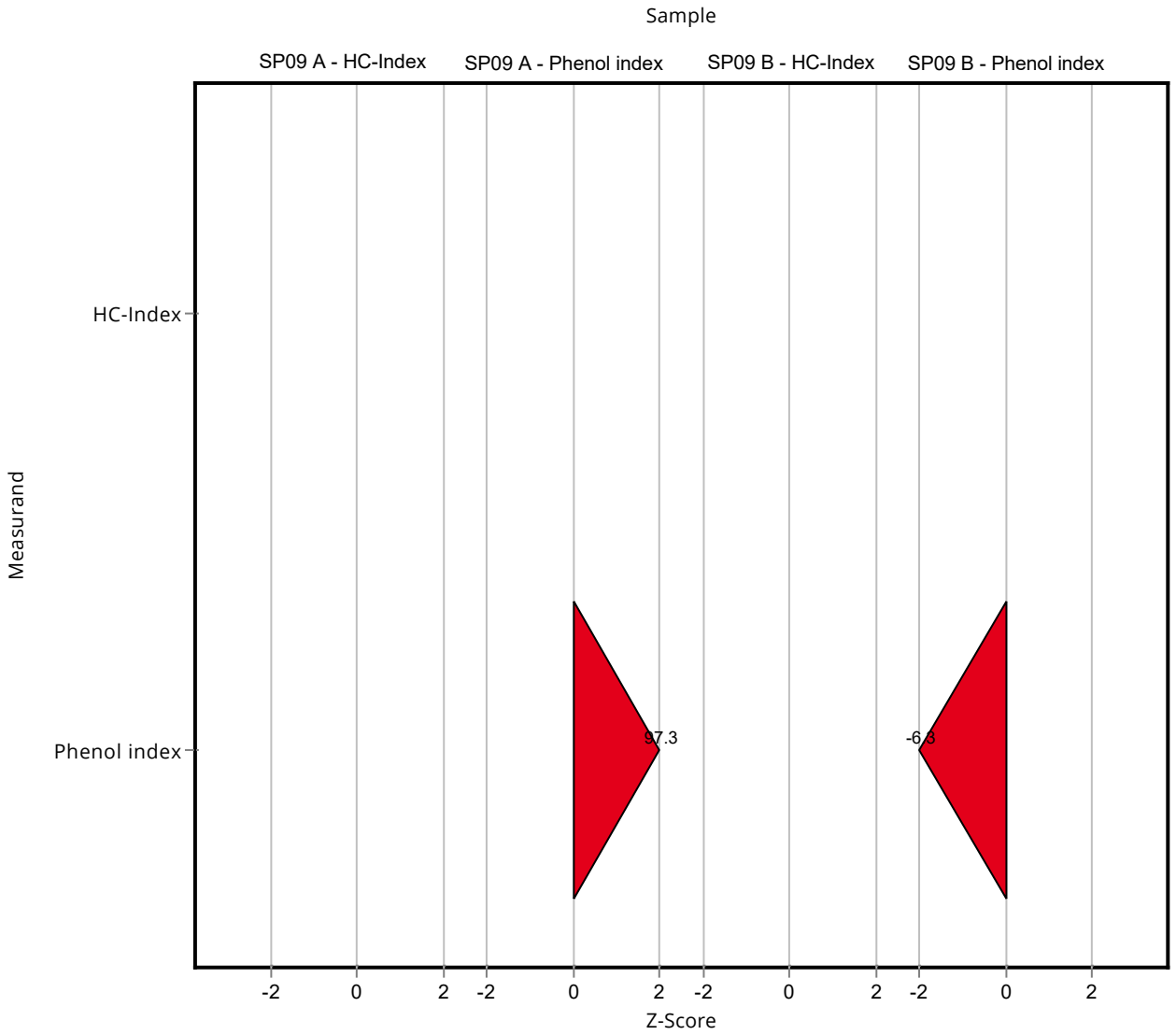
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.285 ± 0.048	0.00268	1170	97.32

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.244 ± 0.041	0.0886	30.3	-6.34


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
97.3
-6.3
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0019

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	- ± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-

Sample: SP09PHIA

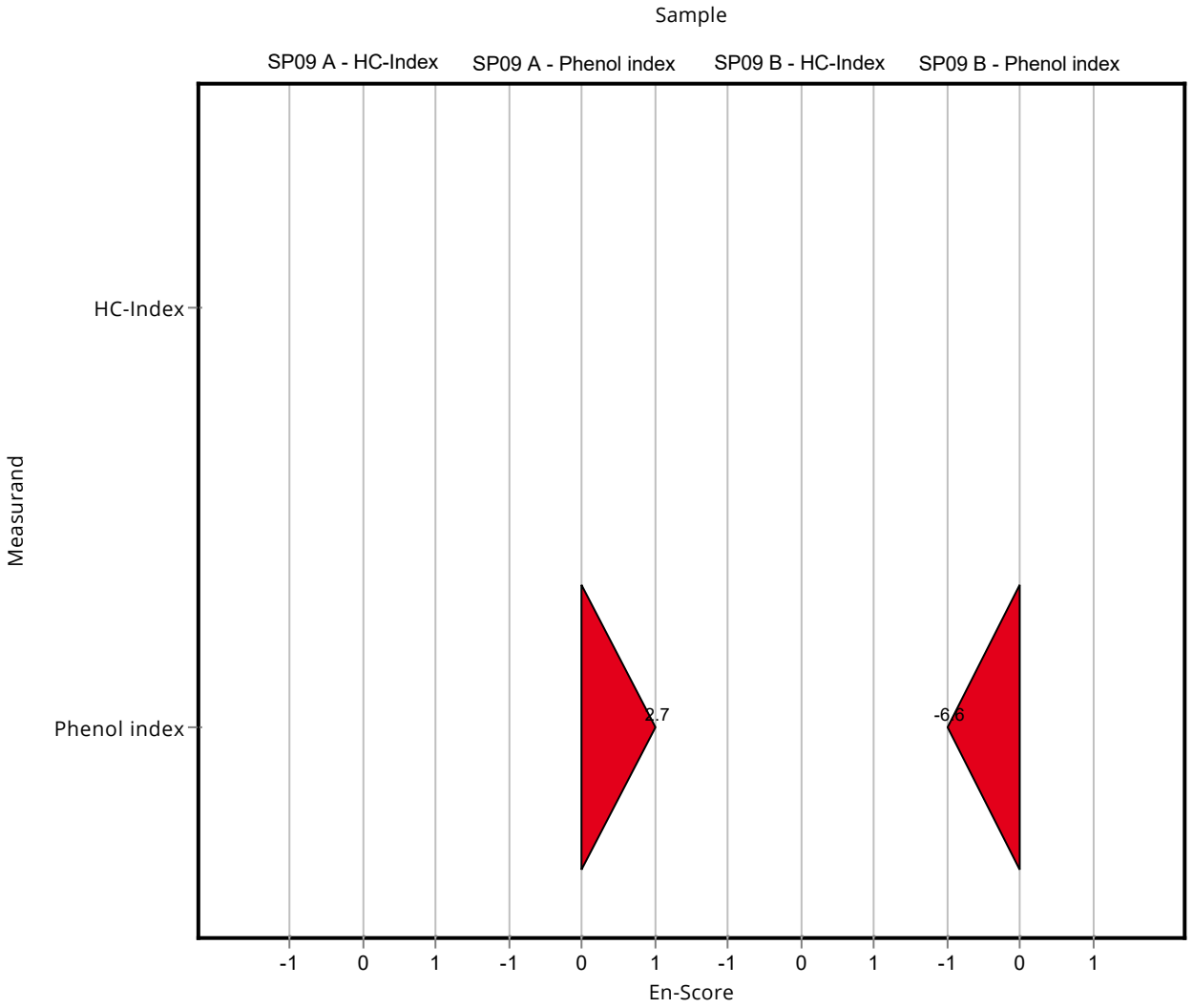
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.285 ± 0.048	0.00268	1170	2.71

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.244 ± 0.041	0.0886	30.3	-6.60

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0019



Summary of results Sum parameters SP09

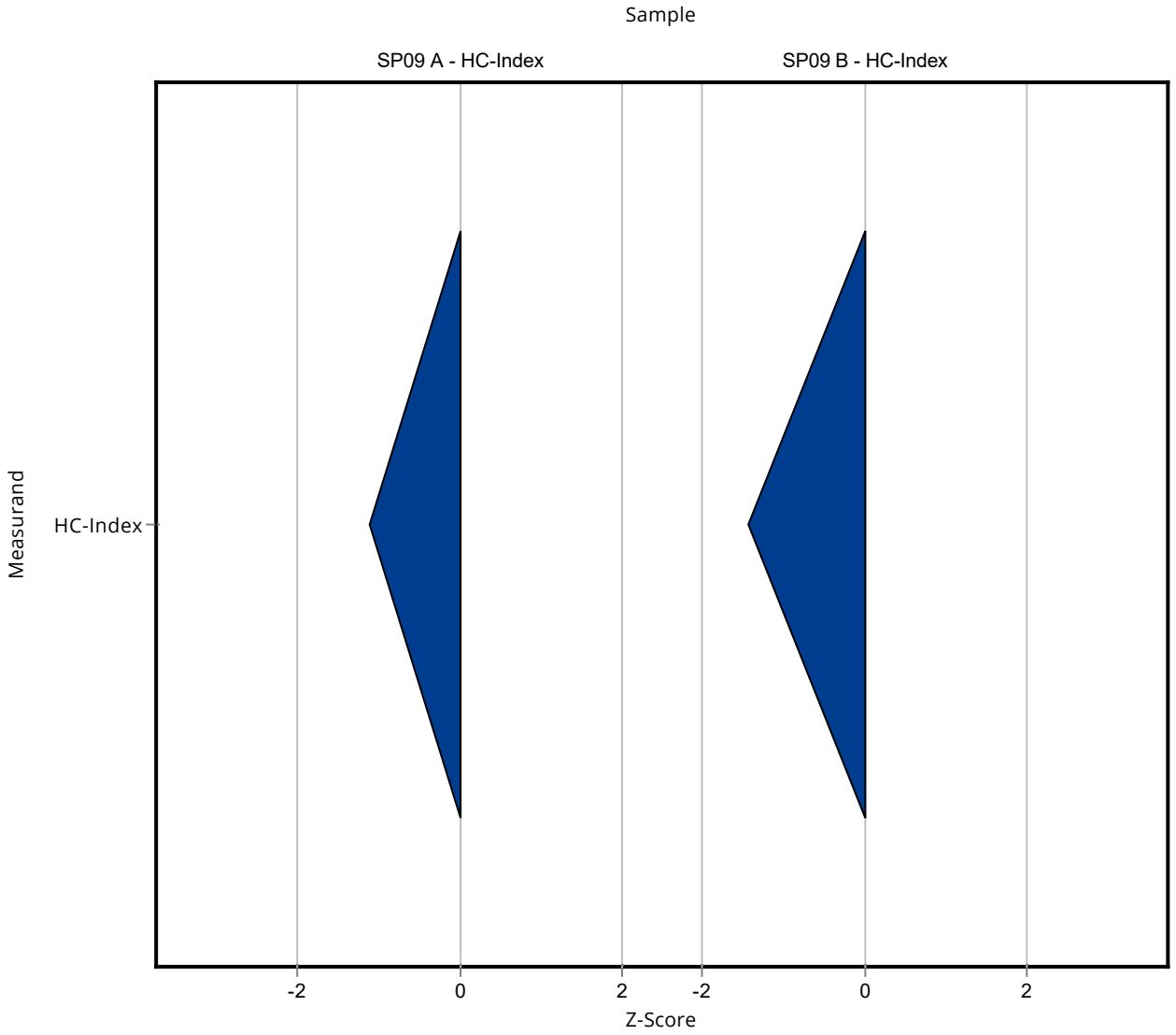
Labcode: LC0020

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.093 ± 0.046	0.0667	55.8	-1.11

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.391 ± 0.196	0.367	42.7	-1.43



Summary of results Sum parameters SP09 - En-Score

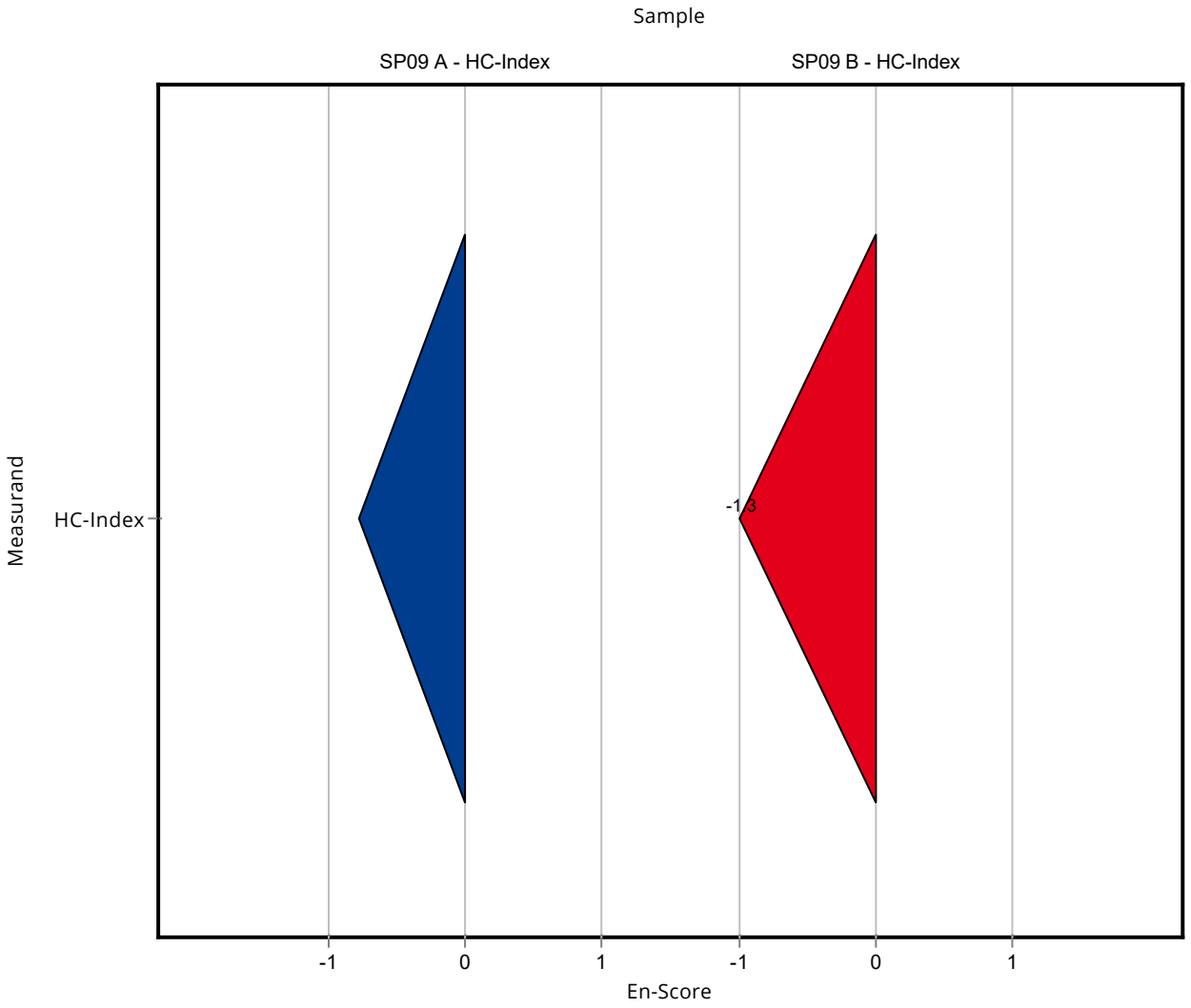
Labcode: LC0020

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.093 ± 0.046	0.0667	55.8	-0.78

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.391 ± 0.196	0.367	42.7	-1.28



Summary of results Sum parameters SP09

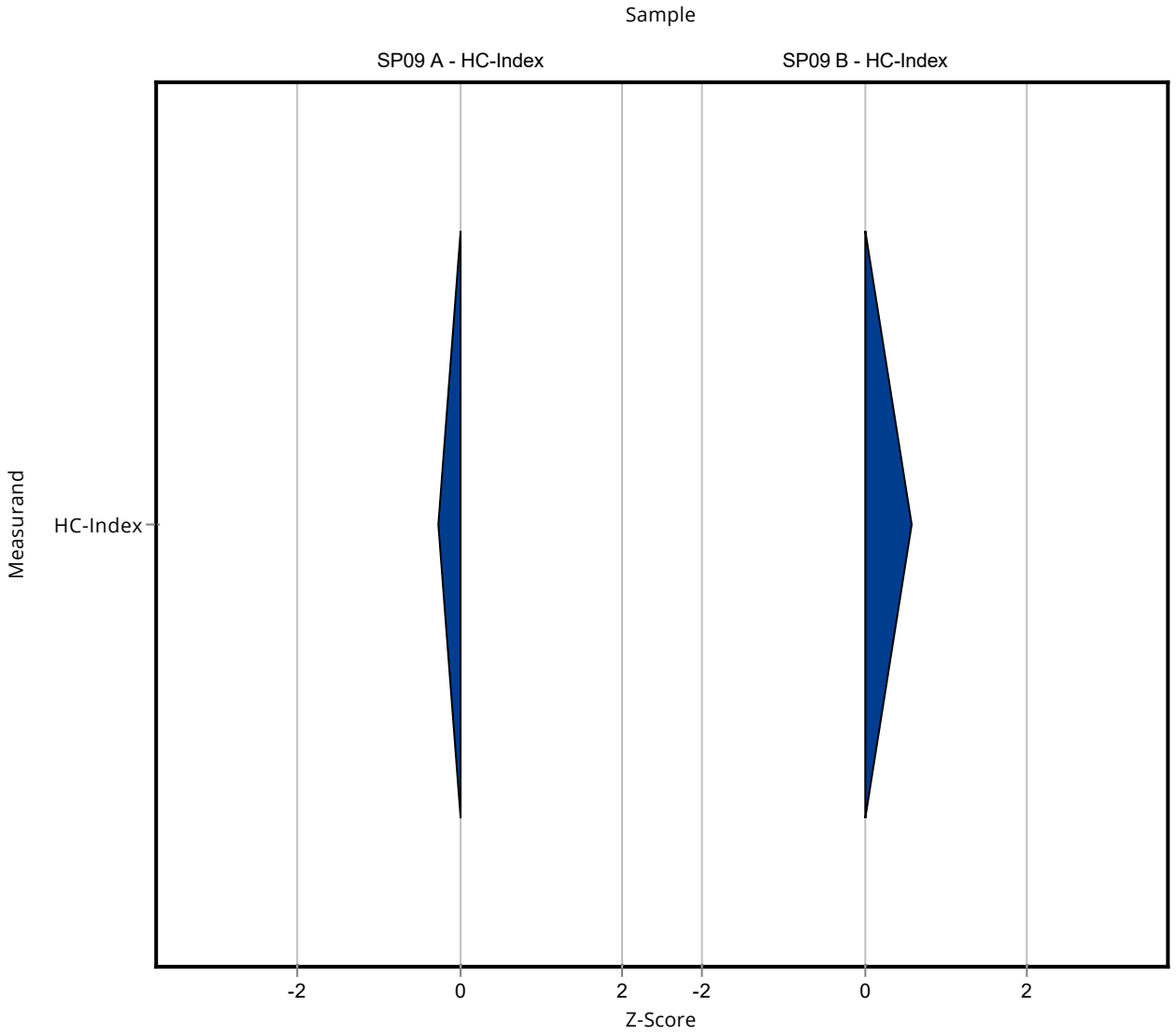
Labcode: LC0021

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.149 ± 0.006	0.0667	89.3	-0.27

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.135 ± 0.005	0.367	124	0.60



Summary of results Sum parameters SP09 - En-Score

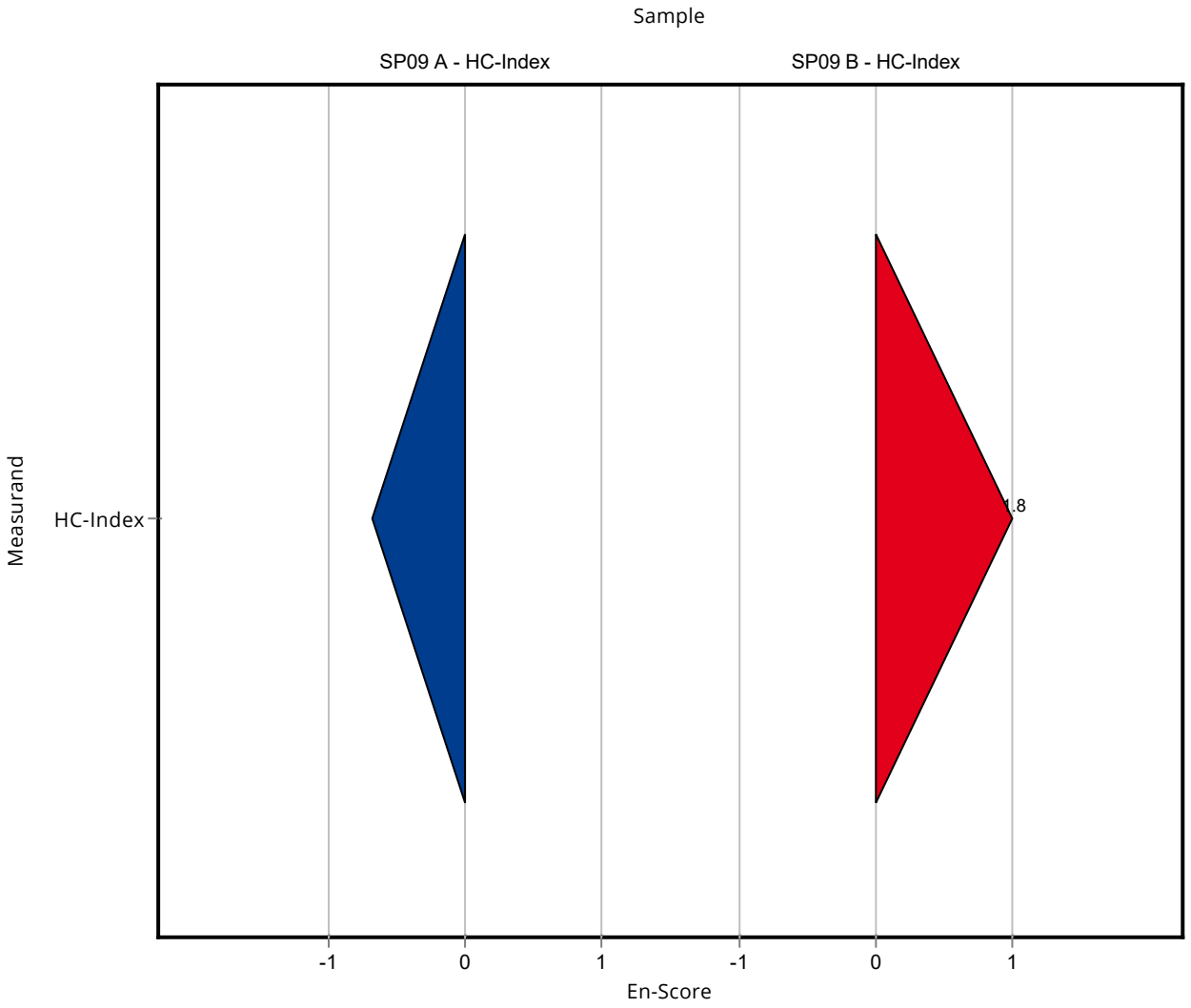
Labcode: LC0021

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.149 ± 0.006	0.0667	89.3	-0.68

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.135 ± 0.005	0.367	124	1.77



Summary of results Sum parameters SP09 Labcode: LC0022

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.226 ± 0.09	0.0667	136	0.89

Sample: SP09KWIB

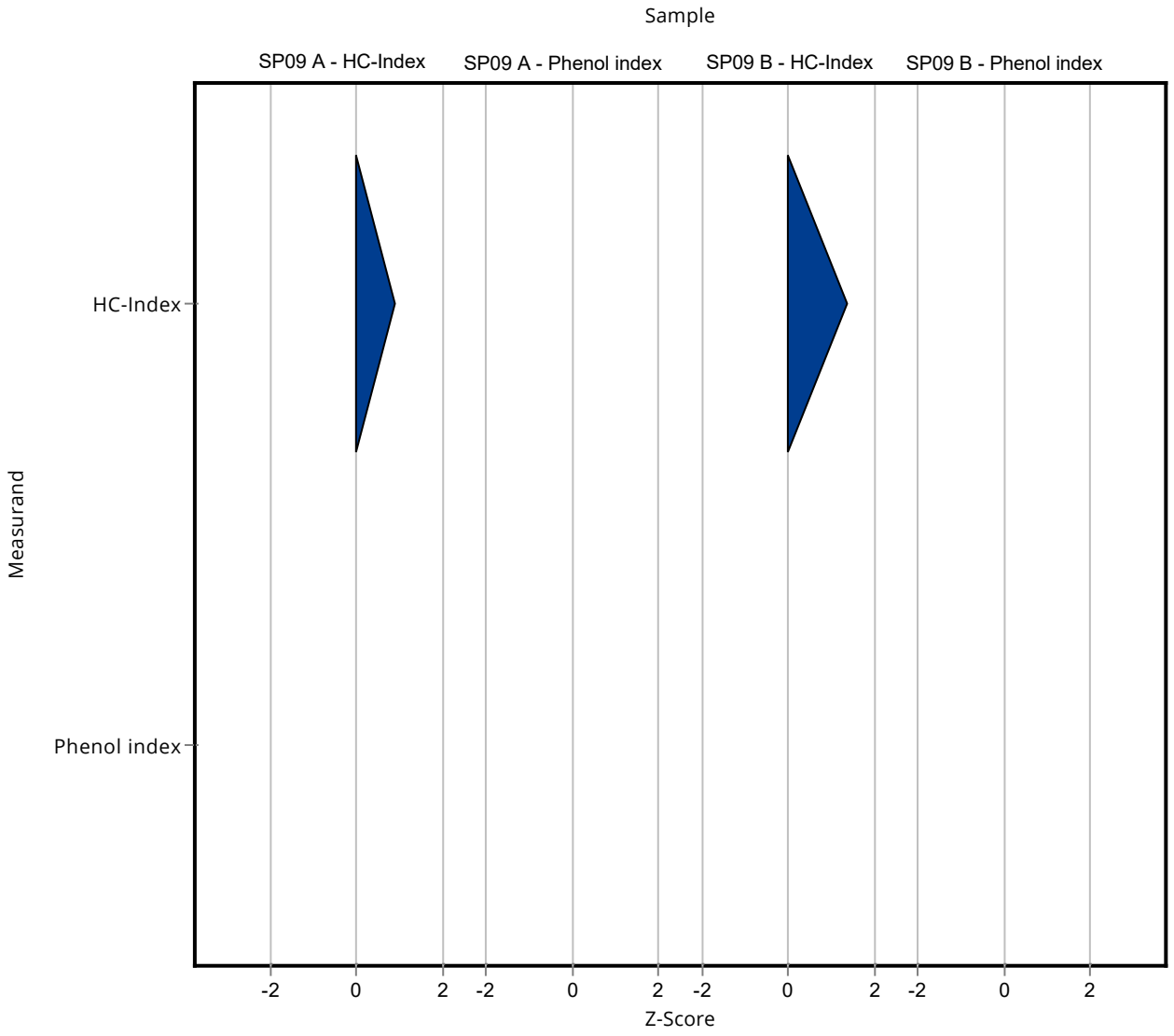
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.42 ± 0.27	0.367	155	1.37

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	- ± -	0.00268	-	-

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	- ± -	0.0886	-	-


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.226 ± 0.09	0.0667	136	0.33

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.42 ± 0.27	0.367	155	0.91

Sample: SP09PHIA

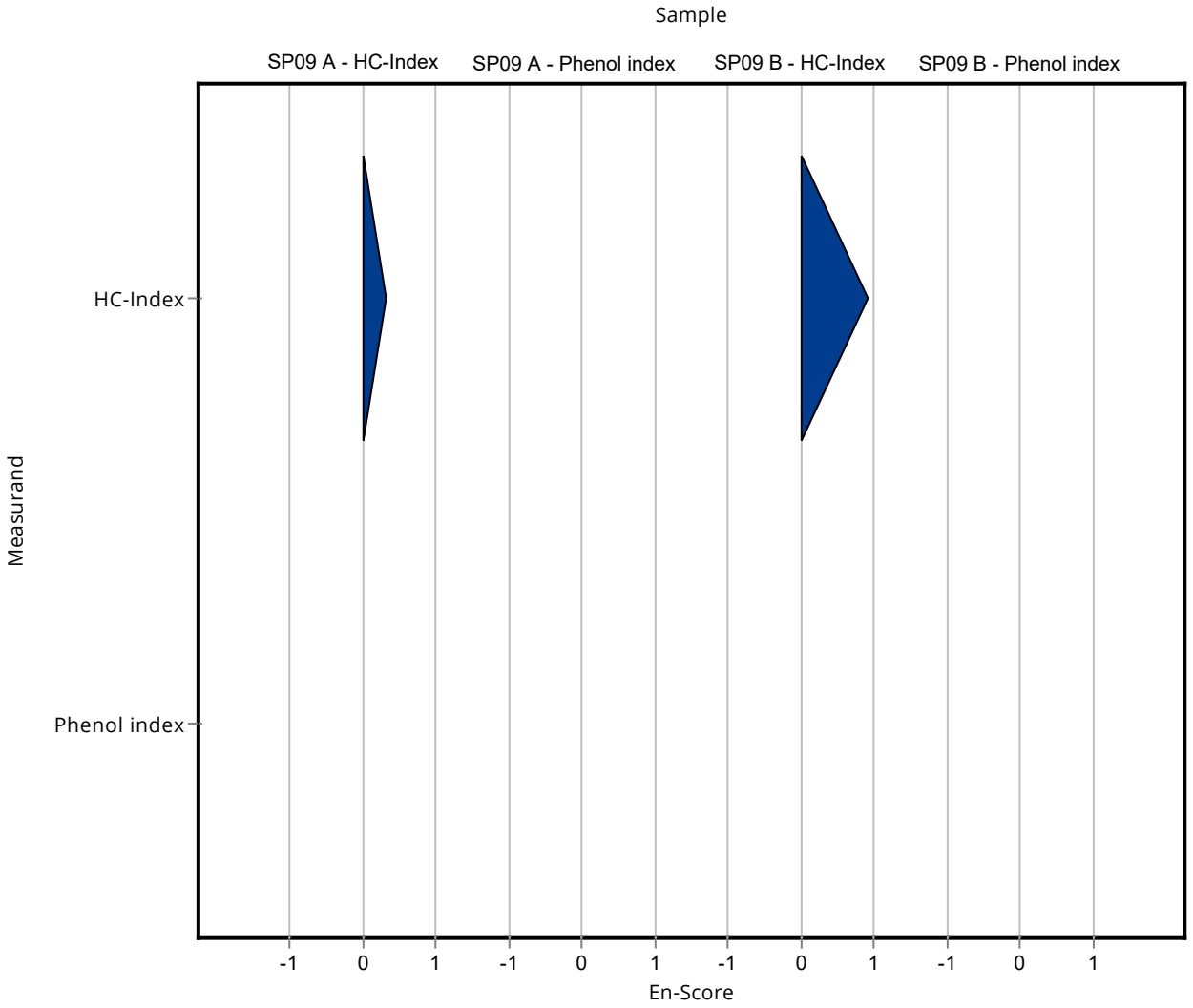
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	- ± -	0.00268	-	-

