

ภาคผนวก ค

ใบรับรองผลการตรวจวัดคุณภาพสิ่งแวดล้อม

ภาคผนวก ค-1

คุณภาพน้ำใช้



Analysis / Test Report

ISO/IEC 17025
Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364048-1

Page 1 of 1

Sample Number	2564609-1
Sampled Date	Jul 08, 2025 2:16 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำใต้ดิน ช่าย
Date Analysis Commenced	Jul 09, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	9.9	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Anuwat Phutawin

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Sithichok T.

Sithichok Thongnguen
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

ISO/IEC 17025
Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364049-1

Page 1 of 1

Sample Number	2564609-2
Sampled Date	Jul 08, 2025 2:17 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำใต้ดิน ขว
Date Analysis Commenced	Jul 09, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	4.3	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Anuwat Phutawin

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Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364050-1

Page 1 of 1

Sample Number	2564609-3
Sampled Date	Jul 08, 2025 2:25 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำดาดฟ้า ช่าย
Date Analysis Commenced	Jul 09, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	0.90	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Anuwat Phutawin

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Accreditation No. 1031/47

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54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :
Project Name :
Project Location :

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364051-1

Page 1 of 1

Sample Number	2564609-4
Sampled Date	Jul 08, 2025 2:27 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำดาดฟ้า ขว
Date Analysis Commenced	Jul 09, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	0.50	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Anuwat Phutawin

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ISO/IEC 17025
Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 06, 2025

Report Number : 3443489-1

Page 1 of 1

Sample Number	2593663-1
Sampled Date	Oct 27, 2025 2:30 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำใต้ดิน ชำย
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	2.5	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Panupong Homewong

Remark :

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Analysis / Test Report

ISO/IEC 17025
Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 06, 2025

Report Number : 3443490-1

Page 1 of 1

Sample Number	2593663-2
Sampled Date	Oct 27, 2025 2:32 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำใต้ดิน ขว
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	2.0	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Panupong Homewong

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Analysis / Test Report

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Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 06, 2025

Report Number : 3443491-1

Page 1 of 1

Sample Number	2593663-3
Sampled Date	Oct 27, 2025 2:17 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำดาดฟ้า ช่าย
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	0.85	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Panupong Homewong

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Sithichok Thongnguen
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Analysis / Test Report

ISO/IEC 17025
Accreditation No. 1031/47

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :
Project Name :
Project Location :

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 06, 2025

Report Number : 3443492-1

Page 1 of 1

Sample Number	2593663-4
Sampled Date	Oct 27, 2025 2:19 PM
Sample Description	Tap Water
Location	ถังเก็บน้ำดาดฟ้า ขว
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Microbiological Testing								
<i>Escherichia coli</i>	in 100 mL	-	-	Not Detected	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 F	Bangkok
Water Testing								
Color	Color unit	-	5	<5	≤20	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 B	Bangkok
Odour		-	-	Odourless	Odourless	Non Objectionable	In-house method : STM 04-025 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2150 B	Bangkok
Turbidity	NTU	-	0.1	0.95	≤5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2130 B	Bangkok

Guideline : Guideline (1) : Notification of the Ministry of Public Health No. 61 B.E. 2524 & 135 B.E. 2534 on bottled drinking water (No.2) & 316 B.E. 2553 & Pathogenic 416 B.E. 2563
Guideline (2) : Water quality standards of the Metropolitan Waterworks Authority
(1) : Inorganic Mercury

Sampling By : Panupong Homewong

Remark :

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Sithichok Thongnguen
Scientist (3)

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ภาคผนวก ค-2

คุณภาพน้ำทิ้ง



Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

TESTING

No.0009

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364052-1

Page 1 of 2

Sample Number	2564609-5
Sampled Date	Jul 08, 2025 2:40 PM
Sample Description	Wastewater
Location	ระบบบำบัดน้ำเสียรวม (บริเวณบ่อน้ำใส)
Date Analysis Commenced	Jul 08, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	18.1	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	400	≤1000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	51.2	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment B.E. 2567 on Effluent Control Standard from Types and Sized of Buildings, Type B.

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

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54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

TESTING

No.0009

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364052-1

Page 2 of 2

Sampling By : Anuwat Phutawin

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Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Life Sciences

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2574358

Date Received : Aug 22, 2025

Date Reported : Aug 29, 2025

Report Number : 3394641-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 2

Sample Number	2574358-1
Sampled Date	Aug 22, 2025 2:15 PM
Sample Description	Wastewater
Location	ระบบบำบัดน้ำเสียรวม (บริเวณบ่อน้ำใส)
Date Analysis Commenced	Aug 23, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	13.7	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	492	≤1000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	34.9	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	28	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment B.E. 2567 on Effluent Control Standard from Types and Sized of Buildings, Type B.

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location:

TESTING

No.0009

Lot ID: 2574358

Date Received : Aug 22, 2025

Date Reported : Aug 29, 2025

Report Number : 3394641-1

Page 2 of 2

Sampling By : Panupong Homewong

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2584742

Date Received : Sep 09, 2025

Date Reported : Sep 16, 2025

Report Number : 3401049-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 4

Sample Number	2584742-1
Sampled Date	Sep 09, 2025 2:15 PM
Sample Description	Wastewater
Location	ระบบบำบัดน้ำเสียรวม (บริเวณบ่อน้ำใส)
Date Analysis Commenced	Sep 10, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	19.0	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	356	≤1000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	70.1	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	22	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment B.E. 2567 on Effluent Control Standard from Types and Sized of Buildings, Type B.

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location:

TESTING

No.0009

Lot ID: 2584742

Date Received : Sep 09, 2025

Date Reported : Sep 16, 2025

Report Number : 3401049-1

Page 2 of 4

Sampling By : Chulladet Warin

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

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Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 05, 2025

Report Number : 3443493-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 2

Sample Number	2593663-5
Sampled Date	Oct 27, 2025 2:35 PM
Sample Description	Wastewater
Location	ระบบบำบัดน้ำเสียรวม (บริเวณบ่อน้ำใส)
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	13.9	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	224	≤1000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	55.4	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	30	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment B.E. 2567 on Effluent Control Standard from Types and Sized of Buildings, Type B.

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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P/O :

Project Name :

Project Location:

TESTING

No.0009

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 05, 2025

Report Number : 3443493-1

Page 2 of 2

Sampling By : Panupong Homewong

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Analysis / Test Report

TESTING

No.0009

Lot ID: 25102891

Date Received : Nov 11, 2025

Date Reported : Nov 18, 2025

Report Number : 3453407-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 2

Sample Number	25102891-1
Sampled Date	Nov 11, 2025 1:50 PM
Sample Description	Wastewater
Location	ระบบบำบัดน้ำเสียรวม (บริเวณบ่อน้ำใส)
Date Analysis Commenced	Nov 12, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	18.0	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	244	≤1000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	70.3	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	25	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment B.E. 2567 on Effluent Control Standard from Types and Sized of Buildings, Type B.

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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P/O :

Project Name :

Project Location:

TESTING

No.0009

Lot ID: 25102891

Date Received : Nov 11, 2025

Date Reported : Nov 18, 2025

Report Number : 3453407-1

Page 2 of 2

Sampling By : Pichai Boonyong

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Suwimon Chairuangwut
Scientist (3)

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54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

TESTING

No.0009

Lot ID: 25102892

Date Received : Dec 09, 2025

Date Reported : Dec 17, 2025

Report Number : 3473385-1

Page 1 of 2

Sample Number	25102892-1
Sampled Date	Dec 09, 2025 3:25 PM
Sample Description	Wastewater
Location	ระบบบำบัดน้ำเสียรวม (บริเวณบ่อน้ำใส)
Date Analysis Commenced	Dec 11, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	21.2	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	324	≤1000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	53.9	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment B.E. 2567 on Effluent Control Standard from Types and Sized of Buildings, Type B.

Approved by

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Suwimon Chairuangwut
Scientist (3)

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P/O :

Project Name :

Project Location:

TESTING

No.0009

Lot ID: 25102892

Date Received : Dec 09, 2025

Date Reported : Dec 17, 2025

Report Number : 3473385-1

Page 2 of 2

Sampling By : Panupong Homewong

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ภาคผนวก ค-3

คุณภาพน้ำระวายน้ำ (รายเดือน)



Analysis / Test Report

TESTING
No.0009

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364053-1

Page 1 of 1

Sample Number	2564609-6
Sampled Date	Jul 08, 2025 2:34 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced	Jul 09, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

Guideline : คำแนะนำของคณะกรรมการสาธารณสุข ฉบับที่ 1/2550 เรื่อง การควบคุมการประกอบกิจการสระว่ายน้ำ หรือกิจการอื่น ๆ ในทำนองเดียวกัน

Sampling By : Anuwat Phutawin

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Sithichok T.

Sithichok Thongnguen
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2564609

Date Received : Jul 08, 2025

Date Reported : Jul 19, 2025

Report Number : 3364054-1

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 1

Sample Number	2564609-7
Sampled Date	Jul 08, 2025 2:36 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , สวนดิน
Date Analysis Commenced	Jul 09, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

Guideline : คำแนะนำของคณะกรรมการสาธารณสุข ฉบับที่ 1/2550 เรื่อง การควบคุมการประกอบกิจการสระว่ายน้ำ หรือกิจการอื่น ๆ ในทำนองเดียวกัน

Sampling By : Anuwat Phutawin

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Sithichok T.

Sithichok Thongnguen
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2574358

Date Received : Aug 22, 2025

Date Reported : Aug 29, 2025

Report Number : 3394642-1

Page 1 of 1

Sample Number 2574358-2
Sampled Date Aug 22, 2025 2:00 PM
Sample Description Swimming pool water
Location น้ำสระว่ายน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced Aug 23, 2025
Condition of Sample Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Panupong Homewong

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Sithichok T.

Sithichok Thongnguen
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2574358

Date Received : Aug 22, 2025

Date Reported : Aug 29, 2025

Report Number : 3394643-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 1

Sample Number	2574358-3
Sampled Date	Aug 22, 2025 1:55 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , สวนดิน
Date Analysis Commenced	Aug 23, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Panupong Homewong

Remark :

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Sithichok Thongnguen
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2584742

Date Received : Sep 09, 2025

Date Reported : Sep 16, 2025

Report Number : 3401049-1

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 3 of 4

Sample Number	2584742-2
Sampled Date	Sep 09, 2025 2:09 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced	Sep 10, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Chulladet Warin

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Lot ID: 2584742

Date Received : Sep 09, 2025

Date Reported : Sep 16, 2025

Report Number : 3401049-1

Page 4 of 4

Sample Number	2584742-3
Sampled Date	Sep 09, 2025 2:07 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , สวนดิน
Date Analysis Commenced	Sep 10, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Chulladet Warin

Remark :

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Suwimon C.

Suwimon Chairuangwut
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Analysis / Test Report

TESTING

No.0009

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 06, 2025

Report Number : 3443494-1

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 1

Sample Number	2593663-6
Sampled Date	Oct 27, 2025 2:10 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Panupong Homewong

Remark :

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Sithichok T.

Sithichok Thongnguen
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2593663

Date Received : Oct 27, 2025

Date Reported : Nov 06, 2025

Report Number : 3443495-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 1

Sample Number	2593663-7
Sampled Date	Oct 27, 2025 2:13 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , สวนดิน
Date Analysis Commenced	Oct 28, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Panupong Homewong

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Analysis / Test Report

TESTING

No.0009

Lot ID: 25102891

Date Received : Nov 11, 2025

Date Reported : Nov 18, 2025

Report Number : 3453408-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 1

Sample Number	25102891-2
Sampled Date	Nov 11, 2025 1:45 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced	Nov 12, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Pichai Boonyong

Remark :

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Sithichok Thongnguen
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 25102891

Date Received : Nov 11, 2025

Date Reported : Nov 18, 2025

Report Number : 3453409-1

Client : Life Sukhumvit 62 Condominium Juristic Person

54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Page 1 of 1

Sample Number	25102891-3
Sampled Date	Nov 11, 2025 1:40 PM
Sample Description	Swimming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , สวนดิน
Date Analysis Commenced	Nov 12, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Pichai Boonyong

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Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

TESTING

No.0009

Lot ID: 25102892

Date Received : Dec 09, 2025

Date Reported : Dec 17, 2025

Report Number : 3473386-1

Page 1 of 1

Sample Number	25102892-2
Sampled Date	Dec 09, 2025 3:14 PM
Sample Description	Swiming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced	Dec 10, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Panupong Homewong

Remark :

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Approved by

Suwannee Chuamkeaw
Section Head

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Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

TESTING

No.0009

Lot ID: 25102892

Date Received : Dec 09, 2025

Date Reported : Dec 17, 2025

Report Number : 3473387-1

Page 1 of 1

Sample Number	25102892-3
Sampled Date	Dec 09, 2025 3:16 PM
Sample Description	Swiming pool water
Location	น้ำสระว่ายน้ำ บริเวณชั้น 23 , สวนดิน
Date Analysis Commenced	Dec 10, 2025
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok

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Sampling By : Panupong Homewong

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

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ภาคผนวก ค-4

คุณภาพน้ำระวายนน้ำ (รายปี)



Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Sample Number 2542138-2
Sampled Date May 13, 2025 2:10 PM
Sample Description Swimming pool water
Location น้ำสระวนน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced May 14, 2025
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
<i>Escherichia coli</i>	MPN/100mL	-	-	<1.8	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, F	Bangkok
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
<i>Pseudomonas aeruginosa</i> *	in 100 mL	-	-	Not Detected	Not Detected	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9213 E	Bangkok
<i>Staphylococcus aureus</i>	in 100 mL	-	-	Not Detected	Not Detected	In-house method - STM No. 01-054 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9213 B and FDA Bacteriological Analytical Manual online, Chapter 12, 2016	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	≤20	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (B, F)	Bangkok
Calcium Hardness as CaCO ₃ *	mg/L	-	1	110	250-600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3500-Ca (B)	Bangkok
Chloride as Cl *	mg/L	0.06	0.2	1252	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4110 B	Bangkok

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Suwannee Chumkeaw
Section Head

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TESTING
No.0009

Lot ID: 2542138

Date Received : May 13, 2025

Date Reported : May 29, 2025

Report Number : 3314660-1

Page 1 of 2



Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Sample Number 2542138-2
Sampled Date May 13, 2025 2:10 PM
Sample Description Swimming pool water
Location น้ำสระวนน้ำ บริเวณชั้น 23 , ส่วนลึก
Date Analysis Commenced May 14, 2025
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Combined residual chlorine *	mg/L	-	0.1	0.35	0.5-1.0	Calculation	Bangkok
Cyanuric acid *	mg/L	2	7	19.0	30-60	Colorimetric Method	Bangkok
Nitrate as NO ₃ *	mg/L	0.3	1.0	8.7	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4110 B	Bangkok
pH at 25 degree C *	-	-	-	7.2	7.2-8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Residual Chlorine *	mg/L	-	0.1	2.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Bangkok
Residual Free Chlorine *	mg/L	-	0.1	1.7	0.6-1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Bangkok
Total Alkalinity as CaCO ₃ *	mg/L	-	1	23	80-100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2320 B	Bangkok

Guideline : ตามคำแนะนำของคณะกรรมการสาธารณสุข ฉบับที่ 1/2550 เรื่อง การควบคุมการประกอบกิจการสระวนน้ำ หรือกิจการอื่น ๆ ในทำนองเดียวกัน

Sampling By : Thitiwan Aimurai

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Suwannee Chumkeaw
Section Head

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TESTING
No.0009

Lot ID: 2542138

Date Received : May 13, 2025

Date Reported : May 29, 2025

Report Number : 3314660-1

Page 2 of 2



Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Sample Number 2542138-3
Sampled Date May 13, 2025 2:05 PM
Sample Description Swimming pool water
Location น้ำสระวนน้ำ บริเวณชั้น 23 , สวนต้น
Date Analysis Commenced May 14, 2025
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
<i>Escherichia coli</i>	MPN/100mL	-	-	<1.8	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, F	Bangkok
Fecal Coliform	in 100 mL	-	-	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B, E	Bangkok
<i>Pseudomonas aeruginosa</i> *	in 100 mL	-	-	Not Detected	Not Detected	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9213 E	Bangkok
<i>Staphylococcus aureus</i>	in 100 mL	-	-	Not Detected	Not Detected	In-house method - STM No. 01-054 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9213 B and FDA Bacteriological Analytical Manual online, Chapter 12, 2016	Bangkok
Total Coliform	MPN/100mL	-	-	<1.8	<10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	≤20	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (B, F)	Bangkok
Calcium Hardness as CaCO ₃ *	mg/L	-	1	110	250-600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3500-Ca (B)	Bangkok
Chloride as Cl *	mg/L	0.06	0.2	1253	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4110 B	Bangkok

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Suwannee Chumkeaw
Section Head

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TESTING
No.0009

Lot ID: 2542138

Date Received : May 13, 2025

Date Reported : May 29, 2025

Report Number : 3314661-1

Page 1 of 2



Analysis / Test Report

Client : Life Sukhumvit 62 Condominium Juristic Person
54 Soi Sukhumvit 62, Phra Khanong Tai, Phra Khanong, Bangkok Thailand 10260

P/O :

Project Name :

Project Location :

Sample Number 2542138-3
Sampled Date May 13, 2025 2:05 PM
Sample Description Swimming pool water
Location น้ำสระวนน้ำ บริเวณชั้น 23 , สวนต้น
Date Analysis Commenced May 14, 2025
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Combined residual chlorine *	mg/L	-	0.1	0.21	0.5-1.0	Calculation	Bangkok
Cyanuric acid *	mg/L	2	7	21.0	30-60	Colorimetric Method	Bangkok
Nitrate as NO ₃ *	mg/L	0.3	1.0	8.7	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4110 B	Bangkok
pH at 25 degree C *		-	-	7.4	7.2-8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Bangkok
Residual Chlorine *	mg/L	-	0.1	2.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Bangkok
Residual Free Chlorine *	mg/L	-	0.1	1.8	0.6-1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Bangkok
Total Alkalinity as CaCO ₃ *	mg/L	-	1	25	80-100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2320 B	Bangkok

Guideline : ค่าแนะนำของคณะกรรมการสาธารณสุข ฉบับที่ 1/2550 เรื่อง การควบคุมการประกอบกิจการสระวนน้ำ หรือกิจการอื่น ๆ ในทำนองเดียวกัน

Sampling By : Thitiwan Aimurai

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Suwannee Chumkeaw
Section Head

