

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์ผลกระทบบึงแวดล้อม

ผลการทดสอบคุณภาพอากาศในปล่องระบาย

Request No. LA67-0333

Report No. 6703-0283

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ต.มาบยางพร อ.ปลวกแดง จ.ระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องหน่วยผลิตไอน้ำ (HRSG) #31  
SAMPLING DATE : 13/03/2024 SAMPLE NO. : 00694  
RECEIVED DATE : 19/03/2024 SAMPLING TIME : 10:15-10:45  
TESTED DATE : 19-21/03/2024 REPORTED DATE : 23/03/2024  
STACK DESCRIPTION @

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	101.00	°C	Operation Capacity :	41.32 MW
Air Velocity :	24.35	m/s	Oxygen Content :	14.39 %
Flow rate <sup>4</sup> :	421,272	Nm <sup>3</sup> /hr	Barometric Pressure :	750.25 mmHg
Moisture Content :	7.33	%	Atmospheric Temperature :	35.00 °C
Shape :	Circle		Carbon Dioxide :	3.75 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>4</sup>		STD	UNIT
			14.39 % O <sub>2</sub>	7 % O <sub>2</sub>		
Total Suspended Particulate (TSP)	Isokinetic, Gravimetric (U.S. EPA Method 5)	10:15-10:45	1.5 0.1755 <sup>@</sup>	3.2 -	60 <sup>1</sup> , 60 <sup>2</sup> , 20 <sup>3</sup> 1.30 <sup>3</sup>	mg/m <sup>3</sup> g/s

## REMARK:

- 1.<sup>1</sup> Notification of The Ministry of Industry B.E. 2547 (2004)
- 2.<sup>2</sup> Notification of The Ministry of Industry B.E. 2553 (2010)
- 3.<sup>3</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- 4.<sup>4</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- 5.<sup>@</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
6. Sampling By Mr. Nitchaphon Tonglor (ว-003-ค-0032)
7. GPS 47P 0727599, 1430985

Examined By.....

(Miss Apiradee Chuen-arom)

(ว-003-ค-0007)

23/03/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(Mr. Thongchai Boonsak)

(ว-003-ค-0012)

23/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL

WITHOUT THE WRITTEN APPROVAL LABORATORY

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องระบายมลพิษทางอากาศ HRSG #31 SAMPLE NO. : 03410-03411  
SAMPLING DATE : 13/03/2024 SAMPLING TIME : 10:15-10:45  
RECEIVED DATE : 13/03/2024 REPORTED DATE : 22/03/2024

STACK DESCRIPTION<sup>(a)</sup>

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	101.00	°C	Operation Capacity :	41.32 MW
Air Velocity :	24.35	m/s	Oxygen Content :	14.39 %
Flow rate <sup>(4)</sup> :	421,272	Nm <sup>3</sup> /hr	Barometric Pressure :	750.25 mmHg
Moisture Content :	7.33	%	Atmospheric Temperature :	35.00 °C
Shape :	Circle		Carbon Dioxide :	3.75 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>(4)</sup>		STD	UNIT
			14.39 % O <sub>2</sub>	7 % O <sub>2</sub>		
Sulfur Dioxide (SO <sub>2</sub> )	Instrumental Analyzer Method	10:15-10:45	<2.6	<5.6	52 <sup>(1)</sup> , 52 <sup>(2)</sup>	mg/m <sup>3</sup>
	(U.S. EPA Method 6C)		<1.0	<2.1	20 <sup>(1)</sup> , 20 <sup>(2)</sup> , 10 <sup>(3)</sup>	ppm
			<0.3043 <sup>(a)</sup>		1.70 <sup>(3)</sup>	g/s
Oxides of Nitrogen (NO <sub>x</sub> )	Instrumental Analyzer Method	10:15-10:45	19.6	41.8	226 <sup>(1)</sup> , 226 <sup>(2)</sup>	mg/m <sup>3</sup>
	(U.S. EPA Method 7E)		10.4	22.2	120 <sup>(1)</sup> , 120 <sup>(2)</sup> , 60 <sup>(3)</sup>	ppm
			2.2936 <sup>(a)</sup>		7.33 <sup>(3)</sup>	g/s

## REMARK:

- <sup>(1)</sup> Notification of The Ministry of Industry B.E. 2547 (2004)
- <sup>(2)</sup> Notification of The Ministry of Natural Resources and Environment B.E. 2553 (2010)
- <sup>(3)</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- <sup>(4)</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- Sampling By Mr. Nitchaphon Thonglor (ว-003-ค-0032)
- <sup>(a)</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
- GPS 47P 0727599, 1430985

Examined By.....

Thongchai Boonsak

(Mr. Thongchai Boonsak)

(ว-003-ค-0012)

22/03/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

Wanpen Lhaochindawat

(Mrs. Wanpen Lhaochindawat)

(ว-003-ค-0003)

22/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ต.มาบยางพร อ.ปลวกแดง จ.ระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องหน่วยผลิตไอน้ำ (HRSG) #32  
SAMPLING DATE : 13/03/2024  
RECEIVED DATE : 19/03/2024  
TESTED DATE : 19-21/03/2024  
STACK DESCRIPTION @

SAMPLE NO. : 00691  
SAMPLING TIME : 10:10-10:40  
REPORTED DATE : 23/03/2024

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	97.00	°C	Operation Capacity :	41.19 MW
Air Velocity :	21.62	m/s	Oxygen Content :	14.36 %
Flow rate <sup>/4</sup> :	380,062	Nm <sup>3</sup> /hr	Barometric Pressure :	750.25 mmHg
Moisture Content :	6.92	%	Atmospheric Temperature :	34.00 °C
Shape :	Circle		Carbon Dioxide :	3.76 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>/4</sup>		STD	UNIT
			14.36 % O <sub>2</sub>	7 % O <sub>2</sub>		
Total Suspended Particulate (TSP)	Isokinetic, Gravimetric (U.S. EPA Method 5)	10:10-10:40	0.3 0.0317 <sup>@</sup>	0.6 -	60 <sup>/1</sup> , 60 <sup>/2</sup> , 20 <sup>/3</sup> 1.30 <sup>/3</sup>	mg/m <sup>3</sup> g/s

## REMARK:

- <sup>/1</sup> Notification of The Ministry of Industry B.E. 2547 (2004)
- <sup>/2</sup> Notification of The Ministry of Industry B.E. 2553 (2010)
- <sup>/3</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- <sup>/4</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- <sup>@</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
- Sampling By Mr. Metee Sukprasert (ว-003-ค-0035)
- GPS 47P 0727622, 1431003

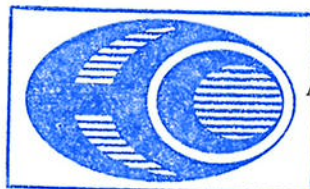
Examined By



(Miss Apiradee Chuen-arom)

(ว-003-ค-0007)

23/03/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By



(Mr. Thongchai Boonsak)

(ว-003-ค-0012)

23/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบางยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องระบายมลพิษทางอากาศ HRSG #32 SAMPLE NO. : 03412-03413  
SAMPLING DATE : 13/03/2024 SAMPLING TIME : 10:10-10:40  
RECEIVED DATE : 13/03/2024 REPORTED DATE : 22/03/2024

STACK DESCRIPTION<sup>(a)</sup>

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	97.00	°C	Operation Capacity :	41.19 MW
Air Velocity :	21.62	m/s	Oxygen Content :	14.36 %
Flow rate <sup>(4)</sup> :	380,062	Nm <sup>3</sup> /hr	Barometric Pressure :	750.25 mmHg
Moisture Content :	6.92	%	Atmospheric Temperature :	34.00 °C
Shape :	Circle		Carbon Dioxide :	3.76 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>(4)</sup>		STD	UNIT
			14.36 % O <sub>2</sub>	7 % O <sub>2</sub>		
Sulfur Dioxide (SO <sub>2</sub> )	Instrumental Analyzer Method	10:10-10:40	<2.6	<5.5	52 <sup>(1)</sup> , 52 <sup>(2)</sup>	mg/m <sup>3</sup>
	(U.S. EPA Method 6C)		<1.0	<2.1	20 <sup>(1)</sup> , 20 <sup>(2)</sup> , 10 <sup>(3)</sup>	ppm
			<0.2745 <sup>(6)</sup>		1.70 <sup>(3)</sup>	g/s
Oxides of Nitrogen (NO <sub>x</sub> )	Instrumental Analyzer Method	10:10-10:40	19.9	42.3	226 <sup>(1)</sup> , 226 <sup>(2)</sup>	mg/m <sup>3</sup>
	(U.S. EPA Method 7E)		10.6	22.5	120 <sup>(1)</sup> , 120 <sup>(2)</sup> , 60 <sup>(3)</sup>	ppm
			2.1008 <sup>(6)</sup>		7.33 <sup>(3)</sup>	g/s

## REMARK:

- <sup>(1)</sup> Notification of The Ministry of Industry B.E. 2547 (2004)
- <sup>(2)</sup> Notification of The Ministry of Natural Resources and Environment B.E. 2553 (2010)
- <sup>(3)</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- <sup>(4)</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- Sampling By Mr. Metee Sukprasert (ว-003-ค-0035)
- <sup>(6)</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
- GPS 47P 0727622, 1431003

Examined By.....

Thongchai Boonsak

(Mr. Thongchai Boonsak)

(ว-003-ค-0012)

22/03/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

Wanpen Lhaochindawat

(Mrs. Wanpen Lhaochindawat)

(ว-003-ค-0003)

22/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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ผลการทดสอบคุณภาพอากาศในบรรยากาศ



Request No. ATR6703044

Report No. 6703-0796 - 6703-0802

## TEST REPORT

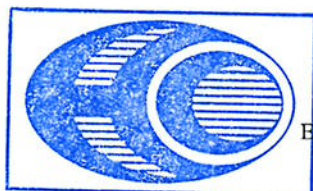
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : โรงเรียนบ้านภูไทร  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030796 - A67030802  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	09-10/03/2024	0.143	0.33	mg/m <sup>3</sup>
		10-11/03/2024	0.180	0.33	mg/m <sup>3</sup>
		11-12/03/2024	0.276	0.33	mg/m <sup>3</sup>
		12-13/03/2024	0.273	0.33	mg/m <sup>3</sup>
		13-14/03/2024	0.295	0.33	mg/m <sup>3</sup>
		14-15/03/2024	0.289	0.33	mg/m <sup>3</sup>
		15-16/03/2024	0.287	0.33	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsoon)

05/04/2024

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WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. ATR6703044

Report No. 6703-0789 - 6703-0795

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : โรงเรียนบ้านภูไทร  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030789 - A67030795  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

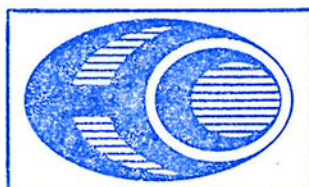
PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	09-10/03/2024	0.078	0.12	mg/m <sup>3</sup>
		10-11/03/2024	0.099	0.12	mg/m <sup>3</sup>
		11-12/03/2024	0.105	0.12	mg/m <sup>3</sup>
		12-13/03/2024	0.102	0.12	mg/m <sup>3</sup>
		13-14/03/2024	0.108	0.12	mg/m <sup>3</sup>
		14-15/03/2024	0.106	0.12	mg/m <sup>3</sup>
		15-16/03/2024	0.104	0.12	mg/m <sup>3</sup>

## REMARK:

<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsoon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. ATR6703044

Report No. 6703-0782 - 6703-0788

## TEST REPORT

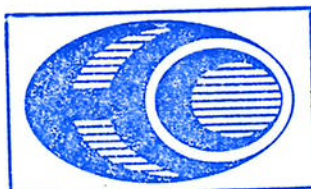
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : วัดพนานิคม  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030782 - A67030788  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	09-10/03/2024	0.043	0.33	mg/m <sup>3</sup>
		10-11/03/2024	0.050	0.33	mg/m <sup>3</sup>
		11-12/03/2024	0.049	0.33	mg/m <sup>3</sup>
		12-13/03/2024	0.046	0.33	mg/m <sup>3</sup>
		13-14/03/2024	0.036	0.33	mg/m <sup>3</sup>
		14-15/03/2024	0.043	0.33	mg/m <sup>3</sup>
		15-16/03/2024	0.035	0.33	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsoon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. ATR6703044

Report No. 6703-0775 - 6703-0781

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : วัดพนานิคม  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030775 - A67030781  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

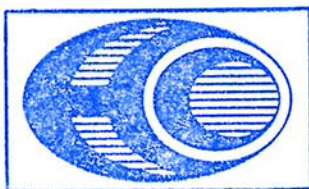
PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	09-10/03/2024	0.033	0.12	mg/m <sup>3</sup>
		10-11/03/2024	0.044	0.12	mg/m <sup>3</sup>
		11-12/03/2024	0.042	0.12	mg/m <sup>3</sup>
		12-13/03/2024	0.034	0.12	mg/m <sup>3</sup>
		13-14/03/2024	0.029	0.12	mg/m <sup>3</sup>
		14-15/03/2024	0.031	0.12	mg/m <sup>3</sup>
		15-16/03/2024	0.029	0.12	mg/m <sup>3</sup>

## REMARK:

<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsoon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. ATR6703044

Report No. 6703-0754 - 6703-0760

## TEST REPORT

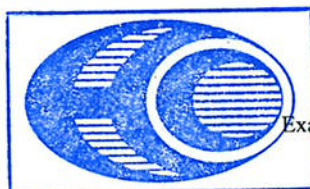
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมายางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : โรงพยาบาลส่งเสริมสุขภาพตำบลมายางพร  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030754 - A67030760  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	09-10/03/2024	0.107	0.33	mg/m <sup>3</sup>
		10-11/03/2024	0.126	0.33	mg/m <sup>3</sup>
		11-12/03/2024	0.092	0.33	mg/m <sup>3</sup>
		12-13/03/2024	0.067	0.33	mg/m <sup>3</sup>
		13-14/03/2024	0.078	0.33	mg/m <sup>3</sup>
		14-15/03/2024	0.119	0.33	mg/m <sup>3</sup>
		15-16/03/2024	0.088	0.33	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsonon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. ATR6703044

Report No. 6703-0747 - 6703-0753

## TEST REPORT

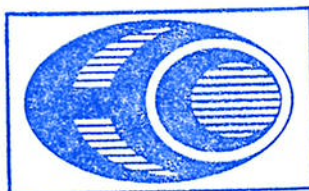
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030747 - A67030753  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>/1</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	09-10/03/2024	0.058	0.12	mg/m <sup>3</sup>
		10-11/03/2024	0.066	0.12	mg/m <sup>3</sup>
		11-12/03/2024	0.058	0.12	mg/m <sup>3</sup>
		12-13/03/2024	0.044	0.12	mg/m <sup>3</sup>
		13-14/03/2024	0.043	0.12	mg/m <sup>3</sup>
		14-15/03/2024	0.057	0.12	mg/m <sup>3</sup>
		15-16/03/2024	0.042	0.12	mg/m <sup>3</sup>

**REMARK:**<sup>/1</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tunmarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By

(Miss Thanatporn Klinsopon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. ATR6703044

Report No. 6703-0768 - 6703-0774

## TEST REPORT

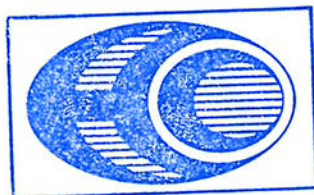
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030768 - A67030774  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	09-10/03/2024	0.053	0.33	mg/m <sup>3</sup>
		10-11/03/2024	0.072	0.33	mg/m <sup>3</sup>
		11-12/03/2024	0.072	0.33	mg/m <sup>3</sup>
		12-13/03/2024	0.063	0.33	mg/m <sup>3</sup>
		13-14/03/2024	0.054	0.33	mg/m <sup>3</sup>
		14-15/03/2024	0.062	0.33	mg/m <sup>3</sup>
		15-16/03/2024	0.054	0.33	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsoyon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. ATR6703044

Report No. 6703-0761 - 6703-0767

## TEST REPORT

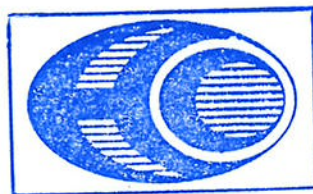
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมายางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : ศูนย์พัฒนาเด็กเล็กกองคั้งการบริหารส่วนตำบลมายางพร  
RECEIVED DATE : 26/03/2024 SAMPLE NO. : A67030761 - A67030767  
TESTED DATE : 26/03/2024-04/04/2024 REPORTED DATE : 05/04/2024

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	09-10/03/2024	0.042	0.12	mg/m <sup>3</sup>
		10-11/03/2024	0.058	0.12	mg/m <sup>3</sup>
		11-12/03/2024	0.059	0.12	mg/m <sup>3</sup>
		12-13/03/2024	0.044	0.12	mg/m <sup>3</sup>
		13-14/03/2024	0.025	0.12	mg/m <sup>3</sup>
		14-15/03/2024	0.036	0.12	mg/m <sup>3</sup>
		15-16/03/2024	0.035	0.12	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Tummarat Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By.....

(Miss Thanatporn Klinsonpon)

05/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

Report No. R6703-3179 - R3703-3185

TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบางพลี จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านคูไทร  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N 7874

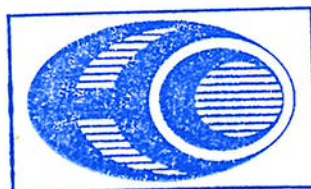
SAMPLE NO. : 05453-05459  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
13:00 - 14:00 <sup>2</sup>	0.004	0.003	0.003	0.003	0.004	0.002	0.002	ppm
14:00 - 15:00	0.004	0.007	0.003	0.003	0.005	0.002	0.003	ppm
15:00 - 16:00	0.005	0.005	0.003	0.004	0.004	0.003	0.002	ppm
16:00 - 17:00	0.008	0.004	0.003	0.004	0.004	0.005	0.004	ppm
17:00 - 18:00	0.007	0.004	0.003	0.003	0.003	0.003	0.003	ppm
18:00 - 19:00	0.004	0.003	0.004	0.004	0.003	0.004	0.004	ppm
19:00 - 20:00	0.003	0.003	0.004	0.003	0.003	0.005	0.003	ppm
20:00 - 21:00	0.003	0.003	0.004	0.003	0.007	0.011	0.004	ppm
21:00 - 22:00	0.004	0.004	0.004	0.004	0.005	0.007	0.009	ppm
22:00 - 23:00	0.004	0.005	0.004	0.004	0.005	0.010	0.005	ppm
23:00 - 00:00	0.004	0.005	0.004	0.003	0.004	0.006	0.008	ppm
00:00 - 01:00	0.003	0.003	0.003	0.003	0.003	0.005	0.003	ppm
01:00 - 02:00	0.003	0.003	0.003	0.004	0.004	0.003	0.002	ppm
02:00 - 03:00	0.002	0.003	0.003	0.005	0.003	0.003	0.002	ppm
03:00 - 04:00	0.003	0.004	0.003	0.004	0.003	0.002	0.002	ppm
04:00 - 05:00	0.003	0.003	0.003	0.005	0.004	0.003	0.002	ppm
05:00 - 06:00	0.003	0.003	0.004	0.006	0.003	0.003	0.002	ppm
06:00 - 07:00	0.003	0.003	0.004	0.004	0.004	0.003	0.004	ppm
07:00 - 08:00	0.005	0.006	0.006	0.006	0.008	0.007	0.004	ppm
08:00 - 09:00	0.005	0.007	0.008	0.007	0.005	0.006	0.003	ppm
09:00 - 10:00	0.003	0.003	0.004	0.005	0.003	0.003	0.004	ppm
10:00 - 11:00	0.002	0.003	0.004	0.004	0.002	0.002	0.004	ppm
11:00 - 12:00	0.003	0.003	0.004	0.007	0.003	0.003	0.003	ppm
12:00 - 13:00	0.003	0.003	0.003	0.006	0.002	0.002	0.005	ppm
Maximum 1 hr.	0.008	0.007	0.008	0.007	0.008	0.011	0.009	ppm
Average 24 hr.	0.004	0.004	0.004	0.004	0.004	0.004	0.004	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)

<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

Report No. R6703-3193 - R6703-3199

TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบางยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N 7866

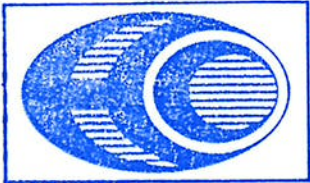
SAMPLE NO. : 05467-05473  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
11:00 - 12:00 <sup>2</sup>	0.008	0.007	0.008	0.005	0.004	0.004	0.005	ppm
12:00 - 13:00	0.008	0.008	0.007	0.006	0.004	0.005	0.004	ppm
13:00 - 14:00	0.009	0.008	0.008	0.007	0.007	0.005	0.005	ppm
14:00 - 15:00	0.008	0.013	0.006	0.006	0.005	0.004	0.004	ppm
15:00 - 16:00	0.007	0.010	0.006	0.004	0.004	0.004	0.004	ppm
16:00 - 17:00	0.016	0.009	0.005	0.005	0.004	0.005	0.005	ppm
17:00 - 18:00	0.015	0.006	0.005	0.005	0.004	0.004	0.004	ppm
18:00 - 19:00	0.007	0.006	0.005	0.006	0.004	0.006	0.006	ppm
19:00 - 20:00	0.006	0.006	0.007	0.006	0.004	0.009	0.006	ppm
20:00 - 21:00	0.006	0.006	0.008	0.005	0.005	0.011	0.007	ppm
21:00 - 22:00	0.007	0.006	0.007	0.005	0.010	0.008	0.010	ppm
22:00 - 23:00	0.007	0.006	0.007	0.004	0.013	0.008	0.007	ppm
23:00 - 00:00	0.007	0.007	0.006	0.005	0.007	0.012	0.009	ppm
00:00 - 01:00	0.006	0.006	0.005	0.004	0.005	0.006	0.006	ppm
01:00 - 02:00	0.005	0.006	0.005	0.004	0.005	0.005	0.004	ppm
02:00 - 03:00	0.005	0.006	0.005	0.005	0.004	0.004	0.004	ppm
03:00 - 04:00	0.005	0.005	0.005	0.004	0.004	0.003	0.003	ppm
04:00 - 05:00	0.004	0.005	0.005	0.004	0.005	0.004	0.003	ppm
05:00 - 06:00	0.005	0.007	0.006	0.004	0.006	0.004	0.003	ppm
06:00 - 07:00	0.005	0.008	0.005	0.005	0.005	0.005	0.005	ppm
07:00 - 08:00	0.009	0.013	0.007	0.011	0.007	0.009	0.003	ppm
08:00 - 09:00	0.011	0.014	0.009	0.008	0.006	0.007	0.004	ppm
09:00 - 10:00	0.008	0.008	0.008	0.005	0.005	0.006	0.006	ppm
10:00 - 11:00	0.007	0.007	0.008	0.004	0.004	0.006	0.007	ppm
Maximum 1 hr.	0.016	0.014	0.009	0.011	0.013	0.012	0.010	ppm
Average 24 hr.	0.008	0.008	0.006	0.005	0.005	0.006	0.005	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)

<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By:   
(MS. THANATPORN KLINSOPON)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

Report No. R6703-3221 - R6703-3227

# TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบตาพุด  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : Environnement SA. Model AC32e S/N 693

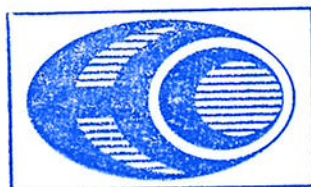
SAMPLE NO. : 05495-05501  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
11:00 - 12:00 <sup>2</sup>	0.016	0.018	0.008	0.010	0.006	0.012	0.011	ppm
12:00 - 13:00	0.012	0.018	0.014	0.012	0.011	0.013	0.016	ppm
13:00 - 14:00	0.013	0.018	0.007	0.011	0.006	0.012	0.017	ppm
14:00 - 15:00	0.016	0.019	0.008	0.010	0.006	0.016	0.016	ppm
15:00 - 16:00	0.016	0.018	0.008	0.012	0.008	0.013	0.017	ppm
16:00 - 17:00	0.018	0.017	0.016	0.015	0.005	0.013	0.017	ppm
17:00 - 18:00	0.018	0.018	0.015	0.011	0.008	0.017	0.017	ppm
18:00 - 19:00	0.018	0.017	0.012	0.010	0.008	0.016	0.014	ppm
19:00 - 20:00	0.018	0.018	0.011	0.008	0.008	0.006	0.007	ppm
20:00 - 21:00	0.019	0.018	0.014	0.009	0.006	0.008	0.007	ppm
21:00 - 22:00	0.013	0.019	0.015	0.009	0.008	0.019	0.013	ppm
22:00 - 23:00	0.014	0.019	0.012	0.010	0.008	0.018	0.016	ppm
23:00 - 00:00	0.016	0.019	0.005	0.013	0.005	0.011	0.013	ppm
00:00 - 01:00	0.019	0.016	0.009	0.014	0.008	0.013	0.017	ppm
01:00 - 02:00	0.019	0.017	0.009	0.012	0.009	0.015	0.016	ppm
02:00 - 03:00	0.019	0.016	0.010	0.013	0.006	0.015	0.011	ppm
03:00 - 04:00	0.019	0.019	0.015	0.010	0.007	0.015	0.014	ppm
04:00 - 05:00	0.019	0.017	0.015	0.010	0.003	0.016	0.013	ppm
05:00 - 06:00	0.019	0.019	0.016	0.008	0.004	0.012	0.010	ppm
06:00 - 07:00	0.018	0.018	0.016	0.007	0.008	0.005	0.010	ppm
07:00 - 08:00	0.017	0.017	0.014	0.005	0.009	0.004	0.009	ppm
08:00 - 09:00	0.017	0.018	0.013	0.009	0.009	0.009	0.015	ppm
09:00 - 10:00	0.018	0.017	0.008	0.010	0.013	0.015	0.015	ppm
10:00 - 11:00	0.017	0.007	0.009	0.008	0.014	0.011	0.009	ppm
Maximum 1 hr.	0.019	0.019	0.016	0.015	0.014	0.019	0.017	ppm
Average 24 hr.	0.017	0.017	0.012	0.010	0.008	0.013	0.013	ppm
Standard (1 hr.) <sup>1/</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1/</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)

<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By 

(MS. THANATPORN KLINSOPON)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

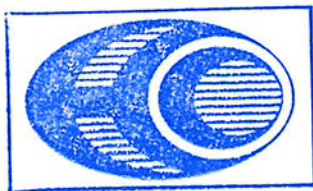
Report No. R6703-3207 - R6703-3213

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบางพลี จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N 2004

SAMPLE NO. : 05481-05487  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
11:00 - 12:00 <sup>2</sup>	0.005	0.002	0.003	0.004	0.001	<0.001	0.004	ppm
12:00 - 13:00	0.009	0.004	0.002	0.001	0.001	<0.001	0.004	ppm
13:00 - 14:00	0.002	0.004	0.004	<0.001	0.001	0.001	0.005	ppm
14:00 - 15:00	0.004	0.002	0.004	0.001	0.001	0.001	0.006	ppm
15:00 - 16:00	0.003	0.002	0.009	0.001	0.001	<0.001	0.007	ppm
16:00 - 17:00	0.003	0.003	0.007	0.001	0.003	0.001	0.005	ppm
17:00 - 18:00	0.002	0.008	0.007	0.002	0.002	0.003	0.005	ppm
18:00 - 19:00	0.003	0.004	0.008	0.003	0.007	0.008	0.012	ppm
19:00 - 20:00	0.003	0.002	0.005	0.007	0.007	0.007	0.002	ppm
20:00 - 21:00	0.002	0.002	0.001	0.001	0.001	0.001	0.003	ppm
21:00 - 22:00	0.002	0.002	0.001	0.002	0.003	0.001	0.001	ppm
22:00 - 23:00	0.002	0.002	0.002	0.001	0.004	0.002	<0.001	ppm
23:00 - 00:00	0.004	0.002	<0.001	0.001	0.002	0.003	<0.001	ppm
00:00 - 01:00	0.004	0.001	<0.001	0.001	0.001	0.004	0.001	ppm
01:00 - 02:00	0.002	0.002	<0.001	0.002	0.003	0.003	<0.001	ppm
02:00 - 03:00	0.003	0.003	<0.001	0.002	0.002	0.004	<0.001	ppm
03:00 - 04:00	0.004	0.002	0.001	<0.001	<0.001	0.002	0.001	ppm
04:00 - 05:00	0.004	0.002	0.001	<0.001	0.001	0.001	0.005	ppm
05:00 - 06:00	0.005	0.002	<0.001	0.001	0.002	0.002	<0.001	ppm
06:00 - 07:00	0.004	0.002	0.002	0.001	0.002	0.002	0.001	ppm
07:00 - 08:00	0.002	0.003	0.010	0.004	0.004	0.012	<0.001	ppm
08:00 - 09:00	0.004	0.020	0.003	0.005	0.003	0.003	<0.001	ppm
09:00 - 10:00	0.006	0.001	0.001	<0.001	<0.001	0.002	0.001	ppm
10:00 - 11:00	0.003	0.025	0.001	0.002	0.004	0.004	0.004	ppm
Maximum 1 hr.	0.009	0.025	0.010	0.007	0.007	0.012	0.012	ppm
Average 24 hr.	0.003	0.004	0.003	0.002	0.002	0.003	0.003	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)<sup>2</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By: 

(MS. THANATPORN KLINSOPON)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL

WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

Report No. R6703-3172 - R6703-3178

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านคูไทร  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : API Model T100 S/N 5702

SAMPLE NO. : 05446-05452  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

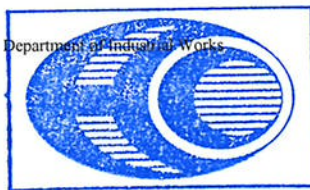
TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
13:00 - 14:00 <sup>3</sup>	0.017	0.019	0.019	0.019	0.019	0.019	0.019	ppm
14:00 - 15:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
15:00 - 16:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
16:00 - 17:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
17:00 - 18:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
18:00 - 19:00	0.019	0.019	0.019	0.019	0.019	0.019	0.018	ppm
19:00 - 20:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
20:00 - 21:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
21:00 - 22:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
22:00 - 23:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
23:00 - 00:00	0.019	0.019	0.019	0.018	0.019	0.019	0.019	ppm
00:00 - 01:00	0.019	0.019	0.019	0.019	0.019	0.018	0.019	ppm
01:00 - 02:00	0.019	0.019	0.019	0.019	0.019	0.019	0.018	ppm
02:00 - 03:00	0.019	0.019	0.019	0.019	0.019	0.019	0.018	ppm
03:00 - 04:00	0.019	0.019	0.019	0.019	0.018	0.019	0.019	ppm
04:00 - 05:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
05:00 - 06:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
06:00 - 07:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
07:00 - 08:00	0.019	0.019	0.019	0.019	0.019	0.019	0.018	ppm
08:00 - 09:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
09:00 - 10:00	0.019	0.019	0.018	0.018	0.019	0.019	0.019	ppm
10:00 - 11:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
11:00 - 12:00	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
12:00 - 13:00	0.019	0.019	0.019	0.018	0.019	0.019	0.019	ppm
Maximum 1 hr.	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
Average 24 hr.	0.019	0.019	0.019	0.019	0.019	0.019	0.019	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)

<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)

<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

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WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. LA67-R0367

Report No. R6703-3186 - R6703-3192

## TEST REPORT

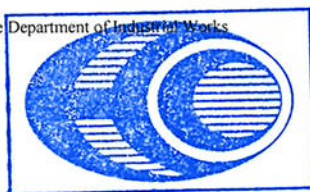
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : API Model T100 S/N 1608

SAMPLE NO. : 05460-05466  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
11:00 - 12:00 <sup>3</sup>	0.008	0.010	0.010	0.010	0.010	0.010	0.010	ppm
12:00 - 13:00	0.010	0.011	0.011	0.010	0.010	0.011	0.010	ppm
13:00 - 14:00	0.011	0.010	0.010	0.010	0.010	0.010	0.009	ppm
14:00 - 15:00	0.012	0.010	0.009	0.011	0.010	0.011	0.009	ppm
15:00 - 16:00	0.008	0.009	0.010	0.011	0.009	0.010	0.010	ppm
16:00 - 17:00	0.008	0.009	0.009	0.009	0.008	0.008	0.009	ppm
17:00 - 18:00	0.008	0.009	0.008	0.008	0.009	0.008	0.009	ppm
18:00 - 19:00	0.008	0.010	0.007	0.008	0.009	0.008	0.009	ppm
19:00 - 20:00	0.008	0.009	0.007	0.008	0.008	0.007	0.008	ppm
20:00 - 21:00	0.008	0.007	0.008	0.007	0.007	0.005	0.006	ppm
21:00 - 22:00	0.008	0.007	0.008	0.008	0.007	0.007	0.007	ppm
22:00 - 23:00	0.009	0.008	0.008	0.008	0.008	0.008	0.008	ppm
23:00 - 00:00	0.009	0.008	0.009	0.008	0.008	0.008	0.009	ppm
00:00 - 01:00	0.008	0.009	0.009	0.008	0.009	0.009	0.009	ppm
01:00 - 02:00	0.009	0.009	0.009	0.009	0.009	0.008	0.009	ppm
02:00 - 03:00	0.009	0.009	0.009	0.009	0.009	0.009	0.009	ppm
03:00 - 04:00	0.008	0.009	0.009	0.009	0.009	0.009	0.009	ppm
04:00 - 05:00	0.009	0.009	0.009	0.009	0.009	0.009	0.009	ppm
05:00 - 06:00	0.009	0.009	0.009	0.009	0.009	0.009	0.009	ppm
06:00 - 07:00	0.009	0.009	0.009	0.008	0.009	0.009	0.009	ppm
07:00 - 08:00	0.009	0.009	0.009	0.008	0.009	0.009	0.008	ppm
08:00 - 09:00	0.009	0.009	0.009	0.008	0.009	0.009	0.008	ppm
09:00 - 10:00	0.009	0.009	0.009	0.009	0.009	0.009	0.007	ppm
10:00 - 11:00	0.010	0.010	0.010	0.010	0.010	0.009	0.008	ppm
Maximum 1 hr.	0.012	0.011	0.011	0.011	0.010	0.011	0.010	ppm
Average 24 hr.	0.009	0.009	0.009	0.009	0.009	0.009	0.008	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

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WITHOUT THE WRITTEN APPROVAL LABORATORY

Approved By.....

(MS. THANATPORN KLINSOPON)

27/03/2024

Request No. LA67-R0367

Report No. R6703-3214 - R6703-3220

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : Environnement SA. Model AF22e S/N 913

SAMPLE NO. : 05488-05494  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
11:00 - 12:00 <sup>3</sup>	0.005	0.006	0.006	0.004	0.003	0.004	0.004	ppm
12:00 - 13:00	0.004	0.004	0.004	0.003	0.004	0.003	0.004	ppm
13:00 - 14:00	0.003	0.003	0.003	0.004	0.003	0.003	0.005	ppm
14:00 - 15:00	0.005	0.005	0.003	0.005	0.003	0.004	0.004	ppm
15:00 - 16:00	0.004	0.004	0.004	0.006	0.003	0.003	0.003	ppm
16:00 - 17:00	0.004	0.004	0.004	0.006	0.003	0.003	0.004	ppm
17:00 - 18:00	0.005	0.005	0.003	0.006	0.006	0.004	0.004	ppm
18:00 - 19:00	0.004	0.003	0.003	0.005	0.004	0.004	0.005	ppm
19:00 - 20:00	0.006	0.003	0.005	0.004	0.003	0.003	0.003	ppm
20:00 - 21:00	0.005	0.004	0.003	0.004	0.003	0.004	0.003	ppm
21:00 - 22:00	0.005	0.005	0.004	0.004	0.004	0.005	0.004	ppm
22:00 - 23:00	0.004	0.005	0.005	0.007	0.003	0.004	0.004	ppm
23:00 - 00:00	0.003	0.004	0.004	0.005	0.003	0.005	0.004	ppm
00:00 - 01:00	0.004	0.003	0.005	0.003	0.004	0.003	0.003	ppm
01:00 - 02:00	0.003	0.006	0.003	0.003	0.003	0.004	0.005	ppm
02:00 - 03:00	0.003	0.004	0.004	0.005	0.003	0.003	0.005	ppm
03:00 - 04:00	0.005	0.003	0.005	0.004	0.003	0.004	0.005	ppm
04:00 - 05:00	0.006	0.005	0.004	0.005	0.003	0.005	0.004	ppm
05:00 - 06:00	0.005	0.005	0.003	0.004	0.004	0.003	0.004	ppm
06:00 - 07:00	0.005	0.003	0.005	0.005	0.004	0.003	0.005	ppm
07:00 - 08:00	0.004	0.005	0.003	0.003	0.004	0.005	0.006	ppm
08:00 - 09:00	0.006	0.003	0.004	0.005	0.003	0.004	0.004	ppm
09:00 - 10:00	0.005	0.005	0.006	0.003	0.004	0.003	0.005	ppm
10:00 - 11:00	0.005	0.006	0.003	0.003	0.004	0.004	0.004	ppm
Maximum 1 hr.	0.006	0.006	0.006	0.007	0.006	0.005	0.006	ppm
Average 24 hr.	0.004	0.004	0.004	0.004	0.004	0.004	0.004	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)

<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)

<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL

WITHOUT THE WRITTEN APPROVAL LABORATORY

Approved By.....

(MS. THANATPORN KLINSOPON)

27/03/2024

Request No. LA67-R0367

Report No. R6703-3200 - R6703-3206

## TEST REPORT

CUSTOMER : บริษัท อมตะ ปิ.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ ปิ.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : API Model M100E S/N 3220

SAMPLE NO. : 05474-05480  
SAMPLING DATE : 09-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME / DATE	09-10/03/2024	10-11/03/2024	11-12/03/2024	12-13/03/2024	13-14/03/2024	14-15/03/2024	15-16/03/2024	UNIT
11:00 - 12:00 <sup>3</sup>	0.007	0.004	0.004	0.005	0.008	0.008	0.009	ppm
12:00 - 13:00	0.007	0.005	0.006	0.005	0.006	0.008	0.007	ppm
13:00 - 14:00	0.006	0.006	0.007	0.005	0.007	0.005	0.008	ppm
14:00 - 15:00	0.004	0.004	0.005	0.007	0.008	0.005	0.006	ppm
15:00 - 16:00	0.004	0.004	0.006	0.006	0.005	0.008	0.009	ppm
16:00 - 17:00	0.007	0.006	0.006	0.005	0.007	0.009	0.008	ppm
17:00 - 18:00	0.008	0.009	0.005	0.009	0.008	0.007	0.008	ppm
18:00 - 19:00	0.003	0.007	0.007	0.007	0.007	0.006	0.010	ppm
19:00 - 20:00	0.004	0.006	0.005	0.008	0.007	0.008	0.008	ppm
20:00 - 21:00	0.003	0.007	0.005	0.007	0.008	0.006	0.008	ppm
21:00 - 22:00	0.004	0.008	0.004	0.004	0.007	0.005	0.009	ppm
22:00 - 23:00	0.005	0.006	0.006	0.006	0.007	0.005	0.008	ppm
23:00 - 00:00	0.005	0.007	0.005	0.004	0.006	0.005	0.008	ppm
00:00 - 01:00	0.006	0.004	0.005	0.005	0.007	0.007	0.008	ppm
01:00 - 02:00	0.006	0.008	0.005	0.006	0.008	0.008	0.009	ppm
02:00 - 03:00	0.005	0.007	0.006	0.006	0.007	0.009	0.007	ppm
03:00 - 04:00	0.004	0.004	0.004	0.007	0.007	0.007	0.009	ppm
04:00 - 05:00	0.005	0.004	0.005	0.007	0.005	0.007	0.008	ppm
05:00 - 06:00	0.007	0.007	0.006	0.006	0.007	0.008	0.006	ppm
06:00 - 07:00	0.004	0.004	0.005	0.005	0.008	0.007	0.008	ppm
07:00 - 08:00	0.003	0.005	0.007	0.006	0.007	0.008	0.008	ppm
08:00 - 09:00	0.004	0.004	0.007	0.008	0.008	0.008	0.006	ppm
09:00 - 10:00	0.005	0.005	0.005	0.007	0.007	0.008	0.008	ppm
10:00 - 11:00	0.004	0.006	0.006	0.008	0.008	0.008	0.008	ppm
Maximum 1 hr.	0.008	0.009	0.007	0.009	0.008	0.009	0.010	ppm
Average 24 hr.	0.005	0.006	0.005	0.006	0.007	0.007	0.008	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)<sup>3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL

WITHOUT THE WRITTEN APPROVAL LABORATORY

Approved By 

(MS. THANATPORN KLINSOPON)

27/03/2024

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

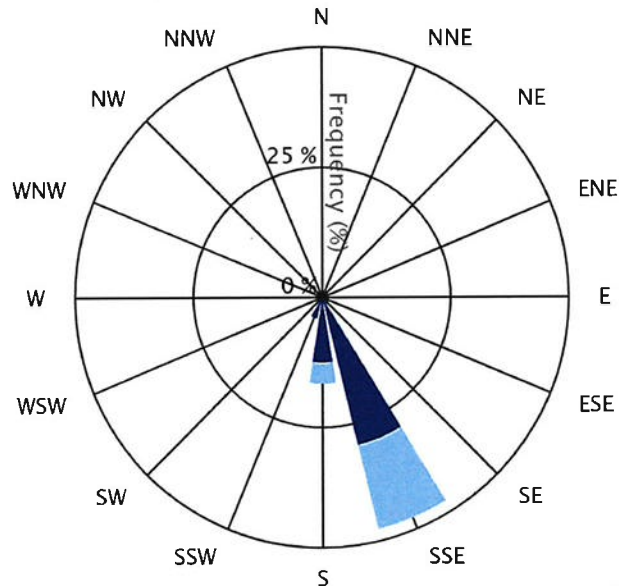
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-1

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 9-10 มีนาคม 2567

Calm 33.3 %



0.4-1.9    2.0-3.9    4.0-5.9    6.0-7.9    8.0-9.9    &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	29.2	16.7	0.0	0.0	0.0	0.0	45.9
S	12.5	4.2	0.0	0.0	0.0	0.0	16.7
SSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	33.3						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-1

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 9-10 มีนาคม 2567

เวลา	9-10 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	1.3	SSE
14:00-15:00	1.8	SSE
15:00-16:00	1.8	SSE
16:00-17:00	2.2	SSE
17:00-18:00	2.2	SSE
18:00-19:00	2.2	SSE
19:00-20:00	2.7	SSE
20:00-21:00	1.8	SSE
21:00-22:00	1.3	S
22:00-23:00	0.9	SSE
23:00-00:00	0.9	SSE
00:00-01:00	0.4	SSE
01:00-02:00	0.4	SSW
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.0	-
10:00-11:00	1.8	S
11:00-12:00	2.2	S
12:00-13:00	1.3	S

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

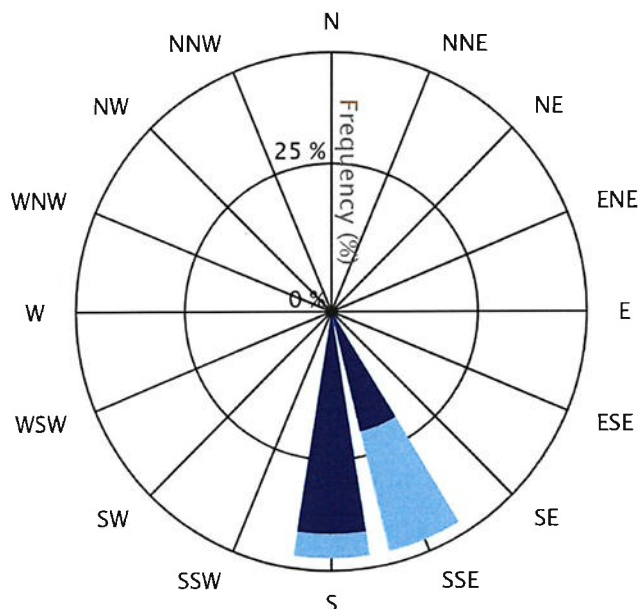
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-2

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 10-11 มีนาคม 2567

Calm 16.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	20.8	20.8	0.0	0.0	0.0	0.0	41.6
S	37.5	4.2	0.0	0.0	0.0	0.0	41.7
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	16.7						

แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-2

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 10-11 มีนาคม 2567

เวลา	10-11 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	1.3	S
14:00-15:00	1.3	S
15:00-16:00	2.2	S
16:00-17:00	2.7	SSE
17:00-18:00	2.7	SSE
18:00-19:00	2.2	SSE
19:00-20:00	2.2	SSE
20:00-21:00	1.8	SSE
21:00-22:00	1.3	SSE
22:00-23:00	0.4	S
23:00-00:00	0.4	S
00:00-01:00	0.9	S
01:00-02:00	0.9	S
02:00-03:00	0.9	S
03:00-04:00	0.0	-
04:00-05:00	0.4	S
05:00-06:00	0.4	SSE
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	1.3	S
10:00-11:00	1.8	SSE
11:00-12:00	2.2	SSE
12:00-13:00	0.9	SSE

