



MERCURY MONITORING AT A SUBURBAN, PHATUMTHANI THAILAND

Presented By: Chanthiraporn Tangsuwan

**Climate Change And Environmental Research Center
Department of Climate Change And Environment**

**The 14th Annual Asia-Pacific Mercury Monitoring Network (APMMN)
Partners Meeting on December 9-12, 2025**

01

CONTENT

- Mercury Monitoring at a suburban, Phatumthani Thailand
- Proficiency Testing Program & ISO17025:2017

OBJECTIVES OF MERCURY MONITORING AT A SUBURBAN, PHATUMTHANI THAILAND

02

01

To study on the concentration of mercury wet deposition and atmospheric mercury in sub-urban Pathumthani, Thailand.

02

To participate in a proficiency testing program in order to assure a laboratory quality control.

03

To participate in a ISO/IEC 17025 : 2017

MERCURY MONITORING AT A SUBURBAN, PHATUMTHANI, THAILAND



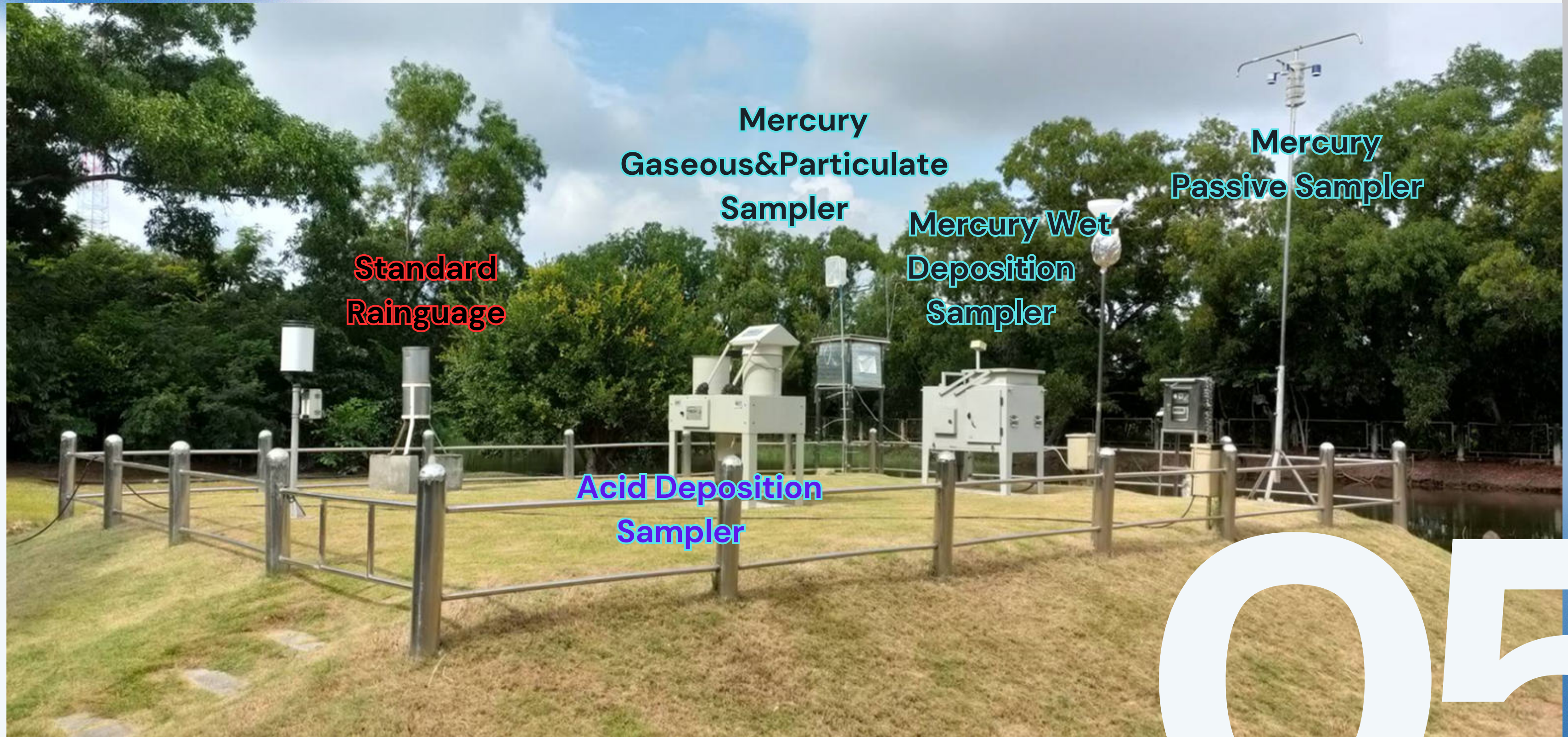
SAMPLING SITE



Latitude 14° 2'46.35"N Longitude 100°42'50.13"E

04

CERC SAMPLING SITE



05

06



Acknowledgement : The sampler was given by
Taiwan EPA in 2016

MERCURY WET DEPOSITION SAMPLER



Weekly sampling

MERCURY GASEOUS & PARTICULATE MERCURY SAMPLING

- Mercury gaseous collect sampler 24 hr
- Particulate mercury collect sampler 7 days