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TESTING
No.0009

Lot ID: 2542138

Date Received : May 13, 2025

Date Reported : May 29, 2025

Report Number : 3314661-1

Page 2 of 2

ภาคผนวก ง

เอกสารการสอบเทียบเครื่องมือตรวจวิเคราะห์



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รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Water Lab	pH at 25 °C	pH meter	BKK_EN0342	9-Oct-25	9-Oct-26	12
Water Lab	Color	Chamber (Cooling Room)	BKK_EN0167	4-Jun-25	4-Dec-26	18
Water Lab	Turbidity	Chamber (Cooling Room)	BKK_EN0167	4-Jun-25	4-Dec-26	18
Water Lab	Settleable Solids	Chamber (Cooling Room)	BKK_EN0167	4-Jun-25	4-Dec-26	18
Water Lab	Sulfide	Burette	BKK_EN0422	3-Sep-25	3-Sep-26	12
Water Lab	Sulfide	Chamber (Cooling Room)	BKK_EN0167	4-Jun-25	4-Dec-26	18
Water Lab	Oil & Grease	Electronic Top-Loading Balance	BKK_EN0003	17-Jul-25	17-Jul-26	12
Water Lab	Oil & Grease	Water Bath	BKK_EN0439	9-Oct-25	9-Oct-26	12
Water Lab	Total Kjeldahl Nitrogen	Digestion Unit	BKK_EN0366	9-Apr-25	9-Apr-26	12
Water Lab	Total Kjeldahl Nitrogen	Discrete analyzer	BKK_EN0438	15-Jul-25	15-Jul-26	12
Water Lab	Total Suspended Solids	Electronic Top-Loading Balance	BKK_EN0003	17-Jul-25	17-Jul-26	12
Water Lab	Total Suspended Solids	Oven	BKK_EN0425	6-Oct-25	6-Oct-26	12
Water Lab	Total Dissolved Solids 180°C	Electronic Top-Loading Balance	BKK_EN0003	17-Jul-25	17-Jul-26	12
Water Lab	Total Dissolved Solids 180°C	Oven	BKK_EN0425	6-Oct-25	6-Oct-26	12
Water Lab	Total Dissolved Solids 103-105°C	Electronic Top-Loading Balance	BKK_EN0003	17-Jul-25	17-Jul-26	12
Water Lab	Total Dissolved Solids 103-105°C	Oven	BKK_EN0425	6-Oct-25	6-Oct-26	12
Water Lab	BOD	DO Meter	BKK_EN0017	20-May-25	20-Nov-26	18
Water Lab	BOD	Incubator	BKK_EN0304	4-Mar-25	4-Mar-26	12
Water Lab	BOD	Burette	BKK_EN0422	3-Sep-25	3-Sep-26	12
Water Lab	Total Coliform	Autoclave	BKK_ML0041	4-Mar-25	4-Sep-26	18
Water Lab	Total Coliform	Incubator	BKK_ML0231	21-Aug-25	21-Aug-26	12
Water Lab	Total Coliform	Hot Air Oven	BKK_ML0013	9-Oct-25	9-Apr-27	18
Water Lab	Fecal Coliform	Autoclave	BKK_ML0041	4-Mar-25	4-Sep-26	18
Water Lab	Fecal Coliform	Incubator	BKK_ML0231	21-Aug-25	21-Aug-26	12
Water Lab	Fecal Coliform	Hot Air Oven	BKK_ML0013	9-Oct-25	9-Apr-27	18
Water Lab	Fecal Coliform	Water Bath	BKK_ML0056	4-Mar-25	4-Mar-26	12
Water Lab	<i>Escherichia coli</i>	Autoclave	BKK_ML0041	4-Mar-25	4-Sep-26	18
Water Lab	<i>Escherichia coli</i>	Incubator	BKK_ML0231	21-Aug-25	21-Aug-26	12
Water Lab	<i>Escherichia coli</i>	Hot Air Oven	BKK_ML0013	9-Oct-25	9-Apr-27	18
Water Lab	<i>Escherichia coli</i>	Water Bath	BKK_ML0056	4-Mar-25	4-Mar-26	12



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert.No.: 24CH1295

Page.: 1 of 3

Equipment : pH Meter
Manufacturer : Hach
Model : HQ411d
Serial No. : 200100031163
ID No. : BKK_EN0342
Condition As-Received: Used Item
Received Date : 16 October 2024
Calibration Date : 17 October 2024
Reference : 2410-0548DSC-5
Submitted by :

REVIEW BY

Jinda K

APPROVED BY

Siriluk P

NEXT CAL DATE

17/10/25

Ambient Temperature : (25 ± 2.5) °C
Relative Humidity : (50 ± 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with
certified reference material (CRM)
- CP-CH8 by comparison with temperature standard

Calibrated by : Warakorn Lernagatrakul

Approved by :

Saithip

Approved Signatory

- () Unnopphol Harachai
() Ponpan Paipim
(✓) Saithip Meangmai

Issue Date : 21 October 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Cert.No.: 24CH1295

Page.: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument

<u>Instrument</u>	<u>Serial No.</u>	<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
1)Ref. Standard Thermometer	2188080	130RC044	24I1022	16 Sep 2025

- This Certification is traceable to SI Through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials :The measurement results are traceable to SI through Hach Lenge GmbH Ltd.
Deutsche Akkreditierungsstelle, Accredited No.D-RM-15184-01-00
:The measurement results are traceable to SI through CPA chem Ltd.,
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

<u>Buffer Solution</u>	<u>Manufacturer</u>	<u>Lot No.</u>	<u>Exp. date</u>
pH 4.008	CPA chem	1034203	27 Sep 2026
pH 6.999	Hach Lenge GmbH	C03145	28 Feb 2026
pH 10.010	CPA chem	1034205	27 Sep 2025

3. This certificate is valid only to the item calibrated on date and place of calibration.

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

<u>Unit Under Calibration</u>	<u>Standard pH Buffer Solution</u>	<u>Actual pH Reading</u>	<u>Actual mV Reading (mV)</u>	<u>Uncertainty of pH Measurement (±)</u>	<u>Coverage factor k</u>
pH Electrode S/N.: 230473042902	4.008	4.028	174.6	0.0044	2.00
	6.999	7.014	1.4	0.0084	2.05
	10.010	10.018	-172.8	0.0066	2.00

Remark - Can not connect the BNC because the plug does not match with the socket.



Cert.No.: 24CH1295

Page.: 3 of 3

Calibration Results

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : PHC281

- Serial No. : 230473042902

Dimension of probe

- Length : 103 mm.

- Diameter : 12 mm.

- Immersion Depth : 90 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement (± °C)	Coverage factor <i>k</i>
25.0	25.002	25.0	-0.002	0.13	2.00

Remark : UUC* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

-o0o-



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CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert.No.: 25CH1162

Page.: 1 of 3

Equipment : pH Meter
Manufacturer : Hach
Model : HQ411d
Serial No. : 200100031163
ID No. : BKK_EN0342
Condition As-Received: Used Item
Received Date : 08 October 2025
Calibration Date : 09 October 2025
Reference : 2510-0271DSC-1
Submitted by :

Ambient Temperature : (25 ± 2.5) °C
Relative Humidity : (50 ± 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with
certified reference material (CRM)
- CP-CH8 by comparison with temperature standard

Calibrated by : Walalak Sirithean

Approved by :

Saithip

Approved Signatory

- () Chakrit Waewwanjua
() Ponpan Paipim
(✓) Saithip Meangmai

Issue Date : 10 October 2025

REVIEW BY *Jinda K*
APPROVED BY *Siriluk P*
NEXT CAL DATE..... 09/10/26

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Cert.No.: 25CH1162

Page.: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument

<u>Instrument</u>	<u>Serial No.</u>	<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
1) Ref. Standard Thermometer	4982054	110RC044	25I708	03 July 2026

- This measurement result is traceable to SI through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd.,
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

<u>Buffer Solution</u>	<u>Manufacturer</u>	<u>Lot No.</u>	<u>Exp. date</u>
pH 4.007	CPA chem	1114384	12 June 2027
pH 6.965	CPA chem	1066667	18 Jan 2026
pH 10.010	CPA chem	1135355	16 Aug 2026

3. This certificate is valid only to the item calibrated on date and place of calibration.

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement ($\pm$)	Coverage factor k
pH Electrode S/N.: 252063043080	4.007	3.996	176.6	0.0046	2.00
	6.965	6.974	1.1	0.0084	2.00
	10.010	9.996	-176.9	0.0070	2.00

Remark - Can not connect the BNC because the plug does not match with the socket.



Cert.No.: 25CH1162

Page.: 3 of 3

Calibration Results

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : PHC281
- Serial No. : 252063043080

Dimension of probe

- Length : 103 mm.
- Diameter : 12 mm.
- Immersion Depth : 90 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement (± °C)	Coverage factor <i>k</i>
25.0	25.001	25.0	-0.001	0.13	2.00

Remark - UUC* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

-o0o-

Certificate No. T250873

Page 1 of 4

Certificate of Calibration

Equipment : Chamber (Cooling Room)**Manufacturer** : KOLDTECH**Model** : KM 320**Serial No.** : TBN-1012061/05**Customer Code** : BKK_EN0167**ID No.** : T2463A3**Customer** : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : Laboratory Room**Date of Receipt** : 28 May 2025**Calibrated By** : Atiphong Rongrat (Technician)**Approved By** :  / Boonchai Suriyawong (Site Calibration Manager)**Date of Issue** : 19 JUN 2025

REVIEW BY



APPROVED BY



NEXT CAL DATE.....04/12/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

Certificate No. T250873

Page 2 of 4

Calibration Report

Equipment : Chamber (Cooling Room)
Date of Calibration : 4 June 2025
Environment : Temperature : 23.4-24.9 °C
Line Voltage : 221.4-230.2 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert 16 standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2001) and AS2853-1986).

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN91-TN100	T242036	3 December 2025
TC	TYPE T	TN101-TN110	T242036	3 December 2025
DATA LOGGER	34970A	T121	T242036	3 December 2025

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

Equipment Description :

Time Constant 2 Hour 20 Minute At 3 °C
Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max
☐ Close
☒ Not Available

5. Adjustment :

(X) without adjustment

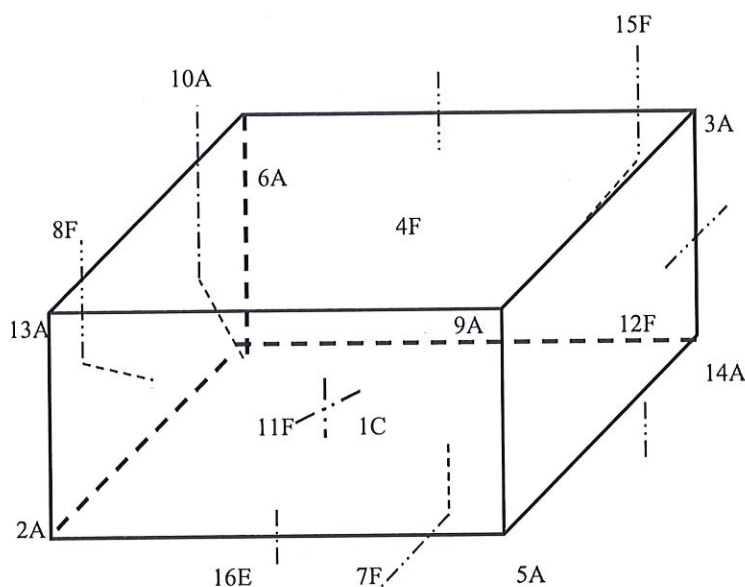
() after adjustment

Approved By. Bum Sri

Certificate No. T250873

Page 3 of 4

Calibration Report



C = Centre , F = Centre of Face , A = Corner , E = Centre of Edge

1C = TN91	12F = TN102
2A = TN92	13A = TN103
3A = TN93	14A = TN104
4F = TN94	15F = TN105
5A = TN95	16E = TN106
6A = TN96	
7F = TN97	
8F = TN98	
9A = TN99	
10A = TN100	
11F = TN101	

Approved By. _____



Certificate No. T250873

Page 4 of 4

Calibration Report

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)											
	TN91	TN92	TN93	TN94	TN95	TN96	TN97	TN98	TN99	TN100	TN101	TN102
3.0	2.95	2.92	3.09	2.92	3.16	3.50	3.40	3.03	3.14	2.98	3.44	3.13
	TN103	TN104	TN105	TN106								
	3.19	3.06	3.46	2.92								

Chamber (Cooling Room)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor <i>k</i>
	Min , Max	Average					
3.0	2.8 , 3.9	3.4	3.14	1.20	1.30	1.90	2.04

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k* which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By. 



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert.No.: 24CG3401

Page.: 1 of 2

Equipment :	Burette
Capacity :	50 mL
Serial No. :	-
ID. No. :	BKK_EN0422
Manufacturer :	Witeg
Made in :	Germany
Submitted by :	ALS Laboratory Group (Thailand) Co.,Ltd. 104 Phatthanakan 40, Phatthanakan Rd. Khwaeng Phatthanakan, Khet Suan Luang Bangkok 10250 Thailand
Ambient Temperature :	(20 ± 2.5) °C
Relative Humidity :	(50 ± 10) %
Barometric Pressure :	756 mmHg
Calibration Procedure :	ASTM E 542 - 01
Calibrated by :	Sa-ngeunkam Wongsa

REVIEW BY *Jinda K.*

APPROVED BY *Siriluk P.*

NEXT CAL DATE..... 03/09/25

Approved by :

Sa-ngeunkam Wongsa
Approved Signatory

(✓) Srisuda Khamtha
() Ponpan Paipim
() Unnopphol Harachai

Issue Date :

3 September 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Burette
Received Date : 29 August 2024
Condition As-Received : Used Item
Calibration Date : 3 September 2024
Reference : 2408-0944DSC-2

Cert.No.: 24CG3401
Page.: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :

<u>Instruments</u>	<u>Model</u>	<u>Serial No.</u>	<u>ID. No.</u>	<u>Certificate No.</u>	<u>Traceability</u>	<u>Due date</u>
1) Balance	XP205	B134206712	140RC007	24MM316	TPA	15 July 2025
2) Data Logger	HL-20D	20683159	140EC012	23H2174	TPA	10 Oct 2024
3) Thermometer	-	1594592	140EC010	24I175	TPA	22 Feb 2025

This certification is traceable to SI Unit

2. The certificate is valid only to the item calibrated on date and place of calibration.
3. True value is converted to true volume at the standard temperature of 20 °C

Calibration result :

Nominal capacity (mL)	Reading (mL)	Uncertainty (± mL)	k Factor
50	49.9951	0.010	2.00

Remark mL = cm³

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k* , providing a level of confidence of approximately 95 %.

-o0o-



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Certificate of Calibration

Cert.No.: 25CG3385

Page.: 1 of 2

Equipment :	Burette
Capacity :	50 mL
Serial No. :	-
ID. No. :	BKK_EN0422
Manufacturer :	Witeg
Made in :	Germany
Submitted by :	ALS Laboratory Group (Thailand) Co.,Ltd. 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand
Ambient Temperature :	(20 ± 2.5) °C
Relative Humidity :	(50 ± 10) %
Barometric Pressure :	753 mmHg
Calibration Procedure :	ASTM E 542 - 01
Calibrated by :	Srisuda Khamtha

REVIEW BY *Linda K*

APPROVED BY *Siriluk P*

NEXT CAL DATE.....03/09/26

Approved by :

Approved Signatory

() Ponpan Paipim
(✓) Chakrit Waewwanjua

Issue Date :

3 September 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Burette
Received Date : 1 September 2025
Condition As-Received : Used Item
Calibration Date : 3 September 2025
Reference : 2509-0049DSC-1

Cert.No.: 25CG3385
Page.: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :

<u>Instruments</u>	<u>Model</u>	<u>Serial No.</u>	<u>ID. No.</u>	<u>Certificate No.</u>	<u>Traceability</u>	<u>Due date</u>
1) Balance	MS204TS	C226356983	140RC010	24MM603	TPA	10 Oct 2025
2) Data Logger	HL-20D	20683159	140EC012	24H2129	TPA	15 Oct 2025
3) Digital Thermometer	HH376	230806555	140EC013	25I1740	TPA	17 Jan 2026

This measurement result is traceable to SI Unit

2. The certificate is valid only to the item calibrated on date and place of calibration.
3. True value is converted to true volume at the standard temperature of 20 °C

Calibration result :

Nominal capacity (mL)	Reading (mL)	Uncertainty (± mL)	k Factor
10	9.9941	0.0082	2.00
25	24.9804	0.0087	2.00
50	49.9819	0.010	2.00

Remark mL = cm³

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k , providing a level of confidence of approximately 95 %.

-o0o-

Accredited by

NSC-TISI-TIS 17025

Calibration 0426



NSC-TISI-TIS 17025

CALIBRATION 0426

Calibration certificate

Calibration Certificate No. 25BCI0265

Object	Electronic non-automatic weighing instrument	This calibration certificate documents the traceability to national standards.
Manufacturer	Sartorius	Uncertainties of measurements are taken into account when only statements of compliance are made.
Type	MSE224S-100-DU	This certificate was prepared by Sartorius Corporation in accordance to the current ISO/IEC 17025:2017 standard and Sartorius Work Instruction (Method) SOP WI 08.
Serial QM Ident. no.	27405555 BKK_EN0003	This certificate relate and apply this equipment only.
Customer	ALS Laboratory Group (Thailand)Co., Ltd. 104 Phatthanakarn 40,Phattanakarn Rd.,Khwaeng Phatthanakarn ,Khet Suan Luang,Bangkok 10250	REVIEW BY <i>Linda K</i> APPROVED BY <i>Siriluk P</i> NEXT CAL DATE <u>17/07/26</u>
Order no.	265054	
Number of pages	4	
Date of calibration	17 Jul 2025	

This calibration certificate may not be reproduced other than in full except with the permission of NSC-TISI-TIS-17025 and the issuing laboratory. Calibration certificates without signature are not valid.

The user is obliged to have the object recalibrated at appropriate intervals.

Date of issue	17 Jul 2025	Approval of the Calibration Certificate	Person in charge
		Mr. Chonchai Inthana	Chonchai Inthana

Calibration object

Single range instrument

Model	MSE224S-100-DU
Serial Number	27405555
QM Ident. no Inventory no.	BKK_EN0003 ---

Maximum capacity (Max. load)	220.0000 g
Measured up to	220.0000 g
Scale interval	0.0001 g

Place of calibration

Address	According to page 1
Department Cost center	ENVI Department ---
Building Floor	--- 1st Floor.
Room	Laboratory Room.
Maximum temperature variation at place of calibration	5 K

Calibration procedure

EURAMET Calibration Guide No. 18, Version 4.0 (11/2015) - Guidelines on the Calibration of Non-Automatic Weighing Instruments

Test equipment

Test equipment type	Test equipment ID	Valid until
Thermometer	Testo 174(Traceable to Si unit through ENTECH)	11 Nov 2025
Test weight set OIML R111 E2	Certificate No.M2308197S ,E2(Traceable to SI unit through TCS)	23 Aug 2025

Adjustment Status

The measuring device was internally adjusted before the calibration.