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	- ± -	0.0886	-	-

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0022



Summary of results Sum parameters SP09 Labcode: LC0023

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.22 ± 0.046	0.0667	132	0.80

Sample: SP09KWIB

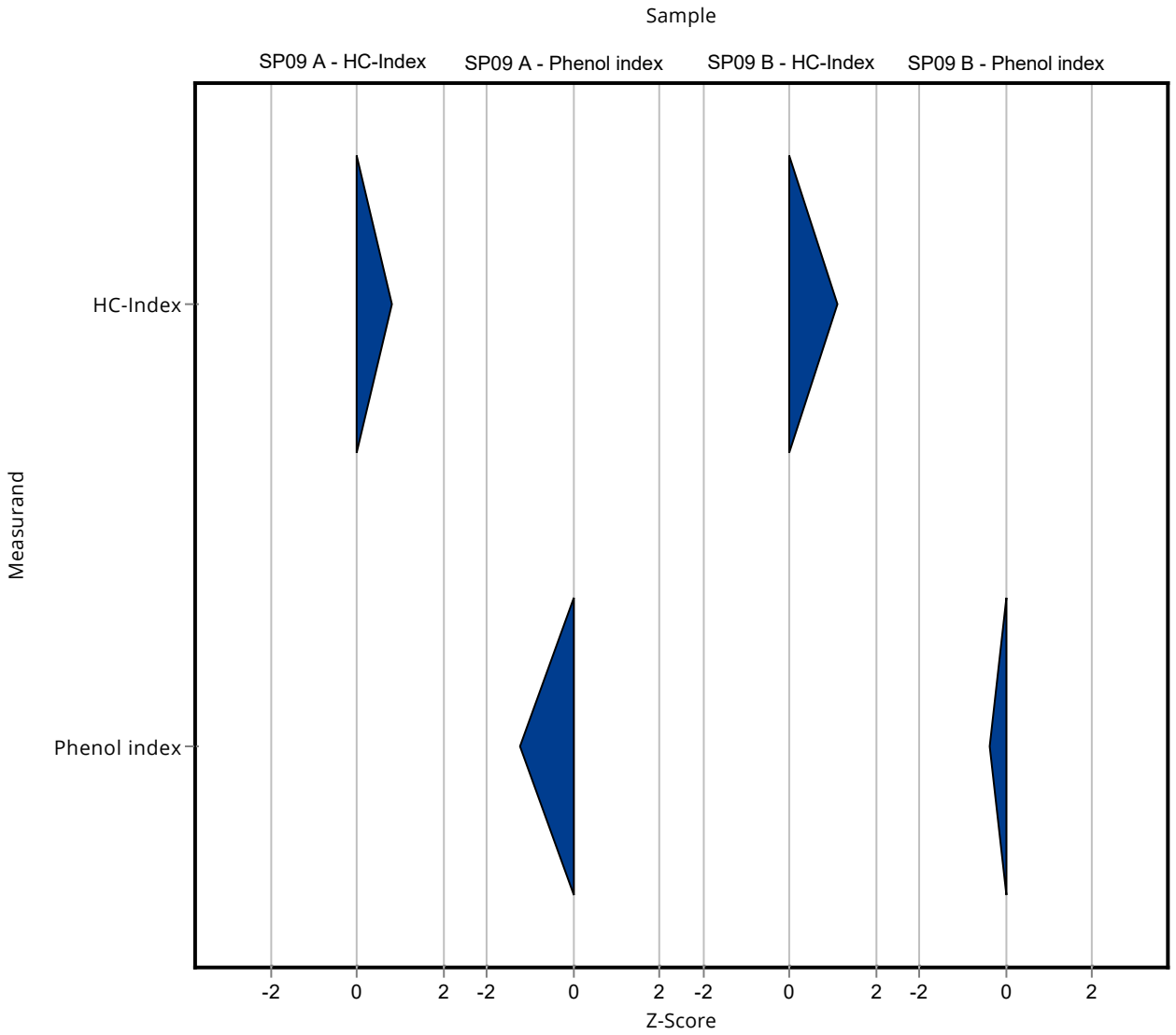
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.315 ± 0.276	0.367	143	1.09

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.021 ± 0.0016	0.00268	86.3	-1.25

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.773 ± 0.058	0.0886	96	-0.37


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0023

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.22 ± 0.046	0.0667	132	0.56

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.315 ± 0.276	0.367	143	0.70

Sample: SP09PHIA

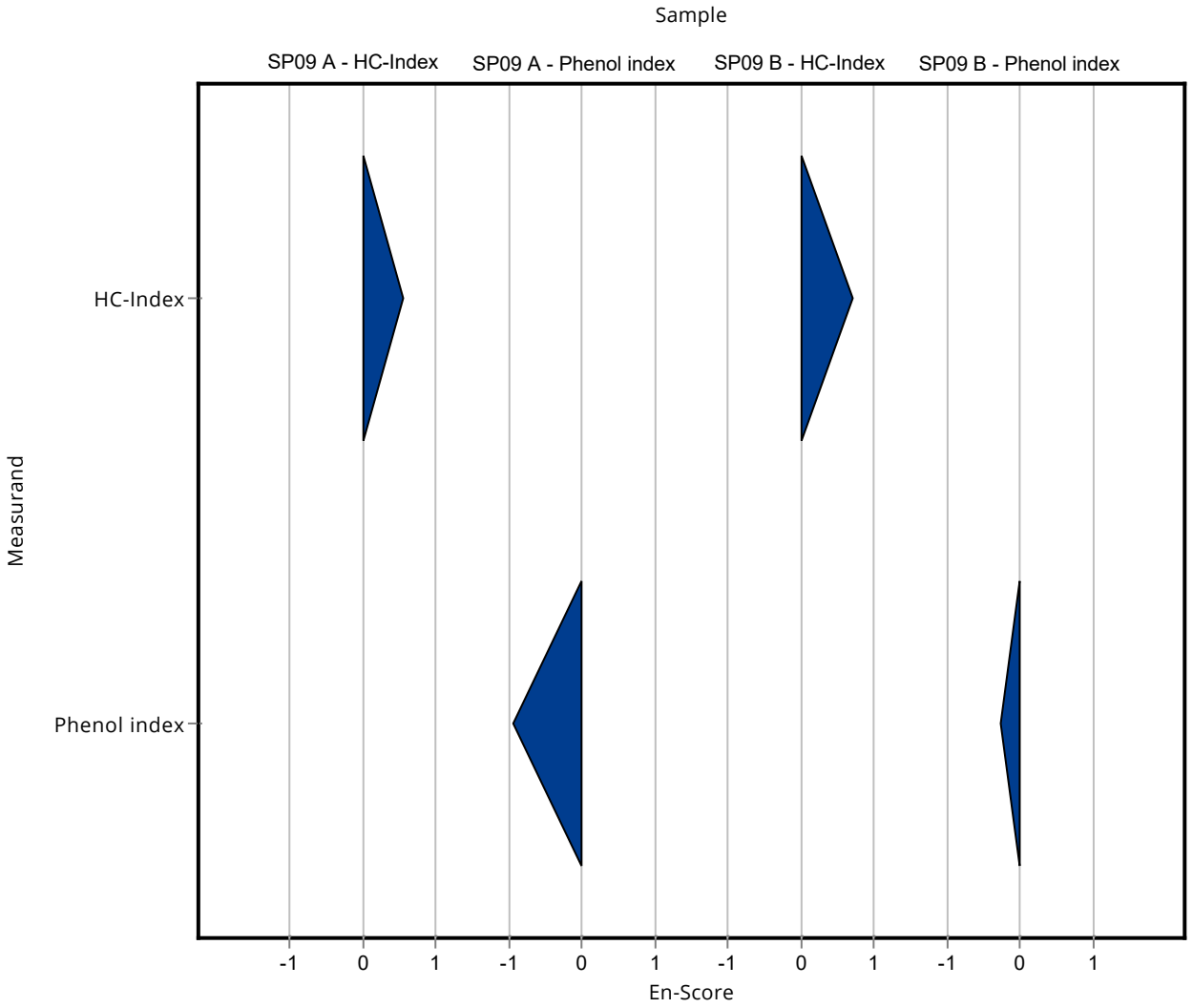
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.021 ± 0.0016	0.00268	86.3	-0.95

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.773 ± 0.058	0.0886	96	-0.27

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0023



Summary of results Sum parameters SP09 Labcode: LC0024

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.201 ± 0.011	0.0667	121	0.51

Sample: SP09KWIB

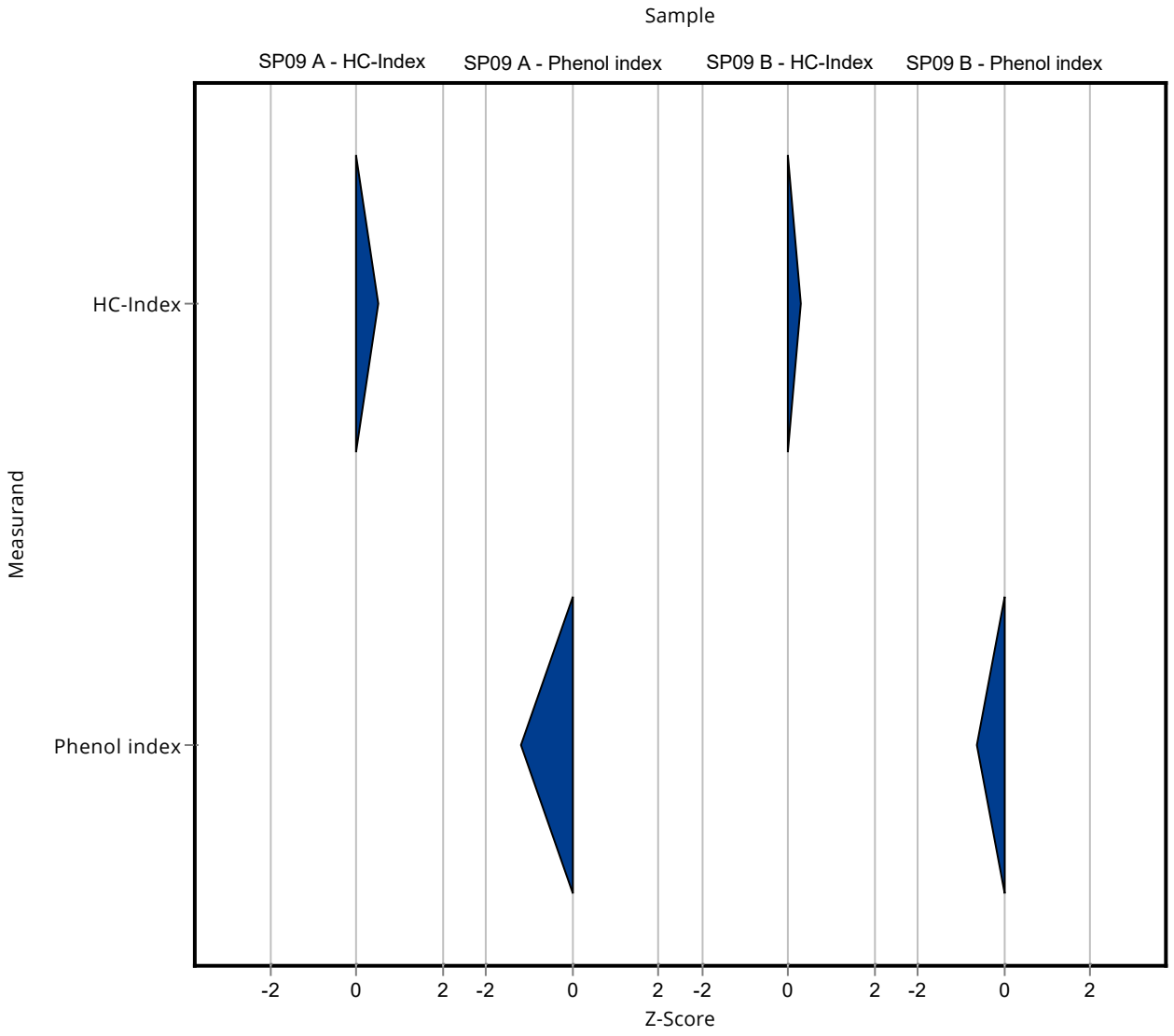
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.02 ± 0.055	0.367	111	0.28

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0211 ± 0.0015	0.00268	86.7	-1.21

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.75 ± 0.054	0.0886	93.1	-0.62


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.201 ± 0.011	0.0667	121	1.07

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.02 ± 0.055	0.367	111	0.63

Sample: SP09PHIA

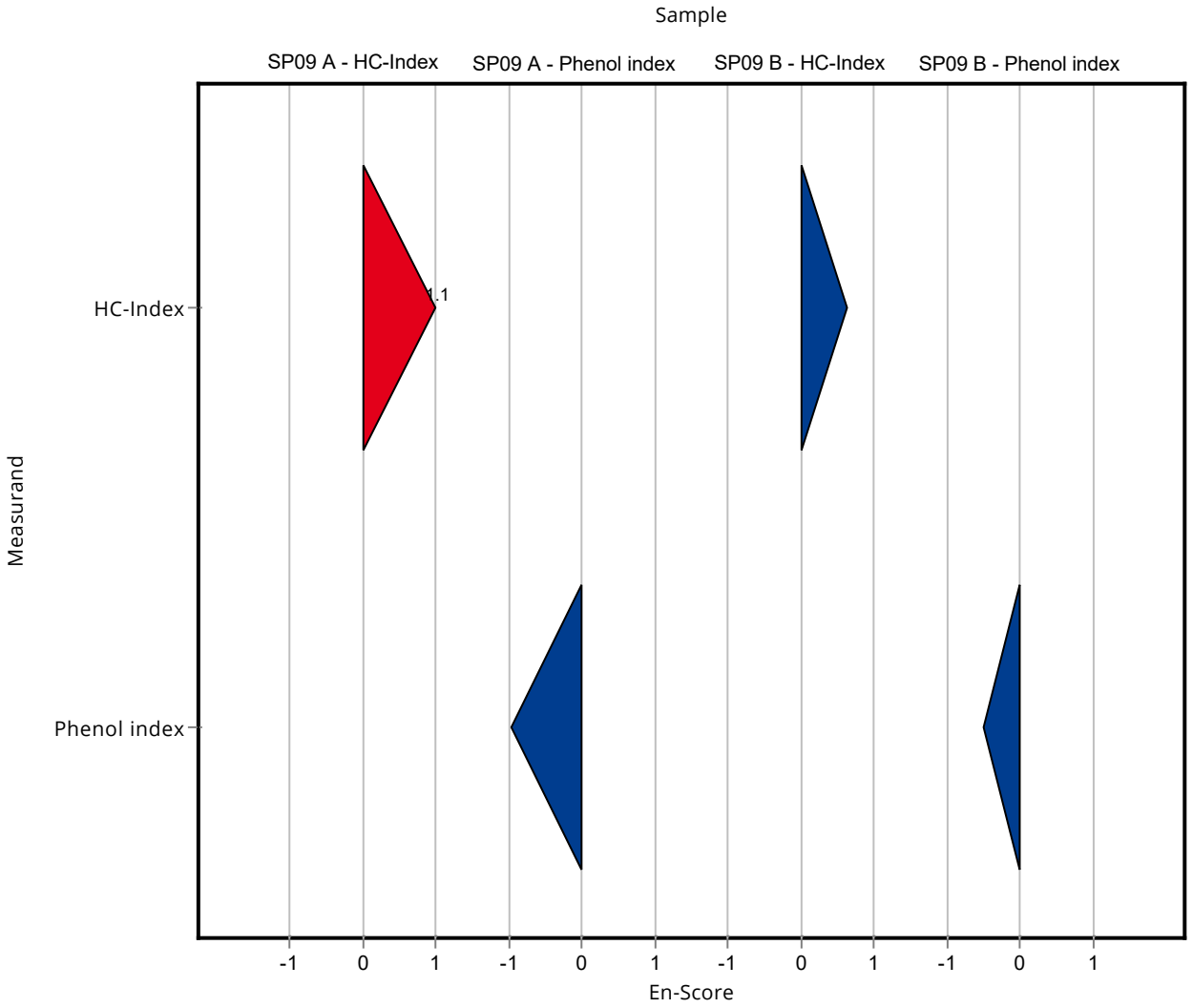
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0211 ± 0.0015	0.00268	86.7	-0.97

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.75 ± 0.054	0.0886	93.1	-0.50

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0024



Summary of results Sum parameters SP09 Labcode: LC0025

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.17 ± 0.004	0.0667	102	0.05

Sample: SP09KWIB

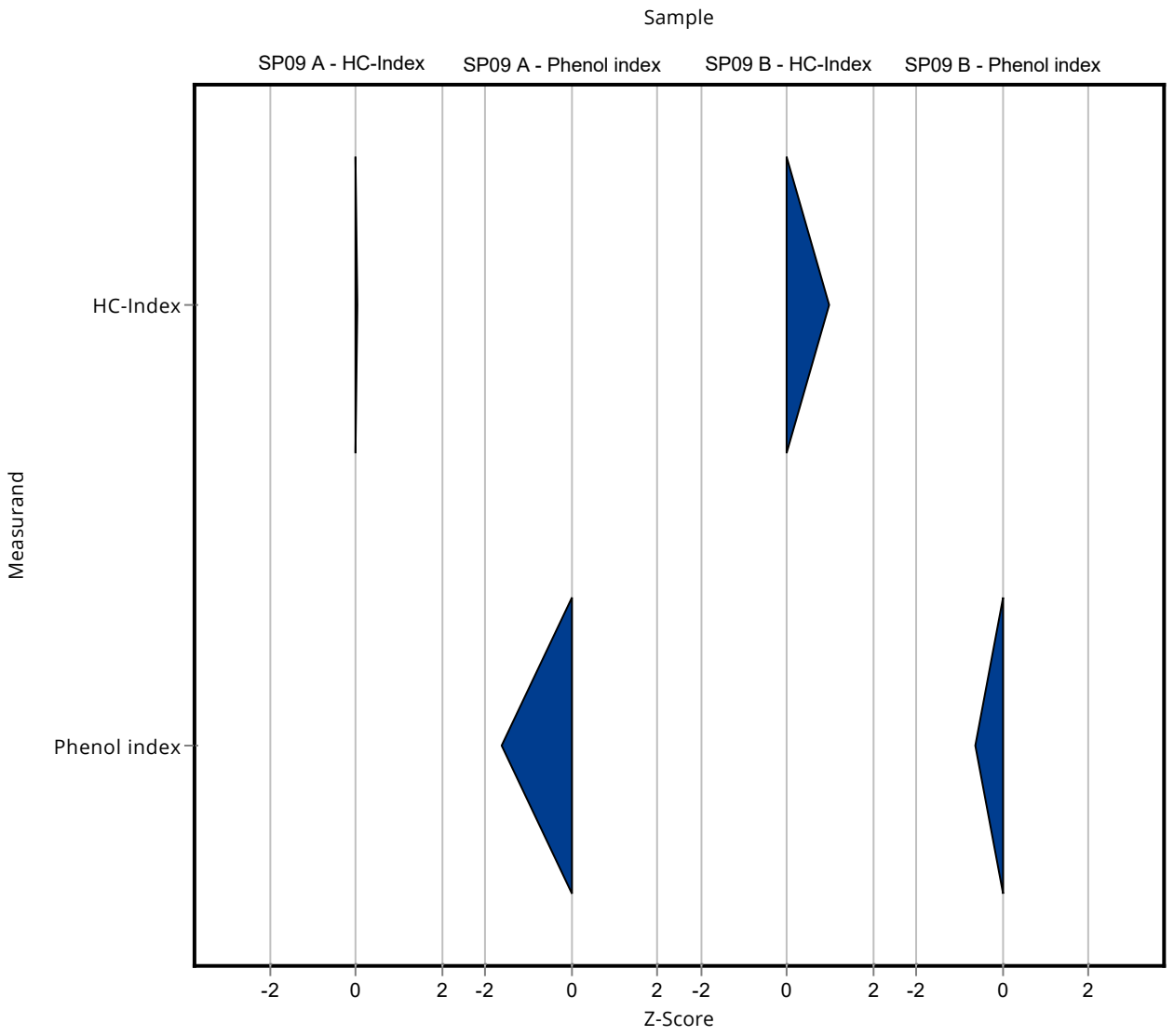
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.28 ± 0.3	0.367	140	0.99

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.02 ± 0.004	0.00268	82.1	-1.62

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.75 ± 0.16	0.0886	93.1	-0.62


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0025

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.17 ± 0.004	0.0667	102	0.13

Sample: SP09KWIB

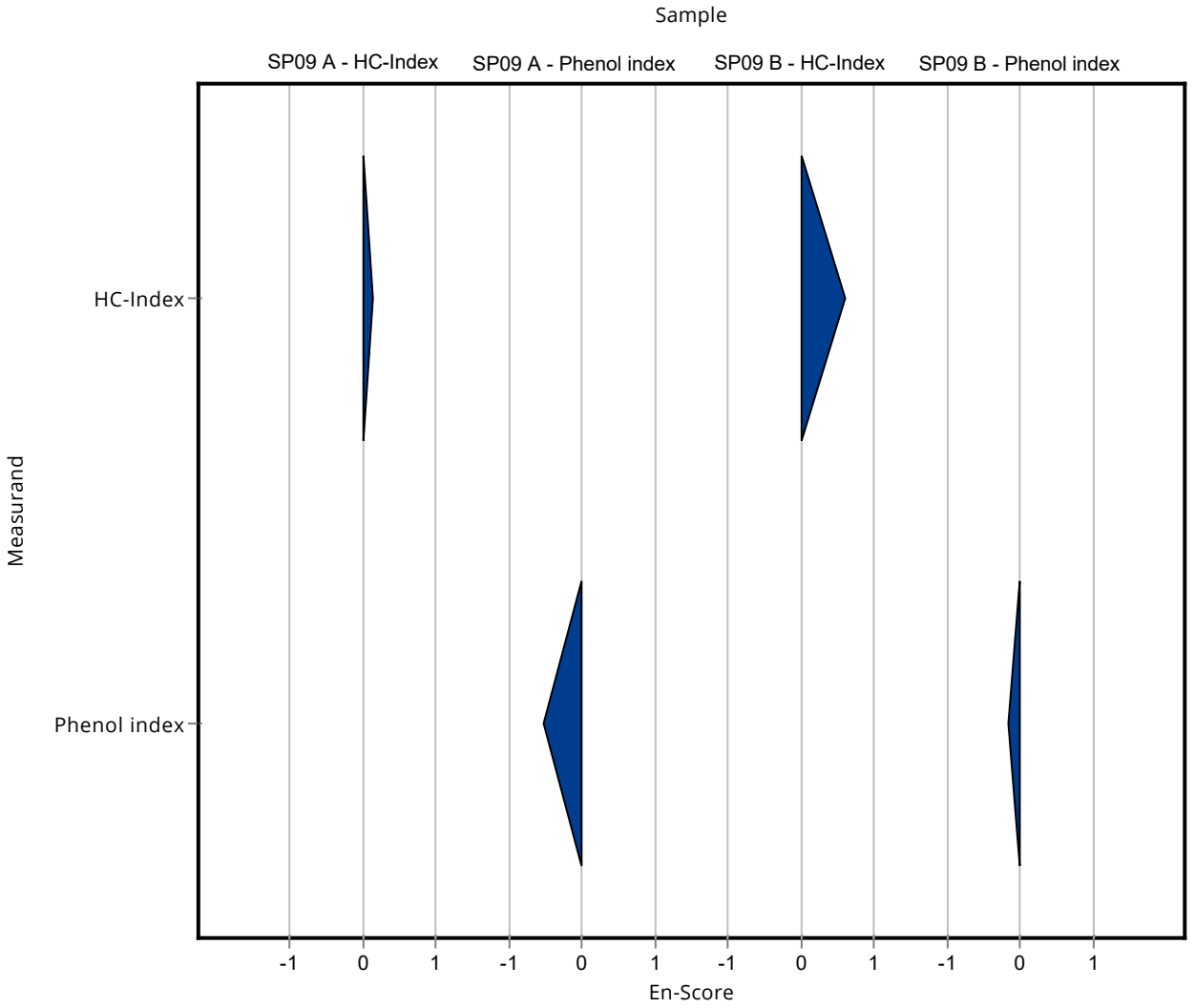
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.28 ± 0.3	0.367	140	0.59

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.02 ± 0.004	0.00268	82.1	-0.53

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.75 ± 0.16	0.0886	93.1	-0.17


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-1
0
1
-1
0
1
-1
0
1
-1
0
1
En-Score

Summary of results Sum parameters SP09

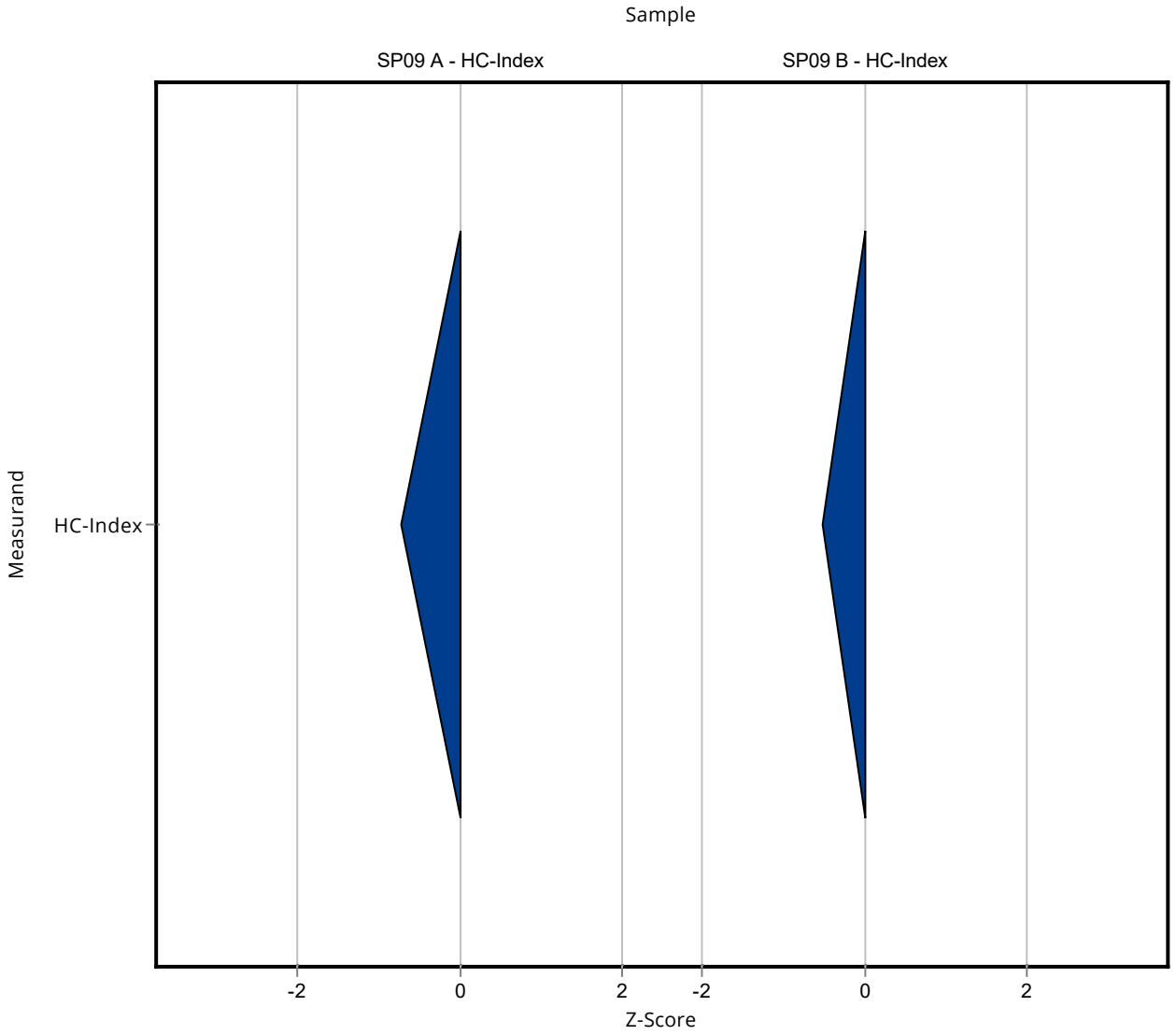
Labcode: LC0026

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.1191 ± 0.0106	0.0667	71.4	-0.71