07

Clean room



Hood and clean benches



ULTRA-TRACE MERCURY LEVEL LABORATORY

Hg in rain water



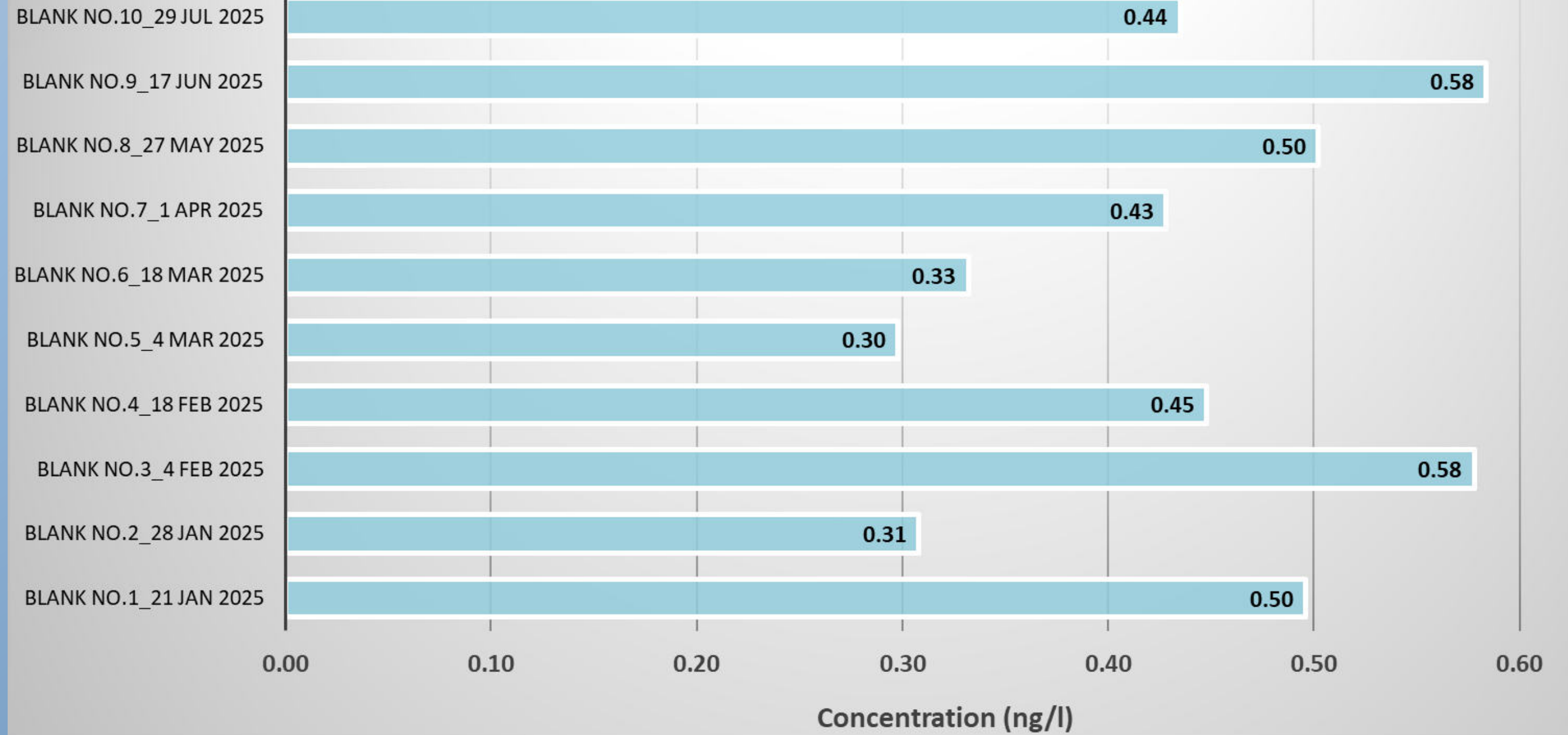
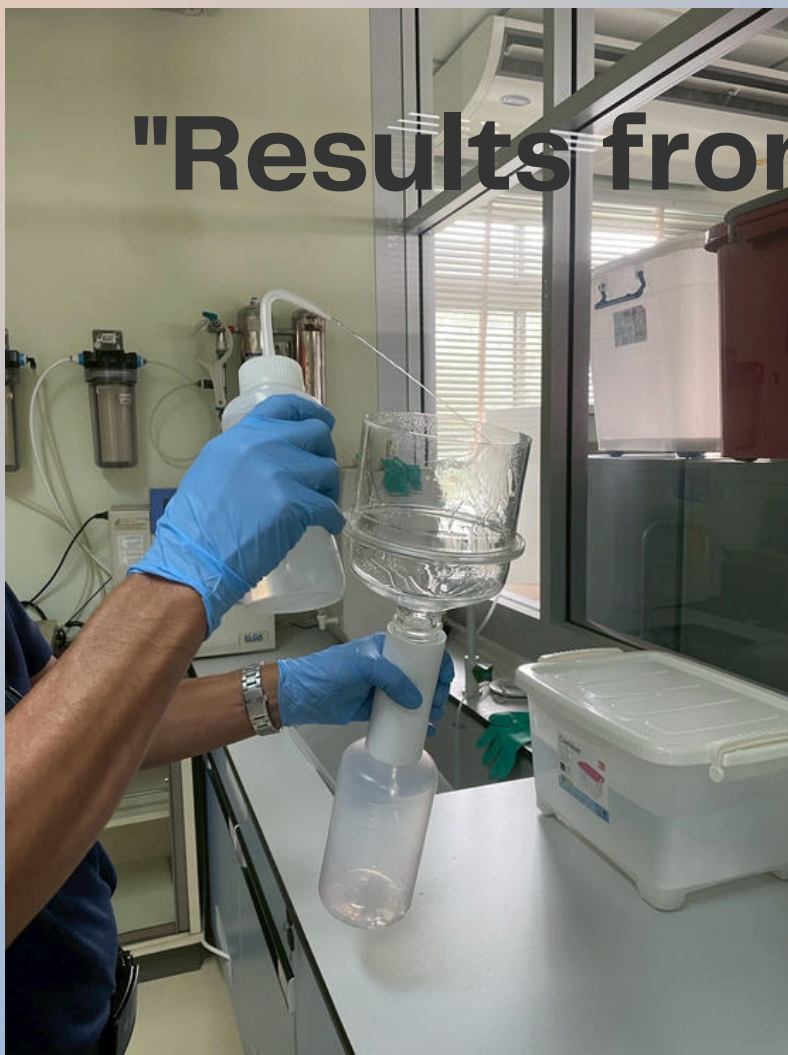
GEM