Environmental and measuring conditions

Date of calibration	17 Jul 2025
Temperature at place of calibration Temp. diff. <i>T</i> _{weights} - <i>T</i> _{place}	22.5 °C 0.7 K
Measuring conditions	The installation site is suitable. The device is level. Balance was loaded up to Max before test.
Comments	Humidity 58.0 %RH.

Measurement results | Measurement uncertainties

Repeatability

Test load (nominal): 10 g 200 g		
	10 g	200 g
1	10.0000 g	200.0000 g
2	10.0000 g	199.9999 g
3	10.0000 g	200.0000 g
4	10.0000 g	200.0000 g
5	10.0001 g	199.9999 g
6	10.0000 g	200.0000 g
7	10.0000 g	200.0000 g
8	10.0001 g	200.0000 g
9	10.0000 g	200.0000 g
10	10.0000 g	199.9999 g
	<i>s</i> = 0.00004 g	<i>s</i> = 0.00005 g

Eccentricity

Test load (nominal): 100 g	
Center	100.0000 g
Front left	100.0001 g
Back left	100.0000 g
Back right	100.0001 g
Front right	100.0001 g
Maximum deviation from centric loading indication $ \Delta_{ecc} _{max} = 0.0001\text{ g}$	

Error of indication

Testload	Indication	Error	Expansion factor	Uncertainty	Uncertainty relative
<i>L</i>	<i>I</i>	<i>E</i>	<i>k</i>	<i>U</i> (<i>E</i>)	<i>U</i> _{rel} (<i>E</i>)
0.0100 g	0.0100 g	0.0000 g	2.00	0.00012 g	1.2 %
0.1000 g	0.1000 g	0.0000 g	2.00	0.00013 g	0.13 %
1.0000 g	1.0000 g	0.0000 g	2.00	0.00013 g	0.013 %
2.0000 g	2.0000 g	0.0000 g	2.00	0.00013 g	0.0065 %
5.0000 g	5.0000 g	0.0000 g	2.00	0.00013 g	0.0026 %
10.0000 g	10.0000 g	0.0000 g	2.00	0.00013 g	0.0013 %
20.0000 g	20.0000 g	0.0000 g	2.00	0.00014 g	0.00068 %
50.0000 g	50.0000 g	0.0000 g	2.00	0.00015 g	0.00029 %
100.0000 g	100.0000 g	0.0000 g	2.00	0.00018 g	0.00018 %
200.0000 g	200.0000 g	0.0000 g	2.00	0.00028 g	0.00014 %
220.0000 g	220.0001 g	0.0001 g	2.00	0.00032 g	0.00015 %
Maximum error of indication		$ E _{max} = 0.0001\text{ g}$			

*U*_{rel}(*E*) is the quotient of *U*(*E*) and test load *L*. The uncertainty of measurement *U*(*E*) is valid only if error *E* is considered. You will find reference notes on the uncertainty of measurement in use under: Appendix to the calibration certificate | Interpretation of measurement results.
Reference note: The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the documented Expansion factor, determined in accordance with the European Calibration Guideline EURAMET cg-18, V4.0. There is a 95 % probability that the value of the measurand will be in the assigned value range.

End of calibration certificate

Uncertainty of measurement in use

Device adjusted before measurement	Yes
Temperature deviation considered	1.5 K (isoCAL active)
Temperature coefficient considered	$1 \cdot 10^{-6}/\text{K}$

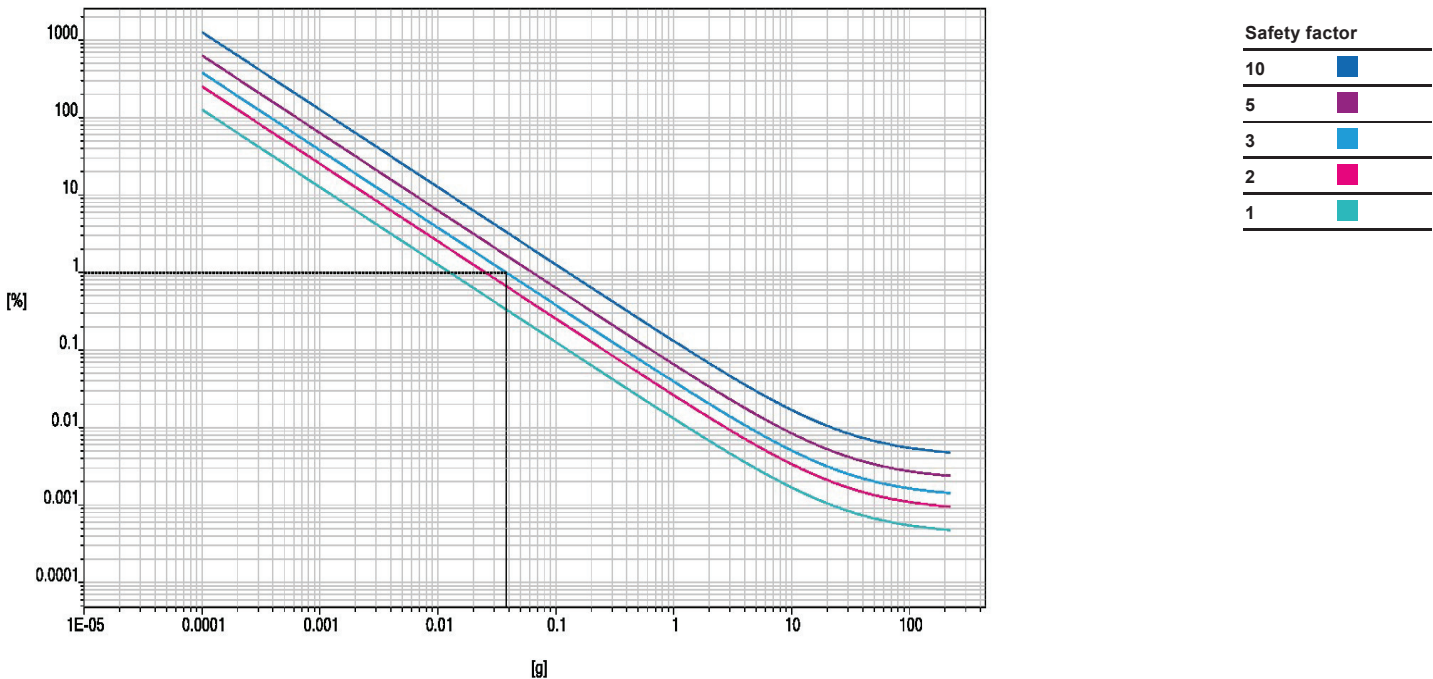
Uncertainty of the weighing result $U_{gl}(W)$

$U_{gl}(W) = 0.00013 \text{ g} + 4.19 \cdot 10^{-6} \cdot R$

Reference note: The current uncertainty of measurement is calculated by entering of the reading R into this formula. In relation to this, there is no need for a correction of the indication error. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied with an Expansion factor of 2, determined in accordance with the European Calibration Guideline EURAMET cg-18, V4.0. There is a 95 % probability that the value of the measurand will be in the assigned value range.

Indication in % from max load	Net indication R	Uncertainty $U_{gl}(W)$	Uncertainty relative $U_{gl}(W)_{rel}$
1 %	2.2000 g	0.00014 g	0.0063 %
25 %	55.0000 g	0.00036 g	0.00066 %
50 %	110.0000 g	0.00059 g	0.00054 %
75 %	165.0000 g	0.00082 g	0.00050 %
100 %	220.0000 g	0.0011 g	0.00048 %

Graphic realization of the relative uncertainty of measurement | process accuracy



Displayed example

Process accuracy	1.00 %
Safety factor	3
Minimum sample weight	0.0380 g



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TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert. No.: 24TM1618

Page : 1 of 3

Equipment : Water Bath
Manufacturer : Memmert
Model : WNE29
Serial No. : L622.0282
ID No. : BKK_EN0439

REVIEW BY *Jinda K.*

APPROVED BY *Siriluk P.*

NEXT CAL DATE **29/10/25**

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Location : Organic Preparation Lab

Received Order : 29 October 2024

Calibration Date : 29 October 2024

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

Calibrated by : Man Pattanapongpaiboon

Kunchit

Approved by :
Approved Signatory

- () Ponpan Paipim
() Suwit Imjai
(✓) Kunchit Promprat

Issue Date : 30 October 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2410-0782OC-4

Cert. No.: 24TM1618

Page : 2 of 3

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

<u>Instrument</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Traceable</u>	<u>Due Date</u>
1) Data Acquisition	MY57013711	24LM115	TPA	13 Jul 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

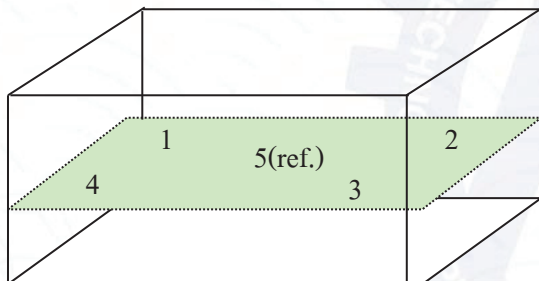
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	<u>Environmental</u>		<u>AC Voltage Supply</u>
	(°C)	(%R.H.)	(Volt)
Beginning of Calibration	25	54	222
Finished of Calibration	25	57	226



Front

<u>Position :</u>	<u>Ref. Std. ID No.:</u>
1	4803988-001
2	4803988-002
3	4803988-003
4	4803988-004
5(ref.)	4803988-005



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2410-0782OC-4
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 24TM1618
Page : 3 of 3

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty (± °C)
			Position					
			1	2	3	4	5 (ref.)	
85.0	85.0	85.0	85.133	85.212	85.150	84.983	85.096	0.22

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor <i>k</i>
85.0	0.21	0.13	2

Average* : The average of 30 values in each position.

Uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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Certificate of Calibration

Cert. No.: 25TM528

Page : 1 of 3

Equipment : Water Bath
Manufacturer : Memmert
Model : WNE 29
Serial No. : L622.0282
ID No. : BKK_EN0439

REVIEW BY

finda k

APPROVED BY

Siriluk P

NEXT CAL DATE

09/10/26

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Location : Organic Preparation Lab

Received Order : 08 October 2025

Calibration Date : 09 October 2025

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

AC Line Voltage : (220 ± 22) V

Calibrated by : Kunchit Promprat

[Signature]

Approved by :

Approved Signatory

() Chakrit Waewwanjua

() Ponpan Paipim

(✓) Suwit Imjai

Issue Date : 28 October 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2510-0042OC-13

Cert. No.: 25TM528

Page : 2 of 3

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

<u>Instrument</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Traceable</u>	<u>Due Date</u>
1) Data Acquisition	MY58041391	25LM20	TPA	08 Feb 2026

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This measurement result is traceable to the International System of Unit maintained through :

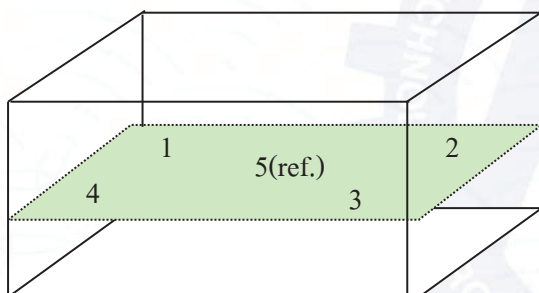
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	<u>Environmental</u>		<u>AC Voltage Supply</u> (Volt)
	(°C)	(%R.H.)	
Beginning of Calibration	24	63	224
Finished of Calibration	24	58	224



Front

<u>Position :</u>	<u>Ref. Std. ID No.:</u>
1	70RC143
2	70RC144
3	70RC145
4	70RC146
5(ref.)	70RC147



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2510-0042OC-13
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 25TM528
Page : 3 of 3

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty (± °C)
			Position					
			1	2	3	4	5 (ref.)	
85.0	85.0	85.0	84.863	84.748	84.869	84.990	84.966	0.21

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor <i>k</i>
85.0	0.33	0.12	2

Average* : The average of 30 values in each position.

Uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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Certificate No. T250578

Page 1 of 4

Certificate of Calibration

Equipment : Digestion Unit**Manufacturer** : SCP Science**Model** : DigiPRER HT**Serial No.** : HTC1120480658**Customer Code** : BKK_EN0366**ID No.** : T2635A5**Customer** : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd.,

Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250

Customer Location : Wet Chemistry Lab 1**Date of Receipt** : 2 April 2025**Calibrated By** : Atiphong Rongrat (Technician)**Approved By** :  / Boonchai Suriyawong (Site Calibration Manager)**Date of Issue** : 13 MAY 2025

REVIEW BY	
APPROVED BY	
NEXT CAL. DATE	09/04/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.



Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110

Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109

Website : www.scieco.co.th

E-Mail : calibrate@scg.co.th

Certificate No. T250578

Page 2 of 4

Calibration Report

Equipment : Digestion Unit
Date of Calibration : 9 April 2025
Environment : Temperature : 23.9 - 26.3 °C
Line Voltage : 221.8 - 225.9 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert four standard thermocouples type S into its chamber , the other one thermocouple type T use for ambient temperature measurement . The calibration was done in according to WI-T10.

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	Type S	M7-(CH1-CH4)	T242035	04 December 2025
DATA LOGGER	34970A	T121	T242035	04 December 2025

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

Equipment Description :

Time Constant 2 Hour 40 Minute At 380 °C
Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max
☐ Close
☒ Not Available

5. Adjustment :

(X) without adjustment

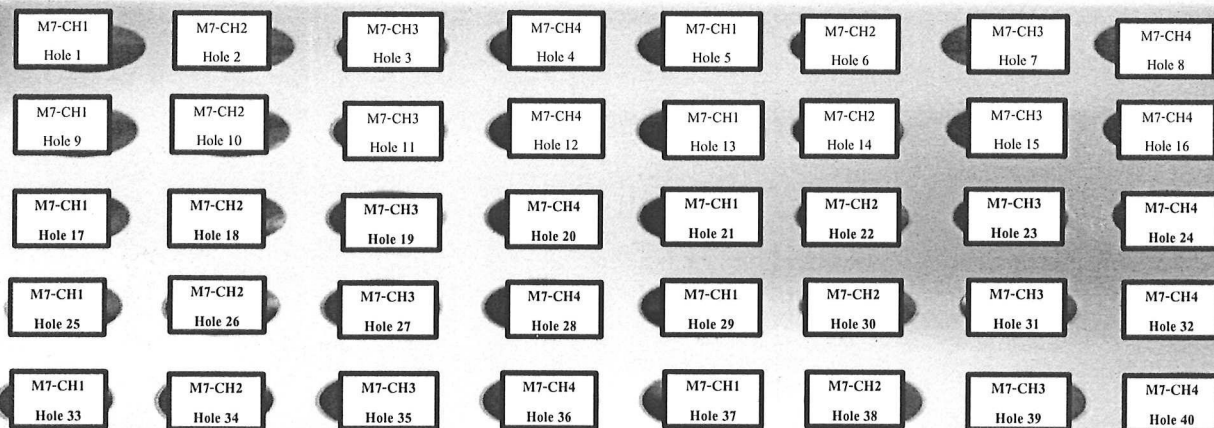
() after adjustment

Approved By. Pon Zi

Certificate No. T250578

Page 3 of 4

Calibration Report



FRONT

Measurement Results

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	M7-CH1 Hole 1	M7-CH2 Hole 2	M7-CH3 Hole 3	M7-CH4 Hole 4	M7-CH1 Hole 5	M7-CH2 Hole 6	M7-CH3 Hole 7	M7-CH4 Hole 8
380.0	380.0	379.8 - 380.2	Max °C	380.0	381.0	380.9	379.6	380.3	380.9	381.3	380.1
			Min °C	379.6	380.8	380.6	379.3	379.9	380.5	380.9	379.6
			Average °C	379.8	380.9	380.7	379.5	380.1	380.7	381.1	379.9
			Stability ± °C	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	M7-CH1 Hole 9	M7-CH2 Hole 10	M7-CH3 Hole 11	M7-CH4 Hole 12	M7-CH1 Hole 13	M7-CH2 Hole 14	M7-CH3 Hole 15	M7-CH4 Hole 16
380.0	380.0	379.8 - 380.2	Max °C	378.9	378.7	379.8	381.0	382.8	381.3	381.7	380.4
			Min °C	378.3	378.2	379.3	380.7	382.1	380.5	381.3	380.0
			Average °C	378.6	378.5	379.5	380.9	382.4	380.9	381.5	380.2
			Stability ± °C	0.3	0.2	0.3	0.1	0.3	0.4	0.2	0.2

Approved By.



Certificate No. T250578

Page 4 of 4

Calibration Report

Measurement Results

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	M7-CH1 Hole 17	M7-CH2 Hole 18	M7-CH3 Hole 19	M7-CH4 Hole 20	M7-CH1 Hole 21	M7-CH2 Hole 22	M7-CH3 Hole 23	M7-CH4 Hole 24
380.0	380.0	379.8 - 380.2	Max °C	379.3	379.2	379.1	379.5	380.8	381.1	382.5	381.3
			Min °C	379.1	379.0	378.8	379.2	380.5	380.8	382.1	381.1
			Average °C	379.2	379.1	379.0	379.3	380.6	380.9	382.3	381.2
			Stability ± °C	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	M7-CH1 Hole 25	M7-CH2 Hole 26	M7-CH3 Hole 27	M7-CH4 Hole 28	M7-CH1 Hole 29	M7-CH2 Hole 30	M7-CH3 Hole 31	M7-CH4 Hole 32
380.0	380.0	379.8 - 380.2	Max °C	378.5	378.2	379.5	378.5	380.4	380.8	380.4	380.9
			Min °C	378.2	377.9	379.2	378.2	380.0	380.5	380.1	380.6
			Average °C	378.3	378.0	379.4	378.3	380.2	380.7	380.2	380.8
			Stability ± °C	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	M7-CH1 Hole 33	M7-CH2 Hole 34	M7-CH3 Hole 35	M7-CH4 Hole 36	M7-CH1 Hole 37	M7-CH2 Hole 38	M7-CH3 Hole 39	M7-CH4 Hole 40
380.0	380.0	379.8 - 380.2	Max °C	379.9	380.0	379.8	379.7	380.1	380.2	379.7	379.8
			Min °C	379.6	379.6	379.5	379.3	379.8	379.9	379.4	379.5
			Average °C	379.8	379.8	379.7	379.5	379.9	380.1	379.5	379.7
			Stability ± °C	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1

 The expanded uncertainty of temperature measurement was $\pm 2.36^{\circ}\text{C}$

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

 The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %.