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.7301 ± 0.0651	0.367	79.7	-0.51



Summary of results Sum parameters SP09 - En-Score

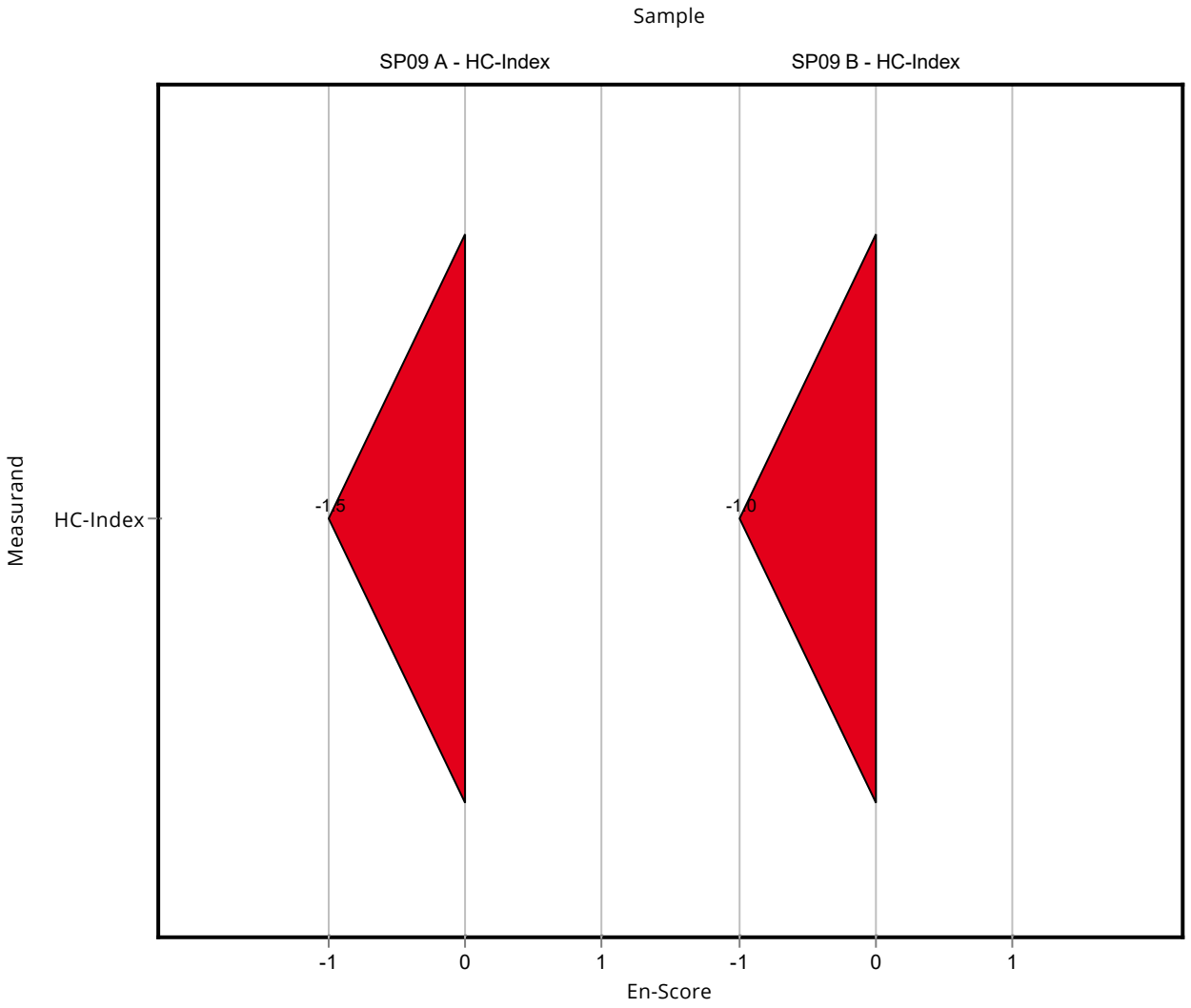
Labcode: LC0026

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.1191	± 0.0106	0.0667	71.4	-1.52

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.7301	± 0.0651	0.367	79.7	-1.04



Summary of results Sum parameters SP09 Labcode: LC0027

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.203 ± 0.0051	0.0667	122	0.54

Sample: SP09KWIB

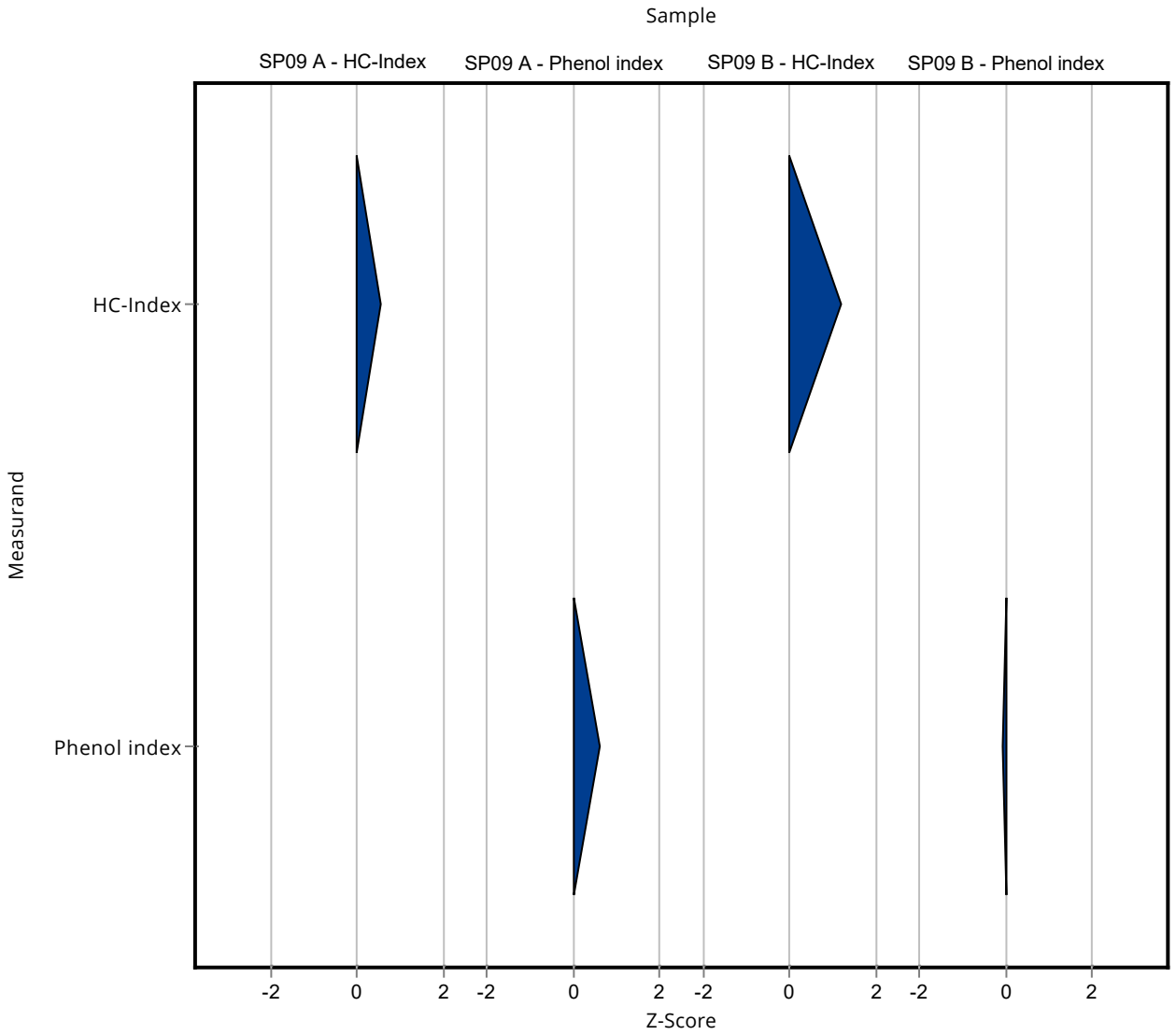
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.36 ± 0.034	0.367	148	1.21

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.026 ± 0.0018	0.00268	107	0.62

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.799 ± 0.055	0.0886	99.2	-0.07


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.203 ± 0.0051	0.0667	122	1.43

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.36 ± 0.034	0.367	148	3.15

Sample: SP09PHIA

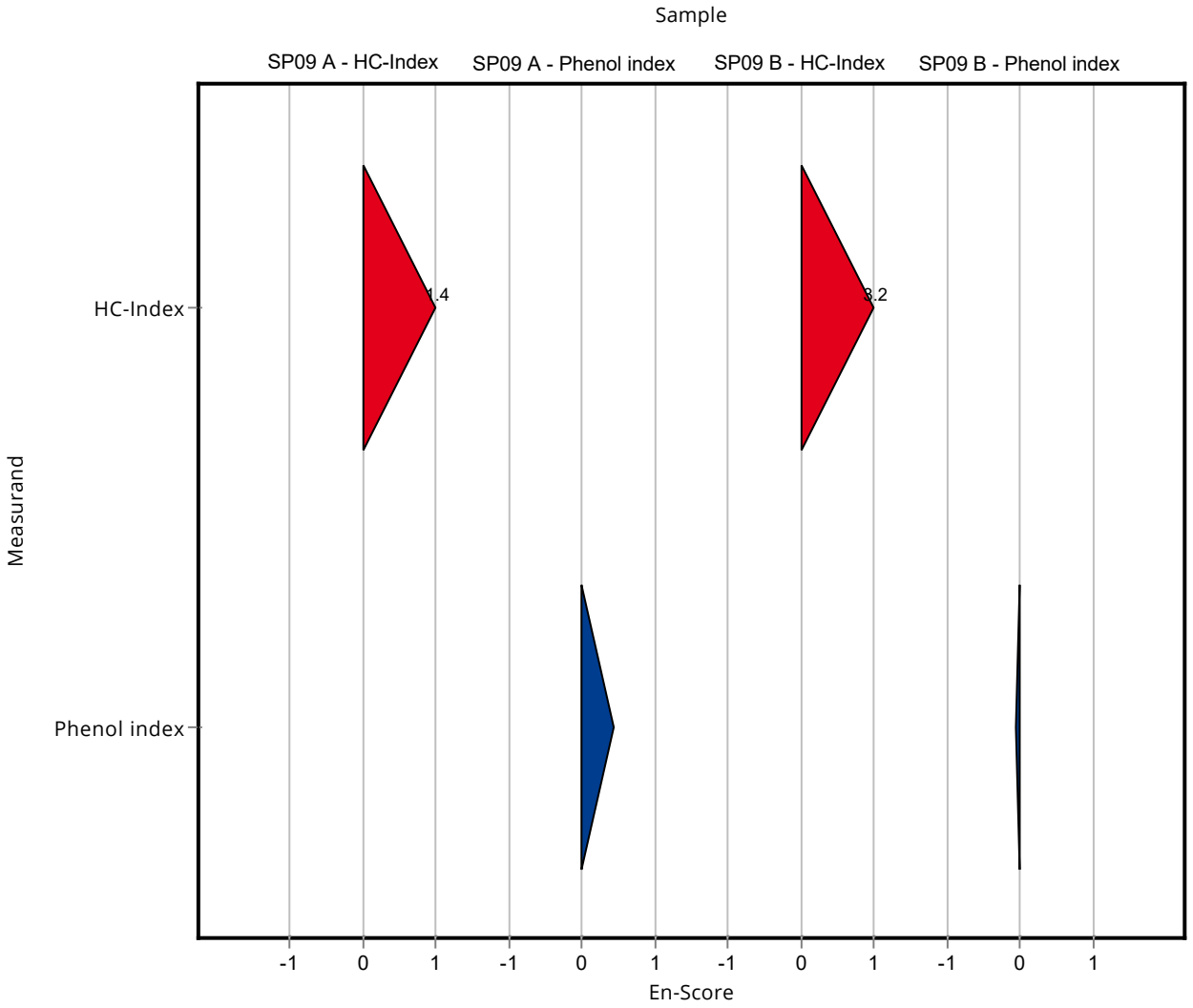
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.026 ± 0.0018	0.00268	107	0.43

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.799 ± 0.055	0.0886	99.2	-0.06

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0027



Summary of results Sum parameters SP09

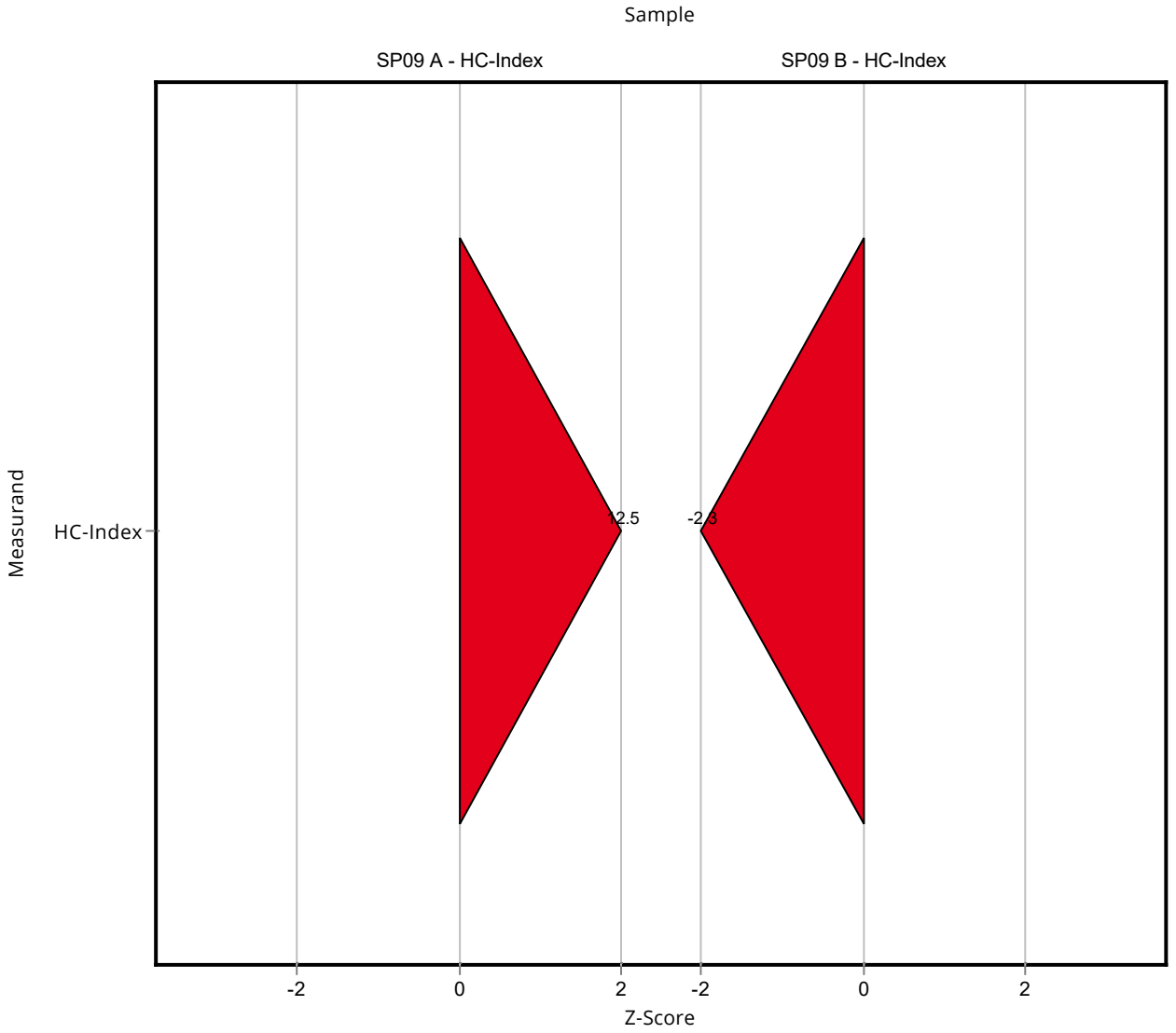
Labcode: LC0028

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.9986 ± 0.075	0.0667	599	12.47

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.0599 ± 0.004	0.367	6.54	-2.34



Summary of results Sum parameters SP09 - En-Score

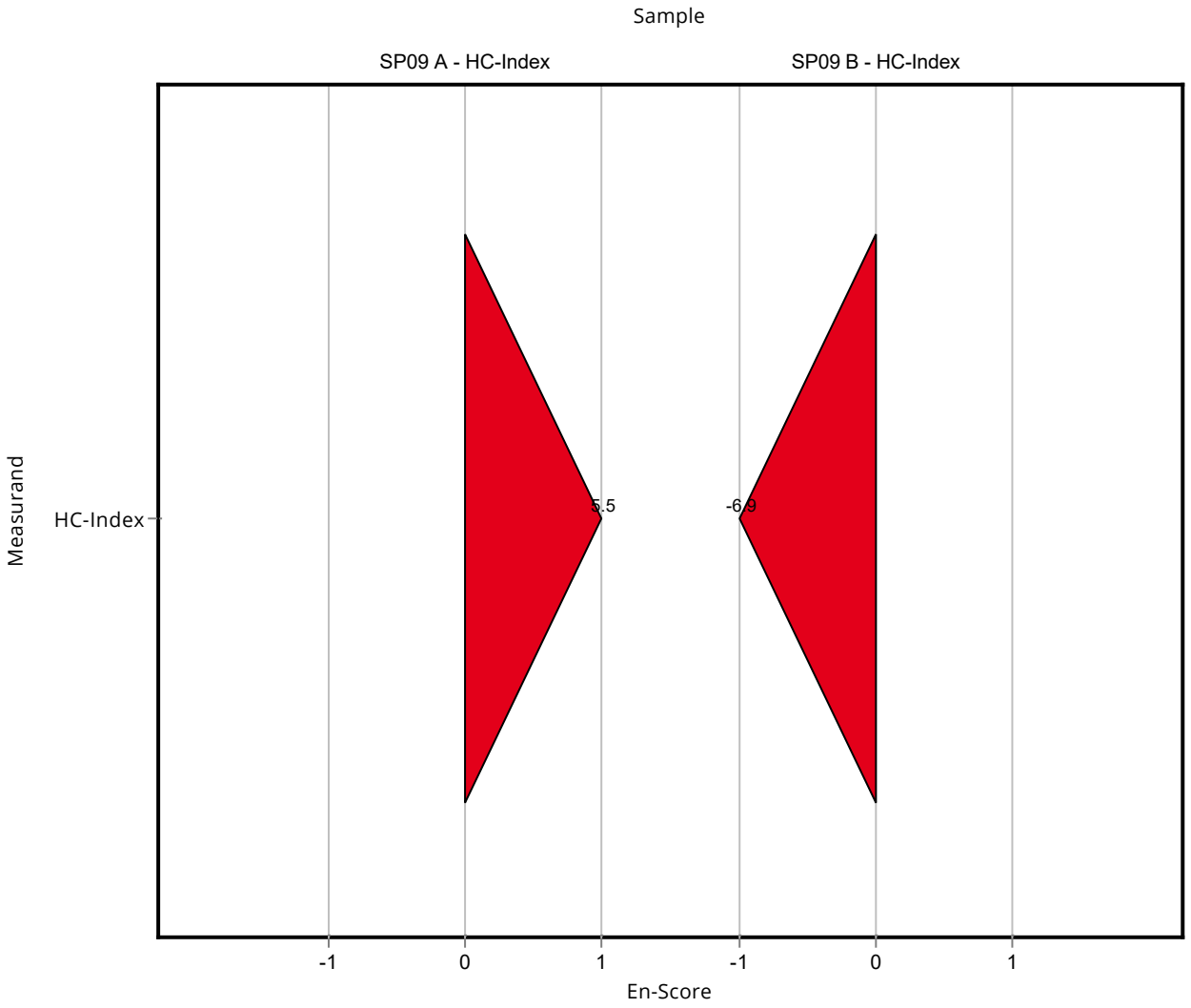
Labcode: LC0028

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.9986 ± 0.075	0.0667	599	5.48

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.0599 ± 0.004	0.367	6.54	-6.95



Summary of results Sum parameters SP09 Labcode: LC0029

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.0925 ± 0.0111	0.0667	55.5	-1.11

Sample: SP09KWIB

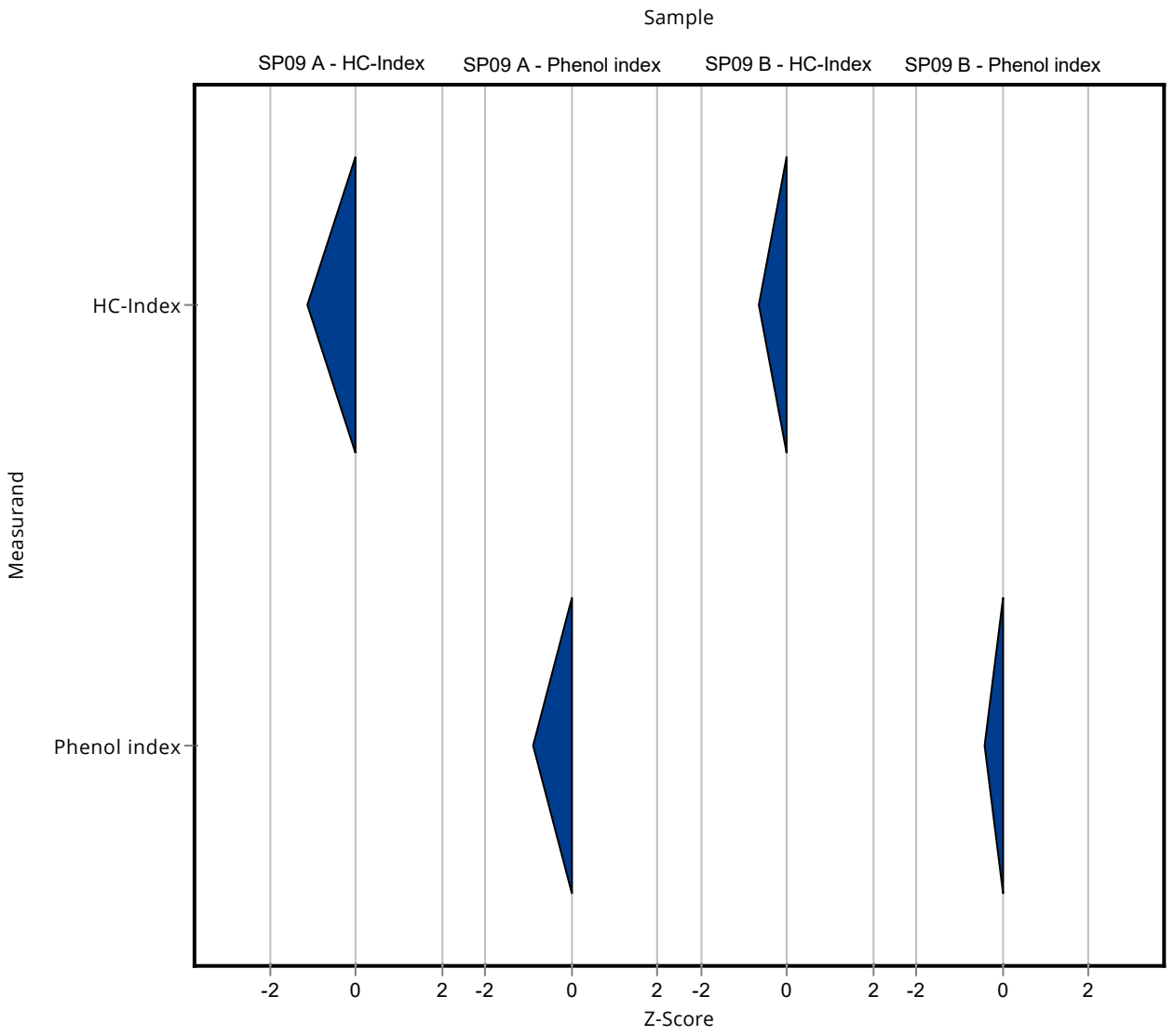
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.678 ± 0.0814	0.367	74	-0.65

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.022 ± 0.003	0.00268	90.4	-0.88

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.768 ± 0.112	0.0886	95.4	-0.42


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.0925	± 0.0111	0.0667	55.5	-2.32

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.678	± 0.0814	0.367	74	-1.17

Sample: SP09PHIA

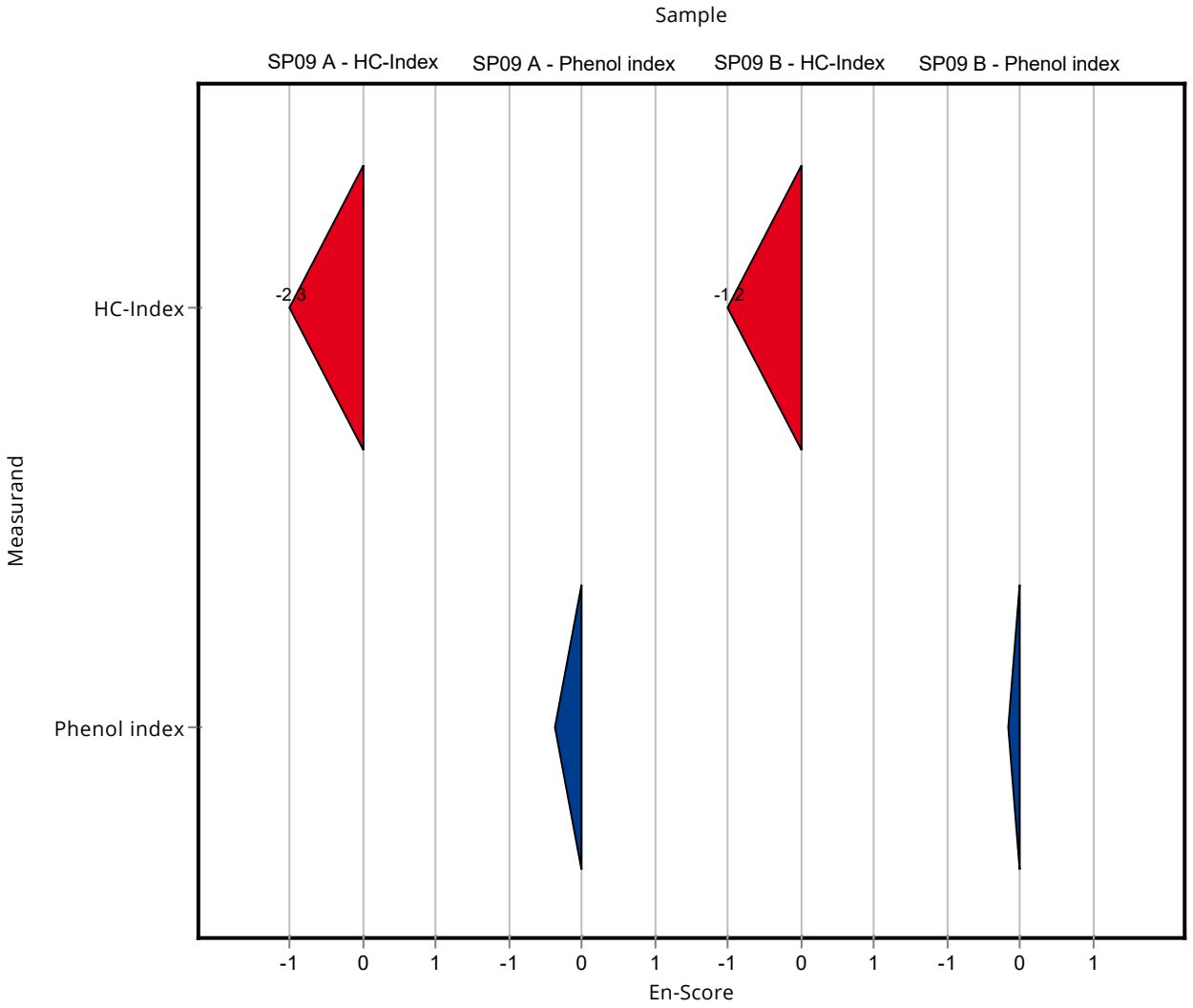
Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243	± 0.00146	0.022	± 0.003	0.00268	90.4	-0.38

Sample: SP09PHIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805	± 0.0228	0.768	± 0.112	0.0886	95.4	-0.17

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0029



Summary of results Sum parameters SP09 Labcode: LC0030

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.151 ± 0.036	0.0667	90.5	-0.24

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.812 ± 0.195	0.367	88.6	-0.29

