

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด  
ที่ อก ๐๓๑๐(๑)/ ๒ ๖ ๔ ๓  
ลงวันที่ ๓ ๑ มกราคม ๒๕๖๖  
ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๔ รายการ

น้ำเสีย จำนวน 4 รายการ

| ลำดับที่ | สารมลพิษ                  | วิธีวิเคราะห์                             |
|----------|---------------------------|---|
| 1        | Biochemical Oxygen Demand | 5-Day BOD Test, Membrane Electrode Method |
| 2        | pH                        | Electrometric Method                      |
| 3        | Total Dissolved Solids    | Dried at 180 °C                           |
| 4        | Total Suspended Solids    | Dried at 103-105 °C                       |

เอกสารอ้างอิง

APHA, AWWA, WEF. **Standard Methods for the Examination of Water and Wastewater.**  
23<sup>rd</sup> ed. Washington, DC: APHA, 2017.



ที่ อก ๐๓๑๐(๑)/ ๒ ๖ ๔ ๓

กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๓ ๑ มกราคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
เรียน กรรมการผู้จัดการ บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด  
อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน  
ลงวันที่ ๘ ธันวาคม ๒๕๖๕

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด จำนวน ๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียน  
ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๓๐๑-สถานที่ตั้งเลขที่ ๕/๔๕ หมู่บ้าน บ้านกลางกรุง ปทุมวัน  
ซอยศรีนครินทร์ ๔๖/๑ (ปราโมทย์) แขวงหนองบอน เขตประเวศ กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด ต่ออายุหนังสือรับขึ้น  
ทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์



ข. เอกสารวิเคราะห์

ทะเบียนเลขที่ ๖-๓๐๑-ค-๐๐๐๑

ทะเบียนเลขที่ ๖-๓๐๑-จ-๐๐๐๑

ทะเบียนเลขที่ ๖-๓๐๑-จ-๐๐๐๒

ทะเบียนเลขที่ ๖-๓๐๑-จ-๐๐๐๓

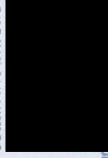
ทะเบียนเลขที่ ๖-๓๐๑-จ-๐๐๐๔

ค. ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนวิเคราะห์ในน้ำเสีย ตามสิ่งที่ส่งมาด้วย

หนังสือฉบับนี้จะหมดอายุในวันที่ ๓ มกราคม ๒๕๖๗ หากประสงค์จะต่ออายุหนังสือ  
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบการคำขอต่อ  
กรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นสุดของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่เว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code  
ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



ผู้ชำนาญ

ผู้จัดการแผนกสนับสนุนโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๕๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๕๓๐ ๖๓๑๒ ต่อ ๒๑๕๔

ไปรษณีย์อิเล็กทรอนิกส์ saraban@dliw.mail.go.th

Green Industry

"อุตสาหกรรมก้าวหน้า ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"

ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์





## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : pH METER  
MANUFACTURER : APERA  
MODEL / TYPE : PH700/201T-F  
SERIAL NO. : PH700X1019061009/N/A [LA-008/PH-02]  
DATE OF CALIBRATION : 11 April 2025

#### ENVIRONMENT CONDITIONS :

Temperature :  $(25 \pm 2.5) ^\circ\text{C}$  Relative Humidity :  $(50 \pm 15) \% \text{ RH}$

#### PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-128, 238. The calibration was performed by direct measurement with Certified Reference Material (CRM) and comparison with Calibration Bath, Precision Thermometer and IPRT which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

1. pH Standard Solution, NIMT TRM CODE TRM-S-2003, TRM CODE TRM-S-2007.
2. pH Standard Solution, Control Company Catalog Number 06664260,11754256, Lot Number CC787362.
3. Calibration Bath, Kambic Model OB-222 ULT S/N. 17115653.
4. Precision Thermometer, ASL Model F250 S/N. 1334023800.
5. IPRT, Wika Model CTP5000-250-D S/N. PO00043543-1-10-1.

Certificate No. Q25042961

F3-011-05/12-23



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : pH METER  
MANUFACTURER : APERA  
MODEL / TYPE : PH700/201T-F  
SERIAL NO. : PH700X1019061009/N/A [LA-008/PH-02]  
CLID. NO. : 272401000  
JOB CONTROL NO. : 250410042961  
CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 10 April 2025

DATE OF ISSUED : 18 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Approved By :



18 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25042961

F3-011-05/12-23





**CALIBRATION LABORATORY CO., LTD.**  
2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com Email:sae@cal-laboratory.com



NSC-TIS-TIS 17025  
CALIBRATION 0059  
CLC

## CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

### MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of pH meter.

#### CALIBRATION DATA

##### 1. pH METER RESULT @ 25 °C

| Standard pH Buffer Solution (pH) | pH Meter Reading (pH) | pH Meter Reading (mV) | Correction (pH) | Uncertainty of Measurement (± pH) | k Factor |
|----------------------------------|-----------------------|-----------------------|-----------------|-----------------------------------|----------|
| 4.003                            | 4.01                  | 134                   | -0.007          | 0.014                             | 2.00     |
| 7.005                            | 7.00                  | -43                   | +0.005          | 0.014                             | 2.00     |
| 10.015                           | 10.01                 | -208                  | +0.005          | 0.100                             | 2.05     |

Technical Note. Setting function CAL 3 point ( 4,7,10 ).

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 91 of 138

##### \*2. TEMPERATURE RESULT

| Immersion depth (mm) | Actual Temperature (°C) | DUC Reading (°C) | Correction (°C) | Uncertainty ± (°C) |
|----------------------|-------------------------|------------------|-----------------|--------------------|
| 100                  | 25.01                   | 24.9             | +0.11           | 0.07               |

Technical Note. Type of sensor : pH Probe

Probe Ø 12 mm

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor of  $k = 2.00$ .

Note. \* means Calibrations marked " Not TISI Accredited " in this Certificate have been included for completeness.

This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25042961  
F3-011-05/12-23



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**CALIBRATION LABORATORY CO., LTD.**  
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NSC-TIS-TIS 17025  
CALIBRATION 0059  
CLC

## TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).

Lot Number. 080124 , 120124. Due Date 23 January 2026.

2. The measurements are traceable to International System of Units (SI), through Control Company.

Certificate No. 4281-14495731 , Due Date 27 September 2025.

3. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.

Certificate No. Q24120999, Due Date 26 November 2025.

4. The measurements are traceable to International System of Units (SI), through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 1042/67, Due Date 16 October 2025.

5. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).  
Certificate No. TT-0146-24, Due Date 28 October 2025.

## UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.  
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25042961  
F3-011-05/12-23

page 3 of 4







**CALIBRATION LABORATORY CO., LTD.**  
2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel: 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com



**CALIBRATION LABORATORY CO., LTD.**  
2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel: 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com

## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : DO METER  
MANUFACTURER : YSI  
MODEL / TYPE : 5000-230V/5010  
SERIAL NO. : 16D101626/19D100367/DOM-01]  
DATE OF CALIBRATION : 11 April 2025

### ENVIRONMENT CONDITIONS :

Temperature :  $(25 \pm 2.5) ^\circ\text{C}$  Relative Humidity :  $(50 \pm 15) \% \text{RH}$

### PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPCH-06. The calibration was performed by direct measurement with Certified Reference Material (CRM).

### REFERENCE STANDARD USED :

Dissolved Oxygen, Sigma-Aldrich Product ID QC3077-500ML.

### TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Merck Co., Ltd. Lot LRAD8571, Due Date April 2026.

### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.00$  which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25042960  
F3-011-05/12-23

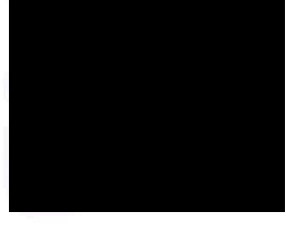


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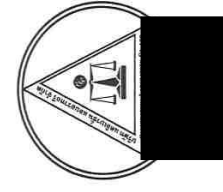
Certificate No. Q25042960  
F3-011-05/12-23

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

18 April 2025



Calibrated By :



Approved By :

DATE OF RECEIVED : 10 April 2025

DATE OF ISSUED : 18 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

### FOR

NOMENCLATURE : DO METER  
MANUFACTURER : YSI  
MODEL / TYPE : 5000-230V/5010  
SERIAL NO. : 16D10162  
CLID. NO. : 272100329  
JOB CONTROL NO. : 250410042960

## CERTIFICATE OF CALIBRATION



# CALIBRATION LABORATORY Co., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cali-laboratory.com E-mail: sale@cali-laboratory.com



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : DIGITAL THERMOMETER WITH PROBE  
MANUFACTURER : LUTRON  
MODEL / TYPE : MTM-380SD  
SERIAL NO. : I.570147/N/A|LA-0013/LA-0013/A|  
CLID. NO. : 232204019  
JOB CONTROL NO. : 250408041416  
CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.  
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 08 April 2025 DATE OF ISSUED : 11 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :

Approved By :

11 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25041416  
F3-011-05/12-23

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@ctcalibration



# CALIBRATION LABORATORY Co., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cali-laboratory.com E-mail: sale@cali-laboratory.com



CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION  
MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of Do Meter.