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

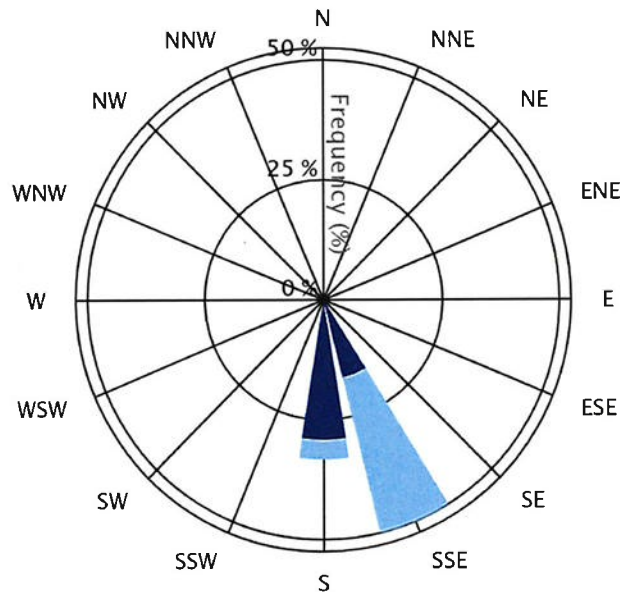
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-3

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 11-12 มีนาคม 2567

Calm 16.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	16.7	33.3	0.0	0.0	0.0	0.0	50.0
S	29.2	4.2	0.0	0.0	0.0	0.0	33.4
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	16.7						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-3

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 11-12 มีนาคม 2567

เวลา	11-12 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	2.7	SSE
14:00-15:00	3.1	SSE
15:00-16:00	3.1	S
16:00-17:00	3.6	SSE
17:00-18:00	2.7	SSE
18:00-19:00	1.8	SSE
19:00-20:00	2.2	SSE
20:00-21:00	1.3	S
21:00-22:00	0.9	SSE
22:00-23:00	1.8	SSE
23:00-00:00	0.4	S
00:00-01:00	0.9	S
01:00-02:00	0.4	S
02:00-03:00	0.4	S
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.4	S
07:00-08:00	0.0	-
08:00-09:00	0.4	S
09:00-10:00	1.3	SSE
10:00-11:00	2.2	SSE
11:00-12:00	2.7	SSE
12:00-13:00	3.1	SSE

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

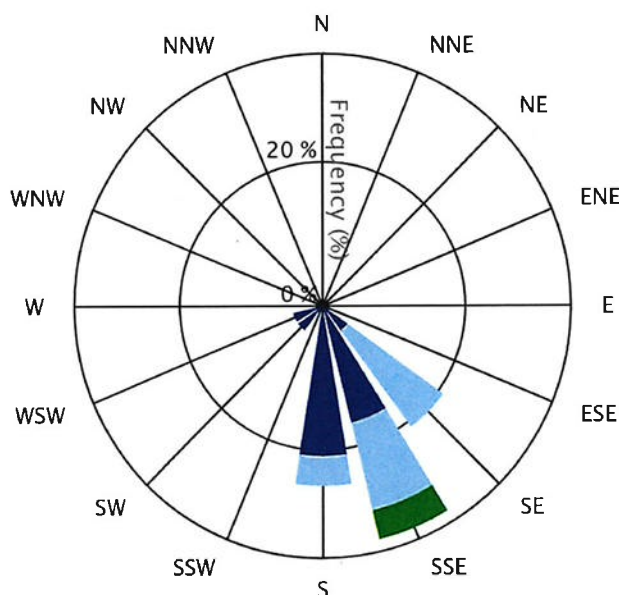
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-4

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 12-13 มีนาคม 2567

Calm 12.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	16.7	0.0	0.0	0.0	0.0	20.9
SSE	16.7	12.5	4.2	0.0	0.0	0.0	33.4
S	20.8	4.2	0.0	0.0	0.0	0.0	25.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	12.5						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-4

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 12-13 มีนาคม 2567

เวลา	12-13 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	3.1	SSE
14:00-15:00	3.1	S
15:00-16:00	4.0	SSE
16:00-17:00	3.6	SSE
17:00-18:00	3.1	SE
18:00-19:00	3.1	SE
19:00-20:00	2.7	SE
20:00-21:00	2.2	SE
21:00-22:00	0.9	SE
22:00-23:00	0.4	SSE
23:00-00:00	0.4	SSE
00:00-01:00	0.4	S
01:00-02:00	0.4	S
02:00-03:00	0.4	S
03:00-04:00	0.4	S
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.4	WSW
08:00-09:00	0.4	SW
09:00-10:00	1.8	SSE
10:00-11:00	2.7	SSE
11:00-12:00	1.8	S
12:00-13:00	1.8	SSE



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

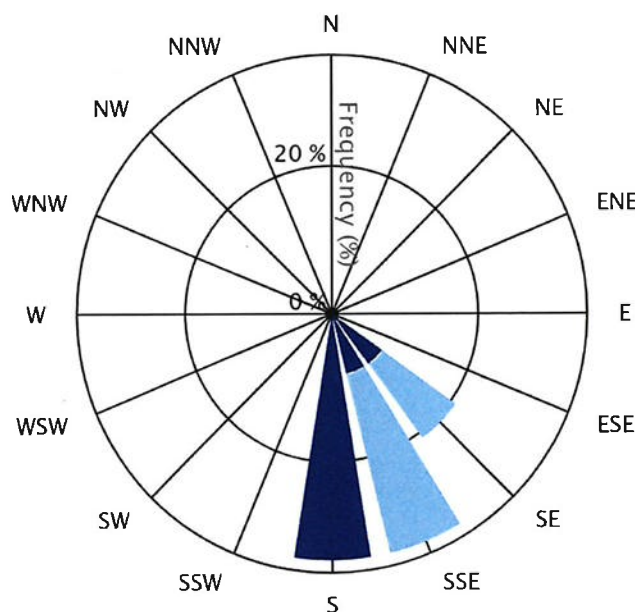
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-5

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 13-14 มีนาคม 2567

Calm 12.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	8.3	12.5	0.0	0.0	0.0	0.0	20.8
SSE	8.3	25.0	0.0	0.0	0.0	0.0	33.3
S	33.3	0.0	0.0	0.0	0.0	0.0	33.3
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	12.5						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-5

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 13-14 มีนาคม 2567

เวลา	13-14 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	2.7	SSE
14:00-15:00	2.2	SSE
15:00-16:00	2.7	SSE
16:00-17:00	3.1	SSE
17:00-18:00	3.1	SSE
18:00-19:00	2.7	SE
19:00-20:00	2.2	SE
20:00-21:00	0.9	SE
21:00-22:00	0.9	SE
22:00-23:00	0.4	S
23:00-00:00	0.4	S
00:00-01:00	0.4	S
01:00-02:00	0.4	S
02:00-03:00	0.9	S
03:00-04:00	0.4	S
04:00-05:00	0.4	S
05:00-06:00	0.4	S
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.9	SSE
10:00-11:00	1.8	SSE
11:00-12:00	2.2	SSE
12:00-13:00	2.2	SE

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

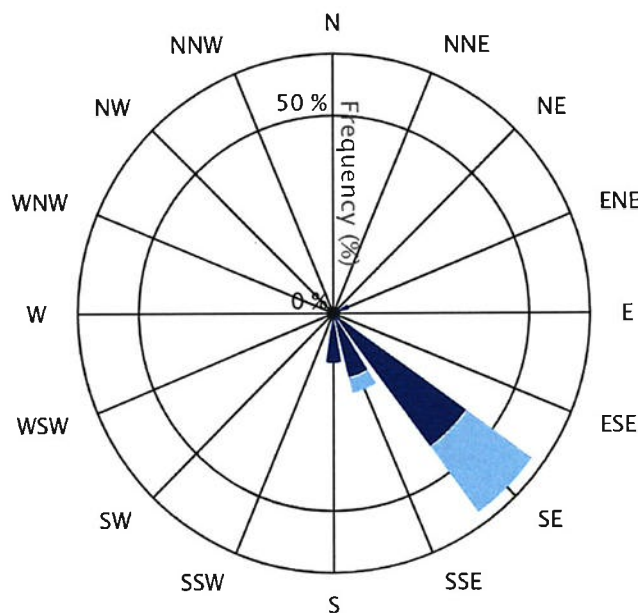
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-6

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 14-15 มีนาคม 2567

Calm 0.0 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	41.7	20.8	0.0	0.0	0.0	0.0	62.5
SSE	16.7	4.2	0.0	0.0	0.0	0.0	20.9
S	12.5	0.0	0.0	0.0	0.0	0.0	12.5
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	0.0						0.0

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-6

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 14-15 มีนาคม 2567

เวลา	14-15 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	1.8	SE
14:00-15:00	2.7	SSE
15:00-16:00	3.1	SE
16:00-17:00	3.6	SE
17:00-18:00	3.1	SE
18:00-19:00	1.3	SE
19:00-20:00	2.7	SE
20:00-21:00	1.8	SE
21:00-22:00	0.9	SE
22:00-23:00	1.3	SE
23:00-00:00	0.4	S
00:00-01:00	0.4	S
01:00-02:00	0.9	S
02:00-03:00	0.9	SSE
03:00-04:00	0.4	SSE
04:00-05:00	0.9	SE
05:00-06:00	0.9	SSE
06:00-07:00	0.9	SE
07:00-08:00	0.9	ENE
08:00-09:00	1.3	SE
09:00-10:00	1.3	SSE
10:00-11:00	1.8	SE
11:00-12:00	1.8	SE
12:00-13:00	2.2	SE



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

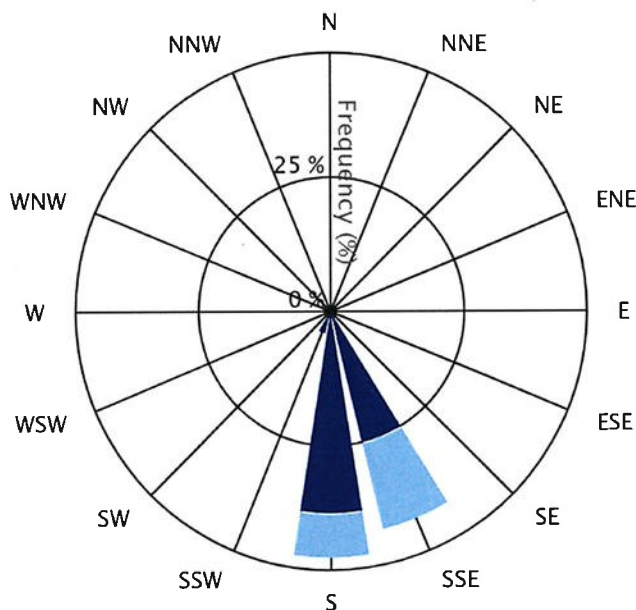
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-7

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 15-16 มีนาคม 2567

Calm 8.3 %



■ 0.4-1.9 ■ 2.0-3.9 ■ 4.0-5.9 ■ 6.0-7.9 ■ 8.0-9.9 ■ &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	25.0	16.7	0.0	0.0	0.0	0.0	41.7
S	37.5	8.3	0.0	0.0	0.0	0.0	45.8
SSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	8.3						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523-7

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 15-16 มีนาคม 2567

เวลา	15-16 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	3.1	SSE
14:00-15:00	3.1	SSE
15:00-16:00	2.7	SSE
16:00-17:00	3.6	S
17:00-18:00	3.1	S
18:00-19:00	2.2	SSE
19:00-20:00	1.8	S
20:00-21:00	1.3	SSE
21:00-22:00	1.3	SSE
22:00-23:00	0.9	S
23:00-00:00	0.9	S
00:00-01:00	0.4	S
01:00-02:00	0.4	S
02:00-03:00	0.4	S
03:00-04:00	0.9	S
04:00-05:00	0.4	SSE
05:00-06:00	0.4	SSE
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.9	SSW
09:00-10:00	1.3	SSE
10:00-11:00	1.8	S
11:00-12:00	1.8	SSE
12:00-13:00	1.8	S

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

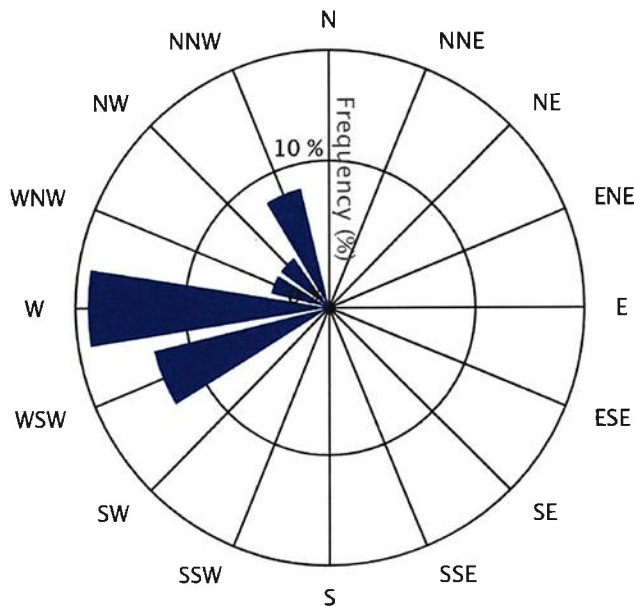
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-1

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 9-10 มีนาคม 2567

Calm 54.2 %



■ 0.4-1.9 ■ 2.0-3.9 ■ 4.0-5.9 ■ 6.0-7.9 ■ 8.0-9.9 ■ &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	12.5	0.0	0.0	0.0	0.0	0.0	12.5
W	16.7	0.0	0.0	0.0	0.0	0.0	16.7
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
Calm	54.2						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-1

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 9-10 มีนาคม 2567

เวลา	9-10 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	NNW
12:00-13:00	0.9	WSW
13:00-14:00	0.9	NNW
14:00-15:00	1.8	WSW
15:00-16:00	1.3	W
16:00-17:00	1.3	WSW
17:00-18:00	0.9	W
18:00-19:00	0.4	W
19:00-20:00	0.4	NW
20:00-21:00	0.0	-
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	WNW
10:00-11:00	0.9	W

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

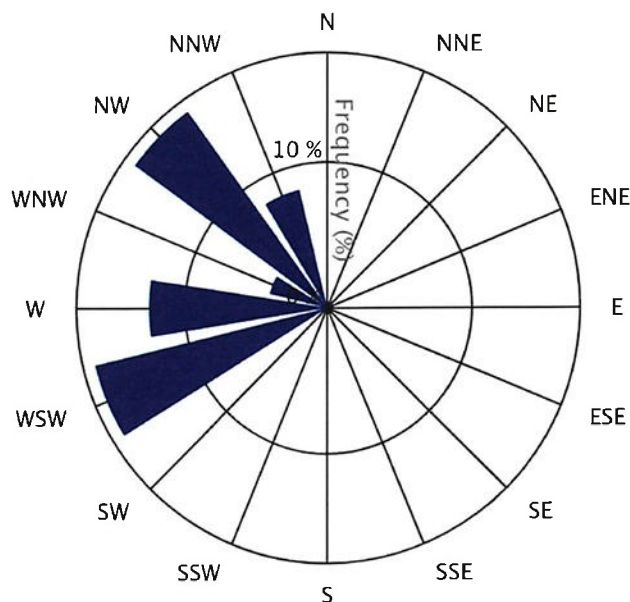
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-2

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 10-11 มีนาคม 2567

Calm 41.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	16.7	0.0	0.0	0.0	0.0	0.0	16.7
W	12.5	0.0	0.0	0.0	0.0	0.0	12.5
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	16.7	0.0	0.0	0.0	0.0	0.0	16.7
NNW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
Calm	41.7						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-2

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 10-11 มีนาคม 2567

เวลา	10-11 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	WNW
12:00-13:00	0.9	WSW
13:00-14:00	0.9	NW
14:00-15:00	1.8	WSW
15:00-16:00	1.8	WSW
16:00-17:00	1.3	WSW
17:00-18:00	1.3	NNW
18:00-19:00	0.9	NW
19:00-20:00	0.4	W
20:00-21:00	0.4	NW
21:00-22:00	0.4	W
22:00-23:00	0.4	W
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	NNW
10:00-11:00	0.9	NW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

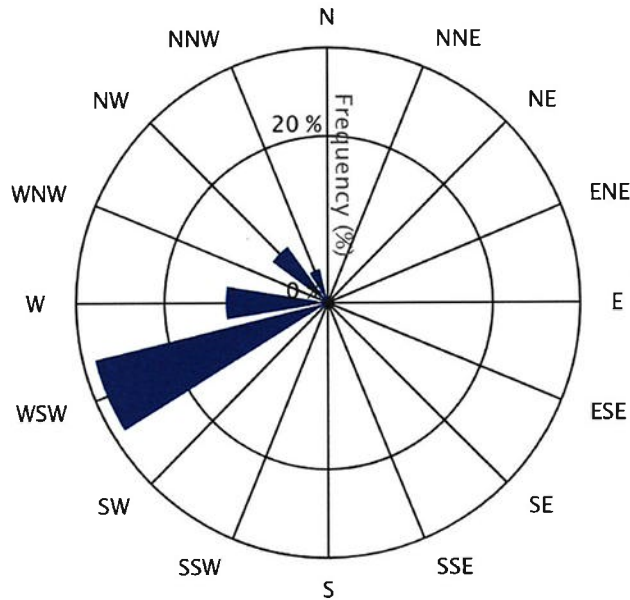
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-3

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 11-12 มีนาคม 2567

Calm 45.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	29.2	0.0	0.0	0.0	0.0	0.0	29.2
W	12.5	0.0	0.0	0.0	0.0	0.0	12.5
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
NNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
Calm	45.8						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-3

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 11-12 มีนาคม 2567

เวลา	11-12 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	W
12:00-13:00	0.9	W
13:00-14:00	0.9	NW
14:00-15:00	1.3	WSW
15:00-16:00	1.8	WSW
16:00-17:00	1.3	W
17:00-18:00	0.9	NW
18:00-19:00	1.3	WSW
19:00-20:00	0.9	WSW
20:00-21:00	0.4	WSW
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.4	NNW
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.9	WSW
10:00-11:00	0.9	WSW



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

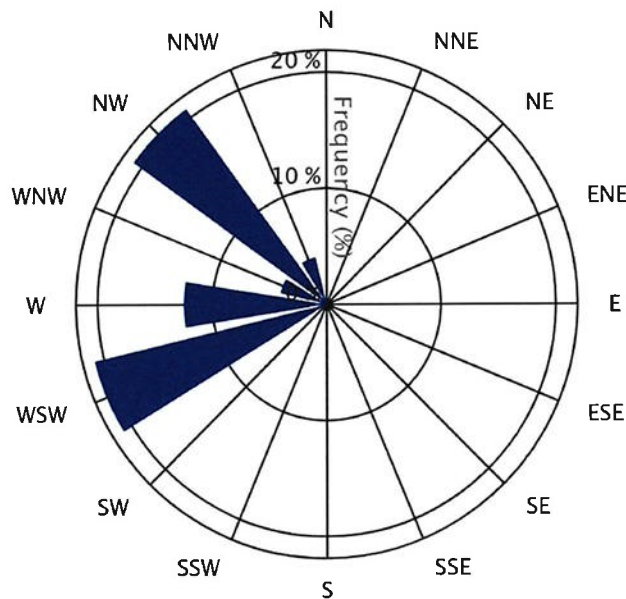
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-4

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 12-13 มีนาคม 2567

Calm 37.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
W	12.5	0.0	0.0	0.0	0.0	0.0	12.5
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
NNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
Calm	37.5						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-4

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 12-13 มีนาคม 2567

เวลา	12-13 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	NW
12:00-13:00	1.3	NW
13:00-14:00	1.3	NW
14:00-15:00	1.3	NW
15:00-16:00	1.3	NW
16:00-17:00	1.3	W
17:00-18:00	0.9	W
18:00-19:00	0.9	WSW
19:00-20:00	0.4	WNW
20:00-21:00	0.4	NNW
21:00-22:00	0.4	WSW
22:00-23:00	0.4	W
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.4	WSW
09:00-10:00	1.3	WSW
10:00-11:00	1.3	WSW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

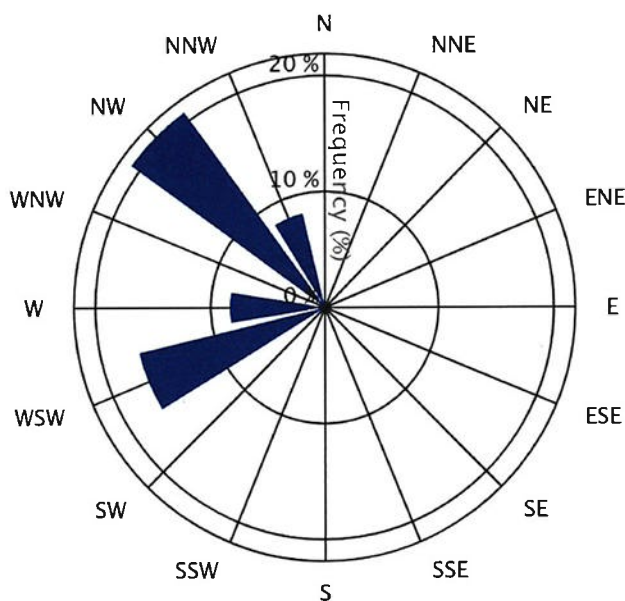
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-5

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 13-14 มีนาคม 2567

Calm 45.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	16.7	0.0	0.0	0.0	0.0	0.0	16.7
W	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
NNW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
Calm	45.8						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-5

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 13-14 มีนาคม 2567

เวลา	13-14 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	NW
12:00-13:00	1.3	NW
13:00-14:00	1.3	NW
14:00-15:00	1.3	NW
15:00-16:00	1.8	W
16:00-17:00	1.3	WSW
17:00-18:00	1.3	WSW
18:00-19:00	1.3	WSW
19:00-20:00	0.9	W
20:00-21:00	0.4	WSW
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.4	NNW
09:00-10:00	0.9	NNW
10:00-11:00	0.9	NW



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

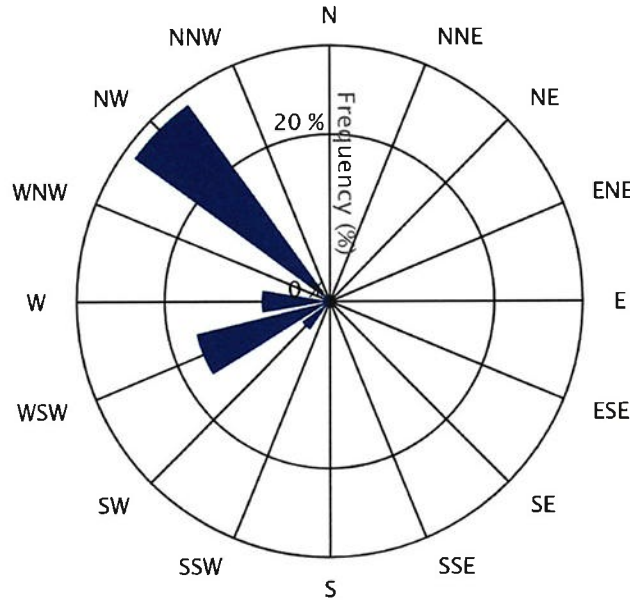
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-6

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 14-15 มีนาคม 2567

Calm 41.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	16.7	0.0	0.0	0.0	0.0	0.0	16.7
W	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	29.2	0.0	0.0	0.0	0.0	0.0	29.2
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	41.7						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-6

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 14-15 มีนาคม 2567

เวลา	14-15 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.3	NW
12:00-13:00	1.8	NW
13:00-14:00	1.8	NW
14:00-15:00	1.3	NW
15:00-16:00	1.8	W
16:00-17:00	1.3	NW
17:00-18:00	1.3	WSW
18:00-19:00	1.3	WSW
19:00-20:00	0.9	W
20:00-21:00	0.9	WSW
21:00-22:00	0.4	WSW
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.4	SW
09:00-10:00	0.9	NW
10:00-11:00	0.9	NW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

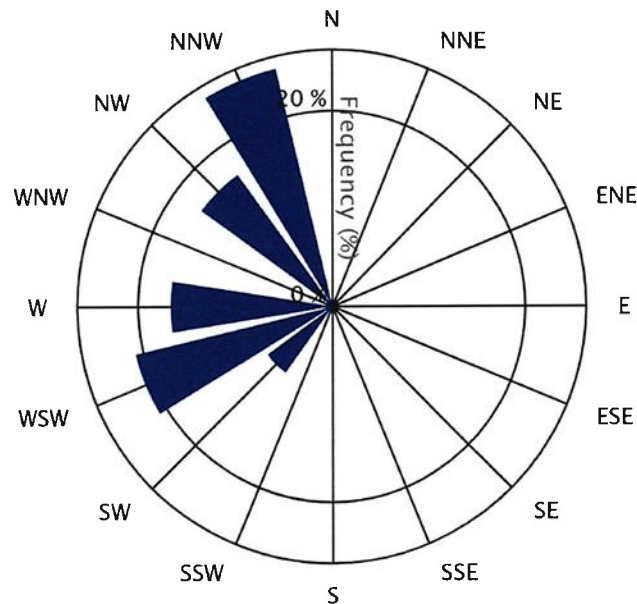
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-7

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 15-16 มีนาคม 2567

Calm 12.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WSW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
W	16.7	0.0	0.0	0.0	0.0	0.0	16.7
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	16.7	0.0	0.0	0.0	0.0	0.0	16.7
NNW	25.0	0.0	0.0	0.0	0.0	0.0	25.0
Calm	12.5						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524-7

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 15-16 มีนาคม 2567

เวลา	15-16 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	NNW
12:00-13:00	0.9	NNW
13:00-14:00	1.3	NNW
14:00-15:00	1.3	WSW
15:00-16:00	1.8	W
16:00-17:00	1.8	NW
17:00-18:00	1.3	WSW
18:00-19:00	0.9	WSW
19:00-20:00	0.4	W
20:00-21:00	0.9	W
21:00-22:00	0.4	W
22:00-23:00	0.9	WSW
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.4	NW
03:00-04:00	0.4	NNW
04:00-05:00	0.4	NW
05:00-06:00	0.4	WSW
06:00-07:00	0.9	SW
07:00-08:00	1.3	SW
08:00-09:00	0.4	NNW
09:00-10:00	0.4	NW
10:00-11:00	0.4	NNW



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

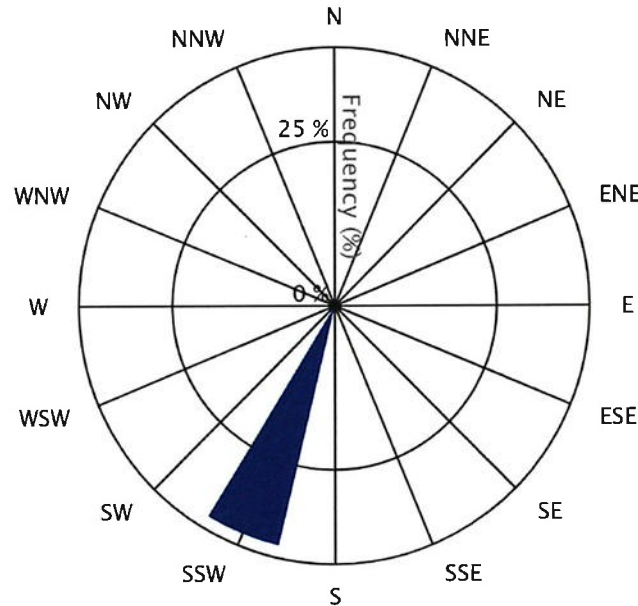
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-1

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 9-10 มีนาคม 2567

Calm 62.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	37.5	0.0	0.0	0.0	0.0	0.0	37.5
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	62.5						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-1

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 9-10 มีนาคม 2567

เวลา	9-10 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.0	-
12:00-13:00	0.9	SSW
13:00-14:00	0.4	SSW
14:00-15:00	1.3	SSW
15:00-16:00	1.3	SSW
16:00-17:00	1.8	SSW
17:00-18:00	0.9	SSW
18:00-19:00	0.4	SSW
19:00-20:00	0.4	SSW
20:00-21:00	0.0	-
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.0	-
10:00-11:00	0.9	SSW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

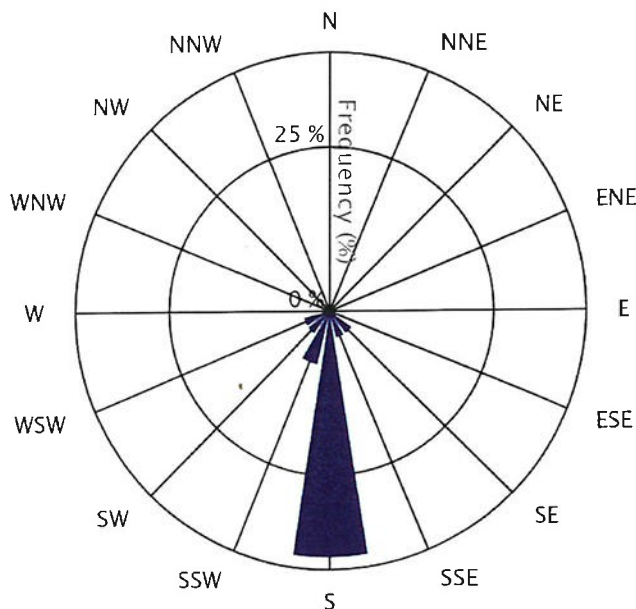
บริษัท อมตะ ปิ.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-2

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 10-11 มีนาคม 2567

Calm 37.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	37.5	0.0	0.0	0.0	0.0	0.0	37.5
SSW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	37.5						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-2

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 10-11 มีนาคม 2567

เวลา	10-11 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	S
12:00-13:00	0.9	S
13:00-14:00	1.3	S
14:00-15:00	1.8	SE
15:00-16:00	1.8	S
16:00-17:00	1.3	SSW
17:00-18:00	1.3	S
18:00-19:00	0.9	SSW
19:00-20:00	0.4	SW
20:00-21:00	0.4	S
21:00-22:00	0.4	S
22:00-23:00	0.4	S
23:00-00:00	0.4	S
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	SSE
10:00-11:00	0.9	WSW



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

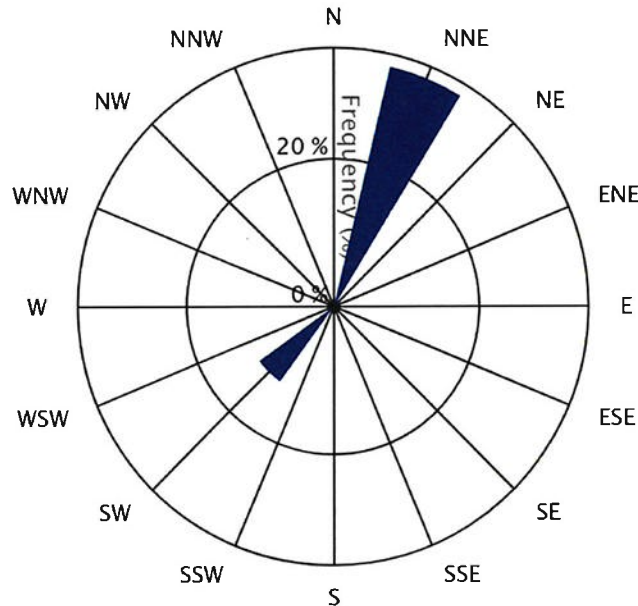
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-3

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 11-12 มีนาคม 2567

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	33.3	0.0	0.0	0.0	0.0	0.0	33.3
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	12.5	0.0	0.0	0.0	0.0	0.0	12.5
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	54.2						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-3

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 11-12 มีนาคม 2567

เวลา	11-12 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.4	NNE
12:00-13:00	0.4	NNE
13:00-14:00	0.9	NNE
14:00-15:00	1.3	SW
15:00-16:00	1.8	SW
16:00-17:00	0.0	-
17:00-18:00	0.4	NNE
18:00-19:00	0.9	NNE
19:00-20:00	0.4	NNE
20:00-21:00	0.4	NNE
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	NNE
10:00-11:00	0.9	SW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

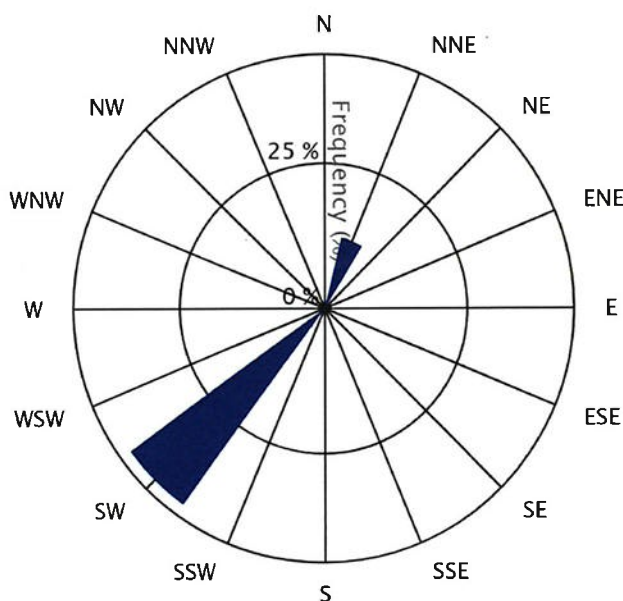
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-4

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 12-13 มีนาคม 2567

Calm 45.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	12.5	0.0	0.0	0.0	0.0	0.0	12.5
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	41.7	0.0	0.0	0.0	0.0	0.0	41.7
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	45.8						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-4

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 12-13 มีนาคม 2567

เวลา	12-13 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.3	NNE
12:00-13:00	0.9	NNE
13:00-14:00	0.9	SW
14:00-15:00	1.3	SW
15:00-16:00	1.3	SW
16:00-17:00	1.3	SW
17:00-18:00	0.9	SW
18:00-19:00	0.9	SW
19:00-20:00	0.4	SW
20:00-21:00	0.4	NNE
21:00-22:00	0.0	-
22:00-23:00	0.9	SW
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	SW
10:00-11:00	1.3	SW



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

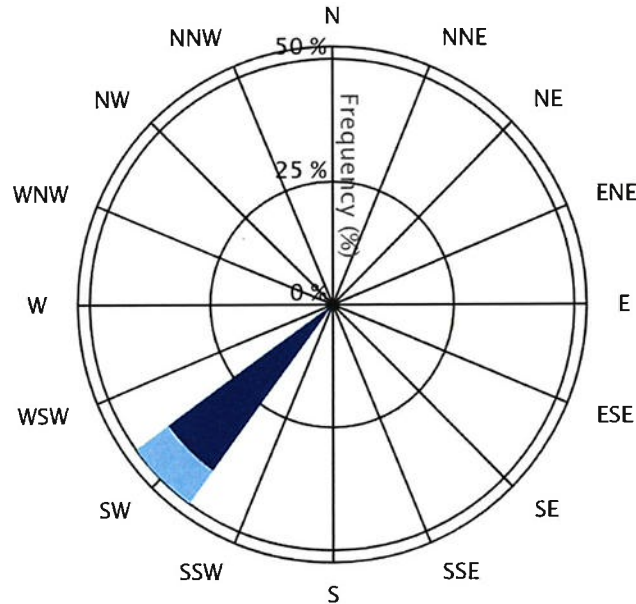
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-5

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 13-14 มีนาคม 2567

Calm 50.0 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	41.7	8.3	0.0	0.0	0.0	0.0	50.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	50.0						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-5

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 13-14 มีนาคม 2567

เวลา	13-14 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.3	SW
12:00-13:00	1.8	SW
13:00-14:00	1.8	SW
14:00-15:00	2.2	SW
15:00-16:00	2.2	SW
16:00-17:00	1.8	SW
17:00-18:00	1.8	SW
18:00-19:00	1.3	SW
19:00-20:00	0.9	SW
20:00-21:00	0.4	SW
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	SW
10:00-11:00	0.4	SW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

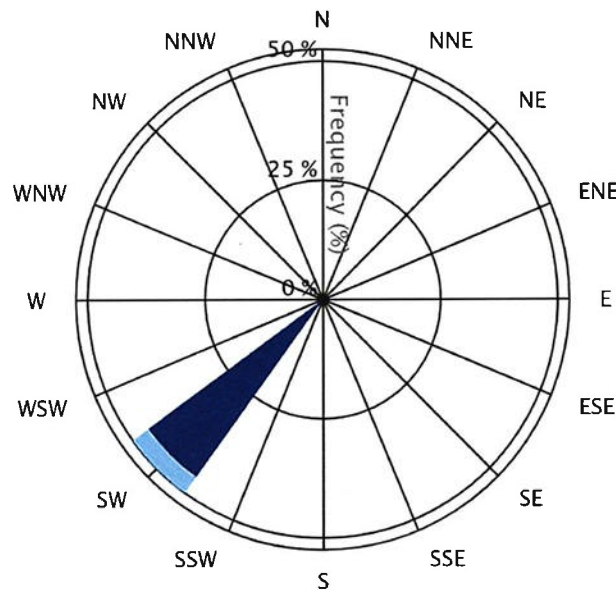
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-6

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 14-15 มีนาคม 2567

Calm 50.0 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	45.8	4.2	0.0	0.0	0.0	0.0	50.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	50.0						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-6

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 14-15 มีนาคม 2567

เวลา	14-15 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.0	-
12:00-13:00	0.9	SW
13:00-14:00	0.4	SW
14:00-15:00	0.4	SW
15:00-16:00	0.4	SW
16:00-17:00	0.9	SW
17:00-18:00	2.2	SW
18:00-19:00	0.9	SW
19:00-20:00	0.4	SW
20:00-21:00	0.9	SW
21:00-22:00	0.4	SW
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	SW
10:00-11:00	1.3	SW

## แผนผังทิศทางและความเร็วลม

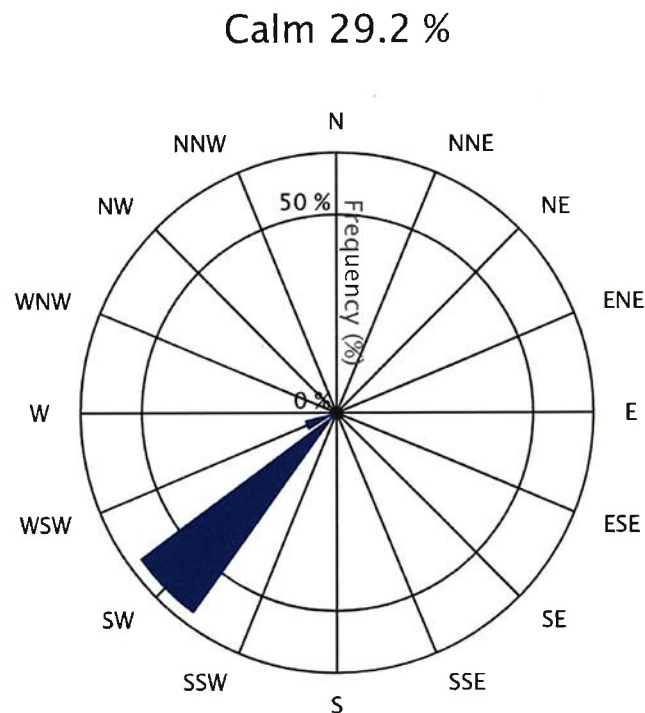
Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-7

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 15-16 มีนาคม 2567



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	62.5	0.0	0.0	0.0	0.0	0.0	62.5
WSW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	29.2						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-7

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 15-16 มีนาคม 2567

เวลา	15-16 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.3	SW
12:00-13:00	0.9	SW
13:00-14:00	1.3	SW
14:00-15:00	1.8	SW
15:00-16:00	1.8	SW
16:00-17:00	1.8	SW
17:00-18:00	0.9	SW
18:00-19:00	0.4	WSW
19:00-20:00	0.9	SW
20:00-21:00	0.9	SW
21:00-22:00	0.9	SW
22:00-23:00	1.3	SW
23:00-00:00	0.4	SW
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	1.3	SW
07:00-08:00	0.4	SW
08:00-09:00	0.9	SW
09:00-10:00	0.4	WSW
10:00-11:00	0.0	-

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

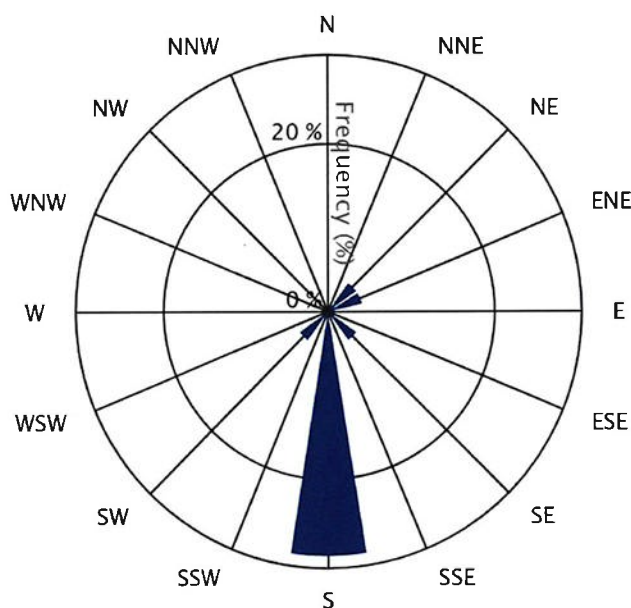
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-1

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 9-10 มีนาคม 2567

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ENE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	29.2	0.0	0.0	0.0	0.0	0.0	29.2
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	54.2						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-1

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 9-10 มีนาคม 2567

เวลา	9-10 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.0	-
12:00-13:00	0.4	SW
13:00-14:00	0.9	S
14:00-15:00	1.3	SE
15:00-16:00	1.8	S
16:00-17:00	1.8	S
17:00-18:00	1.3	S
18:00-19:00	1.3	S
19:00-20:00	0.9	S
20:00-21:00	0.0	-
21:00-22:00	0.0	-
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.4	ENE
06:00-07:00	0.9	NE
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.0	-
10:00-11:00	0.9	S



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

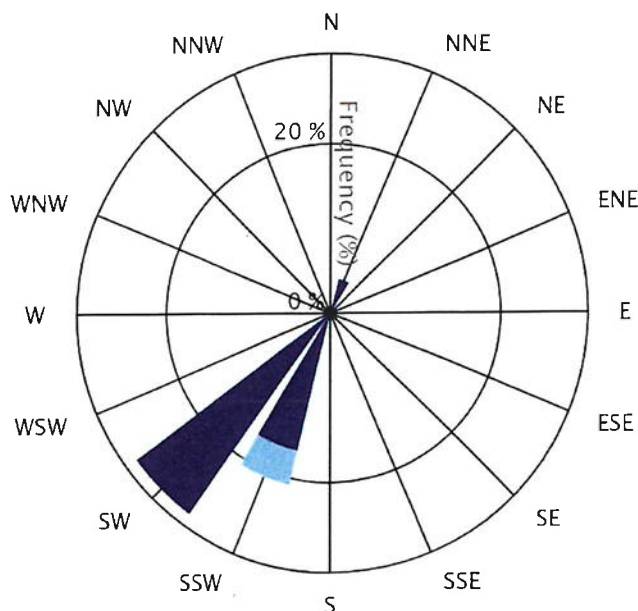
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-2

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 10-11 มีนาคม 2567

Calm 45.8 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	16.7	4.2	0.0	0.0	0.0	0.0	20.9
SW	29.2	0.0	0.0	0.0	0.0	0.0	29.2
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	45.8						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526-2

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 10-11 มีนาคม 2567

เวลา	10-11 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.3	SSW
12:00-13:00	0.4	SSW
13:00-14:00	0.9	SSW
14:00-15:00	2.2	SSW
15:00-16:00	1.3	SW
16:00-17:00	0.9	SW
17:00-18:00	0.9	SW
18:00-19:00	1.8	SW
19:00-20:00	1.3	SW
20:00-21:00	0.4	SW
21:00-22:00	0.0	-
22:00-23:00	0.4	NNE
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.0	-
09:00-10:00	0.4	SSW
10:00-11:00	0.4	SW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

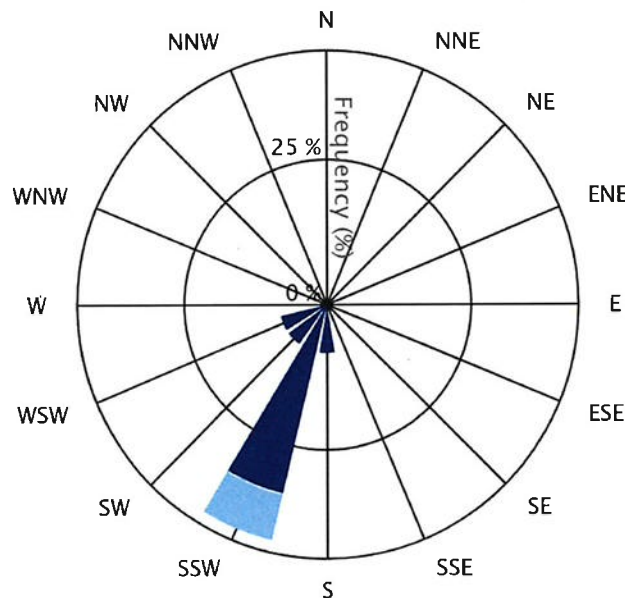
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-3

