

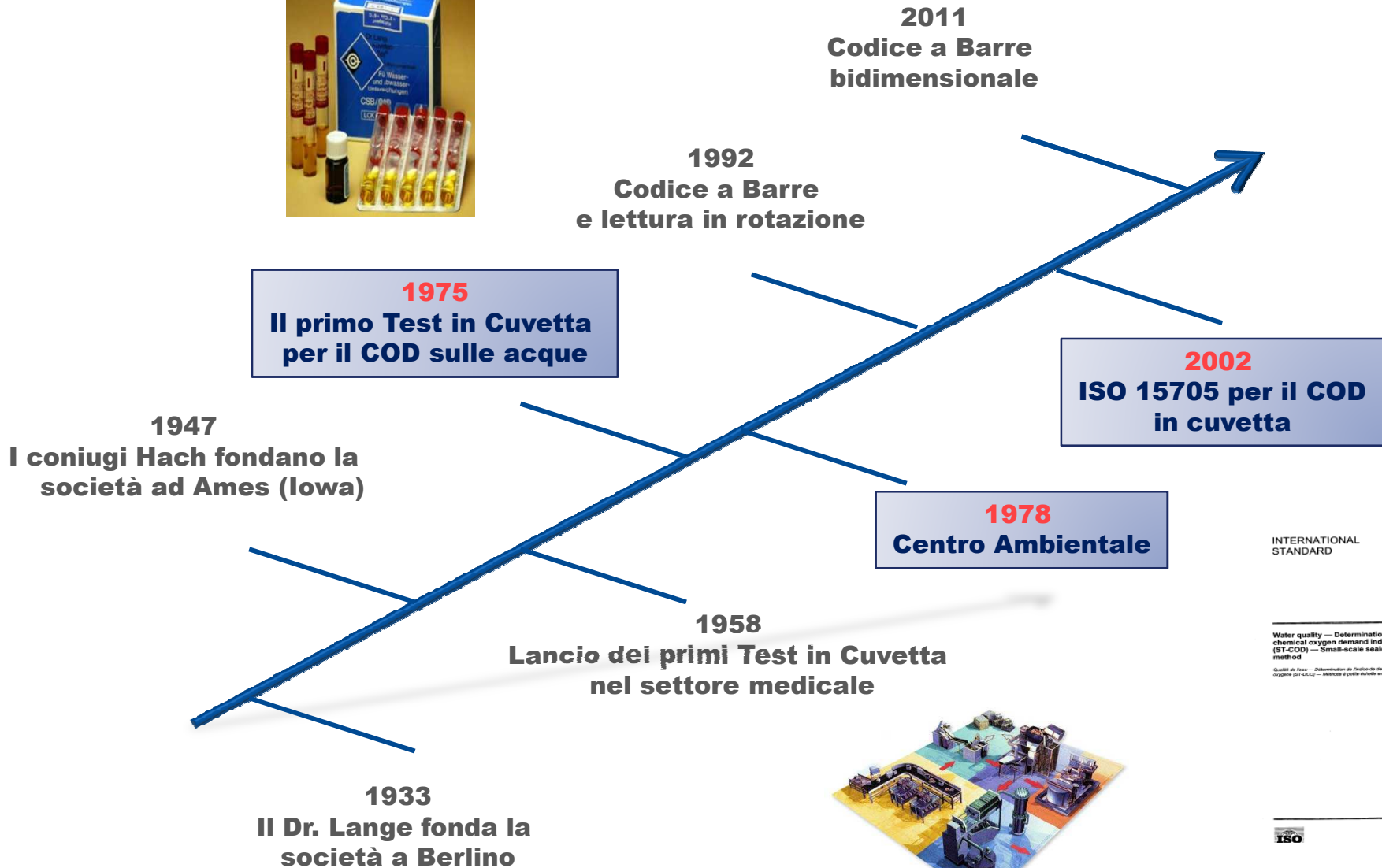


**L'analisi delle
acque mediante i
metodi
Test in Cuvetta:
lo stato dell'arte**

Hach Lange Srl
Stefano Malusardi
Lab Manager



Storia dei Test in Cuvetta



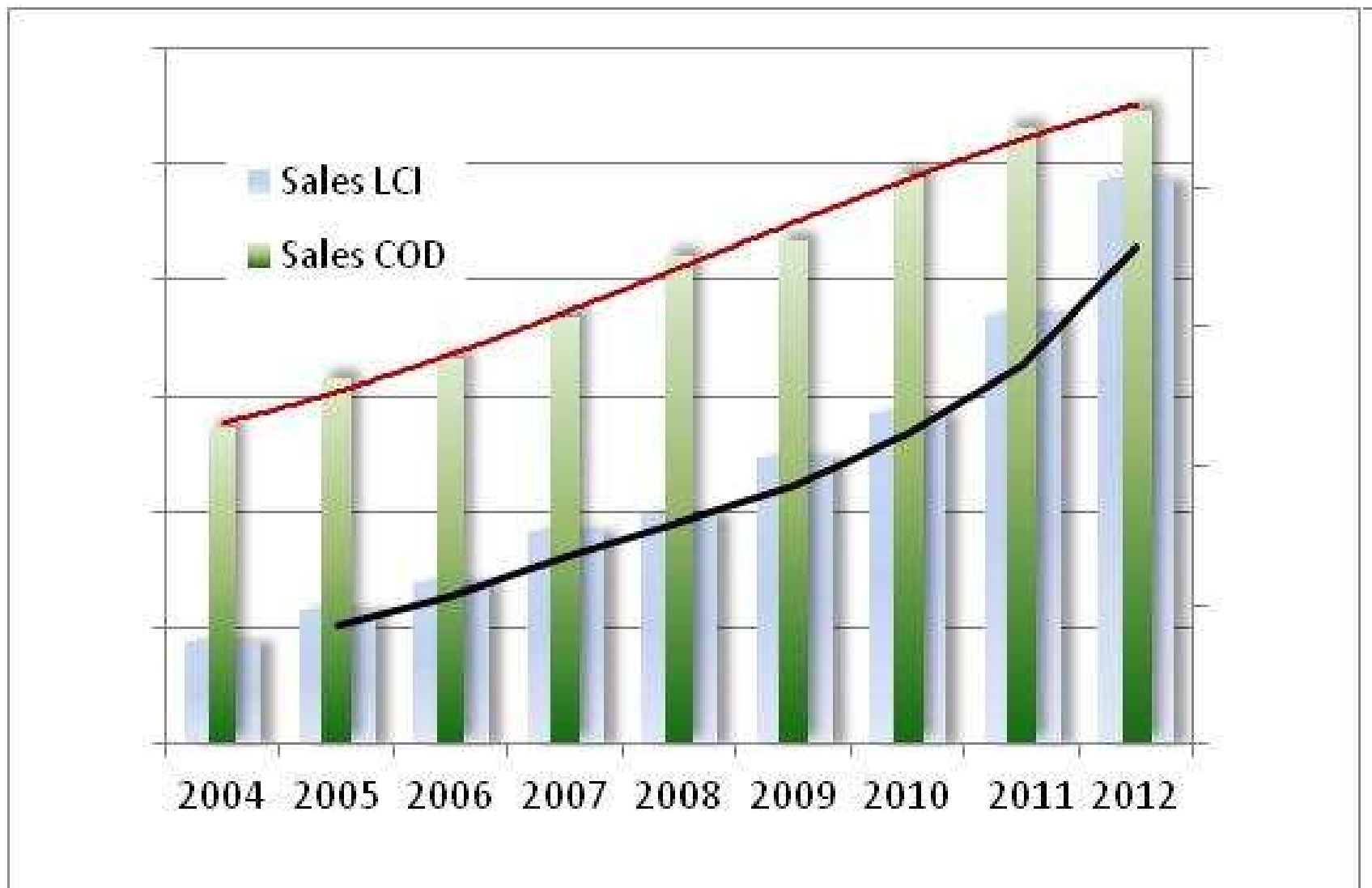
INTERNATIONAL STANDARD
ISO 15705
First edition
2002-11-15

Water quality — Determination of the chemical oxygen demand index (ST-COD) — Small-scale sealed-tube method

Qualité de l'eau — Détermination de l'indice de demande chimique en oxygène (ST-COD) — Méthode à petite échelle en tube fermé



I Test in Cuvetta* in Italia



La sicurezza prima di tutto !