### CALIBRATION DATA

#### DO METER RESULT @ 20 °C

| Nominal Value<br>( mg/L ) | DUC Reading<br>( mg/L ) | Correction<br>( mg/L ) | Uncertainty<br>( mg/L ) |
|---------------------------|-------------------------|------------------------|-------------------------|
| 8.18                      | 8.2                     | -0.02                  | ± 0.38                  |

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 5 of 68

This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25042960  
F3-011-05/12-23

page 3 of 3



@ctcalibration



**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**  
**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The DUC Reading were recorded and the means value were reported of five times measurement in the table below.

**CALIBRATION DATA**

**CORRECTION OF TEMPERATURE : T1**

| Immersion depth (mm) | Actual Temperature ( °C ) | DUC Reading ( °C ) | Correction ( °C ) | Uncertainty ± ( °C ) |
|----------------------|---------------------------|--------------------|-------------------|----------------------|
| 200                  | 4.00                      | 4.0                | 0.00              | 0.52                 |
|                      | 20.02                     | 20.1               | -0.08             |                      |
|                      | 95.02                     | 96.1               | -1.08             |                      |
|                      | 104.02                    | 105.1              | -1.08             |                      |
|                      | 180.00                    | 181.6              | -1.60             |                      |

Technical Note. Type of sensor : Thermocouple Type K.

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 01.5 Page 57 of 68

**This report is valid for the above stated instrument/s only.**

### End of Certificate ###

Certificate No. Q25041416  
F3-011-05/12-23



**REPORT OF CALIBRATION**  
**FOR**

**NOMENCLATURE** : DIGITAL THERMOMETER WITH PROBE  
**MANUFACTURER** : LUTRON  
**MODEL / TYPE** : MTM-380SD  
**SERIAL NO.** : I.570147/N/A|LA-0013/LA-0013/A|  
**DATE OF CALIBRATION** : 10 April 2025

**ENVIRONMENT CONDITIONS :**

**Temperature** : (23 ± 2) °C **Relative Humidity** : (55 ± 10) % RH

**PROCEDURE USED :**

This instrument was calibrated under procedure No. CLC-CPTH-06 based on ASTM E 220-86 as calibration guidelines.

The calibration was performed by using Calibration Bath, Precision Thermometer and IPRT which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

1. Calibration Bath, Kambic Model OB-22/2 ULT, OB-22/2 S/N. I7115653, I7115654.
2. Precision Thermometer, ASL Model F250 S/N. 1334023800.
3. IPRT, Wika, ASL Model CTP5000-450-D, T100-250-ID S/N. PO00036374-1-10-12, PO106346-1-18.

**TRACEABILITY :**

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q24120999, Q24112862. Due Date 26 November 2025, 12 November 2025.
2. The measurements are traceable to International System of Units (SI), through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 1042/67, Due Date 16 October 2025.
3. The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand). Certificate No. TT-0147-24, TT-0110-24. Due Date 28 October 2025, 06 August 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.00$  which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25041416

F3-011-05/12-23





# CALIBRATION LABORATORY Co., LTD.

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## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : DIGITAL THERMOHYGRO METER  
MANUFACTURER : DIGICON  
MODEL / TYPE : TH-02A  
SERIAL NO. : 1919E0284991[DTH-01]  
DATE OF CALIBRATION : 10 April 2025

#### ENVIRONMENT CONDITIONS :

Temperature :  $(23 \pm 2) ^\circ\text{C}$  Relative Humidity :  $(55 \pm 10) \% \text{RH}$

#### PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPTH-11. The calibration was performed by using Chilled Mirror Hygrometer which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

Chilled Mirror Hygrometer, Edgetech Model Dew Master S/N. 44602.  
Temperature & Humidity Chamber, PGC Model 9141-5116 S/N. 1304261.

#### TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Thunder Scientific Corporation.  
Certificate No. 22724, Due Date 03 October 2025.

#### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.00$  which for a normal distribution corresponds to a coverage probability of approximately 95 %.  
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25041414

F3-011-05/12-23

page 2 of 3



@clcalibration



# CALIBRATION LABORATORY Co., LTD.

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## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : DIGITAL THERMOHYGRO METER  
MANUFACTURER : DIGICON  
MODEL / TYPE : TH-02A  
SERIAL NO. : 1919E0284991[DTH-01]  
CLID. NO. : 232100200  
JOB CONTROL NO. : 250408041414  
CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

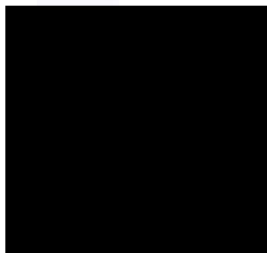
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 08 April 2025

DATE OF ISSUED : 11 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Approved By :

11 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25041414

F3-011-05/12-23

page 1 of 3



@clcalibration





**CALIBRATION LABORATORY Co., LTD.**  
2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cah-laboratory.com E-mail: sale@cah-laboratory.com



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : WATER BATH  
MANUFACTURER : M-LAB  
MODEL / TYPE : WBN 15  
SERIAL NO. : 0335[LA-007]  
CLID. NO. : 332300657  
JOB CONTROL NO. : 250215018258  
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE  
CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

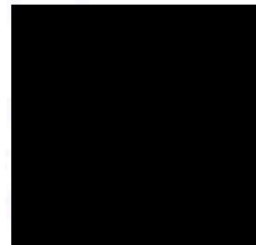
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025

DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Approved By :

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25018258  
F3-011-05/12-23

page 1 of 4



@clcalibration



**CALIBRATION LABORATORY Co., LTD.**  
2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cah-laboratory.com E-mail: sale@cah-laboratory.com



CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION  
MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring digital thermohygro meter.

### CALIBRATION DATA

#### 1. CORRECTION OF TEMPERATURE

| Test point<br>( ° C ) | Actual Temperature<br>( ° C ) | DUC Reading<br>( ° C ) | Correction<br>( ° C ) | Uncertainty<br>± ( ° C ) |
|-----------------------|-------------------------------|------------------------|-----------------------|--------------------------|
| 20.0                  | 20.00                         | 19.6                   | +0.40                 | 0.27                     |
| 25.0                  | 25.00                         | 24.5                   | +0.50                 |                          |
| 30.0                  | 30.00                         | 29.5                   | +0.50                 |                          |

#### 2. CORRECTION OF HUMIDITY

| STD Temperature<br>( ° C ) | STD Reading<br>( %RH ) | DUC Reading<br>( %RH ) | Correction<br>( %RH ) | Uncertainty<br>± ( %RH ) |
|----------------------------|------------------------|------------------------|-----------------------|--------------------------|
| 25                         | 40.0                   | 30                     | +10.0                 | 0.8                      |
| 25                         | 60.0                   | 50                     | +10.0                 | 0.8                      |

Note: The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 60 of 68

This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25041414  
F3-011-05/12-23

page 3 of 3



@clcalibration





**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of the measuring water bath.

**CALIBRATION DATA**

**1. WATER BATH PERFORMANCE**

| Test Point ( °C ) | DUC Reading ( °C ) | Uniformity ( °C ) | Stability ( °C ) |
|-------------------|--------------------|-------------------|------------------|
| 85.0              | 85.0               | 0.40              | 0.28             |



**REPORT OF CALIBRATION**

**FOR**

NOMENCLATURE : WATER BATH  
MANUFACTURER : M-LAB  
MODEL / TYPE : WBN 15  
SERIAL NO. : 0335[LA-007]  
LOCATION SITE : LABORATORY - HOT ZONE  
DATE OF CALIBRATION : 27 February 2025

**ENVIRONMENT CONDITIONS :**

Temperature : 24 °C to 25 °C

Relative Humidity : 49% to 51%

**PROCEDURE USED :**

This instrument was calibrated under procedure No. WI-305-135 based on ASTM E 715-80:2016 as calibration guidelines.

The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.

Certificate No. Q24120965, Due Date 13 May 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.00$  which for a normal distribution corresponds to a coverage probability of approximately 95 %.  
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"



CERTIFICATE OF CALIBRATION

FOR

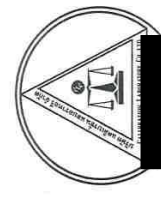
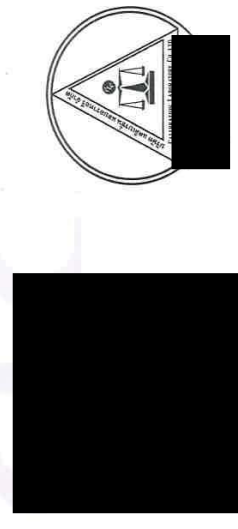
NOMENCLATURE : WATER BATH  
MANUFACTURER : MEMMERT  
MODEL / TYPE : WNB14  
SERIAL NO. : L418.0758[LA-004]  
CLID. NO. : 332100157  
JOB CONTROL NO. : 250215018257  
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.  
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Approved By :

04 March 2025  
This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25018257  
F3-011-05/12-23



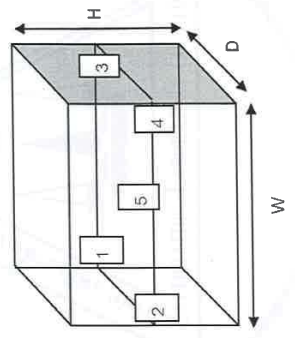
CALIBRATION DATA

2. TEMPERATURE DISTRIBUTION

| Test Point<br>( ° C ) | DUC Reading<br>( ° C ) | STD Reading ( ° C ) |             |             |             |             | Uncertainty<br>± ( ° C ) |
|-----------------------|------------------------|---------------------|-------------|-------------|-------------|-------------|--------------------------|
|                       |                        | Probe No. 1         | Probe No. 2 | Probe No. 3 | Probe No. 4 | Probe No. 5 |                          |
| 85.0                  | 85.0                   | 85.15               | 84.79       | 84.96       | 84.89       | 85.06       | 0.58                     |

Technical Note : W = 35 cm, D = 30 cm, H = 15 cm.