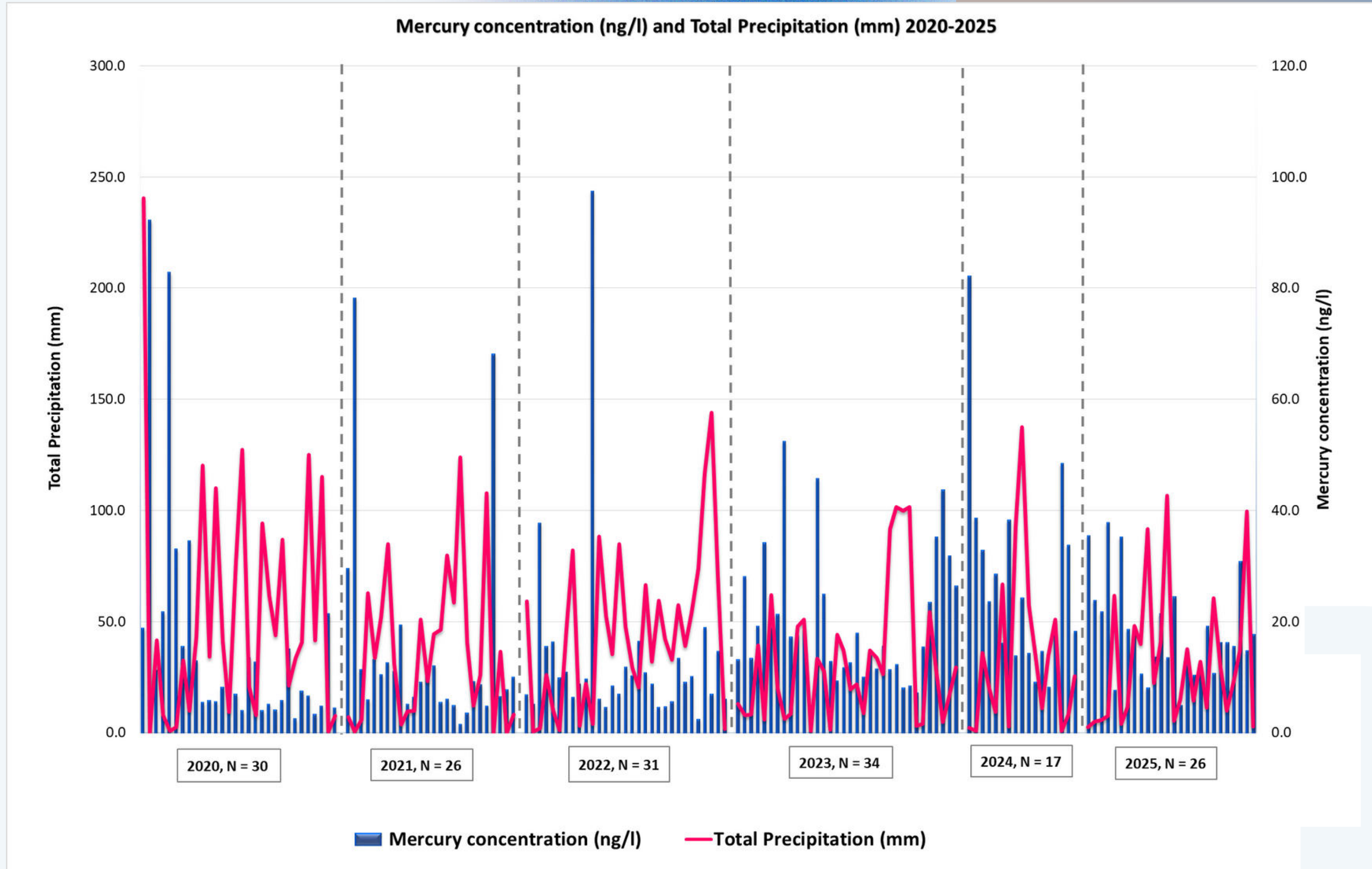
PBM



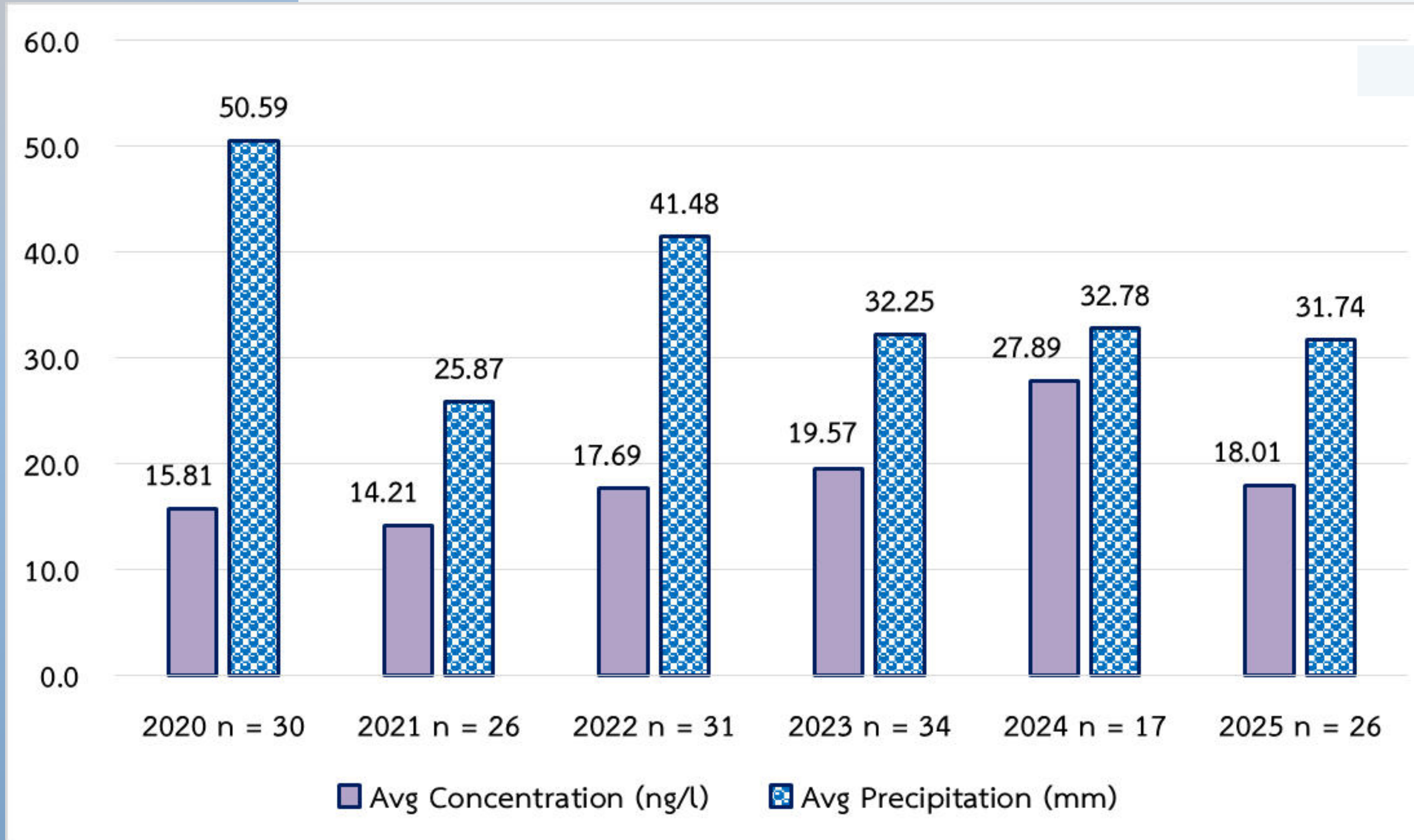
"Results from the Mercury Wet Deposition Sampler Blank Check"