Sample: SP09PHIA

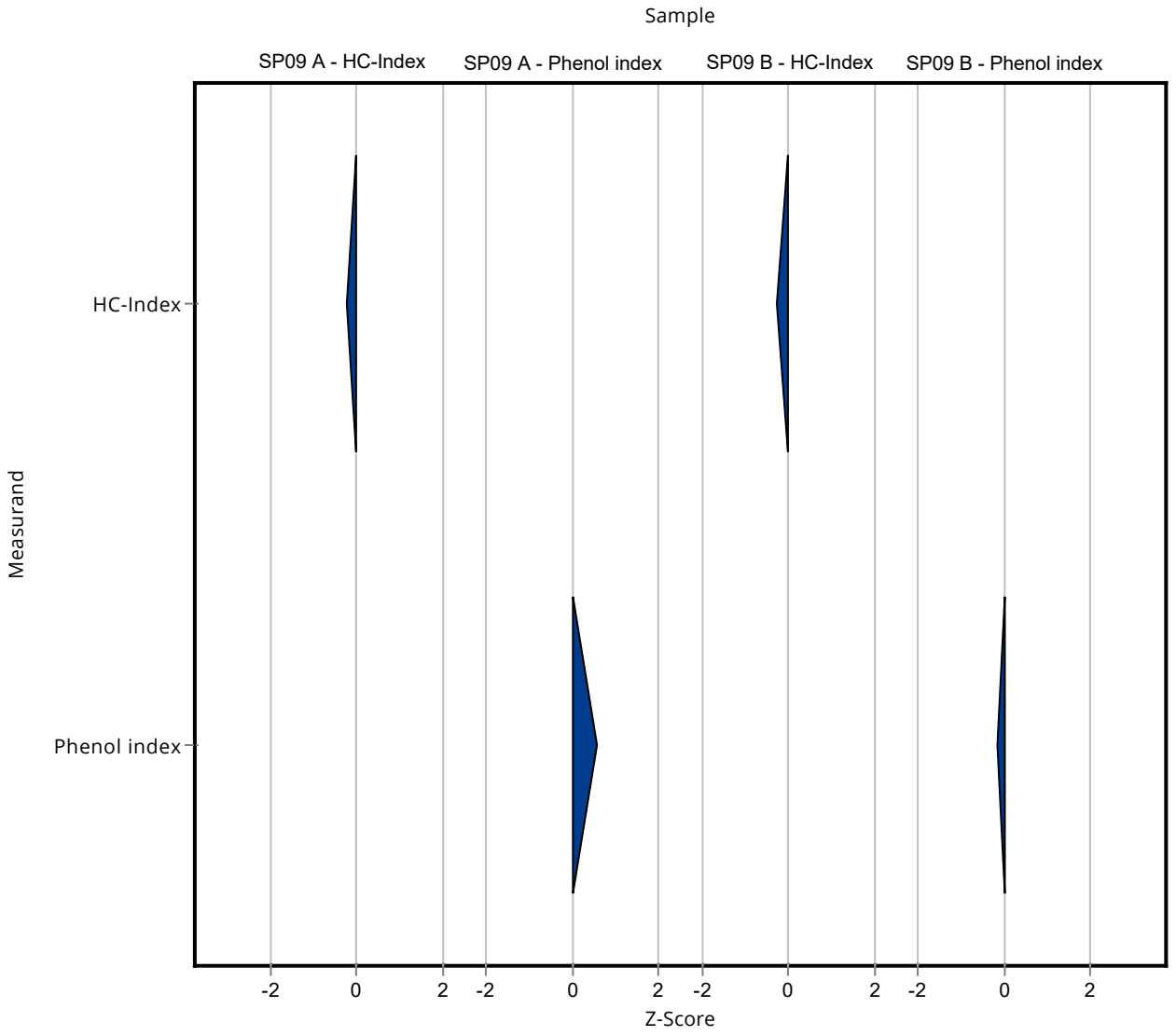
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0259 ± 0.002	0.00268	106	0.58

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.793 ± 0.071	0.0886	98.5	-0.14

Summary of results Sum parameters SP09

Labcode: LC0030



Summary of results Sum parameters SP09 - En-Score

Labcode: LC0030

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.151 ± 0.036	0.0667	90.5	-0.21

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.812 ± 0.195	0.367	88.6	-0.26

Sample: SP09PHIA

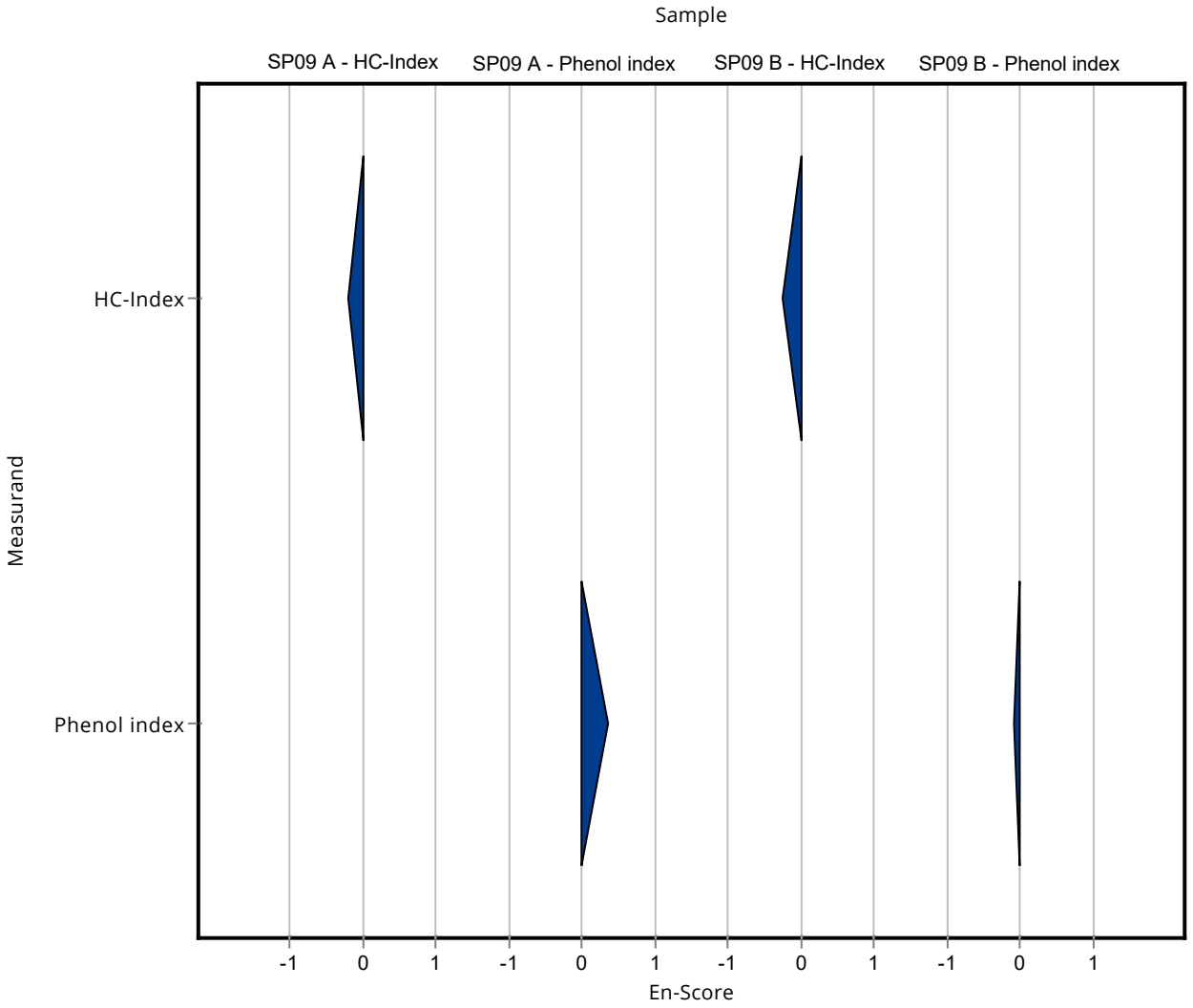
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0259 ± 0.002	0.00268	106	0.36

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.793 ± 0.071	0.0886	98.5	-0.09

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0030



Summary of results Sum parameters SP09

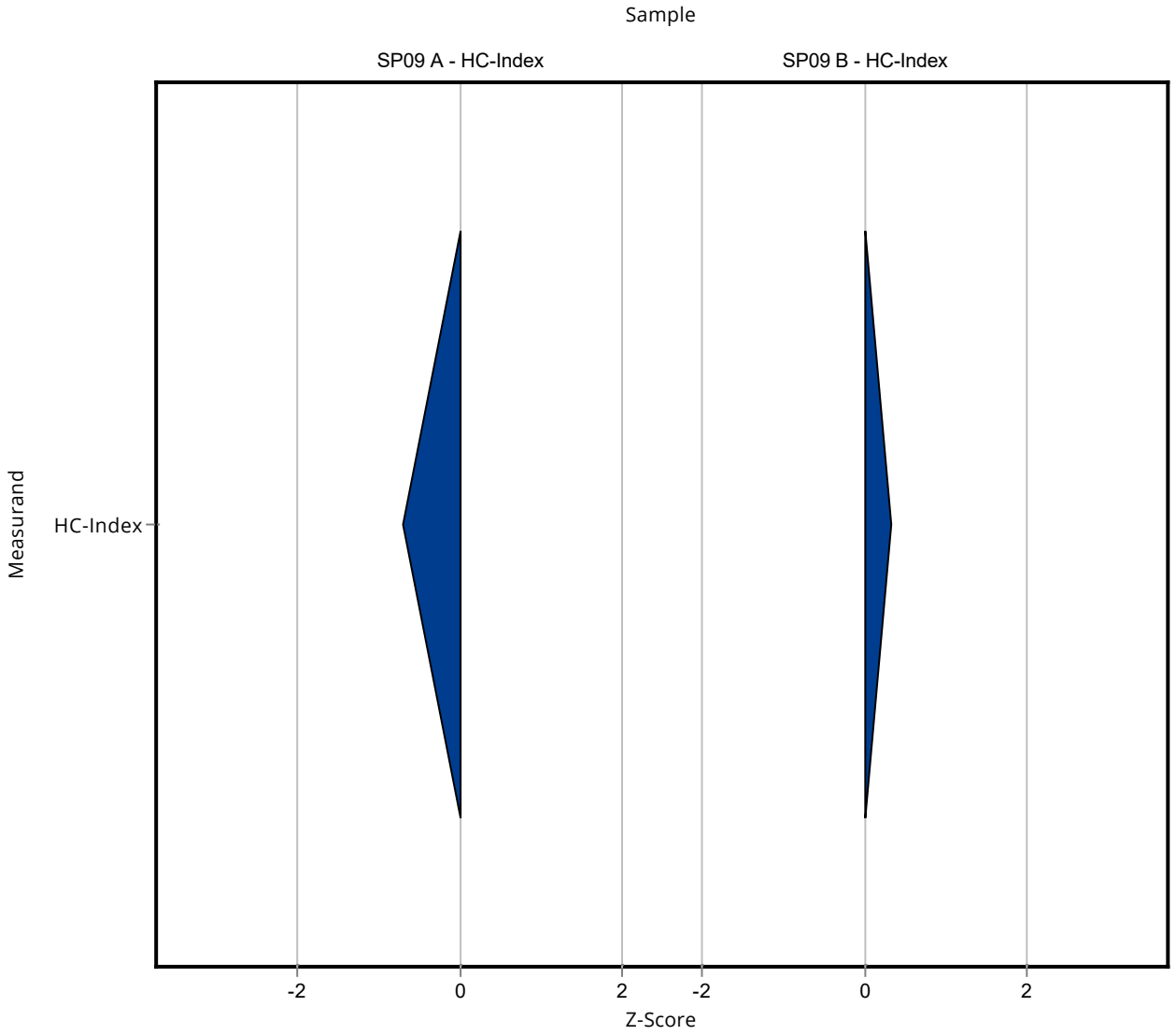
Labcode: LC0031

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.12 ± 0.04	0.0667	71.9	-0.70

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.04 ± 0.37	0.367	113	0.34



Summary of results Sum parameters SP09 - En-Score

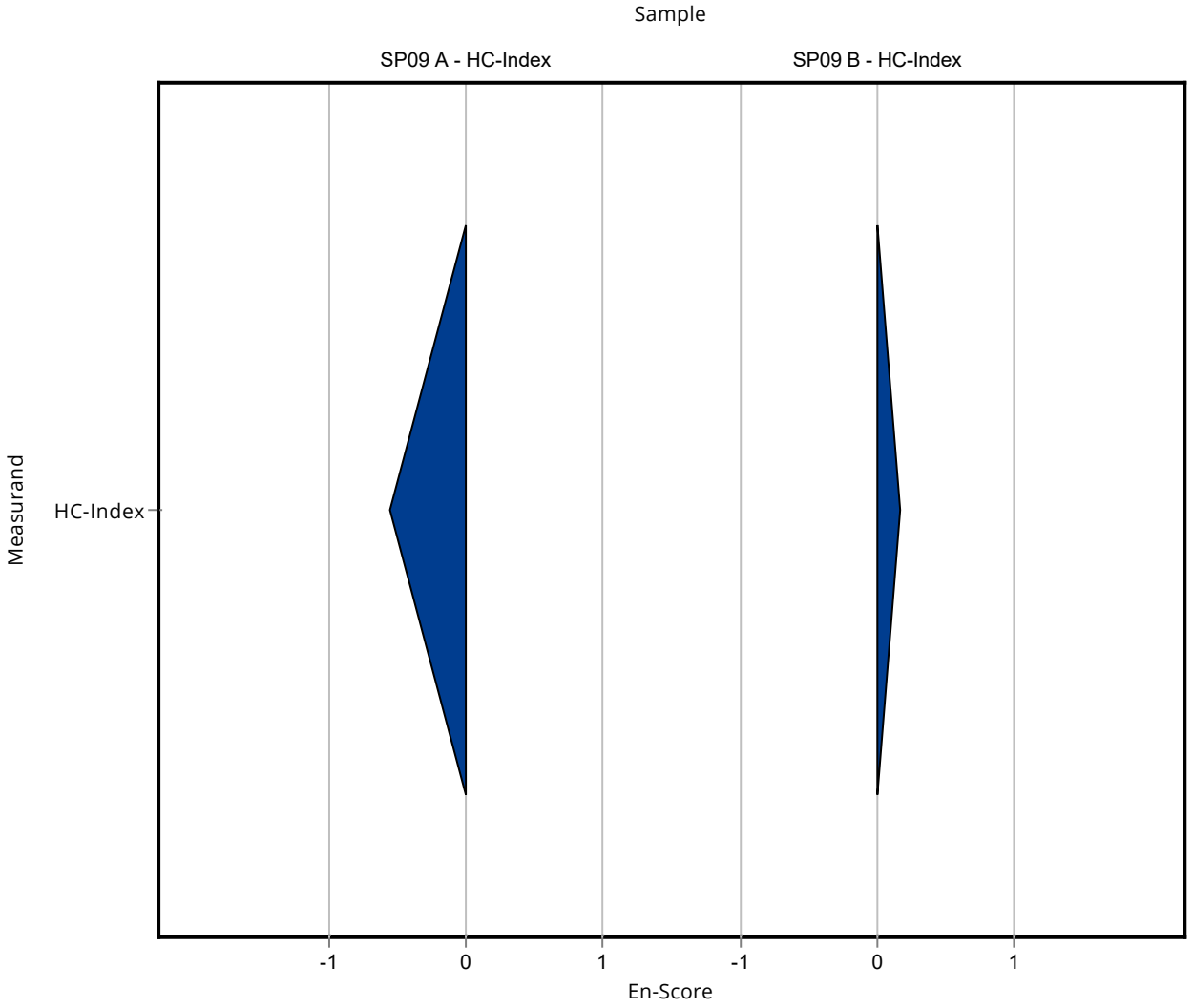
Labcode: LC0031

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.12	± 0.04	0.0667	71.9	-0.56

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	1.04	± 0.37	0.367	113	0.16



Summary of results Sum parameters SP09 Labcode: LC0032

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.16 ± 0.032	0.0667	95.9	-0.10

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.2 ± 0.24	0.367	131	0.77

Sample: SP09PHIA

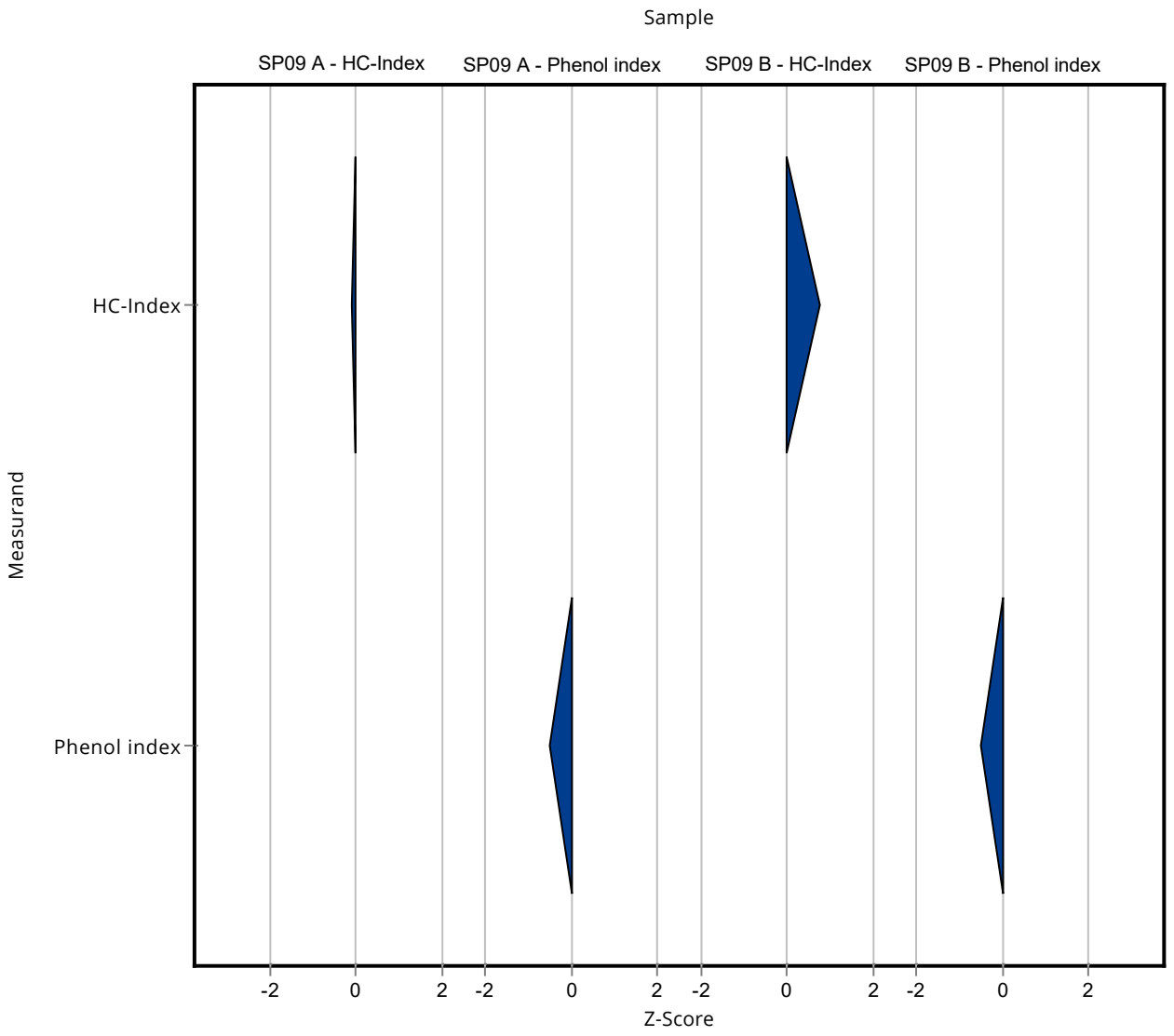
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.023 ± 0.004	0.00268	94.5	-0.50

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.76 ± 0.12	0.0886	94.4	-0.51

Summary of results Sum parameters SP09

Labcode: LC0032



Summary of results Sum parameters SP09 - En-Score

Labcode: LC0032

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.16 ± 0.032	0.0667	95.9	-0.10

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.2 ± 0.24	0.367	131	0.57

Sample: SP09PHIA

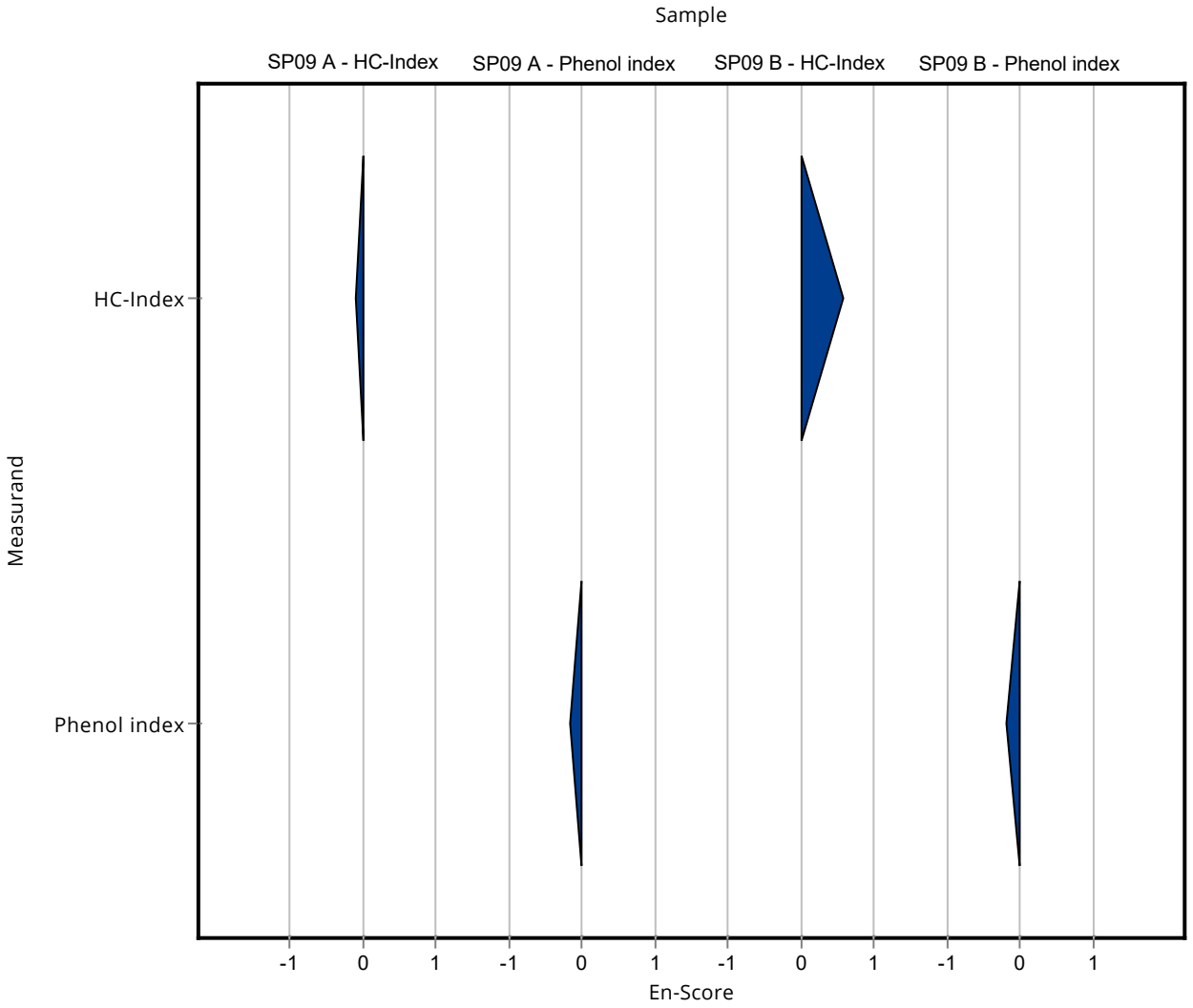
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.023 ± 0.004	0.00268	94.5	-0.17

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.76 ± 0.12	0.0886	94.4	-0.19

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0032



Summary of results Sum parameters SP09

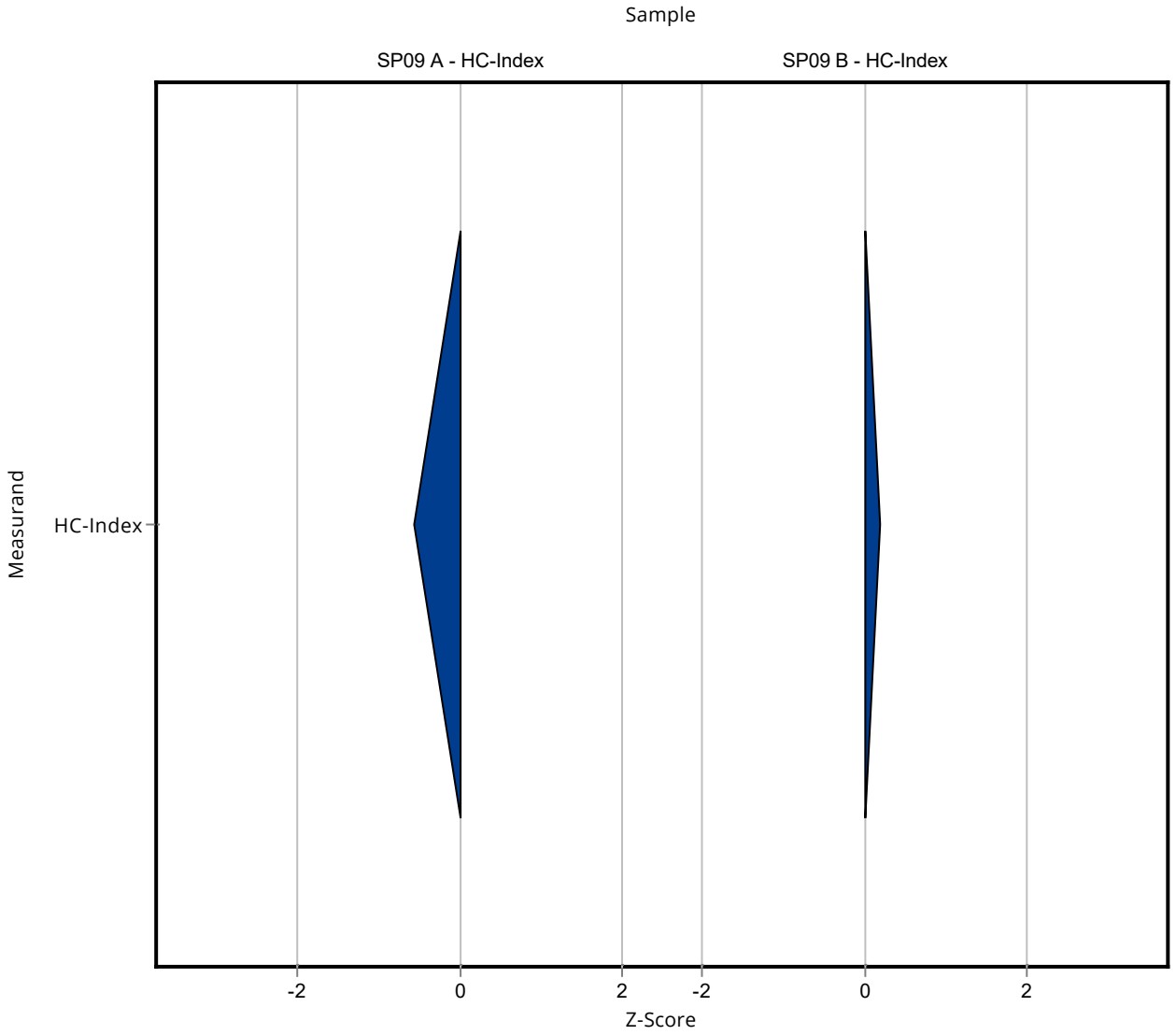
Labcode: LC0033

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.13 ± 0.038	0.0667	77.9	-0.55

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.989 ± 0.014	0.367	108	0.20



Summary of results Sum parameters SP09 - En-Score

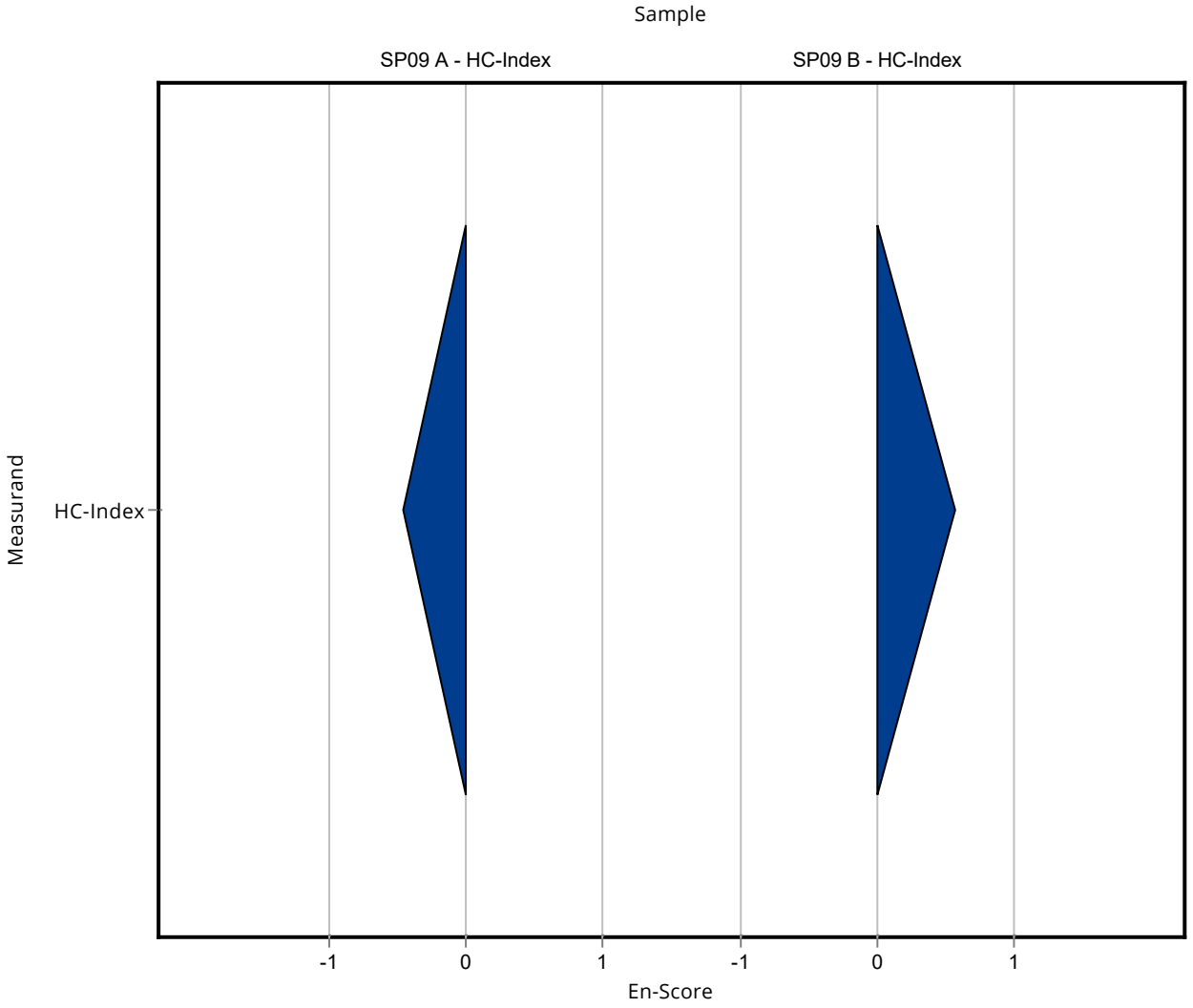
Labcode: LC0033

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.13	± 0.038	0.0667	77.9	-0.46