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 11-12 มีนาคม 2567

Calm 33.3 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSW	33.3	8.3	0.0	0.0	0.0	0.0	41.6
SW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WSW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	33.3						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-3

จุดตรวจวัด : ศูนย์พัฒนาศักยภาพเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 11-12 มีนาคม 2567

เวลา	11-12 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	S
12:00-13:00	0.9	WSW
13:00-14:00	0.9	SW
14:00-15:00	2.2	SSW
15:00-16:00	2.2	SSW
16:00-17:00	1.3	SW
17:00-18:00	0.9	WSW
18:00-19:00	1.3	SSW
19:00-20:00	1.3	SSW
20:00-21:00	0.9	SSW
21:00-22:00	0.4	SSW
22:00-23:00	0.0	-
23:00-00:00	0.4	S
00:00-01:00	0.4	SSW
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.4	SSW
09:00-10:00	1.3	SSW
10:00-11:00	0.9	SSW



## แผนผังทิศทางและความเร็วลม

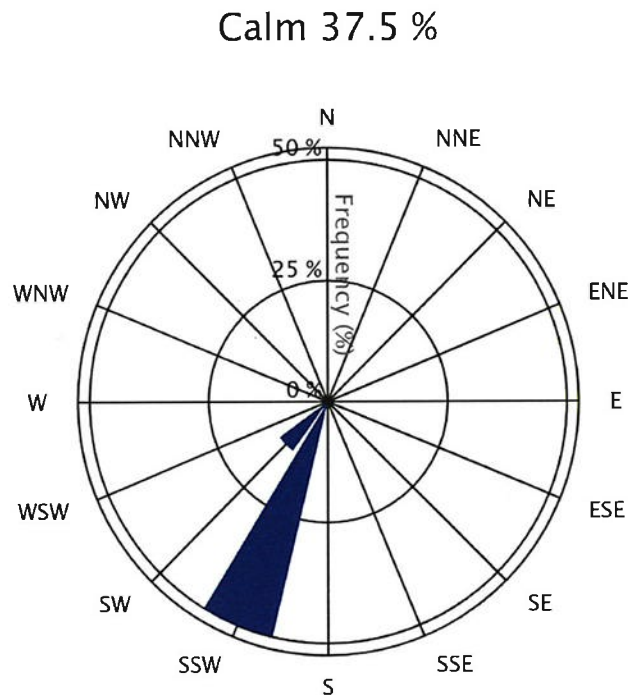
Request No. LA67-R0367

บริษัท อมตะ ปิ.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-4

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 12-13 มีนาคม 2567



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	50.0	0.0	0.0	0.0	0.0	0.0	50.0
SW	12.5	0.0	0.0	0.0	0.0	0.0	12.5
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	37.5						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-4

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 12-13 มีนาคม 2567

เวลา	12-13 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.9	SW
12:00-13:00	1.3	SW
13:00-14:00	1.8	SSW
14:00-15:00	1.3	SSW
15:00-16:00	1.8	SSW
16:00-17:00	1.3	SSW
17:00-18:00	0.9	SSW
18:00-19:00	1.3	SSW
19:00-20:00	0.9	SSW
20:00-21:00	0.4	SSW
21:00-22:00	0.9	SSW
22:00-23:00	0.4	SSW
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.4	SSW
09:00-10:00	0.9	SSW
10:00-11:00	1.3	SW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

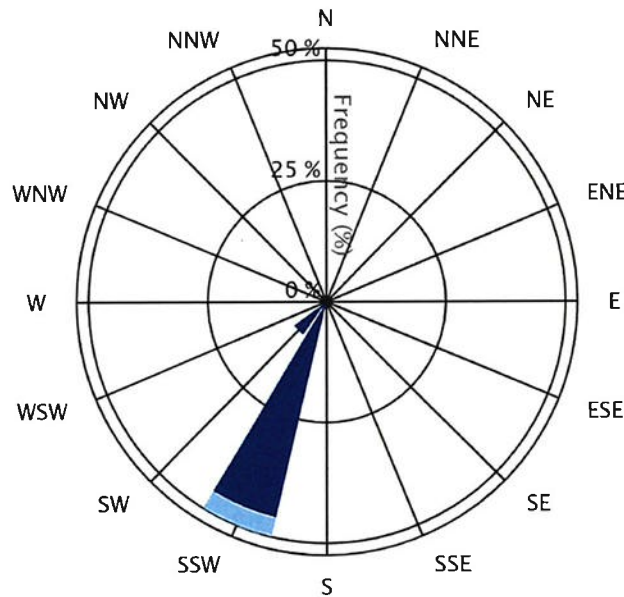
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-5

จุดตรวจวัด : ศูนย์พัฒนาคัดเลือกองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 13-14 มีนาคม 2567

Calm 41.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	45.8	4.2	0.0	0.0	0.0	0.0	50.0
SW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	41.7						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-5

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 13-14 มีนาคม 2567

เวลา	13-14 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.8	SSW
12:00-13:00	1.8	SSW
13:00-14:00	2.2	SSW
14:00-15:00	1.8	SW
15:00-16:00	1.8	SSW
16:00-17:00	1.8	SSW
17:00-18:00	1.8	SSW
18:00-19:00	1.8	SSW
19:00-20:00	1.3	SSW
20:00-21:00	0.9	SSW
21:00-22:00	0.4	SSW
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.0	-
08:00-09:00	0.4	SSW
09:00-10:00	0.9	SW
10:00-11:00	0.9	SSW



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

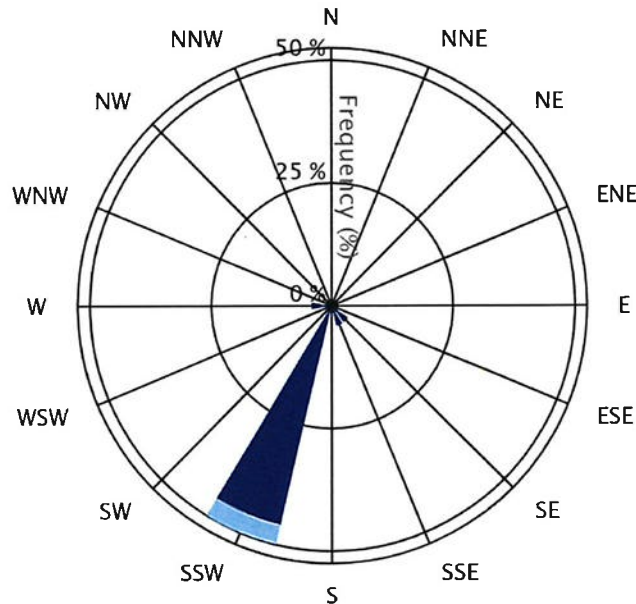
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-6

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 14-15 มีนาคม 2567

Calm 37.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	45.8	4.2	0.0	0.0	0.0	0.0	50.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	37.5						



## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-6

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 14-15 มีนาคม 2567

เวลา	14-15 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.3	SSW
12:00-13:00	1.3	W
13:00-14:00	1.3	SSW
14:00-15:00	1.8	SSW
15:00-16:00	1.8	SSW
16:00-17:00	2.2	SSW
17:00-18:00	1.3	SSW
18:00-19:00	1.3	SSW
19:00-20:00	1.3	SSW
20:00-21:00	1.3	SSW
21:00-22:00	0.9	SSW
22:00-23:00	0.0	-
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.0	-
05:00-06:00	0.0	-
06:00-07:00	0.0	-
07:00-08:00	0.4	SE
08:00-09:00	0.9	SSE
09:00-10:00	0.9	SSW
10:00-11:00	1.3	SSW

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

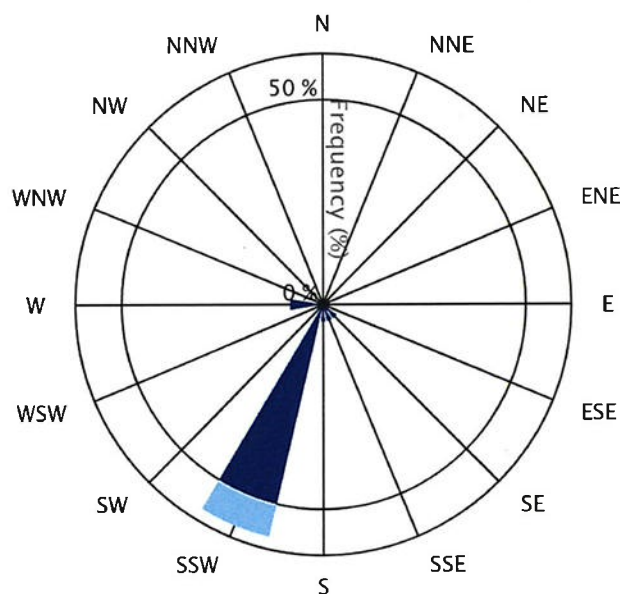
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-7

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 15-16 มีนาคม 2567

Calm 20.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	50.0	8.3	0.0	0.0	0.0	0.0	58.3
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm	20.8						

## แผนผังทิศทางและความเร็วลม

Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525-7

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 15-16 มีนาคม 2567

เวลา	15-16 มีนาคม 2567	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	1.8	SSW
12:00-13:00	2.2	SSW
13:00-14:00	1.8	SSW
14:00-15:00	1.8	SSW
15:00-16:00	2.7	SSW
16:00-17:00	1.8	SSW
17:00-18:00	1.3	SSW
18:00-19:00	1.8	SSW
19:00-20:00	1.3	SSW
20:00-21:00	1.3	SSW
21:00-22:00	1.3	SSW
22:00-23:00	0.9	SSW
23:00-00:00	0.0	-
00:00-01:00	0.0	-
01:00-02:00	0.0	-
02:00-03:00	0.0	-
03:00-04:00	0.0	-
04:00-05:00	0.4	S
05:00-06:00	1.3	SE
06:00-07:00	1.8	SSE
07:00-08:00	0.9	SSW
08:00-09:00	0.4	SSW
09:00-10:00	0.4	W
10:00-11:00	0.4	W



## แผนผังทิศทางและความเร็วลม

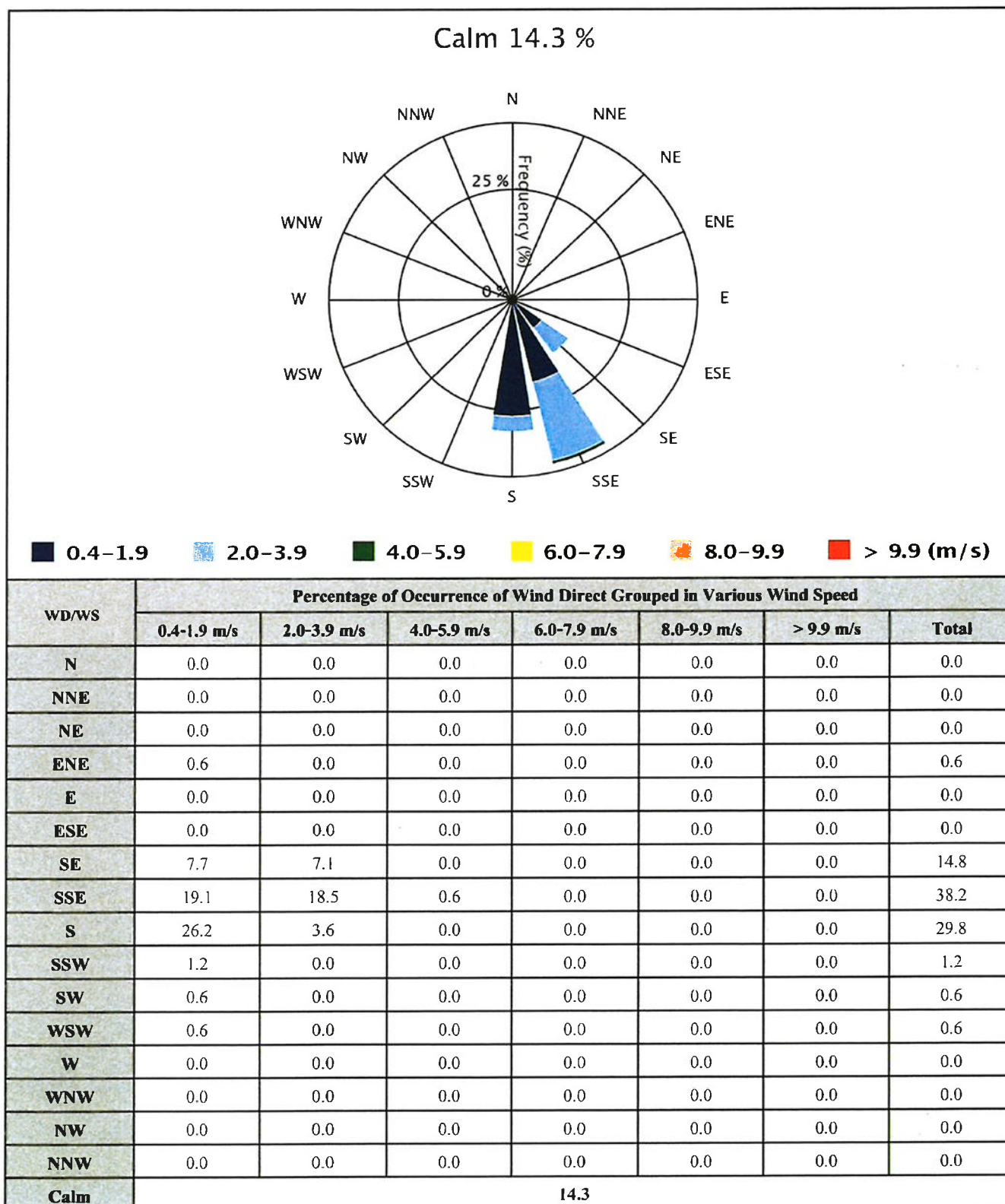
Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05523

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 9-16 มีนาคม 2567





แผนผังทิศทางและความเร็วลม

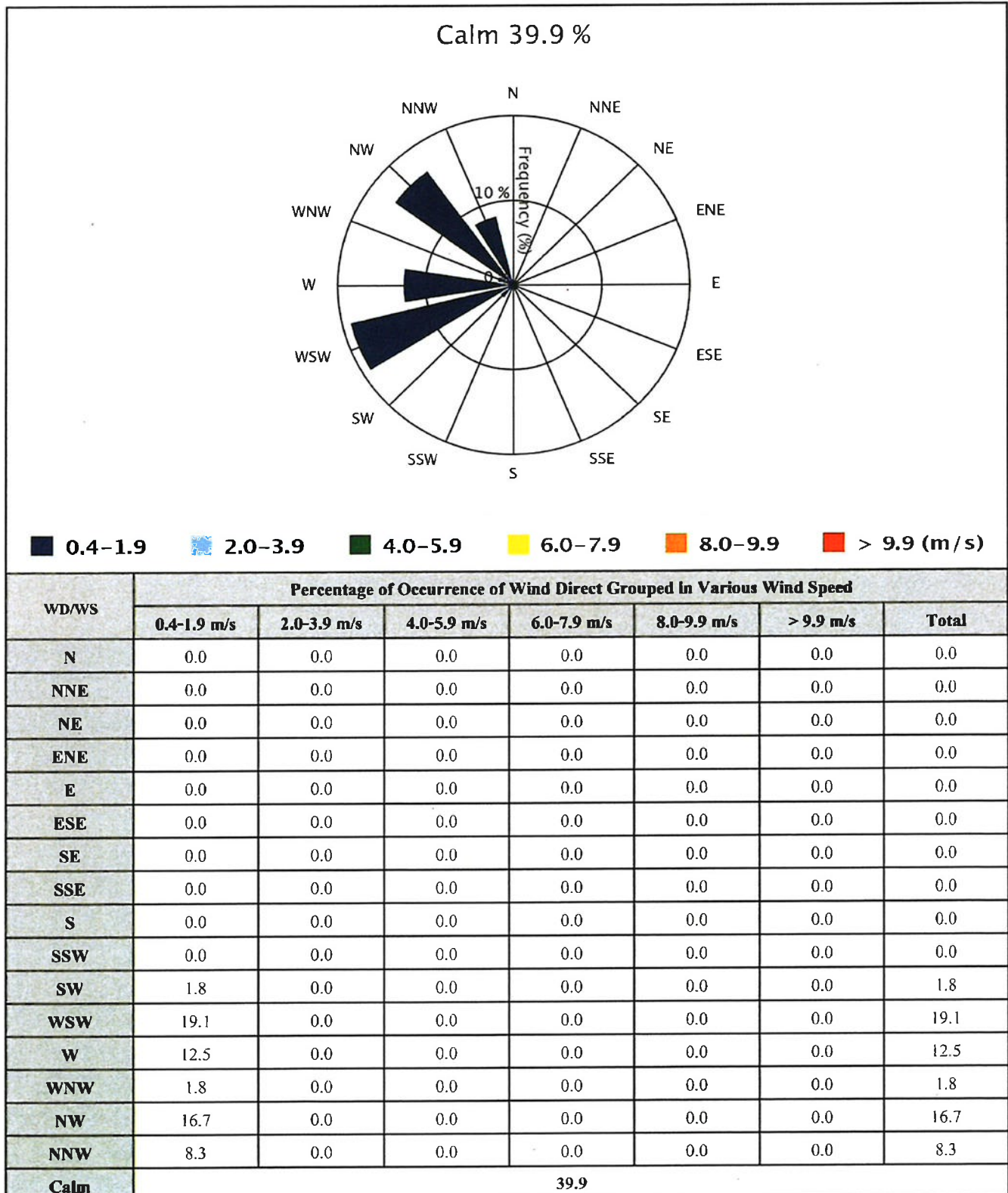
Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05524

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 9-16 มีนาคม 2567



## แผนผังทิศทางและความเร็วลม

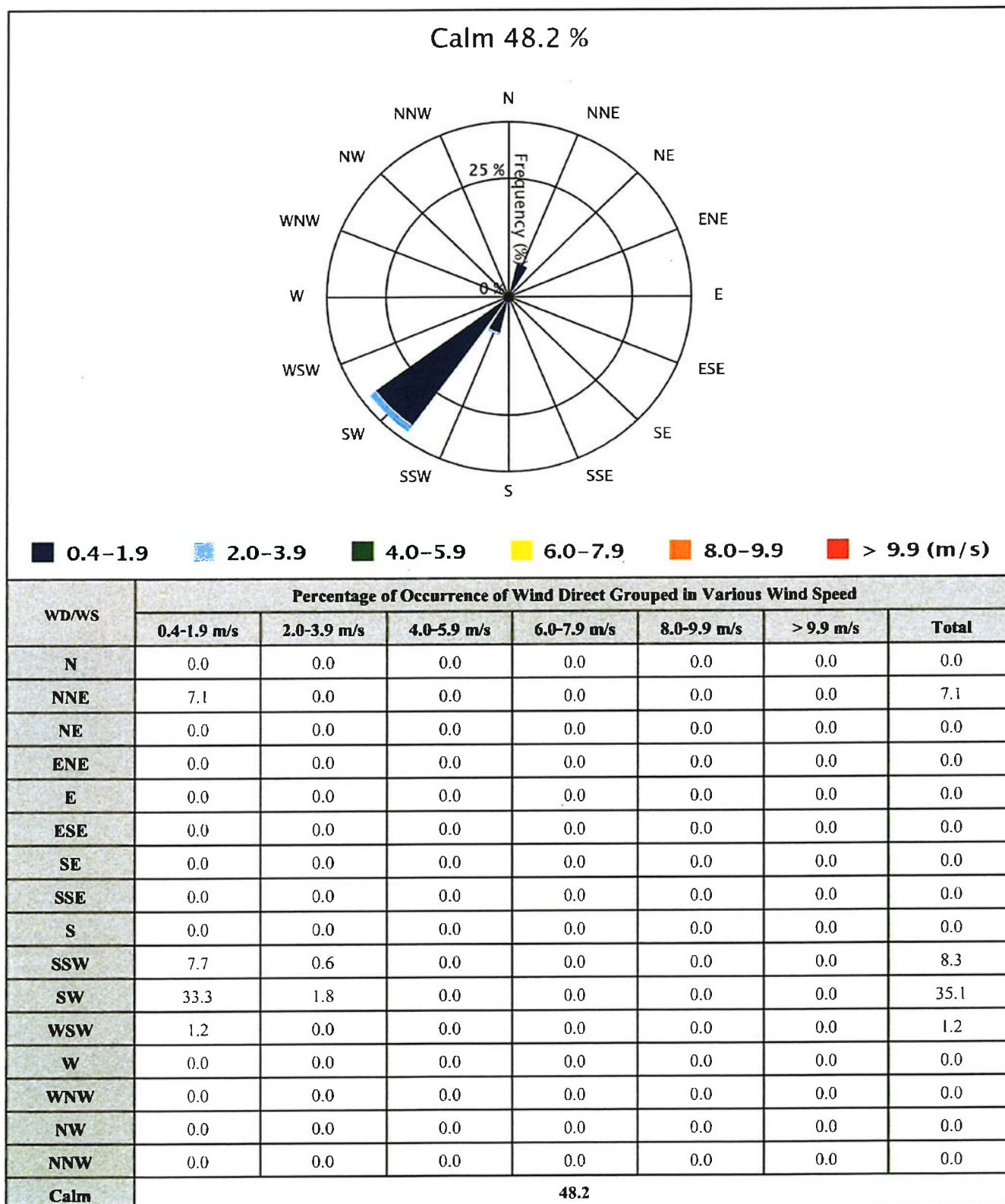
Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05526

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 9-16 มีนาคม 2567



## แผนผังทิศทางและความเร็วลม

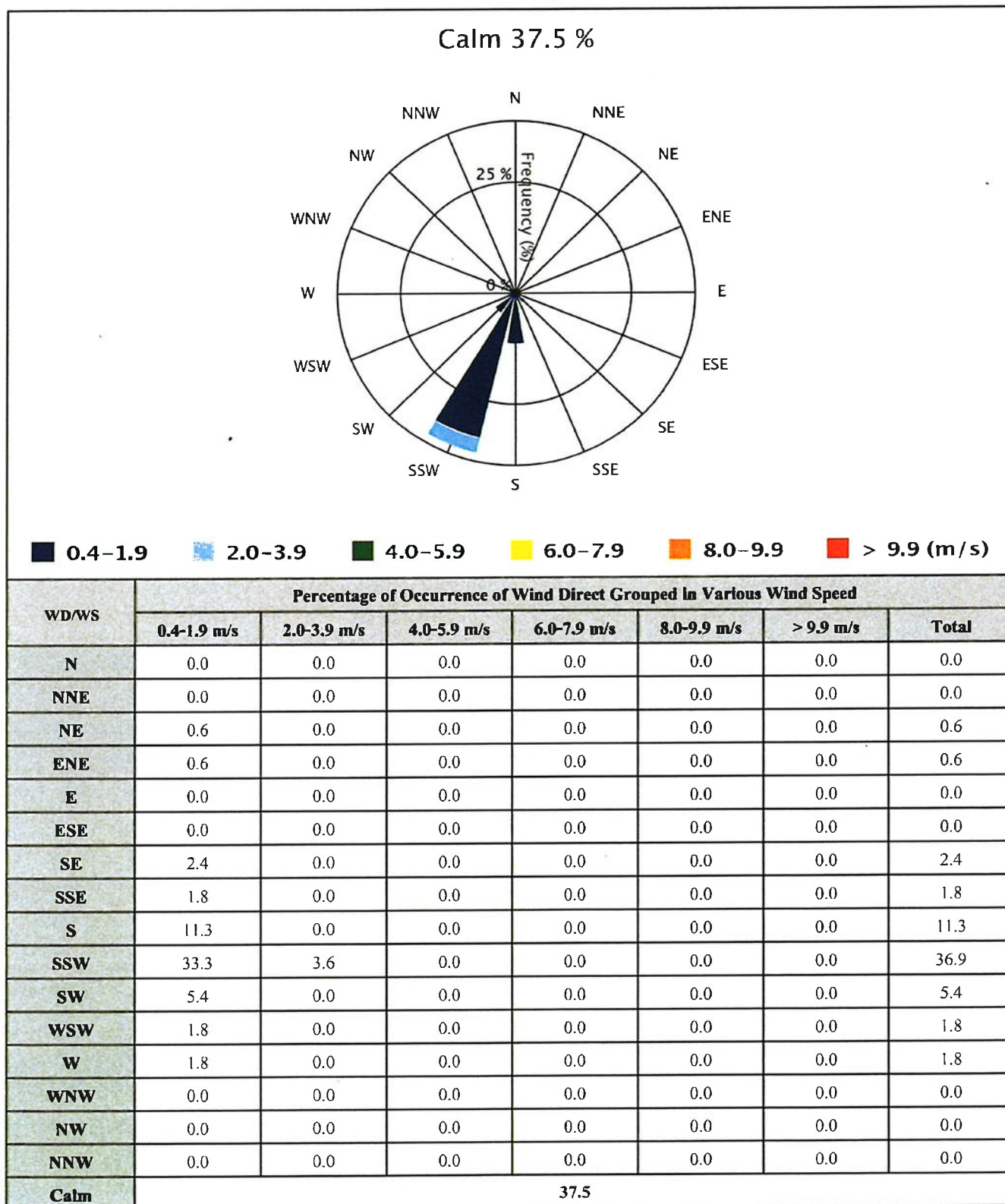
Request No. LA67-R0367

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05525

จุดตรวจวัด : ศูนย์พัฒนาศักยภาพการจัดการบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 9-16 มีนาคม 2567





ผลการตรวจวัดระดับเสียงโดยทั่วไป



Request No. LA67-R0367

Report No. R6703-3235

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05509  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 09-10/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 16/03/2024  
S/N 01120943 : Class 1 REPORTED DATE : 27/03/2024

TIME \ DATE	09-10/03/2024 ( $L_{eq}$ )	09-10/03/2024 ( $L_{max}$ )	09-10/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>3</sup>	51.3	74.7	43.6	dB(A)
13:00 - 14:00	57.3	73.3	45.4	dB(A)
14:00 - 15:00	46.1	68.9	40.1	dB(A)
15:00 - 16:00	44.3	67.5	38.5	dB(A)
16:00 - 17:00	48.6	74.4	38.4	dB(A)
17:00 - 18:00	43.3	67.4	38.7	dB(A)
18:00 - 19:00	45.5	68.2	36.8	dB(A)
19:00 - 20:00	40.4	54.6	37.8	dB(A)
20:00 - 21:00	39.0	53.4	36.5	dB(A)
21:00 - 22:00	39.6	59.2	36.8	dB(A)
22:00 - 23:00	38.5	63.0	37.3	dB(A)
23:00 - 00:00	39.6	56.2	37.0	dB(A)
00:00 - 01:00	38.8	55.1	36.7	dB(A)
01:00 - 02:00	37.5	60.3	36.4	dB(A)
02:00 - 03:00	37.7	61.3	35.9	dB(A)
03:00 - 04:00	37.8	53.9	35.0	dB(A)
04:00 - 05:00	38.4	57.9	35.3	dB(A)
05:00 - 06:00	40.8	63.6	36.0	dB(A)
06:00 - 07:00	49.4	72.4	43.8	dB(A)
07:00 - 08:00	51.2	73.1	44.7	dB(A)
08:00 - 09:00	49.7	70.8	45.0	dB(A)
09:00 - 10:00	48.6	66.4	43.4	dB(A)
10:00 - 11:00	44.2	69.0	37.6	dB(A)
11:00 - 12:00	49.2	76.6	41.9	dB(A)
$L_{eq}$ 24 hr.	47.8	-	-	dB(A)
$L_{dn}$	50.6	-	-	dB(A)
Maximum	-	76.6	-	dB(A)
$L_{90}$	-	-	35.9	dB(A)
Standard	70 <sup>1/1</sup> , 70 <sup>1/2</sup>	115 <sup>1/1</sup> , 115 <sup>1/2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhumi)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

Report No. R6703-3236

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านคูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05510  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 10-11/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 16/03/2024  
S/N 01120943 : Class I REPORTED DATE : 27/03/2024

TIME \ DATE	10-11/03/2024 ( $L_{eq}$ )	10-11/03/2024 ( $L_{max}$ )	10-11/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	43.6	62.1	39.3	dB(A)
13:00 - 14:00	45.8	64.0	42.0	dB(A)
14:00 - 15:00	45.3	66.8	40.5	dB(A)
15:00 - 16:00	43.3	68.9	39.2	dB(A)
16:00 - 17:00	45.0	70.2	39.0	dB(A)
17:00 - 18:00	47.2	70.3	39.1	dB(A)
18:00 - 19:00	41.4	67.2	37.4	dB(A)
19:00 - 20:00	38.1	51.4	36.4	dB(A)
20:00 - 21:00	38.0	54.2	36.4	dB(A)
21:00 - 22:00	36.8	53.2	35.2	dB(A)
22:00 - 23:00	37.1	53.9	35.2	dB(A)
23:00 - 00:00	37.2	46.0	36.1	dB(A)
00:00 - 01:00	37.1	54.7	35.1	dB(A)
01:00 - 02:00	36.0	54.0	34.6	dB(A)
02:00 - 03:00	36.5	52.7	34.5	dB(A)
03:00 - 04:00	36.1	59.1	34.7	dB(A)
04:00 - 05:00	37.5	54.1	34.4	dB(A)
05:00 - 06:00	43.5	65.4	36.3	dB(A)
06:00 - 07:00	52.5	71.1	45.3	dB(A)
07:00 - 08:00	55.8	74.8	49.1	dB(A)
08:00 - 09:00	52.3	72.7	46.1	dB(A)
09:00 - 10:00	53.0	75.5	45.9	dB(A)
10:00 - 11:00	50.9	71.7	44.3	dB(A)
11:00 - 12:00	60.2	82.4	55.1	dB(A)
$L_{eq}$ 24 hr.	50.0	-	-	dB(A)
$L_{dn}$	52.7	-	-	dB(A)
Maximum	-	82.4	-	dB(A)
$L_{90}$	-	-	34.6	dB(A)
Standard	$70^{1/1}, 70^{2/2}$	$115^{1/1}, 115^{2/2}$	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

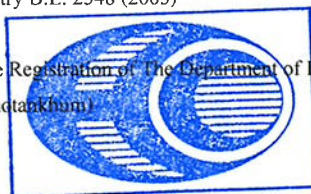
Report No. R6703-3237

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

SAMPLE NO. : 05511  
MEASURING DATE : 11-12/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	11-12/03/2024 ( $L_{eq}$ )	11-12/03/2024 ( $L_{max}$ )	11-12/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	54.0	76.9	43.8	dB(A)
13:00 - 14:00	48.6	72.1	42.5	dB(A)
14:00 - 15:00	51.8	73.8	45.3	dB(A)
15:00 - 16:00	54.3	74.4	45.6	dB(A)
16:00 - 17:00	51.4	75.8	41.4	dB(A)
17:00 - 18:00	48.9	71.2	40.8	dB(A)
18:00 - 19:00	45.5	74.1	37.8	dB(A)
19:00 - 20:00	40.1	50.3	37.7	dB(A)
20:00 - 21:00	40.4	59.3	36.3	dB(A)
21:00 - 22:00	38.6	63.9	36.5	dB(A)
22:00 - 23:00	37.6	54.5	35.8	dB(A)
23:00 - 00:00	37.8	52.2	36.2	dB(A)
00:00 - 01:00	37.6	51.2	36.2	dB(A)
01:00 - 02:00	36.5	52.8	34.8	dB(A)
02:00 - 03:00	36.2	53.9	35.1	dB(A)
03:00 - 04:00	38.4	55.6	35.5	dB(A)
04:00 - 05:00	37.2	53.8	35.8	dB(A)
05:00 - 06:00	44.8	66.5	36.5	dB(A)
06:00 - 07:00	53.1	79.3	45.0	dB(A)
07:00 - 08:00	56.6	76.0	49.3	dB(A)
08:00 - 09:00	52.2	79.5	45.2	dB(A)
09:00 - 10:00	50.1	71.7	44.3	dB(A)
10:00 - 11:00	52.9	83.5	45.8	dB(A)
11:00 - 12:00	60.2	76.8	55.2	dB(A)
$L_{eq}$ 24 hr.	51.3	-	-	dB(A)
$L_{dn}$	53.8	-	-	dB(A)
Maximum	-	83.5	-	dB(A)
$L_{90}$	-	-	35.6	dB(A)
Standard	70 <sup>1/1</sup> , 70 <sup>2/2</sup>	115 <sup>1/1</sup> , 115 <sup>2/2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhun)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By: 

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. LA67-R0367

Report No. R6703-3238

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านคูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

SAMPLE NO. : 05512  
MEASURING DATE : 12-13/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	12-13/03/2024 ( $L_{eq}$ )	12-13/03/2024 ( $L_{max}$ )	12-13/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	49.5	72.0	42.4	dB(A)
13:00 - 14:00	48.8	71.6	43.8	dB(A)
14:00 - 15:00	51.0	76.4	45.6	dB(A)
15:00 - 16:00	49.0	67.5	43.6	dB(A)
16:00 - 17:00	45.4	69.6	41.0	dB(A)
17:00 - 18:00	44.2	70.1	38.7	dB(A)
18:00 - 19:00	45.5	66.0	38.3	dB(A)
19:00 - 20:00	42.0	70.8	37.2	dB(A)
20:00 - 21:00	38.1	53.1	36.4	dB(A)
21:00 - 22:00	40.3	56.2	38.4	dB(A)
22:00 - 23:00	38.6	63.3	37.1	dB(A)
23:00 - 00:00	37.6	52.7	36.6	dB(A)
00:00 - 01:00	38.2	54.2	37.1	dB(A)
01:00 - 02:00	36.8	54.1	35.8	dB(A)
02:00 - 03:00	36.6	60.5	35.6	dB(A)
03:00 - 04:00	40.2	64.5	35.9	dB(A)
04:00 - 05:00	37.1	54.4	35.5	dB(A)
05:00 - 06:00	49.2	74.4	36.9	dB(A)
06:00 - 07:00	50.0	71.5	44.2	dB(A)
07:00 - 08:00	56.5	76.8	47.4	dB(A)
08:00 - 09:00	52.3	75.5	46.0	dB(A)
09:00 - 10:00	53.6	76.6	47.1	dB(A)
10:00 - 11:00	55.3	74.1	48.0	dB(A)
11:00 - 12:00	57.7	75.9	52.2	dB(A)
$L_{eq}$ 24 hr.	50.2	-	-	dB(A)
$L_{dn}$	52.8	-	-	dB(A)
Maximum	-	76.8	-	dB(A)
$L_{90}$	-	-	35.8	dB(A)
Standard	70 <sup>1/1</sup> , 70 <sup>2/2</sup>	115 <sup>1/1</sup> , 115 <sup>2/2</sup>	-	dB(A)

**REMARK :** <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)  
<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)  
<sup>1/3</sup> Start Time  
\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photakham)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....  
(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

Report No. R6703-3239

### TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านกุไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

SAMPLE NO. : 05513  
MEASURING DATE : 13-14/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

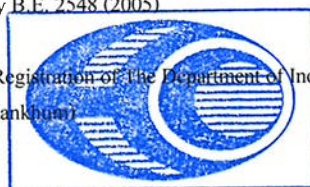
TIME \ DATE	13-14/03/2024 ( $L_{eq}$ )	13-14/03/2024 ( $L_{max}$ )	13-14/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	57.2	78.7	47.2	dB(A)
13:00 - 14:00	51.8	73.4	46.6	dB(A)
14:00 - 15:00	52.5	70.6	47.6	dB(A)
15:00 - 16:00	49.6	69.9	44.8	dB(A)
16:00 - 17:00	48.6	73.3	43.1	dB(A)
17:00 - 18:00	49.3	71.1	42.0	dB(A)
18:00 - 19:00	49.3	71.1	42.1	dB(A)
19:00 - 20:00	44.1	51.6	40.2	dB(A)
20:00 - 21:00	41.9	55.7	37.4	dB(A)
21:00 - 22:00	37.9	49.6	35.8	dB(A)
22:00 - 23:00	39.0	54.1	37.7	dB(A)
23:00 - 00:00	37.8	60.8	35.9	dB(A)
00:00 - 01:00	37.7	54.9	35.3	dB(A)
01:00 - 02:00	35.4	53.6	34.0	dB(A)
02:00 - 03:00	35.8	55.0	34.4	dB(A)
03:00 - 04:00	36.9	58.6	34.4	dB(A)
04:00 - 05:00	36.5	54.0	34.7	dB(A)
05:00 - 06:00	44.3	65.4	36.4	dB(A)
06:00 - 07:00	48.9	68.8	42.8	dB(A)
07:00 - 08:00	55.9	77.2	47.1	dB(A)
08:00 - 09:00	59.4	88.9	47.1	dB(A)
09:00 - 10:00	49.3	67.7	44.7	dB(A)
10:00 - 11:00	52.1	72.8	46.1	dB(A)
11:00 - 12:00	57.9	72.2	53.0	dB(A)
$L_{eq}$ 24 hr.	51.6	-	-	dB(A)
$L_{dn}$	53.0	-	-	dB(A)
Maximum	-	88.9	-	dB(A)
$L_{90}$	-	-	34.5	dB(A)
Standard	$70^{1/1}, 70^{1/2}$	$115^{1/1}, 115^{1/2}$	-	dB(A)

**REMARK :** <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)

<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)

<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhuan)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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Request No. LA67-R0367

Report No. R6703-3240

## TEST REPORT

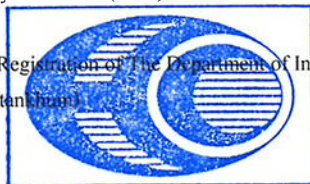
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านกุไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05514  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 14-15/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 16/03/2024  
S/N 01120943 : Class 1 REPORTED DATE : 27/03/2024

TIME \ DATE	14-15/03/2024 ( $L_{eq}$ )	14-15/03/2024 ( $L_{max}$ )	14-15/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	49.1	66.3	44.3	dB(A)
13:00 - 14:00	48.5	68.2	43.0	dB(A)
14:00 - 15:00	49.1	73.5	44.0	dB(A)
15:00 - 16:00	56.3	85.5	44.6	dB(A)
16:00 - 17:00	46.6	70.7	42.0	dB(A)
17:00 - 18:00	46.6	70.4	40.9	dB(A)
18:00 - 19:00	43.5	65.9	38.3	dB(A)
19:00 - 20:00	44.6	60.4	39.9	dB(A)
20:00 - 21:00	43.5	55.1	38.9	dB(A)
21:00 - 22:00	44.1	55.2	40.3	dB(A)
22:00 - 23:00	40.8	57.4	38.3	dB(A)
23:00 - 00:00	39.9	63.3	36.8	dB(A)
00:00 - 01:00	42.6	59.6	37.3	dB(A)
01:00 - 02:00	42.4	53.0	36.4	dB(A)
02:00 - 03:00	43.4	66.6	37.3	dB(A)
03:00 - 04:00	42.2	63.3	36.4	dB(A)
04:00 - 05:00	41.4	56.0	35.9	dB(A)
05:00 - 06:00	52.6	79.7	38.0	dB(A)
06:00 - 07:00	50.1	76.5	45.0	dB(A)
07:00 - 08:00	54.1	77.2	47.5	dB(A)
08:00 - 09:00	49.6	82.7	43.8	dB(A)
09:00 - 10:00	51.4	79.0	45.7	dB(A)
10:00 - 11:00	55.2	75.3	49.1	dB(A)
11:00 - 12:00	58.9	78.5	53.1	dB(A)
$L_{eq}$ 24 hr.	50.7	-	-	dB(A)
$L_{dn}$	54.2	-	-	dB(A)
Maximum	-	85.5	-	dB(A)
$L_{90}$	-	-	36.5	dB(A)
Standard	$70^{1/1}, 70^{1/2}$	$115^{1/1}, 115^{1/2}$	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works

(Measurement By Mr. Tummarut Photankham)



Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

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Request No. LA67-R0367

Report No. R6703-3241

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : โรงเรียนบ้านกุไทร  
 PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05515  
 DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 15-16/03/2024  
 INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 16/03/2024  
 S/N 01120943 : Class I REPORTED DATE : 27/03/2024

TIME \ DATE	15-16/03/2024 ( $L_{eq}$ )	15-16/03/2024 ( $L_{max}$ )	15-16/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>3</sup>	52.8	76.6	46.0	dB(A)
13:00 - 14:00	48.3	68.4	43.9	dB(A)
14:00 - 15:00	51.5	72.0	45.4	dB(A)
15:00 - 16:00	49.8	68.3	45.8	dB(A)
16:00 - 17:00	48.3	72.7	41.7	dB(A)
17:00 - 18:00	48.6	74.3	41.0	dB(A)
18:00 - 19:00	47.2	73.8	41.5	dB(A)
19:00 - 20:00	39.6	59.8	37.3	dB(A)
20:00 - 21:00	40.4	53.7	38.8	dB(A)
21:00 - 22:00	40.9	60.1	39.5	dB(A)
22:00 - 23:00	39.7	55.0	38.5	dB(A)
23:00 - 00:00	38.5	51.5	37.6	dB(A)
00:00 - 01:00	39.4	55.6	38.1	dB(A)
01:00 - 02:00	38.3	53.9	37.1	dB(A)
02:00 - 03:00	38.4	54.9	36.2	dB(A)
03:00 - 04:00	36.1	53.0	34.8	dB(A)
04:00 - 05:00	36.7	55.3	35.0	dB(A)
05:00 - 06:00	64.8	78.4	61.2	dB(A)
06:00 - 07:00	70.3	79.1	67.5	dB(A)
07:00 - 08:00	54.8	72.1	51.7	dB(A)
08:00 - 09:00	48.3	67.8	42.0	dB(A)
09:00 - 10:00	50.3	79.2	41.4	dB(A)
10:00 - 11:00	49.1	78.8	42.9	dB(A)
11:00 - 12:00	46.0	63.6	41.4	dB(A)
$L_{eq}$ 24 hr.	58.0	-	-	dB(A)
$L_{dn}$	67.6	-	-	dB(A)
Maximum	-	79.2	-	dB(A)
$L_{90}$	-	-	36.5	dB(A)
Standard	$70^{1/1}, 70^{2/2}$	$115^{1/1}, 115^{2/2}$	-	dB(A)

**REMARK :** <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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Request No. LA67-R0367

Report No. R6703-3242

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบางยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1

SAMPLE NO. : 05516  
MEASURING DATE : 09-10/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	09-10/03/2024 ( $L_{eq}$ )	09-10/03/2024 ( $L_{max}$ )	09-10/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	51.2	73.9	48.7	dB(A)
13:00 - 14:00	50.6	66.8	48.9	dB(A)
14:00 - 15:00	47.9	68.6	42.4	dB(A)
15:00 - 16:00	50.7	72.1	42.8	dB(A)
16:00 - 17:00	50.3	74.6	42.3	dB(A)
17:00 - 18:00	52.2	74.5	44.7	dB(A)
18:00 - 19:00	49.9	75.2	43.8	dB(A)
19:00 - 20:00	46.9	61.5	44.4	dB(A)
20:00 - 21:00	47.4	60.1	45.3	dB(A)
21:00 - 22:00	48.8	75.8	43.3	dB(A)
22:00 - 23:00	47.7	72.2	44.2	dB(A)
23:00 - 00:00	45.5	71.0	43.6	dB(A)
00:00 - 01:00	45.2	67.7	43.8	dB(A)
01:00 - 02:00	44.7	66.7	42.5	dB(A)
02:00 - 03:00	42.5	59.3	41.2	dB(A)
03:00 - 04:00	44.2	71.6	41.2	dB(A)
04:00 - 05:00	43.2	65.7	39.7	dB(A)
05:00 - 06:00	43.0	61.8	39.8	dB(A)
06:00 - 07:00	51.2	78.4	42.0	dB(A)
07:00 - 08:00	50.9	71.0	45.5	dB(A)
08:00 - 09:00	48.0	68.8	43.6	dB(A)
09:00 - 10:00	49.0	74.7	41.7	dB(A)
10:00 - 11:00	48.6	68.0	42.2	dB(A)
11:00 - 12:00	46.6	70.2	40.3	dB(A)
$L_{eq}$ 24 hr.	48.6	-	-	dB(A)
$L_{dn}$	53.3	-	-	dB(A)
Maximum	-	78.4	-	dB(A)
$L_{90}$	-	-	40.6	dB(A)
Standard	70 <sup>1/1</sup> , 70 <sup>2/2</sup>	115 <sup>1/1</sup> , 115 <sup>2/2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankum)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA67-R0367