Approved By.



Smartchem 600



REVIEW BY Arraya M.
APPROVED BY Siriluk P.
NEXT CAL. DATE 15/07/26.

Maintenance report

Instrument S/N: 2401055

Installed at: ALS Laboratory Group (Thailand) Co., Ltd.

Address: 104 Phatthanakan 40 Alley, Phatthanakan, Suan Luang, Bangkok Thailand

Contact: Arraya Meechai Telephone: 02 760 3000

E-mail: arraya.meechai@alsglobal.com

Date of maintenance: 15-Jul-2025

Service engineer: Apirom, Samphan

Maintenance procedure

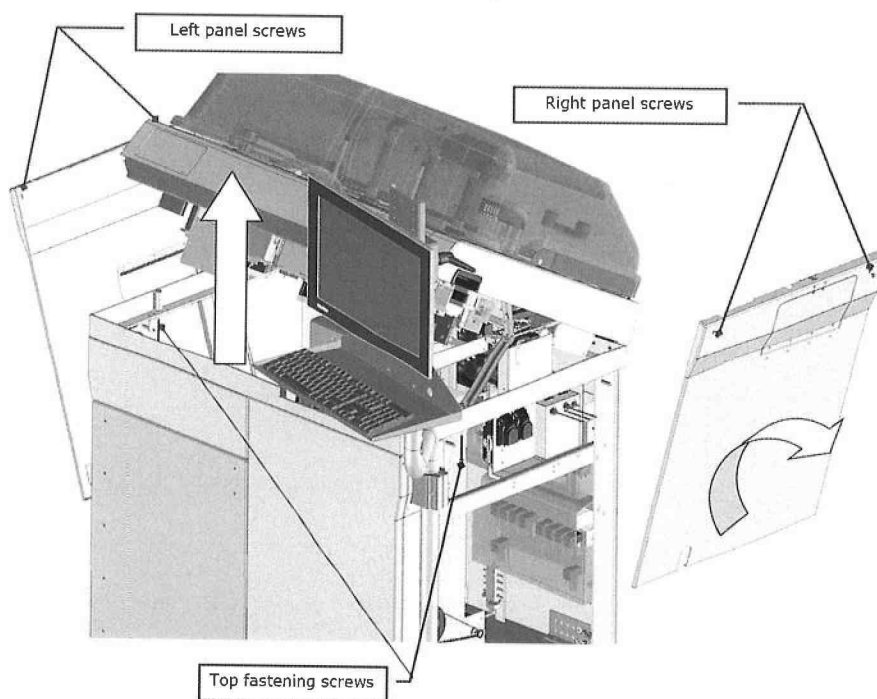
Preliminary checks		
1)	Check problems encountered by the operator while using the instrument Remarks:	☒
2)	Check of the "Event logs" ➤ Access the "Event logs" page ("Archive" → "Event logs") ➤ Filter at least the past two months in order to check if any error have occurred Remarks:	☒
3)	Verify results of WBL (to verify correct operation of the spectrometer, reagents arms and reactions plate) Remarks:	☒
4)	Check for leaks/overflows ➤ Check the coloration of the washing wells (washing wells should be white without any trace of coloration) ➤ Check the absence of dry stain under and inside the instrument (it could be evidence of old leaks/overflows) Remarks:	☒
5)	Check the correct execution of the Home procedure ➤ Access diagnostic area ("Maintenance" → "Diagnostic") ➤ Select the "Home all motors" item in order to perform the general reset of the instrument and wait until the procedure is completed ➤ Make sure that all the Home Sensors light up in green Remarks:	☒

Maintenance procedure

Instrument preparation

- Remove the right side panel
- Remove the left side panel
- Unscrew the two top fastening screws and then lift up the top till the security lock falls and secure the machine in opened position
- Open the main door and gates of the Hydraulic compartment on the back right side
- Open the door of the Electronic compartment on the back left side

1)



Remarks:

2)

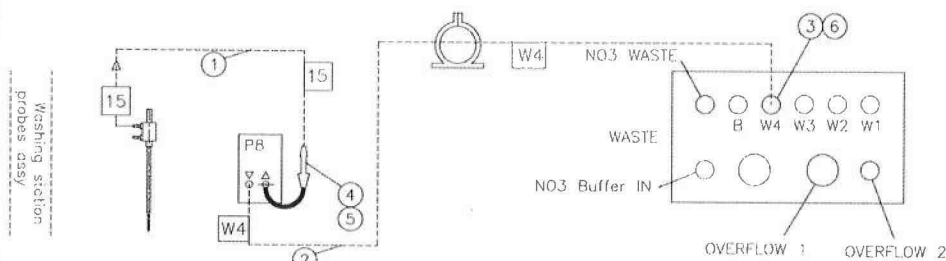
Washing station - emptying the drain line of the 1st cannula

- Access diagnostic area ("Maintenance" → "Diagnostic") and open the "Washing station" page
- Activate the "Probe 1 empty..." for at least 10 seconds

Remarks:

3)	Drain the hydraulic circuit of the EC module (if installed) ➤ Access diagnostic area ("Maintenance" → "Diagnostic") ➤ Perform the mechanical reset of the instrument ("Main" page → "Home all motors") ➤ Remove the cannula from the "DI water" bottle Access the "EC" page and run 10 times the "Purge" feature	☐
	Remarks: Don't installed.	
4)	Drain the hydraulic circuit of the NO3 module (if installed) ➤ Access diagnostic area ("Maintenance" → "Diagnostic") ➤ Perform the mechanical reset of the instrument ("Main" page → "Home all motors") ➤ Remove the cannula from the "Imidazole" bottle ➤ Access the "NO3" page and run 2 times the "Liquids prime" feature	☐
	Remarks: Customer stop to use NO3 module because the Cadmium Coild was defective.	
5)	Perform all updates ➤ Windows update ➤ Software update	☒
	Remarks: For Windows update: We will cooperate with IT of ALS to update Windows For Software update: We will make appointment with ALS to update Software when we have new version of Software.	
6)	Instrument cleaning ➤ Clean the fan of the power supply (using a vacuum cleaner if possible) ➤ Internal and external cleaning of the instrument to eliminate traces of old liquid leaks ➤ Remove all tubings from the inlet tanks and wash the inlet tanks with 5% sodium hypochlorite or 5% HCl ➤ Manually check the correct dispensation of each cannula of the washing station using a syringe with distilled water NOTE: do not inject air in order to prevent any kind of damage of the power supply due to injection of the dust inside it	☒
	Remarks:	

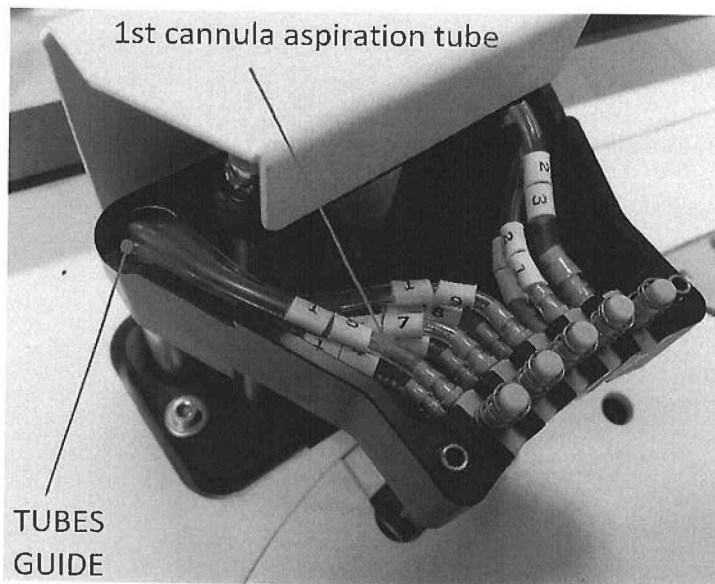
Washing station – tube replacement on 1st cannula



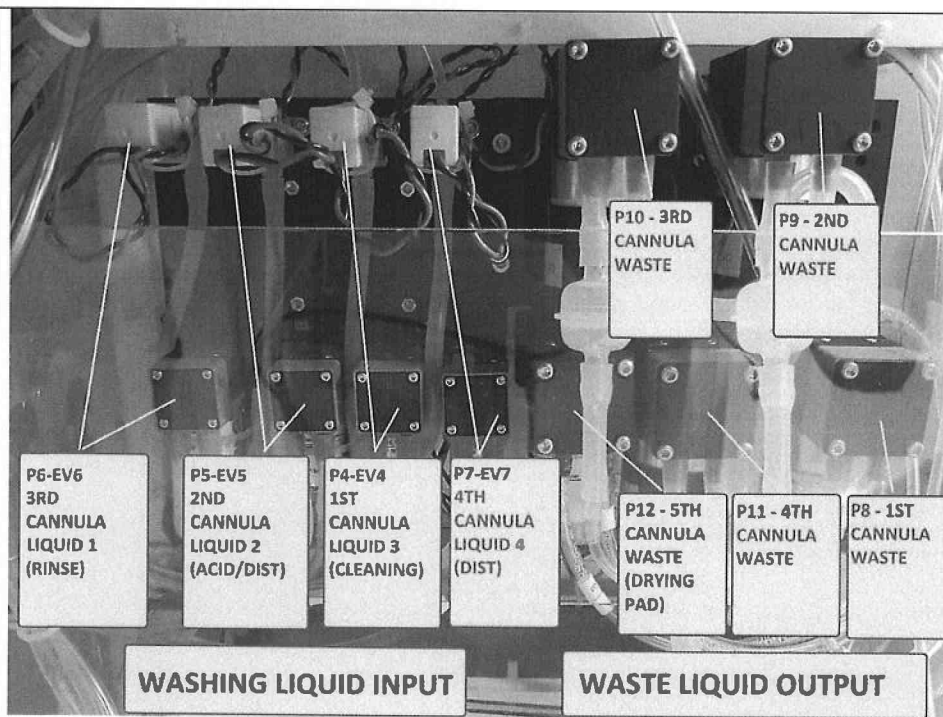
WARNING! BIOHAZARD RISK WHEN REMOVING TUBES. USE APPROPRIATE PROTECTIONS

- Locate the 1st washing station cannula loading tube "ID 15". Unplug it from the 1st cannula and slide it down through the tubes guide

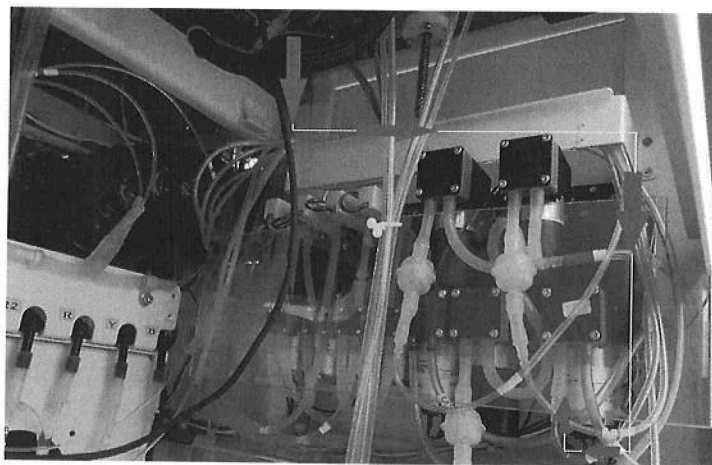
7)



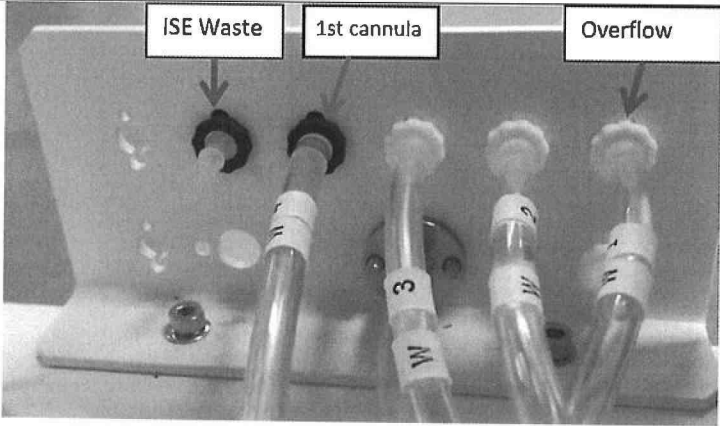
- Unplug the tube "ID 15" from "uP8" in washing station pump compartment



- install the new tube "ID 15" respecting the routing shown in the figure



- Replace tube "W4" from pump "uP8" to the waste tubes panel

		
	Remarks:	
8)	Filters replacement on drain lines WARNING! BIOHAZARD RISK WHEN REMOVING TUBES. USE APPROPRIATE PROTECTIONS	✓
9)	Maintenance of inlet tanks ➤ Wash all inlet tanks at latest 3 times with DI water ➤ Fill all inlet tanks with fresh solutions ➤ Wash the "DI water" bottle and fill it with fresh "DI water" (if the EC module is installed) Remarks:	✓
10)	Switch on instrument and software	✓
11)	Workplans backup (delete archived workplans in order to lighten the database)	✓
12)	Mechanical checking and adjustments ➤ Alignment between reactions plate and photometer ➤ Alignment between washing station and reactions plate ➤ Home position of all sampling arms ➤ Alignment of Samples arm on sample carousels and reactions plate ➤ Alignment of Reagents arm on reagents plate and reactions plate ➤ Alignment of Mixer scoops on reactions plate	✓

	Remarks: The needle of R1 Reagent Sampling probe is bent then we have adjusted the R1 Reagent Sampling Arm for the needle position is in center of the Washing well.	
13)	Functional checks of the drain lines ➤ Washing well of Samples arm - Manually fill the washing well - Access diagnostic area ("Maintenance" → "Diagnostic") and open the "Samples arm (S)" page - Activate the "Washing well empty pump (P20)" and verify that washing well has been emptied	☒
	➤ Washing well Reagents arm R1 - Manually fill the washing well - Access diagnostic area ("Maintenance" → "Diagnostic") and open the "Reagents arm 1 (R1)" page - Activate the "Washing well empty pump (P21)" and verify that washing well is emptied	☒
	➤ Washing well Reagents arm R2 - Manually fill washing the well - Access diagnostic area ("Maintenance" → "Diagnostic") and open the "Reagents arm 2 (R2)" page - Activate the "Washing well empty pump (P22)" and verify that washing well is emptied	☒
	➤ Washing wells Mixer - Manually fill both washing wells - Access diagnostic area ("Maintenance" → "Diagnostic") and open the "Mixer (MX)" page - Activate the "Scoop 1 washing well empty pump (P19)" and verify that washing well is emptied - Activate the "Scoop 2 washing well empty pump (P18)" and verify that washing well is emptied	☒

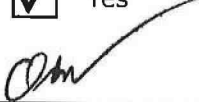
	➤ Washing station – cannulas • Access diagnostic area ("Maintenance" → "Diagnostic") • Perform the mechanical reset of the instrument ("Main" page → "Home all motors") • Manually fill the 4 cuvettes located below the cannulas • Open the "Washing station (WS)" page and activate the "Probe 1 empty...", "Probe 2 empty...", "Probe 3 empty..." and "Probe 4 empty..." • Set "Movement length (mm)" to 10 mm and click on "Move down" till the cannulas will be near to the bottom of cuvettes and check that the cuvettes have been emptied • Disable all empty pumps and click on "Reset" to perform the mechanical reset of the washing station	☒
	➤ EC module (if installed) • Access diagnostic area ("Maintenance" → "Diagnostic") • Manually fill the washing well of the EC module • Open the "EC" page; click on "Maintenance" button and check that washing well have been emptied	☐
	➤ NO3 module (if installed) • Access diagnostic area ("Maintenance" → "Diagnostic") • Manually fill the washing well of the NO3 module • Open the "NO3" page; click on "Activate pump P2" button and check that washing well have been emptied	
	Remarks: EC module don't installed. Customer stop to use NO3 module because the Cadmium Coild was defective.	
14)	Prime the hydraulic circuit of the instrument ➤ Insert tubings inside relative inlet tanks ➤ Perform 2 "Prime liquids" and 1 "Wash all cuvettes"	☒
	Remarks:	
15)	Washing station - hydraulic operating check ➤ Access "Diagnostic" area and click on "Home all motor" ➤ Open the "Washing station (WS)" page and perform the "Liquid level diagnosis"	☒
	Remarks:	

16)	Samples arm - hydraulic operating check ➤ Access "Diagnostic" area and click on "Home all motor" ➤ Open the "Samples arm" page and perform at least 2 times the "Hydraulic check" Remarks:	☒
17)	Reagent arm 1 - hydraulic operating check ➤ Access "Diagnostic" area and click on "Home all motor" ➤ Open the " Reagent arm 1" page and perform at least 2 times the "Hydraulic check" Remarks:	☒
18)	Reagent arm 2 - hydraulic operating check ➤ Access "Diagnostic" area and click on "Home all motor" ➤ Open the " Reagent arm 2" page and perform at least 2 times the "Hydraulic check" Remarks:	☒
19)	Wash and Prime the hydraulic circuit of the instrument ➤ Insert the cannulas inside a backer with washing solution (5% HCl or sodium hypochlorite 5%) ➤ Perform 2 "Prime liquids" checking that all tubes are filled ➤ Wait for fifteen minutes. ➤ Clean and dry the four cannulas and then insert them into a bottle containing distilled water ➤ Perform 4 "prime liquids" to remove any trace of washing solution ➤ Clean and dry the four cannulas and then insert them inside the relative tanks ➤ Perform 2 "Prime liquids" in order to fill each line with the working solutions Remarks:	☒

20)	Prime the hydraulic circuit of the EC module (if installed) ➤ Insert the cannulas inside the DI tank ➤ Perform at least 3 "Purge"	☐
	Remarks: Don't installed	
21)	Prime the hydraulic circuit of the NO3 module (if installed) ➤ Insert the cannula into the "Imidazole" bottle ➤ Perform at least 2 "Liquids Prime"	☐
	Remarks: Customer stop to use NO3 module because the Cadmium Coild was defective.	
22)	Cuvettes replacement and reset of WBL results ➤ Access diagnostic area ("Maintenance" → "Diagnostic") ➤ Click on "Disengage all motor" in order to be able to move the reactions plate freely by hand ➤ Replace all cuvettes ➤ Access the WBL page ("Checks" → "Water blank level") ➤ Click in the center of the reactions plate picture on the screen and select the "Replace cuvettes" feature to reset WBL results	☒
	Remarks:	
23)	Drying pad replacement Customer have replaced the Drying pad before.	☒

24)	Photometer checking and adjustment ➤ Replacement of the lamp ➤ Checking and adjustment of Lamp voltage (5,8 V) • Voltage: ➤ Checking and adjustment of Offset (750 counts) and Gain (7.500.000 counts) for each wavelength • Access "Diagnostic" area and click on "Home all motor" • Manually fill cuvette #1, which is in front of the spectrometer, with at least 300 µL of Rinse solution • Open the "Spectrometer" page and click on "Lamp on" in order to switch off the lamp • Setup the Offset at 750 counts for each wavelength • Click on "Lamp on" in order to switch on the lamp and wait the end of the lamp warm-up time "Warm-up (remaining time)" • Setup the Gain at 7.500.000 counts for each wavelength	☒
Remarks: Voltage: 5.8 Volt		
25)	Temperature ➤ Reaction plate: 36.7 C ➤ Reagents plate: 8.4 C ➤ Sampling arm: 22.9 C ➤ Room: 23.5 C	☒
Remarks:		
1)	Run calibration and quality controls to confirm correct performance Method name: ☒ Pass ☐ Fail ☒ Printout enclosed Method name: ☒ Pass ☐ Fail ☒ Printout enclosed Method name: ☒ Pass ☐ Fail ☒ Printout enclosed	☒
Remarks: The calibration and quality controls done by the user which have that document.		