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.989	± 0.014	0.367	108	0.57



Summary of results Sum parameters SP09 Labcode: LC0034

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.1857 ± 0.032	0.0667	111	0.28

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.0792 ± 0.183	0.367	118	0.44

Sample: SP09PHIA

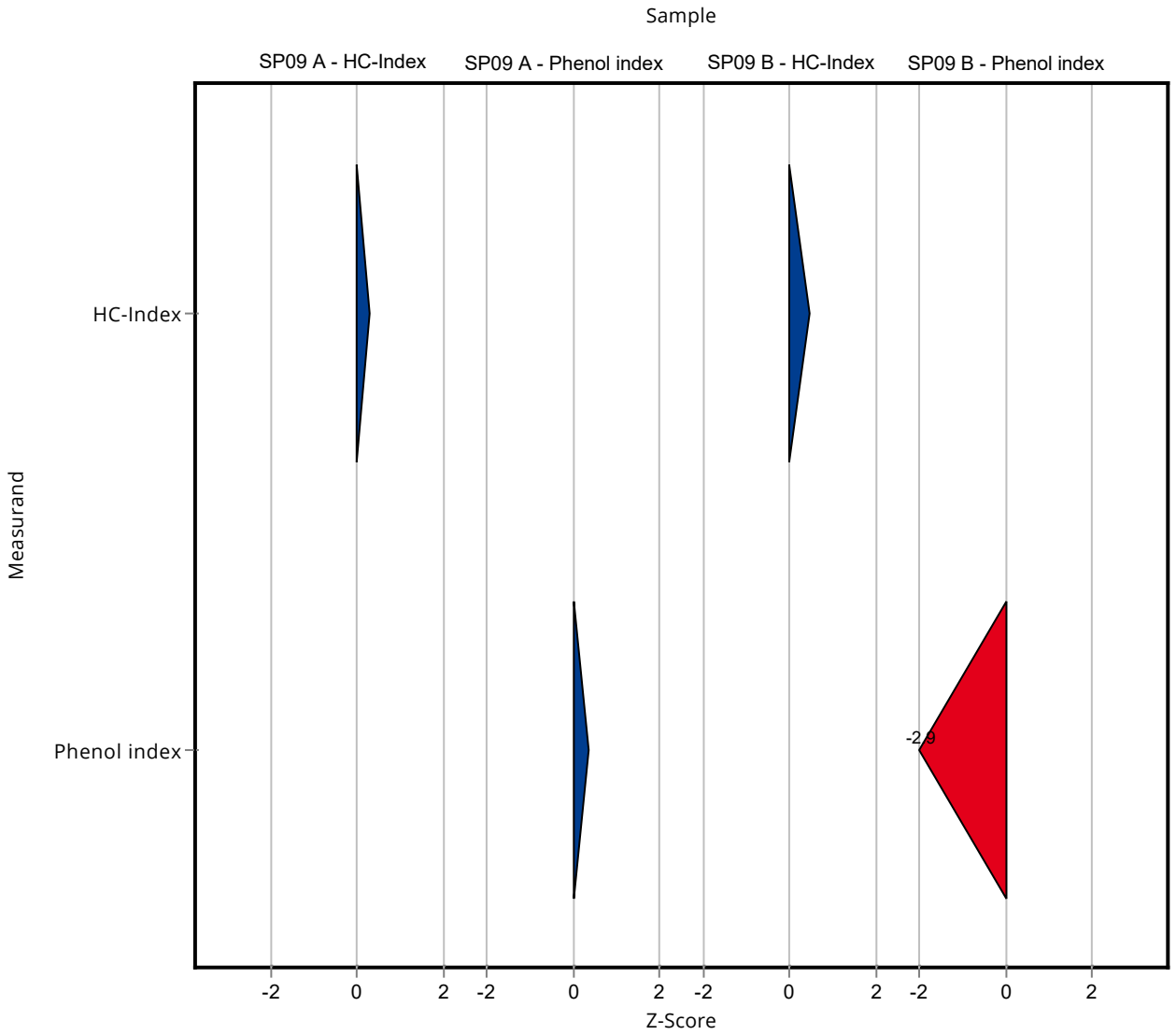
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0253 ± 0.002	0.00268	104	0.36

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.5504 ± 0.04	0.0886	68.3	-2.88

Summary of results Sum parameters SP09

Labcode: LC0034



Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.1857 ± 0.032	0.0667	111	0.28

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.0792 ± 0.183	0.367	118	0.42

Sample: SP09PHIA

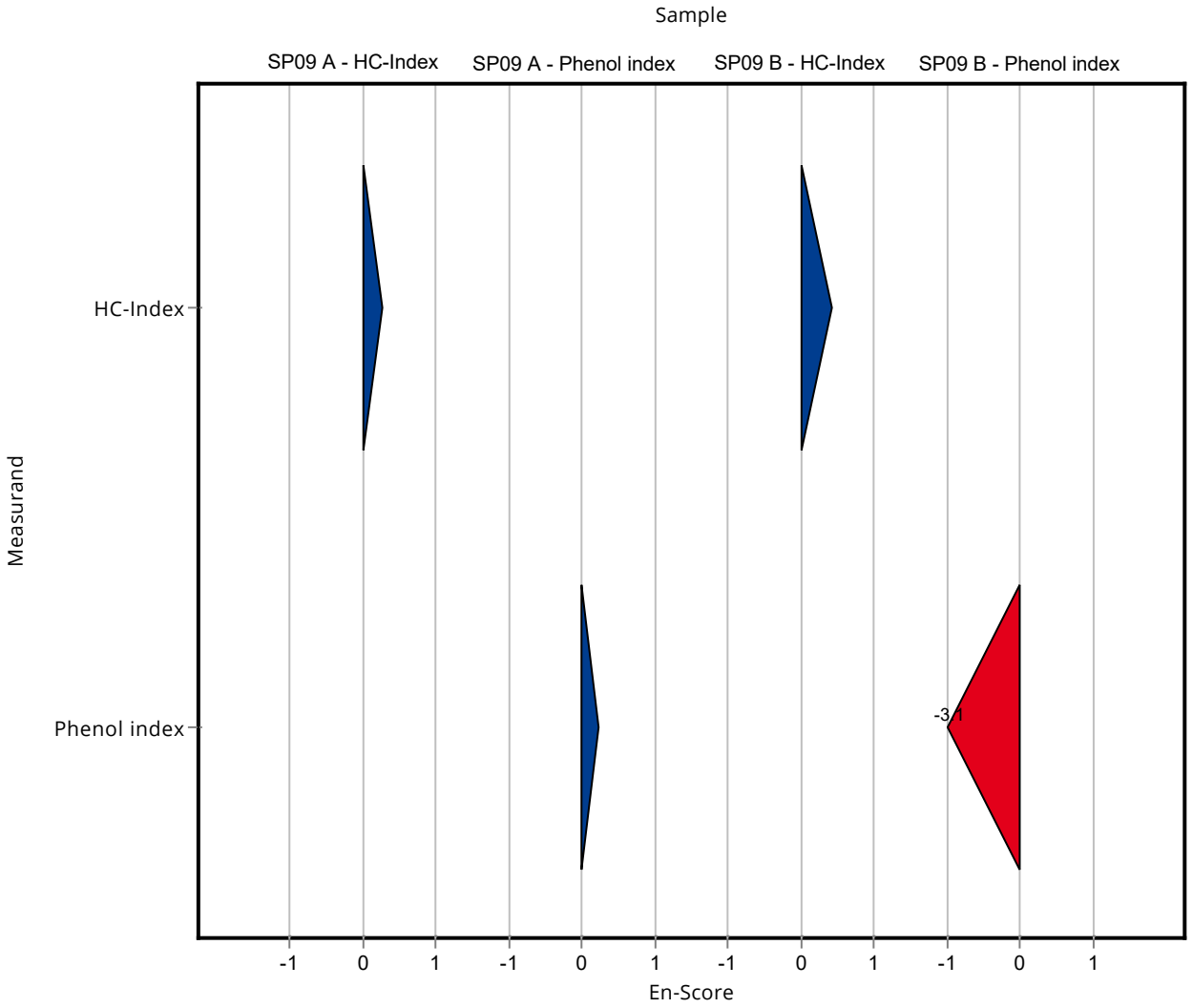
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0253 ± 0.002	0.00268	104	0.22

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.5504 ± 0.04	0.0886	68.3	-3.06

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0034



Summary of results Sum parameters SP09 Labcode: LC0035

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.128 ± 0.0032	0.0667	76.7	-0.58

Sample: SP09KWIB

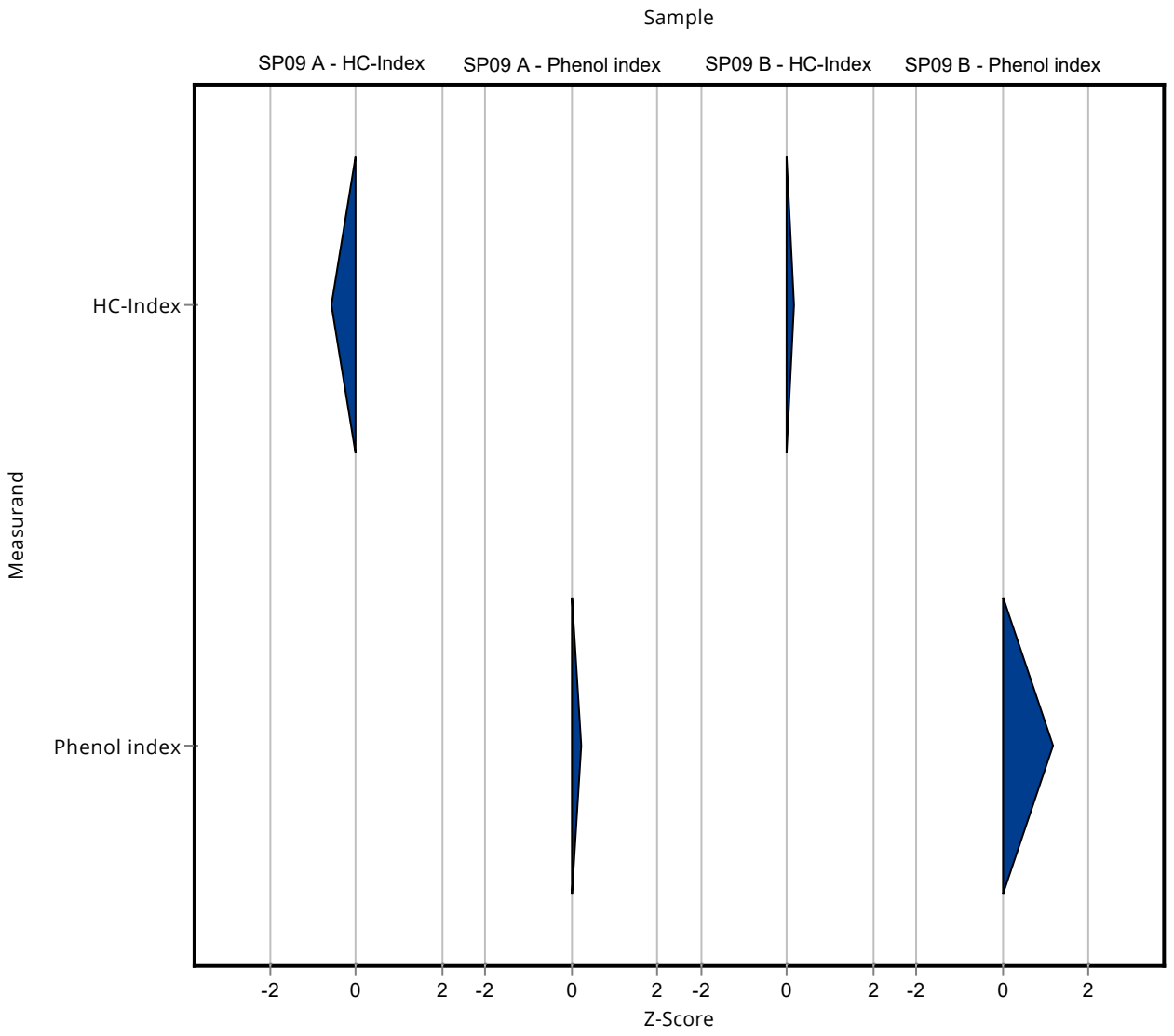
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.97 ± 0.024	0.367	106	0.15

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0249 ± 0.001	0.00268	102	0.21

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.91 ± 0.0379	0.0886	113	1.18


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0035

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.128 ± 0.0032	0.0667	76.7	-1.62

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.97 ± 0.024	0.367	106	0.40

Sample: SP09PHIA

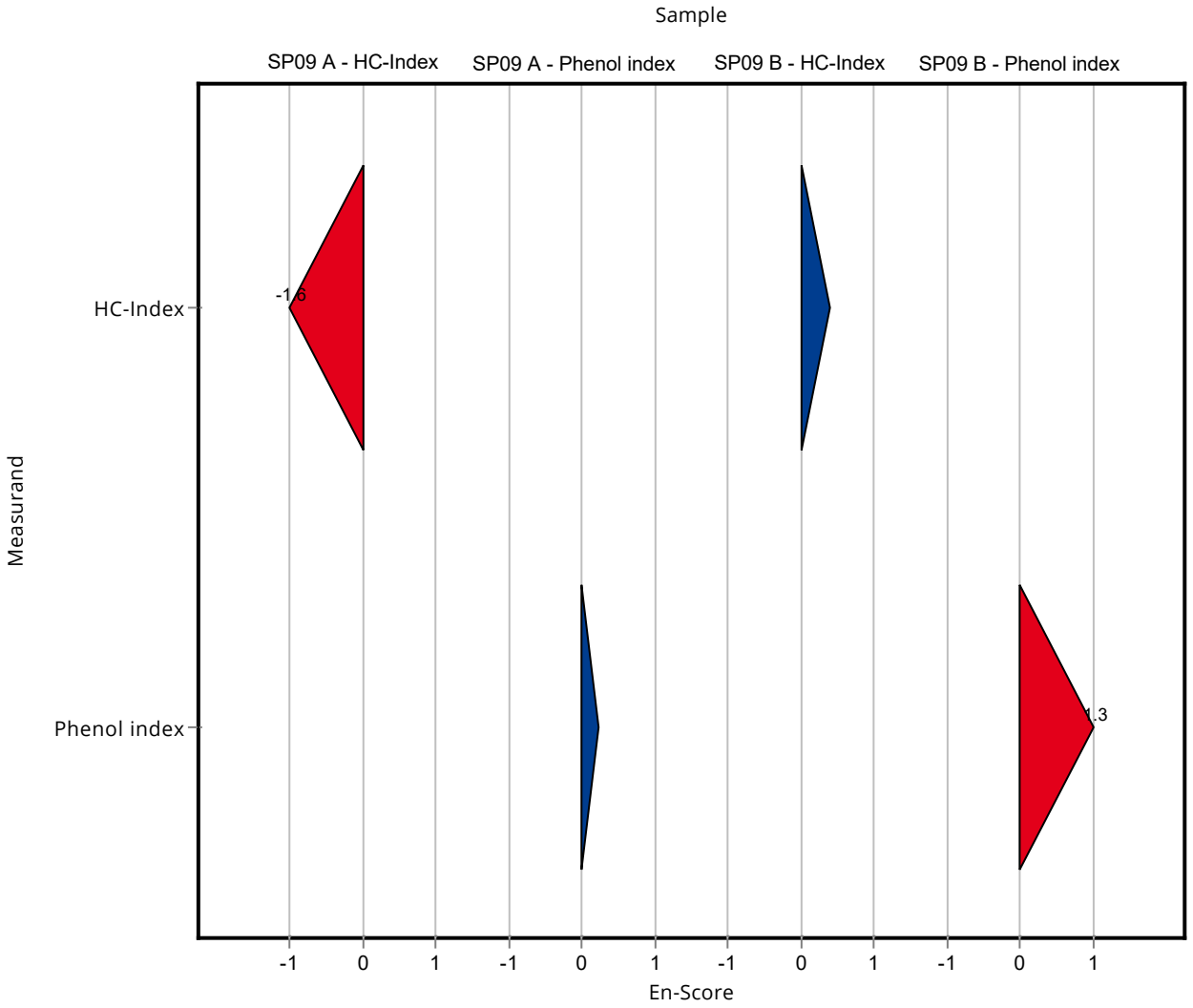
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0249 ± 0.001	0.00268	102	0.22

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.91 ± 0.0379	0.0886	113	1.32

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0035



Summary of results Sum parameters SP09 Labcode: LC0036

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.209 ± 0.0106	0.0667	125	0.63

Sample: SP09KWIB

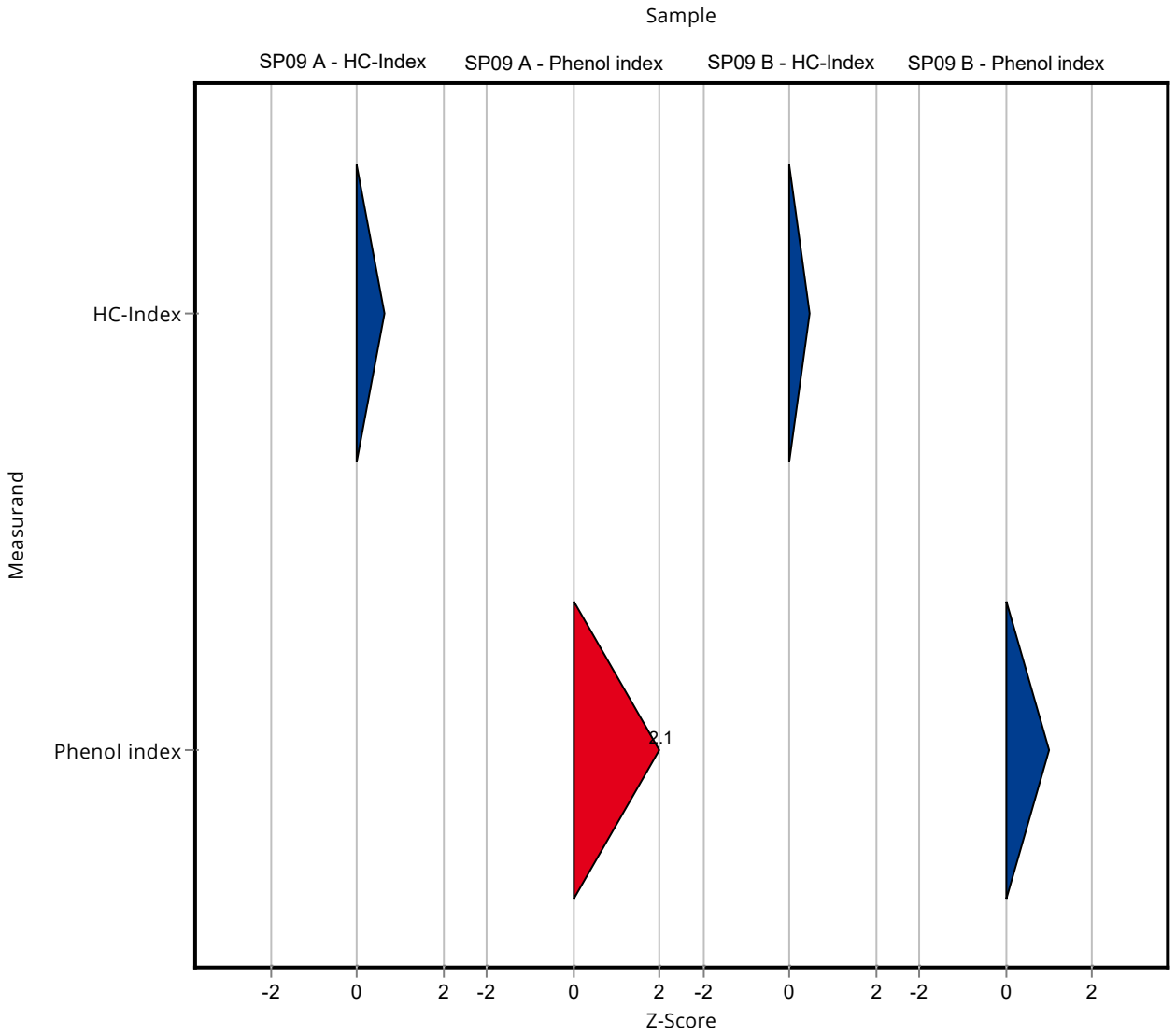
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.085 ± 0.0553	0.367	118	0.46

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.03 ± 0.00095	0.00268	123	2.11

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.895 ± 0.0282	0.0886	111	1.01


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
2.1
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.209 ± 0.0106	0.0667	125	1.35

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	1.085 ± 0.0553	0.367	118	1.02

Sample: SP09PHIA

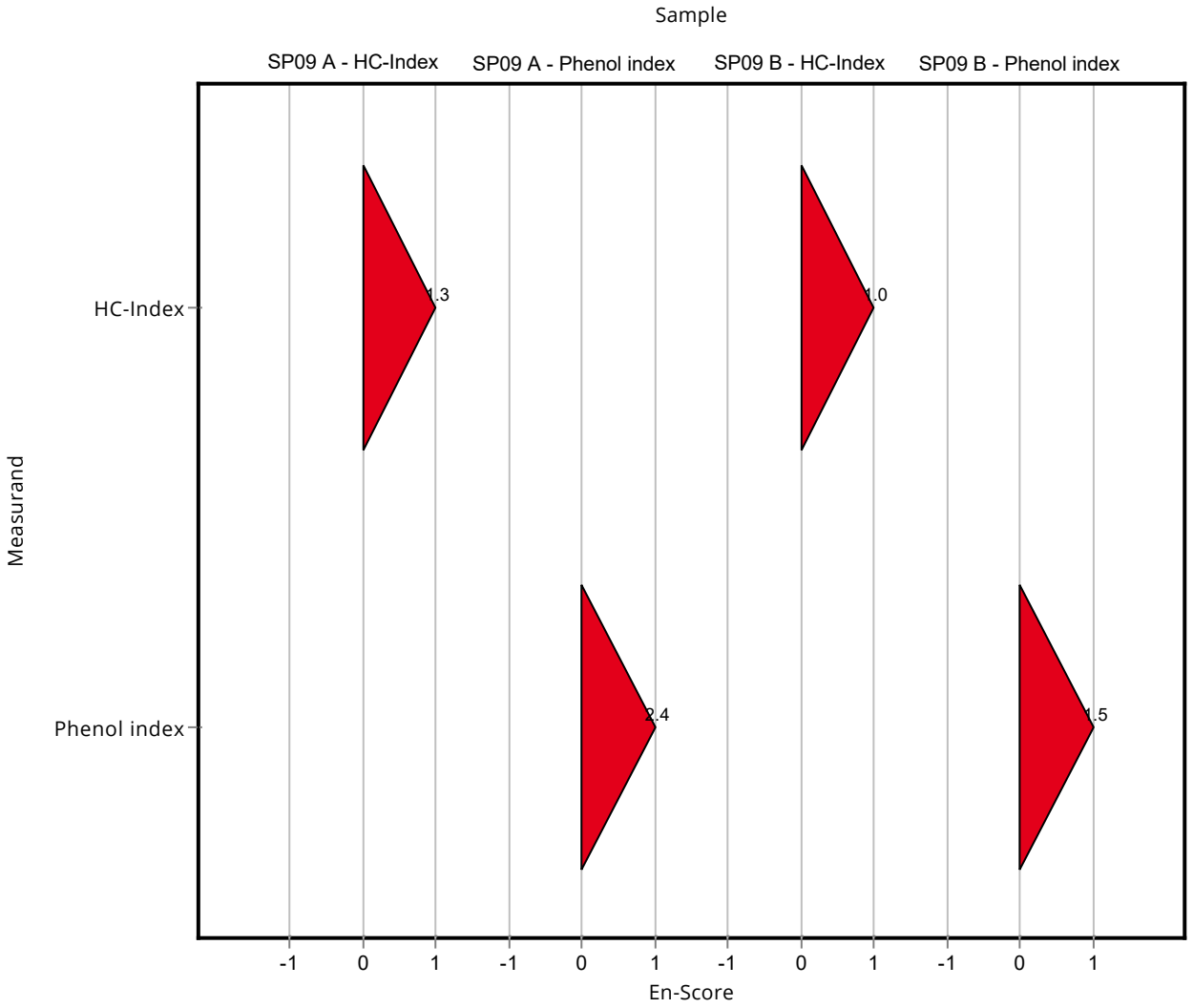
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.03 ± 0.00095	0.00268	123	2.36

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.895 ± 0.0282	0.0886	111	1.47

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0036



Summary of results Sum parameters SP09

Labcode: LC0037

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	- ± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0037

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	- ± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	- ± -	0.367	-	-

Summary of results Sum parameters SP09

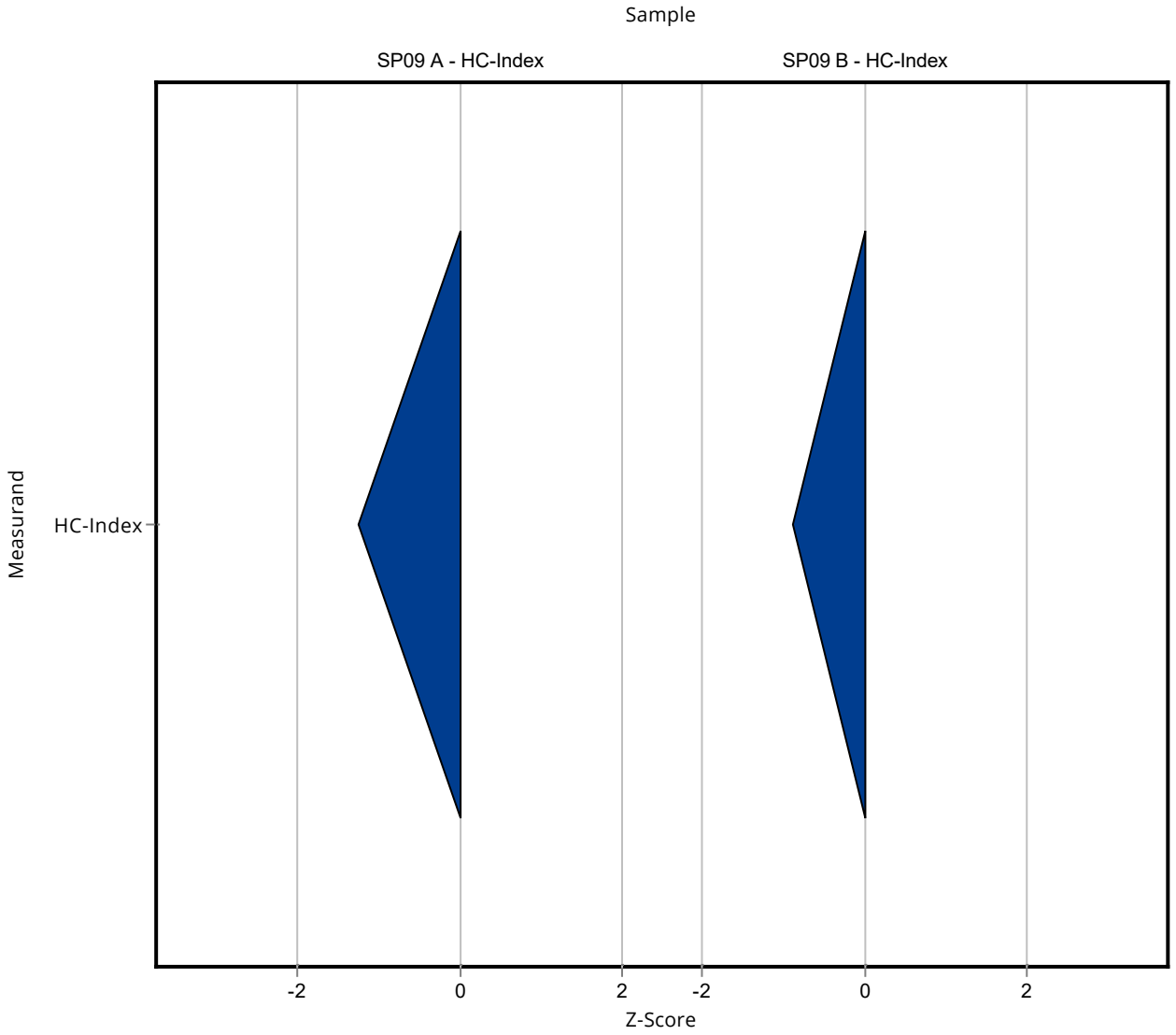
Labcode: LC0038

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.083 ± 0.013	0.0667	49.8	-1.26