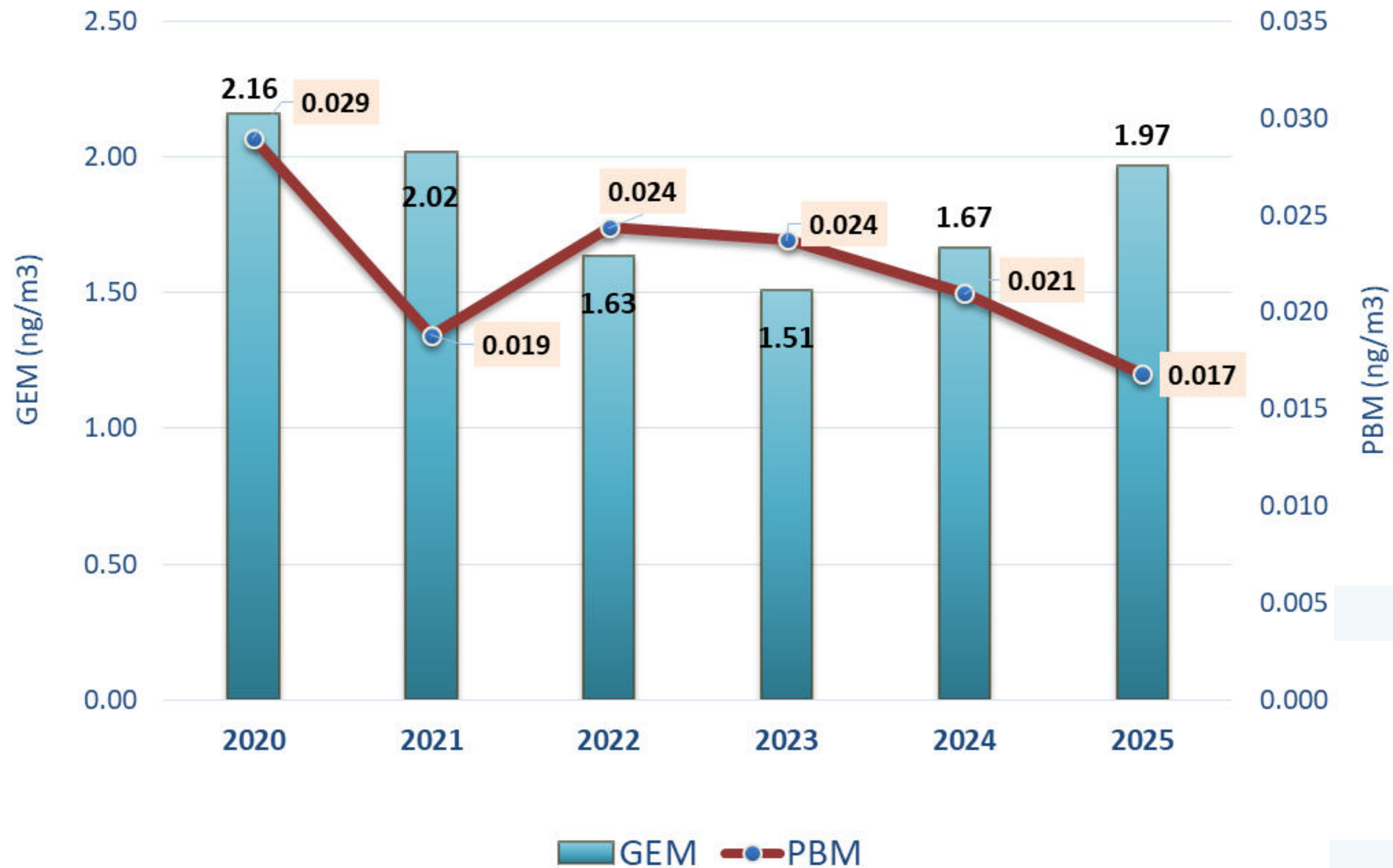
TREND OF MERCURY CONCENTRATION IN PRECIPITATION DURING 2020 – 2025



Average mercury concentration (ng/L) in Rain water vs. Total precipitation amount (mm) 2020-2025



Average Mercury Concentration in GEM&PBM(ng/m³) during 2020 – 2025



Conclusions

- In overall, The mercury concentration in precipitation were high when the precipitation were low. The maximum mercury concentrations were usually found during the beginning of rainy season.
- The trend in the average concentration of mercury wet deposition from 2020 to 2025 fluctuated between 14.21 and 27.89 ng/L. The highest deposition was observed in 2024.
- The PBM level in the air was found to be approximately 85 times lower than the level of GEM.