Maintenance completed successfully: ☒ Yes ☐ No

Service engineer signature: 



Metrology

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851 , +669 8247 2360
Website : www.scieco.co.th E-Mail : calibrate@scg.com



Certificate No. T241770

Page 1 of 3

Certificate of Calibration

Equipment : Chamber (Oven)

Manufacturer : Memmert

Model : UF 110

Serial No. : B423.1549

Customer Code : BKK_EN0425

ID No. : T4671A5

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanaka

Khet Suan Luang, Bangkok 10250

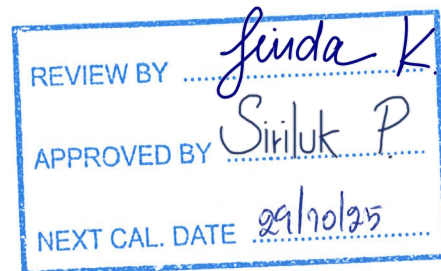
Customer Location : Oven Room

Date of Receipt : 22 October 2024

Calibrated By : Boonchai Suriyawong (Site Calibration Manager)

Approved By :  / Sujjar Naknakred (Site Calibration Manager)

Date of Issue : 11 NOV 2024



The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

Certificate No. T241770

Page 2 of 3

Calibration Report

Equipment : Chamber (Oven)
Date of Calibration : 29 October 2024
Environment : Temperature : 22.4-27.7 °C
Line Voltage : 221.7-225.9 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert nine resistance thermometer detectors into its chamber , the other one resistance thermometer detector use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2001) and AS2853-1986).

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
RTD	100 ohm	31-(CH1-10)	T240399	16 March 2025
DATA LOGGER	34970A	T193	T240399	16 March 2025

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

Equipment Description :

Time Constant 1 Hour 35 Minute At 104 °C
Fresh Air Damper ☐ Open ☒ Min ☐ Medium ☐ Max
☐ Close
☐ Not Available

5. Adjustment :

(X) without adjustment

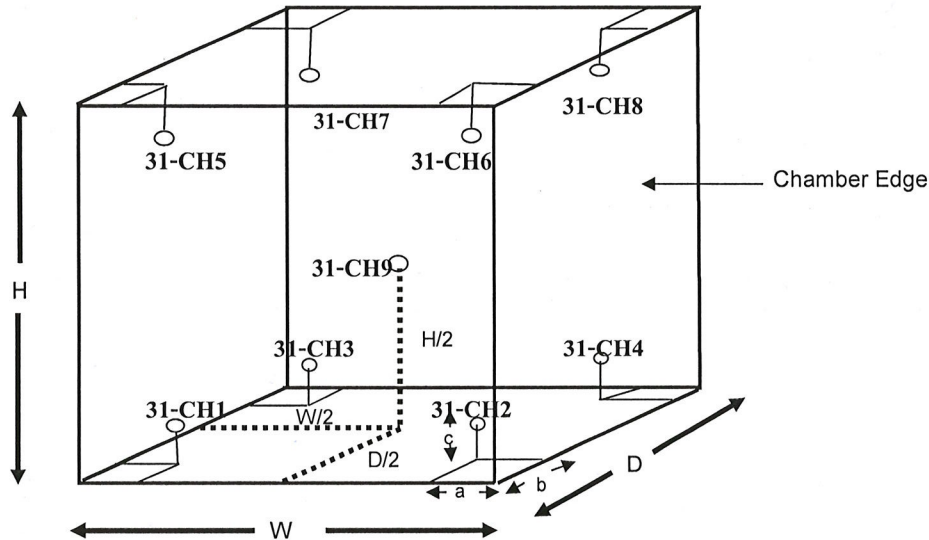
() after adjustment

Approved By. 

Certificate No. T241770

Page 3 of 3

Calibration Report



Remark :

Internal Dimensions of Chamber : W (Width) = 56 cm. , H(Height)=55 cm. and D(Depth)=41 cm.
 Size of Installed Standard sensor number 31-CH1 to number 31-CH8 : a = 5 cm. , b = 5 cm. and c = 5 cm.
 Size of Installed Standard sensor number 31-CH9 : W/2=56 cm./2 , H/2=55 cm./2 and D/2=41 cm./2

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)								
	31-CH1	31-CH2	31-CH3	31-CH4	31-CH5	31-CH6	31-CH7	31-CH8	31-CH9
104	104.19	104.50	103.83	104.26	104.02	104.34	103.76	104.42	103.96
180	180.39	180.40	179.84	180.15	179.27	180.23	180.36	180.68	180.73

Chamber (Oven)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor <i>k</i>
	Min , Max	Average					
104.0	103.9 , 104	104.0	104.14	0.14	0.60	0.42	2.00
180.0	179.9 , 180	180.0	180.23	0.27	0.76	0.63	2.00

* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k* which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate

Approved By. 



Metrology Center
SCI ECO Services Company Limited

51 Moo 8, Tubkwang, Kaeng Khoi, Saraburi, Thailand 18260

Bangkok Tel : +668 9205 6851 , +669 81924 0059

Saraburi Tel : +669 8247 2360

Website : www.scieco.co.th E-Mail : calibrate@scg.co.th



Certificate No. T251785

Page 1 of 3

Certificate of Calibration

Equipment : Chamber (Oven)

Manufacturer : Memmert

Model : UF110

Serial No. : B423.1549

Customer Code : BKK_EN0425

ID No. : T4671A5

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : Oven Room

Date of Receipt : 1 October 2025

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By : Don Zol Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 10 OCT 2025

REVIEW BY	<u>funda k</u>
APPROVED BY	<u>Siriluk P</u>
NEXT CAL. DATE	<u>06/10/26</u>

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

Certificate No. T251785

Page 2 of 3

Calibration Report

Equipment : Chamber (Oven)
Date of Calibration : 6 October 2025
Environment : Temperature : 24.4-25.8 °C
Line Voltage : 220.5-225.2 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert nine resistance thermometer detectors into its chamber , the other one resistance thermometer detector use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2019) and AS2853-1986).

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
RTD	100 ohm	23-(CH1-10)	T250314	6 April 2026
DATA LOGGER	34970A	T195	T250314	6 April 2026

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.

4. Condition of calibrated item : good

Equipment Description :

Time Constant 2 Hour 14 Minute At 104 °C
Fresh Air Damper ☒ Open ☒ Min ☐ Medium ☐ Max
☐ Close
☐ Not Available

5. Adjustment :

() without adjustment

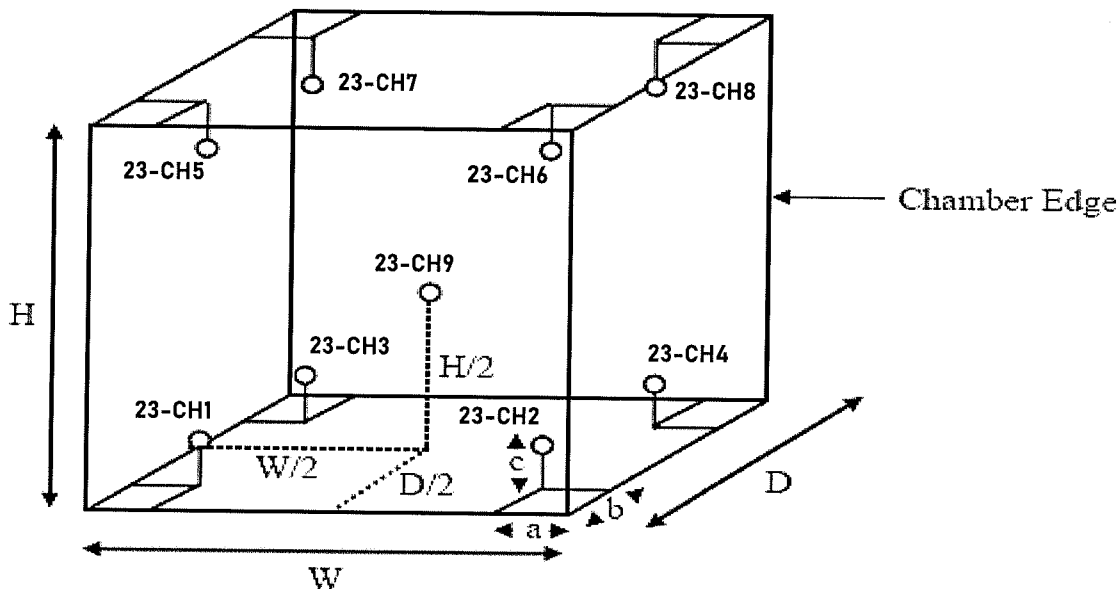
(X) after adjustment

Approved By. 

Certificate No. T251785

Page 3 of 3

Calibration Report



Remark : Internal Dimensions of Chamber : W (Width) = 56 cm. , H (Height) = 48 cm. and D (Depth) = 40 cm.
 Size of Installed Standard sensor number 23-CH1 to number 23-CH8 : a = 5 cm. , b = 5 cm. and c = 5 cm.
 Size of Installed Standard sensor number 23-CH9 : W/2 = 56 cm./2 , H/2 = 48 cm./2 and D/2 = 40cm./2

Measurement Results

Average Standard Reading at each position (°C)									
Calibration Point	23-CH1	23-CH2	23-CH3	23-CH4	23-CH5	23-CH6	23-CH7	23-CH8	23-CH9
104	104.13	103.54	103.92	104.37	104.40	104.51	104.18	103.86	103.80
180	180.05	179.82	179.64	179.52	181.20	180.29	180.19	179.35	179.89

Chamber (Oven)			Temperature Distribution				
Setting °C	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average					
104.0	-	104.0	104.08	0.28	0.87	0.45	2.00
180.0	180.0 , 180.1	180.0	179.99	0.37	1.49	0.61	2.00

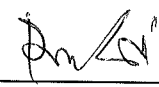
* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate.

Approved By. 



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3 : EQUIPMENT CALIBRATION AND TESTING SERVICES

534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250

TEL. 0-2717-3000 FAX. 0-2719-9484

Certificate of Testing

Cert.No.: 25TW101

Page.: 1 of 2

Equipment :

DO Meter

Manufacturer :

YSI

Model :

5000-230V

Serial No. :

09J101147

ID No. :

BKK_EN0017

Received Date :

19 May 2025

Test Date :

20 May 2025

Reference :

2505-0593DSC-1

Submitted by :

ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Laboratory Condition :

Temperature (25 ± 5) °C

Humidity (50 ± 20) %

Test Procedure :

In - house method : CP-CH9

by Comparison Technique with Azide Modification Method

Tested by :

Walalak Sirithean

Approved by :

Saithip

Approved Signatory

() Chakrit Waewwanjua

() Ponpan Paipim

(✓) Saithip Meangmai

Issue Date :

20 May 2025

REVIEW BY	<i>finda K</i>
APPROVED BY	<i>Siriluk P</i>
NEXT CAL DATE	20/11/26



Cert.No.: 25TW101

Page.: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :

This measurement result is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

<u>Instruments</u>	<u>Serial No.</u>	<u>ID No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
1. Burette	-	130BU10	25CG1126	18 Mar 2027
2. Balance	14233821	110RC001	24MM131	04 July 2025

2. Standard Material :-

<u>Material</u>	<u>Manufacturer</u>	<u>Lot.No.</u>	<u>Assay</u>
Sodium Thiosulfate 5-Hydrate AR	KEMAUS	2203162447	99.6%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %

Dissolved Oxygen Probe No.: 16K100498

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
8.20	8.21	0.0090

This report was certified only for the instrument we tested. It is allowable to use for study
Intend to use for advertising and referral purpose is prohibited. This report may not be reproduced
other in full, without written approval of the laboratory

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert. No.: 25LM83

Page.: 1 of 2

Equipment : DO Meter with Sensor

Manufacturer : YSI

Model : 5000-230V

Serial No. : 09J101147

ID No. : BKK_EN0017

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Location : TPA On Site Calibration Laboratory

Received Order : 19 May 2025

Calibrated Date : 20 May 2025

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

AC Line Voltage : (220 ± 22) V

Calibrated by : Warakorn Lerngagtrakul

Approved by :

Kunchit

Approved Signatory

- () Chakrit Waewwanjua
() Suwit Imjai
(✓) Kunchit Promprat

Issue Date :

26 May 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : DO Meter with Sensor
Condition As-Received : Used Item
Reference : 2505-0593DSC-2

Cert. No.: 25LM83
Page.: 2 of 2

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) into Temperature Bath.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

<u>Instrument</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Traceable</u>	<u>Due Date</u>
1) Digital Thermometer	2188080	2411022	TPA	17 Sep 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function : Temperature measurement.

This instrument was connected with temperature sensor, S/N.: 16K100498

<u>Calibration Point</u> (°C)	<u>Immersion Depth</u> (mm)	<u>Standard Temperature</u> (°C)	<u>UUC* Reading</u> (°C)	<u>Error</u> (°C)	<u>Uncertainty</u> (± °C)	<u>Coverage Factor</u> <i>k</i>
20.00	60	20.003	19.92	-0.083	0.15	2.00

UUC* : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

-o0o-



Metrology

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851 , +669 8247 2360

Website : www.scieco.co.th E-Mail : calibrate@scg.com



Certificate No. T250356

Page 1 of 4

Certificate of Calibration

Equipment : Chamber (Incubator)

Manufacturer : Memmert

Model : ICP 750

Serial No. : F819.0021

Customer Code : BKK_EN0304

ID No. : T9572A4

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd.,

Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250

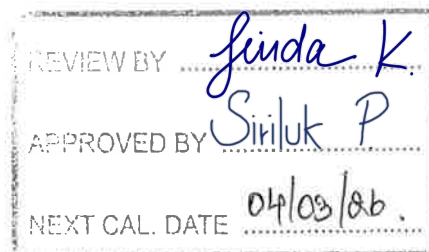
Customer Location : Wet Chemistry Lab 2

Date of Receipt : 26 February 2025

Calibrated By : Atiphong Rongrat (Technician)

Approved By : Boonchai Suriyawong / Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 17 MAR 2025



The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

Certificate No. T250356

Page 2 of 4

Calibration Report

Equipment : Chamber (Incubator)
Date of Calibration : 4 March 2025
Environment : Temperature : 24.5-24.7 °C
Line Voltage : 221.4-224.7 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert 12 resistance thermometer detectors into its chamber , the other one resistance thermometer detector use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2019) and AS2853-1986).

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
RTD	100 ohm	31-(CH1-10)	T240399	16 March 2025
RTD	100 ohm	32-(CH1-10)	T240399	16 March 2025
DATA LOGGER	34970A	T193	T240399	16 March 2025

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

Equipment Description :

Time Constant 2 Hour 10 Minute At 20 °C
Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max
☐ Close
☒ Not Available

5. Adjustment :

(X) without adjustment

() after adjustment

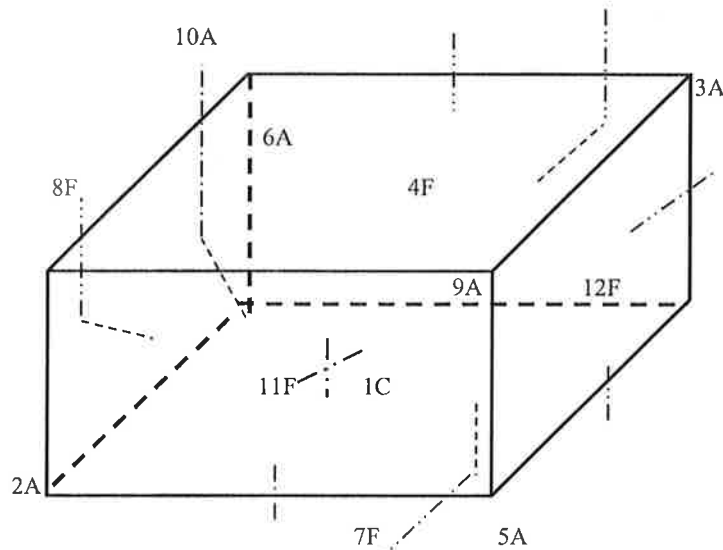
Approved By. _____



Certificate No. T250356

Page 3 of 4

Calibration Report



C = Centre , F = Centre of Face , A = Corner , E = Centre of Edge

1C	=	31-CH1
2A	=	31-CH2
3A	=	31-CH3
4F	=	31-CH4
5A	=	31-CH5
6A	=	31-CH6
7F	=	31-CH7
8F	=	31-CH8
9A	=	31-CH9
10A	=	31-CH10
11F	=	32-CH1
12F	=	32-CH2

Approved By.



Certificate No. T250356

Page 4 of 4

Calibration Report

Measurement Results :

Calibration Point	Average Standard Reading at each position (°C)											
	31-CH1	31-CH2	31-CH3	31-CH4	31-CH5	31-CH6	31-CH7	31-CH8	31-CH9	31-CH10	32-CH1	32-CH2
20	20.02	20.42	19.96	20.23	19.83	19.44	19.71	20.01	20.06	20.04	20.13	19.98

Chamber (Incubator)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor <i>k</i>
	Min , Max	Average					
20.0	-	20.0	19.99	0.10	0.43	0.38	2.02

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k* which for a t-distribution, providing a level of confidence of approximately 95 % .