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.592 ± 0.09	0.367	64.6	-0.89



Summary of results Sum parameters SP09 - En-Score

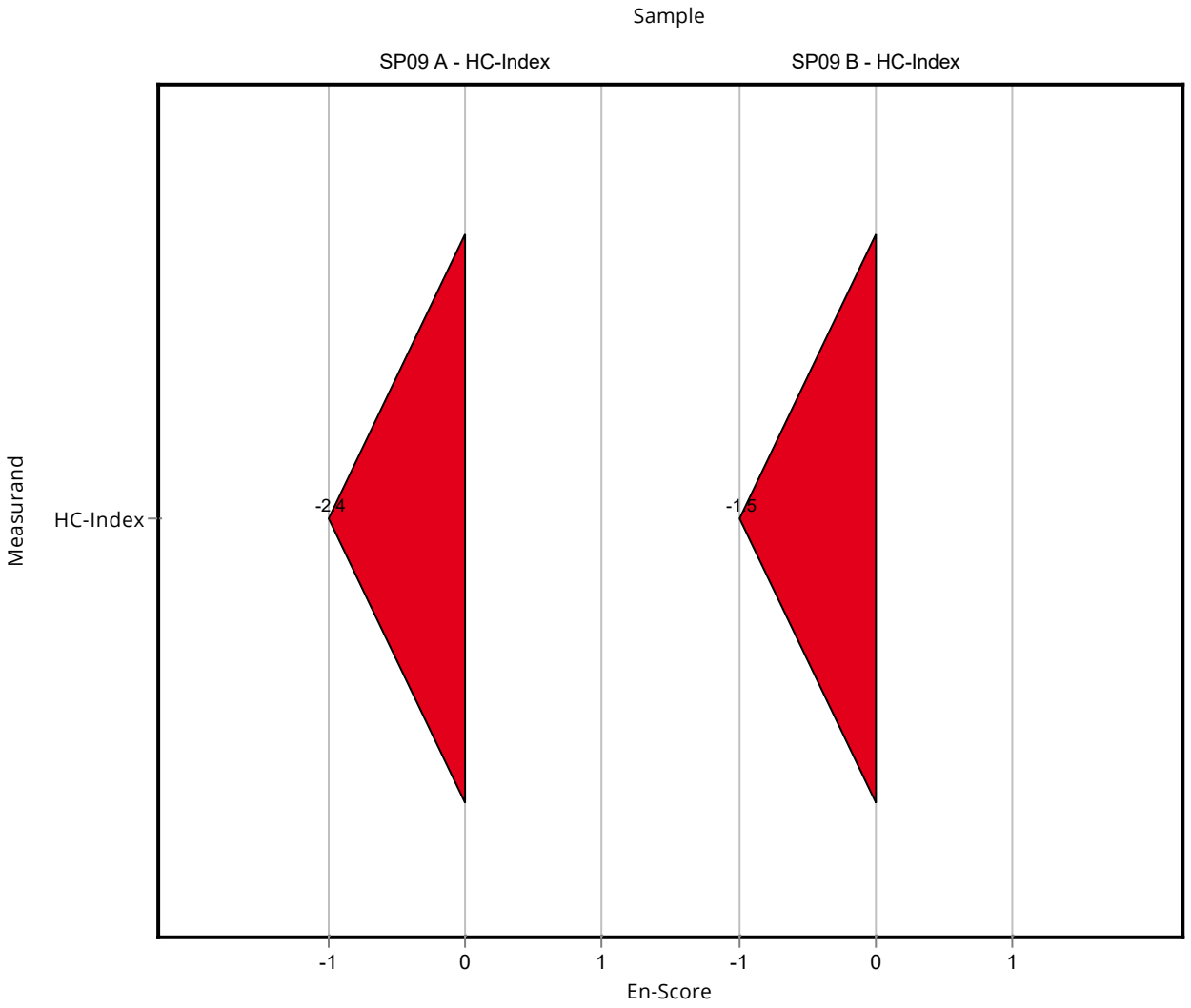
Labcode: LC0038

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.083 ± 0.013	0.0667	49.8	-2.41

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.592 ± 0.09	0.367	64.6	-1.49



Summary of results Sum parameters SP09 Labcode: LC0039

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	<0.05 (LOQ) ± -	0.0667	-	-

Sample: SP09KWIB

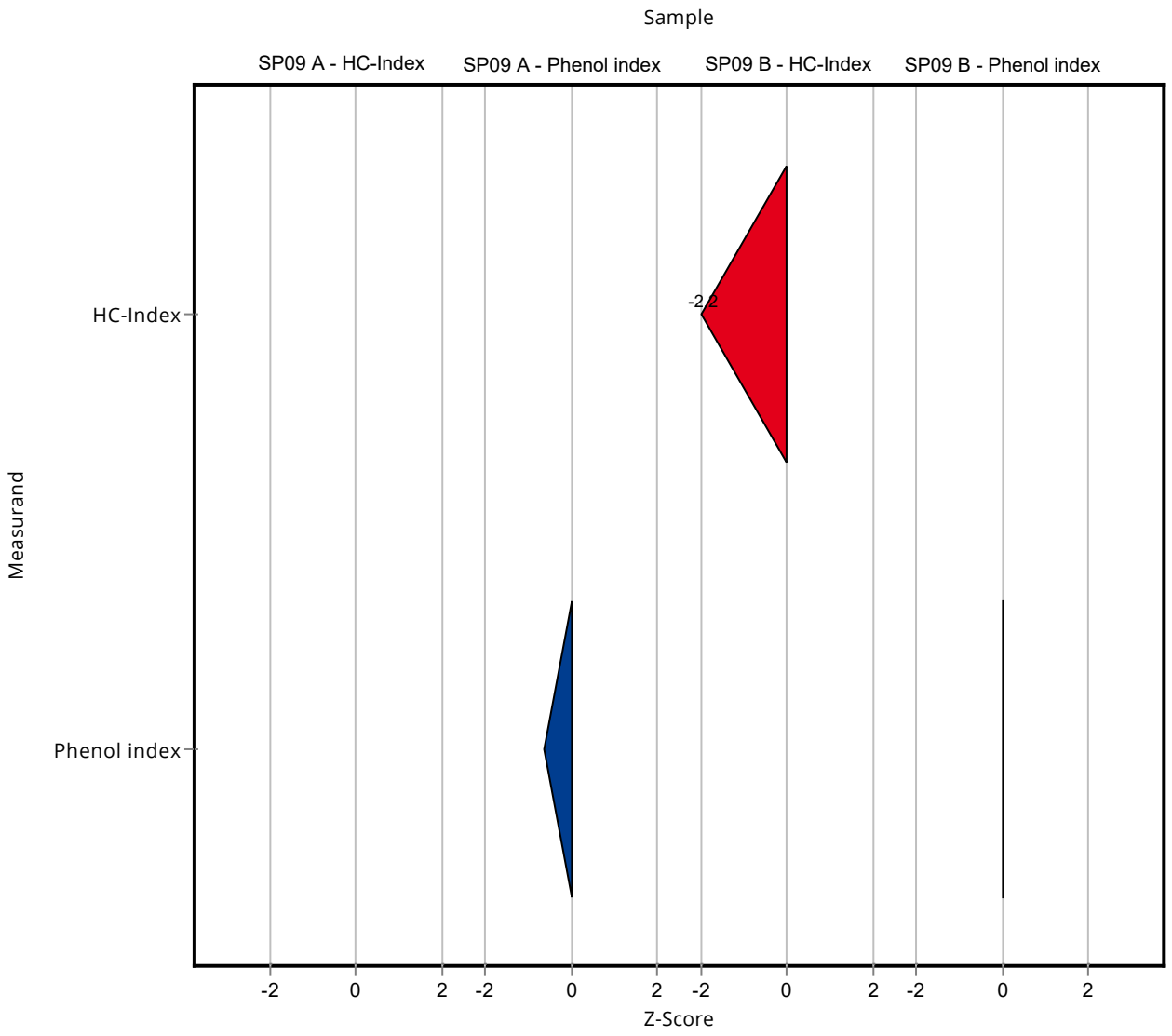
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.12 ± 0.01422	0.367	13.1	-2.17

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0226 ± 0.004723	0.00268	92.8	-0.65

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.8065 ± 0.168559	0.0886	100	0.01


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2,2
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0039

Sample: SP09KWIA

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	±	0.0231	<0.05 (LOQ)	±	-	0.0667	-	-

Sample: SP09KWIB

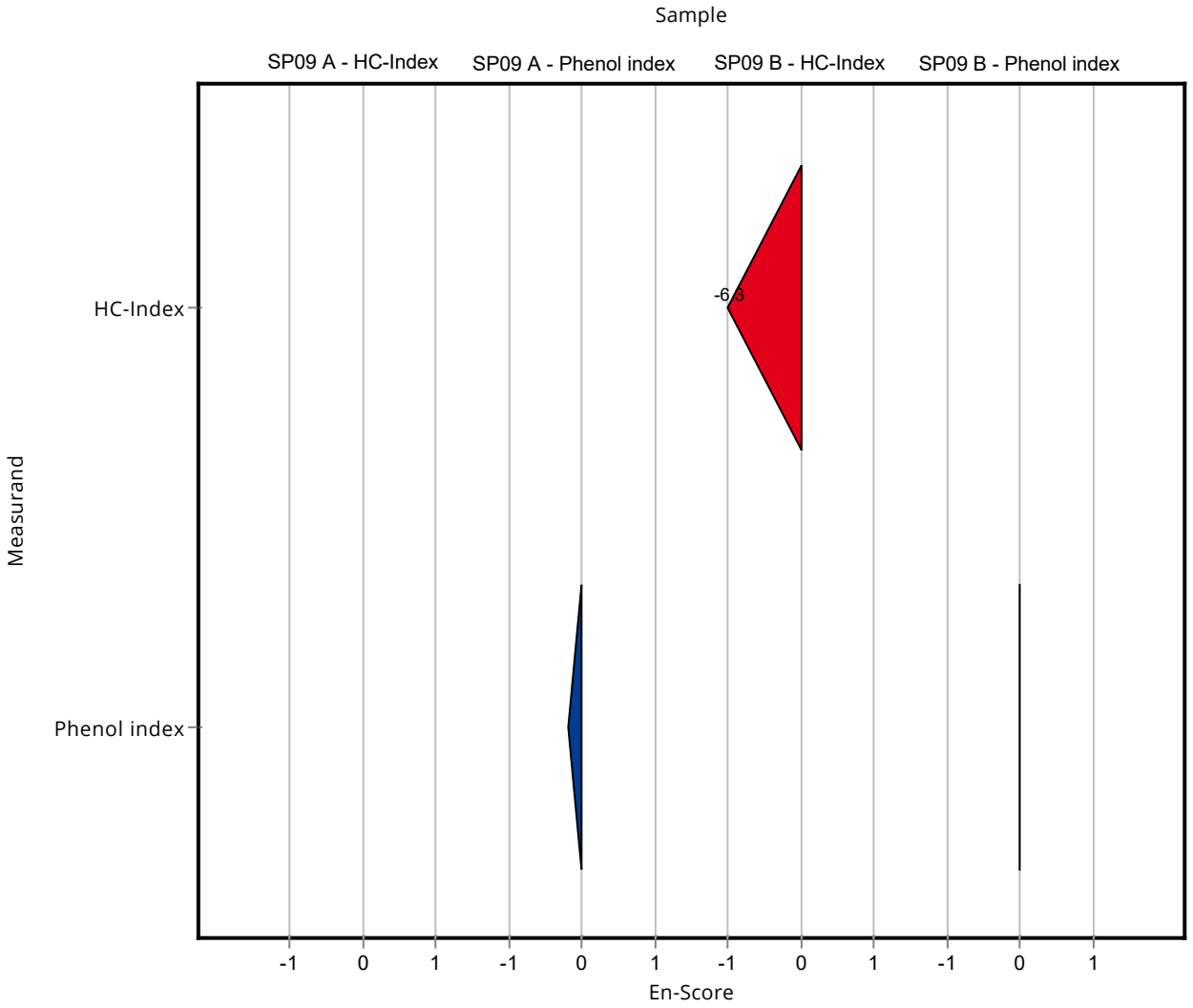
Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	±	0.123	0.12	±	0.01422	0.367	13.1	-6.31

Sample: SP09PHIA

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243	±	0.00146	0.0226	±	0.004723	0.00268	92.8	-0.18

Sample: SP09PHIB

Parameter	Unit	Assigned value	±	U (k=2)	Result	±	U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805	±	0.0228	0.8065	±	0.168559	0.0886	100	0.00


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-6.3
-1
0
1
En-Score

Summary of results Sum parameters SP09

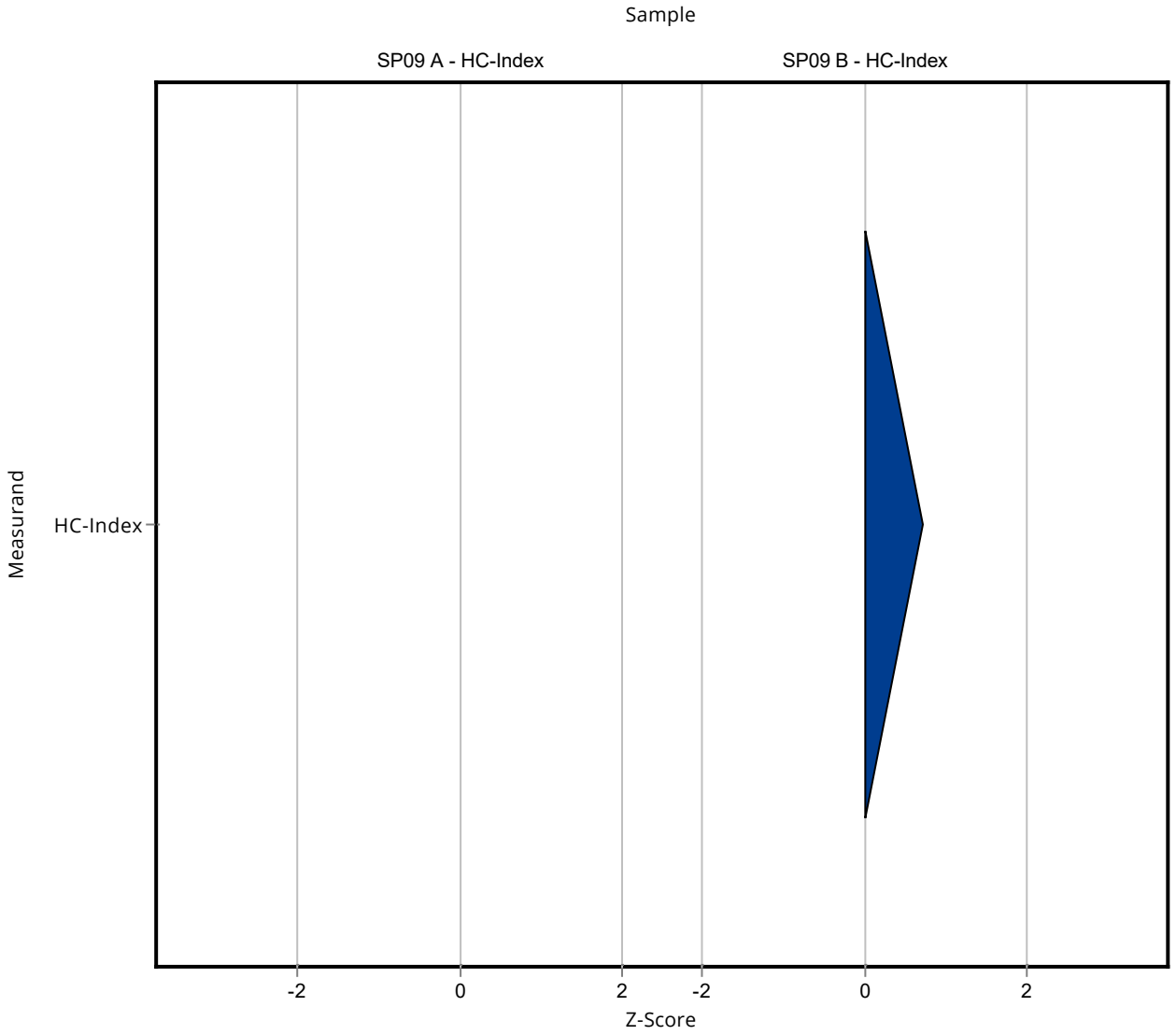
Labcode: LC0040

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	<0.5 (LOQ) ± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.18 ± 0.28	0.367	129	0.72



Summary of results Sum parameters SP09 - En-Score

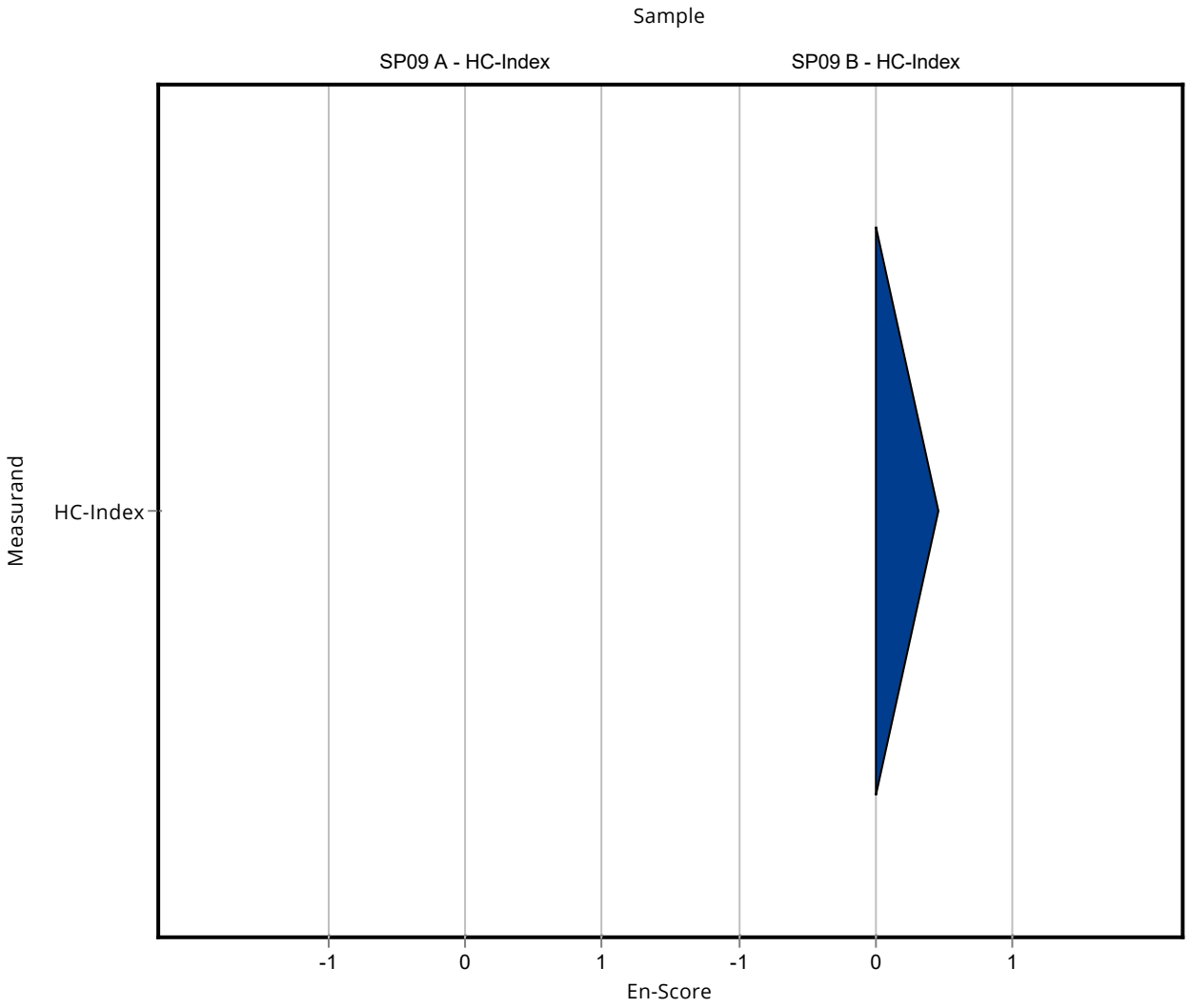
Labcode: LC0040

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	<0.5 (LOQ)	± -	0.0667	-	-

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	1.18	± 0.28	0.367	129	0.46



Summary of results Sum parameters SP09 Labcode: LC0041

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.0358 ± 0.00687	0.0667	21.5	-1.96

Sample: SP09KWIB

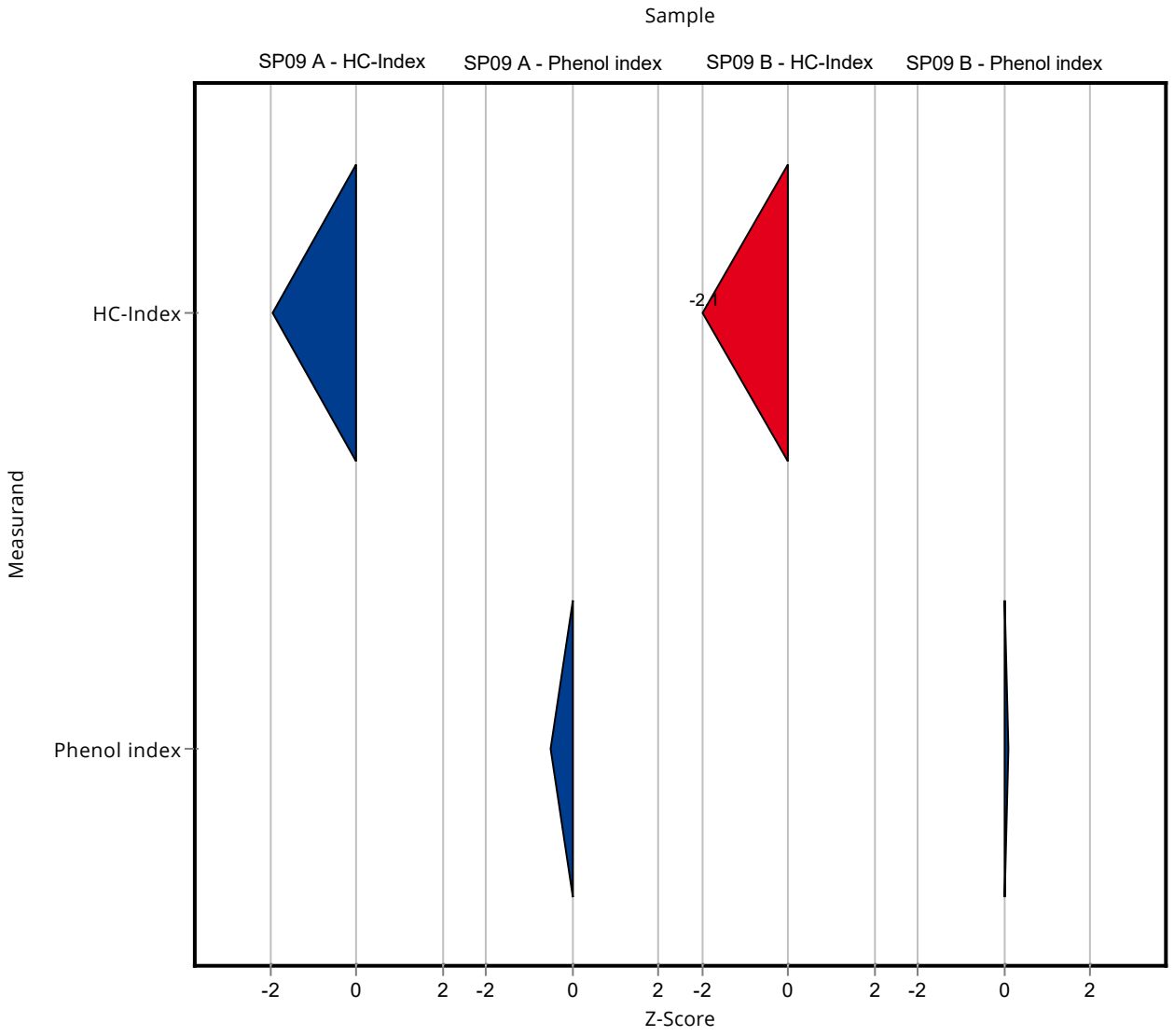
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.139 ± 0.0266	0.367	15.2	-2.12

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.02304 ± 0.0023	0.00268	94.6	-0.49

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.8142 ± 0.0814	0.0886	101	0.10


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0041

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.0358	± 0.00687	0.0667	21.5	-4.87

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.139	± 0.0266	0.367	15.2	-5.80

Sample: SP09PHIA

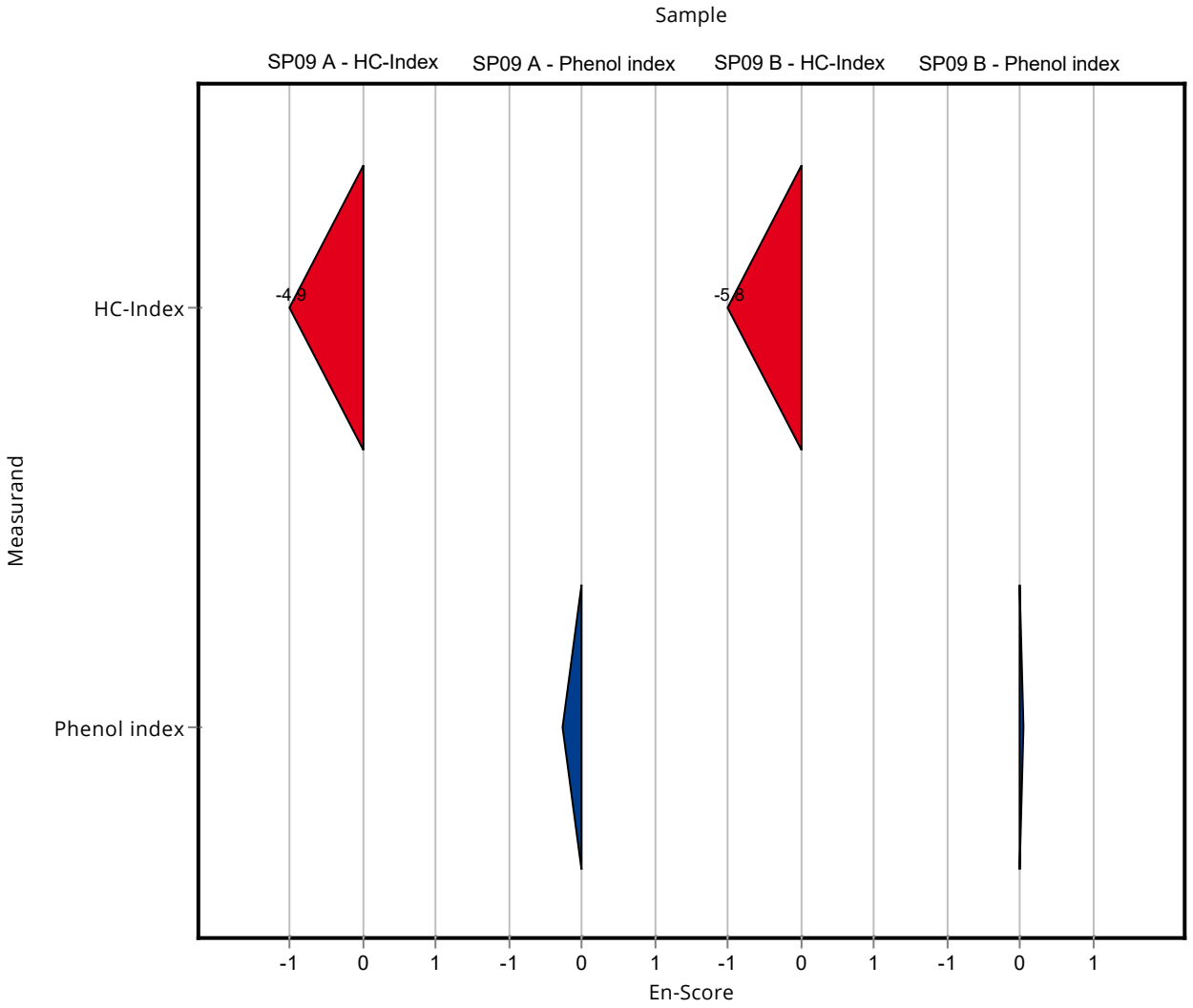
Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243	± 0.00146	0.02304	± 0.0023	0.00268	94.6	-0.27

Sample: SP09PHIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805	± 0.0228	0.8142	± 0.0814	0.0886	101	0.05

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0041



Summary of results Sum parameters SP09 Labcode: LC0042

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.151 ± 0.021	0.0667	90.5	-0.24