The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 128 of 138



This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25018258  
F3-011-05/12-23





CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment

The table in the following gives the calibration results and associated measurement uncertainties of the measuring water bath.

CALIBRATION DATA

1. WATER BATH PERFORMANCE

| Test Point ( °C ) | DUC Reading ( °C ) | Uniformity ( °C ) | Stability ( °C ) |
|-------------------|--------------------|-------------------|------------------|
| 95.0              | 95.0               | 0.39              | 0.17             |



REPORT OF CALIBRATION

FOR

NOMENCLATURE : WATER BATH  
MANUFACTURER : MEMMERT  
MODEL / TYPE : WNB14  
SERIAL NO. : L418.0758[LA-004]  
LOCATION SITE : LABORATORY - HOT ZONE  
DATE OF CALIBRATION : 27 February 2025

ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C

Relative Humidity : 49% to 51%

PROCEDURE USED :

This instrument was calibrated under procedure No. W1-305-135 based on ASTM E 715-80:2016 as calibration guidelines.

The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

REFERENCE STANDARD USED :

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.

Certificate No. Q24120965, Due Date 13 May 2025.

UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.00$  which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"





## Certificate of Calibration

Certificate Number : SPR25050011-3 Page : 1 of 3  
Customer : ENVIRONMENTAL MEASUREMENTS CO., LTD.  
5/45 Baan Klang Krung Biz Town, Soi Srinagarindra 46/1 (Pramote),  
Nongbon Sub-district, Prawet District, Bangkok 10250

Equipment Name : Refrigerator  
Manufacturer : Medicoool  
Model : BB-117  
Serial Number : BB117-190725001  
ID. Number : LA-003  
Environmental Conditions  
Ambient Temperature :  $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$  Received Date : 02 May 2025  
Relative Humidity :  $60\% \pm 20\%$  Calibration Date : 06 May 2025  
Location of Calibration : On-Site Recommend Due Date : N/A  
Calibration Procedure : SP-CPT-04-01 Date of Issue : 07 May 2025

### Method of Calibration

This certifies that the above instrument was calibrated in compliance with the calibration system requirement of ISO/IEC 17025:2017 in accordance with reference procedure. Standards used to perform this calibration are certified by NIST or equivalent, National metrology institute, Natural physical constants, consensus standards. The result reported herein apply only to the calibration of the item described above as received. Our decision rule is to contact the customer if the item pass and fail calibration when the results include the uncertainties and the customer must determine if the results meets their needs.  
The calibration certificate shall not be reproduced except in full, without written approval of SP Metrology System (Thailand).

Calibrated by : Mr. Keerati Bunyawat

Calibration Officer

App



CLC  
Accredited  
ISO/IEC 17025



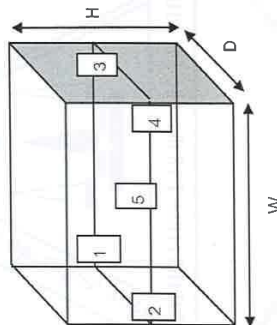
### CALIBRATION DATA

#### 2. TEMPERATURE DISTRIBUTION

| Test Point<br>( $^{\circ}\text{C}$ ) | DUC Reading<br>( $^{\circ}\text{C}$ ) | STD Reading ( $^{\circ}\text{C}$ ) |             |             |             |             | Uncertainty<br>$\pm (^{\circ}\text{C})$ |
|--------------------------------------|---------------------------------------|------------------------------------|-------------|-------------|-------------|-------------|---|
|                                      |                                       | Probe No. 1                        | Probe No. 2 | Probe No. 3 | Probe No. 4 | Probe No. 5 |   |
| 95.0                                 | 95.0                                  | 96.45                              | 96.30       | 96.22       | 96.04       | 96.26       | 0.51                                    |

Technical Note : W = 35 cm, D = 29 cm, H = 14 cm.

The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 128 of 138



This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25018257

F3-011-05/12-23





# Calibration Report

Certificate Number : SPR25050011-3

## Reference Standards

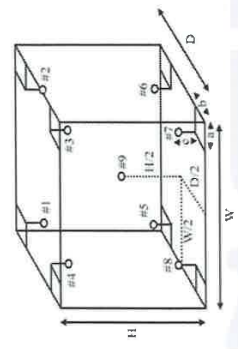
| Equipment Name               | Model  | Serial No. | Certificate No. | Due. Date   |
|------------------------------|--------|------------|-----------------|-------------|
| Data Acquisition/Switch Unit | 34970A | MY44074688 | SPR24080102-24  | 07 Sep 2025 |

## Traceability

This certification is traceable to the International System of Unit maintained at :  
SP Metrology - SP Metrology system (Thailand) Co.Ltd.

# Result of Calibration

Certificate Number : SPR25050011-3



## Temperature Accuracy in the Measurement Zone.

Unit : °C

| UUC Setting | Measured Temperature (°C) @ Probe No. 9 is REF.) |      |      |      |      |      |      |      |      | Uncertainty ( ± ) |
|-------------|--|------|------|------|------|------|------|------|------|-------------------|
|             | # 1  | # 2  | # 3  | # 4  | # 5  | # 6  | # 7  | # 8  | # 9  |                   |
| 4.0         | 3.37   | 4.12 | 4.25 | 4.13 | 3.93 | 3.98 | 3.95 | 4.23 | 4.16 | 0.60              |

## Temperature Uniformity, Stability, Overall Variation

Unit : °C

| UUC Setting | UUC Reading | Temperature Stability | Temperature Uniformity | Overall Variation |
|-------------|-------------|-----------------------|------------------------|-------------------|
| 4.0         | 4.0         | 0.09                  | 0.94                   | 1.07              |

## Note :

The result of calibration was found accurate as show on date and place of calibration only.  
This Certificate is not certified for any commercial transaction.

## Measurement Uncertainty

The reported uncertainty of measurement is the expanded uncertainty obtained by multiplying the standard uncertainty with the coverage factor k = 2, providing a level of confidence approximately 95 %  
- End of Certificate -



# CALIBRATION LABORATORY Co., LTD.

210-11,14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : INCUBATOR  
MANUFACTURER : ACCUPLUS  
MODEL / TYPE : SMART i250  
SERIAL NO. : 2059-0718-0010[LA-002]  
LOCATION SITE : LABORATORY  
DATE OF CALIBRATION : 27 February 2025

#### ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C

Relative Humidity : 49 % to 51 %

#### PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-165 based on TLAS G-20-1/02-08 as calibration guidelines.

The calibration was performed by using Hydra Series II which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

Hydra Series II, Fluke Model 2635A S/N. 8209003.

#### TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.

Certificate No. Q24052151, Due Date 27 May 2025.

#### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25018255

F3-011-05/12-23

page 2 of 4



@clcalibration



# CALIBRATION LABORATORY Co., LTD.

210-11,14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : INCUBATOR  
MANUFACTURER : ACCUPLUS  
MODEL / TYPE : SMART i250  
SERIAL NO. : 2059-0718-0010[LA-002]  
CLID. NO. : 332100155  
JOB CONTROL NO. : 250215018255  
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),

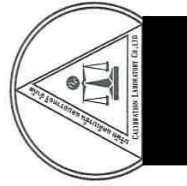
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025

DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Approved By :

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25018255

F3-011-05/12-23

page 1 of 4



@clcalibration





## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : HOT AIR OVEN  
MANUFACTURER : MEMMERT  
MODEL / TYPE : UF110  
SERIAL NO. : B422.0026[LA-0012]  
LOCATION SITE : LABORATORY-HOT ZONE  
DATE OF CALIBRATION : 19 March 2025

#### ENVIRONMENT CONDITIONS :

Temperature : 24 °C to 25 °C  
Relative Humidity : 49% to 51 %

#### PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPH-07 based on TLAS G-20 as calibration guidelines.  
The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

Hydra Data Logger, Fluke Model 2620 S/N: 5592550.

#### TRACEABILITY :

The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd.  
Certificate No. Q24052150, Due Date 27 May 2025.

#### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.  
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25027140

F3-011-05/12-23



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : HOT AIR OVEN  
MANUFACTURER : MEMMERT  
MODEL / TYPE : UF110  
SERIAL NO. : B422.0026[LA-0012]  
CLID. NO. : 332202464  
JOB CONTROL NO. : 250306027140  
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

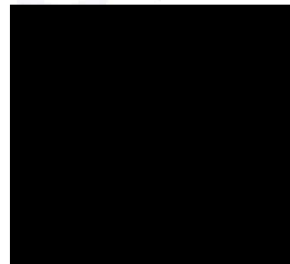
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 06 March 2025

DATE OF ISSUED : 25 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By :



Approved By :

25 MARCH 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25027140

F3-011-05/12-23







**CALIBRATION LABORATORY CO., LTD.**  
2/10-11,14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



**CALIBRATION LABORATORY CO., LTD.**  
2/10-11,14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



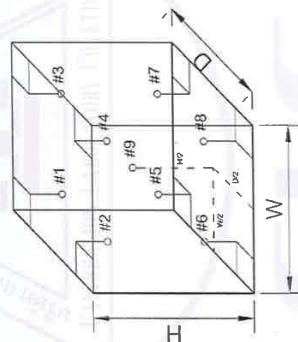
## CALIBRATION DATA

### 2. TEMPERATURE DISTRIBUTION

| DUC            |                   | Measured Temperature ( °C )@Probe No.9 is Ref. |        |        |        |        |        |        |        |        | Uncertainty<br>± ( °C ) | Coverage<br>factor <i>k</i> |
|----------------|-------------------|--|--------|--------|--------|--------|--------|--------|--------|--------|-------------------------|-----------------------------|
| Setting ( °C ) | Indicating ( °C ) | 1  | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      |                         |                             |
| 104.0          | 104.0             | 103.64   | 103.91 | 103.49 | 103.54 | 103.67 | 103.61 | 103.47 | 103.96 | 103.72 | 0.43                    | 2.00                        |
| 180.0          | 180.0             | 179.19   | 179.91 | 178.87 | 179.17 | 179.38 | 179.38 | 178.90 | 179.22 | 179.63 | 0.51                    | 2.00                        |

Technical Note : W = 56 cm, D = 40 cm, H = 48 cm.

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 59 of 68



This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25027140  
F3-011-05/12-23



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Certificate No. Q25027140  
F3-011-05/12-23



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# CALIBRATION LABORATORY CO., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com



## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : BALANCE  
MANUFACTURER : SHIMADZU  
MODEL / TYPE : AP225WD  
SERIAL NO. : D316300692[L/A-001]  
LOCATION SITE : LABORATORY-BALANCE ROOM  
DATE OF CALIBRATION : 27 February 2025

#### ENVIRONMENT CONDITIONS :

Temperature : 23 °C to 24 °C  
Relative Humidity : 49 % to 51 %

#### PROCEDURE USED :

This instrument was calibrated under procedure No. WI-305-46 based on EURAMET/eg-18/Version 4.0 (11/2015).  
The calibration was performed by Comparison with Weight Set which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

Weight Set, Mettler Toledo Class E2 S/N. 158850.

#### TRACEABILITY :

The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).  
Certificate No. MM-0165-23, Due Date 21 December 2025.

#### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95%. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q25018253

F3-011-05/12-23

page 2 of 3



@clccalibration



# CALIBRATION LABORATORY CO., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail: sale@cal-laboratory.com



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : BALANCE  
MANUFACTURER : SHIMADZU  
MODEL / TYPE : AP225WD  
SERIAL NO. : D316300692[L/A-001]  
CLID. NO. : 362100172  
JOB CONTROL NO. : 250215018253  
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

#### CUSTOMER :

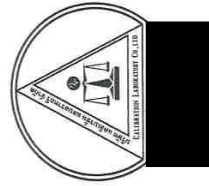
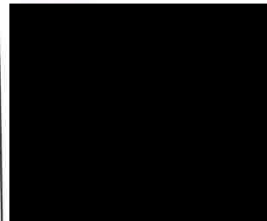
ENVIRONMENTAL MEASUREMENTS CO., LTD.  
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025

DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

#### Calibrated By :



#### Approved By :

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

Certificate No. Q25018253

F3-011-05/12-23

page 1 of 3



@clccalibration



CALIBRATION LABORATORY CO., LTD.

2/10-11, 14, 55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-lab.com E-mail: sale@cal-lab.com



NSC-TISI-TIS 17025  
CALIBRATION 0059  
CLC

## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : BALANCE  
MANUFACTURER : METTLER TOLEDO  
MODEL / TYPE : MS204TS/00  
SERIAL NO. : B935191252[LA-002]  
CLID. NO. : 362200356  
JOB CONTROL NO. : 250215018254  
CALIBRATION SERVICE : ☐ IN-LABORATORY ☒ ON-SITE

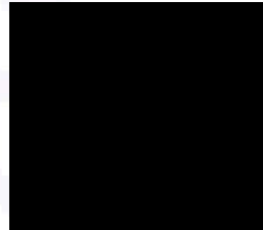
CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.  
5/45 BAAK KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),  
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025

DATE OF ISSUED : 04 March 2025

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Certificate No. Q25018254  
F3-011-05/12-23

page 1 of 3



@clcalibration



CALIBRATION LABORATORY CO., LTD.

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NSC-TISI-TIS 17025  
CALIBRATION 0059  
CLC

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

### CALIBRATION DATA

#### 1. Error of indications

| Nominal Test Value (g) | Conventional mass (g) | Display Value (g) | Error of Balance (g) | Uncertainty $\pm$ (mg) | Coverage factor k |
|------------------------|-----------------------|-------------------|----------------------|------------------------|-------------------|
| Unload                 | 0.0000                | 0.0000            | 0.0000               | 0.07                   | 2.00              |
| 5.0000                 | 5.0000                | 5.0001            | +0.0001              | 0.11                   | 2.00              |
| 10.0000                | 10.0000               | 10.0000           | 0.0000               | 0.11                   | 2.00              |
| 20.0000                | 20.0000               | 20.0000           | 0.0000               | 0.12                   | 2.00              |
| 40.0000                | 40.0000               | 39.9999           | -0.0001              | 0.14                   | 2.00              |
| 60.0000                | 59.9999               | 59.9999           | 0.0000               | 0.15                   | 2.00              |
| 80.0000                | 79.9999               | 80.0000           | +0.0001              | 0.19                   | 2.00              |
| 100.0000               | 99.9999               | 100.0000          | +0.0001              | 0.17                   | 2.00              |
| 120.0000               | 119.9999              | 120.0000          | +0.0001              | 0.21                   | 2.00              |
| 140.0000               | 139.9999              | 139.9999          | 0.0000               | 0.25                   | 2.00              |
| 160.0000               | 159.9998              | 159.9998          | 0.0000               | 0.26                   | 2.00              |
| 180.0000               | 179.9998              | 179.9998          | 0.0000               | 0.30                   | 2.00              |
| 200.0000               | 199.9997              | 199.9996          | -0.0001              | 0.26                   | 2.00              |

#### 2. Repeatability of indications

| Nominal Test Value (g) | Standard Deviation of Reading (g) |
|------------------------|-----------------------------------|
| 200.0000               | 0.00006                           |

#### 3. Effect of eccentric application of a load on the indication

| <input type="checkbox"/> | <input checked="" type="checkbox"/>    |
|--------------------------|--|
| Display Value (g)        |  |
| Nominal Test Value (g)   | Maximum Difference of Center Value (g) |
| 100.0000                 | 0.0001                                 |

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116,117 of 138

This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25018253  
F3-011-05/12-23

page 3 of 3



@clcalibration

CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION

MEASUREMENT RESULTS : (X) without adjustment ( ) adjustment

### CALIBRATION DATA

#### 1. Error of indications

| Nominal Test Value<br>(g) | Conventional mass<br>(g) | Display Value<br>(g) | Error of<br>Balance (g) | Uncertainty<br>$\pm$ (mg) | Coverage factor <i>k</i> |
|---------------------------|--------------------------|----------------------|-------------------------|---------------------------|--------------------------|
| Unload                    | 0.0000                   | 0.0000               | 0.0000                  | 0.06                      | 2.00                     |
| 0.1000                    | 0.1000                   | 0.1000               | 0.0000                  | 0.14                      | 2.00                     |
| 0.5000                    | 0.5000                   | 0.5000               | 0.0000                  | 0.15                      | 2.00                     |
| 1.0000                    | 1.0000                   | 1.0001               | +0.0001                 | 0.15                      | 2.00                     |
| 2.0000                    | 2.0000                   | 2.0001               | +0.0001                 | 0.15                      | 2.00                     |
| 5.0000                    | 5.0000                   | 5.0000               | 0.0000                  | 0.15                      | 2.00                     |
| 10.0000                   | 10.0000                  | 10.0001              | +0.0001                 | 0.15                      | 2.00                     |

#### 2. Repeatability of indications

| Nominal Test Value (g) | Standard Deviation of Reading (g) |
|------------------------|-----------------------------------|
| 200.0000               | 0.00004                           |

#### 3. Effect of eccentric application of a load on the indication

| Nominal Test Value (g) | Display Value (g) |            |            |            |            | Maximum Difference of<br>Center Value (g) |
|------------------------|-------------------|------------|------------|------------|------------|---|
|                        | Position 1        | Position 2 | Position 3 | Position 4 | Position 5 |   |
| 100.0000               | 99.9999           | 100.0001   | 99.9999    | 99.9998    | 99.9998    | 0.0002                                    |

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116 of 138

This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25018254

F3-011-05/12-23

Certificate No. Q25018254

F3-011-05/12-23

## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : BALANCE  
MANUFACTURER : METTLER TOLEDO  
MODEL / TYPE : MS204TS/00  
SERIAL NO. : B935191252[LA-002]  
LOCATION SITE : LABORATORY - BALANCE ROOM  
DATE OF CALIBRATION : 27 February 2025

#### ENVIRONMENT CONDITIONS :

Temperature : 23 °C to 24 °C

Relative Humidity : 49 % to 51 %

#### PROCEDURE USED :

This instrument was calibrated under procedure No. W1-305-46 based on EURAMET cg-18 Version 4.0 (11/2015).