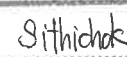
End of Certificate

Approved By. 

Certificate No. T250353

Page 1 of 4

Certificate of Calibration**Equipment : Autoclave****Manufacturer : TOMY****Model : SX-700****Serial No. : 48134190****Customer Code : BKK_ML0041****ID No. : T7725A3****Customer : ALS Laboratory Group (Thailand) Co.,Ltd.****104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,
Khet Suan Luang, Bangkok 10250****Customer Location : Washing Room****Date of Receipt : 26 February 2025****Calibrated By : Boonchai Suriyawong (Site Calibration Manager)****Approved By :  / Sujjar Naknakred (Site Calibration Manager)****Date of Issue : 10 MAR 2025**

REVIEW BY	
APPROVED BY	
NEXT CAL. DATE	04/09/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

Certificate No. T250353

Page 2 of 4

Calibration Report

Equipment : Autoclave
Date of Calibration : 4 March 2025
Environment : Temperature : 22.2-25.4 °C
Line Voltage : 221.1-224.7 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert 3 standard temperature recorder into its chamber and test according to WI-T23 inhouse method.(based on BS 2646-1 : 2021)

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Standard No.	Certificate No.	Due Date
1. Temperature recorder	RTD	T210	T242028	11 December 2025
2. Temperature recorder	RTD	T211	T242029	11 December 2025
3. Temperature recorder	RTD	T212	T242030	11 December 2025

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

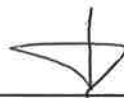
Equipment Description :

Pressure Indicator 0.11-0.12 MPa At 121 °C Holding time 20 minute

5. Adjustment :

(X) without adjustment

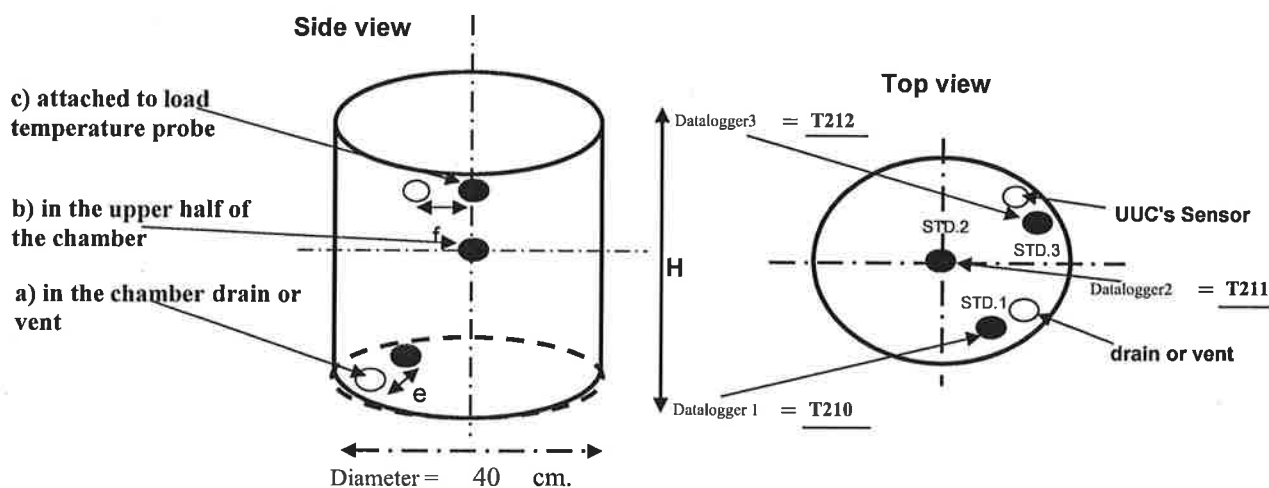
() after adjustment

Approved By. 

Certificate No. T250353

Page 3 of 4

Calibration Report


Remark :

Size of Installed Standard sensor STD.1 : Distance the chamber drain or vent $e \leq 10$ cm. (less than or be equal to 10 cm.)

Size of Installed Standard sensor STD.2 : Geometric Center (upper half of the chamber)

Size of Installed Standard sensor STD.3 : Distance UUC's Sensor $f = 2$ cm.

Measurement Results :

Calibration Point	Average Standard Reading at each position (°C)		
	T210	T211	T212
121	121.2	121.1	121.1

Autoclave			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (±°C)	Uniformity (±°C)	Uncertainty (±°C)	Coverage Factor k
	Min , Max	Average					
121	-	121	121.2	0.1	0.1	0.65	2.00

* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

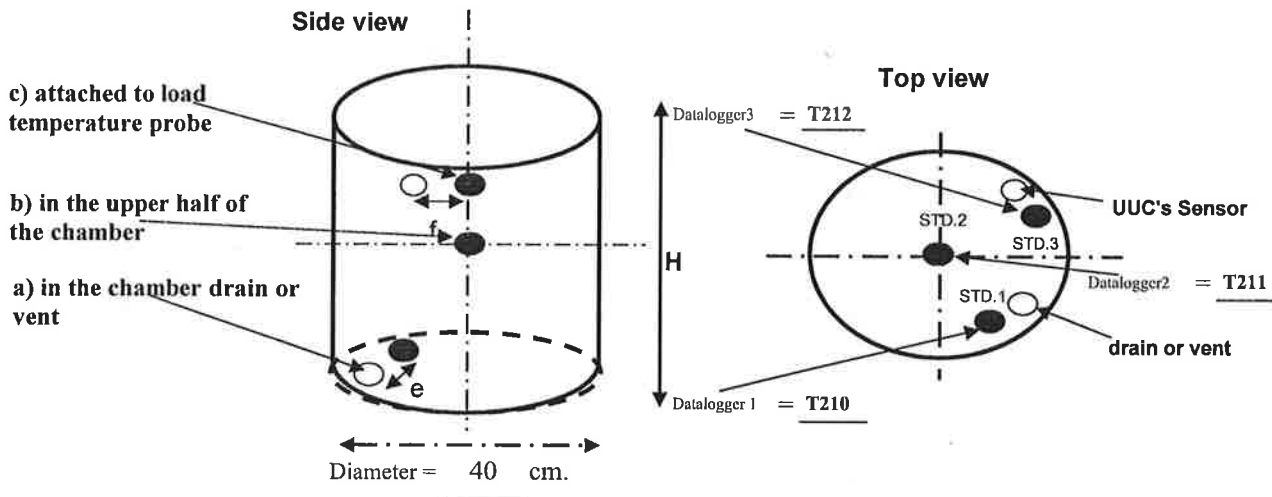
The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate

Approved By. _____

Calibration Report



Remark :

Size of Installed Standard sensor STD.1 : Distance the chamber drain or vent $e \leq 10$ cm. (less than or be equal to 10 cm.)

Size of Installed Standard sensor STD.2 : Geometric Center (upper half of the chamber)

Size of Installed Standard sensor STD.3 : Distance UUC's Sensor $f = 2$ cm.

Measurement Results :

Calibration Point	Average Standard Reading at each position (°C)		
	T210	T211	T212
121	121.18	121.12	121.13

Autoclave			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (± °C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average					
121	-	121	121.16	0.10	0.10	0.65	2.00

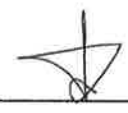
* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate

Approved By. 



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert. No.: 25TM1235

Page : 1 of 3

Equipment : Incubator
Manufacturer : Memmert
Model : IPP750eco
Serial No. : V821.0172
ID No. : BKK_ML0231

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang ,
Bangkok 10250 Thailand

Location : Incubation & Microbiological Reading

Received Order : 21 August 2025
Calibration Date : 21 August 2025
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V

Calibrated by : Khit Ruttanaprapachai

Approved by :

Kunchit

Approved Signatory

- () Chakrit Waewwanjua
() Suwit Imjai
(✓) Kunchit Promprat

Issue Date : 25 August 2025

REVIEW BY Sithichok T.
APPROVED BY
NEXT CAL DATE..... 21/08/26

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Incubator
 Condition As-Received : Used Item
 Reference : 2508-0459OC-2

Cert. No.: 25TM1235
 Page : 2 of 3

Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Serial No.	Cert. No.	Traceable	Due Date
1) Data Acquisition	MY44073381	25LM82	TPA	17 May 2026

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This measurement result is traceable to the International System of Unit maintained through :

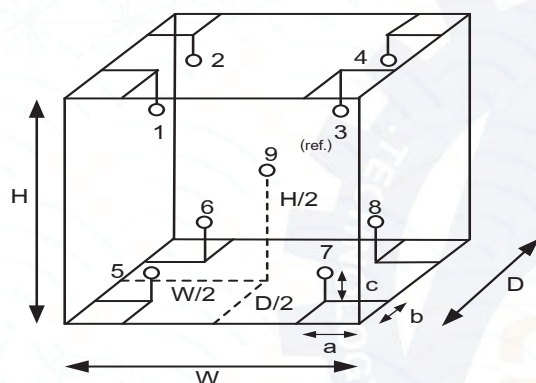
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Not Available

Environment during calibration		
	Beginning	Finished
Temp. (°C)	21	20
REL.Humid. (%)	62	65
AC Supply (Volt)	222	221



Position :	Ref. Std. ID No.:
1	25-01RTD-01
2	25-01RTD-02
3	25-01RTD-03
4	25-01RTD-04
5	25-01RTD-05
6	25-01RTD-06
7	25-01RTD-07
8	25-01RTD-08
9 (ref.)	25-01RTD-09

Probe Installation Details :

a = 10 cm
 b = 10 cm
 c = 10 cm

Dimension of Chamber :

D = 0.60 m
 W = 1.0 m
 H = 1.2 m
 Capacity = 0.75 m³



Equipment : Incubator
Condition As-Received : Used Item
Reference : 2508-0459OC-2
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Not Available

Cert. No.: 25TM1235

Page : 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor <i>k</i>
35.0	35.0	35.0	0.12	0.37	0.43	2
37.0	37.0	37.0	0.15	0.47	0.49	2
41.5	41.5	41.5	0.13	0.79	0.84	2

Calibration Point (°C)	Measured Temperature (°C)									Uncertainty (± °C)
	Position									
	1	2	3	4	5	6	7	8	9 (ref.)	
35.0	34.834	34.929	34.924	34.849	34.856	34.954	35.002	35.002	35.127	0.30
37.0	36.940	37.065	37.010	36.921	36.883	36.973	37.043	37.045	37.235	0.31
41.5	41.641	41.838	41.742	41.484	41.249	41.427	41.466	41.495	41.926	0.34

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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Certificate of Calibration

Cert. No.: 24TM667

Page : 1 of 3

Equipment : Hot Air Oven
Manufacturer : Binder
Model : ED 240/E2
Serial No. : 00-15533
ID No. : BKK_ML0013

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Location : Media Preparation Room

Received Order : 23 April 2024
Calibration Date : 23 April 2024
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %

Calibrated by : Tawatchai Pama

Approved by :

Approved Signatory

() Ponpan Paipim
(✓) Suwit Imjai
() Kunchit Promprat

Issue Date : 26 April 2024

REVIEW BY *Sithichok T.*
APPROVED BY
NEXT CAL DATE..... 23/10/25

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2404-0439OC-8
Procedure Used :-

Cert. No.: 24TM667
Page : 2 of 3

Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Thermocouple Type T.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

<u>Instrument</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Traceable</u>	<u>Due Date</u>
1) Data Acquisition	MY49001451	24LM44	TPA	17 Mar 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

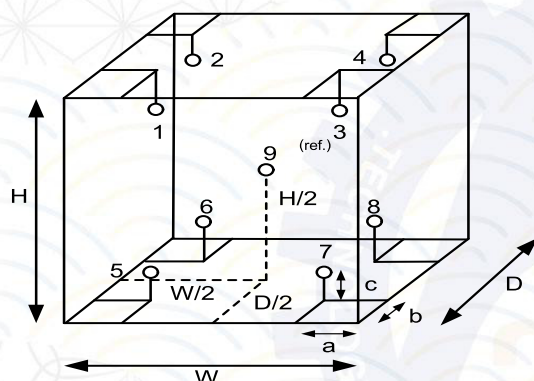
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close

Environment during calibration		
	Beginning	Finished
Temp. (°C)	24	23
REL.Humid. (%)	65	65
AC Supply (Volt)	223	222



Position :	Ref. Std. ID No.:
1	24-19TC-01
2	24-19TC-02
3	24-19TC-03
4	24-19TC-04
5	24-19TC-05
6	24-19TC-06
7	24-19TC-07
8	24-19TC-08
9 (ref.)	24-19TC-09

Probe Installation Details :

a = 10 cm
b = 10 cm
c = 10 cm

Dimension of Chamber :

D = 0.50 m
W = 0.80 m
H = 0.60 m
Capacity = 0.24 m³



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2404-0439OC-8
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Cert. No.: 24TM667

Page : 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor <i>k</i>
180	180	180	0.64	2.7	3.7	2

Calibration Point (°C)	Measured Temperature (°C)									Uncertainty (±°C)
	Position									
	1	2	3	4	5	6	7	8	9 (ref.)	
180	181.009	181.511	180.922	181.359	181.217	183.659	181.664	181.986	181.474	1.5

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert. No.: 25TM525

Page : 1 of 3

Equipment : Hot Air Oven
Manufacturer : Binder
Model : ED 240/E2
Serial No. : 00-15533
ID No. : BKK_ML0013

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand
Location : Media Preparation Room

Received Order : 08 October 2025
Calibration Date : 09 October 2025
Ambient Temperature : $(26 \pm 10) ^\circ\text{C}$
Relative Humidity : $(50 \pm 30) \%$
AC Line Voltage : $(220 \pm 22) \text{ V}$

Calibrated by : Uthen Kankawi

Approved by :

Kunchit

Approved Signatory

- () Chakrit Waewwanjua
() Suwit Imjai
(✓) Kunchit Promprat

Issue Date : 16 October 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

REVIEW BYSithichok T.....

APPROVED BY.....

NEXT CAL DATE.....09/04/27.....



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2510-0042OC-3

Cert. No.: 25TM525
Page : 2 of 3

Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Thermocouple Type T.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Serial No.	Cert. No.	Traceable	Due Date
1) Data Acquisition	MY59003411	24LM192	TPA	24 Dec 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.

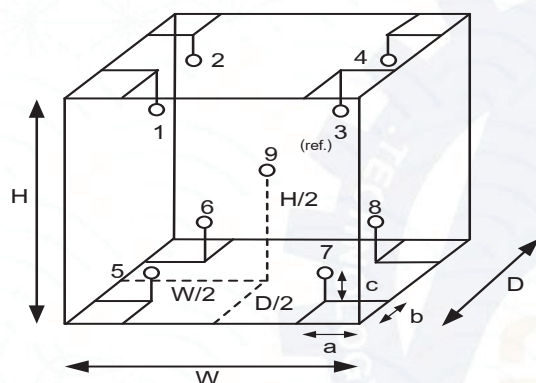
3. This measurement result is traceable to the International System of Unit maintained through :

Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close



Environment during calibration		
	Beginning	Finished
Temp. (°C)	23	24
REL.Humid. (%)	54	56
AC Supply (Volt)	220	221

Position :	Ref. Std. ID No.:
1	23-20TC-01
2	23-20TC-02
3	23-20TC-03
4	23-20TC-04
5	23-20TC-05
6	23-20TC-06
7	23-20TC-07
8	23-20TC-08
9 (ref.)	23-20TC-09

Probe Installation Details :

a = 5.0 cm
b = 5.0 cm
c = 5.0 cm

Dimension of Chamber :

D = 0.50 m
W = 0.80 m
H = 0.60 m
Capacity = 0.24 m³



Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2510-0042OC-3
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Cert. No.: 25TM525

Page : 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor <i>k</i>
170	170	170	0.45	1.3	2.3	2

Calibration Point (°C)	Measured Temperature (°C)									Uncertainty (± °C)
	Position									
	1	2	3	4	5	6	7	8	9 (ref.)	
170	169.588	170.427	168.486	168.900	169.725	169.499	168.946	169.327	169.529	1.3

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484



Certificate of Calibration

Cert. No.: 25TM460

Page : 1 of 3

Equipment : Water Bath
Manufacturer : Memmert
Model : WNE 45
Serial No. : L712.0429
ID No. : BKK_ML0056

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Location : Incubation & Microbiological Reading

Received Order : 04 March 2025
Calibration Date : 04 March 2025
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V

Calibrated by : Khit Ruttanaprapachai

Approved by :

Kunchit

Approved Signatory

- () Chakrit Waewwanjua
() Suwit Imjai
(✓) Kunchit Promprat

Issue Date : 06 March 2025

REVIEW BY Sithichok T.

APPROVED BY 

NEXT CAL DATE..... 04/03/26

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2503-0006OC-2

Cert. No.: 25TM460
Page : 2 of 3

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

<u>Instrument</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Traceable</u>	<u>Due Date</u>
1) Data Acquisition	MY44073381	23LM73	TPA	18 May 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

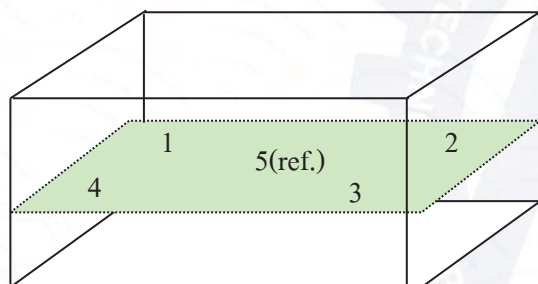
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	<u>Environmental</u>		<u>AC Voltage Supply</u>
	(°C)	(%R.H.)	(Volt)
Beginning of Calibration	24	49	220
Finished of Calibration	25	51	221



Front

<u>Position :</u>	<u>Ref. Std. S/N.:</u>
1	4803988-006
2	4803988-007
3	4804539-014
4	4804539-015
5(ref.)	4804539-016



Equipment : Water Bath
Condition As-Received : Used Item
Reference : 2503-0006OC-2
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source

Cert. No.: 25TM460
Page : 3 of 3

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C)					Uncertainty
			Position					
			1	2	3	4	5 (ref.)	(± °C)
44.5	44.5	44.5	44.489	44.469	44.497	44.476	44.479	0.15
45.0	45.0	45.0	44.990	44.966	44.997	44.983	44.980	0.15

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor <i>k</i>
44.5	0.045	0.035	2
45.0	0.047	0.031	2

Average* : The average of 30 values in each position.

Uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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ภาคผนวก จ

สำเนาหนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการ
วิเคราะห์เอกชน

ที่อก ๐๓๑๐(๑)/ ๑๖๑๖๘



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๐ พฤศจิกายน ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๔ สิงหาคม ๒๕๖๖

- สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ แผ่น
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ ๑๘๑ ราย ตามสิ่งที่ส่งมาด้วย ๒
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย น้ำใต้ดิน อากาศเสีย สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว และดิน ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ กันยายน ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นสุดอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายสิระ จันทรเจ็ด)

นักวิทยาศาสตร์เชี่ยวชาญ วิชาการราชการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ว-๒๐๔
ที่ ออก ๐๓๑๐(๑)/ ๑ ๖ ๑ ๖ ๘ ลงวันที่ ๒๐ พฤศจิกายน ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย

- | | |
|--------------------------------|----------------------------|
| ๑) นางสาวยุพาพร จันทรเปล่ง | ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๑ |
| ๒) นางสาวชัชชัย โกมารกุล ณ นคร | ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๒ |
| ๓) นายศรายุทธ จิตรานนท์ | ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๓ |
| ๔) นางสาวนกกร เอนก | ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๔ |
| ๕) นายสุริยา สอนแก้ว | ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๕ |
| ๖) นายวิชาญ ชุณหะวัณ | ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๖ |

วิมล

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ ออก ๐๓๑๐(๑)/ ๑๖๑๖๘

ลงวันที่ ๒๐ พฤศจิกายน ๒๕๖๖

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๘๑ ราย

๑) นายกาจบัณฑิต กิตติคุณวิชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๑
๒) นายภัทรพล สว่างใจธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๒
๓) นายนราธิป เทือกชัยคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๓
๔) นายศิริโชค พงษ์ประสม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๔
๕) นายณัฐวุฒิ ดั่งแพง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๕
๖) นางสาวจินดา ไชจุลธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๖
๗) นางสาวสาวิตรี น้อยเสงี่ยม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๗
๘) นางสาวชนัญญาญจน์ อัมมขม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๘
๙) นางสาวนรินทร์ สายเส็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๙
๑๐) นางสาวนันทวดี สมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๐
๑๑) นางสาวศรณิยา เฉลิมธารงค์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๑
๑๒) นางสาวธัญญธร มงคลจิรวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๒
๑๓) นางสาวศิริลักษณ์ บุญนาค	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๓
๑๔) นายพนพงศ์ จันททรัพย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๔
๑๕) นายนรเศรษฐ์ โกมลาลัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๕
๑๖) นายธันวา จริยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๖
๑๗) นางสาวเกศรินทร์ แก้วมัน	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๗
๑๘) นางสาวสุวิมล ชัยเรืองวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๘
๑๙) นางสาวสุชาดา ธรรมถาวร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๙
๒๐) นางสาวเปมิกา ชัยเดชธนกุล	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๐
๒๑) นางสาวศศิธร หมูสวัสดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๑
๒๒) นางสาวเสาวลักษณ์ ภูณภาพพร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๒
๒๓) นายอภิสิทธิ์ สิงหา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๓
๒๔) นายศักดิ์สิทธิ์ ไพศาลพิสุทธิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๔
๒๕) ว่าที่ร้อยตรีหญิง พรรณิภา ขำเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๕
๒๖) นางจิตตา คำภูแก้ว	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๖
๒๗) นางสาวอรรพรรณ รักยง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๗
๒๘) นางสาวนพรัตน์ แยมกรานต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๘
๒๙) นายจุลเดช วารินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๙
๓๐) นางสาวดาญรัตน์ ร้องคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๐
๓๑) นายพรมมี ศรีปัดเนตร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๑
๓๒) นายอุทิศ อุ่นสีม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๒
๓๓) ว่าที่ร้อยตรี เฉลิมเกียรติ อมรศรีเสริม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๓
๓๔) นางสาววริยา สร้างนา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๔
๓๕) นายอนุพงศ์ รัตนศรีประเสริฐ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๕



๓๖) นางสาวจุฑารัตน์...

๓๖) นางสาวจุฑารัตน์ โอนสันเทียะ
๓๗) นางสาวจารุวรรณ พิมพ์อภิฤติยา
๓๘) นางสาวปรางค์ทิพย์ กิจไพศาลศักดิ์
๓๙) นางสาวเดือนใจ ทางกลาง
๔๐) นางสาวจิราพร ศิริเวช
๔๑) นายวรากร ผูกרך
๔๒) นายทง วิริยะสทกิจ
๔๓) นายธนิศ เจนจบ
๔๔) นายคณิศร ขำเพชร
๔๕) นายภูวิช พรหมสะอาด
๔๖) นายธนเดช โกศาพิพัฒน์
๔๗) นายชวฤทธิ์ วงษ์จันทร์
๔๘) นายอาทิตย์ ศรีเสน
๔๙) นายเจษดินทร์ คงศักดิ์ไทย
๕๐) นายจรัส บุญยิ่ง
๕๑) นายธนาณัติ เอนก
๕๒) นายอภิวัฒน์ ทุมหนู
๕๓) นางสาวสุภาขวัญ มาก
๕๔) นางสาวทัตพร ขวาลสมบุรณ์
๕๕) นางสาวธิดิมา บุญเพ็ง
๕๖) นางสาวภานุมาศ นามวัฒน์
๕๗) นางสาวอุไรรัตน์ ทังสร้างแป้น
๕๘) นายธีรวัฒน์ ปวงสุข
๕๙) นายอิทธิพล ยะโส
๖๐) นายประพจน์ วรรณชูชัย
๖๑) นายชยธร พวงทิพย์
๖๒) นางสาวกนกวรรณ จันทบาล
๖๓) นายสิทธิโชค ธงเงิน
๖๔) นางศิวาวรรณ ใจบุญ
๖๕) นางสาวพรรณธิดา พุ่มคง
๖๖) นายนวกัทร ศรีวิริยะ
๖๗) นายสุวิชา ทองอ่อน
๖๘) นายวิญญู บุญตะนัย
๖๙) นายสมบุรณ์ บุตรจันทร์
๗๐) นายวิรัตน์ ไชยนระรา
๗๑) นายณฤเบศน์ เพิ่มพูน
๗๒) นายจิรณัฐ ขาวละออ
๗๓) นายอัสนี นามบุรี
๗๔) นายอัศวเรศ จ่อสา

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๖
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ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๔

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๗๕) นายประเสริฐ สุระขันธุ์
๗๖) นายอนุกุล จันทรเนียม
๗๗) นายพิรพงษ์ ทองคุณปรีดา
๗๘) นายณฤพล ทองนุช
๗๙) นายอนุวัฒน์ ม่วงแพ
๘๐) นายเจตศราวุฒิ ปัตตะมะ
๘๑) นายกฤษณะ สายวรรณ
๘๒) นายพิชัย บุญยงค์
๘๓) นายภาณุพงศ์ โสมวงศ์
๘๔) นายสามารถ คุ่มปลี
๘๕) นายสัญญาชัย โกศรีนาม
๘๖) นายณัฐวุฒิ ศรีประเสริฐ
๘๗) นายชวัลรัช นาคพนม
๘๘) นายพงศธร ชัยทิพย์
๘๙) นายสิทธิโชค ทาสีดา
๙๐) นายธนากร อินสุตา
๙๑) นางสาววรรณิษา ชาตวันชัย
๙๒) นางสาวพิมพ์ตะวัน มินากุล
๙๓) นางสาวเพชรรัตน์ สิงห์สมบุญ
๙๔) นางสาวชญานิน พรหมจันทร์
๙๕) นายกীরติ ทวีราช
๙๖) นายจักริน หมั่นวิชา
๙๗) นายฉัตรชัย สุขเปี้ย
๙๘) นายณรรนท ต๊ะทองคำ
๙๙) นายดุลยพล สนนอก
๑๐๐) นายทักษ์ดนัย อุบลศรี
๑๐๑) นายธนศวรร นามะกฤษณา
๑๐๒) นายจิติพงศ์ บัวแดง
๑๐๓) นายนนทชัย อุปถัมภ์
๑๐๔) นายณัฐพล คุณสุทธิ
๑๐๕) นายนันทวัฒน์ สาริน
๑๐๖) นายปิยะนัฐ พลมะศรี
๑๐๗) นายพงศ์สิริ โสมเขียว
๑๐๘) นายพีรพัฒน์ กำคำ
๑๐๙) นายภาณุพงศ์ มานิตย์
๑๑๐) นายมงคล ผลาทิพย์
๑๑๑) นายสิรินนท์ ทองอ้น
๑๑๒) นายอเนชา ทันสมัย
๑๑๓) นายอดิศักดิ์ ผมไผ

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๕
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ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๑๓

วิมล

๑๑๔) นายอนันตชัย...

๑๑๔) นายอนันตชัย วิสม
๑๑๕) นายวรวิธ ตีนัก
๑๑๖) นายแสงตะวัน นตะสัด
๑๑๗) นายยุทธพงศ์ รัตนะ
๑๑๘) นายชัยวัฒน์ ไชยชนะนิจ
๑๑๙) นายวิศรุต ศรีธรรมมา
๑๒๐) นายณนทกร เผือกผ่อง
๑๒๑) นายกำชัย สุทธะ
๑๒๒) นางสาวณัฐภรณ์ บุญตะนัย
๑๒๓) นางสาวพัชรินทร์ แสนสร้อย
๑๒๔) นายไพรวลัย เปี่ยมพิมาย
๑๒๕) นางสาวศุภมาศ ทองมาก
๑๒๖) นางสาวลลิตา จิตรสว่าง
๑๒๗) นางสาวไมพร เสิกภูเขียว
๑๒๘) นางสาวกฤติมาพร คำมีแก่น
๑๒๙) นางสาวสกุลรัตน์ ภาคภูมิ
๑๓๐) นางสาวไพรินทร์ ศรีรูปี
๑๓๑) นางสาวทิพนเตร ผุยปัญญา
๑๓๒) นางสาวสาธิตา ปานทอง
๑๓๓) นางสาวอริสา ทองนวล
๑๓๔) นางสาวอรรยา คำคล้อง
๑๓๕) นางสาวชุตาภรณ์ สุนทรสนาน
๑๓๖) นางสาวอัญชลี คำจันทร์
๑๓๗) นายบุญฤทธิ์ เอี่ยมเทศ
๑๓๘) นางสาวศุภรดา บันมยุรา
๑๓๙) นางสาวพาฤดี คุณนาน
๑๔๐) นางสาวจิราเจต ฟองดา
๑๔๑) นางสาวอารยา มีชัย
๑๔๒) นางสาววิษุตา นาคผจญ
๑๔๓) นางสาวนันทิยา จันทะสุน
๑๔๔) นายกิตติพงศ์ แซ่ลี
๑๔๕) นายอนวัติ ภูถวิล
๑๔๖) นายธีรพล แสงทอง
๑๔๗) นายศักดิ์พิพัฒน์ บุญมัน
๑๔๘) นายฐิติวัลด์ เอมอุไร
๑๔๙) นายชัยณรงค์ ศรีบุรินทร์
๑๕๐) นางสาวอัจฉราวรรณ สอนสนอง
๑๕๑) นางสาวณัฐพร สิงหา
๑๕๒) นายกัมเรศ แหยมโต

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ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๔๖
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ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๕๐
ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๕๑
ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๕๒

31/๑๖

๑๕๓) นางสาวอุบล...

๑๕๓) นางสาวอุบล เคิกศิริ
๑๕๔) นางสาวมโนรัตน์ ทองบุตร
๑๕๕) นายภาคภูมิ แทนไทย
๑๕๖) นางสาวสุภาณัฐ เมล์พวง
๑๕๗) นางสาวพรทิศา สาดาชนม์
๑๕๘) นายเอกวิทย์ วันทะนา
๑๕๙) นายไตรมณฑล ทิพย์วรรณ
๑๖๐) นายจิรเมธ ประเสริฐสิริพงศ์
๑๖๑) นายจิรายุส เกษมสุข
๑๖๒) นายจิรศักดิ์ ศรีวิชัย
๑๖๓) นายณัฐกฤษณ์ สะพานแก้ว
๑๖๔) นายบุญศักดิ์ ปะที
๑๖๕) นายปณณวิทย์ เสมอทรัพย์
๑๖๖) นายพิษณุพงษ์ ไชยา
๑๖๗) นายภัทรพงษ์ มณฑาทอง
๑๖๘) นายวสันต์ ตรีนกุล
๑๖๙) นายภาณุเดช เพชรอุด
๑๗๐) นายอนุกุล วิละแสง
๑๗๑) นายภัทรพงษ์ มีสุข
๑๗๒) นางสาวนุชรี ลีละทีป
๑๗๓) นางสาวสุภาวดี โกศรีนาม
๑๗๔) นางสาวอรณิข เทียนคำ
๑๗๕) นางสาวพรเพ็ญ ชอบสอน
๑๗๖) นางสาววันวิสา ขอนพิกุล
๑๗๗) นางสาวอรรณณ เถาว์ทอง
๑๗๘) นางสาวอัยย์ลีน เมอร์วิณณ์
๑๗๙) นางสาววิสรา ค่อยครอง
๑๘๐) นายวุฒิกร ศิริวรรณ
๑๘๑) นางสาวจรรวรรณ กระจำงพันธุ์

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๕๓
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ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๗๕
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ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๗๘
ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๗๙
ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๐
ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๑

วิมล

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/ ๑๖๑๖๘ ลงวันที่ ๒๐ พฤศจิกายน ๒๕๖๖

ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๗๔ รายการ

น้ำเสีย จำนวน 60 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldicarb	High-Performance Liquid Chromatographic Method ^[4]
2	Aldicarb Sulfone	High-Performance Liquid Chromatographic Method ^[4]
3	Aldicarb Sulfoxide	High-Performance Liquid Chromatographic Method ^[4]
4	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
5	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
6	Barium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
7	α -BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
8	β -BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
9	δ -BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
10	γ -BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
11	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method ^[4] 2) 5-Day BOD Test, Membrane Electrode Method ^[4]
12	Carbaryl	High-Performance Liquid Chromatographic Method ^[4]
13	Carbofuran	High-Performance Liquid Chromatographic Method ^[4]
14	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
15	Chemical Oxygen Demand	1) Closed Reflux, Colorimetric Method ^[4] 2) Closed Reflux, Titrimetric Method ^[4]
16	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
17	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
18	Color	ADMI Weighted-Ordinate Spectrophotometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Copper	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
20	Cyanide	Distillation, Colorimetric Method ^[4]
21	2,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
22	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
23	2,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
24	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
25	2,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
26	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
27	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
28	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
29	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
30	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
31	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
32	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
33	Formaldehyde	Distillation, Colorimetric Method ^[3]
34	Free Chlorine	1) DPD Ferrous Titrimetric Method ^[4] 2) DPD Colorimetric Method ^[4]
35	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
36	Heptachlor Epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
37	Hexavalent Chromium	Colorimetric Method ^[4]
38	3-Hydroxycarbofuran	High-Performance Liquid Chromatographic Method ^[4]
39	Lead	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]

Small

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
41	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass spectrometric Method ^[4]
42	Methiocarb	High-Performance Liquid Chromatographic Method ^[4]
43	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
44	Methomyl	High-Performance Liquid Chromatographic Method ^[4]
45	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
46	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method ^[4] 2) Soxhlet Extraction Method ^[4]
47	Oxamyl	High-Performance Liquid Chromatographic Method ^[4]
48	Propoxur	High-Performance Liquid Chromatographic Method ^[4]
49	pH	Electrometric Method ^[4]
50	Phenols	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4]
51	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
52	Sulfide	Iodometric Method ^[4]
53	Temperature	Laboratory and Field Methods ^[4]
54	Total Dissolved Solids	Dried at 180 °C ^[4]
55	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method ^[4]
56	Total Phosphorous	Digestion, Colorimetric Method ^[4]
57	Total Suspended Solids	Dried from 103-105 °C ^[4]
58	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
59	Trivalent Chromium	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation ^[4]
60	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4]

วิมล

น้ำใต้ดิน จำนวน 126 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
8	Barium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
13	Benzoic Acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
15	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
22	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
25	Carbon disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
27	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation ^[4]
35	Chromium (VI)	Colorimetric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
36	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
37	Cyanide	Distillation, Colorimetric Method ^[4]
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
39	DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
40	DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
41	DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
43	Di-n-Butyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
47	3,3-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
57	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
58	Diethyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
63	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
64	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
65	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
69	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
70	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
74	α-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
75	β-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
76	γ-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
81	Lead	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
82	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
83	Mercury	1) Digestion, Cold Vapor Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
84	Methanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
86	Methyl bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
87	Methylene chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
90	Methyl tert-butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
92	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
95	N-Nitrosodi-n-Propylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB 1242 - PCB 1248 - PCB 1254 - PCB 1260	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
98	pH	Electrometric Method ^[4]
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
100	Phenol	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4] 3) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
102	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
103	Silver	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
104	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
105	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
106	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
107	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
108	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
109	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,25]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
110	TPH (C ₈ -C ₁₆)	Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[9,22]
111	TPH (C ₁₆ -C ₃₅)	Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[9,22]
112	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
113	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
114	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
115	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
116	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
117	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
118	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
119	Vanadium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4]
120	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
121	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
122	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
123	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
124	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
125	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[4]
126	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4]

3/11/25

อากาศเสีย (ปล่อยระบาย) จำนวน 28 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
2	Arsenic	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
3	Beryllium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
4	Cadmium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
5	Carbon Monoxide	1) Instrumental Analyzer Method ^[5] 2) Sampling Bag Non-Dispersive Infrared Method ^[5]
6	Chlorine	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
7	Chromium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
8	Cobalt	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
9	Copper	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
10	Cresol	Adsorption Sampling, Gas Chromatographic Method ^[5]
11	Dioxins	Isokinetic Sampling ^[5]
12	Hydrogen Chloride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
13	Hydrogen Fluoride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
14	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[5]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
15	Lead	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
16	Manganese	2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
17	Mercury	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
18	Nickel	2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
19	Opacity	1) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[5]
20	Oxides of Nitrogen	2) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[5]
21	Selenium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
22	Sulfur Dioxide	2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
23	Sulfuric Acid	1) Absorption Sampling, Phenoldisulfonic Acid Method ^[5]
24	Tellurium	2) Absorption Sampling, Alkaline Permanganate/Colorimetric Method ^[5]
25	Tin	3) Instrumental Analyzer Method ^[5]
26	Total Suspended Particulate	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
		2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
		1) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5]
		2) Instrumental Analyzer Method ^[5]
		Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5]
		1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
		2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
		1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
		2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
		1) Isokinetic Sampling, Gravimetric Method ^[5]
		2) Paired Train, Isokinetic Sampling, Gravimetric Method ^[5]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Vanadium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[5]
28	Xylene	Adsorption Sampling, Gas Chromatographic Method ^[5]