Sample: SP09KWIB

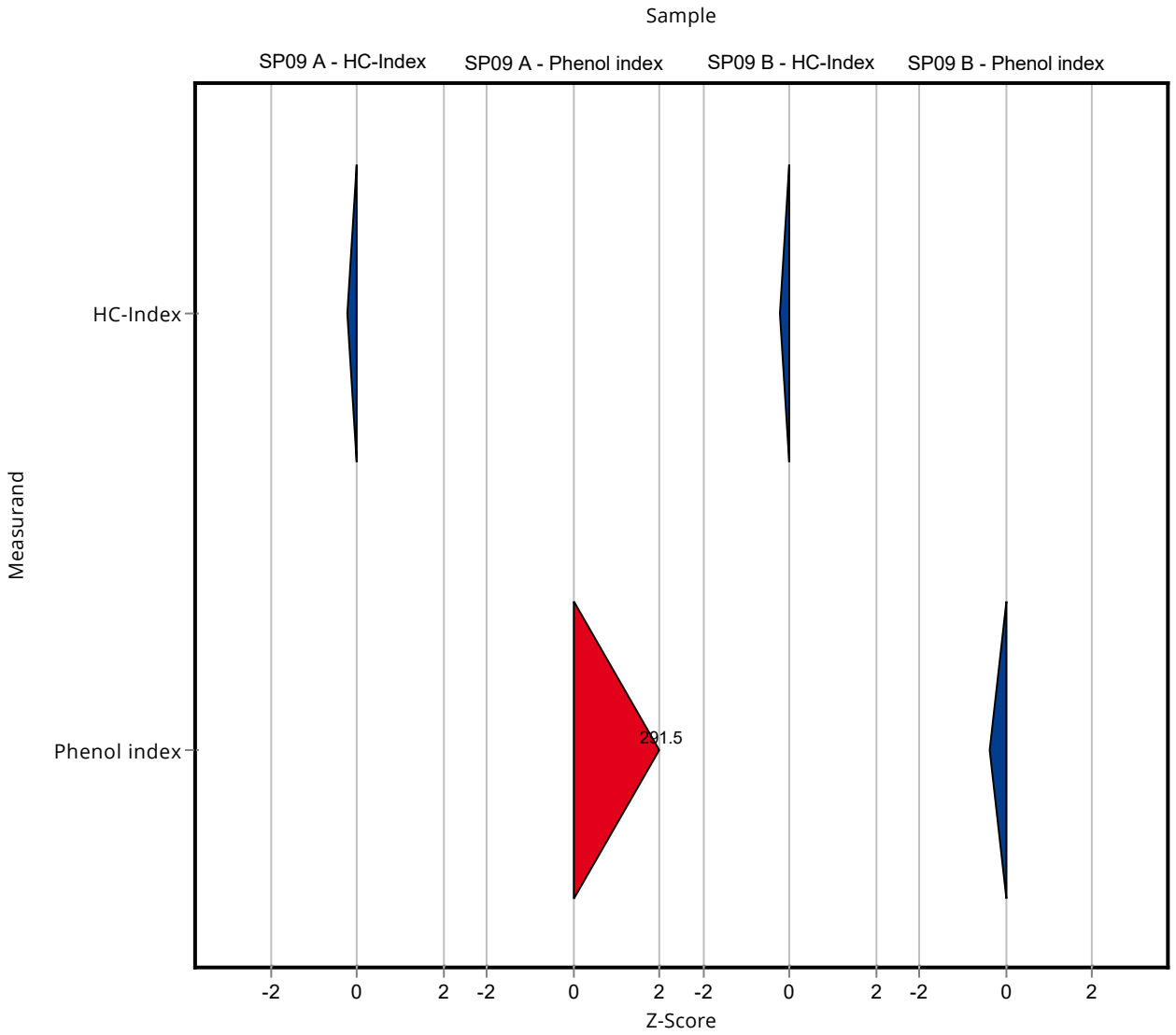
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.841 ± 0.115	0.367	91.8	-0.21

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.805 ± 0.044	0.00268	3310	291.49

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.774 ± 0.043	0.0886	96.1	-0.35


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
291.5
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0042

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.151 ± 0.021	0.0667	90.5	-0.33

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.841 ± 0.115	0.367	91.8	-0.29

Sample: SP09PHIA

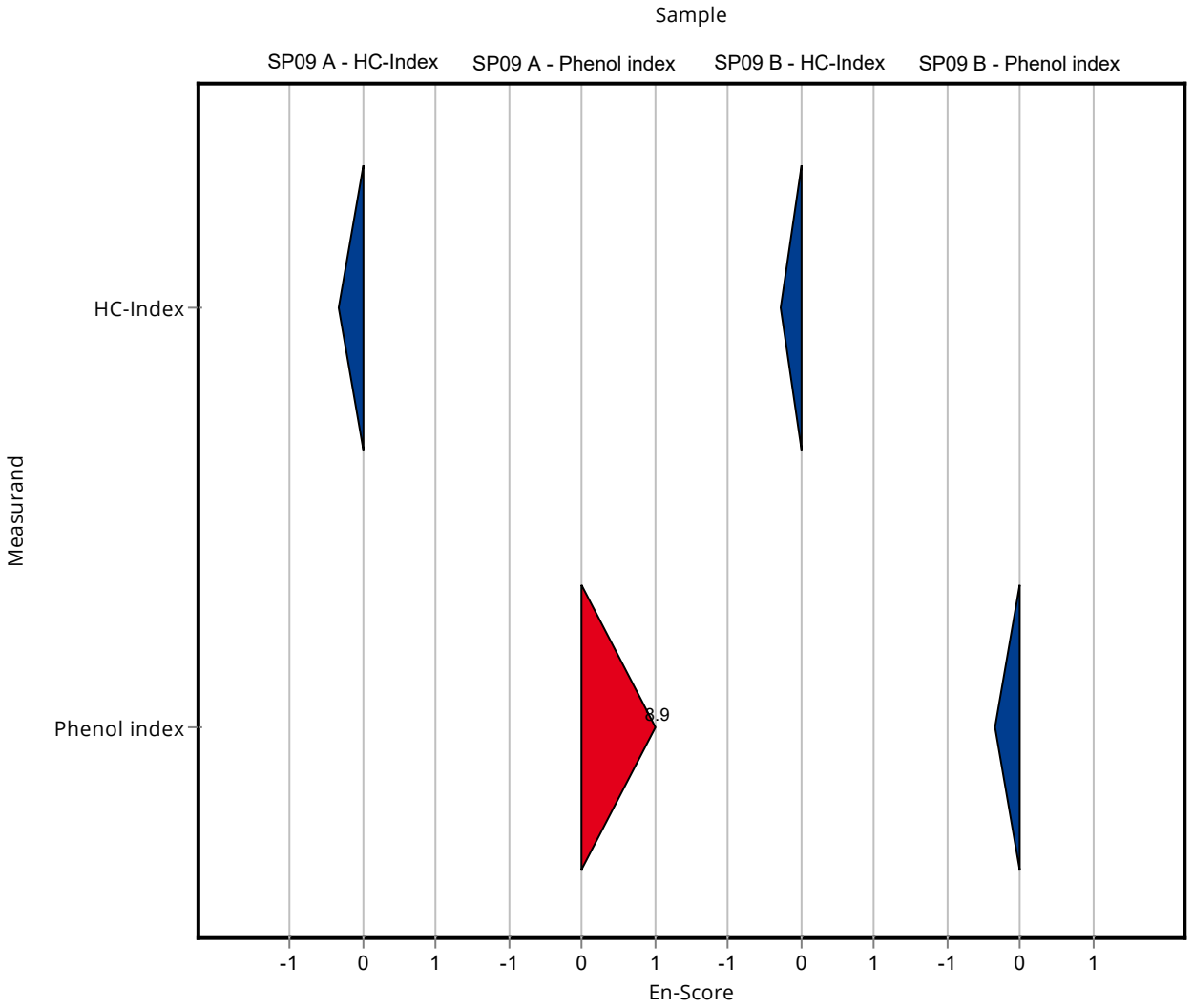
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.805 ± 0.044	0.00268	3310	8.87

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.774 ± 0.043	0.0886	96.1	-0.35

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0042



Summary of results Sum parameters SP09

Labcode: LC0043

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.1 ± 0.04	0.0667	60	-1.00

Sample: SP09KWIB

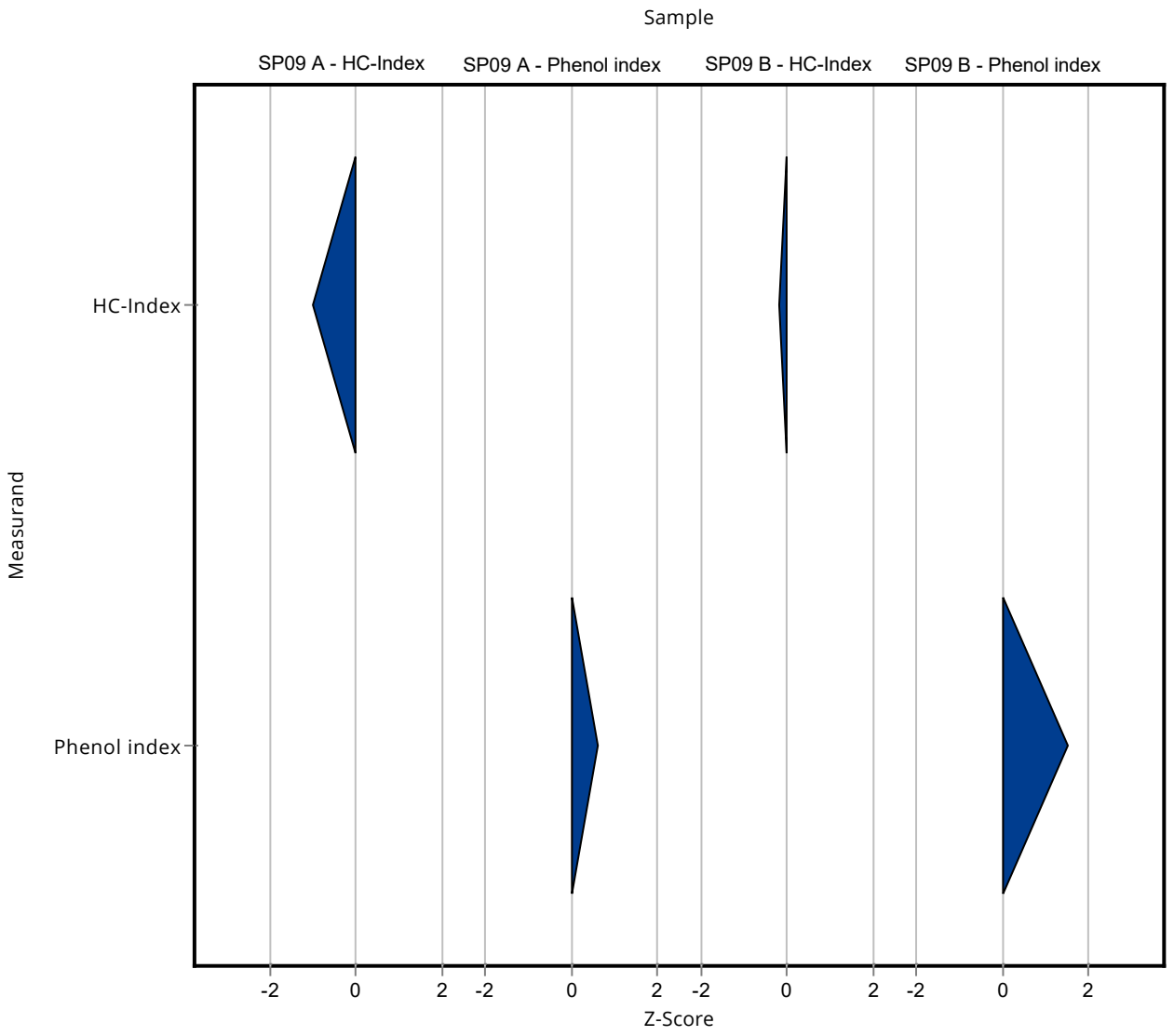
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.844 ± 0.342	0.367	92.1	-0.20

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.026 ± 0.008	0.00268	107	0.62

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.939 ± 0.287	0.0886	117	1.51


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
Measurand
HC-Index
Phenol index
-2
0
2
Z-Score

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0043

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167 ± 0.0231	0.1 ± 0.04	0.0667	60	-0.80

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917 ± 0.123	0.844 ± 0.342	0.367	92.1	-0.10

Sample: SP09PHIA

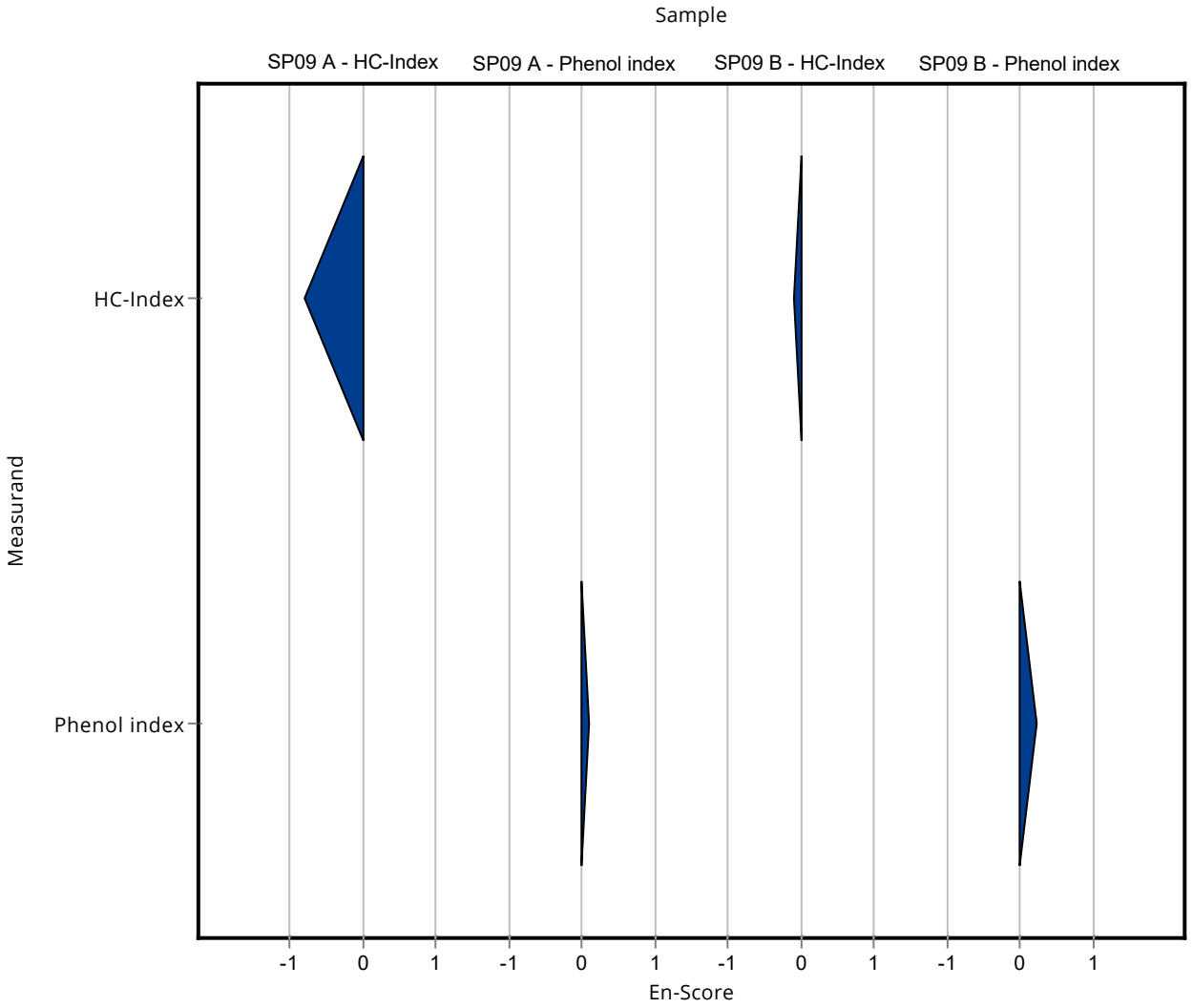
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.026 ± 0.008	0.00268	107	0.10

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805 ± 0.0228	0.939 ± 0.287	0.0886	117	0.23

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0043



Summary of results Sum parameters SP09

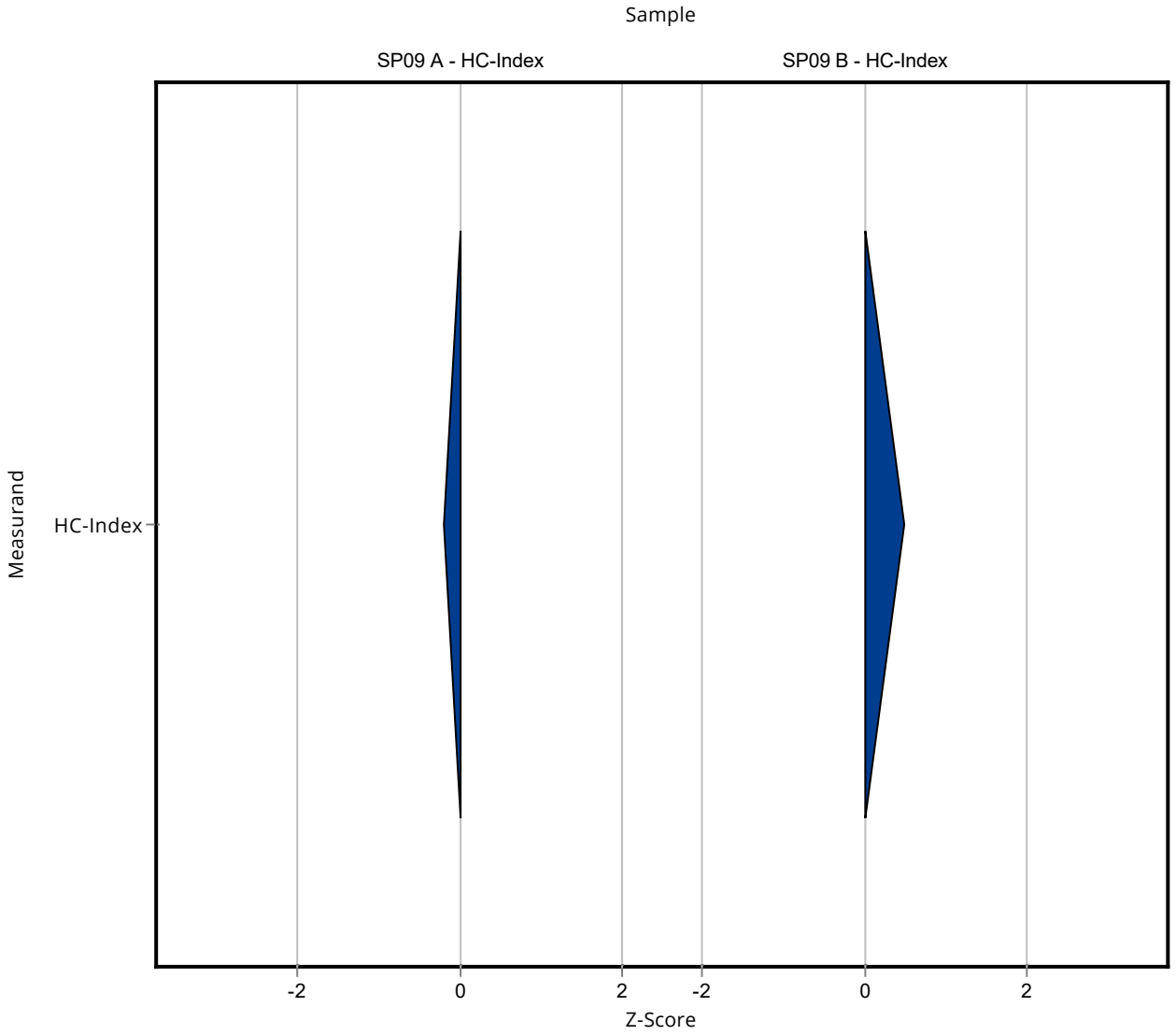
Labcode: LC0044

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.154 ± 0.025	0.0667	92.3	-0.19

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.1 ± 0.17	0.367	120	0.50



Summary of results Sum parameters SP09 - En-Score

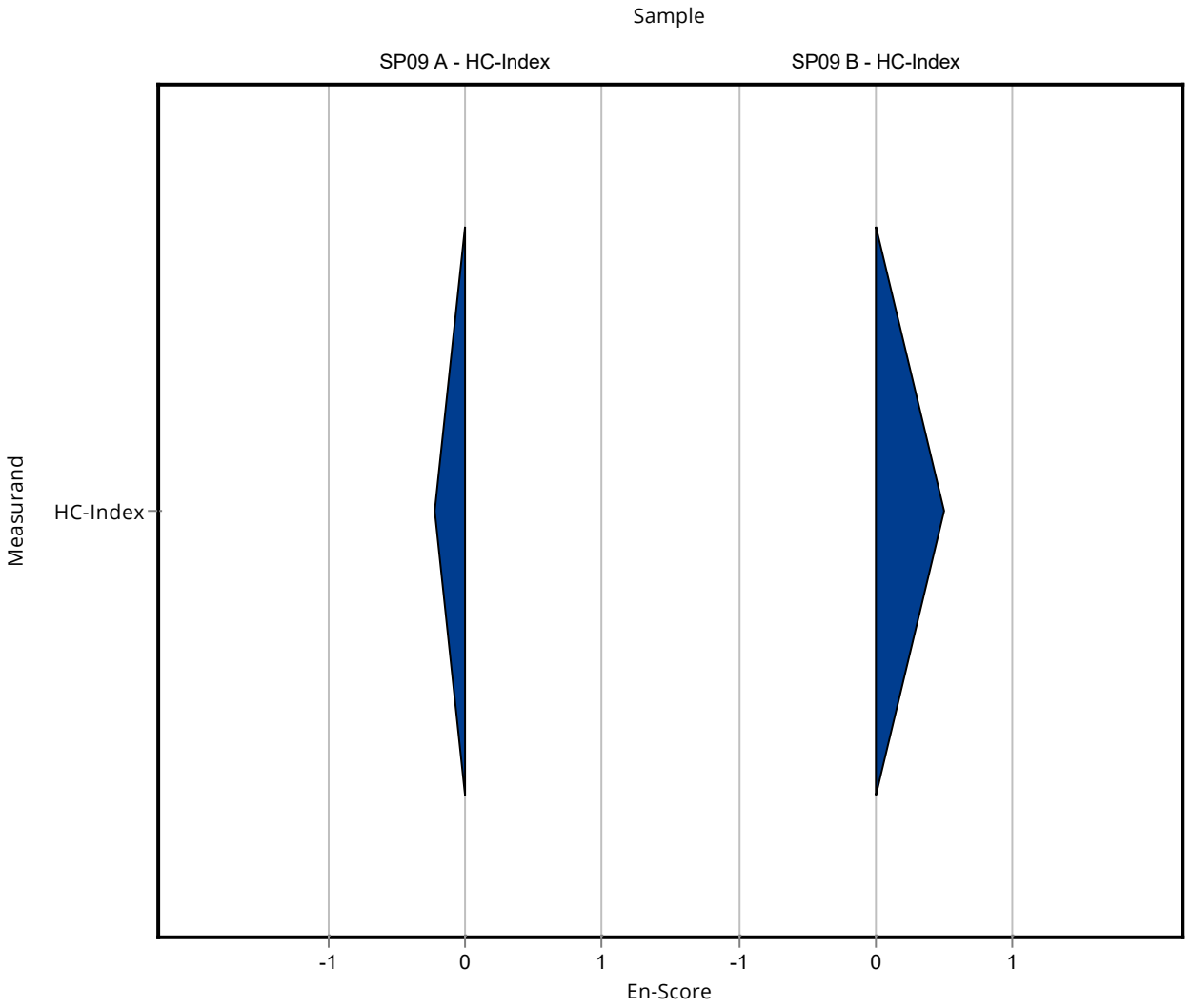
Labcode: LC0044

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.154	± 0.025	0.0667	92.3	-0.23

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	1.1	± 0.17	0.367	120	0.51



Summary of results Sum parameters SP09 Labcode: LC0045

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.15 ± 0.056	0.0667	89.9	-0.25

Sample: SP09KWIB

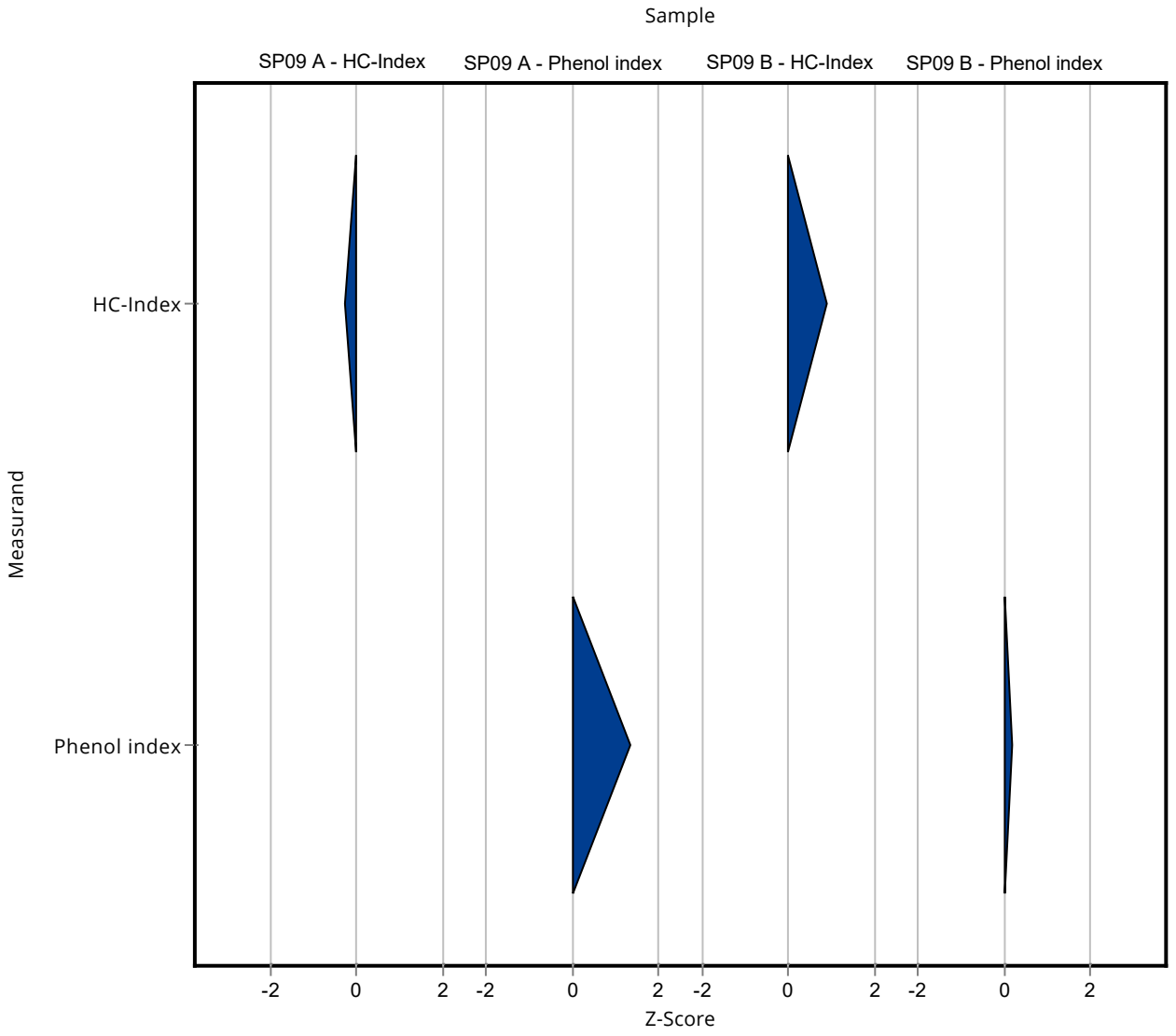
Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	1.248 ± 0.469	0.367	136	0.90

Sample: SP09PHIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.0243 ± 0.00146	0.0279 ± 0.007	0.00268	115	1.33

Sample: SP09PHIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
Phenol index	mg/l	0.805 ± 0.0228	0.822 ± 0.207	0.0886	102	0.19


Sample
SP09 A - HC-Index
SP09 A - Phenol index
SP09 B - HC-Index
SP09 B - Phenol index
HC-Index
Phenol index
Measurand
-2
0
2
Z-Score

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.15	± 0.056	0.0667	89.9	-0.15

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	1.248	± 0.469	0.367	136	0.35