The calibration was performed by Comparison with Weight Set which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

Weight Set, Mettler Toledo Class E2 S/N. 158850.

#### TRACEABILITY :

The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).

Certificate No. MM-0165-23, Due Date 21 December 2025.

#### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95%. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"





## Certificate of Calibration

Certificate Number : SPR25050011-1Page : 1 of 3

Customer : ENVIRONMENTAL MEASUREMENTS CO., LTD.  
5/45 Baan Klang Krung Biz Town, Soi Srinagarindra 46/1 (Pramote),  
Nongbon Sub-district, Prawet District, Bangkok 10250

|                          |   |
|--------------------------|---|
| Equipment Name           | : Soil Hydrometer                           |
| Manufacturer             | : Precision                                 |
| Model                    | : ASTM 152H                                 |
| Serial Number            | : 061                                       |
| ID. Number               | : N/A                                       |
| Environmental Conditions |   |
| Ambient Temperature      | : 23 °C ± 2 °CReceived Date : 02 May 2025   |
| Relative Humidity        | : 50 % ± 15 %Calibration Date : 10 May 2025 |
| Location of Calibration  | : In-LabRecommend Due Date : N/A            |
| Calibration Procedure    | : SP-CPM-04-14Date of Issue : 11 May 2025   |

### Method of Calibration

This certifies that the above instrument was calibrated in compliance with the calibration system requirement of ISO/IEC 17025:2017 in accordance with reference procedure. Standards used to perform this calibration are certified by to NIST or equivalent, National metrology institute, Natural physical constants, consensus standards. The result reported herein apply only to the calibration of the item described above as received. Our decision rule is to contact the customer if the item pass and fail calibration when the results include the uncertainties and the customer must determine if the results meets their needs.

The calibration certificate shall not be reproduced except in full, without written approval of SP Metrology System (Thailand).

Calibrated by :



## Calibration Report

Certificate Number : SPR25050011-1Page : 2 of 3

### Reference Standards

| Equipment Name               | Model            | Serial No.      | Certificate No. | Due. Date   |
|------------------------------|------------------|-----------------|-----------------|-------------|
| Digital Micrometer           | 293-821-30       | 45121126        | SPR25020035-6   | 22 Feb 2026 |
| Electronic Balance           | N/A              | 14246789        | SPR24090254-10  | 02 Oct 2025 |
| Barometer                    | MHB-382SD        | AJ52188         | SPR25020035-8   | 26 Feb 2026 |
| Standard Weight Ring         | N/A              | N/A             | SPR24110445-33  | 26 Dec 2025 |
| Digital Thermometer With PRT | GT11/3850-40-392 | 08000098/100288 | SPR24060233-5   | 27 Jun 2025 |

### Traceability

This certification is traceable to the International System of Unit maintained at :  
SP Metrology - SP Metrology system (Thailand) Co.Ltd.



## Result of Calibration

Certificate Number : SPR25050011-1 Page : 3 of 3

Range : -5 to 60 g/ml Resolution : 1 g/ml Accuracy (±) : 1 g/ml

Hydrometer Measurement @ 20 °C Unit : g/ml

| Standard Value | UUC Reading | Error   | Uncertainty ( ± ) |
|----------------|-------------|---------|-------------------|
| 0.3380         | 0           | -0.3380 | 0.23              |
| 30.1943        | 30          | -0.1943 | 0.23              |
| 60.1249        | 60          | -0.1249 | 0.23              |

### Note:

The result of calibration was found accurate as show on date and place of calibration only.  
This Certificate is not certified for any commercial transaction.

### Measurement Uncertainty

The reported uncertainty of measurement is the expanded uncertainty obtained by multiplying the standard uncertainty with the coverage factor  $k = 2$ , providing a level of confidence approximately 95%.  
- End of Certificate -

69/29 Moo 1 Klongsi Klongluang Pathumthani 12120 ( Thailand ) Tel: (662) 193-2220 5 คล้าย www.สอบเทียบเครื่องมือวัด.com



ที่ อก ๐๑๑๐(๑)/ ๑ ๔ ๙ ๑

กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๔ กุมภาพันธ์ ๒๕๖๔

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ยูนิเด็ค แอนาไลส์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ด้อยค่า/เปลี่ยนแปลงบุคลากร และขอคืนสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน  
ลงวันที่ ๑๘ กุมภาพันธ์ ๒๕๖๔

ตามคำขอที่อ้างถึง บริษัท ยูนิเด็ค แอนาไลส์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด  
ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๑๔๕๕ สถานที่ตั้งเลขที่ ๓ ซอยอุดมสุข ๔๑ ถนนสุขุมวิท  
แขวงบางจาก เขตพระโขนง กรุงเทพมหานคร ขอยกเลิกบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน  
จำนวน ๓ ราย ได้แก่

ทะเบียนเลขที่ ๖-๑๔๕๕-๖-๐๐๕๘  
ทะเบียนเลขที่ ๖-๑๔๕๕-๖-๐๑๗๐  
ทะเบียนเลขที่ ๖-๑๔๕๕-๖-๐๑๘๘

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและพัฒนายุทธศาสตร์โรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@dilw.go.th



UNITED ANALYST AND ENGINEERING  
CONSULTANT COMPANY LIMITED



“อุตสาหกรรมก้าวหน้า ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



๓๖) นายนาเคนทร์...

[illegible]

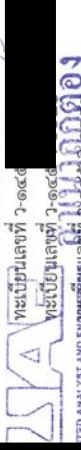
Page

สิ่งที่ส่งมาด้วย ๒

เอกสารแนบท้ายหนังสือตอบรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
บริษัท ยูนิเด็ค เอนเนอร์จีส แอนด์ เอ็นจิเนียริง คอมพิวเตอร์ จำกัด เลขทะเบียน ๖-๑๔๔-  
ที่ อก ๐๓๑๐(๑)/ ๑ ๐ ๘ ๙ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๕

ข. เจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑๔๑ ราย

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| ๓๗ | ๓๗ | ๑๔๔๕-จ-๐๐๓๗ | ทะเบียนเลขที่ ๖-๑๔๔๕-จ-๐๐๓๗ |
| ๓๘ | ๓๘ | ๑๔๔๕-จ-๐๐๓๘ | ทะเบียนเลขที่ ๖-๑๔๔๕-จ-๐๐๓๘ |
| ๓๙ | ๓๙ | ๑๔๔๕-จ-๐๐๓๙ | ทะเบียนเลขที่ ๖-๑๔๔๕-จ-๐๐๓๙ |
| ๔๐ | ๔๐ | ๑๔๔๕-จ-๐๐๔๐ | ทะเบียนเลขที่ ๖-๑๔๔๕-จ-๐๐๔๐ |



UAE  
UNITED ANALYST AND ENGINEERING  
CONSULTANT COMPANY LIMITED

นางสาวนิภาพร...



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UNITED ANALYST AND ENGINEERING  
CONSULTANT COMPANY LIMITED

นางสาวนิภาพร...



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๑๑๓) นางสาวปติยา...

[illegible]

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๗๔) นายนั้นทวดนี้...