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 35 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
8	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
9	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,6,16,19] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,6,17,19] 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,16,19] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,17,19]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method ^[1,6,19] 2) Alkaline Digestion, Colorimetric Method ^[8,19]
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
12	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
13	2,4-D	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
20	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[1,6,20] 2) Waste Extraction, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[1,6,30] 3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[20] 4) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[30] 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method ^[21]
23	Methoxychlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic / Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic / Mass Spectrometric Method ^[11,26]
24	Mirex	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic / Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic / Mass Spectrometric Method ^[11,26]
25	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma / Mass Spectrometric Method ^[7,17]
26	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma / Mass Spectrometric Method ^[7,17]
27	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[11,26]

3m

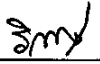
ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
	- 2-Chlorobiphenyl - 2,3-Dichlorobiphenyl - 2,2',5-Trichlorobiphenyl - 2,4',5-Trichlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5'-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2',3,4,4',5'-Hexachlorobiphenyl - 2,2',3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6-Hexachlorobiphenyl - 2,2',4,4',5,5'-Hexachlorobiphenyl - 2,2',3,3',4,4',5-Heptachlorobiphenyl - 2,2',3,4,4',5,5'-Heptachlorobiphenyl - 2,2',3,4,4',5',6-Heptachlorobiphenyl - 2,2',3,4',5,5',6-Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
28	Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
29	pH	Electrometric Method ^[23,24]
30	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
31	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
32	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
33	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,26]
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]
35	Zinc	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,17] 3) Digestion, Inductively Coupled Plasma Method ^[7,16] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,17]

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ดิน จำนวน 125 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
2	Acetone	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25] 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[13]
3	Aldrin	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
4	Anthracene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
7	Atrazine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
8	Barium	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
9	Benz(a)anthracene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25] 

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
11	Benzo(b)fluoranthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
12	Benzo(k)fluoranthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
13	Benzoic acid	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
14	Benzo(a)pyrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
15	Benzo(g,h,i)perylene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
17	Bis(2-chloroethyl)ether	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
18	Bis(2-ethylhexyl)phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
21	Butanol	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[13,25]
22	Butyl Benzyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
24	Carbazole	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
27	Chlordane	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
28	p-Chloroaniline	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
32	2-Chlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,16,19] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,17,19]
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method ^[8,19]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
36	Chrysene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
37	Cyanide	Extraction, Distillation, Colorimetric Method ^[27,28,29]
38	2,4-D	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
39	DDD	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
40	DDE	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
41	DDT	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
42	Dibenz(a,h)anthracene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
43	Di-n-Butyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
47	3,3-Dichlorobenzidine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
53	2,4-Dichlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
57	Dieldrin	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
58	Diethyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
59	2,4-Dimethylphenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
60	2,4-Dinitrophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
61	2,4-Dinitrotoluene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
62	2,6-Dinitrotoluene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
63	Di-n-Octyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
64	Endosulfan	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
65	Endrin	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
67	Fluoranthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
68	Fluorene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
69	Heptachlor	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
70	Heptachlor epoxide	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
71	Hexachlorobenzene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
73	n-Hexane	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25] 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[13]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
74	α -HCH	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
75	β -HCH	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
76	γ -HCH	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
77	Hexachlorocyclopentadiene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
78	Hexachloroethane	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
79	Indeno(1,2,3-cd)pyrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
80	Isophorone	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
81	Lead	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
82	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[20] 2) Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry ^[21] 3) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[30]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25] 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[13,25]
85	Methoxychlor	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
88	2-methylphenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
89	2-Methylnaphthalene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
91	Naphthalene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
92	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
93	Nitrobenzene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
94	N-Nitrosodiphenylamine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
95	N-Nitrosodi-n-propylamine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
96	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5'-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2',3,4,4',5'-Hexachlorobiphenyl - 2,2',3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6-Hexachlorobiphenyl - 2,2',4,4',5,5'-Hexachlorobiphenyl - 2,2',3,3',4,4',5-Heptachlorobiphenyl - 2,2',3,4,4',5,5'-Heptachlorobiphenyl - 2,2',3,4,4',5',6-Heptachlorobiphenyl - 2,2',3,4',5,5',6-Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
97	Pentachlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
98	Phenanthrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
99	Phenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
100	Pyrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
101	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
102	Silver	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
103	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
106	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
107	Toxaphene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
108	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
109	TPH (C ₈ - C ₁₆)	1) Automate Extraction, Gas Chromatographic Method ^[11,22] 2) Solvent Extraction, Gas Chromatographic Method ^[12,22] 3) Ultrasonic Extraction, Gas Chromatographic Method ^[22,31]
110	TPH (C ₁₆ - C ₃₅)	1) Automate Extraction, Gas Chromatographic Method ^[11,22] 2) Solvent Extraction, Gas Chromatographic Method ^[12,22] 3) Ultrasonic Extraction, Gas Chromatographic Method ^[22,31]
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
114	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
115	2,4,5-Trichlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
116	2,4,6-Trichlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,26]
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
118	Vanadium	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]
119	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
120	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
121	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
122	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
123	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
124	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[15,25]
125	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,17]

วิมล

เอกสารอ้างอิง

- กระทรวงอุตสาหกรรม. ประกาศกระทรวงอุตสาหกรรม, พ.ศ. 2566. เรื่อง การจัดการสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว. ราชกิจจานุเบกษา. 31 พฤษภาคม 2566. เล่มที่ 140 ตอนพิเศษ 126 ง.
- กระทรวงอุตสาหกรรม. ประกาศกระทรวงอุตสาหกรรม, พ.ศ. 2549. เรื่อง กำหนดค่าปริมาณเขม่าควันที่เจือปนในอากาศที่ระบายออกจากปล่องของหม้อน้ำโรงสีข้าวที่ใช้กลบเป็นเชื้อเพลิง. ราชกิจจานุเบกษา. 4 ธันวาคม 2549. เล่มที่ 123 ตอนพิเศษ 125 ง.
- สมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย. คู่มือวิเคราะห์น้ำเสีย. พิมพ์ครั้งที่ 4. กรุงเทพฯ: เรือนแก้วการพิมพ์, 2547.
- APHA, AWWA, WEF. Standard Methods for the Examination of Water and Wastewater. 24th ed. Washington, DC: APHA, 2023.

5. United States Environmental Protection Agency. Standards of Performance for New Stationary Sources. 40 CFR 60. Appendix A, 2023.

6. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. SW-846, 2014.

7. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Acid Digestion of Sludges and Sediments and Soils. SW-846 Method 3050B, 1996.

8. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Alkaline Digestion for Hexavalent Chromium. SW-846 Method 3060A, 1996.

9. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Separatory Funnel Liquid-Liquid Extraction. SW-846 Method 3510C, 1996.

10. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Soxhlet Extraction. SW-846 Method 3540C, 1996.

11. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Automated Soxhlet Extraction. SW-846 Method 3541, 1994.

12. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Microscale Solvent Extraction (MSE). SW-846 Method 3570, 2002.

13. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Volatile Organic Compounds (VOCs) in Various Sample Matrices Using Equilibrium Headspace Analysis. SW-846 Method 5021A, 2014.

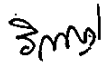
14. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Purge-and-Trap for Aqueous Samples. SW-846 Method 5030B, 1996.

15. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples. SW-846 Method 5035, 1996.

16. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Inductively Coupled Plasma-Atomic Emission Spectrometry. SW-846 Method 6010B, 1996.

17. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Inductively Coupled Plasma-Mass Spectrometry. SW-846 Method 6020A, 2007.

18. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Antimony and Arsenic (Atomic Absorption, Borohydride Reduction). SW-846 Method 7062, 1994. เพิ่มใหม่

19. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Chromium, Hexavalent (Colorimetric). SW-846 Method 7196A, 1992. 

20. United States...

20. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique). SW-846 Method 7471B, 2007.

21. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry. SW-846 Method 7473, 2007.

22. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Nonhalogenated Organics by Gas Chromatography. SW-846 Method 8015C, 2007.

23. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. pH Electrometric Measurement. SW-846 Method 9040C, 2004.

24. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Soil and Waste pH. SW-846 Method 9045D, 2004.

25. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). SW-846 Method 8260D, 2018.

26. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). SW-846 Method 8270E, 2018.

27. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Total and Amenable Cyanide: Distillation SW-846 Method 9010B, 1996.

28. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Cyanide Extraction Procedure for Solids and Oil. SW-846 Method 9013A, 1996.

29. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Cyanide in Waters and Extracts Using Titrimetric and Manual Spectrophotometric Procedures. SW-846 Method 9014, 2014.

30. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Mercury in Sediment and Tissue Samples by Atomic Fluorescence Spectrometry. SW-846 Method 7474, 2007.

31. United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. Ultrasonic Extraction. SW-846 Method 3550C, 2007.

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ที่ อก ๐๓๑๐(๑)/ ๔๑ ๒๑

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๕ เมษายน ๒๕๖๗

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๙ มีนาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓ ราย

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| ๑) นางสาวพรรณธิดา พุ่มคง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๕ |
| ๒) นายกำชัย สุทธะ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๒๑ |
| ๓) นางสาวศุภรดา บัณมยุรา | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๓๘ |

๒. ให้เพิ่มเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑๒ ราย

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| ๑) นางสาวฐานิดา กลิ่นเขียว | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๒ |
| ๒) นางสาวกัญญภัสสร สายคำ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๓ |
| ๓) นางสาวณัฐนันท์ กันทะวงศ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๔ |
| ๔) นายอำนาจ วงษาเคน | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๕ |
| ๕) นายกฤษณพล ปัญญาวงศ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๖ |
| ๖) นายณชากร ทรรษา | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๗ |
| ๗) นายวัชรินทร์ ผ่องสามสวน | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๘ |
| ๘) นายณัฐพงศ์ โสภา | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๙ |
| ๙) นายศักรินทร์ ปานเพ็ง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๐ |
| ๑๐) นายณัฐพล ชุ่มชื่น | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๑ |
| ๑๑) นายธนา สุพาพันธุ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๒ |
| ๑๒) นายนราธร แก้วพงษ์ชา | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๓ |

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ในวันที่ ๒ กันยายน ๒๕๖๙

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายพริต ก้านกรอง)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ที่อก ๐๓๑๐(๑)/ ๑๒ ๓๖ ๘ /



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๑๘ ธันวาคม ๒๕๖๗

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๒ ธันวาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอยกเลิกบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๘ ราย ได้แก่

- | | |
|-------------------------------|----------------------------|
| ๑) นายประพจน์ วรรณชูชัย | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๐ |
| ๒) นายจิรณัฐ ขาวละออ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๒ |
| ๓) นายพีรพัฒน์ กำคำ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๐๘ |
| ๔) นางสาวอรยา คำคล่อง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๓๔ |
| ๕) นายกิตติพงศ์ แซ่ลี | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๔๔ |
| ๖) นายจิรเมธ ประเสริฐศิริพงศ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๖๐ |
| ๗) นายภัทรพงษ์ มณฑาทอง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๖๗ |
| ๘) นางสาวจารุวรรณ กระจำงพันธ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๑ |

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายธีรทัศน์ อิศรางกูร ณ อยุธยา)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



ที่ อก ๐๓๑๐(๑)/ ๓๑๕๐



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๑๐ เมษายน ๒๕๖๘

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒ เมษายน ๒๕๖๘

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอยกเลิกบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
จำนวน ๒ ราย ได้แก่

๑) นายธิตพิงค์ บัวแดง

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๐๒

๒) นายมงคล ผลาทิพย์

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๑๐

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายธีรทัศน์ อิศรางกูร ณ อยุธยา)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th





ที่ อก ๐๓๑๐(๑)/ ๕๖ ๗ ๓

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๐๕ มิถุนายน ๒๕๖๔

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๗ พฤษภาคม ๒๕๖๔

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการ
วิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ
เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้เพิ่มเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน
จำนวน ๑๑ ราย ได้แก่

- | | |
|-----------------------------------|----------------------------|
| ๑) นายคุณากร มั่นชื่น | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๔ |
| ๒) นายชัยมงคล แสนมาตร | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๕ |
| ๓) นายเอกรินทร์ บุตส์ักดิ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๖ |
| ๔) นายพิชานนท์ อินปริง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๗ |
| ๕) นายศตวรรษ แก้วกันหา | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๘ |
| ๖) นายวิกรม มีศิริ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๙๙ |
| ๗) นายภคนันท์ คำจันทราช | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๒๐๐ |
| ๘) นายศิริวิทย์ มีไพฑูรย์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๒๐๑ |
| ๙) นายธีรพงษ์ ศรีคำแหง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๒๐๒ |
| ๑๐) นายอภิสิทธิ์ ศรีคงแก้ว | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๒๐๓ |
| ๑๑) ว่าที่ร้อยตรี ภาณุพงศ์ แสนศรี | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๒๐๔ |

อนึ่ง หนังสือฉบับนี้จะสิ้นอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ในวันที่ ๒ กันยายน ๒๕๖๔

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายศิระ จันท์เลิศ)

นักวิทยาศาสตร์เชี่ยวชาญ รัชการยการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



ที่ อก ๐๓๑๐(๑)/ ๒๕๐๘



กรมโรงงานอุตสาหกรรม

ถนนพระรามที่ ๖ แขวงทุ่งพญาไท

เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๑ สิงหาคม ๒๕๖๔

เรื่อง เปลี่ยนแปลงสารมลพิษที่วิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๗ มิถุนายน ๒๕๖๔

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือเปลี่ยนแปลงสารมลพิษที่วิเคราะห์

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด จำนวน ๖ แผ่น

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการ
วิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ
เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงสารมลพิษที่วิเคราะห์ ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด
เพิ่มขอบข่ายชนิดสารมลพิษที่วิเคราะห์ในน้ำใต้ดิน สิ่งปฏิกูลและวัสดุที่ไม่ใช้แล้ว และดิน ตามสิ่งที่ส่งมาด้วย

อนึ่ง หนังสือฉบับนี้จะสิ้นสุดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ในวันที่ ๒ กันยายน ๒๕๖๕

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นางสาวปัทมวรรณ คุณประเสริฐ)

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



เอกสารแนบท้ายหนังสือเปลี่ยนแปลงสารมลพิษที่วิเคราะห์

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/ ๖๕ ๐ ๘

ลงวันที่

๒๑

สิงหาคม ๒๕๖๔

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๔๐ รายการ

น้ำใต้ดิน จำนวน ๔ รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aluminum	Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[2]
2	Copper	Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[2]
3	Iron	Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[2]
4	Molybdenum	Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[2]

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 17 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
2	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
3	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]

๗๖

Beryllium

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
4	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
5	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
6	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
7	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,3,6,8] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,3,7,8] 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[4,5,6,8] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[4,5,7,8]
8	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
9	Copper	3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7] 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
10	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
11	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
12	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
13	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]

อนุทิน

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
14	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
15	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
16	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
17	Zinc	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,3,6] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,3,7] 3) Digestion, Inductively Coupled Plasma Method ^[4,6] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]

ดิน จำนวน 19 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aluminum	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]
2	Antimony	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4,7]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
3	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
4	Barium	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
5	Beryllium	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
6	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
7	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
8	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[4,5,6,8] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[4,5,7,8]
9	Copper	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
10	Iron	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
11	Lead	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
12	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
13	Molybdenum	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
14	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
15	pH	Electrometric Method ^[9]
16	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
17	Silver	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
18	Vanadium	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]
19	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[4,6] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4,7]

เอกสารอ้างอิง

- กระทรวงอุตสาหกรรม. ประกาศกระทรวงอุตสาหกรรม, พ.ศ. 2566. เรื่อง การจัดการสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว. **ราชกิจจานุเบกษา**. 31 พฤษภาคม 2566. เล่มที่ 140 ตอนพิเศษ 126 ง.
- APHA, AWWA, WEF. **Standard Methods for the Examination of Water and Wastewater**. 24th ed. Washington, DC: APHA, 2023.
- United States Environmental Protection Agency. **Test Methods for Evaluating Solid Waste Physical/Chemical Methods. SW-846**.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Acid Digestion of Sediments, Sludges, and Soils. SW-846 Method 3050B**, 1996.
- United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. **Alkaline Digestion for Hexavalent Chromium. SW-846 Method 3060A**, 1996.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Inductively Coupled Plasma-Optical Emission Spectrometry. SW-846 Method 6010D**, 2018.
- United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. **Inductively Coupled Plasma-Mass Spectrometry. SW-846 Method 6020B**, 2014.
- United States Environmental Protection Agency. Test Methods for Evaluating Solid Waste Physical/Chemical Methods. **Chromium, Hexavalent (Colorimetric). SW-846 Method 7196A**, 1992.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Soil and Waste pH. SW-846 Method 9045D**, 2004.

กมลวิ

ที่ อก ๐๓๑๐(๑)/๘๐ ๑ ๑



กรมโรงงานอุตสาหกรรม

ถนนพระรามที่ ๖ แขวงทุ่งพญาไท

เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๒๖ กันยายน ๒๕๖๔

เรื่อง เปลี่ยนแปลงบุคลากร ชื่อตัวและชื่อสกุลของบุคลากร

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกซเรย์
ลงวันที่ ๒๑ สิงหาคม ๒๕๖๔

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัดห้องปฏิบัติการวิเคราะห์เอกซเรย์ เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร ชื่อตัวและชื่อสกุลของบุคลากร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒ ราย

๑) นางสาวพาฤดี คุณนาน

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๓๙

๒) นางสาวอรณิชา เทียนดำ

ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๗๔

๒. ให้เปลี่ยนชื่อตัวและชื่อสกุลของเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จากเดิม นายอาทิตย์ ศรีเสน เป็น นายรัฐธีร์ ทวีกิจวรพจน์ ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๘

อนึ่ง หนังสือฉบับนี้จะสิ้นอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกซเรย์ ในวันที่ ๒ กันยายน ๒๕๖๔

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นางสาวปัทมวรรณ คุณประเสริฐ)

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”





right solutions.
right partner.

บริษัท เอแอลเอส แลборาทอรี กรุ๊ป (ประเทศไทย) จำกัด

104 ซอยพัฒนาการ 40 ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพฯ 10250