**MERCURY LABORATORY
PROFICIENCY TESTING PROGRAM
& ISO17025:2017**

PROFICIENCY TESTING PROGRAM 2025



Report No. 1031/2025

Proficiency Testing Scheme

Organised by

Center for Laboratory Proficiency Testing

Department of Science Service,

Ministry of Higher Education, Science, Research and Innovation, Thailand

Mercury (Hg) in water

PTEN - W12 - 2501

9 April 2025

SUMMARY REPORT

Laboratory Name : Standard and Laboratory group,
Climate Change and Environmental Research Center,
Department of Climate Change and Environment

Laboratory Code : W12 - 2501 - 030

Sample	Number of results	Assigned value (x_{pt}) ($\mu\text{g/L}$)	Standard deviation for proficiency assessment (σ_{pt}) ($\mu\text{g/L}$)	Lab's result ($\mu\text{g/L}$)		z score
				Value	MU	
A	90	2.02	0.51	2.00	-	-0.04
B	92	6.08	1.52	6.10	-	0.01

Note

1. Assigned values (x_{pt}) are the reference values determined by the reference laboratory (National Institute of Metrology Thailand).
2. Standard deviations for proficiency assessment (σ_{pt}) are the target standard deviations from expert judgement.
3. MU is measurement uncertainty at 95% confidence level.
4. Each z score marked with "A" is an outlier ($|z| \geq 3.0$). Therefore, laboratory which is marked with "A" shall investigate the result. Laboratory is also encouraged to review the result which has an absolute z score value between two and three ($2.0 < |z| < 3.0$) marked with "W".
5. This summary report shall be read in conjunction with the final report.

Reported by

Surasak T.

(Mr. Surasak Thanutchaisut)
Coordinator

Approved by

C. Yaowalux

(Mrs. Yaowalux Chinchusak)
Director of Center for Laboratory Proficiency Testing
Department of Science Service

Organised by Center for Laboratory Proficiency Testing
Department of Science Service,
Ministry of Higher Education, Science, Research and Innovation, Thailand



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ISO/IEC 17025 : 2017
TESTING CERTIFICATE 2024
ULTRA-TRACE MERCURY LABORATORY



Ref No. : 0303/17860

CERTIFICATE OF TESTING LABORATORY ACCREDITATION

This is to certify that

*Climate Change and Environment Research Center,
Department of Climate Change and Environment
34 Moo 3, Technopolis, Tambon Klong 5, Amphoe Klong Luang,
Changwat Pathum Thani 12120*

has successfully undergone assessment according to ISO/IEC 17025 : 2017
and under the Bureau of Laboratory Accreditation, Department of Science Service
for the requirements, regulations and criteria for the competence of testing laboratories

LABORATORY ACCREDITATION
BLA-DSS
Accreditation Number TESTING - 0019

The scope of accreditation is as annexed hereto

Issue date : 18th December 2024

Expired date : 26th February 2027

Signature : *Chantararat Vorasapavit*
(Mrs. Chantararat Vorasapavit)
Director of Bureau of Laboratory Accreditation

Bureau of Laboratory Accreditation, Department of Science Service,
Ministry of Higher Education, Science, Research and Innovation

Reference No. : 0303/17860

Scope of Testing Laboratory Accreditation

Laboratory Name : Climate Change and Environment Research Center,
Department of Climate Change and Environment

Address : 34 Moo 3, Technopolis, Tambon Klong 5, Amphoe Klong Luang,
Changwat Pathum Thani 12120

Accreditation Number : Testing - 0019

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
4	Surface water	- pH 4.0 to 9.0	In - house method : WIT-ST-02-W7001 based on Standard Method for Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 4500-H ⁺ B
5	Rain water	- Mercury 2.0 ng/L to 20 ng/L	In - house method : WIT-ST-02-M1001 based on Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry, August 2002

Initial Issued Date 25th September 2007

Issue Number 11

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

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THANK YOU VERY MUCH FOR YOUR ATTENTION

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