- Del personale specializzato di laboratorio
- Volumi ridotti e nessun contatto con reagenti pericolosi



La sicurezza prima di tutto !

- Maggiore riproducibilità e ripetibilità dei dati analitici
- Più di 10 anni di circuiti interlaboratorio: Unichim, Kiwa, Ispra, A.R.P.A., Hach Lange
- Procedure rigorose nel controllo qualità e validazione del produttore

Certificate of Conformity

We hereby declare that the
LANGE Cuvette Test LCI 500
 is completely conform to
ISO 15705
 „Determination of the chemical oxygen demand index (ST-COD)-
 Small-scale sealed tube method“

Quality certificate
 Technical data for Validation
 of LI500 (0-150 mg/l COD in
 conformity with ISO 15705)

Required
 Formulae
 one: K₁C
 one: K₂C
 one: K₃C
 one: K₄C

Sample V
 ml: 20 ml

Digestion
 Temperature
 Time: 2 h

Probiostat
 Wavelength

HACH LAM
 L500 Appl
 Düsseldorf

Dr. Ralf

HACH LANGE
 UNITED FOR WATER QUALITY

Quality certificate
 Technical data for cuvette test LCI500

Sensitivity	0.0032 Abs./mg/l
Ordinate intercept	0.003 Abs.
Residual standard deviation	0.0026 Abs.
Method variation coefficient	0.96 %
Method standard deviation	0.8 mg/l
Confidence interval: (95%)	± 1.9 mg/l

The technical data for cuvette test LCI500 were determined in conformity with ISO 8466-1 and DIN 38402 A51 „Calibration of analysis methods“.

The series of the smallest and largest calibration standards exhibit normal distribution and are outlier- and trend-free.

The calibration gives a linear function.

Technical data in conformity with DIN 38465

Detection limit	2.3 mg/l
Quantitation limit	6.9 mg/l

The detection and the quantitation limits were determined in conformity with DIN 38465.

IE
 ER QUALITY

Result	Confidence interval (95%)	90 COD, DCO 0 mg/l
30 mg/l	± 2.0 mg/l	304
60 mg/l	± 1.9 mg/l	
90 mg/l	± 1.9 mg/l	ML value range
120 mg/l	± 2.0 mg/l	
150 mg/l	± 2.1 mg/l	

HACH LANGE GmbH
 Quality Management

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0 %
 %

nominal value, value before
 actual value, value inside

4.25.0 mg/l
 8.8 mg/l

Gerät:
 Wetzlarstraße

Instrument, apparat:
 Wetzlarstraße, Länge: 420 mm

Cadas200
 440 nm

Datum der Prüfung:
 Prüfer:

date, date:
 Inspector, operator:

17.08.05 18:05
 Fr. Rothkopf

Bitte verwenden Sie dieses Zertifikat bei Ihren Unterlagen auf.
 Please use it in relation to your documents.
 Do not put in return correspondence in our files and we will not.

Enti di Normazione

- Partecipazione agli Studi Collaborativi di ISPRA
- Partecipazione nella Commissione Unichim “Qualità dell’acqua”, Gruppo di Lavoro “METODI CHIMICI E CHIMICO-FISICI”
- Partecipazione ai Gruppi di Lavoro (WG) della Commissione Tecnica (ISO TC/147) per la “Qualità dell’acqua”



ISPRA



Enti regolatori Europei

- Collaborazioni con Commissioni Europee:
 - **Environment (ENV)**
 - **Agriculture and Rural Development (AGRI)**
 - **Joint Research Centre (JRC)**
 - **Maritime Affairs and Fisheries (MARE)**
- Iniziative al Parlamento Europeo:
 - **Environment, Public Health & Food Safety**
 - **Internal Market & Consumer Protection**
 - **Regional Development**
 - **Agriculture & Rural Development**



Quali nuove prospettive?



L'analisi con i Test in Cuvetta
diventa automatica

AP 3900 semplifica la routine
analitica





 **LANGE** 
UNITED FOR WATER QUALITY

Grazie per
l'attenzione