เอกสารแนบท้ายหนังสือออายูรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
บริษัท ยูนิเทค แอนาไลติกส์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด เลขทะเบียน ๖-๑๕๕  
ที่ อก ๐๓๑๐(๑) / ๑ ๐ ๘ ๘ ๙ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๕

ขอประชาสัมพันธ์ที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๕๓ รายการ

แนบท้าย จำนวน 46 รายการ

| ลำดับ | สารเคมี                   | วิธีวิเคราะห์  |
|-------|---------------------------|--|
| 1     | Aldrin                    | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 2     | Arsenic                   | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>         |
| 3     | Barium                    | Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>  |
| 4     | α-BHC                     | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 5     | β-BHC                     | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 6     | δ-BHC                     | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 7     | γ-BHC                     | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 8     | Biochemical Oxygen Demand | 1) 5-Day BOD Test, Azide Modification Method <sup>(4)</sup><br>2) 5-Day BOD Test, Membrane Electrode Method <sup>(4)</sup>                                       |
| 9     | Cadmium                   | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                                 |
| 10    | Chemical Oxygen Demand    | 1) Closed Reflux, Titrimetric Method <sup>(4)</sup><br>2) Closed Reflux, Colorimetric Method <sup>(4)</sup><br>3) Open Reflux, Titrimetric Method <sup>(4)</sup> |
| 11    | Chlordane                 | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 12    | Chromium                  | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                                 |
| 13    | Color                     | ADMI Weighted-Ordinate Spectrophotometric Method <sup>(4)</sup>  |
| 14    | Copper                    | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                                 |
| 15    | Cyanide                   | 1) Distillation, Colorimetric Method <sup>(4)</sup><br>2) Total Cyanide after Distillation, by Flow Injection Analysis Method <sup>(4)</sup>                     |
| 16    | o,p'-DDT                  | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 17    | 4,4'-DDD                  | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 18    | 4,4'-DDE                  | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 19    | 4,4'-DDT                  | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 20    | Dieldrin                  | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 21    | Endosulfan I              | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 22    | Endosulfan II             | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 23    | Endosulfan sulfate        | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 24    | Endrin                    | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |

25 Endrin aldehyde...

|     |                            |
|-----|----------------------------|
| ๑๑๐ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๐ |
| ๑๑๑ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๑ |
| ๑๑๒ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๒ |
| ๑๑๓ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๓ |
| ๑๑๔ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๔ |
| ๑๑๕ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๕ |
| ๑๑๖ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๖ |
| ๑๑๗ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๗ |
| ๑๑๘ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๘ |
| ๑๑๙ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๖๙ |
| ๑๒๐ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๐ |
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| ๑๒๔ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๔ |
| ๑๒๕ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๕ |
| ๑๒๖ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๖ |
| ๑๒๗ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๗ |
| ๑๒๘ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๘ |
| ๑๒๙ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๗๙ |
| ๑๓๐ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๐ |
| ๑๓๑ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๑ |
| ๑๓๒ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๒ |
| ๑๓๓ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๓ |
| ๑๓๔ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๔ |
| ๑๓๕ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๕ |
| ๑๓๖ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๖ |
| ๑๓๗ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๗ |
| ๑๓๘ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๘ |
| ๑๓๙ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๘๙ |
| ๑๔๐ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๙๐ |
| ๑๔๑ | ทะเบียนเลขที่ ๖-๑๕๕-จ-๐๑๙๑ |

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| ลำดับ | สารมลพิษ                | วิธีการตรวจ  |
|-------|-------------------------|--|
| 25    | Endrin aldehyde         | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 26    | Formaldehyde            | Distillation, Colorimetric Method <sup>(2)</sup>   |
| 27    | Free Chlorine           | 1) Iodometric Method <sup>(4)</sup><br>2) DPD Ferrous Titrimetric Method <sup>(4)</sup>  |
| 28    | Heptachlor              | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 29    | Heptachlor Epoxide      | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 30    | Hexavalent Chromium     | Colorimetric Method <sup>(4)</sup>   |
| 31    | Lead                    | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                         |
| 32    | Manganese               | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                         |
| 33    | Mercury                 | Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(4)</sup>  |
| 34    | Methoxychlor            | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>  |
| 35    | Nickel                  | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                         |
| 36    | Oil & Grease            | 1) Liquid-Liquid, Partition-Gravimetric Method <sup>(4)</sup><br>2) Soxhlet Extraction Method <sup>(4)</sup>   |
| 37    | pH                      | Electrometric Method <sup>(4)</sup>  |
| 38    | Phenols                 | 1) Distillation, Chloroform Extraction Method <sup>(4)</sup><br>2) Distillation, Direct Photometric Method <sup>(4)</sup>                                |
| 39    | Selenium                | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> |
| 40    | Sulfide                 | 1) Iodometric Method <sup>(4)</sup><br>2) Methylene Blue Method <sup>(4)</sup>   |
| 41    | Temperature             | Laboratory and Field Methods <sup>(4)</sup>  |
| 42    | Total Dissolved Solids  | Dried at 180 °C <sup>(4)</sup>   |
| 43    | Total Kjeldahl Nitrogen | Semi-Micro-Kjeldahl Method <sup>(4)</sup>  |
| 44    | Total Suspended Solids  | Dried from 103 to 105 °C <sup>(4)</sup>  |
| 45    | Trivalent Chromium      | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                         |
| 46    | Zinc                    | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>                         |

น้ำใต้ดิน...

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## น้ำใต้ดิน จำนวน 126 รายการ

| ลำดับ | สารมลพิษ             | วิธีการตรวจ   |
|-------|----------------------|---|
| 1     | Acenaphthene         | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 2     | Acetone              | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 3     | Aldrin               | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 4     | Anthracene           | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 5     | Antimony             | Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>   |
| 6     | Arsenic              | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>            |
| 7     | Atrazine             | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 8     | Barium               | Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>   |
| 9     | Benz(a)anthracene    | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 10    | Benzene              | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 11    | Benzo(b)fluoranthene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 12    | Benzo(k)fluoranthene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 13    | Benzoic acid         | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |

14 Benzo(a)pyrene...



| ลำดับ | สารมลพิษ              | วิธีวิเคราะห์  |
|-------|-----------------------|--|
| 29    | Chlorobenzene         | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 30    | Chlorodibromomethane  | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 31    | Chloroform            | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 32    | 2-Chlorophenol        | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 33    | Chromium              | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(a)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup>   |
| 34    | Chromium (III)        | 1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation <sup>(a)</sup><br>2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>(a)</sup> |
| 35    | Chromium (VI)         | Colorimetric Method <sup>(a)</sup>   |
| 36    | Chrysene              | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                  |
| 37    | Cyanide               | Distillation, Colorimetric Method <sup>(a)</sup>   |
| 38    | 2,4-D                 | Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>  |
| 39    | DDD                   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                  |
| 40    | DDE                   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                  |
| 41    | DDT                   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                  |
| 42    | Dibenz(a,h)anthracene | 1) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>               |

43 Di-n-butyl phthalate...

| ลำดับ | สารมลพิษ                   | วิธีวิเคราะห์  |
|-------|----------------------------|--|
| 14    | Benzo(a)pyrene             | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                    |
| 15    | Benzo(g,h,i)perylene       | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                    |
| 16    | Beryllium                  | Digestion, Inductively Coupled Plasma Method <sup>(a)</sup>  |
| 17    | Bis(2-chloroethyl)ether    | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 18    | Bis(2-ethylhexyl)phthalate | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 19    | Bromodichloromethane       | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 20    | Bromoform                  | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 21    | Butanol                    | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 22    | Butyl benzyl phthalate     | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 23    | Cadmium                    | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(a)</sup><br>2) Digestion, Electrothermal Atomic Absorption Spectrometric Method <sup>(a)</sup>                                   |
| 24    | Carbazole                  | 3) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup><br>Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                               |
| 25    | Carbon disulfide           | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 26    | Carbon tetrachloride       | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 27    | Chlordane                  | 1) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 28    | p-Chloroaniline            | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |

29 Chlorobenzene...



| ลำดับ | สารเคมี                  | วิธีวิเคราะห์   |
|-------|--------------------------|---|
| 61    | 2,4-Dinitrotoluene       | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 62    | 2,6-Dinitrotoluene       | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 63    | Di-n-Octyl phthalate     | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 64    | Endosulfan               | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 65    | Endrin                   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 66    | Ethylbenzene             | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 67    | Fluoranthene             | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 68    | Fluorene                 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 69    | Heptachlor               | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 70    | Heptachlor epoxide       | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 71    | Hexachlorobenzene        | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 72    | Hexachloro-1,3-butadiene | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 73    | n-Hexane                 | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |

74 α-HCH...

| ลำดับ | สารเคมี                    | วิธีวิเคราะห์   |
|-------|----------------------------|---|
| 43    | Di-n-butyl phthalate       | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 44    | 1,2-Dichlorobenzene        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 45    | 1,3-Dichlorobenzene        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 46    | 1,4-Dichlorobenzene        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 47    | 3,3'-Dichlorobenzidine     | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 48    | 1,1-Dichloroethane         | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 49    | 1,2-Dichloroethane         | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 50    | 1,1-Dichloroethylene       | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 51    | cis-1,2-Dichloroethylene   | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 52    | trans-1,2-Dichloroethylene | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 53    | 2,4-Dichlorophenol         | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 54    | 1,2-Dichloropropane        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 55    | 1,3-Dichloropropane        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 56    | 1,3-Dichloropropene        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 57    | Dieldrin                   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 58    | Diethyl phthalate          | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 59    | 2,4-Dimethylphenol         | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 60    | 2,4-Dinitrophenol          | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |

61 2,4-Dinitrotoluene...