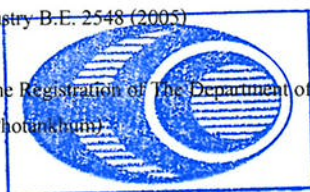
Report No. R6703-3243

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1

SAMPLE NO. : 05517  
MEASURING DATE : 10-11/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	10-11/03/2024 ( $L_{eq}$ )	10-11/03/2024 ( $L_{max}$ )	10-11/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	46.9	69.3	41.6	dB(A)
13:00 - 14:00	48.1	68.0	42.8	dB(A)
14:00 - 15:00	49.1	72.3	43.5	dB(A)
15:00 - 16:00	46.6	73.3	41.6	dB(A)
16:00 - 17:00	51.3	82.6	42.4	dB(A)
17:00 - 18:00	52.0	76.3	44.0	dB(A)
18:00 - 19:00	50.5	71.5	42.7	dB(A)
19:00 - 20:00	49.5	71.9	44.2	dB(A)
20:00 - 21:00	47.2	62.5	44.4	dB(A)
21:00 - 22:00	47.0	77.7	41.9	dB(A)
22:00 - 23:00	43.2	66.4	41.1	dB(A)
23:00 - 00:00	45.9	71.6	41.2	dB(A)
00:00 - 01:00	43.7	59.8	41.4	dB(A)
01:00 - 02:00	45.3	72.9	39.8	dB(A)
02:00 - 03:00	40.6	59.3	39.6	dB(A)
03:00 - 04:00	39.5	57.1	38.0	dB(A)
04:00 - 05:00	41.1	60.6	37.3	dB(A)
05:00 - 06:00	44.1	69.5	38.9	dB(A)
06:00 - 07:00	58.2	84.2	44.1	dB(A)
07:00 - 08:00	52.6	77.6	46.5	dB(A)
08:00 - 09:00	51.4	72.6	44.9	dB(A)
09:00 - 10:00	46.6	64.5	42.9	dB(A)
10:00 - 11:00	46.3	70.0	41.5	dB(A)
11:00 - 12:00	47.4	69.3	40.1	dB(A)
$L_{eq}$ 24 hr.	49.5	-	-	dB(A)
$L_{dn}$	56.1	-	-	dB(A)
Maximum	-	84.2	-	dB(A)
$L_{90}$	-	-	39.1	dB(A)
Standard	$70^{1/1}, 70^{2/2}$	$115^{1/1}, 115^{2/2}$	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photunkhumb)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

Report No. R6703-3244

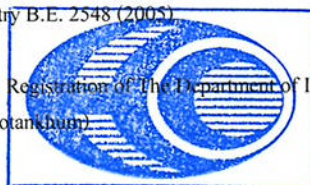
# TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1

SAMPLE NO. : 05518  
MEASURING DATE : 11-12/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	11-12/03/2024 ( $L_{eq}$ )	11-12/03/2024 ( $L_{max}$ )	11-12/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	47.6	68.8	44.6	dB(A)
13:00 - 14:00	45.2	60.5	41.8	dB(A)
14:00 - 15:00	47.8	65.8	43.0	dB(A)
15:00 - 16:00	50.1	69.0	45.4	dB(A)
16:00 - 17:00	51.3	79.4	44.1	dB(A)
17:00 - 18:00	51.4	70.4	45.2	dB(A)
18:00 - 19:00	53.7	81.1	43.3	dB(A)
19:00 - 20:00	46.4	62.9	44.3	dB(A)
20:00 - 21:00	48.7	71.4	44.9	dB(A)
21:00 - 22:00	48.3	69.3	44.3	dB(A)
22:00 - 23:00	45.9	72.2	42.7	dB(A)
23:00 - 00:00	44.3	59.6	41.6	dB(A)
00:00 - 01:00	45.8	65.3	42.2	dB(A)
01:00 - 02:00	47.0	73.5	42.7	dB(A)
02:00 - 03:00	45.2	74.0	41.2	dB(A)
03:00 - 04:00	44.4	73.6	41.6	dB(A)
04:00 - 05:00	44.9	61.7	42.2	dB(A)
05:00 - 06:00	46.6	74.1	40.2	dB(A)
06:00 - 07:00	55.4	78.5	43.0	dB(A)
07:00 - 08:00	51.8	76.0	45.7	dB(A)
08:00 - 09:00	51.3	71.8	44.9	dB(A)
09:00 - 10:00	50.3	73.3	43.2	dB(A)
10:00 - 11:00	50.4	73.7	43.6	dB(A)
11:00 - 12:00	48.0	66.7	43.9	dB(A)
$L_{eq}$ 24 hr.	49.5	-	-	dB(A)
$L_{dn}$	55.2	-	-	dB(A)
Maximum	-	81.1	-	dB(A)
$L_{90}$	-	-	41.6	dB(A)
Standard	70 <sup>1/1</sup> , 70 <sup>2/2</sup>	115 <sup>1/1</sup> , 115 <sup>2/2</sup>	-	dB(A)

**REMARK :** <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)  
<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)  
<sup>3/</sup> Start Time  
\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhuan)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

Report No. R6703-3245

TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1  
SAMPLE NO. : 05519  
MEASURING DATE : 12-13/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	12-13/03/2024 ( $L_{eq}$ )	12-13/03/2024 ( $L_{max}$ )	12-13/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	48.9	70.1	44.7	dB(A)
13:00 - 14:00	48.3	66.5	44.4	dB(A)
14:00 - 15:00	48.4	65.1	44.5	dB(A)
15:00 - 16:00	49.9	69.4	44.6	dB(A)
16:00 - 17:00	51.9	72.2	44.4	dB(A)
17:00 - 18:00	51.0	78.9	44.4	dB(A)
18:00 - 19:00	51.4	76.6	43.7	dB(A)
19:00 - 20:00	48.4	73.6	44.8	dB(A)
20:00 - 21:00	48.9	71.2	45.2	dB(A)
21:00 - 22:00	44.7	68.4	41.9	dB(A)
22:00 - 23:00	44.3	60.1	42.5	dB(A)
23:00 - 00:00	43.2	55.8	41.4	dB(A)
00:00 - 01:00	44.6	62.7	41.9	dB(A)
01:00 - 02:00	45.3	64.2	41.4	dB(A)
02:00 - 03:00	46.9	73.2	40.9	dB(A)
03:00 - 04:00	46.2	66.1	40.8	dB(A)
04:00 - 05:00	42.7	61.5	39.0	dB(A)
05:00 - 06:00	43.6	63.3	39.3	dB(A)
06:00 - 07:00	53.4	80.5	43.8	dB(A)
07:00 - 08:00	55.9	81.0	47.2	dB(A)
08:00 - 09:00	52.8	75.0	46.3	dB(A)
09:00 - 10:00	49.9	66.8	44.8	dB(A)
10:00 - 11:00	49.2	69.7	42.0	dB(A)
11:00 - 12:00	47.9	70.9	42.6	dB(A)
$L_{eq}$ 24 hr.	49.6	-	-	dB(A)
$L_{dn}$	54.2	-	-	dB(A)
Maximum	-	81.0	-	dB(A)
$L_{90}$	-	-	40.8	dB(A)
Standard	$70^{1/1}, 70^{1/2}$	$115^{1/1}, 115^{1/2}$	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)  
<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)  
<sup>1/3</sup> Start Time  
\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhurn)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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Request No. LA67-R0367

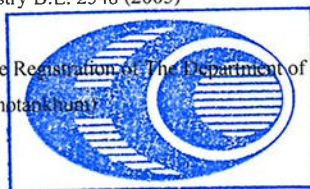
Report No. R6703-3246

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1

SAMPLE NO. : 05520  
MEASURING DATE : 13-14/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	13-14/03/2024 ( $L_{eq}$ )	13-14/03/2024 ( $L_{max}$ )	13-14/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>3</sup>	48.4	68.1	43.7	dB(A)
13:00 - 14:00	49.3	72.0	44.2	dB(A)
14:00 - 15:00	48.9	66.6	44.4	dB(A)
15:00 - 16:00	49.2	68.0	44.5	dB(A)
16:00 - 17:00	52.1	78.1	45.0	dB(A)
17:00 - 18:00	51.7	76.2	44.9	dB(A)
18:00 - 19:00	53.6	76.6	44.9	dB(A)
19:00 - 20:00	52.5	75.6	45.8	dB(A)
20:00 - 21:00	47.7	67.2	45.3	dB(A)
21:00 - 22:00	48.1	85.2	43.0	dB(A)
22:00 - 23:00	46.1	71.4	43.1	dB(A)
23:00 - 00:00	45.5	59.5	43.0	dB(A)
00:00 - 01:00	47.2	75.1	42.9	dB(A)
01:00 - 02:00	45.8	69.4	42.9	dB(A)
02:00 - 03:00	48.4	74.2	41.6	dB(A)
03:00 - 04:00	45.3	73.2	40.3	dB(A)
04:00 - 05:00	43.4	74.9	39.9	dB(A)
05:00 - 06:00	46.3	65.8	40.8	dB(A)
06:00 - 07:00	58.8	84.8	45.0	dB(A)
07:00 - 08:00	54.4	89.0	47.0	dB(A)
08:00 - 09:00	60.7	83.4	47.1	dB(A)
09:00 - 10:00	61.5	85.4	44.2	dB(A)
10:00 - 11:00	47.4	68.6	42.6	dB(A)
11:00 - 12:00	47.8	67.2	43.1	dB(A)
$L_{eq}$ 24 hr.	53.4	-	-	dB(A)
$L_{dn}$	58.0	-	-	dB(A)
Maximum	-	89.0	-	dB(A)
$L_{90}$	-	-	41.0	dB(A)
Standard	70 <sup>1</sup> , 70 <sup>2</sup>	115 <sup>1</sup> , 115 <sup>2</sup>	-	dB(A)

REMARK : <sup>1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhun)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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Request No. LA67-R0367

Report No. R6703-3247

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1

SAMPLE NO. : 05521  
MEASURING DATE : 14-15/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	14-15/03/2024 ( $L_{eq}$ )	14-15/03/2024 ( $L_{max}$ )	14-15/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>3</sup>	48.6	68.6	44.2	dB(A)
13:00 - 14:00	48.9	70.4	43.9	dB(A)
14:00 - 15:00	47.3	64.5	42.9	dB(A)
15:00 - 16:00	47.5	65.1	42.7	dB(A)
16:00 - 17:00	49.7	71.0	44.2	dB(A)
17:00 - 18:00	51.8	77.3	44.7	dB(A)
18:00 - 19:00	49.3	67.9	43.3	dB(A)
19:00 - 20:00	46.9	66.7	44.1	dB(A)
20:00 - 21:00	46.7	64.2	43.8	dB(A)
21:00 - 22:00	45.3	58.7	43.4	dB(A)
22:00 - 23:00	47.0	72.3	43.6	dB(A)
23:00 - 00:00	44.5	61.2	42.4	dB(A)
00:00 - 01:00	43.6	56.4	41.9	dB(A)
01:00 - 02:00	48.2	73.2	41.0	dB(A)
02:00 - 03:00	45.0	69.7	40.6	dB(A)
03:00 - 04:00	42.7	59.5	40.2	dB(A)
04:00 - 05:00	42.0	60.3	39.7	dB(A)
05:00 - 06:00	45.1	60.3	41.0	dB(A)
06:00 - 07:00	55.6	80.1	45.2	dB(A)
07:00 - 08:00	56.8	78.7	46.3	dB(A)
08:00 - 09:00	52.2	75.7	44.7	dB(A)
09:00 - 10:00	48.8	66.7	44.1	dB(A)
10:00 - 11:00	48.0	67.5	42.8	dB(A)
11:00 - 12:00	47.0	62.6	42.9	dB(A)
$L_{eq}$ 24 hr.	49.6	-	-	dB(A)
$L_{dn}$	55.1	-	-	dB(A)
Maximum	-	80.1	-	dB(A)
$L_{90}$	-	-	40.7	dB(A)
Standard	70 <sup>1</sup> , 70 <sup>2</sup>	115 <sup>1</sup> , 115 <sup>2</sup>	-	dB(A)

REMARK : <sup>1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankham)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

Report No. R6703-3248

# TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120944 : Class 1

SAMPLE NO. : 05522  
MEASURING DATE : 15-16/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

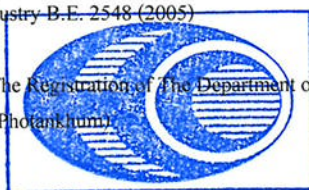
TIME \ DATE	15-16/03/2024 ( $L_{eq}$ )	15-16/03/2024 ( $L_{max}$ )	15-16/03/2024 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	47.9	64.3	45.1	dB(A)
13:00 - 14:00	49.1	66.2	45.9	dB(A)
14:00 - 15:00	47.0	63.7	42.8	dB(A)
15:00 - 16:00	49.9	65.8	45.6	dB(A)
16:00 - 17:00	53.0	75.2	45.2	dB(A)
17:00 - 18:00	51.8	79.3	44.8	dB(A)
18:00 - 19:00	54.0	77.2	43.5	dB(A)
19:00 - 20:00	54.0	80.5	44.1	dB(A)
20:00 - 21:00	45.9	61.9	43.6	dB(A)
21:00 - 22:00	43.8	60.0	41.8	dB(A)
22:00 - 23:00	45.6	65.2	42.0	dB(A)
23:00 - 00:00	46.2	67.1	42.7	dB(A)
00:00 - 01:00	45.8	65.3	42.0	dB(A)
01:00 - 02:00	45.1	69.0	39.5	dB(A)
02:00 - 03:00	51.7	82.2	39.2	dB(A)
03:00 - 04:00	50.8	80.7	38.2	dB(A)
04:00 - 05:00	52.0	82.1	38.7	dB(A)
05:00 - 06:00	51.9	73.6	39.8	dB(A)
06:00 - 07:00	59.5	84.7	47.8	dB(A)
07:00 - 08:00	57.6	81.3	51.9	dB(A)
08:00 - 09:00	54.5	83.7	49.3	dB(A)
09:00 - 10:00	49.9	77.5	45.3	dB(A)
10:00 - 11:00	49.7	73.1	44.9	dB(A)
11:00 - 12:00	52.1	74.9	45.2	dB(A)
$L_{eq}$ 24 hr.	52.3	-	-	dB(A)
$L_{dn}$	58.9	-	-	dB(A)
Maximum	-	84.7	-	dB(A)
$L_{90}$	-	-	39.3	dB(A)
Standard	70 <sup>1/1</sup> , 70 <sup>2/2</sup>	115 <sup>1/1</sup> , 115 <sup>2/2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)

<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)

<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

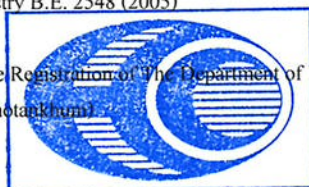
Report No. R6703-3228

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : รีมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

SAMPLE NO. : 05502  
MEASURING DATE : 09-10/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	09-10/03/2024 ( $L_{eq}$ )	09-10/03/2024 ( $L_{max}$ )	09-10/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>1/3</sup>	63.7	70.8	63.4	dB(A)
09:00 - 10:00	63.4	67.3	63.1	dB(A)
10:00 - 11:00	63.4	68.1	63.1	dB(A)
11:00 - 12:00	63.4	68.8	63.1	dB(A)
12:00 - 13:00	63.2	72.8	62.9	dB(A)
13:00 - 14:00	63.3	66.2	62.9	dB(A)
14:00 - 15:00	63.6	71.7	63.3	dB(A)
15:00 - 16:00	63.6	67.4	63.3	dB(A)
16:00 - 17:00	63.9	69.0	63.5	dB(A)
17:00 - 18:00	64.0	77.2	63.6	dB(A)
18:00 - 19:00	66.3	79.7	65.6	dB(A)
19:00 - 20:00	64.1	66.5	63.8	dB(A)
20:00 - 21:00	63.6	73.8	63.3	dB(A)
21:00 - 22:00	63.5	65.6	63.3	dB(A)
22:00 - 23:00	63.5	65.5	63.3	dB(A)
23:00 - 00:00	63.6	65.3	63.4	dB(A)
00:00 - 01:00	64.3	73.0	63.4	dB(A)
01:00 - 02:00	64.1	66.2	63.9	dB(A)
02:00 - 03:00	64.1	65.8	63.9	dB(A)
03:00 - 04:00	64.1	65.5	64.0	dB(A)
04:00 - 05:00	64.2	68.9	64.0	dB(A)
05:00 - 06:00	64.4	70.8	64.1	dB(A)
06:00 - 07:00	64.2	77.9	64.0	dB(A)
07:00 - 08:00	64.1	72.7	63.9	dB(A)
$L_{eq}$ 24 hr.	63.9	-	-	dB(A)
$L_{dn}$	70.4	-	-	dB(A)
Maximum	-	79.7	-	dB(A)
$L_{90}$	-	-	63.1	dB(A)
Standard	$70^{1/1}, 70^{2/2}$	$115^{1/1}, 115^{2/2}$	-	dB(A)

**REMARK :** <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankham)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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Request No. LA67-R0367

Report No. R6703-3229

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

SAMPLE NO. : 05503  
MEASURING DATE : 10-11/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	10-11/03/2024 ( $L_{eq}$ )	10-11/03/2024 ( $L_{max}$ )	10-11/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>1/3</sup>	64.3	71.2	64.1	dB(A)
09:00 - 10:00	64.1	66.7	63.8	dB(A)
10:00 - 11:00	64.1	66.6	63.8	dB(A)
11:00 - 12:00	64.2	66.2	64.0	dB(A)
12:00 - 13:00	64.1	68.2	63.7	dB(A)
13:00 - 14:00	64.2	66.1	63.9	dB(A)
14:00 - 15:00	64.0	66.7	63.6	dB(A)
15:00 - 16:00	63.5	65.5	63.3	dB(A)
16:00 - 17:00	63.7	65.7	63.4	dB(A)
17:00 - 18:00	68.7	83.2	66.2	dB(A)
18:00 - 19:00	66.8	74.1	66.2	dB(A)
19:00 - 20:00	64.0	67.4	63.8	dB(A)
20:00 - 21:00	63.6	66.3	63.4	dB(A)
21:00 - 22:00	63.6	65.3	63.3	dB(A)
22:00 - 23:00	63.6	72.1	63.3	dB(A)
23:00 - 00:00	68.8	85.8	63.6	dB(A)
00:00 - 01:00	63.9	65.6	63.7	dB(A)
01:00 - 02:00	64.0	65.8	63.8	dB(A)
02:00 - 03:00	64.0	65.3	63.8	dB(A)
03:00 - 04:00	63.9	65.8	63.7	dB(A)
04:00 - 05:00	63.8	65.9	63.7	dB(A)
05:00 - 06:00	64.4	66.6	64.1	dB(A)
06:00 - 07:00	64.4	74.9	63.8	dB(A)
07:00 - 08:00	68.2	80.0	66.1	dB(A)
$L_{eq}$ 24 hr.	65.0	-	-	dB(A)
$L_{dn}$	71.3	-	-	dB(A)
Maximum	-	85.8	-	dB(A)
$L_{90}$	-	-	63.3	dB(A)
Standard	$70^{1/1}, 70^{2/2}$	$115^{1/1}, 115^{2/2}$	-	dB(A)

**REMARK :** <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photakhanthong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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Request No. LA67-R0367

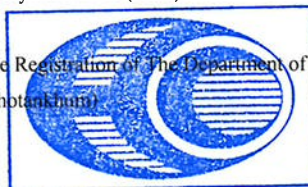
Report No. R6703-3230

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

SAMPLE NO. : 05504  
MEASURING DATE : 11-12/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	11-12/03/2024 ( $L_{eq}$ )	11-12/03/2024 ( $L_{max}$ )	11-12/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>1/3</sup>	72.5	88.9	67.7	dB(A)
09:00 - 10:00	63.7	65.6	63.4	dB(A)
10:00 - 11:00	63.4	67.0	63.1	dB(A)
11:00 - 12:00	63.2	65.2	62.9	dB(A)
12:00 - 13:00	63.2	66.6	62.9	dB(A)
13:00 - 14:00	63.2	66.3	62.9	dB(A)
14:00 - 15:00	63.2	71.0	62.9	dB(A)
15:00 - 16:00	63.4	65.6	63.0	dB(A)
16:00 - 17:00	63.8	73.0	63.4	dB(A)
17:00 - 18:00	63.9	78.0	63.2	dB(A)
18:00 - 19:00	65.9	71.1	65.3	dB(A)
19:00 - 20:00	63.6	66.1	63.3	dB(A)
20:00 - 21:00	63.6	65.7	63.4	dB(A)
21:00 - 22:00	63.8	66.5	63.5	dB(A)
22:00 - 23:00	63.6	65.9	63.4	dB(A)
23:00 - 00:00	63.6	65.7	63.4	dB(A)
00:00 - 01:00	63.8	65.6	63.5	dB(A)
01:00 - 02:00	63.5	65.9	63.2	dB(A)
02:00 - 03:00	63.8	67.2	63.5	dB(A)
03:00 - 04:00	63.7	65.8	63.5	dB(A)
04:00 - 05:00	63.9	65.9	63.7	dB(A)
05:00 - 06:00	64.5	68.3	64.3	dB(A)
06:00 - 07:00	63.8	69.5	63.5	dB(A)
07:00 - 08:00	64.0	74.7	63.8	dB(A)
$L_{eq}$ 24 hr.	64.8	-	-	dB(A)
$L_{dn}$	70.5	-	-	dB(A)
Maximum	-	88.9	-	dB(A)
$L_{90}$	-	-	62.9	dB(A)
Standard	$70^{1/1}, 70^{1/2}$	$115^{1/1}, 115^{1/2}$	-	dB(A)

**REMARK :** <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhura)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

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Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

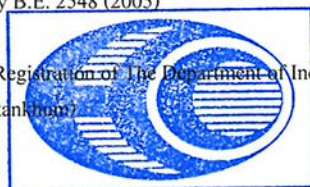
Request No. LA67-R0367

Report No. R6703-3231

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05505  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 12-13/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 16/03/2024  
S/N 01120950 : Class 1 REPORTED DATE : 27/03/2024

TIME \ DATE	12-13/03/2024 ( $L_{eq}$ )	12-13/03/2024 ( $L_{max}$ )	12-13/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>3</sup>	63.6	67.1	63.4	dB(A)
09:00 - 10:00	63.8	67.5	63.5	dB(A)
10:00 - 11:00	63.9	70.4	63.5	dB(A)
11:00 - 12:00	63.7	68.1	63.4	dB(A)
12:00 - 13:00	63.6	68.1	63.3	dB(A)
13:00 - 14:00	63.3	70.2	63.0	dB(A)
14:00 - 15:00	63.2	69.2	62.8	dB(A)
15:00 - 16:00	63.1	73.4	62.7	dB(A)
16:00 - 17:00	63.1	71.9	62.7	dB(A)
17:00 - 18:00	63.4	66.3	63.1	dB(A)
18:00 - 19:00	65.9	76.2	65.4	dB(A)
19:00 - 20:00	63.5	67.0	63.2	dB(A)
20:00 - 21:00	63.3	65.2	63.1	dB(A)
21:00 - 22:00	63.4	65.4	63.2	dB(A)
22:00 - 23:00	63.3	65.2	63.1	dB(A)
23:00 - 00:00	63.4	65.3	63.1	dB(A)
00:00 - 01:00	63.4	65.5	63.2	dB(A)
01:00 - 02:00	63.5	65.2	63.2	dB(A)
02:00 - 03:00	63.5	65.4	63.3	dB(A)
03:00 - 04:00	63.5	65.1	63.3	dB(A)
04:00 - 05:00	63.7	66.0	63.5	dB(A)
05:00 - 06:00	64.1	66.7	63.8	dB(A)
06:00 - 07:00	63.9	77.9	63.5	dB(A)
07:00 - 08:00	63.7	72.9	63.4	dB(A)
$L_{eq}$ 24 hr.	63.7	-	-	dB(A)
$L_{dn}$	70.0	-	-	dB(A)
Maximum	-	77.9	-	dB(A)
$L_{90}$	-	-	62.9	dB(A)
Standard	70 <sup>1</sup> , 70 <sup>2</sup>	115 <sup>1</sup> , 115 <sup>2</sup>	-	dB(A)

REMARK : <sup>1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankham)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....  
(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA67-R0367

Report No. R6703-3232

# TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

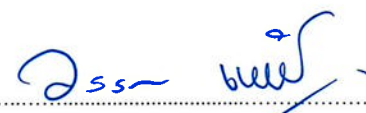
SAMPLE NO. : 05506  
MEASURING DATE : 13-14/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	13-14/03/2024 ( $L_{eq}$ )	13-14/03/2024 ( $L_{max}$ )	13-14/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>3</sup>	63.6	71.9	63.3	dB(A)
09:00 - 10:00	63.4	69.1	63.1	dB(A)
10:00 - 11:00	63.3	66.9	63.0	dB(A)
11:00 - 12:00	63.1	65.4	62.8	dB(A)
12:00 - 13:00	63.7	71.1	63.4	dB(A)
13:00 - 14:00	64.0	67.0	63.6	dB(A)
14:00 - 15:00	64.1	65.8	63.8	dB(A)
15:00 - 16:00	63.8	67.1	63.4	dB(A)
16:00 - 17:00	63.6	79.9	63.0	dB(A)
17:00 - 18:00	63.6	73.1	63.3	dB(A)
18:00 - 19:00	66.6	76.1	65.8	dB(A)
19:00 - 20:00	64.0	66.4	63.7	dB(A)
20:00 - 21:00	63.6	66.8	63.5	dB(A)
21:00 - 22:00	63.7	65.3	63.5	dB(A)
22:00 - 23:00	63.6	65.1	63.4	dB(A)
23:00 - 00:00	63.6	67.8	63.4	dB(A)
00:00 - 01:00	63.3	65.7	63.1	dB(A)
01:00 - 02:00	63.5	65.6	63.3	dB(A)
02:00 - 03:00	63.4	65.4	63.2	dB(A)
03:00 - 04:00	63.4	65.4	63.2	dB(A)
04:00 - 05:00	63.4	65.8	63.2	dB(A)
05:00 - 06:00	64.1	66.8	63.8	dB(A)
06:00 - 07:00	63.8	83.9	63.5	dB(A)
07:00 - 08:00	63.5	72.0	63.2	dB(A)
$L_{eq}$ 24 hr.	63.8	-	-	dB(A)
$L_{dn}$	70.0	-	-	dB(A)
Maximum	-	83.9	-	dB(A)
$L_{90}$	-	-	63.0	dB(A)
Standard	70 <sup>1</sup> , 70 <sup>2</sup>	115 <sup>1</sup> , 115 <sup>2</sup>	-	dB(A)

**REMARK :** <sup>1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)  
<sup>2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)  
<sup>3</sup> Start Time  
\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photanbun)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By   
(MRS. WANPEN LHAOCHINDAWAT)  
27/03/2024

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Request No. LA67-R0367

Report No. R6703-3233

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

SAMPLE NO. : 05507  
MEASURING DATE : 14-15/03/2024  
RECEIVED DATE : 16/03/2024  
REPORTED DATE : 27/03/2024

TIME \ DATE	14-15/03/2024 ( $L_{eq}$ )	14-15/03/2024 ( $L_{max}$ )	14-15/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>3</sup>	63.7	70.0	63.4	dB(A)
09:00 - 10:00	69.2	76.1	68.5	dB(A)
10:00 - 11:00	63.3	77.7	63.0	dB(A)
11:00 - 12:00	63.3	66.6	62.9	dB(A)
12:00 - 13:00	63.0	67.9	62.7	dB(A)
13:00 - 14:00	63.2	73.0	62.9	dB(A)
14:00 - 15:00	63.2	66.0	62.8	dB(A)
15:00 - 16:00	63.4	67.5	63.1	dB(A)
16:00 - 17:00	63.3	68.0	62.9	dB(A)
17:00 - 18:00	63.3	74.4	62.9	dB(A)
18:00 - 19:00	66.0	75.4	65.4	dB(A)
19:00 - 20:00	63.6	66.5	63.3	dB(A)
20:00 - 21:00	63.4	64.7	63.1	dB(A)
21:00 - 22:00	63.1	65.1	62.9	dB(A)
22:00 - 23:00	63.1	65.3	62.9	dB(A)
23:00 - 00:00	63.2	64.6	63.0	dB(A)
00:00 - 01:00	63.2	65.0	63.0	dB(A)
01:00 - 02:00	63.4	65.9	63.2	dB(A)
02:00 - 03:00	63.4	66.2	63.2	dB(A)
03:00 - 04:00	63.5	65.3	63.3	dB(A)
04:00 - 05:00	63.6	66.2	63.4	dB(A)
05:00 - 06:00	63.9	67.2	63.7	dB(A)
06:00 - 07:00	63.6	75.5	63.3	dB(A)
07:00 - 08:00	63.4	70.6	63.1	dB(A)
$L_{eq}$ 24 hr.	64.0	-	-	dB(A)
$L_{dn}$	70.0	-	-	dB(A)
Maximum	-	77.7	-	dB(A)
$L_{90}$	-	-	62.9	dB(A)
Standard	$70^{/1}, 70^{/2}$	$115^{/1}, 115^{/2}$	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankham)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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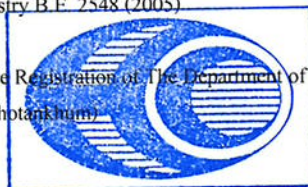
Request No. LA67-R0367

Report No. R6703-3234

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05508  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 15-16/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 16/03/2024  
S/N 01120950 : Class 1 REPORTED DATE : 27/03/2024

TIME \ DATE	15-16/03/2024 ( $L_{eq}$ )	15-16/03/2024 ( $L_{max}$ )	15-16/03/2024 ( $L_{90}$ )	UNIT
08:00 - 09:00 <sup>3</sup>	63.7	68.7	63.4	dB(A)
09:00 - 10:00	63.4	75.0	63.1	dB(A)
10:00 - 11:00	63.2	70.3	62.8	dB(A)
11:00 - 12:00	63.4	66.1	63.0	dB(A)
12:00 - 13:00	63.1	70.4	62.7	dB(A)
13:00 - 14:00	63.2	66.8	62.9	dB(A)
14:00 - 15:00	62.9	65.1	62.6	dB(A)
15:00 - 16:00	63.4	66.7	63.0	dB(A)
16:00 - 17:00	63.3	67.7	63.0	dB(A)
17:00 - 18:00	63.6	74.0	63.2	dB(A)
18:00 - 19:00	66.4	82.4	65.8	dB(A)
19:00 - 20:00	63.7	66.1	63.4	dB(A)
20:00 - 21:00	63.6	65.4	63.4	dB(A)
21:00 - 22:00	63.3	65.3	63.1	dB(A)
22:00 - 23:00	63.3	65.9	63.1	dB(A)
23:00 - 00:00	63.3	65.5	63.1	dB(A)
00:00 - 01:00	63.1	65.3	62.9	dB(A)
01:00 - 02:00	63.2	66.9	62.9	dB(A)
02:00 - 03:00	63.2	65.2	63.0	dB(A)
03:00 - 04:00	63.2	65.0	63.0	dB(A)
04:00 - 05:00	63.4	66.0	63.1	dB(A)
05:00 - 06:00	63.6	67.3	63.2	dB(A)
06:00 - 07:00	63.8	77.0	63.2	dB(A)
07:00 - 08:00	64.8	78.5	64.3	dB(A)
$L_{eq}$ 24 hr.	63.6	-	-	dB(A)
$L_{dn}$	69.8	-	-	dB(A)
Maximum	-	82.4	-	dB(A)
$L_{90}$	-	-	62.8	dB(A)
Standard	$70^{1/1}, 70^{2/2}$	$115^{1/1}, 115^{2/2}$	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Tummarut Photankhum)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

27/03/2024

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ผลการตรวจวัดระดับเสียงในบริเวณการทำงาน



**TEST REPORT**

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140\*\*\*  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
SAMPLE POINT : เครื่องผลิตไฟฟ้ากังหันก๊าซ\*\*\*  
PARAMETER\*\*\*\* :  $L_{eq}$  1 hr.,  $L_{eq}$  8 hr.,  $L_{max}$  &  $L_{90\#}$  SAMPLE NO. : 03014  
DETERMINATION METHOD : ISO 11202:2010## MEASURING DATE : 13/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 13/03/2024  
S/N 00322745 : Class 2 REPORTED DATE : 19/03/2024

MEASURING TIME	RESULT				UNIT
	$L_{eq}$ 1 hr.	$L_{eq}$ 1 hr.	$L_{max}$	$L_{90\#}$	
09:05-10:05	76	76	79	75	dB(A)
10:05-11:05	75	75	78	75	dB(A)
11:05-12:05	76	76	79	75	dB(A)
12:05-13:05	75	75	78	74	dB(A)
13:05-14:05	76	76	78	75	dB(A)
14:05-15:05	76	76	78	75	dB(A)
15:05-16:05	76	76	78	75	dB(A)
16:05-17:05	76	76	88	75	dB(A)
$L_{eq}$ 8 hr. (TWA)	75*	75**	—	—	dB(A)
$L_{max}$	—	—	88	—	dB(A)
Standard	85 <sup>/1</sup>	90 <sup>/2</sup>	— <sup>/1</sup> , 140 <sup>/2</sup> , 115 <sup>/3</sup>	—	dB(A)

**REMARK :** # Test Report/Sampling marked 'Not TISI Accredited' in this report are not included in the TISI Accreditation Schedule for our laboratory

## ISO 11202:2010, Notification of The Ministry of Industry B.E. 2546 (2003) on The Safety Protection Measures in Factory Regarding Working Area Environment, Dated November 6, 2003, Notification of The Department of Labour Protection and Welfare on The Standard of Noise Level That Employees are Allowed to Receive in Average Period of Work Each Day, Dated December 13, 2017, Notification of The Department of Labour Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, Dated February 8, 2018

<sup>/1</sup> Notification of The Department of Labour Protection and Welfare B.E. 2561 (2018)

(Published in the Government Gazette on January 26, 2018)

<sup>/2</sup> Notification of The Ministry of Industry B.E. 2546 (2003)

<sup>/3</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

\* Based on Criteria 85 dB(A); 3 dB Exchange Rate

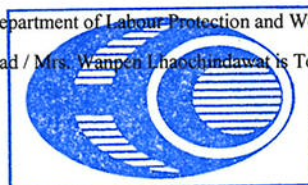
\*\* Based on Criteria 90 dB(A); 5 dB Exchange Rate

\*\*\* These Data are Non Laboratory Data

\*\*\*\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0403-03-2564-0009

(Ms. Thanatporn Klinsoon is Section Head / Mrs. Wanpen Lhaochindawat is Technical Management)

(Measurement By Ms. Yonlada Pale)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By .....

(MRS. WANPEN LHAOCHINDAWAT)

19/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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**TEST REPORT**

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140\*\*\*  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
SAMPLE POINT : เครื่องผลิตไฟฟ้ากังหันไอน้ำ\*\*\*  
PARAMETER\*\*\*\* :  $L_{eq}$  1 hr.,  $L_{eq}$  8 hr.,  $L_{max}$  &  $L_{90\#}$  SAMPLE NO. : 03013  
DETERMINATION METHOD : ISO 11202:2010## MEASURING DATE : 13/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 13/03/2024  
S/N 01147299 : Class 2 REPORTED DATE : 19/03/2024

MEASURING TIME	RESULT				UNIT
	$L_{eq}$ 1 hr.	$L_{eq}$ 1 hr.	$L_{max}$	$L_{90\#}$	
09:00-10:00	69	69	77	68	dB(A)
10:00-11:00	68	68	70	68	dB(A)
11:00-12:00	68	68	70	67	dB(A)
12:00-13:00	68	68	72	67	dB(A)
13:00-14:00	69	69	79	68	dB(A)
14:00-15:00	68	68	70	68	dB(A)
15:00-16:00	68	68	70	68	dB(A)
16:00-17:00	69	69	86	68	dB(A)
$L_{eq}$ 8 hr. (TWA)	68*	68**	—	—	dB(A)
$L_{max}$	—	—	86	—	dB(A)
Standard	85 <sup>/1</sup>	90 <sup>/2</sup>	— <sup>/1</sup> , 140 <sup>/2</sup> , 115 <sup>/3</sup>	—	dB(A)

**REMARK :** # Test Report/Sampling marked 'Not TISI Accredited' in this report are not included in the TISI Accreditation Schedule for our laboratory

## ISO 11202:2010, Notification of The Ministry of Industry B.E. 2546 (2003) on The Safety Protection Measures in Factory Regarding Working Area Environment, Dated November 6, 2003, Notification of The Department of Labour Protection and Welfare on The Standard of Noise Level That Employees are Allowed to Receive in Average Period of Work Each Day, Dated December 13, 2017, Notification of The Department of Labour Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, Dated February 8, 2018

<sup>/1</sup> Notification of The Department of Labour Protection and Welfare B.E. 2561 (2018)

(Published in the Government Gazette on January 26, 2018)

<sup>/2</sup> Notification of The Ministry of Industry B.E. 2546 (2003)

<sup>/3</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

\* Based on Criteria 85 dB(A); 3 dB Exchange Rate

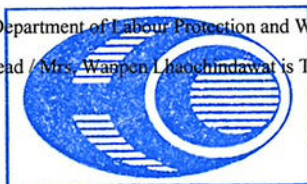
\*\* Based on Criteria 90 dB(A); 5 dB Exchange Rate

\*\*\* These Data are Non Laboratory Data

\*\*\*\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0403-03-2564-0009

(Ms. Thanatporn Klinsoon is Section Head / Mrs. Wanpen Lhaochindawat is Technical Management)

(Measurement By Ms. Yonlada Pale)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By .....

(MRS. WANPEN LHAOCHINDAWAT)

19/03/2024

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**TEST REPORT**

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140\*\*\*  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
SAMPLE POINT : เครื่องอัดอากาศ\*\*\*  
PARAMETER\*\*\*\* :  $L_{eq}$  1 hr.,  $L_{eq}$  8 hr.,  $L_{max}$  &  $L_{90\#}$  SAMPLE NO. : 03012  
DETERMINATION METHOD : ISO 11202:2010## MEASURING DATE : 13/03/2024  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 13/03/2024  
S/N 00322751 : Class 2 REPORTED DATE : 19/03/2024

MEASURING TIME	RESULT				UNIT
	$L_{eq}$ 1 hr.	$L_{eq}$ 1 hr.	$L_{max}$	$L_{90\#}$	
08:55-09:55	77	77	81	76	dB(A)
09:55-10:55	76	76	79	76	dB(A)
10:55-11:55	76	76	80	76	dB(A)
11:55-12:55	76	76	80	76	dB(A)
12:55-13:55	76	76	81	76	dB(A)
13:55-14:55	76	76	79	76	dB(A)
14:55-15:55	76	76	79	76	dB(A)
15:55-16:55	76	76	85	75	dB(A)
$L_{eq}$ 8 hr. (TWA)	76*	76**	—	—	dB(A)
$L_{max}$	—	—	85	—	dB(A)
Standard	85 <sup>/1</sup>	90 <sup>/2</sup>	— <sup>/1</sup> , 140 <sup>/2</sup> , 115 <sup>/3</sup>	—	dB(A)

**REMARK :** # Test Report/Sampling marked 'Not TISI Accredited' in this report are not included in the TISI Accreditation Schedule for our laboratory

## ISO 11202:2010, Notification of The Ministry of Industry B.E. 2546 (2003) on The Safety Protection Measures in Factory Regarding Working Area Environment, Dated November 6, 2003, Notification of The Department of Labour Protection and Welfare on The Standard of Noise Level That Employees are Allowed to Receive in Average Period of Work Each Day, Dated December 13, 2017, Notification of The Department of Labour Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, Dated February 8, 2018

<sup>/1</sup> Notification of The Department of Labour Protection and Welfare B.E. 2561 (2018)

(Published in the Government Gazette on January 26, 2018)

<sup>/2</sup> Notification of The Ministry of Industry B.E. 2546 (2003)

<sup>/3</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

\* Based on Criteria 85 dB(A); 3 dB Exchange Rate

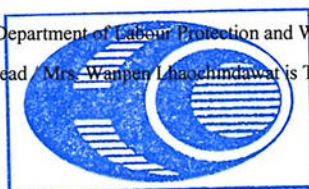
\*\* Based on Criteria 90 dB(A); 5 dB Exchange Rate

\*\*\* These Data are Non Laboratory Data

\*\*\*\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0403-03-2564-0009

(Ms. Thanatporn Klinsoon is Section Head / Mrs. Wanpen Lhaochindawat is Technical Management)

(Measurement By Ms. Yonlada Pale)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By .....

(MRS. WANPEN LHAOCHINDAWAT)

19/03/2024

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ผลการทดสอบคุณภาพน้ำทิ้ง



## Test Report

Request No : W6701178

Report No : 6701-0978-1

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited\*\*

Sample No : W 67010566

Sample Name : ป๊อตตรวจสอบคุณภาพน้ำทิ้ง\*\*

Sampling Date : 10/01/2024\*\*

Sampling By : ETC\*\*

Sampling Time : 10:20 AM\*\*

Sampling Method : Grab\*\*

Received Date : 11/01/2024

Tested Date : 11/01/2024 - 17/01/2024

Reported Date : 26/04/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	5.2	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	42	≤750
Oil and Grease @	mg/L	Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius) *		Electrometric Method (SM:4500 -H +B)	7.6	5.5-9.0
pH (on site) *		Electrometric Method	7.5	5.5 - 9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	30	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,624	≤3000
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	29	≤200

Physical Apperance : 1. Sample : lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. @ = ISO/IEC 17025:2017 Accredited by TISI., # = ISO/IEC 17025:2017 Accredited by DSS,

SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Parkpoom Buasawad (จ-003-ก-0017)\*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ก-0007)

26/04/2024

SUPPLEMENT TO TEST REPORT NO. 6701-0978



บริษัท อีสเทิร์นไทยคอนซัลติง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ก-0005)

26/04/2024

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## Test Report

Request No : W6701178

Report No : 6701-0978

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited

Sample No : W 67010566

Sample Name : บ่อดตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 10/01/2024

Sampling By : ETC

Sampling Time : 10:20 AM

Sampling Method : Grab

Received Date : 11/01/2024

Tested Date : 11/01/2024 - 17/01/2024

Reported Date : 19/01/2024

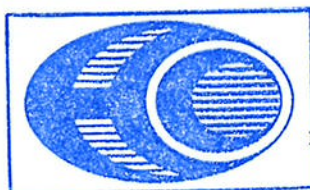
Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate	m <sup>3</sup> / sec	Calculation	0.022	-

Physical Apperance : 1. Sample : lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

- SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.
- Parameter Outside The Scope of The Registration of Department of Industrial Works
- Sampling By Mr. Parkpoom Buasawad



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : 

(Miss Apiradee Chuen-arom)

19/01/2024

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## Test Report

Request No : W6702330

Report No : 6702-0948-1

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited\*\*

Sample No : W 67021018

Sample Name : ป๊อดตรวจสอบคุณภาพน้ำทิ้ง\*\*

Sampling Date : 12/02/2024\*\*

Sampling By : ETC\*\*

Sampling Time : 11:15 AM\*\*

Sampling Method : Grab\*\*

Received Date : 13/02/2024

Tested Date : 13/02/2024 - 17/02/2024

Reported Date : 26/04/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	3.1	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	61	≤750
Oil and Grease @	mg/L	Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius) *		Electrometric Method (SM:4500 -H +B)	7.6	5.5-9.0
pH (on site) *		Electrometric Method	7.5	5.5 - 9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	31	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,776	≤3000
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	25	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. @ = ISO/IEC 17025:2017 Accredited by TISI., # = ISO/IEC 17025:2017 Accredited by DSS,

SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Songpon Phiwan (๖-๐๐3-๓-๐๐16)\*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(๖-๐๐3-๓-๐๐๐7)

26/04/2024

SUPPLEMENT TO TEST REPORT NO. 6702-0948



บริษัท อีสเทิร์นไทยคอนซัลต์ 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(๖-๐๐3-๓-๐๐๐5)

26/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6702330

Report No : 6702-0948

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangpom,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited

Sample No : W 67021018

Sample Name : ป๊อตตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 12/02/2024

Sampling By : ETC

Sampling Time : 11:15 AM

Sampling Method : Grab

Received Date : 13/02/2024

Tested Date : 13/02/2024 - 17/02/2024

Reported Date : 20/02/2024

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

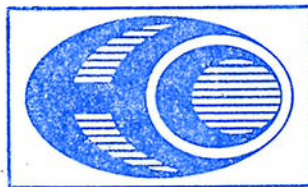
2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Songpon Phiwuan



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : 

(Miss Apiradee Chuen-arom)

20/02/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6703300

Report No : 6703-1260-1

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 67030967

Sample Name : บ่อตรวจสอปคุณภาพน้ำทิ้ง\*\*

Sampling Date : 11/03/2024\*\*

Sampling By : ETC\*\*

Sampling Time : 11:30 AM\*\*

Sampling Method : Grab\*\*

Received Date : 12/03/2024

Tested Date : 12/03/2024 - 20/03/2024

Reported Date : 26/04/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	5.1	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	53	≤750
Oil and Grease @	mg/L	Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius) *		Electrometric Method (SM:4500 -H +B)	7.8	5.5-9.0
pH (on site) *		Electrometric Method	7.8	5.5 - 9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	31	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,452	≤3000
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	16	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. @ = ISO/IEC 17025:2017 Accredited by TISI., # = ISO/IEC 17025:2017 Accredited by DSS,

SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Parkpoom Buasawad (จ-003-ท-0017)\*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ท-0007)

26/04/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ท-0005)

26/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY



## Test Report

Request No : W6703300

Report No : 6703-1260

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 67030967

Sample Name : ป๊อตรวจสออบคุณภาพน้ำทิ้ง

Sampling Date : 11/03/2024

Sampling By : ETC

Sampling Time : 11:30 AM

Sampling Method : Grab

Received Date : 12/03/2024

Tested Date : 12/03/2024 - 20/03/2024

Reported Date : 22/03/2024

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

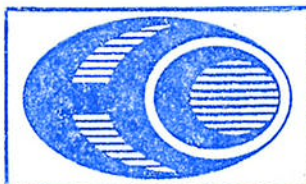
2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Parkpoom Buasawad



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

22/03/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6704250

Report No : 6704-1021-1

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 67040801

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง\*\*

Sampling Date : 08/04/2024\*\*

Sampling By : ETC\*\*

Sampling Time : 10:45 AM\*\*

Sampling Method : Grab\*\*

Received Date : 09/04/2024

Tested Date : 09/04/2024 - 18/04/2024

Reported Date : 26/04/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	4.5	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	52	≤750
Oil and Grease @	mg/L	Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius) *		Electrometric Method (SM:4500 -H +B)	7.6	5.5-9.0
pH (on site) *		Electrometric Method	7.4	5.5 - 9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	34	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,622	≤3000
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	14	≤200

Physical Apperance : 1. Sample : slightly - white, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. @ = ISO/IEC 17025:2017 Accredited by TISI., # = ISO/IEC 17025:2017 Accredited by DSS,

SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Supharerk Phatklang (จ-003-ท-0031)\*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ท-0007)

26/04/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ท-0005)

26/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6704250

Report No : 6704- 1021

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 67040801

Sample Name : ป้อนตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 08/04/2024

Sampling By : ETC

Sampling Time : 10:45 AM

Sampling Method : Grab

Received Date : 09/04/2024

Tested Date : 09/04/2024 - 18/04/2024

Reported Date : 22/04/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : slightly - white, lightly SS

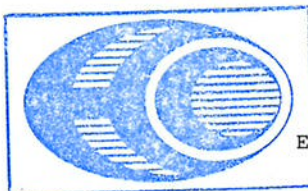
2. Container : Normal [ PE 0.5 L, PE 1.0 L , PE 1.8 L, G 1.0 L]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Supharerk Phatklang



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : 

(Miss Apiradee Chuen-arom)

22/04/2024

## Test Report

Request No : W6705328

Report No : 6705-1343

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\* Sample No : W 67051106

Sample Name : ป๊อตตรวจสอบคุณภาพน้ำทิ้ง\*\* Sampling Date : 13/05/2024\*\*

Sampling By : ETC\*\* Sampling Time : 10:35 AM\*\*


Sampling Method : Grab\*\* Received Date : 14/05/2024

Tested Date : 14/05/2024 - 21/05/2024 Reported Date : 24/05/2024

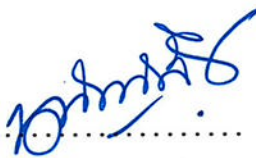
Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	68	≤750
Oil and Grease @	mg/L	Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius) *		Electrometric Method (SM:4500 -H +B)	7.9	5.5-9.0
pH (on site) *		Electrometric Method	7.7	5.5 - 9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	30	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,400	≤3000
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	11	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS  
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)  
2. @ = ISO/IEC 17025:2017 Accredited by TISI., # = ISO/IEC 17025:2017 Accredited by DSS,  
SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.  
3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.  
4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Songpon Phiwan (จ-003-ท-0016)\*  
5. \*\* = These data are non laboratory data.

