

Proficiency Testing Program
Organised by
Center for Laboratory Proficiency Testing
Department of Science Service,
Ministry of Science and Technology, Bangkok, Thailand
Total hardness (as CaCO₃) and Chlorides (as Cl) in water
PTEN - W08 - 1901
4 March 2019

SUMMARY SHEET

Laboratory Name : Technical Training and Support Service,
Center for Scientific and Technological Equipment,
Walailak University

Laboratory Code : W08 - 1901 - 234

Test items (mg/L)	Sample	Number of results	Assigned value (X_{pt})	Standard deviation for proficiency assessment (σ_{pt})	Lab's result	MU	z-score
Total hardness (as CaCO ₃)	A	254	30.60	1.53	30.0	1	-0.39
	B	255	157.5	6.3	159	4	0.24
Chlorides (as Cl)	A	234	109.1	6.5	-	-	-
	B	234	54.11	4.33	-	-	-

Note

1. Assigned values (X_{pt}) are the robust averages of the participant results in this round, calculated by using Algorithm A (ISO 13528: 2015).
2. Standard deviations for proficiency assessment (σ_{pt}) are the target standard deviations from previous rounds and expert judgement.
3. Each z-score marked with "A" is an outlier ($|z| \geq 3.0$). Therefore, laboratory which is marked with "A" shall investigate result. Laboratory is also encouraged to review result which has an absolute z-score value between two and three ($2.0 < |z| < 3.0$) or marked with "W".
4. This summary sheet should be read in conjunction with the final report.

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