| ลำดับ | สารเคมี   | วิธีวิเคราะห์   |
|-------|---|---|
| 87    | Methylene chloride  | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 88    | 2-Methylphenol  | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 89    | 2-Methylnaphthalene   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 90    | Methyl tert-butyl ether   | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 91    | Naphthalene   | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 92    | Nickel  | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(a)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup>                                    |
| 93    | Nitrobenzene  | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 94    | N-Nitrosodiphenylamine  | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 95    | N-Nitrosodi-n-propylamine   | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 96    | Polychlorinated Biphenyls<br>- PCB 1016<br>- PCB 1221<br>- PCB 1232<br>- PCB-1242<br>- PCB-1248<br>- PCB-1254<br>- PCB-1260 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |
| 97    | Pentachlorophenol   | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 98    | pH  | Electrometric Method <sup>(a)</sup>   |
| 99    | Phenanthrene  | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup> |

| ลำดับ | สารเคมี                   | วิธีวิเคราะห์  |
|-------|---------------------------|--|
| 74    | α-HCH                     | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                |
| 75    | β-HCH                     | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                |
| 76    | γ-HCH                     | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                |
| 77    | Hexachlorocyclopentadiene | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 78    | Hexachloroethane          | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 79    | Indeno(1,2,3-cd)pyrene    | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                |
| 80    | Isophorone                | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>   |
| 81    | Lead                      | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(a)</sup><br>2) Digestion, Electrothermal Atomic Absorption Spectrometric Method <sup>(a)</sup>   |
| 82    | Manganese                 | 3) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup><br>1) Digestion, Direct Air-Acetylene Flame Method <sup>(a)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> |
| 83    | Mercury                   | Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(a)</sup>  |
| 84    | Methanol                  | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |
| 85    | Methoxychlor              | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>                                |
| 86    | Methyl bromide            | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(a)</sup>  |

| ลำดับ | สารมลพิษ               | วิธีวิเคราะห์  |
|-------|------------------------|--|
| 116   | 2,4,5-Trichlorophenol  | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 117   | 2,4,6-Trichlorophenol  | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 118   | 1,3,5-Trimethylbenzene | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 119   | Vanadium               | Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>  |
| 120   | Vinyl acetate          | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 121   | Vinyl chloride         | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 122   | m-Xylene               | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 123   | o-Xylene               | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 124   | p-Xylene               | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 125   | Xylene (Total)         | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>  |
| 126   | Zinc                   | 1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> |

อากาศเสีย (ปล่อยระบาย) จำนวน 25 รายการ

| ลำดับ | สารมลพิษ        | วิธีวิเคราะห์  |
|-------|-----------------|--|
| 1     | Antimony        | Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(5)</sup>   |
| 2     | Arsenic         | 1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(5)</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(5)</sup> |
| 3     | Cadmium         | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(5)</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(5)</sup>                         |
| 4     | Carbon Monoxide | Instrumental Analyzer Method <sup>(5)</sup>  |
| 5     | Chlorine        | Isokinetic Sampling, Ion Chromatographic Method <sup>(5)</sup>   |
| 6     | Chromium        | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(5)</sup>  |

ฉบับที่ ๑

Chromium (ต่อ)...

| ลำดับ | สารมลพิษ                                   | วิธีวิเคราะห์   |
|-------|--|---|
| 100   | Phenol                                     | 1) Distillation, Chloroform Extraction Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>           |
| 101   | Pyrene                                     | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 102   | Selenium                                   | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>            |
| 103   | Silver                                     | Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>   |
| 104   | Styrene                                    | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 105   | 1,1,2,2-Tetrachloroethane                  | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 106   | Tetrachloroethylene                        | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 107   | Toluene                                    | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 108   | Toxaphene                                  | 1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup><br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup> |
| 109   | TPH (C <sub>5</sub> - C <sub>6</sub> )     | 1) Purge and Trap, Gas Chromatographic Method <sup>(12,22)</sup><br>2) Purge and Trap, Gas Chromatographic/Mass spectrometric Method <sup>(12,27)</sup>             |
| 110   | TPH (C <sub>5,8</sub> - C <sub>6</sub> )   | Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(9,22)</sup>  |
| 111   | TPH (C <sub>5,16</sub> - C <sub>35</sub> ) | Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(9,22)</sup>  |
| 112   | 1,2,4-Trichlorobenzene                     | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 113   | 1,1,1-Trichloroethane                      | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 114   | 1,1,2-Trichloroethane                      | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |
| 115   | Trichloroethylene                          | Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>   |

ฉบับที่ ๑

116 2,4,5-Trichlorophenol...



| ลำดับ | สารเคมี                     | วิธีวิเคราะห์   |
|-------|-----------------------------|---|
| 23    | Total Suspended Particulate | Isokinetic Sampling, Gravimetric Method <sup>[5]</sup>  |
| 24    | Vanadium                    | Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>  |
| 25    | Xylene                      | 1) Bag Sampling, Gas Chromatographic Method <sup>[5]</sup><br>2) Adsorption Sampling, Gas Chromatographic Method <sup>[5]</sup> |

สิ่งปลูกสรหรือวัตถุที่ไม่ใช่แล้ว จำนวน 35 รายการ

| ลำดับ | สารเคมี   | วิธีวิเคราะห์   |
|-------|-----------|---|
| 1     | Aldrin    | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[3,9,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup>  |
| 2     | Antimony  | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[3,6,14]</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup>  |
| 3     | Arsenic   | 1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[3,6,16]</sup><br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[3,6,14]</sup><br>3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[7,16]</sup>   |
| 4     | Barium    | 4) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup><br>1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[3,6,14]</sup>  |
| 5     | Beryllium | 2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup><br>1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[3,6,14]</sup>  |
| 6     | Cadmium   | 2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup><br>1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>[3,6,13]</sup><br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[3,6,14]</sup>  |
| 7     | Chlordane | 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>[7,13]</sup><br>4) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup><br>1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[3,9,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup> |

๘ Chromium...

| ลำดับ | สารเคมี            | วิธีวิเคราะห์  |
|-------|--------------------|--|
| 6     | Chromium (ห่อ)     | 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>  |
| 7     | Cobalt             | Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>   |
| 8     | Copper             | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>[5]</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>                         |
| 9     | Cresol             | Absorption Sampling, Gas Chromatographic Method <sup>[5]</sup>   |
| 10    | Dioxins/Furans     | Isokinetic Sampling <sup>[5]</sup>   |
| 11    | Hydrogen Chloride  | Isokinetic Sampling, Ion Chromatographic Method <sup>[5]</sup>   |
| 12    | Hydrogen Fluoride  | Isokinetic Sampling, Ion Chromatographic Method <sup>[5]</sup>   |
| 13    | Hydrogen Sulfide   | Absorption Sampling, Iodometric Method <sup>[5]</sup>  |
| 14    | Lead               | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>[5]</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>                         |
| 15    | Manganese          | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>[5]</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>                         |
| 16    | Mercury            | Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[5]</sup>   |
| 17    | Nickel             | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>[5]</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>                         |
| 18    | Opacity            | Ringelmann's Method <sup>[1]</sup>   |
| 19    | Oxides of Nitrogen | 1) Absorption Sampling, Phenoldisulfonic acid Method <sup>[5]</sup><br>2) Instrumental Analyzer Method <sup>[5]</sup>  |
| 20    | Selenium           | 1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[5]</sup><br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup> |
| 21    | Sulfur Dioxide     | 1) Absorption Sampling, Barium-Thorium Titrimetric Method <sup>[5]</sup><br>2) Instrumental Analyzer Method <sup>[5]</sup>   |
| 22    | Sulfuric Acid      | Isokinetic Sampling, Barium-Thorium Titrimetric Method <sup>[5]</sup>  |

23 Total Suspended Particulate...





| ลำดับ | สารเคมี  | วิธีวิเคราะห์   |
|-------|--|---|
| 27    | Polychlorinated Biphenyls (ดอ)<br>- 2,2',3,4,4',5'-<br>Hexachlorobiphenyl<br>- 2,2',3,4,5,5'-<br>Hexachlorobiphenyl<br>- 2,2',3,5,5',6'-<br>Hexachlorobiphenyl<br>- 2,2',4,4',5,5'-<br>Hexachlorobiphenyl<br>- 2,2',3,3',4,4',5'-<br>Heptachlorobiphenyl<br>- 2,2',3,4,4',5,5'-<br>Heptachlorobiphenyl<br>- 2,2',3,4,4',5',6'-<br>Heptachlorobiphenyl<br>- 2,2',3,4',5,5',6'-<br>Heptachlorobiphenyl<br>- 2,2',3,3',4,4',5,5',6'-<br>Nonachlorobiphenyl<br>Pentachlorophenol | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(3.9,28)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup><br>Electrometric Method <sup>(31,32)</sup><br>1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(3.6,21)</sup><br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6,14)</sup><br>3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7,21)</sup><br>4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup><br>1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6,14)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup><br>1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6,14)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup> |
| 28    | pH   |   |
| 29    | Selenium   |   |
| 30    | Silver   |   |
| 31    | Thallium   |   |

32 Toxaphene...

| ลำดับ | สารเคมี  | วิธีวิเคราะห์  |
|-------|--|--|
| 22    | Mercury (ดอ)   | 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>(20)</sup>   |
| 23    | Methoxychlor   | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3.9,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>   |
| 24    | Molybdenum   | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6,14)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>   |
| 25    | Nickel   | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3.6,15)</sup><br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6,14)</sup><br>3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup><br>4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup> |
| 26    | Polychlorinated Biphenyls<br>- Aroclor 1016<br>- Aroclor 1221<br>- Aroclor 1232<br>- Aroclor 1242<br>- Aroclor 1248<br>- Aroclor 1254<br>- Aroclor 1260<br>- 2-Chlorobiphenyl<br>- 2,3-Dichlorobiphenyl<br>- 2,2',5-Trichlorobiphenyl<br>- 2,4',5-Trichlorobiphenyl<br>- 2,2',3,5'-Tetrachlorobiphenyl<br>- 2,2',5,5'-Tetrachlorobiphenyl<br>- 2,3',4,4'-Tetrachlorobiphenyl<br>- 2,2',3,4,5'-<br>Pentachlorobiphenyl<br>- 2,2',4,5,5'-<br>Pentachlorobiphenyl<br>- 2,3,3',4',6'-<br>Pentachlorobiphenyl | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3.9,24)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,24)</sup>   |