Examined By :   
(Miss Apiradee Chuen-arom)  
(จ-003-ท-0007)  
24/05/2024



Approved By :   
(Miss Nunnaphat Bakhuntod)  
(จ-003-ท-0005)  
24/05/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY



## Test Report

Request No : W6705328

Report No : 6705-1343

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331, Mabyangporn, Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 67051106

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 13/05/2024

Sampling By : ETC

Sampling Time : 10:35 AM

Sampling Method : Grab

Received Date : 14/05/2024

Tested Date : 14/05/2024 - 21/05/2024

Reported Date : 24/05/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	<0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

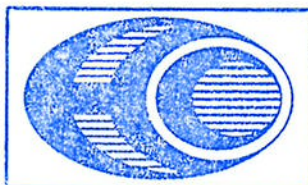
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 76 / 2560 (2017)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd Edition, 2017.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Songpon Phiwuan



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

24/05/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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## Test Report

Request No : W6706240

Report No : 6706-1154

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 67060744

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 10/06/2024

Sampling By : ETC

Sampling Time : 10:10 AM

Sampling Method : Grab

Received Date : 11/06/2024

Tested Date : 11/06/2024 - 19/06/2024

Reported Date : 20/06/2024

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	60	≤750
Oil and Grease	mg/L	Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius)		Electrometric Method (SM:4500 -H +B)	7.6	5.5-9.0
pH (on site)		Electrometric Method	7.4	5.5-9.0
Temperature	°C	Laboratory and Field Method (SM:2550 B)	31	≤45
Total Dissolved Solids	mg/L	Dried at 180 degree celsius (SM:2540C)	2,536	≤3000
Total Suspended Solids	mg/L	Dried at 103-105 degree celsius (SM:2540D)	< 5	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

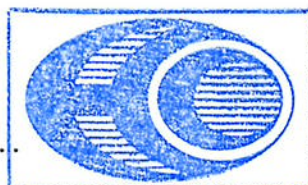
3. Sampling By Mr. Parkpoom Buasawad (1-003-ค-0017)

Examined By : .....

(Miss Apiradee Chuen-arom)

(1-003-ค-0007)

20/06/2024



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(1-003-ค-0005)

20/06/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6706240

Report No : 6706-1154

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 67060744

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 10/06/2024

Sampling By : ETC

Sampling Time : 10:10 AM

Sampling Method : Grab

Received Date : 11/06/2024

Tested Date : 11/06/2024 - 19/06/2024

Reported Date : 20/06/2024

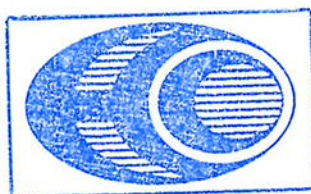
Parameter	Unit	Method	Result	Standard <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.2	-
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	≤1

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

- SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.
- Parameter Outside The Scope of The Registration of Department of Industrial Works
- Sampling By Mr. Parkpoom Buasawad



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

20/06/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY



ผลการตรวจวัดระดับความร้อนในบริเวณการทำงาน



Request No. LA67-R0424

Report No. R6704-1054

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : พื้นที่ปฏิบัติงาน (คุณปิยะนัส เจริมทา) SAMPLE NO. : 07001  
DURATION (MIN) : 120 MEASURING DATE : 01/04/2024  
PARAMETER\* : Heat Stress RECEIVED DATE : 01/04/2024  
SAMPLING INSTRUMENT : Wet Bulb Globe Temperature (WBGT) ; REPORTED DATE : 09/04/2024

AREA	WBGT	SAMPLING	DURATION	RESULT (°C)			
	S/N No.	TIME	(min)	NWB	GT	DB	WBGT
1. Low Vol	TEU080015	14:55-15:00	5	28.7	48.8	35.9	33.4
2. High Vol	TEU080014	14:55-15:00	5	28.5	48.6	36.2	33.2
3. GT 31	TEU080012	14:55-15:00	5	28.4	43.5	36.6	32.3
4. GT 32	TPL060040	14:55-15:00	5	28.3	43.0	36.2	32.1
5. Gas Heater	TEU080013	14:55-15:00	5	28.5	49.8	37.2	33.6
6. Sampling Lab HRSG	TPI050069	14:55-15:00	5	28.6	38.2	37.3	31.4
7. Feed Motor HPLP 31, 32	TEU080013	11:55-12:00	5	27.6	40.6	36.2	31.1
8. Super Heat Steam 31, 32	TPI050069	11:55-12:00	5	28.5	40.0	35.8	31.5
9. HP Drum	TEU080015	11:55-12:00	5	28.5	44.6	34.2	32.3
10. Chemical Dosing HRSG	TPL060040	11:55-12:00	5	28.0	38.1	35.5	30.7
11. LP Drum	TEU080014	11:55-12:00	5	30.9	53.7	41.1	36.5
12. Deaerator	TEU080012	11:55-12:00	5	27.8	38.5	34.4	30.6
13. STG 30	TEU080011	14:55-15:00	5	29.6	39.8	39.0	32.6
14. Cooling Tower	TPL090016	11:55-12:00	5	27.5	41.1	33.7	30.8
15. WTP Control Room	TEU080011	11:10-12:00	50	18.7	22.9	22.0	20.0
WBGT AVERAGE		-	-	-	-	-	27.2
STANDARD <sup>/1</sup>		-	-	-	-	-	34.0

## REMARK :

Work Load is Light

Area 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 = Outdoor

Area 15 = Indoor

<sup>/1</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

NWB = Natural Wet - Bulb Temperature

GT = Globe Temperature

DB = Dry - Bulb Temperature

WBGT = Wet - Bulb Globe Temperature

\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0401-03-2564-0009  
(Measurement By Ms. Savita Kittinoavarat)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

09/04/2024

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

ภาคผนวก ง

ใบแสดงการตรวจเทียบเครื่องมือ

**ANALYTICAL BALANCE (DU)**

**Model : XS205DU**

**Serial No. : 1126323724**



Certificate No. : 23-148799  
Sample Code : 23-56200-001

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Analytical Balance Room)

Equipment : ELECTRONIC BALANCE

Manufacturer : METTLER TOLEDO

Model : XS205DU

Serial No. : 1126323724

ID No. : LABE 05/1

Date of Receipt : 22 December 2023

Date of Calibration : 22 December 2023

Calibrated by Mr. Somwang Sangdee  
Scientist

Approved by (Mr. Somchai Neampunt)  
Signed for Director

Issue date 25 December 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 23-148799  
Sample Code : 23-56200-001

## REPORT OF CALIBRATION

Equipment : ELECTRONIC BALANCE  
Manufacturer : METTLER TOLEDO  
Model : XS205DU  
Capacity : Max 81 g / 220 g  
Resolution : 0.01 mg / 0.1 mg  
Serial No. : 1126323724  
ID No. : LABE 05/1

## Result of Calibration

## 1. Test weight and repeatability of reading

Repeatability is a measure of the ability of a balance to supply the same result in repetitive weighings with one and the same load under the same measurement condition. The measurement of the repeatability must include both the balance specifications and the ambient (vibration, fluctuating air current/temperature/humidity, etc.) Operator handling of the balance is also included in the standard deviation.

Unit : g	Range : 80	<input checked="" type="checkbox"/> Before adjustment	<input checked="" type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value	40	80
<input checked="" type="checkbox"/> Adjustment	Standard weight	40.000054	80.000048
	Average reading of indicator	40.000026	80.000037
	Standard deviation	0.000015	0.000016

Unit : g	Range : 200	<input checked="" type="checkbox"/> Before adjustment	<input checked="" type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value	100	200
<input checked="" type="checkbox"/> Adjustment	Standard weight	100.000042	200.000041
	Average reading of indicator	100.00003	200.00004
	Standard deviation	0.00005	0.00005



Certificate No. : 23-148799  
Sample Code : 23-56200-001

## REPORT OF CALIBRATION

## Result of Calibration

## 2. Sensitivity or value of a scale division

Change in the output variable of a measuring instrument divided by the associated change in the input variable.

Unit : g

Range : 80

Range : 200

Test Point	Sensitivity, S	Test Point	Sensitivity, S
0	1.00748	0	1.0274
40	0.98753	100	0.9975
80	0.99751	200	0.9975

## 3. Departure of indication from nominal value, Linearity

Unit : g

Nominal Value	Standard Value	Average Reading of Indicator	Correction Value	Expanded Uncertainty	Coverage Factor (k)
Unload	0.0000000	0.00000	0.00000	0.000012	2.05
0.01	0.0100025	0.01000	0.00000	0.000012	2.05
0.1	0.1000019	0.10001	-0.00001	0.000013	2.03
1	1.0000125	1.00001	0.00000	0.000015	2.02
5	5.0000208	5.00004	-0.00002	0.000021	2.00
10	10.000004	10.00008	-0.00008	0.000026	2.00
20	20.000030	20.00011	-0.00008	0.000036	2.00
50	50.000014	50.00014	-0.00013	0.000068	2.00
100	100.000042	100.0001	-0.0001	0.00016	2.00
150	150.000056	150.0001	0.0000	0.00022	2.00
200	200.000041	200.0002	-0.0002	0.00027	2.00

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**COPY**

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

Certificate No. : 23-148799  
Sample Code : 23-56200-001

## REPORT OF CALIBRATION

## Result of Calibration :

## 4. Eccentric or off-centre loading

Deviation of the measurement value through off - center (eccentric) loading. The corner load increases with the weight of the load and its removal from the center of the pan support.

☐ Circle

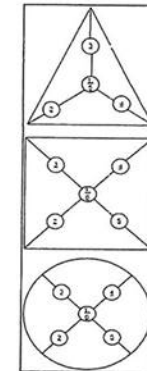
☐ Triangular

☒ Rectangular

Test weight : 50 and 100

Unit : g

Range	80	200
Position	Reading of indicator	Reading of indicator
1	50.00015	100.0001
2	50.00022	100.0001
3	50.00008	100.0001
4	50.00002	100.0000
5	50.00016	100.0002
6	50.00014	100.0001
Maximum difference	0.00013	0.0001



## Condition of Calibration

1. Calibration Method : WI-CL-004 base on UKAS LAB 14: 2019

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. Condition of Calibration item: Normal

4. This certification is traceable to the International System of Unit maintained at : -

Through the reference standard laboratory of Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (Instrument number 1).

5. Reference standard instrument :

Instrument	Class	ID.No.	Certificate No.	Due Date
1) STANDARD WEIGHT 1 mg to 1 kg	E2	LB-WE-79	23-105642	10 September 2024

- End of Report -

6. Ambient conditions	Min	Max
Temperature (°C)	22.8	23.0
Relative Humidity (%Rh)	43.5	51.1
Air pressure (hPa)	1012.5	1014.5

*Handwritten signature*  
**COPY**

**ANALYTICAL BALANCE**

**Model : MS204TS/00**

**Serial No. : B904136539**

Mettler-Toledo (Thailand) Ltd.

846/4 - 846/5 Lasalle Rd., Bangna Tai Sub-District  
Bangna District, Bangkok 10260  
+66 2723 0382

MT-TH.ServiceSupport@mtl.com



NSC-TISI-TIS 17025  
CALIBRATION 0062

## Accuracy Calibration Certificate

### Customer

Company: EASTERN THAI CONSULTING 1992 CO., LTD.  
Address: 683 Moo 11, Sukhaphiban 8 Rd., Nong Kham  
City: Sriracha Contact: Sasiporn N.  
Zip / Postal: 20230  
State / Province: Chonburi  
Order Number: 

### Weighing Device

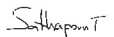
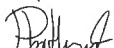
Manufacturer: Mettler Toledo Instrument Type: Weighing Instrument  
Model: MS204TS/00 Asset Number: LABE 05/4  
Serial No.: B904136539 Terminal Model: N/A  
Building: Laboratory Terminal Serial No.: N/A  
Floor: 1 Terminal Asset No.: N/A  
Room: Balance

Range	Max. Capacity	Readability (d)
1	220 g	0.0001 g

### Procedure

Calibration Guideline: EURAMET cg-18 v. 4.0 (11/2015)  
METTLER TOLEDO Work Instruction: CP/W002/20  
This calibration certificate contains measurements for As Found and As Left calibrations.  
The sensitivity/span of the weighing instrument was adjusted before As Found and As Left calibrations with a built-in weight.  
In accordance with EURAMET cg-18 (11/2015), the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

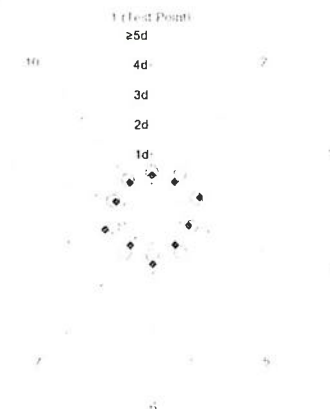
	Temperature		Humidity	
As Found	Start: 23.4 °C	End: 23.4 °C	Start: 50.6 %	End: 50.6 %
As Left	Start: 23.8 °C	End: 23.4 °C	Start: 51.8 %	End: 51.2 %

As Found Calibration Date: 05-Feb-2024 Calibrator:   
As Left Calibration Date: 05-Feb-2024  
Issue Date: 05-Feb-2024  
Approved Signatory:   
Technical Manager / Head of Calibration Center

## Measurement Results

### Repeatability

Test Load: 100 g			As Found	As Left
1	As Found	As Left	99.9996 g	100.0001 g
2	As Found	As Left	99.9997 g	100.0001 g
3	As Found	As Left	99.9997 g	100.0000 g
4	As Found	As Left	99.9996 g	100.0001 g
5	As Found	As Left	99.9997 g	100.0001 g
6	As Found	As Left	99.9996 g	100.0000 g
7	As Found	As Left	99.9997 g	100.0001 g
8	As Found	As Left	99.9996 g	100.0000 g
9	As Found	As Left	99.9996 g	100.0001 g
10	As Found	As Left	99.9996 g	100.0001 g
Standard Deviation			0.00005 g	0.00005 g

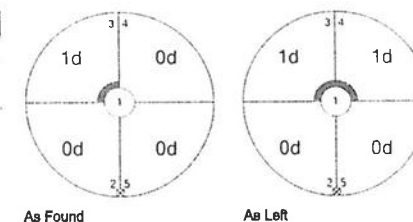


The "d" in the graph represents the readability of the range/interval in which the test was performed.

The results of this graph are based upon the absolute values of the differences from the mean value.

### Eccentricity

Test Load: 100 g			As Found	As Left
Position	As Found	As Left	99.9996 g	100.0000 g
1	As Found	As Left	99.9996 g	100.0000 g
2	As Found	As Left	99.9997 g	100.0001 g
3	As Found	As Left	99.9996 g	100.0001 g
4	As Found	As Left	99.9996 g	100.0001 g
5	As Found	As Left	99.9996 g	100.0000 g
Maximum Deviation			0.0001 g	0.0001 g



As Found

As Left

The "d" in the graph represents the readability of the range/interval in which the test was performed.

Error of Indication

As Found

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.0000 g	0.0000 g	0.0000 g	0.12 mg	2
2	0.0100 g	0.0100 g	0.0000 g	0.13 mg	2
3	0.0500 g	0.0499 g	-0.0001 g	0.13 mg	2
4	0.1000 g	0.0999 g	-0.0001 g	0.13 mg	2
5	1.0000 g	0.9999 g	-0.0001 g	0.13 mg	2
6	5.0000 g	4.9999 g	-0.0001 g	0.14 mg	2
7	10.0000 g	9.9999 g	-0.0001 g	0.14 mg	2
8	50.0000 g	49.9997 g	-0.0003 g	0.16 mg	2
9	100.0000 g	99.9995 g	-0.0005 g	0.20 mg	2
10 *	149.9999 g	149.9993 g	-0.0006 g	0.31 mg	2
11 *	199.9998 g	199.9990 g	-0.0008 g	0.35 mg	2

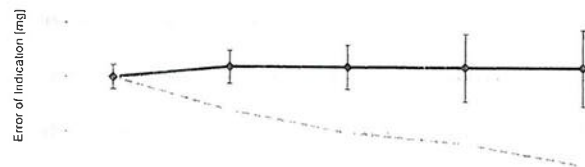
As Left

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.0000 g	0.0000 g	0.0000 g	0.11 mg	2
2	0.0100 g	0.0100 g	0.0000 g	0.13 mg	2
3	0.0500 g	0.0500 g	0.0000 g	0.13 mg	2
4	0.1000 g	0.1000 g	0.0000 g	0.13 mg	2
5	1.0000 g	1.0001 g	0.0001 g	0.13 mg	2
6	5.0000 g	5.0000 g	0.0000 g	0.13 mg	2
7	10.0000 g	10.0001 g	0.0001 g	0.14 mg	2
8	50.0000 g	50.0001 g	0.0001 g	0.15 mg	2
9 *	100.0000 g	100.0001 g	0.0001 g	0.20 mg	2
10 *	149.9999 g	150.0000 g	0.0001 g	0.31 mg	2
11 *	199.9998 g	199.9999 g	0.0001 g	0.35 mg	2

\*The calculated uncertainty was replaced by the CMC (Calibration and Measurement Capabilities) value because the calculated uncertainty was smaller than the CMC value.

As Found

As Left



For improved legibility of the graphics only increasing measurement points are shown and measurement points close to zero are not displayed.

The results of this calibration certificate relate only to the calibrated item.

Test Equipment

All weights used for metrological testing are traceable to national or international standards. The weights were calibrated and certified by an accredited calibration laboratory.

Weight Set 1: OIML E2

Weight Set No.: WS32 Date of Issue: 25-Sep-2023  
Certificate Number: 188109 Calibration Due Date: 25-Mar-2025

Weight Set 2: OIML E2

Weight Set No.: WS85 Date of Issue: 27-Sep-2023  
Certificate Number: 188113 Calibration Due Date: 26-Mar-2025

Thermo Baro Hygrometer

Equipment No.: IN74 Date of Issue: 19-May-2023  
Certificate Number: SG-H-00418/66 Calibration Due Date: 18-May-2024

Remarks

FACT adjustment functionality activated  
Equipment condition: Good  
Next calibration according to customer's procedure  
Calibration data not decide by calibration laboratory

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

The uncertainty stated is the expanded uncertainty at calibration obtained by multiplying the standard combined uncertainty by the coverage factor  $k$  – which can be larger than 2 according to EURAMET cg-18. The value of the measurand lies within the assigned range of values with a probability of approximately 95%.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.



## Measurement Uncertainty of the Weighing Instrument in Use

Stated is the expanded uncertainty with  $k=2$  in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value  $R$  represents the net load indication in the unit of measure of the device.

Temperature coefficient for the evaluation of the measurement uncertainty in use:  $1.5 \cdot 10^{-6} / K$

Temperature range on site for the evaluation of the measurement uncertainty in use: 5 K

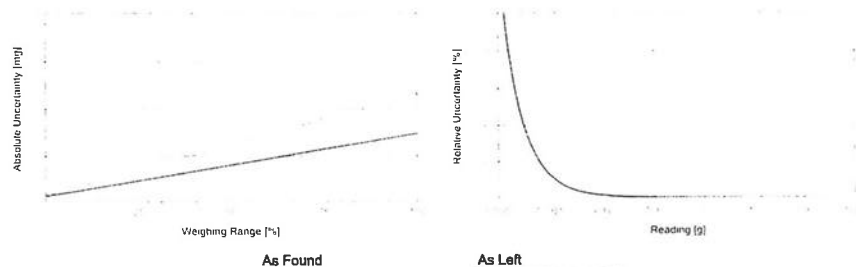
### Linearization of Uncertainty Equation

Range			As Found	As Left
d		Max		
1	0.0001 g	220 g	$U_1 = 0.13 \text{ mg} + 0.0101 \text{ mg/g} \cdot R$	$U_1 = 0.13 \text{ mg} + 0.00616 \text{ mg/g} \cdot R$

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

### Absolute and Relative Measurement Uncertainty In Use for Various Net Indications (Examples)

Net Indication	As Found		As Left	
0.0220 g	0.13 mg	0.59%	0.13 mg	0.59%
0.2200 g	0.13 mg	0.060%	0.13 mg	0.060%
2.2000 g	0.15 mg	0.0069%	0.14 mg	0.0065%
22.0000 g	0.35 mg	0.0016%	0.27 mg	0.0012%
220.0000 g	2.4 mg	0.0011%	1.5 mg	0.00068%



# GWP® Certificate



As  
Found



As  
Left



The weighing device meets the given process requirements.

The weighing device meets the given process requirements.

Tests Performed: ☒ As Found ☒ As Left

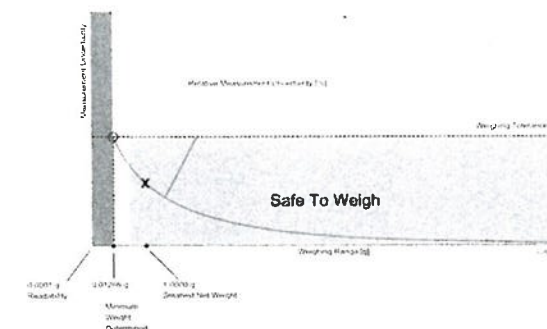
## Process Requirements

Weighing Tolerance: 1%

Smallest Net Weight: 1.0000 g

Safety Factor: 2

### Safe Weighing Range



While the values in this graph reflect the actual calibration results, the measurement uncertainty curves are simply a visual representation. This graph reflects As Left testing, unless only As Found was performed.

## Minimum Weight

### As Found Minimum Weight Table

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.13300 g	0.26873 g	0.40728 g	0.69320 g	1.46405 g
0.2%	0.06616 g	0.13300 g	0.20051 g	0.33764 g	0.69320 g
0.5%	0.02638 g	0.05288 g	0.07947 g	0.13300 g	0.26873 g
1%	0.01318 g	0.02638 g	0.03962 g	0.06616 g	0.13300 g
2%	0.00659 g	0.01318 g	0.01978 g	0.03300 g	0.06616 g
5%	0.00263 g	0.00527 g	0.00790 g	0.01318 g	0.02638 g

✓ Pass: The determined minimum weight meets the requirement for the smallest net weight.

### As Left Minimum Weight Table

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.12728 g	0.25614 g	0.38662 g	0.65256 g	1.34797 g
0.2%	0.06344 g	0.12728 g	0.19151 g	0.32118 g	0.65256 g
0.5%	0.02533 g	0.05072 g	0.07618 g	0.12728 g	0.25614 g
1%	0.01266 g	0.02533 g	0.03802 g	0.06344 g	0.12728 g
2%	0.00633 g	0.01266 g	0.01899 g	0.03167 g	0.06344 g
5%	0.00253 g	0.00506 g	0.00759 g	0.01266 g	0.02533 g

✓ Pass: The determined minimum weight meets the requirement for the smallest net weight.

At these net minimum weight values, the measurement uncertainty of the weighing device is equal to or less than 1/1 (no safety factor), 1/2, 1/3, 1/5, or 1/10 of the required tolerance. The values are calculated with  $k = 2$  and based on the linear formula of the measurement uncertainty of the weighing device in use.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

Notes on minimum weight values in above table:

1. If "N/A" is shown above, no appropriate value could be calculated.
2. METTLER TOLEDO is not responsible for the definition of the process requirements.

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## Measurement Results

### Results Summary

	Repeatability	Eccentricity	Error of Indication
As Found	✓	✓	✓
As Left	✓	✓	✓

✓ = Passed

✗ = Failed

N/A = Safety Factor not met

### Repeatability

Test Load: 100 g

Tolerance	Control Limit	As Found		As Left	
		Std. Deviation	Result	Std. Deviation	Result
0.1%	0.00050 g		✓		✓
0.2%	0.00100 g		✓		✓
0.5%	0.00250 g		✓		✓
1%	0.00500 g	0.00005 g	✓	0.00005 g	✓
2%	0.01000 g		✓		✓
5%	0.02500 g		✓		✓

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

### Eccentricity

Test Load: 100 g

Tolerance	Control Limit	As Found		As Left	
		Deviation	Result	Deviation	Result
0.1%	0.0500 g		✓		✓
0.2%	0.1000 g		✓		✓
0.5%	0.2500 g		✓		✓
1%	0.5000 g	0.0001 g	✓	0.0001 g	✓
2%	1.0000 g		✓		✓
5%	2.5000 g		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

COPY

**Error of Indication**

**As Found**

Reference Value	Error	Control limits for various weighing tolerances					
		0.1%	0.2%	0.5%	1%	2%	5%
0.0000 g	0.0000 g	N/A	N/A	N/A	N/A	N/A	N/A
50.0000 g	-0.0003 g	0.0250 g	0.0500 g	0.1250 g	0.2500 g	0.5000 g	1.2500 g
100.0000 g	-0.0005 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
149.9999 g	-0.0006 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
199.9998 g	-0.0008 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
<b>Result</b>		✓	✓	✓	✓	✓	✓

**As Left**

Reference Value	Error	Control limits for various weighing tolerances					
		0.1%	0.2%	0.5%	1%	2%	5%
0.0000 g	0.0000 g	N/A	N/A	N/A	N/A	N/A	N/A
50.0000 g	0.0001 g	0.0250 g	0.0500 g	0.1250 g	0.2500 g	0.5000 g	1.2500 g
100.0000 g	0.0001 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
149.9999 g	0.0001 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
199.9998 g	0.0001 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
<b>Result</b>		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

**COPY**

**Area Heat Stress Monitor**

**Model : QUESTemp 34**

**Serial No. : TEU080015**





## CALIBRATION CERTIFICATE

Certificate No. : L202307241-0001

Date Issued : 24-Jul-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
 683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : QUEST TECHNOLOGY

**Model** : QUESTEMP 34

**Serial No.** : TEU080015

**ID No./Tag No.** : No.14

**Date Received** : 21-Jul-23

**Date Calibrated** : 22-Jul-23

**Calibrated by** : Mr. Apiwat Peanrungrat

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

*Sorayuth T.*

(Mr. Sarayuth Tochua)



Page 1 of 2

*COPY*

Certificate No. : L202307241-0001

**Environment** : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\%RH$

STD	UUC Reading ( $^\circ\text{C}$ )		UUC Error	Measurement
Reading ( $^\circ\text{C}$ )	Before Adjusted	After Adjusted	( $^\circ\text{C}$ )	Uncertainty ( $\pm^\circ\text{C}$ )
38.00	WET 38.0	-	0.00	0.35
38.00	DRY 38.1	-	0.10	0.35
38.00	GLOBE 37.9	-	-0.10	0.35
44.99	WET 44.7	-	-0.29	0.35
44.99	DRY 44.8	-	-0.19	0.35
44.99	GLOBE 44.6	-	-0.39	0.35

STD = Standard

UUC = Unit Under Calibration

**Description of UUC :**

Range	0 to 100	$^\circ\text{C}$
Resolution	0.1	$^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

### Measurement Standards Used & Traceability :

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

*COPY*

**Area Heat Stress Monitor**

**Model : QUESTemp 34**

**Serial No. : TEU080014**



MIRACLE INTERNATIONAL TECHNOLOGY CO.,LTD

214 Bangwaek Rd. Bangpai Bangkae Bangkok 10160  
Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202307241-0002

Date Issued : 24-Jul-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : QUEST TECHNOLOGY

**Model** : QUESTEMP 34

**Serial No.** : TEU080014

**ID No./Tag No.** : No.13

**Date Received** : 21-Jul-23

**Date Calibrated** : 22-Jul-23

**Calibrated by** : Mr. Apiwat Peanrungrat

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:   
( Mr. Sarayuth Tochua)



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**COPY**

Certificate No. : L202307241-0002

Environment : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\%RH$

STD Reading ( $^\circ\text{C}$ )	UUC Reading ( $^\circ\text{C}$ )		UUC Error ( $^\circ\text{C}$ )	Measurement Uncertainty ( $\pm^\circ\text{C}$ )
	Before Adjusted	After Adjusted		
38.00	WET 38.1	-	0.10	0.35
38.00	DRY 38.2	-	0.20	0.35
38.00	GLOBE 38.0	-	0.00	0.35
44.99	WET 45.0	-	0.01	0.35
44.99	DRY 45.1	-	0.11	0.35
44.99	GLOBE 44.9	-	-0.09	0.35

STD = Standard

UUC = Unit Under Calibration

Description of UUC : Range 0 to 100  $^\circ\text{C}$   
Resolution 0.1  $^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

Measurement Standards Used & Traceability :

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

**COPY**

**Area Heat Stress Monitor**

**Model : QUESTemp 34**

**Serial No. : TEU080012**





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## CALIBRATION CERTIFICATE

Certificate No. : L202306315-002

Date Issued : 04-Jul-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
 683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : TSI  
**Model** : QUESTemp 34  
**Serial No.** : TEU080012  
**ID No./Tag No.** : NO.11  
**Date Received** : 30-Jun-23  
**Date Calibrated** : 02-Jul-23

**Calibrated by** : Mr. Apiwat Peanrungrat

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

*Sarayuth T.*

( Mr. Sarayuth Tochua )



Page 1 of 2

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Certificate No. : L202306315-002

**Environment** : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$   
 Relative Humidity :  $(50 \pm 15)\%\text{RH}$

STD	UUC Reading ( $^\circ\text{C}$ )		UUC Error	Measurement
Reading ( $^\circ\text{C}$ )	Before Adjusted	After Adjusted	( $^\circ\text{C}$ )	Uncertainty ( $\pm^\circ\text{C}$ )
37.99	WET 37.9	-	-0.09	0.35
37.99	DRY 37.9	-	-0.09	0.35
37.99	GLOBE 37.9	-	-0.09	0.35
45.01	WET 45.3	-	0.29	0.35
45.01	DRY 45.2	-	0.19	0.35
45.01	GLOBE 45.1	-	0.09	0.35

STD = Standard

UUC = Unit Under Calibration

**Description of UUC :** Range 0 to 100  $^\circ\text{C}$   
 Resolution 0.1  $^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

**Measurement Standards Used & Traceability :**

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

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**Area Heat Stress Monitor**

**Model : QUESTemp 32**

**Serial No. : TPL060040**



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Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202305299-010

Date Issued : 07-Jun-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : Quest Technologies

**Model** : QUESTemp 32

**Serial No.** : TPL060040

**ID No./Tag No.** : NO.5

**Date Received** : 29-May-23

**Date Calibrated** : 05-Jun-23

**Calibrated by** : Mr. Apiwat Peanrungrot

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

*Sarayuth T.*

( Mr. Sarayuth Tochua )



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Certificate No. : L202305299-010

**Environment** : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\%RH$

STD Reading ( $^\circ\text{C}$ )	UUC Reading ( $^\circ\text{C}$ )		UUC Error ( $^\circ\text{C}$ )	Measurement Uncertainty ( $\pm^\circ\text{C}$ )
	Before Adjusted	After Adjusted		
38.00	WET 38.0	-	0.00	0.35
38.00	DRY 38.0	-	0.00	0.35
38.00	GLOBE 37.9	-	-0.10	0.35
44.99	WET 45.0	-	0.01	0.35
44.99	DRY 45.1	-	0.11	0.35
44.99	GLOBE 44.8	-	-0.19	0.35

STD = Standard

UUC = Unit Under Calibration

**Description of UUC :**

Range	0 to 100	$^\circ\text{C}$
Resolution	0.1	$^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

**Measurement Standards Used & Traceability :**

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

Page 2 of 2

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**Area Heat Stress Monitor**

**Model : QUESTemp 34**

**Serial No. : TEU080013**





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Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202306315-003

Date Issued : 04-Jul-23

Customer : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

Equipment : Area Heat Stress Monitor

Manufacturer : TSI

Model : QUESTemp 34

Serial No. : TEU080013

ID No./Tag No. : NO.12

Date Received : 30-Jun-23

Date Calibrated : 02-Jul-23

Calibrated by : Mr. Apiwat Peanrungrot

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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*Sarayuth T.*  
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Certificate No. : L202306315-003

Environment : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\% \text{RH}$

STD Reading ( $^\circ\text{C}$ )	UUC Reading ( $^\circ\text{C}$ )		UUC Error ( $^\circ\text{C}$ )	Measurement Uncertainty ( $\pm ^\circ\text{C}$ )
	Before Adjusted	After Adjusted		
37.99	WET 37.8	-	-0.19	0.35
37.99	DRY 38.0	-	0.01	0.35
37.99	GLOBE 38.2	-	0.21	0.35
45.01	WET 45.1	-	0.09	0.35
45.01	DRY 45.3	-	0.29	0.35
45.01	GLOBE 45.1	-	0.09	0.35

STD = Standard

UUC = Unit Under Calibration

Description of UUC : Range 0 to 100  $^\circ\text{C}$   
Resolution 0.1  $^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

Measurement Standards Used & Traceability :

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

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**Area Heat Stress Monitor**

**Model : QUESTemp 32**

**Serial No. : TPI050069**



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214 Bangwaek Rd. Bangpai Bangkae Bangkok 10160  
Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202307143-005

Date Issued : 25-Jul-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : QUEST TECHNOLOGY

**Model** : QUESTEMP 32

**Serial No.** : TPI050069

**ID No./Tag No.** : NO.2

**Date Received** : 19-Jul-23

**Date Calibrated** : 22-Jul-23

**Calibrated by** : Mr. Apiwat Peanrungrat

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

*Sarayuth T.*

(Mr. Sarayuth Tochua)



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Certificate No. : L202307143-005

**Environment :** Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\%RH$

STD Reading ( $^\circ\text{C}$ )	UUC Reading ( $^\circ\text{C}$ )		UUC Error ( $^\circ\text{C}$ )	Measurement Uncertainty ( $\pm^\circ\text{C}$ )
	Before Adjusted	After Adjusted		
38.00	WET 38.4	-	0.40	0.35
38.00	DRY 38.0	-	0.00	0.35
38.00	GLOBE 38.0	-	0.00	0.35
44.99	WET 45.3	-	0.31	0.35
44.99	DRY 45.2	-	0.21	0.35
44.99	GLOBE 45.0	-	0.01	0.35

STD = Standard

UUC = Unit Under Calibration

**Description of UUC :** Range 0 to 100  $^\circ\text{C}$   
Resolution 0.1  $^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

**Measurement Standards Used & Traceability :**

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

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**Area Heat Stress Monitor**

**Model : QUESTemp 34**

**Serial No. : TEU080011**





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Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202306315-001

Date Issued : 04-Jul-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : TSI  
**Model** : QUESTemp 34  
**Serial No.** : TEU080011  
**ID No./Tag No.** : NO.10  
**Date Received** : 30-Jun-23  
**Date Calibrated** : 02-Jul-23

**Calibrated by** : Mr. Apiwat Peanrungrot

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

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Certificate No. : L202306315-001

Environment : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\% \text{RH}$

STD	UUC Reading ( $^\circ\text{C}$ )		UUC Error	Measurement
Reading ( $^\circ\text{C}$ )	Before Adjusted	After Adjusted	( $^\circ\text{C}$ )	Uncertainty ( $\pm ^\circ\text{C}$ )
37.99	WET 37.9	-	-0.09	0.35
37.99	DRY 37.7	-	-0.29	0.35
37.99	GLOBE 37.9	-	-0.09	0.35
45.01	WET 44.9	-	-0.11	0.35
45.01	DRY 44.8	-	-0.21	0.35
45.01	GLOBE 45.0	-	-0.01	0.35

STD = Standard

UUC = Unit Under Calibration

Description of UUC : Range 0 to 100  $^\circ\text{C}$   
Resolution 0.1  $^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

Measurement Standards Used & Traceability :

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

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**Area Heat Stress Monitor**

**Model : QUESTemp 32**

**Serial No. : TPL090016**



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214 Bangwaek Rd. Bangpai Bangkae Bangkok 10160

Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202308070-0001

Date Issued : 05-Sep-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Area Heat Stress Monitor

**Manufacturer** : QUEST TECHNOLOGY

**Model** : QUESTEMP 32

**Serial No.** : TPL090016

**ID No./Tag No.** : No.6

**Date Received** : 01-Sep-23

**Date Calibrated** : 04-Sep-23

**Calibrated by** : Mr. Apiwat Peanrungrat

### Calibration Method or Calibration Procedure Used

In-house method : CP-19 by comparing against Standard Digital Humidity / Temperature Meter

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

*Sorayuth T.*

( Mr. Sarayuth Tochua)



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Certificate No. : L202308070-0001

Environment : Ambient Temperature :  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity :  $(50 \pm 15)\%RH$

STD Reading ( $^\circ\text{C}$ )	UUC Reading ( $^\circ\text{C}$ )		UUC Error ( $^\circ\text{C}$ )	Measurement Uncertainty ( $\pm ^\circ\text{C}$ )
	Before Adjusted	After Adjusted		
37.99	WET 38.1	-	0.11	0.35
37.99	DRY 37.9	-	-0.09	0.35
37.99	GLOBE 38.1	-	0.11	0.35
45.01	WET 45.1	-	0.09	0.35
45.01	DRY 44.9	-	-0.11	0.35
45.01	GLOBE 45.1	-	0.09	0.35

STD = Standard

UUC = Unit Under Calibration

Description of UUC : Range 0 to 100  $^\circ\text{C}$   
Resolution 0.1  $^\circ\text{C}$

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

Measurement Standards Used & Traceability :

The International System of Units (SI) through

MIT Certificate No. L202210258-006 for Digital Thermometer with Probe (Fluke) Serial No. 5856603, Due 10-Nov-23

End of Certificate

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## **BAROMETER**

**Equipment : Analog Barometer**

**ID No. / Tag No. : BM001/41**



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Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202305085-002

Date Issued : 16-May-23

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Analog Barometer

**Manufacturer** : Barigo

**Model** : -

**Serial No.** : -

**ID No./Tag No.** : BM001/41

**Date Received** : 11-May-23

**Date Calibrated** : 15-May-23

**Calibrated by** : Mr. Jame Khaothong

### Calibration Method or Calibration Procedure Used

In-house method : CP-21 base on DKD-R 6-1: Edition 3 2014.

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

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Approved by:

*Sarayuth T.*

(Mr. Sarayuth Tochua)



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Certificate No : L202305085-002

**Environment** Ambient Temperature :  $(25 \pm 2)^{\circ}\text{C}$   
Relative Humidity :  $(50 \pm 15)\%\text{RH}$

STD Reading	UUC Reading (mbar)	UUC Reading (mbar)	UUC Error	Uncertainty
mbar	Before Adjusted	After Adjusted	mbar	$\pm$ mbar
990.00	990.0	-	0.00	0.61
1000.00	1000.0	-	0.00	0.61
1010.00	1010.0	-	0.00	0.61
1020.00	1020.0	-	0.00	0.61
1030.00	1030.0	-	0.00	0.61

STD = Standard

UUC = Unit Under Calibration

**Calibrated condition :** Pressure Medium Air : Density =  $1.19 \text{ kg/m}^3$  @  $20^{\circ}\text{C}$ , 1 bar  
Mounting Position Vertical  
Reference Level at center of its dial  
Conversion Factor Multiply by  $1.0 \text{ E}+02$  - Pa unit

**Description of UUC :** Range 990 - 1030 mbar Absolute  
Calibration Range 990 - 1030 mbar Absolute  
Scale Interval 1 mbar  
Resolution 0.5 mbar Absolute

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

**Measurement Standards Used & Traceability :**

The International System of Units (SI) through

iRPC Certificate No. CL1-P220104 for Reference Pressure Monitor Serial No. 1598, Due 11-Nov-23

End of Certificate

Page 2 of 2

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**CERTIFICATE OF ANALYSIS**

**EPA PROTOCOL GAS**

**Cylinder No. : EB0145030**

# **CERTIFICATE OF ANALYSIS**

## **Grade of Product: EPA Protocol**

Part Number: E03NI99E15AC0U4      Reference Number: 160-402242242-1  
Cylinder Number: EB0145030      Cylinder Volume: 144.4 CF  
Laboratory: 124 - Plumsteadville - PA      Cylinder Pressure: 2015 PSIG  
PGVP Number: A12021      Valve Outlet: 350  
Gas Code: CH4,PPN,BALN      Certification Date: Oct 15, 2021

**Expiration Date: Oct 15, 2029**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/031, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

### **ANALYTICAL RESULTS**

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
METHANE	180.0 PPM	177.0 PPM	G1	+/- 1.0% NIST Traceable	10/15/2021
PROPANE	185.0 PPM	187.0 PPM	G1	+/- 1.0% NIST Traceable	10/15/2021
NITROGEN	Balance				

### **CALIBRATION STANDARDS**

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	08011503	K002564	246.7 PPM METHANE/AIR	+/- 0.6%	May 15, 2025
NTRM	200602-06	6162660Y	243.3 PPM PROPANE/AIR	+/- 0.5%	Mar 17, 2027

### **ANALYTICAL EQUIPMENT**

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet iS50 FTIR AUP2110295 CH4	FTIR	Oct 13, 2021
Nicolet iS50 FTIR AUP2110295 C3H8	FTIR	Oct 14, 2021

Triad Data Available Upon Request

#### **NOTES:**

Gross Weight: 28.0 Kg  
Net Weight: 4.9 Kg  
PO# 5221004861



*Michael A. Huber*  
Approved for Release



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**CERTIFICATE OF ANALYSIS**

**EPA PROTOCOL GAS**

**Cylinder No. : EB0062815**

# CERTIFICATE OF ANALYSIS

## Grade of Product: EPA Protocol

Part Number: E04NI99E15ACX9C Reference Number: 82-401135335-1  
Cylinder Number: EB0062815 Cylinder Volume: 144.4 CF  
Laboratory: 124 - Riverton (SAP) - NJ Cylinder Pressure: 2015 PSIG  
PGVP Number: B52018 Valve Outlet: 660  
Gas Code: CO,NO,NOX,SO2,BALN Certification Date: Mar 13, 2018

Expiration Date: Mar 13, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

### ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	50.00 PPM	50.55 PPM	G1	+/- 1.4% NIST Traceable	03/06/2018, 03/13/2018
NITRIC OXIDE	50.00 PPM	50.50 PPM	G1	+/- 1.4% NIST Traceable	03/06/2018, 03/13/2018
SULFUR DIOXIDE	50.00 PPM	51.01 PPM	G1	+/- 1.0% NIST Traceable	03/06/2018, 03/13/2018
CARBON MONOXIDE	2000 PPM	1977 PPM	G1	+/- 1.0% NIST Traceable	03/06/2018
NITROGEN	Balance				

### CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	18060807	CC442564	50.42 PPM NITRIC OXIDE/NITROGEN	+/- 0.8%	Jun 27, 2020
PRM	12367	APEX1099237	9.82 PPM NITROGEN DIOXIDE/AIR	+/- 2.0%	Jun 02, 2017
GMIS	0315201604	CC503358	4.975 PPM NITROGEN DIOXIDE/NITROGEN	+/- 1.6%	Mar 15, 2019
NTRM	18011025	CC473218	49.02 PPM SULFUR DIOXIDE/NITROGEN	+/- 0.8%	Jun 07, 2022
NTRM	12060735	CC356192	2498 PPM CARBON MONOXIDE/NITROGEN	+/- 0.6%	Dec 14, 2026

The SRM, PRM or RGM noted above is only in reference to the GMIS used in the assay and not part of the analysis.

### ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet 6700 APW1100391 CO	FTIR	Feb 08, 2018
Nicolet 6700 APW1100391 NO	FTIR	Feb 15, 2018
Nicolet 6700 APW1100391 NO2	FTIR	Feb 16, 2018
Nicolet 6700 APW1100391 SO2	FTIR	Mar 01, 2018

Triad Data Available Upon Request

NOTES: NET WEIGHT: 10.43lbs

GROSS WEIGHT: 60.93lbs

PO# 5218000763

This calibration std. has been certified in accordance with the May 2012 EPA Traceability Protocol, Document EPA-600/R-12/531. All testing processes and measurements conform to the requirements of ISO/IEC 17025 and to Airgas ISO 9001:2000 and relate only to items identified on this certificate. All values are certified to be NIST Traceable with total uncertainty as detailed under Analytical Uncertainty. This document shall not be reproduced in full without written approval of the issuer.



TESTING CERT No. 3082.05

*Don Morris*  
Approved for Release

*COPY*

**DRY GAS METER XC-572-OV**

**Serial No. : A2204323**

Certificate of Calibration

Method 5 Pre-Test Console Calibration - Cubic meter (m<sup>3</sup>)

**Meter Console Information**  
Console Model : XC-57Z-OV  
Console serial : A2204323  
DCM Model #: SK255X  
DCM Serial #: 00008294

**Calibration Condition**  
Calibration Date: 2-May-2023  
Due Date : 1-May-2024  
Cal. Report No. : WDS-SV600066  
Ambient Temp (°C): 25  
Pressure (mm Hg): 758  
Relative Humidity (%): 55

**Factors/Conversion**  
Std. Temp. (°C): 298  
Std. Pressure (mm Hg): 760  
K<sub>1</sub> (K/mm Hg): 0.3857

**Reference Equipment**  
WTM Model: W4-NK02a-5B  
WTM Serial: 800245  
WTM Cal. Date: 22-Nov-2022  
Gamma: 1.0000

UT Meter (DCM)				Reference Meter (WTM)			
Run Time (minutes)	DCM Office (mm H <sub>2</sub> O) P <sub>min</sub>	Volume		Outlet Temp		Volume	
		Initial V <sub>ini</sub>	Final V <sub>fin</sub>	Initial T <sub>ini</sub>	Final T <sub>fin</sub>	Initial V <sub>ini</sub>	Final V <sub>fin</sub>
15.00	13.0	18.065	18.2252	25	26	17.55844	17.71573
10.00	25.0	18.2477	18.3894	25	26	17.73837	17.88948
8.00	50.0	18.4339	18.6056	25	26	17.92517	18.09730
7.00	80.0	18.6458	18.8344	25	27	18.13775	18.32707
5.00	120.0	18.8839	19.0510	25	27	18.37705	18.54528

Standardized Data				Calibration Results			
Test Meter	Std. Flow Rate Q <sub>std</sub> m <sup>3</sup> /min	Reference Meter		Correction Factor		Flow Rate	
		Std. Volume V <sub>std</sub> (m <sup>3</sup> )	Std. Flow Rate Q <sub>std</sub> m <sup>3</sup> /min	"Gamma" (γ)	Variation (Δγ)	Std & Corr Q <sub>std</sub> (m <sup>3</sup> /min)	ΔH@ (mm H <sub>2</sub> O) 0.0212 SCMM ΔH <sub>g</sub>
0.154	0.010	0.154	0.010	1.004	0.003	0.010	54.437
0.148	0.015	0.148	0.015	1.002	0.001	0.015	50.528
0.169	0.021	0.169	0.021	0.999	-0.001	0.021	50.086
0.186	0.027	0.186	0.027	0.999	-0.001	0.027	50.928
0.165	0.033	0.165	0.033	0.999	-0.002	0.033	49.741
							51.144
							ΔH@ Avg

Note: For Calibration Factor γ, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance is ±0.02  
Note: For ΔH<sub>g</sub>, office pressure differential that equates to 0.75cdm (0.0212m<sup>3</sup>/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2inches (5.1mm) H<sub>2</sub>O.

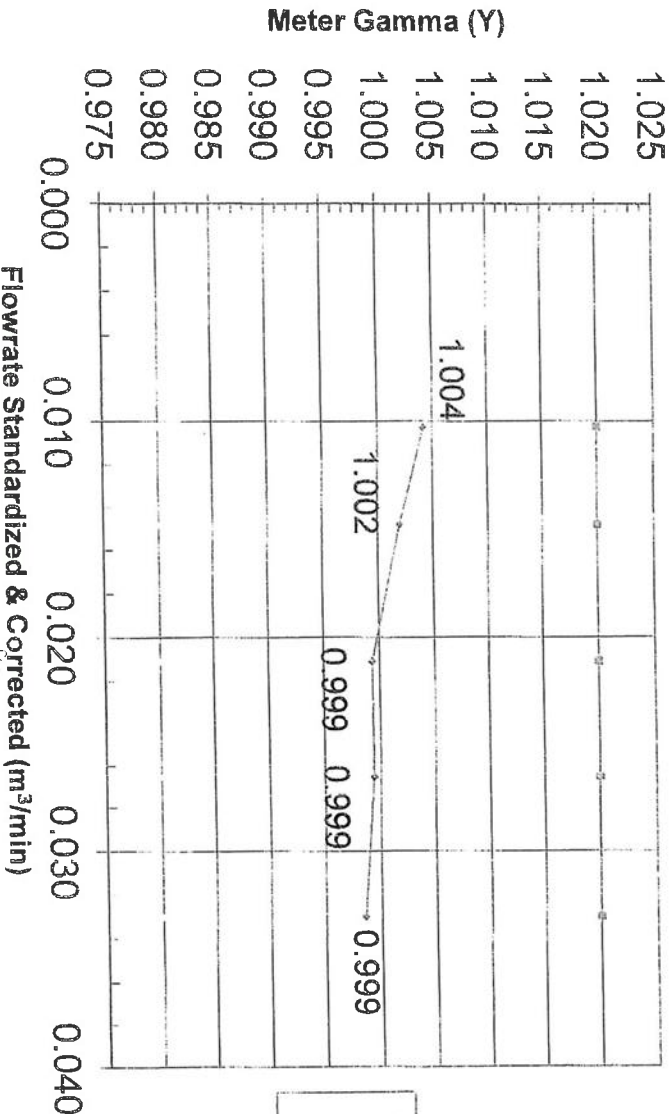
Approved By:   
Service Manager

WISDOM SCIENCE SALE AND SERVICE GROUP  
Date: 2-May-2023

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Pass/Fail Result: **PASS**

Meter Gamma vs Flowrate



Console Serial:

A2204323

Console Model:

XC-57Z-OV

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TEMPERATURE DISPLAY CALIBRATION

**Meter Console Information**

Console Model : XC-572-OV  
Console Serial : A2204323  
Temp Indicator Model : 765-KF  
Temp. Indicator Serial : JC19022

**Calibration Conditions**

Cal. Date : 2-May-2023  
Due Date : 1-May-2024  
Cal. Report No. : WDS-SV660066  
Ambient Temp. (°C) : 25  
Pressure (mm Hg) : 758  
Humidity (%) : 55

**Reference Equipment**

Temp. Simulator Model : FLUKE 714B  
Serial No. : 60590035  
Calibration Date : 14-Feb-2023

**Temperature Sensor Calibration**

Reference Point	Ref. Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
1	-18.0	-17.0	1.0
2	25.0	25.0	0.0
3	90.0	90.0	0.0
4	120.0	120.0	0.0
5	250.0	249.0	1.0
6	380.0	380.0	0.0
7	500.0	500.0	0.0
8	620.0	620.0	0.0
9	740.0	739.0	1.0
10	860.0	860.0	0.0

Maximum<sup>1</sup>

PASS

**Note**  
<sup>1</sup> For valid test results, the maximum difference between temperature readings should  $\leq 1.0^{\circ}\text{C}$  (EPA Method 5, Section 6.1.1.8).  
Perform AUX, STACK, PROBE, OVEN, FILTER, EXIT. Except meter (DGM) channel

**DGM Out Temperature Sensor Calibration**

Temperature point	Ref. Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
Ambient	28.8	29.0	-0.2
Heat	100.0	101.3	-1.3

**Difference Rang**

DGM Out Temp. Diff.  $\pm 3^{\circ}\text{C}$

PASS

Approved By :

(Patrasu Chaisana)  
Service Manager

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Console Serial:

A2204323

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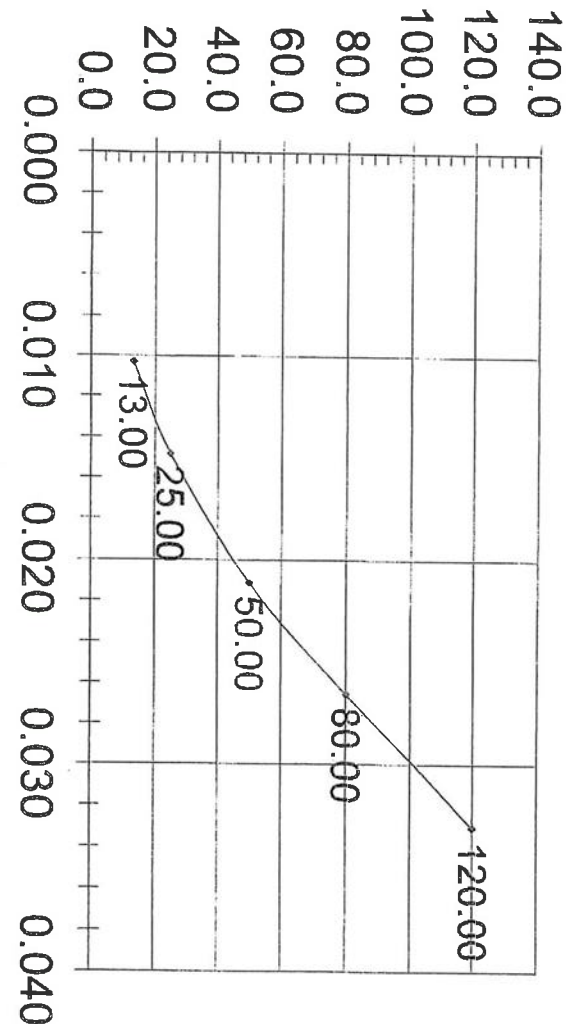
Console Model:

XC-572-OV

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**DGM Orifice  $\Delta H$  (mm H<sub>2</sub>O)**

**Flowrate Standardized & Corrected (m<sup>3</sup>/min)**



**Meter Pressure vs Flowrate**

**DRY GAS METER XC572V**

**Serial No. : 1110070**

Meter Console Information		Calibration Condition	
Meter Model	XC572V	Calibration Date	3-Jul-23
Console serial	1110070	Due Date	2-Jul-24
DGM Model #	SK25EX	Cal Report No.	WDS-SV660107
DGM Serial #	0005413	Ambient Temp (°C)	25
		Pressure (mm Hg)	758
		Relative Humidity (%)	60

Factors/Conversion	
Std Temp (°C)	298
Std Pressure (mm Hg)	760
K <sub>1</sub> (K/mm Hg)	0.357

Reference Equipment	
WTM Model	W-NK02A-SB
WTM Serial	600245
WTM Cal Due Date	Nov. 2022
Gamma	1.0000


UT Meter (DGM)				Reference Meter (WTM)			
Run Time (minutes)	DGM Orifice (mm H <sub>2</sub> O)	Volume		Outlet Temp		Volume	
		Initial	Final	Initial	Final	Initial	Final
15.00	13.0	599.3828	599.5462	27	27	20.05690	20.22163
10.00	25.0	599.5889	599.7246	27	26	20.24425	20.39999
8.00	50.0	599.7405	599.9176	26	26	20.41592	20.59344
7.00	80.0	599.9333	600.1337	26	26	20.60920	20.81034
5.00	120.0	600.1559	600.3319	26	26	20.83271	21.00950

Standardized Data				Calibration Results			
Test Meter	Std Flow Rate	Reference Meter		Correction Factor		Flow Rate	
		Std Volume	Std Flow Rate	"Gamma" (°)	Variation (u)	Std & Corr	ΔH@ (mm H <sub>2</sub> O)
V <sub>read</sub> (m <sup>3</sup> )	Q <sub>read</sub> m <sup>3</sup> /min	V <sub>std</sub> (m <sup>3</sup> )	Q <sub>std</sub> m <sup>3</sup> /min				
0.159	0.011	0.160	0.011	1.005	0.010	0.011	50.181
0.152	0.015	0.152	0.015	0.996	0.000	0.015	48.096
0.174	0.022	0.173	0.022	0.995	-0.001	0.022	47.605
0.197	0.028	0.196	0.028	0.993	-0.003	0.028	45.688
0.174	0.035	0.172	0.034	0.990	-0.006	0.034	45.602
							-1.832
							47.434
							ΔH@ Avg

Pass/Fail Result: Pass

Note: For Calibration Factor 'v' the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance is 0.02% for individual values from the average is 0.02%.

Note: For dH<sub>g</sub>, orifice pressure differential that equates to 0.53dm (0.021m<sup>3</sup>/min) at standard temperature and pressure. Individual values from the average is 0.2 Zinchex (5.1mm) H<sub>2</sub>O.

Approved By:   
(Palapsu Chaisana)  
Service Manager

ผู้ว่าราชการจังหวัดนนทบุรี  
WISDOM SCIENCE SALE AND SERVICE GROUP COMPANY LIMITED

WISDOM SCIENCE

Date: 3-Jul-23

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## TEMPERATURE DISPLAY CALIBRATION

## Meter Console Information

Console Model	XC572V
Console serial	1110070
Temp Indicator Model	765-KF
Temp. Indicator Serial	JC17852

## Calibration Conditions

Cal Date	3-Jul-23
Due Date	2-Jul-24
Cal Report No.	WDS-SV660107
Ambient Temp. (°C)	25
Pressure (mm Hg)	758
Humidity (%)	60

## Reference Equipment

Temp Simulator Model	FLUKE 714B
Serial No	60590035

## Temperature Sensor Calibration

Reference Point	Ref. Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
1	-18.0	-17.0	1.0
2	38.0	37.0	1.0
3	93.0	93.0	0.0
4	149.0	149.0	0.0
5	260.0	259.0	1.0
6	371.0	372.0	-1.0
7	482.0	482.0	0.0
8	593.0	594.0	-1.0
9	816.0	816.0	0.0
10	1038.0	1039.0	-1.0

Maximum 1

PASS

## Note

' For valid test results , the maximum difference between temperature readings should ≤1.0°C ( EPA Method 5, Section 6.1.1.8 )  
Perform all TC Channel calibrations. Except meter (DGM) channel

## DGM Out Temperature Sensor Calibration

Temperature point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
Ambient	26.5	27.0	-0.5
Heat	100.5	102.5	-2.0

## Difference Rang

DGM Out Temp. Diff. ±3 °C

PASS

Approved By: 

(Palapsu Chaisana)  
Service Manager  
WISDOM SCIENCE

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ELAPSED TIMER CALIBRATION

Meter Console Information

Model #: XC572V  
Serial #: 1110070  
Elapsed Timer Model #: C342-1464  
Elapsed Timer Serial #: -

Calibration Conditions

Cal. Date : 03-Jul-23  
Due Date : 02-Jul-24  
Cal. Report No. : WDS-SV660107  
Ambient Temp. (°C) : 25  
Pressure (mm Hg) : 758  
Humidity (%) : 60

Reference Equipment

Calibration Standard: JS-307  
Method Reference: Compare

Calibration Results						
Run Time	Elapsed Timer				Average Time	Deviation
Elapsed STD.	1	2	3	4		
Minute	Minute	Minute	Minute	Minute	Minute	Minute
2.00	2.00	2.00	2.00	2.00	2.000	0.000
3.00	3.00	3.00	3.00	3.00	3.000	0.000
5.00	5.00	5.00	5.00	5.00	5.000	0.000
7.00	7.00	7.00	7.00	7.00	7.000	0.000
9.00	9.00	9.00	9.00	9.00	9.000	0.000

Approved By

*Patpasu Chaisana*

( Patpasu Chaisana )  
Service Engineer

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**Flue gas Analyzer**

**Testo 350 NEW**

**Serial No. 63455658/0722**

**Certificate No:** G 660488  
**Date of issue :** 17-Aug-23

**Instrument description :** Flue Gas Analyzer  
**Instrument model :** Testo 350 New  
**Instrument serial no. :** 63455658/0722  
**Control unit serial no. :** 03601409/0722  
**ID no. or control no. :** -  
**Manufacturer :** Testo SE & Co. KGaA  
**Probe description :** -  
**Probe model :** -  
**Probe serial :** -  
**Customer name :** Eastern Thai Consulting 1992 Company Limited  
**Customer address :** 683 Moo 11, Sukhapibarn 8 Road, Nongkham, Si Racha, Chon Buri 20280

**Total pages of certificate :** 2 Pages  
**Receiving no. :** L-232624  
**Receiving date. :** 10-Aug-23  
**Parameter of calibration :** Gas Calibration(Oxygen 2.498,10.04,21.02 %vol, Carbon Monoxide 80.14,302,1003 ppm, Nitrogen Dioxide 80.96 ppm, Nitric Oxide 151.5 ppm, Sulphur Dioxide 100.8 ppm)  
**Condition of UUC. :** Used  
**Ambient condition :** All of the Measurment were caried out the stablized labotary  
Temperature : 23 ±5 °C  
Humidity : 55 ± 15 %RH  
**Calibration place :** 17/121 Soi Ngamwongwan 47 Yaek 48, Toongsonghong, Laksi, Bangkok 10210  
**Calibration procedure no. :** This Instrument was calibrated by comparison with Standard gas mixture according to calibration work instration no. WI-CL-28-C

*The calibration certificate expanded uncertainty of measurement is stated as the standard uncertainty of measurent Multiplied by coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. This certificate is applied only to item under test Environmental condition. This Calibration Certificate may not be reporduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature and seal not valid and The results relate only to the items tested/calibrated. This calibration certificate documents are tracebility to national standards, which realize measurement according to the International System of Units (SI).*

**Date of calibration :** 17-Aug-23

  
Mr. Kwanchai Khamdoun  
Calibration Technician

  
Mrs. Nongluck Wongsettee  
Technical Manager

**COPY**

**Certificate No.:** G 660488

## Standard References (Table 1)

Standard	Certificate No.	Vendor	Due date
Oxygen ( O2 ) 2.498 % Vol	4219/21	Linde	30-Sep-25
Oxygen ( O2 ) 10.04 % Vol	CG-0153-21	Nimt	18-Nov-26
Oxygen ( O2 ) 21.02 % Vol	CG-0041-22	Nimt	10-Feb-27
Carbon monoxide ( CO ) 80.14 ppm	CG-0040-22	Nimt	14-Feb-27
Carbon monoxide ( CO ) 302 ppm	1915/23	Linde	16-Jun-25
Carbon monoxide ( CO ) 1003 ppm	2583/22	Linde	09-Aug-24
Nitrogen Dioxide ( NO2 ) 80.96 ppm	3240/21	Linde	26-Jun-24
Nitric Oxide ( NO ) 151.5 ppm	0161/23	Linde	22-Jan-25
Sulphur Dioxide ( SO2 ) 100.8 ppm	3507/22	Linde	09-Nov-24

## Measured room conditions

Temperature : 23.5 °C Humidity : 61.2 %RH Pressure : 1009.5 mbar

## Calibration conditions

Gas Temperature : 24 °C Flow rate : 1,300 ml/min Gas pressure : 1016.4 mbar

## Calibration Results (Without adjustment) (Table 2)

Parameter of Standard	Standard Values	Mean of UUC	Error	Uncertainty (±)
O2 (%Vol)	2.498	2.58	0.082	0.15
O2 (%Vol)	10.04	10.10	0.06	0.20
O2 (%Vol)	21.02	21.11	0.09	0.30
CO (ppm)	80.14	80	-0.14	3.0
CO (ppm)	302	301	-1	6.0
CO (ppm)	1003	997	-6	12
*NO2 (ppm)	80.96	80.3	-0.66	8.0
*NO (ppm)	151.5	153	1.5	8.0
*SO2 (ppm)	100.8	101	0.2	6.0

**Remark :** 1 cmol/mol = 1 %vol. 1 µmol/mol = 1 ppm.

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

## End of Report

**COPY**

**Hot Air Oven**

**Model : UFE 500**

**Serial No. : G511.0182**

## CERTIFICATE OF CALIBRATION

Certificate No. : 23-148804  
Sample Code : 23-56200-006

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Hot Lab)

Equipment : Temperature controlled enclosures (Hot air oven)

Manufacturer : Memmert Model : UFE 500

Serial No. : G511.0182 ID No. : LABE 17/4

Date of Receipt : 22 December 2023 Date of Calibration : 22 December 2023

## Condition of Calibration

1. Environment
- |                           |           |           |           |           |
|---------------------------|-----------|-----------|-----------|-----------|
| 1.1 Ambient temperature   | : Maximum | 30.9 °C   | : Minimum | 29.6 °C   |
| 1.2 Relative humidity     | : Maximum | 54.5 %    | : Minimum | 46.8 %    |
| 1.3 Line voltage supplied | : Maximum | 227.6 VAC | : Minimum | 224.2 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data Acquisition With Sensor (RTD-Pt100)	LB-DA-08 (RTD-248 to RTD-256)	23-084070	06 August 2024

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by : Mr. Pisek Into  
Scientist

Approved by : (Mr. Somchai Neampunt)  
Signed for Director

Issue date : 25 December 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

## REPORT OF CALIBRATION

Certificate No. : 23-148804  
Sample Code : 23-56200-006

## Results of Calibration

Resolution : 0.5 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor k
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9 <sup>Ref</sup>		
104	103.5	103.5	104.11	103.94	103.85	103.84	103.97	103.93	103.64	103.51	104.23	0.47	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
104	0.04	0.78	0.81

## Notes

UUC\* = Unit Under Calibration



Calibrated by : Mr. Pisek Into  
Scientist

Approved by : (Mr. Somchai Neampunt)  
Signed for Director

Issue date : 25 December 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



## REPORT OF CALIBRATION

Page 3 of 3

Certificate No. : 23-148804

Sample Code : 23-56200-006

## Results of Calibration

## Notes

## 1. Sensor installation locations

1.1 All sensors at any corners or walls should be positioned

5 cm (a x b x c) from the wall.

1.2 The reference sensor is preferably located of the geometric center of the chamber.

## 2. Interior dimensions approx of chamber :

W = 56 cm ; D = 40 cm ; H = 48 cm

## 3. Air valve or fresh air level : Off

## 4. Fan level : Open

## 5. The quoted uncertainty includes "Stability of chamber and loading effect in chamber at 20% of uniformity".

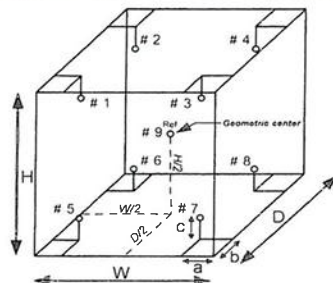
## 6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

## 7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.

## 8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.

## 9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.

## 10. Calibration results without adjustment.

Figure: Example of sensor  
installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -

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**ORIFICE TRANSFER STANDARD CERTIFICATION**

**WORKSHEET TE-5025A**

**ROOTSMETER S/N 0438320**



TISCH ENVIRONMENTAL, INC.  
145 SOUTH MIAMI AVE  
VILLAGE OF CLEVELAND, OH  
44102  
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877.283.7610 TOLL FREE  
513.467.9009 FAX

# ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2016 Rootmeter S/N 0438320 Ta (K) - 295  
Operator Tisch Orifice I.D. - 0136 Pa (mm) - 742.95

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3400	3.2	2.00
2	NA	NA	1.00	0.9510	6.3	4.00
3	NA	NA	1.00	0.8510	7.8	5.00
4	NA	NA	1.00	0.8130	8.6	5.50
5	NA	NA	1.00	0.6690	12.6	8.00

## DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9832	0.7337	1.4054	0.9957	0.7430	0.8911
0.9791	1.0296	1.9875	0.9915	1.0426	1.2603
0.9770	1.1481	2.2221	0.9894	1.1626	1.4090
0.9760	1.2006	2.3305	0.9884	1.2157	1.4778
0.9707	1.4510	2.8107	0.9830	1.4694	1.7823

Qstd slope (m) = 1.96262  
intercept (b) = -0.03249  
coefficient (r) = 0.99993  
Qa slope (m) = 1.22896  
intercept (b) = -0.02060  
coefficient (r) = 0.99993

y axis = SQRT[H2O(Pa/760) (298/Ta)]

y axis = SQRT[H2O(Ta/Pa)]

## CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)  
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]  
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}  
Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}

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**THERMO-HYGROMETER**

**Model : 608-H1**

**Serial No. : 45106737**



NSC-TIS1-TIS17025  
CALIBRATION 0152

Page 1 of 2

## CERTIFICATE OF CALIBRATION

Certificate No. : 23-055203  
Sample Code : 23-21440-001

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration laboratory)

Equipment : Digital thermo-hygrometer

Manufacturer : testo Model : 608-H1

Serial No. : 45106737 ID No. : LABE 09/7

Date of Receipt : 25 May 2023 Date of Calibration : 29 May 2023

## Condition of Calibration

1. Environment 1.1 Ambient temperature : 23.0 °C ± 3.0 °C  
1.2 Relative humidity : 55.0 % ± 15.0 %
2. Calibration method
- 2.1 In-house method: WI-CL-045 By comparison with thermometer standard / chilled mirror hygrometer in controlled chamber.
- 2.2 The calibration by comparison unit under calibration (UUC) to the thermometer standard / chilled mirror hygrometer in a chamber at the controlled temperature / relative humidity.

## 3. Reference standard instrument

Instrument	Model	ID No.	Certificate No.	Due Date
3.1 Chilled Mirror	Optidew Vision	LB-DP-02 & LB-DP-02 (DP)	TH-0157-22	05 December 2023
3.2 Digital Thermometer	Optidew Vision	LB-DP-02 & LB-DP-02 (Temp.)	23-014916	12 February 2024
3.3 Digital Thermometer	34972A	LB-DA-07 with RTD-89	22-095535	06 September 2023

## 4. This certificate is traceable to the international system of unit (SI Unit).

- 4.1 Instrument No. 3.1 through National Institute of Metrology (Thailand).
- 4.2 Instrument No. 3.2 and 3.3 through Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.
5. This result of calibration was found accurate as shown on date and place of calibration only.
6. Condition of calibration item : Normal

Calibrated by

Miss Pornsuda Lohabal  
Scientist

Approved by

(Mr. Somchai Neampunt)  
Signed for Director

Issue date

31 May 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

NSC-TIS1-TIS17025  
CALIBRATION 0152

Page 2 of 2

## REPORT OF CALIBRATION

Certificate No. : 23-055203  
Sample Code : 23-21440-001

## Results of Calibration

## Temperature measurement

Resolution : 0.1 °C  
Range : 0 °C to 50 °C

Calibration point °C	Average of standard reading		Unit under calibration		Expanded uncertainty °C
	Controlled humidity %RH	Temperature °C	Average reading °C	Correction value °C	
20	50	20.00	20.0	0.00	± 0.39
25	50	25.02	25.1	- 0.08	± 0.39
30	50	30.00	30.0	0.00	± 0.39

## Humidity measurement

Resolution : 0.1 %RH  
Range : 10 %RH to 95 %RH

Calibration point %RH	Average of standard reading		Unit under calibration		Expanded uncertainty %RH
	Air temperature °C	Calculated humidity %RH	Average reading %RH	Correction value %RH	
45	25.00	45.18	53.5	- 8.32	± 1.3
60	25.00	60.03	68.3	- 8.27	± 1.5
75	25.00	75.20	83.2	- 8.00	± 1.7

## Notes

- Calibration results without adjustment.

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -

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**UV/VIS SPECTROPHOTOMETER**

**Model : UV - 1800**

**Serial No. : A11635101643 CD**



Bara Scientific Co., Ltd.  
958 U Chu Liang Building Floor7 Rama4 Road  
Silom Bangrak Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



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Silom Bangrak Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



## Certificate of Calibration

Number of Page(s) 1 of 3

Certificate No. BSCC-UV-152/23  
Equipment UV/Vis Spectrophotometer  
Model UV-1800  
Manufacturer Shimadzu  
Serial No. A11635101643 CD  
ID No. N/A  
Date of receipt 25 April 2023  
Date of calibration 25 April 2023  
Date of issue 27 April 2023

Customer name Eastern Thai Consulting 1992 Co.,Ltd  
Address 683 Moo 11, Sukkaphibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

Temperature (22.4-23.1) °C (On site)  
Humidity (44.5-45.2) %RH (On site)

Equipment condition Good Operation

Calibration Location Analysis Department

Calibration Procedure In-house method WI-UV-702-01 based on ASTM E275-01

Traceability Wavelength Accuracy is traceable to certificate No. 94780 and 94775  
Photometric Accuracy is traceable to certificate No. 94808 and 100147  
Stray Light is traceable to certificate No. 94791  
The above certificate are traceable to SI unit through Sarna Scientific Ltd.  
(UKAS accredited calibration laboratory NO. 0659)

Calibrated by Mr.Pannaphong Phanmekakul

Approved by

Mr.Kanchit Choothep  
Technical Manager

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate.  
Advertising the report / Certificate and publicity of the results are prohibited and also shall not be reproduced  
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## Certificate of Calibration

Certificate No. BSCC-UV-152/23

Number of Page(s) 2 of 3

### Calibration Results:

#### 1.Wavelength Accuracy

Certified Wavelength (nm)	UUC (nm)	Error (nm)	Uncertainty (±nm)
287.71	287.65	-0.06	0.18
445.82	445.80	-0.02	0.18
536.52	536.35	-0.17	0.18
741.02	740.99	-0.03	0.18
879.41	879.27	-0.14	0.18

#### 2.Photometric Accuracy (UV)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
235	0.0000 0.7311	0.0000 0.7313	0.0000 0.0002	0.0075 0.0075
257	CNR CNR	CNR CNR	CNR CNR	CNR CNR
313	CNR CNR	CNR CNR	CNR CNR	CNR CNR
350	0.0000 0.6306	0.0000 0.6314	0.0000 0.0008	0.0075 0.0075

\*CNR = Customer not request

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# Certificate of Calibration

Certificate No.

BSCC-UV-152/23

Number of Page(s)

3 of 3

Calibration Results:

## 3. Photometric Accuracy (Visible)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty ( $\pm A$ )
420.0	0.0000	0.0000	0.0000	0.0042
	0.5488	0.5508	0.0020	0.0042
	0.7527	0.7535	0.0008	0.0042
	1.0756	1.0758	0.0002	0.0042
440.0	0.0000	0.0000	0.0000	0.0042
	0.5391	0.5406	0.0015	0.0042
	0.7355	0.7360	0.0005	0.0042
	1.0509	1.0501	-0.0008	0.0042
465.0	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
546.1	0.0000	0.0000	0.0000	0.0042
	0.5045	0.5044	-0.0001	0.0042
	0.6884	0.6885	0.0001	0.0042
	0.9816	0.9808	-0.0008	0.0042
590.0	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
635.0	0.0000	0.0000	0.0000	0.0042
	0.5183	0.5178	-0.0005	0.0042
	0.6864	0.6868	0.0004	0.0042
	0.9747	0.9739	-0.0008	0.0042

\*CNR = Customer not request

## 4. Stray Light\*

Standard cut-off wavelength (nm)	Unit Under Calibration(UUC)		
	Wavelength (nm)	Transmission (%T)	Absorbance (A)
200.75 $\pm$ 0.11nm	200.72	0.9630	2.0164

The Stray light transmission reference is less than 1.0%T and Stray light absorbance reference is greater than 2.00A  
\*Stray Light not NSC-ONSC Accredited.

The measurement uncertainty is base on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

\*\*\*End of Certificate\*\*\*

The above results are valid exclusively for the calibrated item(s) as mention in this report / Certificate  
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**SOUND LEVEL CALIBRATOR**

**MODEL : NC-75**

**SERIAL No. : 34802645**

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACC23037  
Pages : 1 of 3

## Calibration Certificate

**Equipment :** SOUND CALIBRATOR  
**Manufacturer :** RION  
**Model :** NC-75  
**Serial No.:** 34802645  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :**  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 SEPTEMBER 2023  
**Calibration Date :** 12 OCTOBER 2023  
**Date of Issue :** 16 OCTOBER 2023

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACC23037  
Job No. : VC66AC0097  
Pages : 2 of 3

**Calibration Procedure :** CP-AC-03

### Calibration Method :

This equipment was calibrated by based on IEC-60942-2003 Standard.

The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 30/0267	13-FEB-24
Digital Multimeter	33461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24
Audio Analyzer	AVR-3360A	V744B6069	EF-0012-23	10-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

*COPY*  
*T. Petchur*

Continuation of Calibration Certificate

Cert. No. : ACC23037  
Job No. : VC66AC0097  
Pages : 3 of 3

Result of calibration :

**1. Sound pressure level**

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Acceptance limit (dB)
94	93.94	-0.06	0.14	0.40

**2. Frequency**

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Uncertainty (%)	Acceptance limit (%)
1000	1000.0	0.0	0.1	1.0

**3. Total distortion**

Measured value (%)	Uncertainty (%)	Acceptance limit (%)
0.24	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

————— End of Calibration Certificate —————

**COPY**

T. Petcha

**SOUND LEVEL METER**

**MODEL : NL-52A**

**SERIAL No. : 01120943**





Cert. No. : ACL24038  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120943 / 22778 / 22431  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 11 JANUARY 2024  
**Calibration Date :** 16 - 17 JANUARY 2024  
**Date of Issue :** 18 JANUARY 2024

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**   
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Cert. No. : ACL24038  
Job No. : VC67AC0042  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :


#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EELBP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EELBP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EELBP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

  
T. Petchurai

**SITHIPORN ASSOCIATES CO., LTD.**  
**CALIBRATION LABORATORY**

451-451/1 Sirinthorn Road, Bangbunru, Bangplud, Bangkok, 10700 Thailand  
 Tel. +66 2433 8331 Email : calibration@sithiporn.com

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Cert. No. : ACL24038  
 Job No. : VC67AC0042  
 Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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*7. Peter -*

**SITHIPORN ASSOCIATES CO., LTD.**  
**CALIBRATION LABORATORY**

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Cert. No. : ACL24038  
 Job No. : VC67AC0042  
 Pages : 4 of 8

**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	94.0	0.0	±0.3

**2. Self-generated noise**

2.1 Normal test

Measured Value ( dB )
13.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	8.7
C - weight	14.2
Flat	19.9

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.0
1000	0.1	0.1	0.1	± 0.7
8000	0.2	0.3	0.3	+ 1.5, - 2.5

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*7. Peter -*

# SITHIPORN ASSOCIATES CO., LTD. CALIBRATION LABORATORY

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Cert. No. : ACL24038  
Job No. : VC67AC0042  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±1.0
125	0.0	0.0	0.0	±1.0
250	0.0	0.0	-0.1	±1.0
500	0.0	0.0	-0.1	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	+ 1.5, - 2.5
16000	0.0	-1.2	-1.2	+ 2.5, -16.0

## 5. Frequency and time weightings at 1 kHz

### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

*7. Reteh*

# SITHIPORN ASSOCIATES CO., LTD. CALIBRATION LABORATORY

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Cert. No. : ACL24038  
Job No. : VC67AC0042  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	±0.8
136.0	136.0	0.0	±0.8
135.0	135.0	0.0	±0.8
134.0	134.0	0.0	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.0	0.0	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.0	0.0	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	30.0	0.0	±0.8
29.0	29.0	0.0	±0.8
28.0	28.0	0.0	±0.8
27.0	26.9	-0.1	±0.8
26.0	26.0	0.0	±0.8
25.0	24.9	-0.1	±0.8

*7. Reteh*

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Cert. No. : ACL24038  
 Job No. : VC67AC0042  
 Pages : 7 of 8

**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±0.8

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	117.0	0.0	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.9	-0.1	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
One	136.4	135.4	-1.0	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	132.9	-0.1	±1.0
Positive half cycle	135.4	135.1	-0.3	±1.0
Negative half cycle	135.4	135.1	-0.3	±1.0

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**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.6	89.5	-0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

**End of Calibration Certificate**

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**SOUND LEVEL METER**

**MODEL : NL-52A**

**SERIAL No. : 01120944**

Cert. No. : ACL24039  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-52A / Microphone UC-59 / Preamplifier NH-25  
Serial No.: 01120944 / 21950 / 22333  
ID No.: -

Condition As Found : GOOD

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

Location : -  
Ambient Temperature : ( 23.0  $\pm$  3 ) °C  
Pressure : ( 101.3  $\pm$  3 ) kPa  
Relative Humidity : ( 50.0  $\pm$  20 ) %

Received Date : 11 JANUARY 2024  
Calibration Date : 16 - 17 JANUARY 2024  
Date of Issue : 18 JANUARY 2024

Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchurai  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
other than in full, except with the prior written approval of the head of Calibration Laboratory.

Cert. No. : ACL24039  
Job No. : VC67AC0042  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL24039  
 Job No. : VC67AC0042  
 Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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Cert. No. : ACL24039  
 Job No. : VC67AC0042  
 Pages : 4 of 8

**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	94.0	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
13.8

**2.2 The microphone of the sound level meter was replaced by electrical signal input device.**

Frequency Weighting	Measured value ( dB )
A - weight	9.9
C - weight	15.4
Flat	20.9

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.2	0.2	± 1.0
1000	0.1	0.1	0.1	± 0.7
8000	0.3	0.4	0.4	+ 1.5, - 2.5

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 Job No. : VC67AC0042  
 Pages : 5 of 8

#### 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±1.0
125	0.0	0.1	0.0	±1.0
250	0.0	0.0	0.0	±1.0
500	0.0	0.1	0.0	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±1.0
4000	0.0	0.1	0.0	±1.0
8000	0.1	0.1	0.1	+ 1.5, - 2.5
16000	0.0	-1.2	-1.1	+ 2.5, -16.0

#### 5. Frequency and time weightings at 1 kHz

##### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

##### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

#### 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.1	0.1	± 0.1

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Cert. No. : ACL24039  
 Job No. : VC67AC0042  
 Pages : 6 of 8

#### 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.1	0.1	±0.8
136.0	136.1	0.1	±0.8
135.0	135.1	0.1	±0.8
134.0	134.1	0.1	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.1	0.1	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.1	0.1	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	29.9	-0.1	±0.8
29.0	28.9	-0.1	±0.8
28.0	27.9	-0.1	±0.8
27.0	26.9	-0.1	±0.8
26.0	25.9	-0.1	±0.8
25.0	24.9	-0.1	±0.8

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Cert. No. : ACL24039  
 Job No. : VC67AC0042  
 Pages : 7 of 8

**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±0.8

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	116.9	-0.1	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.8	-0.2	1.0 ; -3.0
	2	8	108.0	107.9	-0.1	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
One	136.4	136.2	-0.2	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.1	-0.3	±1.0
Negative half cycle	135.4	135.1	-0.3	±1.0

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 Pages : 8 of 8

**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

**End of Calibration Certificate**

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**SOUND LEVEL METER**

**MODEL : NL-52A**

**SERIAL No. : 01120950**

Cert. No. : ACL24044

Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120950 / 22043 / 22339  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 11 JANUARY 2024  
**Calibration Date :** 16 - 17 JANUARY 2024  
**Date of Issue :** 18 JANUARY 2024

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchurai )

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Cert. No. : ACL24044

Job No. : VC67AC0042

Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EELBP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EELBP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EELBP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL24044  
Job No. : VC67AC0042  
Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	94.0	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
13.1

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	8.7
C - weight	14.6
Flat	20.1

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.0
1000	0.2	0.2	0.2	± 0.7
8000	0.7	0.8	0.8	+ 1.5, - 2.5

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 Job No. : VC67AC0042  
 Pages : 5 of 8

**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±1.0
125	0.0	0.0	0.0	±1.0
250	0.0	0.0	-0.1	±1.0
500	0.0	0.0	-0.1	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.0	0.0	+ 1.5, - 2.5
16000	0.0	-1.3	-1.2	+ 2.5, -16.0

**5. Frequency and time weightings at 1 kHz**

**5.1 Frequency weightings at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

**5.2 Time weighting at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

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**7. Level linearity on the reference level range**

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.1	0.1	±0.8
136.0	136.1	0.1	±0.8
135.0	135.1	0.1	±0.8
134.0	134.1	0.1	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.1	0.1	±0.8
124.0	124.0	0.0	±0.8
119.0	119.1	0.1	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.1	0.1	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	29.9	-0.1	±0.8
29.0	28.9	-0.1	±0.8
28.0	27.9	-0.1	±0.8
27.0	26.9	-0.1	±0.8
26.0	26.0	0.0	±0.8
25.0	24.9	-0.1	±0.8

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*7. Peter*



Bara Scientific Co., Ltd.  
958 U Chu Liang Building Floor7 Rama4 Road  
Silom Bangrak Bangkok Thailand 10500  
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www.barascientific.com



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## Certificate of Calibration

Number of Page(s) 1 of 3

Certificate No. BSCC-UV-152/23  
Equipment UV/Vis Spectrophotometer  
Model UV-1800  
Manufacturer Shimadzu  
Serial No. A11635101643 CD  
ID No. N/A  
Date of receipt 25 April 2023  
Date of calibration 25 April 2023  
Date of issue 27 April 2023

Customer name Eastern Thai Consulting 1992 Co.,Ltd  
Address 683 Moo 11, Sukkaphibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

Temperature (22.4-23.1) °C (On site)  
Humidity (44.5-45.2) %RH (On site)

Equipment condition Good Operation

Calibration Location Analysis Department

Calibration Procedure In-house method WI-UV-702-01 based on ASTM E275-01

Traceability Wavelength Accuracy is traceable to certificate No. 94780 and 94775  
Photometric Accuracy is traceable to certificate No. 94808 and 100147  
Stray Light is traceable to certificate No. 94791  
The above certificate are traceable to SI unit through Sarna Scientific Ltd.  
(UKAS accredited calibration laboratory NO. 0659)

Calibrated by Mr.Pannaphong Phanmekakul

Approved by

Mr.Kanchit Choothep  
Technical Manager

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate.  
Advertising the report / Certificate and publicity of the results are prohibited and also shall not be reproduced  
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## Certificate of Calibration

Certificate No. BSCC-UV-152/23

Number of Page(s) 2 of 3

### Calibration Results:

#### 1.Wavelength Accuracy

Certified Wavelength (nm)	UUC (nm)	Error (nm)	Uncertainty (±nm)
287.71	287.65	-0.06	0.18
445.82	445.80	-0.02	0.18
536.52	536.35	-0.17	0.18
741.02	740.99	-0.03	0.18
879.41	879.27	-0.14	0.18

#### 2.Photometric Accuracy (UV)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
235	0.0000 0.7311	0.0000 0.7313	0.0000 0.0002	0.0075 0.0075
257	CNR CNR	CNR CNR	CNR CNR	CNR CNR
313	CNR CNR	CNR CNR	CNR CNR	CNR CNR
350	0.0000 0.6306	0.0000 0.6314	0.0000 0.0008	0.0075 0.0075

\*CNR = Customer not request

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# Certificate of Calibration

Certificate No.