Sample: SP09PHIA

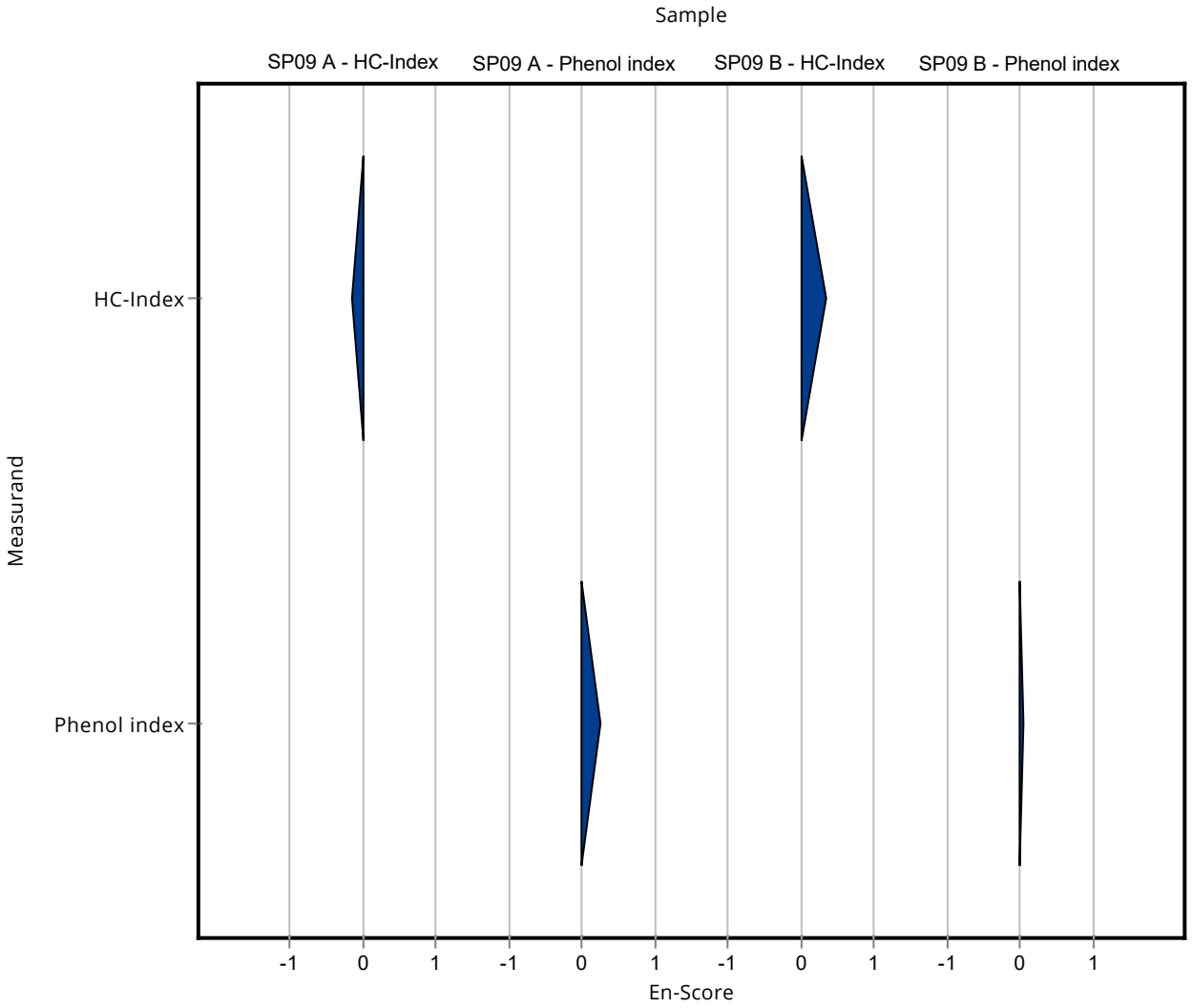
Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.0243	± 0.00146	0.0279	± 0.007	0.00268	115	0.25

Sample: SP09PHIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
Phenol index	mg/l	0.805	± 0.0228	0.822	± 0.207	0.0886	102	0.04

Summary of results Sum parameters SP09 - En-Score

Labcode: LC0045



Summary of results Sum parameters SP09

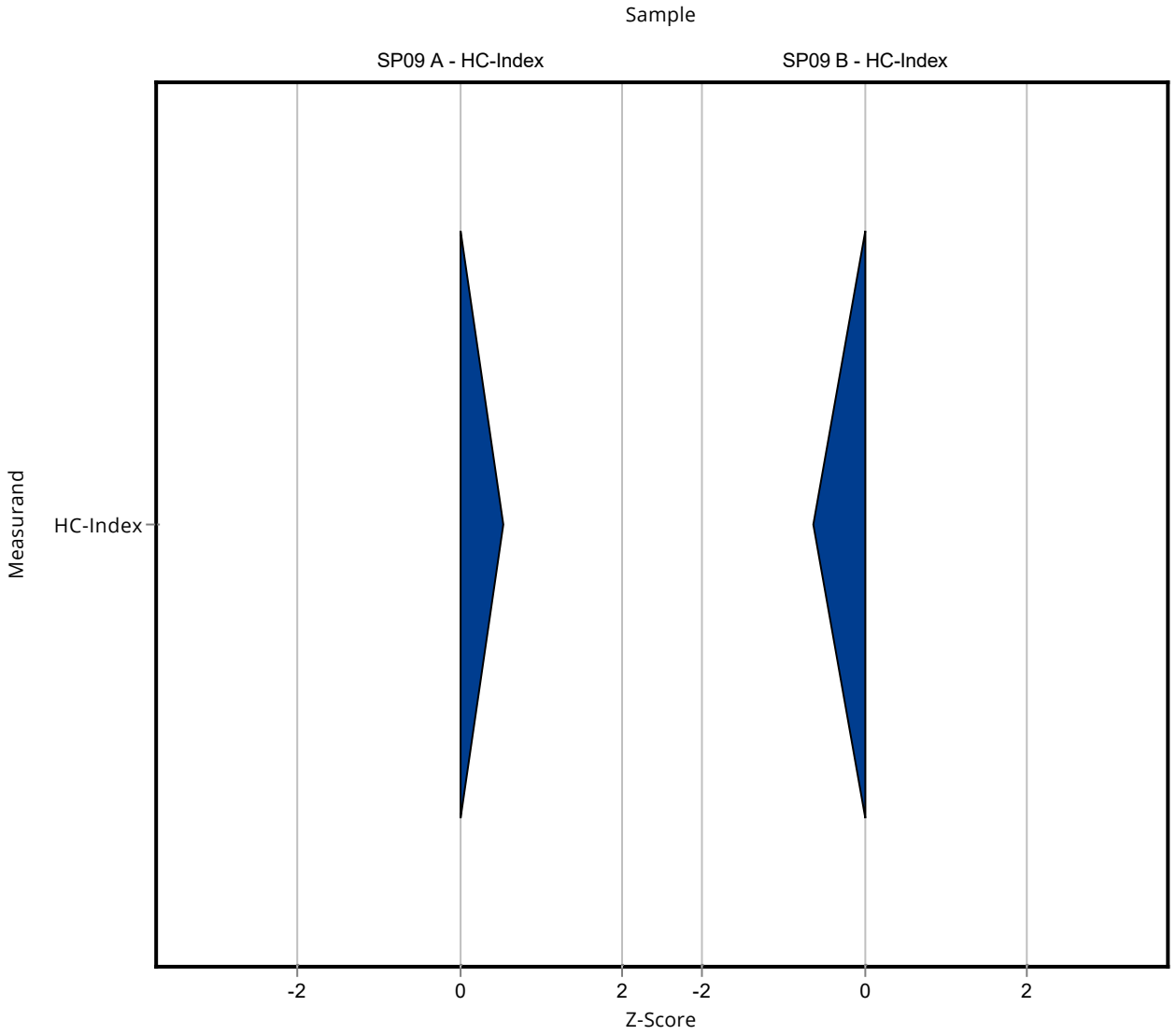
Labcode: LC0046

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.202 ± 0.0603	0.0667	121	0.53

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.685 ± 0.204	0.367	74.7	-0.63



Summary of results Sum parameters SP09 - En-Score

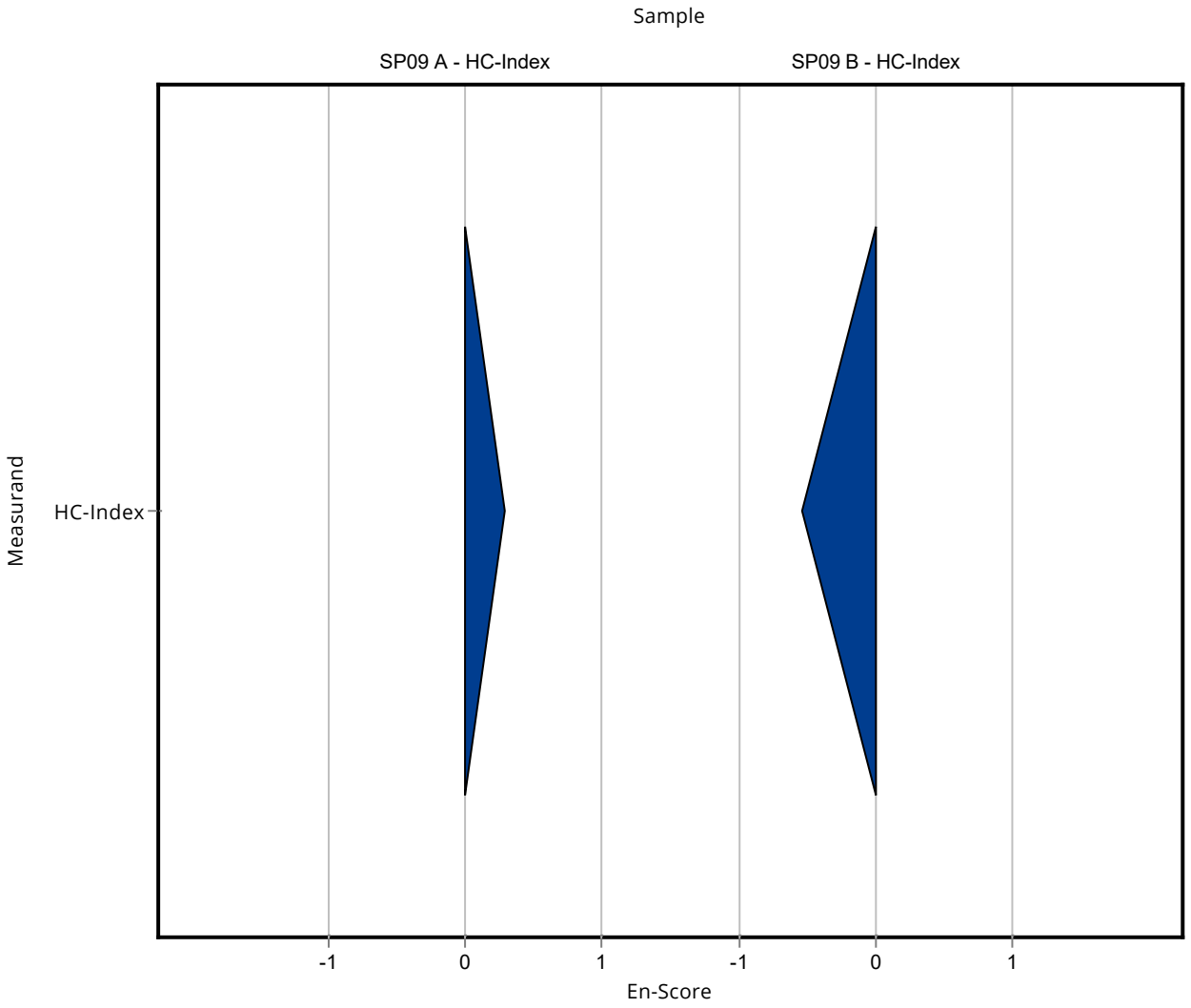
Labcode: LC0046

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.202	± 0.0603	0.0667	121	0.29

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.685	± 0.204	0.367	74.7	-0.54



Summary of results Sum parameters SP09

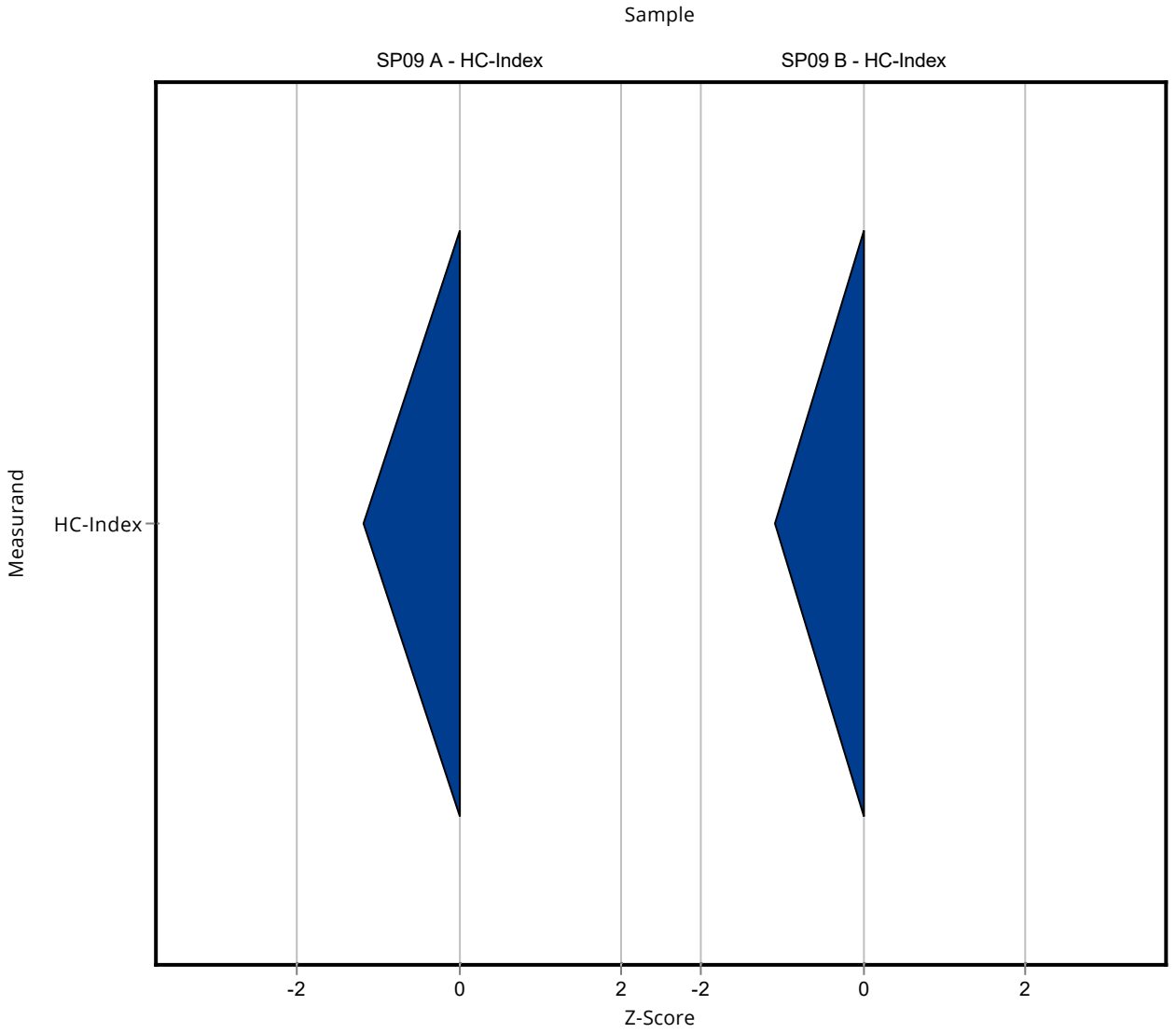
Labcode: LC0047

Sample: SP09KWIA

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.167 ± 0.0231	0.0875 ± 0.0175	0.0667	52.5	-1.19

Sample: SP09KWIB

Parameter	Unit	Assigned value ± U (k=2)	Result ± U	Criterion	Recovery [%]	z-Score
HC-Index	mg/l	0.917 ± 0.123	0.517 ± 0.103	0.367	56.4	-1.09



Summary of results Sum parameters SP09 - En-Score

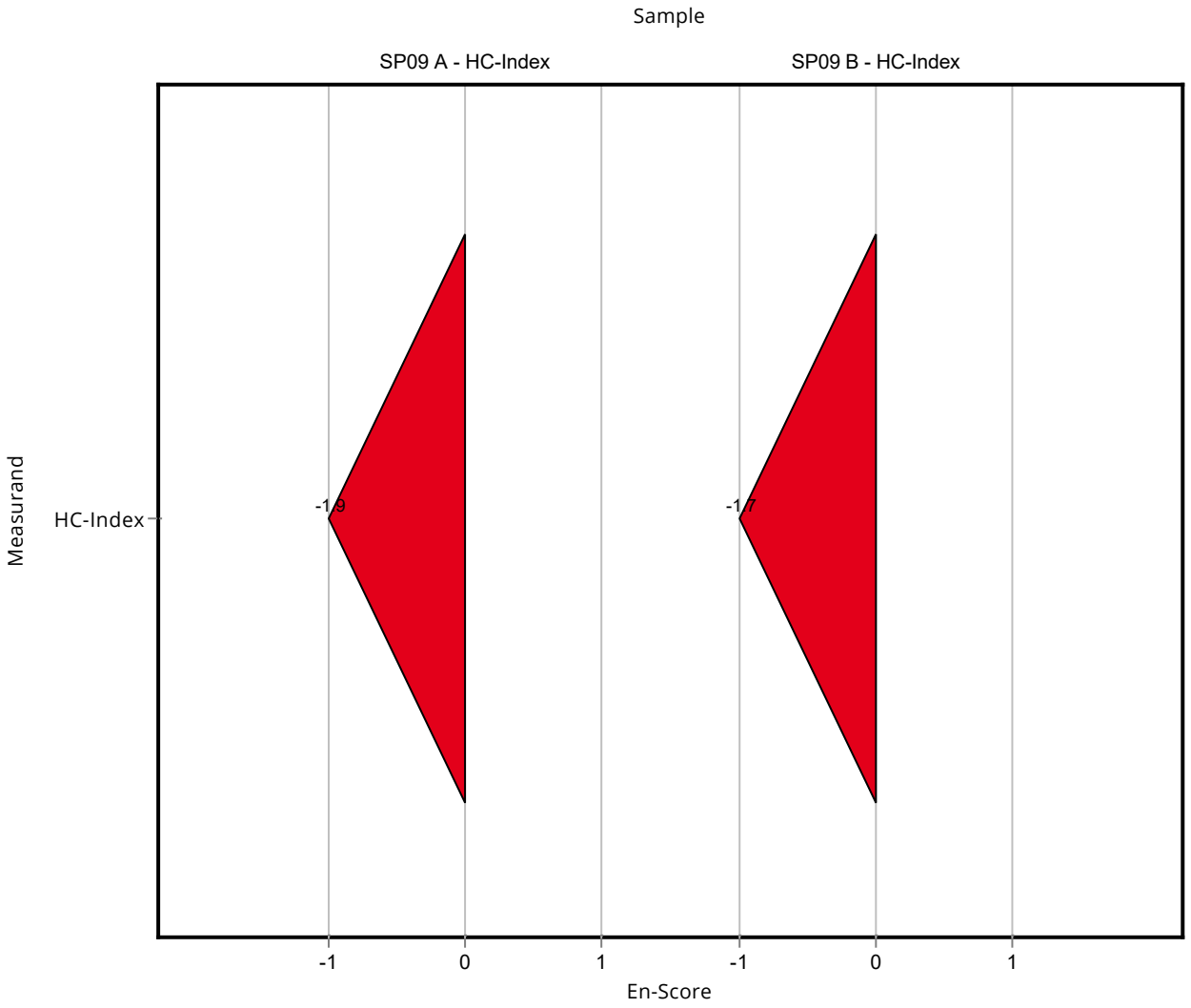
Labcode: LC0047

Sample: SP09KWIA

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.167	± 0.0231	0.0875	± 0.0175	0.0667	52.5	-1.89

Sample: SP09KWIB

Parameter	Unit	Assigned value	± U (k=2)	Result	± U	Criterion	Recovery [%]	En-Score
HC-Index	mg/l	0.917	± 0.123	0.517	± 0.103	0.367	56.4	-1.66



E9. Methodenübersicht / Overview of methods

LabCode	Sample	HC-Index
LC0001	SP09KWIA	
LC0002	SP09KWIA	EN ISO 9377-2;
LC0003	SP09KWIA	EN ISO 9377-2;
LC0004	SP09KWIA	EN ISO 9377-2;
LC0005	SP09KWIA	EN ISO 9377-2;
LC0006	SP09KWIA	EN ISO 9377-2;
LC0007	SP09KWIA	EN ISO 9377-2;
LC0008	SP09KWIA	EN ISO 9377-2;
LC0009	SP09KWIA	EN ISO 9377-2; GC-FID
LC0010	SP09KWIA	EN ISO 9377-2; GC-FID
LC0011	SP09KWIA	EN ISO 9377-2;
LC0012	SP09KWIA	EN ISO 9377-2;
LC0013	SP09KWIA	EN ISO 9377-2;
LC0014	SP09KWIA	EN ISO 9377-2;
LC0015	SP09KWIA	EN ISO 9377-2; GC
LC0016	SP09KWIA	EN ISO 9377-2;
LC0017	SP09KWIA	EN ISO 9377-2;
LC0018	SP09KWIA	EN ISO 9377-2;
LC0019	SP09KWIA	
LC0020	SP09KWIA	EN ISO 9377-2; H53
LC0021	SP09KWIA	EN ISO 9377-2; H53
LC0022	SP09KWIA	EN ISO 9377-2; H53
LC0023	SP09KWIA	EN ISO 9377-2;
LC0024	SP09KWIA	EN ISO 9377-2; GC-FID
LC0025	SP09KWIA	EN ISO 9377-2;
LC0026	SP09KWIA	EN ISO 9377-2;
LC0027	SP09KWIA	EN ISO 9377-2; H53
LC0028	SP09KWIA	EN ISO 9377-2;
LC0029	SP09KWIA	EN ISO 9377-2;
LC0030	SP09KWIA	EN ISO 9377-2;
LC0031	SP09KWIA	EN ISO 9377-2;
LC0032	SP09KWIA	EN ISO 9377-2;
LC0033	SP09KWIA	EN ISO 9377-2; H53
LC0034	SP09KWIA	EN ISO 9377-2; H53; GC-MS
LC0035	SP09KWIA	EN ISO 9377-2; H53
LC0036	SP09KWIA	EN ISO 9377-2; H53
LC0037	SP09KWIA	
LC0038	SP09KWIA	EN ISO 9377-2; GC
LC0039	SP09KWIA	EN ISO 9377-2; H53
LC0040	SP09KWIA	GC-FID;

LabCode	Sample	HC-Index
LC0041	SP09KWIA	EN ISO 9377-2;
LC0042	SP09KWIA	EN ISO 9377-2; GC-FID
LC0043	SP09KWIA	EN ISO 9377-2; H53
LC0044	SP09KWIA	EN ISO 9377-2;
LC0045	SP09KWIA	EN ISO 9377-2; H53
LC0046	SP09KWIA	EN ISO 9377-2;
LC0047	SP09KWIA	EN ISO 9377-2;

LabCode	Sample	Phenol index
LC0001	SP09PHIA	EN ISO 14402; part 2
LC0002	SP09PHIA	DIN 38409-16; H16-2
LC0003	SP09PHIA	
LC0004	SP09PHIA	
LC0005	SP09PHIA	DIN 38409-16;
LC0006	SP09PHIA	EN ISO 14402;
LC0007	SP09PHIA	
LC0008	SP09PHIA	
LC0009	SP09PHIA	EN ISO 14402; FIA
LC0010	SP09PHIA	EN ISO 14402;
LC0011	SP09PHIA	
LC0012	SP09PHIA	
LC0013	SP09PHIA	DIN 38409-16; H16
LC0014	SP09PHIA	
LC0015	SP09PHIA	
LC0016	SP09PHIA	
LC0017	SP09PHIA	
LC0018	SP09PHIA	
LC0019	SP09PHIA	ISO 6439;
LC0020	SP09PHIA	
LC0021	SP09PHIA	
LC0022	SP09PHIA	
LC0023	SP09PHIA	EN ISO 14402; CFA analyser
LC0024	SP09PHIA	EN ISO 14402; CFA
LC0025	SP09PHIA	EN ISO 14402;
LC0026	SP09PHIA	
LC0027	SP09PHIA	DIN 38409-16; H16, Photometer
LC0028	SP09PHIA	
LC0029	SP09PHIA	EN ISO 14402;
LC0030	SP09PHIA	DIN 38409-16; H16
LC0031	SP09PHIA	
LC0032	SP09PHIA	EN ISO 14402;
LC0033	SP09PHIA	
LC0034	SP09PHIA	DIN 38409-16; H16-3
LC0035	SP09PHIA	DIN 38409-16; H16, Photometer
LC0036	SP09PHIA	DIN 38409-16; H16
LC0037	SP09PHIA	
LC0038	SP09PHIA	
LC0039	SP09PHIA	EN ISO 14402; H37
LC0040	SP09PHIA	
LC0041	SP09PHIA	EN ISO 14402;
LC0042	SP09PHIA	DIN 38409-16; H16-1

LabCode	Sample	Phenol index
LC0043	SP09PHIA	EN ISO 14402;
LC0044	SP09PHIA	
LC0045	SP09PHIA	DIN 38409-16; H16-1
LC0046	SP09PHIA	
LC0047	SP09PHIA	

LabCode	Sample	HC-Index
LC0001	SP09KWIB	
LC0002	SP09KWIB	EN ISO 9377-2;
LC0003	SP09KWIB	EN ISO 9377-2;
LC0004	SP09KWIB	EN ISO 9377-2;
LC0005	SP09KWIB	EN ISO 9377-2;
LC0006	SP09KWIB	EN ISO 9377-2;
LC0007	SP09KWIB	EN ISO 9377-2;
LC0008	SP09KWIB	EN ISO 9377-2;
LC0009	SP09KWIB	EN ISO 9377-2; GC-FID
LC0010	SP09KWIB	EN ISO 9377-2; GC-FID
LC0011	SP09KWIB	EN ISO 9377-2;
LC0012	SP09KWIB	EN ISO 9377-2;
LC0013	SP09KWIB	EN ISO 9377-2;
LC0014	SP09KWIB	EN ISO 9377-2;
LC0015	SP09KWIB	EN ISO 9377-2; GC
LC0016	SP09KWIB	
LC0017	SP09KWIB	EN ISO 9377-2;
LC0018	SP09KWIB	EN ISO 9377-2;
LC0019	SP09KWIB	
LC0020	SP09KWIB	EN ISO 9377-2; H53
LC0021	SP09KWIB	EN ISO 9377-2; H53
LC0022	SP09KWIB	EN ISO 9377-2; H53
LC0023	SP09KWIB	EN ISO 9377-2;
LC0024	SP09KWIB	EN ISO 9377-2; GC-FID
LC0025	SP09KWIB	EN ISO 9377-2;
LC0026	SP09KWIB	EN ISO 9377-2;
LC0027	SP09KWIB	EN ISO 9377-2; H53
LC0028	SP09KWIB	EN ISO 9377-2;
LC0029	SP09KWIB	EN ISO 9377-2;
LC0030	SP09KWIB	EN ISO 9377-2;
LC0031	SP09KWIB	EN ISO 9377-2;
LC0032	SP09KWIB	EN ISO 9377-2;
LC0033	SP09KWIB	EN ISO 9377-2; H53
LC0034	SP09KWIB	EN ISO 9377-2; H53; GC-MS
LC0035	SP09KWIB	EN ISO 9377-2; H53
LC0036	SP09KWIB	EN ISO 9377-2; H53
LC0037	SP09KWIB	
LC0038	SP09KWIB	EN ISO 9377-2; GC
LC0039	SP09KWIB	EN ISO 9377-2; H53
LC0040	SP09KWIB	GC-FID;
LC0041	SP09KWIB	EN ISO 9377-2;
LC0042	SP09KWIB	EN ISO 9377-2; GC-FID

LabCode	Sample	HC-Index
LC0043	SP09KWIB	EN ISO 9377-2; H53
LC0044	SP09KWIB	EN ISO 9377-2;
LC0045	SP09KWIB	EN ISO 9377-2; H53
LC0046	SP09KWIB	EN ISO 9377-2;
LC0047	SP09KWIB	EN ISO 9377-2;

LabCode	Sample	Phenol index
LC0001	SP09PHIB	EN ISO 14402; part 2
LC0002	SP09PHIB	DIN 38409-16; H16-2
LC0003	SP09PHIB	
LC0004	SP09PHIB	
LC0005	SP09PHIB	DIN 38409-16;
LC0006	SP09PHIB	EN ISO 14402;
LC0007	SP09PHIB	
LC0008	SP09PHIB	
LC0009	SP09PHIB	EN ISO 14402; FIA
LC0010	SP09PHIB	EN ISO 14402;
LC0011	SP09PHIB	
LC0012	SP09PHIB	
LC0013	SP09PHIB	DIN 38409-16; H16
LC0014	SP09PHIB	
LC0015	SP09PHIB	
LC0016	SP09PHIB	
LC0017	SP09PHIB	
LC0018	SP09PHIB	
LC0019	SP09PHIB	ISO 6439;
LC0020	SP09PHIB	
LC0021	SP09PHIB	
LC0022	SP09PHIB	
LC0023	SP09PHIB	EN ISO 14402; CFA analyser
LC0024	SP09PHIB	EN ISO 14402; CFA
LC0025	SP09PHIB	EN ISO 14402;
LC0026	SP09PHIB	
LC0027	SP09PHIB	DIN 38409-16; H16, Photometer
LC0028	SP09PHIB	
LC0029	SP09PHIB	EN ISO 14402;
LC0030	SP09PHIB	DIN 38409-16; H16
LC0031	SP09PHIB	
LC0032	SP09PHIB	ISO 6439;
LC0033	SP09PHIB	
LC0034	SP09PHIB	DIN 38409-16; H16-3
LC0035	SP09PHIB	DIN 38409-16; H16, Photometer
LC0036	SP09PHIB	DIN 38409-16; H16
LC0037	SP09PHIB	
LC0038	SP09PHIB	
LC0039	SP09PHIB	EN ISO 14402; H37
LC0040	SP09PHIB	
LC0041	SP09PHIB	EN ISO 14402;
LC0042	SP09PHIB	DIN 38409-16; H16-1

LabCode	Sample	Phenol index
LC0043	SP09PHIB	EN ISO 14402;
LC0044	SP09PHIB	
LC0045	SP09PHIB	DIN 38409-16; H16-1
LC0046	SP09PHIB	
LC0047	SP09PHIB	