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Polychlorinated Biphenyls (ดอ)...

| ลำดับ | สารเคมี              | วิธีวิเคราะห์  |
|-------|----------------------|--|
| 4     | Anthracene (ตบ)      | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |
| 5     | Antimony             | Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup>                             |
| 6     | Arsenic              | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7.16)</sup>  |
| 7     | Atrazine             | 2) Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup>                          |
| 8     | Barium               | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup>    |
| 9     | Benz(a)anthracene    | Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup>                             |
| 10    | Benzene              | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.25)</sup>                    |
| 11    | Benzo(b)fluoranthene | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |
| 12    | Benzo(k)fluoranthene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>        |
| 13    | Benzoic acid         | 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup> |
| 14    | Benzo(a)pyrene       | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.25)</sup>                    |
| 15    | Benzo(g,h,i)perylene | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |
| 16    | Beryllium            | 1) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |

17 Bis(2-chloroethyl)ether...

| ลำดับ | สารเคมี           | วิธีวิเคราะห์  |
|-------|-------------------|--|
| 32    | Toxaphene         | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3.23)</sup>  |
| 33    | Trichloroethylene | 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.23)</sup>  |
| 34    | Vanadium          | 1) Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(3.12.27)</sup>        |
| 35    | Zinc              | 2) Waste Extraction, Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(3.11.27)</sup> |
|       |                   | 3) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>                            |
|       |                   | 4) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup>                     |
|       |                   | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6.14)</sup>                          |
|       |                   | 2) Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup>  |
|       |                   | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3.6.15)</sup>               |
|       |                   | 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3.6.14)</sup>                          |
|       |                   | 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7.15)</sup>                                   |
|       |                   | 4) Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup>  |

ดิบ จำนวน 125 รายการ

| ลำดับ | สารเคมี      | วิธีวิเคราะห์  |
|-------|--------------|--|
| 1     | Acenaphthene | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.25)</sup>                    |
| 2     | Acetone      | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |
| 3     | Aldrin       | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>           |
| 4     | Anthracene   | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.23)</sup>                    |
|       |              | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |
|       |              | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.23)</sup>                    |
|       |              | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup> |
|       |              | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10.23)</sup>                    |

Anthracene (ตบ)...



| ลำดับ | สารเคมี               | วิธีวิเคราะห์  |
|-------|-----------------------|--|
| 33    | Chromium              | 1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>  |
| 34    | Chromium (III)        | 1) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation <sup>(7,8,15,17)</sup><br>2) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation <sup>(7,8,14,17)</sup><br>Alkaline Digestion, Colorimetric Method <sup>(8,17)</sup> |
| 35    | Chromium (VI)         | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,25)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 36    | Chrysene              | Extraction, Distillation, Colorimetric Method <sup>(29,30)</sup><br>Ultrasonic Extraction, Gas Chromatographic Method <sup>(26)</sup>  |
| 37    | Cyanide               | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>  |
| 38    | 2,4-D                 | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 39    | DDD                   | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 40    | DDE                   | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 41    | DDT                   | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 42    | Dibenz(a,h)anthracene | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,25)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 43    | Di-n-butyl phthalate  | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 44    | 1,2-Dichlorobenzene   | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>   |

| ลำดับ | สารเคมี                    | วิธีวิเคราะห์   |
|-------|----------------------------|---|
| 17    | Bis(2-chloroethyl)ether    | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 18    | Bis(2-ethylhexyl)phthalate | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 19    | Bromodichloromethane       | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 20    | Bromoform                  | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 21    | Butanol                    | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 22    | Butyl benzyl phthalate     | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 23    | Cadmium                    | 1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>                                 |
| 24    | Carbazole                  | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 25    | Carbon disulfide           | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 26    | Carbon tetrachloride       | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup> |
| 27    | Chlordane                  | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>             |
| 28    | p-Chloroaniline            | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 29    | Chlorobenzene              | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 30    | Chlorodibromomethane       | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 31    | Chloroform                 | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 32    | 2-Chlorophenol             | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |



| ลำดับ | สารเคมี              | วิธีวิเคราะห์  |
|-------|----------------------|--|
| 58    | Diethyl phthalate    | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 59    | 2,4-Dimethylphenol   | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 60    | 2,4-Dinitrophenol    | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 61    | 2,4-Dinitrotoluene   | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 62    | 2,6-Dinitrotoluene   | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 63    | Di-n-Octyl phthalate | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>  |
| 64    | Endosulfan           | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>                    |
| 65    | Endrin               | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>                    |
| 66    | Ethylbenzene         | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>        |
| 67    | Fluoranthene         | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,25)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>                    |
| 68    | Fluorene             | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,25)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>                    |
| 69    | Heptachlor           | 1) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,23)</sup> |
| 70    | Heptachlor epoxide   | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>  |

Heptachlor epoxide (คต)...  
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| ลำดับ | สารเคมี                    | วิธีวิเคราะห์   |
|-------|----------------------------|---|
| 45    | 1,3-Dichlorobenzene        | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 46    | 1,4-Dichlorobenzene        | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 47    | 3,3'-Dichlorobenzidine     | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 48    | 1,1-Dichloroethane         | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup> |
| 49    | 1,2-Dichloroethane         | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup> |
| 50    | 1,1-Dichloroethylene       | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup> |
| 51    | cis-1,2-Dichloroethylene   | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup> |
| 52    | trans-1,2-Dichloroethylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup> |
| 53    | 2,4-Dichlorophenol         | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>   |
| 54    | 1,2-Dichloropropane        | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 55    | 1,3-Dichloropropane        | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 56    | 1,3-Dichloropropene        | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>  |
| 57    | Dieldrin                   | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>             |

58 Diethyl phthalate...  
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| ลำดับ | สารมลพิษ                                    | วิธีวิเคราะห์   |
|-------|---|---|
| 83    | Mercury                                     | 1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[19]</sup><br>2) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>[20]</sup> |
| 84    | Methanol                                    | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[13,27]</sup>  |
| 85    | Methoxychlor                                | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>               |
| 86    | Methyl bromide                              | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[13,27]</sup>  |
| 87    | Methylene chloride                          | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[13,27]</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>[11,27]</sup>   |
| 88    | 2-Methylphenol                              | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 89    | 2-Methylnaphthalene                         | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 90    | Methyl tert-butyl ether                     | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[13,27]</sup>  |
| 91    | Naphthalene                                 | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>               |
| 92    | Nickel                                      | 1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>[7,15]</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup>                                   |
| 93    | Nitrobenzene                                | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 94    | N-Nitrosodiphenylamine                      | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 95    | N-Nitrosodi-n-propylamine                   | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 96    | Polychlorinated Biphenyls<br>- Aroclor 1016 | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,24]</sup>   |

Polychlorinated Biphenyls(ตอ)...  
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| ลำดับ | สารมลพิษ                  | วิธีวิเคราะห์   |
|-------|---------------------------|---|
| 70    | Heptachlor epoxide (ตอ)   | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>  |
| 71    | Hexachlorobenzene         | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup> |
| 72    | Hexachloro-1,3-butadiene  | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[13,27]</sup>  |
| 73    | n-Hexane                  | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[13,27]</sup>  |
| 74    | α-HCH                     | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup> |
| 75    | β-HCH                     | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup> |
| 76    | γ-HCH                     | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup> |
| 77    | Hexachlorocyclopentadiene | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 78    | Hexachloroethane          | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 79    | Indeno(1,2,3-cd)pyrene    | 1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup><br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup> |
| 80    | Isophorone                | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>   |
| 81    | Lead                      | 1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>[7,15]</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup>                     |
| 82    | Manganese                 | 1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>[7,15]</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup>                     |

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83 Mercury...

**PURGE AND TRAP**

97 Pentachlorophenol...



| ลำดับ | สารมลพิษ | วิธีวิเคราะห์   |
|-------|----------|---|
| 125   | Zinc     | 1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7.15)</sup><br>2) Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup> |

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|-------|------------------------|---|
| 111   | 1,2,4-Trichlorobenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>  |
| 112   | 1,1,1-Trichloroethane  | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>  |
| 113   | 1,1,2-Trichloroethane  | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>  |
| 114   | Trichloroethylene      | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup> |
| 115   | 2,4,5-Trichlorophenol  | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup>   |
| 116   | 2,4,6-Trichlorophenol  | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10.28)</sup>   |
| 117   | 1,3,5-Trimethylbenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>  |
| 118   | Vanadium               | Digestion, Inductively Coupled Plasma Method <sup>(7.14)</sup>  |
| 119   | Vinyl acetate          | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>  |
| 120   | Vinyl chloride         | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup>  |
| 121   | m-Xylene               | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup> |
| 122   | o-Xylene               | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup> |
| 123   | p-Xylene               | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup> |
| 124   | Xylene (Total)         | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13.27)</sup><br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11.27)</sup> |



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