BSCC-UV-152/23

Number of Page(s)

3 of 3

Calibration Results:

## 3. Photometric Accuracy (Visible)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty ( $\pm A$ )
420.0	0.0000	0.0000	0.0000	0.0042
	0.5488	0.5508	0.0020	0.0042
	0.7527	0.7535	0.0008	0.0042
	1.0756	1.0758	0.0002	0.0042
440.0	0.0000	0.0000	0.0000	0.0042
	0.5391	0.5406	0.0015	0.0042
	0.7355	0.7360	0.0005	0.0042
	1.0509	1.0501	-0.0008	0.0042
465.0	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
546.1	0.0000	0.0000	0.0000	0.0042
	0.5045	0.5044	-0.0001	0.0042
	0.6884	0.6885	0.0001	0.0042
	0.9816	0.9808	-0.0008	0.0042
590.0	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
635.0	0.0000	0.0000	0.0000	0.0042
	0.5183	0.5178	-0.0005	0.0042
	0.6864	0.6868	0.0004	0.0042
	0.9747	0.9739	-0.0008	0.0042

\*CNR = Customer not request

## 4. Stray Light\*

Standard cut-off wavelength (nm)	Unit Under Calibration(UUC)		
	Wavelength (nm)	Transmission (%T)	Absorbance (A)
200.75 $\pm$ 0.11nm	200.72	0.9630	2.0164

The Stray light transmission reference is less than 1.0%T and Stray light absorbance reference is greater than 2.00A  
\*Stray Light not NSC-ONSC Accredited.

The measurement uncertainty is base on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

\*\*\*End of Certificate\*\*\*

The above results are valid exclusively for the calibrated item(s) as mention in this report / Certificate  
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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACC23037  
Pages : 1 of 3

## Calibration Certificate

**Equipment :** SOUND CALIBRATOR  
**Manufacturer :** RION  
**Model :** NC-75  
**Serial No.:** 34802645  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :**  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 SEPTEMBER 2023  
**Calibration Date :** 12 OCTOBER 2023  
**Date of Issue :** 16 OCTOBER 2023

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACC23037  
Job No. : VC66AC0097  
Pages : 2 of 3

**Calibration Procedure :** CP-AC-03

### Calibration Method :

This equipment was calibrated by based on IEC-60942-2003 Standard.

The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 30/0267	13-FEB-24
Digital Multimeter	33461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24
Audio Analyzer	AVR-3360A	V744B6069	EF-0012-23	10-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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*T. Petchur*



Continuation of Calibration Certificate

Cert. No. : ACC23037  
Job No. : VC66AC0097  
Pages : 3 of 3

**Result of calibration :**

**1. Sound pressure level**

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Acceptance limit (dB)
94	93.94	-0.06	0.14	0.40

**2. Frequency**

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Uncertainty (%)	Acceptance limit (%)
1000	1000.0	0.0	0.1	1.0

**3. Total distortion**

Measured value (%)	Uncertainty (%)	Acceptance limit (%)
0.24	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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Cert. No. : ACL24038  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120943 / 22778 / 22431  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 11 JANUARY 2024  
**Calibration Date :** 16 - 17 JANUARY 2024  
**Date of Issue :** 18 JANUARY 2024

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchurai*  
( Thanakul Petchurai )

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Cert. No. : ACL24038  
Job No. : VC67AC0042  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EELBP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EELBP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EELBP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

*T. Petchurai*  
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**SITHIPORN ASSOCIATES CO., LTD.**  
**CALIBRATION LABORATORY**

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Cert. No. : ACL24038  
 Job No. : VC67AC0042  
 Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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Cert. No. : ACL24038  
 Job No. : VC67AC0042  
 Pages : 4 of 8

**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	94.0	0.0	±0.3

**2. Self-generated noise**

2.1 Normal test

Measured Value ( dB )
13.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	8.7
C - weight	14.2
Flat	19.9

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.0
1000	0.1	0.1	0.1	± 0.7
8000	0.2	0.3	0.3	+ 1.5, - 2.5

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Cert. No. : ACL24038  
Job No. : VC67AC0042  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±1.0
125	0.0	0.0	0.0	±1.0
250	0.0	0.0	-0.1	±1.0
500	0.0	0.0	-0.1	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	+ 1.5, - 2.5
16000	0.0	-1.2	-1.2	+ 2.5, -16.0

## 5. Frequency and time weightings at 1 kHz

### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

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Cert. No. : ACL24038  
Job No. : VC67AC0042  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	±0.8
136.0	136.0	0.0	±0.8
135.0	135.0	0.0	±0.8
134.0	134.0	0.0	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.0	0.0	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.0	0.0	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	30.0	0.0	±0.8
29.0	29.0	0.0	±0.8
28.0	28.0	0.0	±0.8
27.0	26.9	-0.1	±0.8
26.0	26.0	0.0	±0.8
25.0	24.9	-0.1	±0.8

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Cert. No. : ACL24038  
 Job No. : VC67AC0042  
 Pages : 7 of 8

**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±0.8

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	117.0	0.0	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.9	-0.1	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
One	136.4	135.4	-1.0	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	132.9	-0.1	±1.0
Positive half cycle	135.4	135.1	-0.3	±1.0
Negative half cycle	135.4	135.1	-0.3	±1.0

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 Job No. : VC67AC0042  
 Pages : 8 of 8

**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.6	89.5	-0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

**End of Calibration Certificate**

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Cert. No. : ACL24039  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120944 / 21950 / 22333  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 11 JANUARY 2024  
**Calibration Date :** 16 - 17 JANUARY 2024  
**Date of Issue :** 18 JANUARY 2024

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchurai*  
( Thanakul Petchurai )

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Cert. No. : ACL24039  
Job No. : VC67AC0042  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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**CALIBRATION LABORATORY**

451-451/1 Srinthorn Road, Bangbunru, Bangkok, 10700 Thailand  
 Tel : +66 2433 8331 Email : calibration@sithiporn.com



Cert. No. : ACL24039  
 Job No. : VC67AC0042  
 Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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 Job No. : VC67AC0042  
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**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	94.0	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
13.8

**2.2 The microphone of the sound level meter was replaced by electrical signal input device.**

Frequency Weighting	Measured value ( dB )
A - weight	9.9
C - weight	15.4
Flat	20.9

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.2	0.2	± 1.0
1000	0.1	0.1	0.1	± 0.7
8000	0.3	0.4	0.4	+ 1.5, - 2.5

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#### 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±1.0
125	0.0	0.1	0.0	±1.0
250	0.0	0.0	0.0	±1.0
500	0.0	0.1	0.0	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±1.0
4000	0.0	0.1	0.0	±1.0
8000	0.1	0.1	0.1	+ 1.5, - 2.5
16000	0.0	-1.2	-1.1	+ 2.5, -16.0

#### 5. Frequency and time weightings at 1 kHz

##### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

##### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

#### 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.1	0.1	± 0.1

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#### 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.1	0.1	±0.8
136.0	136.1	0.1	±0.8
135.0	135.1	0.1	±0.8
134.0	134.1	0.1	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.1	0.1	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.1	0.1	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	29.9	-0.1	±0.8
29.0	28.9	-0.1	±0.8
28.0	27.9	-0.1	±0.8
27.0	26.9	-0.1	±0.8
26.0	25.9	-0.1	±0.8
25.0	24.9	-0.1	±0.8

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**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±0.8

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	116.9	-0.1	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.8	-0.2	1.0 ; -3.0
	2	8	108.0	107.9	-0.1	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
One	136.4	136.2	-0.2	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.1	-0.3	±1.0
Negative half cycle	135.4	135.1	-0.3	±1.0

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**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

**End of Calibration Certificate**

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## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120950 / 22043 / 22339  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 11 JANUARY 2024  
**Calibration Date :** 16 - 17 JANUARY 2024  
**Date of Issue :** 18 JANUARY 2024

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
other than in full, except with the prior written approval of the head of Calibration Laboratory.

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Job No. : VC67AC0042

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**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EELBP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EELBP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EELBP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	94.0	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
13.1

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	8.7
C - weight	14.6
Flat	20.1

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.0
1000	0.2	0.2	0.2	± 0.7
8000	0.7	0.8	0.8	+ 1.5, - 2.5

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**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±1.0
125	0.0	0.0	0.0	±1.0
250	0.0	0.0	-0.1	±1.0
500	0.0	0.0	-0.1	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.0	0.0	+ 1.5, - 2.5
16000	0.0	-1.3	-1.2	+ 2.5, -16.0

**5. Frequency and time weightings at 1 kHz**

**5.1 Frequency weightings at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

**5.2 Time weighting at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

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**7. Level linearity on the reference level range**

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.1	0.1	±0.8
136.0	136.1	0.1	±0.8
135.0	135.1	0.1	±0.8
134.0	134.1	0.1	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.1	0.1	±0.8
124.0	124.0	0.0	±0.8
119.0	119.1	0.1	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.1	0.1	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	29.9	-0.1	±0.8
29.0	28.9	-0.1	±0.8
28.0	27.9	-0.1	±0.8
27.0	26.9	-0.1	±0.8
26.0	26.0	0.0	±0.8
25.0	24.9	-0.1	±0.8

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**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±0.8

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	117.0	0.0	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.9	-0.1	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, Lpcak ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
One	136.4	136.3	-0.1	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.2	-0.2	±1.0
Negative half cycle	135.4	135.2	-0.2	±1.0

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**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.7	89.6	-0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

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**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±0.8

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	117.0	0.0	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.9	-0.1	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>pcak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
One	136.4	136.3	-0.1	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.2	-0.2	±1.0
Negative half cycle	135.4	135.2	-0.2	±1.0

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**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.7	89.6	-0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

**End of Calibration Certificate**

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**SOUND LEVEL METER**

**MODEL : NL-42A**

**SERIAL No. : 00322745**

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



NSC-TISI-TIS 17025  
CALIBRATION 0394

Cert. No. : ACL23166

Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42A/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00322745 / 196468 / 15477  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 10 MAY 2023  
**Calibration Date :** 17 -18 MAY 2023  
**Date of Issue :** 24 MAY 2023

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchurai*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL23166

Job No. : VC66AC0058

Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).

The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).



Continuation of Calibration Certificate

Cert. No. : ACL23166  
Job No. : VC66AC0058  
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

Note : Pass/Fail evaluation for each parameter, will be considered together from the acceptance limit and the Maximum-permitted uncertainty of measurement.

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Continuation of Calibration Certificate

Cert. No. : ACL23166  
Job No. : VC66AC0058  
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value ( dB )
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	10.8
C - weight	17.2
Flat	23.0

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.3	0.3	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.5	0.6	0.6	±5.0

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Continuation of Calibration Certificate

Cert. No. : ACL23166  
Job No. : VC66AC0058  
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

Continuation of Calibration Certificate

Cert. No. : ACL23166  
Job No. : VC66AC0058  
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.0	0.0	± 1.1

Continuation of Calibration Certificate

Cert. No. : ACL23166  
Job No. : VC66AC0058  
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, Lepeak ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±3.0
One	136.4	136.2	-0.2	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

Continuation of Calibration Certificate

Cert. No. : ACL23166  
Job No. : VC66AC0058  
Pages : 8 of 8

11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.8	89.6	-0.2	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

**SOUND LEVEL METER**

**MODEL : NL-42**

**SERIAL No. : 01147299**



Cert. No. : ACL24022  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42 / Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 01147299 / 133107 / 46657  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 18 DECEMBER 2023  
**Calibration Date :** 10 JANUARY 2024  
**Date of Issue :** 12 JANUARY 2024

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchurai*  
( Thanakul Petchurai )

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Cert. No. : ACL24022  
Job No. : VC67AC0039  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL24022  
 Job No. : VC67AC0039  
 Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	-	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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 Job No. : VC67AC0039  
 Pages : 4 of 8

**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	93.9	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
24.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	18.3
C - weight	24.4
Flat	29.9

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.4	0.4	± 1.5
1000	-0.4	-0.4	-0.4	± 1.0
8000	-3.6	-3.5	-3.5	±5.0

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Job No. : VC67AC0039  
Pages : 5 of 8

**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.0	-0.1	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.0	±5.0

**5. Frequency and time weightings at 1 kHz**

**5.1 Frequency weightings at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

**5.2 Time weighting at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

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Cert. No. : ACL24022  
Job No. : VC67AC0039  
Pages : 6 of 8

**7. Level linearity on the reference level range**

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.1	0.1	± 1.1
134.0	134.1	0.1	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.1	0.1	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.1	0.1	± 1.1
28.0	28.2	0.2	± 1.1
27.0	27.3	0.3	± 1.1
26.0	26.3	0.3	± 1.1
25.0	25.4	0.4	± 1.1

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 Pages : 7 of 8

**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±1.1

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	116.9	-0.1	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.8	-0.2	1.5 ; -5.0
	2	8	108.0	107.9	-0.1	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±3.0
One	136.4	135.8	-0.6	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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Cert. No. : ACL24022  
 Job No. : VC67AC0039  
 Pages : 8 of 8

**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
 or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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**SOUND LEVEL METER**

**MODEL : NL-42A**

**SERIAL No. : 00322751**

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru,Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL23140  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42A/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00322751 / 196474 / 15483  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 02 MAY 2023  
**Calibration Date :** 02 -04 MAY 2023  
**Date of Issue :** 05 MAY 2023

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

  
( Thanakul Petchurai )

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL23140  
Job No. : VC66AC0047  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-23	07-FEB-24
Waveform Generator	33511B	MY52302742	EF-0010-23	07-FEB-24
Digital Multimeter	33461A	MY53220104	EEL.BP 30/0266	13-FEB-24
Digital Multimeter	33461A	MY53220076	EEL.BP 29/0266	13-FEB-24
Digital Multimeter	34461A	MY60024273	EEL.BP 31/0266	14-FEB-24
Programmable Attenuator	MAT-1070	62100114	EF-0011-23	08-FEB-24
Condenser Microphone	4180	2977900	AA-1001-23	14-FEB-24
Measuring Amplifier	NA-42KAI	34560495	AA-3002-23	14-FEB-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

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Continuation of Calibration Certificate

Cert No. : ACL23140  
Job No. : VC66AC0047  
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

Note : Pass/Fail evaluation for each parameter,  
will be considered together from the acceptance limit and the Maximum-permitted uncertainty of measurement.

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Continuation of Calibration Certificate

Cert No. : ACL23140  
Job No. : VC66AC0047  
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.98)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value ( dB )
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	9.9
C - weight	16.6
Flat	22.3

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.0	0.0	0.0	±5.0

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Continuation of Calibration Certificate

Cert. No. : ACL23140  
Job No. : VC66AC0047  
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.2	-0.1	-0.2	±2.0
125	-0.1	-0.1	-0.1	±1.5
250	-0.1	-0.1	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	-0.1	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.0	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.1	0.1	± 0.3

Continuation of Calibration Certificate

Cert. No. : ACL23140  
Job No. : VC66AC0047  
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.1	0.1	± 1.1
136.0	136.1	0.1	± 1.1
135.0	135.1	0.1	± 1.1
134.0	134.1	0.1	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.1	0.1	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.1	0.1	± 1.1
109.0	109.1	0.1	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.1	0.1	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.0	0.0	± 1.1
25.0	25.0	0.0	± 1.1



Continuation of Calibration Certificate

Cert. No. : ACL23140  
Job No. : VC66AC0047  
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	116.9	-0.1	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±3.0
One	136.4	136.2	-0.2	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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Continuation of Calibration Certificate

Cert. No. : ACL23140  
Job No. : VC66AC0047  
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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**ANALYTICAL BALANCE (DU)**

**Model : XS205DU**

**Serial No. : 1126323724**



Certificate No. : 23-148799  
Sample Code : 23-56200-001

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Analytical Balance Room)

Equipment : ELECTRONIC BALANCE

Manufacturer : METTLER TOLEDO

Model : XS205DU

Serial No. : 1126323724

ID No. : LABE 05/1

Date of Receipt : 22 December 2023

Date of Calibration : 22 December 2023

Calibrated by Mr. Somwang Sangdee  
Scientist

Approved by (Mr. Somchai Neampunt)  
Signed for Director

Issue date 25 December 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 23-148799  
Sample Code : 23-56200-001

## REPORT OF CALIBRATION

Equipment : ELECTRONIC BALANCE  
Manufacturer : METTLER TOLEDO  
Model : XS205DU  
Capacity : Max 81 g / 220 g  
Resolution : 0.01 mg / 0.1 mg  
Serial No. : 1126323724  
ID No. : LABE 05/1

### Result of Calibration

#### 1. Test weight and repeatability of reading

Repeatability is a measure of the ability of a balance to supply the same result in repetitive weighings with one and the same load under the same measurement condition. The measurement of the repeatability must include both the balance specifications and the ambient (vibration, fluctuating air current/temperature/humidity, etc.) Operator handling of the balance is also included in the standard deviation.

Unit : g	Range : 80	<input checked="" type="checkbox"/> Before adjustment	<input checked="" type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value	40	80
<input checked="" type="checkbox"/> Adjustment	Standard weight	40.000054	80.000048
	Average reading of indicator	40.000026	80.000037
	Standard deviation	0.000015	0.000016
		0.000008	0.000009
Unit : g	Range : 200	<input checked="" type="checkbox"/> Before adjustment	<input checked="" type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value	100	200
<input checked="" type="checkbox"/> Adjustment	Standard weight	100.000042	200.000041
	Average reading of indicator	100.00003	200.00004
	Standard deviation	0.00005	0.00005
		0.00003	0.00005

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Certificate No. : 23-148799  
Sample Code : 23-56200-001

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## REPORT OF CALIBRATION

## Result of Calibration

## 2. Sensitivity or value of a scale division

Change in the output variable of a measuring instrument divided by the associated change in the input variable.

Unit : g

Range : 80

Range : 200

Test Point	Sensitivity, S	Test Point	Sensitivity, S
0	1.00748	0	1.0274
40	0.98753	100	0.9975
80	0.99751	200	0.9975

## 3. Departure of indication from nominal value, Linearity

Unit : g

Nominal Value	Standard Value	Average Reading of Indicator	Correction Value	Expanded Uncertainty	Coverage Factor (k)
Unload	0.0000000	0.00000	0.00000	0.000012	2.05
0.01	0.0100025	0.01000	0.00000	0.000012	2.05
0.1	0.1000019	0.10001	-0.00001	0.000013	2.03
1	1.0000125	1.00001	0.00000	0.000015	2.02
5	5.0000208	5.00004	-0.00002	0.000021	2.00
10	10.000004	10.00008	-0.00008	0.000026	2.00
20	20.000030	20.00011	-0.00008	0.000036	2.00
50	50.000014	50.00014	-0.00013	0.000068	2.00
100	100.000042	100.0001	-0.0001	0.00016	2.00
150	150.000056	150.0001	0.0000	0.00022	2.00
200	200.000041	200.0002	-0.0002	0.00027	2.00

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

Certificate No. : 23-148799  
Sample Code : 23-56200-001

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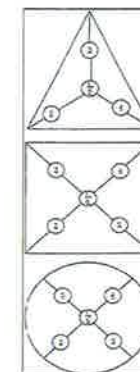
## REPORT OF CALIBRATION

## Result of Calibration :

## 4. Eccentric or off-centre loading

Deviation of the measurement value through off - center (eccentric) loading. The corner load increases with the weight of the load and its removal from the center of the pan support.

Weighting pan	<input type="radio"/> Circle <input type="radio"/> Triangular <input checked="" type="radio"/> Rectangular	Test weight : 50 and 100 Unit : g
Range	80	200
Position	Reading of indicator	Reading of indicator
1	50.00015	100.0001
2	50.00022	100.0001
3	50.00008	100.0001
4	50.00002	100.0000
5	50.00016	100.0002
6	50.00014	100.0001
Maximum difference	0.00013	0.0001



## Condition of Calibration

1. Calibration Method : WI-DL-004 base on UKAS LAB 14: 2019

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. Condition of Calibration tem: Normal

4. This certification is traceable to the International System of Unit maintained at :

Through the reference standard laboratory of Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (Instrument number 1).

## 5. Reference standard instrument :

Instrument	Class	ID No.	Certificate No.	Due Date
1) STANDARD WEIGHT 1 mg to 1 kg	E2	LB-WE-79	23-105642	10 September 2024

End of Report

6. Ambient conditions	Min	Max
Temperature (°C)	22.8	23.0
Relative Humidity (%Rh)	43.5	51.1
Air pressure (hPa)	1012.5	1014.5



**ANALYTICAL BALANCE**

**Model : SECURA224-1S**

**Serial No. : 0036707137**

Certificate No. : 23-148800  
Sample Code : 23-56200-002

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Analytical Balance Room)

Equipment : ELECTRONIC BALANCE

Manufacturer : SARTORIUS

Model : SECURA224-1S

Serial No. : 0036707137

ID No. : LABE 05/2

Date of Receipt : 22 December 2023

Date of Calibration : 22 December 2023

Calibrated by Mr. Somwang Sangdee  
Scientist

Approved by (Mr. Somchai Neampunt)  
Signed for Director

Issue date : 25 December 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

Certificate No. : 23-148800  
Sample Code : 23-56200-002

## REPORT OF CALIBRATION

Equipment : ELECTRONIC BALANCE  
Manufacturer : SARTORIUS  
Model : SECURA224-1S  
Capacity : Max 220 g  
Resolution : 0.0001 g  
Serial No. : 0036707137  
ID No. : LABE 05/2

## Result of Calibration

## 1. Test weight and repeatability of reading

Repeatability is a measure of the ability of a balance to supply the same result in repetitive weighings with one and the same load under the same measurement condition. The measurement of the repeatability must include both the balance specifications and the ambient (vibration, fluctuating air current/temperature/humidity, etc.) Operator handling of the balance is also included in the standard deviation.

Unit : g	Range : 220	<input checked="" type="checkbox"/> Before adjustment	<input checked="" type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value	100	200
<input checked="" type="checkbox"/> Adjustment	Standard weight	100.000042	200.000041
	Average reading of indicator	99.9998	199.9998
	Standard deviation	0.00006	0.00007

Unit :	Range :	<input type="checkbox"/> Before adjustment	<input type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value		
<input type="checkbox"/> Adjustment	Standard weight		
	Average reading of indicator		
	Standard deviation		

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Certificate No. : 23-148800  
Sample Code : 23-56200-002

## REPORT OF CALIBRATION

## Result of Calibration

## 2. Sensitivity or value of a scale division

Change in the output variable of a measuring instrument divided by the associated change in the input variable.

Unit : g

Range : 220

Range : -

Test Point	Sensitivity, S	Test Point	Sensitivity, S
0	0.7980	-	-
100	0.8978	-	-
200	0.8978	-	-

## 3. Departure of indication from nominal value, Linearity

Unit : g

Nominal Value	Standard Value	Average Reading of Indicator	Correction Value	Expanded Uncertainty	Coverage Factor (k)
Unload	0.0000000	0.0000	0.0000	0.000086	2.00
0.01	0.0100025	0.0100	0.0000	0.000086	2.00
0.1	0.1000019	0.1000	0.0000	0.000087	2.00
1	1.0000125	1.0000	0.0000	0.000087	2.00
2	2.0000089	2.0000	0.0000	0.000087	2.00
5	5.0000208	5.0001	-0.0001	0.000088	2.00
10	10.000004	10.0000	0.0000	0.000090	2.00
20	20.000030	20.0000	0.0000	0.000093	2.00
50	50.000014	50.0000	0.0000	0.00011	2.00
100	100.000042	100.0000	0.0000	0.00016	2.00
200	200.000041	200.0000	0.0000	0.00028	2.00

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.



Certificate No. : 23-148800  
Sample Code : 23-56203-002

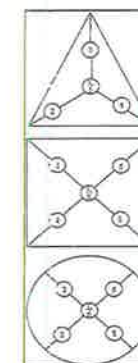
## REPORT OF CALIBRATION

## Result of Calibration :

## 4. Eccentric or off-centre loading

Deviation of the measurement value through off-center (eccentric) loading. The corner load increases with the weight of the load and its removal from the center of the pan support.

Weighing pan	<input checked="" type="radio"/> Circle <input type="radio"/> Triangular <input type="radio"/> Rectangular	Test weight : 100 Unit : g
Range	220	
Position	Reading of indicator	Reading of indicator
1	100.0000	-
2	100.0000	-
3	100.0000	-
4	99.9999	-
5	100.0000	-
6	100.0000	-
Maximum difference	0.0001	-



## Condition of Calibration

1. Calibration Method : WI-CL-004 base on UKAS LAB 14: 2019
2. This result of calibration was found accurate as shown on date and place of calibration only.

3. Condition of Calibration item: Normal

4. This certification is traceable to the International System of Unit maintained at : \*

\* Through the reference standard laboratory of Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (Instrument number 1)

5. Reference standard instrument :

Instrument	Class	ID No.	Certificate No.	Due Date
1) STANDARD WEIGHT 1 mg to 1 kg	E2	LB-WE-79	23-105642	10 September 2024

End of Report

6. Ambient conditions	Min	Max
Temperature (°C)	24.4	24.8
Relative Humidity (%Rh)	39.9	41.1
Air pressure (hPa)	1012.2	1012.8

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**BOD INCUBATOR**

**Model : TC445S**

**Serial No. : 0223/007275**



SK

S K SALES AND SERVICE CO.,LTD.  
194/56, 194/57 Thakham Rd. Samoe Dam  
Bang Khun Thien Bangkok 10150  
Tel. : 02-417-2144 Fax : 02-417-2155



## Certificate of Calibration

Reference No. : C03190/2309-025 Certificate No. : S2309-3014  
Customer : Eastern Thai Consulting 1992 Co.,Ltd. Page 1 of 2  
683 Moo 11, Sukhaphiban 8, Tambol Nongkham,  
Siracha District, Chonburi 20230, Thailand  
Equipment : Incubator  
Manufacturer : Lovibond  
Model : TC445S  
Serial No. : 0223/007275  
ID No. :  
Received Date : 15 September 2023  
Calibrated Date : 15 September 2023  
Issued Date : 18 September 2023  
Environment :

	Minimum Value	Maximum Value
Ambient Temperature ( °C )	27.5	28.1
Relative Humidity ( % RH )	57	58
AC Line Voltage ( VAC )	224	226
Place Of Calibration	Production Line	
Calibrated by	Mr. Teerasak Chalyaporn	

### Calibration Method

In-house method : SK-WI-23 base on Thai Laboratory Accreditation Scheme Publication Reference G-20

### Condition of this result of calibration

#### 1. Reference standard instrument

Instrument	Serial No.	Certificate No.	Due Date
1) Data acquisition/Switch unit	MY44047397	L2305-268	4 November 2023
2) Multiplexer Module	MY41105123	L2305-268	4 November 2023

2. This result of calibration was found accurate as shown on date and place of calibration only

3. This certificate can be traceable to International System of Unit :

- Through Thailand Institute of Scientific And Technological Research (TISTR)

Approved by

☒ Mr. Suphachai Saksri ☐ Mr. Phayak Toolit ☐ Miss Tantaraporn Pettong

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k = 2.0$  ,providing a level of confidence level of approximately 95 %

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Certificate No. : S2309-3014

Page 2 of 2

Table1 General Information

Working Area ( W*L*H )	60 *56 *145 cm
Fresh Air	OFF

Table2 Chamber Performance

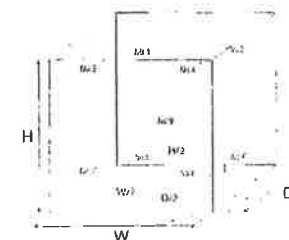
Setting Temperature ( °C )	Average Indicating Temperature ( °C )	Measured Stability ( ± °C )	Measured Uniformity ( °C )	Overall Variation ( °C )
20.0	20.0	0.37	0.64	0.98

Table3 Temperature Distribution

Setting Temperature ( °C )	Average Standard Reading ( °C )									Uncertainty ( ± °C )
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	
20.0	19.52	19.40	19.70	19.43	19.33	19.39	19.45	19.58	19.67	0.55

Resolution : 0.1 ( °C )

\* Probe No. 9 is Reference Probe



Notes : 1. The temperature stability is the one-half of greatest maximum difference of measured temperatures at any one probe.

2. The temperature uniformity is the maximum difference of measured temperatures between of any probes and the measured temperature at the reference location which are observed at same time

3. Overall variation is the difference of maximum and minimum measured temperatures throughout observation time.

4. The reported uncertainty of measurement were excluded Uniformity and Stability

\*\* End of Calibration Report \*\*

COPY

**BOD INCUBATOR**

**ID No. : LABE 19/5**



Page 1 of 3

## CERTIFICATE OF CALIBRATION

Certificate No. : 23-040768  
Sample Code : 23-16178-002

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapiban 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Laboratory)

Equipment : Temperature controlled enclosures (Incubator)

Manufacturer : Lovibond Model : Tc445S

Serial No. : 0520/005227 ID No. : LABE 19/5

Date of Receipt : 21 April 2023 Date of Calibration : 21 April 2023

## Condition of Calibration

1. Environment
- |                           |   |         |           |   |         |           |
|---------------------------|---|---------|-----------|---|---------|-----------|
| 1.1 Ambient temperature   | : | Maximum | 36.1 °C   | : | Minimum | 34.5 °C   |
| 1.2 Relative humidity     | : | Maximum | 51.8 %    | : | Minimum | 49.3 %    |
| 1.3 Line voltage supplied | : | Maximum | 224.7 VAC | : | Minimum | 221.9 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data Acquisition With Sensor (RTD-Pt100)	LB-DA-08 (RTD-239 to RTD-247)	22-077888	09 August 2023

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Sarawoot Thammo

Scientist

Approved by

(Mr. Somchai Neampunt)

Signed for Director

Issue date 24 April 2023

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

NSC-TISI-TIS17025  
CALIBRATION 0152

Page 2 of 3

## REPORT OF CALIBRATION

Certificate No. : 23-040768  
Sample Code : 23-16178-002

## Results of Calibration

Resolution : 0.1 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor k
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9 <sup>Ref</sup>		
20	20.0	20.0	20.06	19.92	19.96	19.89	19.93	20.08	19.97	19.79	19.86	0.42	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
20	0.32	0.37	0.85

## Notes

- UUC\* = Unit Under Calibration

NSC-TISI-TIS17025  
CALIBRATION 0152

Page 3 of 3

## REPORT OF CALIBRATION

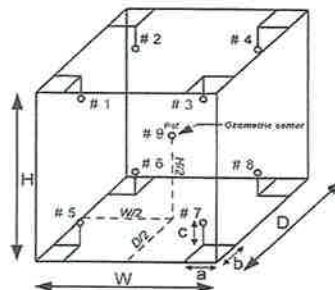
Certificate No. : 23-040768

Sample Code : 23-16178-002

## Results of Calibration

## Notes

1. Sensor installation locations
  - 1.1 All sensors at any corners or walls should be positioned 5 cm (a x b x c) from the wall.
  - 1.2 The reference sensor is preferably located of the geometric center of the chamber.
2. Interior dimensions approx of chamber :  
W = 60 cm ; D = 56 cm ; H = 146 cm
3. Air valve or fresh air level : Off
4. Fan level : Open
5. The quoted uncertainty includes" Stability of chamber and loading effect in chamber at 20% of uniformity ".
6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.
7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.
8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.
9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.
10. Calibration results without adjustment.

Figure: Example of sensor  
installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

End of Report

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**BOD INCUBATOR**

**ID No. : LABE 19/5**



Page 1 of 3

## CERTIFICATE OF CALIBRATION

Certificate No. : 24-046203

Sample Code : 24-18906-002

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Laboratory)

Equipment : Temperature controlled enclosures (Incubator)

Manufacturer : Lovibond Model : Tc445S

Serial No. : 0520/005227 ID No. : LABE 19/5

Date of Receipt : 18 April 2024 Date of Calibration : 18 April 2024

## Condition of Calibration

1. Environment
- |                           |   |
|---------------------------|---|
| 1.1 Ambient temperature   | : Maximum 35.0 °C ; Minimum 33.7 °C     |
| 1.2 Relative humidity     | : Maximum 69.1 % ; Minimum 50.0 %       |
| 1.3 Line voltage supplied | : Maximum 222.5 VAC ; Minimum 218.8 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data Acquisition With Sensor (RTD-Pt100)	LB-DA-08 (RTD-248 to RTD-256)	23-084070	06 August 2024

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Sarawoot Thammo  
Scientist

Issue date 19 April 2024

Approved by

(Mr. Nuttaput Timula)

Signed for Director

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC)



Page 2 of 3

## REPORT OF CALIBRATION

Certificate No. : 24-046203

Sample Code : 24-18906-002

## Results of Calibration

Resolution : 0.1 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor k
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9		
20	20.5	20.0	20.28	19.86	19.90	19.91	19.82	20.10	20.01	19.89	19.75	0.59	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
20	0.45	0.85	1.31

## Notes

- UUC\* = Unit Under Calibration

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## REPORT OF CALIBRATION

Page 3 of 3

Certificate No. : 24-046203

Sample Code : 24-18906-002

## Results of Calibration

## Notes

1. Sensor installation locations
  - 1.1 All sensors at any corners or walls should be positioned 5 cm (a x b x c) from the wall.
  - 1.2 The reference sensor is preferably located of the geometric center of the chamber.
2. Interior dimensions approx of chamber :  
W = 60 cm ; D = 56 cm ; H = 146 cm
3. Air valve or fresh air level : Off
4. Fan level : Open
5. The quoted uncertainty includes "Stability of chamber and loading effect in chamber at 20% of uniformity".
6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.
7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.
8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.
9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.
10. Calibration results without adjustment.

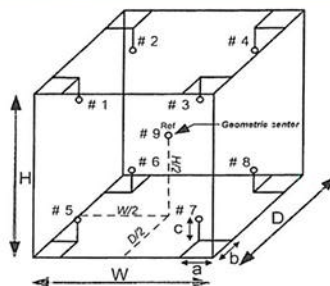


Figure: Example of sensor  
installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -



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**Hot Air Oven**

**Model : UM 400**

**Serial No. : 900982**

## CERTIFICATE OF CALIBRATION

Certificate No. : 24-001944  
Sample Code : 24-00963-001Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Hot Lab)

Equipment : Temperature controlled enclosures (Hot air oven)

Manufacturer : Memmert Model : UM 400

Serial No. : 900982 ID No. : LABE 17/1

Date of Receipt : 09 January 2024 Date of Calibration : 09 January 2024

## Condition of Calibration

1. Environment
- |                           |           |           |           |           |
|---------------------------|-----------|-----------|-----------|-----------|
| 1.1 Ambient temperature   | : Maximum | 30.6 °C   | : Minimum | 29.2 °C   |
| 1.2 Relative humidity     | : Maximum | 57.5 %    | : Minimum | 46.4 %    |
| 1.3 Line voltage supplied | : Maximum | 229.5 VAC | : Minimum | 222.5 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data Acquisition With Sensor (RTD-Pt100)	LB-DA-10 (RTD-257 to RTD-265)	23-066256	29 June 2024

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Sarawoot Thammo  
Scientist

Approved by

(Mr. Somchai Nearnpunt)

Signed for Director

Issue date 09 January 2024

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

## REPORT OF CALIBRATION

Certificate No. : 24-001944  
Sample Code : 24-00963-001

## Results of Calibration

Resolution : 0.1 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor <i>k</i>
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9 <sup>Ref</sup>		
60	60.0	60.0	60.04	59.90	59.81	59.84	59.47	59.91	60.08	59.98	59.87	0.25	2.00
85	85.0	85.0	86.07	85.75	85.58	85.62	84.69	85.83	86.28	85.94	85.77	0.34	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
60	0.11	0.49	0.80
85	0.09	1.13	1.72

## Notes

- UUC\* = Unit Under Calibration





## REPORT OF CALIBRATION

Page 3 of 3

Certificate No. : 24-001944

Sample Code : 24-00963-001

### Results of Calibration

#### Notes

1. Sensor installation locations
  - 1.1 All sensors at any corners or walls should be positioned 5 cm (a x b x c) from the wall.
  - 1.2 The reference sensor is preferably located of the geometric center of the chamber.
2. Interior dimensions approx of chamber :  
W = 40 cm ; D = 28 cm ; H = 39 cm
3. Air valve or fresh air level : Off
4. Fan level : Open
5. The quoted uncertainty includes "Stability of chamber and loading effect in chamber at 20% of uniformity".
6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.
7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.
8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.
9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.
10. Calibration results without adjustment.

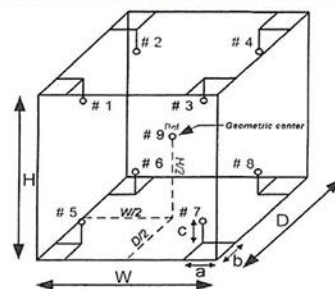


Figure: Example of sensor  
installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -

**COPY**

**LIQUID IN GLASS THERMOMETER**

**Model : Total Immersion**

**Serial No. : 43560**



QUALITY CALIBRATION CO.,LTD.  
235 Petchkasem 63/2 Road, Laksong, Bangkae, Bangkok 10160  
Tel (662) 421-5402, (662) 444-0152-3, Fax (662) 809-4584  
www.qcalibration.com



CERTIFICATE No : 23T10864  
REFERENCE No : 71117-1

PAGE : 1 OF 2

## Certificate of Calibration

EQUIPMENT : LIQUID IN GLASS THERMOMETER  
MANUFACTURER : PRECISION  
MODEL : 0 °C TO 100 °C  
SERIAL No : 43560  
ID No : LABE 16/1  
RESOLUTION : 0.1 °C  
TYPE : TOTAL IMMERSION  
CONDITION AS RECEIVED : USED ITEM  
SUBMITTED BY : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 MOO 11, SUKHAPIBAN 8 ROAD, NONGKHAM,  
SRIRACHA, CHONBURI 20230

CALIBRATED BY : CHARUKIT L.  
CALIBRATION DATE : 09-Nov-23  
APPROVED BY : PONGSAK J.  
ISSUED DATE : 09-Nov-23  
RECEIVED DATE : 02-Nov-23

**COPY**

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QUALITY CALIBRATION CO., LTD.



QUALITY CALIBRATION CO.,LTD.  
235 Petchkasem 63/2 Road, Laksong, Bangkae, Bangkok 10160  
Tel (662) 421-5402, (662) 444-0152-3, Fax (662) 809-4584  
www.qcalibration.com

CERTIFICATE No : 23T10864

PAGE : 2 OF 2

## Calibration Report

EQUIPMENT : LIQUID IN GLASS THERMOMETER  
MANUFACTURER : PRECISION  
MODEL : 0 °C TO 100 °C  
ID No : LABE 16/1  
RESOLUTION : 0.1 °C  
RECEIVED DATE : 02-Nov-23  
AMBIENT TEMPERATURE : 23 °C ± 3 °C  
SERIAL NUMBER : 43560  
TYPE : TOTAL IMMERSION  
CALIBRATION DATE : 09-Nov-23  
RELATIVE HUMIDITY : 50 %RH ± 20 %RH

### CONDITION OF THIS RESULTS OF CALIBRATION

- THIS INSTRUMENT WAS CALIBRATED BASED ON ASTM E77:1992 BY COMPARISON WITH STANDARD PLATINUM RESISTANCE THERMOMETER (SPRT) INTO LIQUID BATH TEMPERATURE CONTROLLER. THE TEMPERATURE SCALE USED WAS BASED ON ITS-90.
- REFERENCE STANDARD INSTRUMENTS :-

INSTRUMENT	MODEL	SERIAL No	CERTIFICATE No	DUE DATE
1) STANDARD THERMOMETER	1502	77964	23T3927	08-Mar-24
2) SPRT PROBE	5614	636636	23T3927	08-Mar-24
3) PRECISION BATH	7320	A21105	22T13199	14-Dec-23
4) PRECISION BATH	CTR-40	A68155	22T13198	09-Dec-23
5) PRECISION BATH	6045	3C023	22T13200	19-Dec-23
- THE CERTIFICATE IS VALID FOR THE ITEM CALIBRATED AS SHOWN ON THE DATE AND PLACE OF CALIBRATION ONLY.
- THIS RESULT EXCLUDE LONG TERM STABILITY OF THE UNIT UNDER CALIBRATION.
- THIS CERTIFICATE IS TRACEABLE TO THE INTERNATIONAL SYSTEM OF UNIT MAINTAINED AT:-  
- NATIONAL INSTITUTE OF METROLOGY (THAILAND).

### RESULT OF CALIBRATION : WITHOUT ADJUSTMENT

STANDARD READING (°C)	UUC* READING (°C)	IMMERSION DEPTH (mm)	CORRECTION (°C)	EMERGENT STEM TEMPERATURE (°C)	UNCERTAINTY OF MEASUREMENT (±°C)
0.009	0.0	60	0.0090	N/A	0.26
25.01	25.0	165	0.0050	N/A	0.26
50.00	50.0	275	0.0040	N/A	0.26
99.991	100.0	360	-0.009	29.3	0.26

### UUC\* : UNIT UNDER CALIBRATION

THE REPORTED UNCERTAINTY OF MEASUREMENT WAS BASED ON A STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR k=2, PROVIDING A LEVEL OF CONFIDENCE APPROXIMATELY 95%.  
END OF CALIBRATION REPORT

**COPY**

**pH Meter**

**Model : SevenCompact S220**

**Serial No. : B448305208**



## CERTIFICATE OF CALIBRATION

Page 1 of 3

Supersede to Calibration Certificate No. 24-001949

Certificate No. : 24-001949/1

Sample Code : 24-00963-006

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.

683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Laboratory)

Equipment : pH Meter

Manufacturer : METTLER TOLEDO

Model : SevenCompact S220

Serial No. : B448305208

ID No. : LABE 11/4

Date of Receipt : 09 January 2024

Date of Calibration : 09 January 2024

## Condition of Calibration

## 1. Environment

1.1 Ambient temperature : 22.4 ± 0.2 °C 1.2 Relative humidity : 56.4 % ± 2.1 %

## 2. Calibration method

In house method WI-CL-019: based on direct measurement by using standard voltage calibrator and using certified reference material (CRM).

## 3. Reference standard / Certified reference material

Instrument	ID No.	Certificate No.	Due Date
3.1 Voltage Calibrator	LB-AMC-01	23E3244	03 October 2024
3.2 Digital Thermometer	LB-TH-33	23-098974	25 August 2024
Certified Reference Material		Lot. No.	Ref No.
3.3 Buffer Solution pH 4.008	919273	PH216.L5	24 September 2025
3.4 Buffer Solution pH 6.986	941727	PH107.L5	06 November 2024
3.5 Buffer Solution pH 9.997	919278	PH220.L5	24 September 2024

## 4. This certificate is traceable to the international system of unit (SI Unit).

4.1 Instrument No. 3.1 through Technology Promotion Association (Thailand-Japan).

4.2 Instrument No. 3.2 through Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

4.3 Buffer Solution No. 3.3 and No. 3.5 traceable to CPA chem (through primary measurement method-Harned cell using calibrated thermometer, barometer, and nanovoltmeter Accredited laboratory ISO/IEC 17025 and ISO/IEC 17034).

4.4 Buffer Solution No. 3.4 traceable to CPA chem (CPA RefN HARNED CELL LotN 61275737; CPA RefN HARNED CELL LotN 61273986 Accredited laboratory ISO/IEC 17025 and ISO/IEC 17034).

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Nuttaput Timula

Approved by

(Mr. Sornchai Neampunt)

Scientist

Issue date 31 January 2024

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



## REPORT OF CALIBRATION

Page 2 of 3

Supersede to Calibration Certificate No. 24-001949

Certificate No. : 24-001949/1

Sample Code : 24-00963-006

Equipment : pH Meter Resolution : 0.01 pH ; 0.1 mV ; 0.1 °C  
Manufacturer : METTLER TOLEDO Model : SevenCompact S220  
Serial No. : B448305208 ID No. : LABE 11/4  
Range : -2.000 pH to 20.000 pH ; ± 2000.0 mV ; -5.0 °C to 130.0 °C

## Results of Calibration

## Part 1. DC Voltage measurement

pH Meter Serial No. : B448305208

Nominal Value	Applied DC Voltage	Average indicator reading		Uncertainty	Coverage factor
		mV	pH		
0	414.113	413.9	0.00	± 0.083	2.00
4	177.477	177.4	4.00	± 0.083	2.00
7	0.000	0.1	7.00	± 0.083	2.00
10	-177.477	-177.3	10.00	± 0.083	2.00
14	-414.113	-413.8	14.00	± 0.083	2.00

## Part 2. Performance of Electrode system

Electrode Manufacturer : METTLER TOLEDO Model : InLab Expert Pro-ISM

Electrode Serial No. : 2453982

Three-Point Calibration at pH4, pH7 and pH10 Percent Slope : 98.3

Standard Buffer Solution	Average indicator reading		Error Value	Uncertainty	Coverage factor
	pH	mV			
pH (@ 25 °C)					
4.008	4.01	182.1	0.002	± 0.010	2.00
6.986	7.00	7.8	0.014	± 0.011	2.00
9.997	10.01	-167.2	0.013	± 0.011	2.00

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.



NSC-TISI-TIS17025  
CALIBRATION 0152

Page 3 of 3

## REPORT OF CALIBRATION

Supersede to Calibration Certificate No. 24-001949

Certificate No. : 24-001949/1

Sample Code : 24-00963-006

Equipment : pH Meter (Digital Thermometer with sensor)

## Thermometer readout

Manufacturer : METTLER TOLEDO Model : SevenCompact S220  
 Serial No. : B448305208 ID No. : LABE 11/4  
 Resolution : 0.1 °C Range : -5.0 °C to 130.0 °C

## Thermometer sensor

Manufacturer : METTLER TOLEDO Model : InLab Expert Pro-ISM  
 Serial No. : 2453982 ID No. : N/A

## Condition of Calibration

1. Environment 1.1 Ambient temperature : 22.6 °C ± 0.1 °C  
 1.2 Relative humidity : 55.1 % ± 3.3 %

## 2. Calibration method

- 2.1 The calibration use in house method WI-CL-021 : by comparison with standard thermometer  
 2.2 The calibration by comparison unit under calibration (UUC) to the standard thermometer in a calibration bath at the controlled temperature.  
 2.3 The temperature scale in use of this laboratory is the international temperature scale of 1990 (ITS-90).

## 3. Reference standard instrument

Instrument	Model	ID. No.	Certificate No.	Due date
3.1 Resistance Thermometer	PT-100	RTD-90	23-098974	25 August 2024
3.2 Thermometer Readout	GT-11	LB-TH-33	23-098974	25 August 2024

## 4. This certificate is traceable to the international system of unit (SI Unit).

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (Accreditation Under TLAS Laboratory Calibration No.0152)

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

6. Condition of Calibration item : Normal

## Results of Calibration

Calibration point °C	Average of standard reading °C	Unit under calibration			Expanded uncertainty °C	Coverage factor k
		Immersion depth mm	Average reading °C	Correction value °C		
25	25.000	120	25.0	0.000	± 0.14	2.00

## Notes

- Calibration results without adjustment

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

- End of report -

**COPY**

**STANDARD WEIGHT 50 g**



Certificate No. : 22-052238  
Sample Code : 22-19150-003

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapiban 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration Laboratory)

Equipment : Standard Weight 50 g

Manufacturer : METTLER TOLEDO

Class : F1

Serial No. : N/A

ID No. : LABE 10/1

Date of Receipt : 18 May 2022

Date of Calibration : 30 May 2022

Calibrated by Mr. Somwang Sangdee  
Scientist

Issue date 31 May 2022

Approved by ( Mr. Somchai Neampunt )  
Signed for Director

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 22-052238  
Sample Code : 22-19150-003

## REPORT OF CALIBRATION

Equipment : Standard Weight 50 g

Manufacturer : METTLER TOLEDO

Class : F1

Serial No. : N/A

ID No. : LABE 10/1

### Result of Calibration :

☒ Without adjustment

☐ Adjustment

Conventional value of the result of weighing in air. For a weight taken at a reference temperature ( $t_{ref}$ ) of 20°C, the conventional mass is the mass of a reference weight of a density ( $\rho_{ref}$ ) of 8000 kg.m<sup>-3</sup> which it balances in air of a reference density ( $\rho_0$ ) of 1.2 kg.m<sup>-3</sup>

Description	Deviation	Conventional	Expanded	Maximum	ID No.
		Mass	Uncertainty	Permissible Error	
	(mg)		(mg)	± (mg)	
50 g	-0.324	49.999676 g	0.10	0.30	LABE 10/1

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.0$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

COPY



Certificate No. : 22-052238

Sample Code : 22-19150-003

## REPORT OF CALIBRATION

## Condition of Calibration

1. Ambient Conditions : Temperature 20 °C ± 1.5°C, Relative humidity 50% ± 10% and air density 1.20 kg/m<sup>3</sup>

2. Calibration Method : Direct comparison weighing according to OIML R111-1 : 2004(E)

3. Reference standard instrument

Instrument	Class	ID No.	Certificate No.	Due Date
1) Standard Weight 1 mg to 1 kg	E2	LB-WE-79	21-079366	22 September 2022

4. This certification is traceable to the International System of Unit maintained at : -

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

(Instrument number 1).

5. Condition of Calibration item: Normal

## 6. Description of Calibrated Item :

Type and Nominal Value :	Standard Weight 50 g
Shape :	Cylindrical weight with knob
Material :	Stainless steel
Case :	Wooden Box
Comments :	Recalibration

- End of Report -

COPY

**STANDARD WEIGHT 100 g**





Certificate No. : 22-052239  
Sample Code : 22-19150-004

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapiban 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration Laboratory)

Equipment : Standard Weight 100 g

Manufacturer : N/A

Class : N/A

Serial No. : N/A

ID No. : LABE 10/2

Date of Receipt : 18 May 2022

Date of Calibration : 30 May 2022

Calibrated by : Mr. Somwang Sangdee  
Scientist

Approved by

( Mr. Somchai Neampunt )

Signed for Director

Issue date : 31 May 2022

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 22-052239  
Sample Code : 22-19150-004

## REPORT OF CALIBRATION

Equipment : Standard Weight 100 g  
Manufacturer : N/A  
Class : N/A  
Serial No. : N/A  
ID No. : LABE 10/2

### Result of Calibration :

☒ Without adjustment

☐ Adjustment

Conventional value of the result of weighing in air. For a weight taken at a reference temperature ( $t_{ref}$ ) of 20°C, the conventional mass is the mass of a reference weight of a density ( $\rho_{ref}$ ) of 8000 kg.m<sup>-3</sup> which it balances in air of a reference density ( $\rho_0$ ) of 1.2 kg.m<sup>-3</sup>

Description	Deviation	Conventional	Expanded	Maximum	ID No.
		Mass	Uncertainty	Permissible Error	
	(mg)		(mg)	± (mg)	
100 g	-0.171	99.999829 g	0.16	0.50	LABE 10/2

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.0$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

COPY



Certificate No. : 22-052239

Sample Code : 22-19150-004

Page 3 of 3

## REPORT OF CALIBRATION

## Condition of Calibration

1. Ambient Conditions : Temperature  $20^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$ , Relative humidity  $50\% \pm 10\%$  and air density  $1.18 \text{ kg/m}^3$ 

2. Calibration Method : WI-CL-007 base on OIML R 111-1 : 2004(E)

3. Reference standard instrument

Instrument	Class	ID No.	Certificate No.	Due Date
1) Standard Weight 1 mg to 1 kg	E2	LB-WE-79	21-079366	22 September 2022

4. This certification is traceable to the International System of Unit maintained at : -

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

( Instrument number 1).

5. Condition of Calibration item: Normal

## 6. Description of Calibrated Item :

Type and Nominal Value :	Standard Weight 100 g
Shape :	Cylindrical weight with knob
Material :	Stainless steel
Case :	Wooden Box
Comments :	Recalibration

- End of Report -

COPY

**STANDARD WEIGHT 50 g**



Certificate No. : 22-052237  
Sample Code : 22-19150-002

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapiban 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration Laboratory)

Equipment : Standard Weight 50 g

Manufacturer : N/A

Class : N/A

Serial No. : N/A

ID No. : LABE 10/4

Date of Receipt : 18 May 2022

Date of Calibration : 30 May 2022

Calibrated by : Mr. Somwang Sangdee  
Scientist

Approved by : ( Mr. Somchai Neampunt )  
Signed for Director

Issue date : 31 May 2022

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

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 22-052237  
Sample Code : 22-19150-002

## REPORT OF CALIBRATION

Equipment : Standard Weight 50 g  
Manufacturer : N/A  
Class : N/A  
Serial No. : N/A  
ID No. : LABE 10/4

### Result of Calibration :

☒ Without adjustment

☐ Adjustment

Conventional value of the result of weighing in air. For a weight taken at a reference temperature ( $t_{ref}$ ) of 20°C, the conventional mass is the mass of a reference weight of a density ( $\rho_{ref}$ ) of 8000 kg.m<sup>-3</sup> which it balances in air of a reference density ( $\rho_0$ ) of 1.2 kg.m<sup>-3</sup>

Description	Deviation	Conventional Mass	Expanded Uncertainty	Maximum Permissible Error	ID No.
	(mg)		(mg)	± (mg)	
50 g	-0.111	49.999889 g	0.10	0.30	LABE 10/4

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.0$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

COPY

Certificate No. : 22-052237  
Sample Code : 22-19150-002

Page 3 of 3

## REPORT OF CALIBRATION

### Condition of Calibration

1. Ambient Conditions : Temperature  $20^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$ , Relative humidity  $50\% \pm 10\%$  and air density  $1.18 \text{ kg/m}^3$
2. Calibration Method : WI-CL-007 base on OIML R 111-1 : 2004(E)
3. Reference standard instrument

Instrument	Class	ID No.	Certificate No.	Due Date
1) Standard Weight 1 mg to 1 kg	E2	LB-WE-79	21-079366	22 September 2022

4. This certification is traceable to the International System of Unit maintained at : -

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

( Instrument number 1).

5. Condition of Calibration item: Normal

### 6. Description of Calibrated Item :

Type and Nominal Value :	Standard Weight 50 g
Shape :	Cylindrical weight with knob
Material :	Stainless steel
Case :	Wooden Box
Comments :	Recalibration

- End of Report -



COPY



ภาคผนวก จ

เอกสารชี้แจงเงื่อนไขของปฏิบัติการวิเคราะห์เอกสาร

ที่ อก ๐๓๒๐/๑๑๓๔๒



กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๗ กรกฎาคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด

อ้างถึง คำขอต่ออายุของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๗ มิถุนายน ๒๕๖๖

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๔๐ ราย
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒๕ ราย
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๙๒ รายการ จำนวน ๑๙ แผ่น

ตามหนังสือที่อ้างถึง บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๐๐๓ สถานที่ตั้งเลขที่ ๖๘๓ หมู่ที่ ๑๑ ถนนสุขุมวิท ๘ ตำบลหนองขาม อำเภอสรีราชา จังหวัดชลบุรี ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๔๐ ราย ตามสิ่งที่ส่งมาด้วย ๑
- ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒๕ ราย ตามสิ่งที่ส่งมาด้วย ๒
- ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๔๗ รายการ อากาศเสีย (ปล่องระบาย) จำนวน ๒๑ รายการ น้ำใต้ดิน จำนวน ๑๑๑ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน ๑๘ รายการ และดิน จำนวน ๙๕ รายการ รวมทั้งสิ้นจำนวน ๒๙๒ รายการ ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๕ กรกฎาคม ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

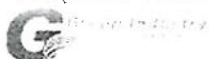
(นายทวี อำพาพันธ์)

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก  
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

โทร. ๐ ๓๓๑๓ ๖๐๕๕ ต่อ ๕๐๐๑-๒

ไปรษณีย์อิเล็กทรอนิกส์ [eirw@diw.mail.go.th](mailto:eirw@diw.mail.go.th)



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”

COPY



เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท อีสเทิร์น ไทย คอนซัลตติ้ง ๑๙๙๒ จำกัด เลขทะเบียน ว-๐๐๓

ที่ อก ๐๓๒๐/๑๑๓๔๒

ลงวันที่ ๒๗ กรกฎาคม ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๔๐ ราย

๑) นางสาวมาลีเกษ เลขะวัจกุล	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๑
๒) นายวัฒนา โคตรหล้า	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๒
๓) นางวรรณเพ็ญ เหลาจินดาวัฒน์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๓
๔) นายกะวีร์ สุธาทรัพย์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๔
๕) นางสาวนันท์ณภัส แปะขุนทด	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๕
๖) นางสาวพรนภา หลงคำหงษ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๖
๗) นางสาวอภิรดี ชื่นอารมย์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๗
๘) นางสาวอัจฉรี จิตตะยโสธร	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๘
๙) นางสาวจิรพร ปานคง	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๙
๑๐) นายสุทธา สองธนี	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๐
๑๑) นางสาวนันประภา อุตสูงเนิน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๑
๑๒) นายธงไชย บุญศักดิ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๒
๑๓) นางสาวธนาพร กลิ่นโสภณ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๓
๑๔) นายธีระพงษ์ นวลอินทร์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๔
๑๕) นางสาวแพรว พลแสน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๕
๑๖) นายทรงพล ผิวอ้วน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๖
๑๗) นายภาคภูมิ บัวสวัสดิ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๗
๑๘) นางสาวจันทน์ สายพันธ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๘
๑๙) นายภาณุพงศ์ บำรุงรส	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๙
๒๐) นางสาวปภาณิน จันตะสอน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๐
๒๑) นายวรกร ไวทยะเสวี	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๑
๒๒) นางสาววรรณภา ไชยศิริ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๒
๒๓) นางสาวพรพิมล ภูมิคอนสาร	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๓
๒๔) นางสาวธมลวรรณ ผลอ้อ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๔
๒๕) นางสาวบุญเรือง บุญถม	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๕
๒๖) นางสาวกสณันท์ ป้อมน้อย	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๖
๒๗) นายชานูวัฒน์ โชตะวงศ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๗
๒๘) นางสาวพจณี งามวิสัย	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๘
๒๙) นายวิญญ์วัล สิงห์โต	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๙
๓๐) นางสาวนุกูล อารศรี	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๐
๓๑) นายศุภฤกษ์ พาดกลาง	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๑
๓๒) นายณิชาพล ทองหล่อ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๒
๓๓) นายธรรมรัตน์ โพธิ์ตันคำ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๓
๓๔) นายโอชา ขวัญศิริมงคล	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๔
๓๕) นายเมธี สุขประเสริฐ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๕

**COPY**

๓๖) นางสาวพรพินันท์...

๓๖) นางสาวพรพินันท์ วิริยกุลกุล	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๖
๓๗) นางสาวอาภาภรณ์ เสริมสนธิ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๗
๓๘) นางสาวนภัทร์ธมณต์ ประดิษฐ์นุช	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๘
๓๙) นางสาวสุนิษา เอ็งเส้ง	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๙
๔๐) นางสาวระพิน อ้นชั้น	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๔๐

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒๕ ราย

๑) นางสาวดวงกมล เนื้อทอง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๑
๒) นางสาววัชรภรณ์ อินทสุข	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๒
๓) นางสาวกัญจน์ถวิกา จันทร์ชอดแก้ว	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๓
๔) นางสาวฉัตรสุดา มงคลโกชนัน	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๔
๕) นางสาวณัฐวดี อำมาตย์ทัศน์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๕
๖) นางสาวนิอรธมา ปาระ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๖
๗) นางสาวธัญลักษณ์ ชันโต	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๗
๘) นางสาวสุทธิดา สร้างแก้ว	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๘
๙) นายอุดมทรัพย์ เจนจบจริง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๙
๑๐) นายณราธิป สงวนศิลป์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๐
๑๑) นายวีระชัย พอใจ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๑
๑๒) นายอัญชลี ทะพงษ์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๒
๑๓) นางสาวสุมลิตรา มีแก่น	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๓
๑๔) นางสาวสวรรณยา เพชรประไพ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๔
๑๕) นางสาวจุฑามาศ เจริญพรหม	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๕
๑๖) นางสาวนิภาพร คำขมภู	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๖
๑๗) นางสาวอรชา พันธุ์เมือง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๗
๑๘) นายกิตติ ไพโรจน์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๘
๑๙) นายชาญณรงค์ ตั้งธรรมรักษ์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๙
๒๐) นางสาวปวีรศา เอสันเทียะ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๐
๒๑) นางสาวจุฑาทิพย์ กิจดี	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๑
๒๒) นางสาวสุภาวดี ศรีละออง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๒
๒๓) นางสาวณัฐชยา บรรพบุตร	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๓
๒๔) นางสาวณัฐนิช นนตานอก	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๔
๒๕) นางสาวดวงสุดา แสนวันดี	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๕

COPY

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด เลขทะเบียน ว-๐๐๓

ที่ อก ๐๓๒๐/๑๑๓๔๒

ลงวันที่ ๒๗ กรกฎาคม ๒๕๖๖

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๙๒ รายการ

น้ำเสีย จำนวน 47 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
2	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
3	Barium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
4	$\alpha$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
5	$\beta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
6	$\delta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
7	$\gamma$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method <sup>[4]</sup> 2) 5-Day BOD Test, Azide Modification Method <sup>[4]</sup>
9	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
10	Chemical Oxygen Demand	Closed Reflux, Titrimetric Method <sup>[4]</sup>
11	cis-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
12	trans-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
13	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

COPY

14 Color...



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
14	Color	ADMI Weighted-Ordinate Spectrophotometric Method <sup>[4]</sup>
15	Copper	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
16	Cyanide	Distillation, Colorimetric Method <sup>[4]</sup>
17	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
18	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
19	DDT	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
20	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
21	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
22	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
23	Endosulfan sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
24	Endrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
25	Endrin aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
26	Endrin ketone	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
27	Formaldehyde	Distillation, Colorimetric Method <sup>[3]</sup>
28	Free Chlorine	1) Iodometric Method <sup>[4]</sup> 2) Colorimetric Method <sup>[4]</sup>

**COPY**

29 Heptachlor...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
29	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
30	Heptachlor Epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
31	Hexavalent Chromium	Filtration, Colorimetric Method <sup>[4]</sup>
32	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
33	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
34	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[4]</sup>
35	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
36	Nickel	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
37	Oil and Grease	Liquid-Liquid, Partition-Gravimetric Method <sup>[4]</sup>
38	pH	Electrometric Method <sup>[4]</sup>
39	Phenols	Distillation, Direct Photometric Method <sup>[4]</sup>
40	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup>
41	Sulfide	ZnS Precipitation, Iodometric Method <sup>[4]</sup>
42	Temperature	Field Method <sup>[4]</sup>
43	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>[4]</sup>
44	Total Dissolved Solids	Dried at 180 °C <sup>[4]</sup>
45	Total Kjeldahl Nitrogen	Macro Kjeldahl Method <sup>[4]</sup>
46	Total Suspended Solids	Dried at 103-105 °C <sup>[4]</sup>
47	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

COPY

อากาศเสีย...

อากาศเสีย (ปล่องระบาย) จำนวน 21 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
2	Arsenic	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
3	Cadmium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
4	Carbon Monoxide	1) Bag, Non-Dispersive Infrared Method <sup>[5]</sup> 2) Instrumental Analyzer Method <sup>[5]</sup>
5	Chromium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
6	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
7	Copper	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
8	Hydrogen Sulfide	Absorption Sampling, Iodometric Method <sup>[5]</sup>
9	Lead	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
10	Manganese	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
11	Mercury	Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[5]</sup>
12	Nickel	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
13	Opacity	Ringelmann's Method <sup>[1,5]</sup>
14	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method <sup>[8]</sup> 2) Instrumental Analyzer Method <sup>[7]</sup>
15	Selenium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
16	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup> 2) Instrumental Analyzer Method <sup>[5]</sup>
17	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method <sup>[6]</sup>
18	Tin	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>

COPY

19 Total Suspended Particulate...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method <sup>[6]</sup>
20	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
21	Xylene	Adsorption Sampling, Gas Chromatographic Method <sup>[6]</sup>

น้ำใต้ดิน จำนวน 111 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	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	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
5	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
6	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
7	Barium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
8	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
9	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
10	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
11	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
12	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
13	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
14	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

**COPY**

15 Bis(2-chloroethyl)ether...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
15	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
16	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
17	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
18	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
19	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
20	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
21	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
22	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
23	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
24	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
25	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
26	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
27	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
28	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
29	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
30	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
31	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
32	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method; Calculation <sup>[4]</sup>

**COPY**



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
33	Chromium (VI)	Filtration, Colorimetric Method <sup>[4]</sup>
34	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
35	Cyanide	Distillation, Colorimetric Method <sup>[4]</sup>
36	DDD	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
37	DDE	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
38	DDT	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
39	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
40	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
41	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
42	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
43	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
44	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
45	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
46	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
47	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
48	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
49	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
50	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
51	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>



**COPY**

52 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
52	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
53	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
54	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
55	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
56	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
57	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
58	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
59	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
60	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
61	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
62	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
63	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
64	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
65	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
66	Hexachloro-1,3-butadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
67	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
68	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
69	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

COPY

70  $\gamma$ -HCH...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
70	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
71	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
72	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
73	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
74	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
75	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
76	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
77	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[4]</sup>
78	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
79	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
80	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
81	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
82	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
83	Naphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
84	Nickel	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
85	Nitrobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
86	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
87	pH	Electrometric Method <sup>[4]</sup>
88	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

COPY

89 Phenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
89	Phenol	1) Distillation, Direct Photometric Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
90	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
91	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup>
92	Silver	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
93	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
94	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
95	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
96	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
97	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
98	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
99	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
100	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
101	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
102	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
103	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
104	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
105	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
106	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

**COPY**

107 m-Xylene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
107	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
108	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
109	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
110	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
111	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

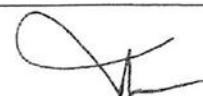
**สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 18 รายการ**

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
2	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
3	Barium	2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
4	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
5	Cadmium	2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
6	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
7	Chromium (VI)	2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
8	Cobalt	1) Waste Extraction, Digestion, Colorimetric Method <sup>[2,13]</sup>
9	Copper	2) Alkaline Digestion, Colorimetric Method <sup>[9,13]</sup>
		1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
		2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
10	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
11	Mercury	1) Waste Extraction, Digestion, Cold Vapor Atomic Absorption Spectrometric Method <sup>[2,11]</sup> 2) Digestion, Cold vapor Atomic Absorption Spectrometric Method <sup>[9,11]</sup>
12	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
13	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
14	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
15	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
16	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
17	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
18	Zinc	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>



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ดิน...

ดิน จำนวน 95 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
3	Anthracene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
4	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
5	Arsenic	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
6	Barium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
7	Benz(a)anthracene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
8	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
9	Benzo(b)fluoranthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
10	Benzo(k)fluoranthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
11	Benzo(a)pyrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
12	Benzo[g,h,i]perylene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
13	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
14	Bis(2-chloroethyl)ether	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
15	Bis(2-ethylhexyl)phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
16	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
17	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
18	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>

COPY

19 Butyl benzyl phthalate...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Butyl benzyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
20	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
21	Carbazole	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
22	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
23	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
24	p-Chloroaniline	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
25	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
26	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
27	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
28	2-Chlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
29	Chromium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
30	Chromium (III)	Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method; Calculation <sup>[9,10]</sup>
31	Chromium (VI)	Alkaline Digestion, Colorimetric Method <sup>[12,13]</sup>
32	Chrysene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
33	Dibenz(a,h)anthracene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
34	Di-n-butyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
35	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
36	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
37	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>

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38 1,1-Dichloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
38	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
39	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
40	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
41	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
42	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
43	2,4-Dichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
44	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
45	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
46	Diethyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
47	2,4-Dimethylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
48	2,4-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
49	2,6-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
50	Di-n-octyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
51	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
52	Fluoranthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
53	Fluorene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
54	Hexachlorobenzene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
55	Hexachloro-1,3-butadiene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
56	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
57	Hexachlorocyclopentadiene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
58	Hexachloroethane	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
59	Indeno(1,2,3-cd)pyrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
60	Isophorone	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
61	Lead	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
62	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
63	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[9,11]</sup>
64	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
65	2-Methylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
66	2-Methylnaphthalene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
67	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
68	Naphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
69	Nickel	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
70	Nitrobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
71	N-Nitrosodi-n-propylamine	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
72	Phenanthrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
73	Phenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
74	Pyrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>

**COPY**



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
75	Selenium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
76	Silver	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
77	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
78	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
79	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
80	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
81	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
82	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
83	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
84	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
85	2,4,5-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
86	2,4,6-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
87	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
88	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
89	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
90	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
91	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
92	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
93	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
94	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
95	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>

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**COPY**

ที่ อก ๐๓๒๐/ ๕๖๐๕ 1



กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๑๕ พฤษภาคม ๒๕๖๗

เรื่อง เปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ เปลี่ยนแปลงสารมลพิษในดิน และเปลี่ยนแปลงบุคลากร  
ของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน  
ลงวันที่ ๕ มีนาคม ๒๕๖๗

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ และเปลี่ยนแปลง  
สารมลพิษบริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด จำนวน ๑๒ แผ่น

ตามคำขอฯ ที่อ้างถึง บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด ห้องปฏิบัติการวิเคราะห์  
เอกชน เลขทะเบียน ว-๐๐๓ สถานที่ตั้งเลขที่ ๖๘๓ หมู่ที่ ๑๑ ถนนสุขาภิบาล ๘ ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี แจ้งขอเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษในน้ำเสีย น้ำใต้ดิน  
เปลี่ยนแปลงสารมลพิษในดิน และเปลี่ยนแปลงบุคลากร นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ ราย

นายวัฒนา โคตรหล้า ทะเบียนเลขที่ ว-๐๐๓-ค-๐๐๐๒

๒. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓ ราย

๑) นางสาวอัญชลี ทะพงษ์ ทะเบียนเลขที่ ว-๐๐๓-จ-๐๐๑๒

๒) นางสาวจุฑามาศ เจริญพรหม ทะเบียนเลขที่ ว-๐๐๓-จ-๐๐๑๕

๓) นางสาวณัฐนิช นนตานอก ทะเบียนเลขที่ ว-๐๐๓-จ-๐๐๒๔

๓. ให้ยกเลิกขอบข่ายรายการสารมลพิษในน้ำเสีย และน้ำใต้ดินตามรายการเอกสารแนบท้าย  
หนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชนที่ อก ๐๓๒๐/๑๑๓๔๒ ลงวันที่ ๒๗ กรกฎาคม ๒๕๖๖

๔. ให้วิเคราะห์สารมลพิษตามขอบข่ายที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๔๗ รายการ  
และน้ำใต้ดิน จำนวน ๑๑๑ รายการ รวมทั้งสิ้นจำนวน ๑๕๘ รายการ ตามเอกสารแนบท้ายหนังสือเปลี่ยนแปลง  
เอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ เปลี่ยนแปลงสารมลพิษในดิน และเปลี่ยนแปลงบุคลากร ดังสิ่งที่ส่งมาด้วย

๕. ให้วิเคราะห์สารมลพิษตามขอบข่ายที่ได้รับขึ้นทะเบียนให้วิเคราะห์เพิ่มเติมในดิน จำนวน  
๑๒ รายการ ตามเอกสารแนบท้ายหนังสือเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษเปลี่ยนแปลงสารมลพิษ  
ในดิน และเปลี่ยนแปลงบุคลากร ดังสิ่งที่ส่งมาด้วย

อนึ่ง หนังสือ ....

COPY



อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์  
เอกชนในวันที่ ๕ กรกฎาคม ๒๕๖๙

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



(นายพรยศ กลั่นกรอง)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมโรงงานอุตสาหกรรม

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

โทร. ๐ ๓๓๑๓ ๖๐๕๙ ต่อ ๕๐๐๑-๒

ไปรษณีย์อิเล็กทรอนิกส์ [eirw@diw.mail.go.th](mailto:eirw@diw.mail.go.th)

COPY





เอกสารแนบท้ายหนังสือเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด

เลขทะเบียน ว-๐๐๓

ที่ ออก ๐๓๒๐/

ลงวันที่

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๑๗๐ รายการ

น้ำเสีย จำนวน 47 รายการ

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
2	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
3	Barium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
4	$\alpha$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
5	$\beta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
6	$\delta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
7	$\gamma$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method <sup>[1]</sup> 2) 5-Day BOD Test, Azide Modification Method <sup>[1]</sup>
9	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
10	Chemical Oxygen Demand	Closed Reflux, Titrimetric Method <sup>[1]</sup>
11	cis-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>

COPY

12 trans-Chlordane ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
12	trans-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
13	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
14	Color	ADMI Weighted-Ordinate Spectrophotometric Method <sup>[1]</sup>
15	Copper	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
16	Cyanide	Distillation, Colorimetric Method <sup>[1]</sup>
17	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
18	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
19	DDT	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
20	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
21	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
22	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
23	Endosulfan sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
24	Endrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>

**COPY**

25 Endrin aldehyde ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
25	Endrin aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
26	Endrin ketone	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
27	Formaldehyde	Distillation, Colorimetric Method <sup>[4]</sup>
28	Free Chlorine	1) Iodometric Method <sup>[1]</sup> 2) Colorimetric Method <sup>[1]</sup>
29	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
30	Heptachlor Epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
31	Hexavalent Chromium	Filtration, Colorimetric Method <sup>[1]</sup>
32	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
33	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
34	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1]</sup>
35	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
36	Nickel	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
37	Oil and Grease	Liquid-Liquid, Partition-Gravimetric Method <sup>[1]</sup>
38	pH	Electrometric Method <sup>[1]</sup>
39	Phenols	Distillation, Direct Photometric Method <sup>[1]</sup>
40	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1]</sup>

**COPY**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
41	Sulfide	ZnS Precipitation, Iodometric Method <sup>[1]</sup>
42	Temperature	Field Method <sup>[1]</sup>
43	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>[1]</sup>
44	Total Dissolved Solids	Dried at 180 °C <sup>[1]</sup>
45	Total Kjeldahl Nitrogen	Macro Kjeldahl Method <sup>[1]</sup>
46	Total Suspended Solids	Dried at 103-105 °C <sup>[1]</sup>
47	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>

น้ำใต้ดิน จำนวน 111 รายการ

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
5	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
6	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
7	Barium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
8	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

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ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
9	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
10	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
11	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
12	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
13	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
14	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
15	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
16	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
17	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
18	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
19	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
20	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
21	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
22	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
23	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
24	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

**COPY**

25 Chlordane ...



ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
25	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
26	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
27	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
28	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
29	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
30	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
31	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
32	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method; Calculation <sup>[1]</sup>
33	Chromium (VI)	Filtration, Colorimetric Method <sup>[1]</sup>
34	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
35	Cyanide	Distillation, Colorimetric Method <sup>[1]</sup>
36	DDD	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
37	DDE	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
38	DDT	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
39	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

COPY

40 Di-n-butyl phthalate ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
40	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
41	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
42	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
43	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
44	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
45	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
46	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
47	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
48	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
49	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
50	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
51	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
52	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
53	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
54	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

55 2,4-Dinitrotoluene ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
55	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
56	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
57	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
58	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
59	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
60	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
61	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
62	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
63	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
64	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
65	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
66	Hexachloro-1,3-butadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
67	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
68	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
69	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
70	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
71	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
72	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
73	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
74	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
75	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
76	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
77	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1]</sup>
78	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
79	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
80	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
81	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
82	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
83	Naphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
84	Nickel	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
85	Nitrobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

**COPY**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
86	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
87	pH	Electrometric Method <sup>[4]</sup>
88	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
89	Phenol	1) Distillation, Direct Photometric Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
90	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
91	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup>
92	Silver	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
93	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
94	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
95	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
96	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
97	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
98	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
99	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
100	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
101	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>



ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
102	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
103	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
104	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
105	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
106	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
107	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
108	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
109	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
110	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
111	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

**ดิน จำนวน 12 รายการ**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
1	$\alpha$ -HCH	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
2	$\beta$ -HCH	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
3	$\gamma$ -HCH	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
4	Heptachlor	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>

**COPY**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
5	Aldrin	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
6	Heptachlor epoxide	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
7	Chlordane	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
8	Dieldrin	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
9	Endrin	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
10	DDD	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
11	DDT	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
12	Methoxychlor	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>

#### เอกสารอ้างอิง

1. APHA, AWWA, WEF. **Standard Methods for the Examination of Water and Wastewater**. 24<sup>th</sup> ed. Washington, DC: APHA, 2023.
2. United States Environment Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Ultrasonic Extraction. SW-846 Method 3550C**, 2007
3. United States Environment Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry. SW-846 Method 8270E**, 2018
4. สมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย. คู่มือวิเคราะห์น้ำเสีย. พิมพ์ครั้งที่ 4. กรุงเทพฯ: เรือนแก้วการพิมพ์, 2547.

**COPY**

ภาคผนวก จ

ใบรับรองความสามารถห้องปฏิบัติการวิเคราะห์



ที่ อว 0303/18183

## ใบรับรองความสามารถห้องปฏิบัติการทดสอบ

ใบรับรองฉบับนี้ให้ไว้เพื่อแสดงว่า

ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลติ้ง 1992 จำกัด  
เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอสรีราชา จังหวัดชลบุรี 20230

ได้ผ่านการประเมินความสามารถห้องปฏิบัติการทดสอบตามมาตรฐาน ISO/IEC 17025 : 2017  
และข้อกำหนด กฎระเบียบ และเงื่อนไขการรับรองความสามารถห้องปฏิบัติการทดสอบ  
ของกองบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ  
หมายเลขการรับรองระบบงานที่ ทดสอบ - 0159

รายละเอียดการรับรองดังขอบข่ายการรับรองแนบท้าย

ออกให้ ณ วันที่ : 7 พฤศจิกายน 2566

หมดอายุ วันที่ : 6 พฤศจิกายน 2570

ลงชื่อ : 

(นางจันทรัตน์ วรสรรพวิทย)

นักวิทยาศาสตร์ชำนาญการพิเศษ

รักษาราชการแทน ผู้อำนวยการกองบริหารและรับรองห้องปฏิบัติการ

กองบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ  
กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม

### ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตัง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
1	น้ำ	- ซีโอดี 40 mg/L ถึง 5 000 mg/L  - โปรท 0.001 mg/L ถึง 0.02 mg/L  - บีโอดี 2 mg/L ถึง 5 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 5220 C  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 3112 B  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 5210 B

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 4



## ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตติ้ง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ ชั่วคราว ☐ เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
1 (ต่อ)	น้ำ	- สารที่ละลายได้ทั้งหมด ที่อุณหภูมิ 180 °C 25 mg/L ถึง 10 000 mg/L  - สารแขวนลอยทั้งหมด ที่อุณหภูมิ 103 °C ถึง 105 °C 5 mg/L ถึง 2 000 mg/L  - ฟลูออไรด์ 0.5 mg/L ถึง 10 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 2540 C  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 2540 D  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 4500-F C

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 4

### ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตัง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
2	น้ำเสีย	- ซีโอดี 40 mg/L ถึง 5 000 mg/L  - โปรท 0.001 mg/L ถึง 0.02 mg/L  - บีโอดี 2 mg/L ถึง 5 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 5220 C  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 3112 B  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017, part 5210 B

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 4

### ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตัง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

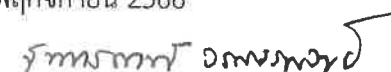
หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ ชั่วคราว ☐ เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
2 (ต่อ)	น้ำเสีย	<p>- สารที่ละลายได้ทั้งหมด ที่อุณหภูมิ 180 °C 25 mg/L ถึง 10 000 mg/L</p> <p>- สารแขวนลอยทั้งหมด ที่อุณหภูมิ 103 °C ถึง 105 °C 5 mg/L ถึง 2 000 mg/L</p> <p>- ฟลูออไรด์ 0.5 mg/L ถึง 10 mg/L</p>	<p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA &amp; WEF, 23<sup>rd</sup> ed., 2017, part 2540 C</p> <p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA &amp; WEF, 23<sup>rd</sup> ed., 2017, part 2540 D</p> <p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA &amp; WEF, 23<sup>rd</sup> ed., 2017, part 4500-F C</p>

ออกให้ ณ วันที่ : 7 พฤศจิกายน 2566

ลงชื่อ :



(นางจันทน์ วรสรพวิทย์)

นักวิทยาศาสตร์ชำนาญการพิเศษ

รักษาราชการแทน ผู้อำนวยการกองบริหารและรับรองห้องปฏิบัติการ

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 4



ใบรับรองเลขที่ 23-LB0251  
(Certificate No.)

## ใบรับรองระบบงาน (Certificate of Accreditation)

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑  
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม  
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้  
(Issues this certificate to)

บริษัท อีสเทิร์น ไทย คอนซัลติง 1992 จำกัด  
(Eastern Thai Consulting 1992 Co., Ltd.)

ตั้งอยู่เลขที่  
(Address)

๖๘๓ หมู่ที่ ๑๑ ถนนสุขาภิบาล ๘ ตำบลหนองขาม อำเภอสรีราชา จังหวัดชลบุรี  
(683 Moo 11, Sukhapibarn 8 Road, Nongkham, Sriracha, Chonburi)

ได้รับการรับรองความสามารถ  
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๗๐๒๕ - ๒๕๖๑  
(Standard No. TIS 17025-2561 (2018) (ISO/IEC 17025: 2017))

ข้อกำหนดทั่วไปว่าด้วยความสามารถของ ห้องปฏิบัติการทดสอบและห้องปฏิบัติการสอบเทียบ  
(General requirements for the competence of testing and calibration laboratories)

หมายเลขการรับรองที่ ทดสอบ ๑๗๑๒  
(Accreditation No. Testing 1712)

โดยมีรายละเอียดสาขาและขอบข่ายที่ได้ใบรับรอง แสดงไว้ใน QR CODE และ [www.tisi.go.th](http://www.tisi.go.th)  
(Details of the scheme and scope of the certificate are shown in QR CODE and [www.tisi.go.th](http://www.tisi.go.th))

ออกให้ ณ วันที่ ๒๓ สิงหาคม พ.ศ. ๒๕๖๖  
(Issue date : 23 August B.E. 2566 (2023))

(นายเอกนิติ รมยานนท์)

รองเลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



c88f6993



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 23-LB0251

(Certification No. 23-LB0251)



ชื่อห้องปฏิบัติการ

(Laboratory Name)

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง 1992 จำกัด

(Eastern Thai Consulting 1992 Co.,Ltd.)

หมายเลขการรับรองที่

(Accreditation No.)

ทดสอบ 1712

(Testing 1712)

ฉบับที่ 01

(Issue No.01)

ออกให้ตั้งแต่วันที่ 17 กรกฎาคม พ.ศ. 2566

(Valid from) (17 July B.E.2566 (2023))

ถึงวันที่ 16 กรกฎาคม พ.ศ. 2571

(Until) (16 July B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ

(Laboratory status)

☒ ถาวร

(Permanent)

☐ นอกสถานที่

(Site)

☐ ชั่วคราว

(Temporary)

☐ เคลื่อนที่

(Mobile)

☐ หลายสถานที่

(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (Environmental field)</p> <p>1. น้ำ ( Water )</p>	<p>- โลหะหนัก (Heavy metal)</p> <ul style="list-style-type: none"> <li>โครเมียม (Cr) 0.03 mg/L to 2.00 mg/L</li> <li>ทองแดง (Cu) 0.03 mg/L to 2.00 mg/L</li> <li>เหล็ก (Fe) 0.03 mg/L to 2.00 mg/L</li> <li>ตะกั่ว (Pb) 0.01 mg/L to 1.00 mg/L</li> <li>นิกเกิล (Ni) 0.03 mg/L to 2.00 mg/L</li> <li>อลูมิเนียม (Al) 0.10 mg/L to 2.00 mg/L</li> <li>แบเรียม (Ba) 0.03 mg/L to 2.00 mg/L</li> <li>แคดเมียม (Cd) 0.003 mg/L to 1.00 mg/L</li> <li>แมงกานีส (Mn) 0.03 mg/L to 2.00 mg/L</li> <li>เงิน (Ag) 0.05 mg/L to 2.00 mg/L</li> <li>สังกะสี (Zn) 0.03 mg/L to 2.00 mg/L</li> </ul>	<p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 3030 F and 3120 B</p>

กระทรวงอุตสาหกรรมสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

(Ministry of Industry, Thai Industrial Standards Institute)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 23-LB0251

(Certification No. 23-LB0251)



ฉบับที่ 01

(Issue No.)

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (Environmental field)</p> <p>1. น้ำ (ต่อ) (Water ) (cont.)</p> <p>2. น้ำเสีย (Wastewater )</p>	<p>- ไขมันและน้ำมัน (Oil &amp; Grease) 3.0 mg/L - 20.0 mg/L</p> <p>- โลหะหนัก (Heavy metal)</p> <ul style="list-style-type: none"> <li>โครเมียม (Cr) 0.03 mg/L to 2.00 mg/L</li> <li>ทองแดง (Cu) 0.03 mg/L to 2.00 mg/L</li> <li>เหล็ก (Fe) 0.03 mg/L to 2.00 mg/L</li> <li>ตะกั่ว (Pb) 0.03 mg/L to 2.00 mg/L</li> <li>นิกเกิล (Ni) 0.03 mg/L to 2.00 mg/L</li> <li>อลูมิเนียม (Al) 0.10 mg/L to 2.00 mg/L</li> <li>แบเรียม (Ba) 0.03 mg/L to 2.00 mg/L</li> <li>แคดเมียม (Cd) 0.03 mg/L to 2.00 mg/L</li> </ul>	<p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 5520 B</p> <p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 3030 F and 3120 B</p>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสังแวดล้อม (Environmental field)</p> <p>2. น้ำเสีย (ต่อ) (Wastewater ) (cont.)</p>	<p>- โลหะหนัก (ต่อ) (Heavy metal) (cont.)</p> <ul style="list-style-type: none"> <li>• แมงกานีส (Mn) 0.03 mg/L to 2.00 mg/L</li> <li>• เงิน (Ag) 0.05 mg/L to 2.00 mg/L</li> <li>• สังกะสี (Zn) 0.03 mg/L to 2.00 mg/L</li> </ul> <p>- ไขมันและน้ำมัน (Oil &amp; Grease) 3.0 mg/L - 20.0 mg/L</p>	<p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 3030 F and 3120 B</p> <p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 5520 B</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 23-LB0251

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ฉบับที่ 01  
(Issue No.)

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสีงแวดล้อม (Environmental field)</p> <p>3.พื้นที่การทำงาน (Workplace)</p>	<p>- ระดับเสียง (Sound Level)</p> <ul style="list-style-type: none"> <li>ระดับเสียงเฉลี่ย <math>L_{eqT}</math> ช่วง 30 - 130 dB(A)</li> <li>ระดับเสียงสูงสุด <math>L_{max}</math> ช่วง 30 - 130 dB(A)</li> </ul>	<p>- ISO 11202:2010</p> <p>- ประกาศกระทรวงอุตสาหกรรม เรื่องมาตรการคุ้มครองความปลอดภัยในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.2546 ลงวันที่ 6 พ.ย. 2546 (Notification of The Ministry of Industry B.E. 2546 (2003) on the Safety Protection Measures in Factory Regarding Working Area Environment, dated November 6, 2003)</p> <p>- ประกาศกรมสวัสดิการและคุ้มครองแรงงาน เรื่องมาตรฐานระดับเสียงที่ยอมให้ลูกจ้างได้รับเฉลี่ยตลอดระยะเวลาการทำงานในแต่ละวัน ลงวันที่ 13 ธ.ค. 2560 (Notification of the Department of Labor Protection and Welfare on the standard of noise level that employees are allowed to receive in average period of work each day, dated December 13, 2017.)</p> <p>- ประกาศกรมสวัสดิการและคุ้มครองแรงงาน เรื่องหลักเกณฑ์ วิธีการตรวจวัดและการวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับความร้อน แสงสว่าง หรือเสียง รวมทั้งระยะเวลาและประเภทกิจการที่ต้องดำเนินการ ลงวันที่ 8 ก.พ. 2561 (Notification of the Department of Labor Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, dated February 8, 2018.)</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

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ใบรับรองเลขที่ 23-LB0251

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (Environmental field)</p> <p>4. บรรยากาศ (Ambient)</p>	<p>- ระดับเสียง (Sound Level)</p> <ul style="list-style-type: none"> <li>• ระดับเสียงเฉลี่ย LeqT ช่วง 30.0 - 130.0 dB(A)</li> <li>• ระดับเสียงสูงสุด Lmax ช่วง 30.0 - 130.0 dB(A)</li> </ul>	<p>- ISO 1996 - 1 : 2016</p> <p>- ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (2540) เรื่องกำหนด มาตรฐาน ระดับเสียงโดยทั่วไป ลงวันที่ 12 มี.ค. 2540 (Notification of The National Environmental Board Volume 15 B.E. 2540 (1997) on the general noise level standards, dated March 12, 1997)</p> <p>- ประกาศกรมควบคุมมลพิษ เรื่อง การ คำนวณค่าระดับเสียง ลงวันที่ 11 ส.ค. 2540 (Notification of the Pollution Control Department on the calculation of the noise level, dated August 11, 1997.)</p> <p>- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงการรบกวน ระดับ เสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่ เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553 ลงวันที่ 20 ธ.ค. 2553 (Notification of the Department of Industrial Works on Methods for Measuring Noise Annoyance, Noise Levels 24-Hour Average and Maximum Noise Level from Factory B.E. 2553, dated December 20, 2010.)</p>