

ภาคผนวก ง

ใบรับรองผลการตรวจวิเคราะห์คุณภาพสิ่งแวดล้อม

## ภาคผนวก ง.1

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ใบรับรองผลการตรวจวิเคราะห์  
คุณภาพอากาศจากปล่องระบายอากาศ



บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd.	REF. NO.	: 224004_Cert-Stack/TSP_Jun 24
	Branch 2 (BCC2)	SAMPLING DATE	: 04/06/2024
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 05-06/06/2024
RECEIVED DATE	: 05/06/2024	SAMPLE CONDITION	: Normal
REPORT DATE	: 12/06/2024	FUEL TYPE	: Natural Gas
SOURCE DESCRIPTION	: Combustion	STACK LOCATION	: HRSO 11
OPERATOR	: Mr. Song Hangchhwanun		

STACK DESCRIPTION

Height	: 40.0	m	Gas Velocity	: 14.8	m/s
Diameter	: 3.30	m	Flow Rate*	: 5,554	Ncu.m/min
Temperature	: 81.7	°C	Excess Oxygen	: 13.3	%

PARAMETER	UNITS	RESULTS*		STANDARDS <sup>1/</sup>	REFERENCE
		13.3%O <sub>2</sub>	7%O <sub>2</sub>	7%O <sub>2</sub>	METHODS
Total Suspended Particulate	mg/Ncu.m.	2.70	4.92	60	US. EPA Method 5

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO. 2-239-9-0021

Miss Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO. 2-239-9-0010

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. \* At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. <sup>1/</sup> Notification of the Ministry of Industry, B.E.2549 and the Ministry of Natural Resources and Environment, B.E.2549.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd.	REF. NO.	: 224004_Cert-Stack/PM-10_Jun 24
	Branch 2 (BCC2)	SAMPLING DATE	: 04/06/2024
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 05-06/06/2024
RECEIVED DATE	: 05/06/2024	SAMPLE CONDITION	: Normal
REPORT DATE	: 12/06/2024	FUEL TYPE	: Natural Gas
SOURCE DESCRIPTION	: Combustion	STACK LOCATION	: HRSO 11
OPERATOR	: Mr. Song Hangchhwanun		

STACK DESCRIPTION

Height	: 40.0	m	Gas Velocity	: 14.8	m/s
Diameter	: 3.30	m	Flow Rate*	: 5,554	Ncu.m/min
Temperature	: 81.7	°C	Excess Oxygen	: 13.3	%

PARAMETER	UNITS	RESULTS*		STANDARDS	REFERENCE
		13.3%O <sub>2</sub>	7%O <sub>2</sub>	7%O <sub>2</sub>	METHODS
Particulate matter less than 10 microns	mg/Ncu.m.	1.30	2.37	-	US. EPA Method 210A

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO. 2-239-9-0021

Miss Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO. 2-239-9-0010

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3. \* At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. - Standard is not specified.

**The Monitoring Result of Emission Concentration**  
**HRSG 11**  
**BANGKOK COGENERATION CO., LTD., (Branch 2)**  
**June 4, 2024**

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	13.24	13.31	10.57	10.56	19.34
2	13.24	13.24	10.43	10.46	18.98
3	13.30	13.21	10.75	10.57	19.11
<b>Average</b>	<b>13.26</b>	<b>13.25</b>	<b>10.58</b>	<b>10.53</b>	<b>19.14</b>

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	13.24	13.31	0.48	0.43	0.79
2	13.24	13.24	0.32	0.39	0.71
3	13.30	13.21	0.18	0.15	0.27
<b>Average</b>	<b>13.26</b>	<b>13.25</b>	<b>0.32</b>	<b>0.32</b>	<b>0.59</b>

Run Number	Oxygen content (%)		Carbonmonoxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	13.24	13.31	1.62	1.80	3.30
2	13.24	13.24	1.21	1.29	2.34
3	13.30	13.21	1.32	1.12	2.02
<b>Average</b>	<b>13.26</b>	<b>13.25</b>	<b>1.38</b>	<b>1.40</b>	<b>2.55</b>

**BANGKOK COGENERATION CO., LTD., (Branch 2)**  
**EMISSION TEST RESULT**

Date: June 4, 2024  
 Start time: 1:50 PM  
 O<sub>2</sub> instrument Model: AMI 70  
 NO<sub>x</sub> instrument Model: TELEDYNE 200 EM  
 SO<sub>2</sub> instrument Model: API 100 AH  
 CO instrument Model: API 300 A  
 Fuel Type : Natural Gas

Run # : 1  
 Location : HRSG 11  
 Finish time : 2:10 PM  
 Serial No.: 161212-14  
 Serial No.: 435  
 Serial No.: 058  
 Serial No.: 1070  
 Test Operator : Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)	CO (ppm)
1:50 PM	13.25	10.81	0.39	2.05
1:51 PM	13.25	10.64	0.43	1.97
1:52 PM	13.25	10.51	0.43	2.00
1:53 PM	13.25	10.53	0.47	1.97
1:54 PM	13.25	10.55	0.48	2.13
1:55 PM	13.20	10.68	0.49	2.13
1:56 PM	13.22	10.77	0.51	1.79
1:57 PM	13.25	10.70	0.50	1.49
1:58 PM	13.25	10.51	0.48	1.45
1:59 PM	13.25	10.41	0.48	1.60
2:00 PM	13.25	10.34	0.52	1.53
2:01 PM	13.25	10.42	0.48	1.35
2:02 PM	13.25	10.49	0.50	1.29
2:03 PM	13.25	10.52	0.48	1.54
2:04 PM	13.23	10.46	0.48	1.43
2:05 PM	13.24	10.41	0.50	1.33
2:06 PM	13.25	10.52	0.50	1.53
2:07 PM	13.25	10.73	0.47	1.37
2:08 PM	13.25	10.82	0.47	1.43
2:09 PM	13.25	10.62	0.47	1.47
2:10 PM	13.19	10.55	0.46	1.26
<b>Average</b>	<b>13.24</b>	<b>10.57</b>	<b>0.48</b>	<b>1.62</b>

Signature 

( Miss Katesarin Vorradetwittaya )  
 Environmental Scientist



## BANGKOK COGENERATION CO., LTD., (Branch 2) EMISSION TEST RESULT

**Date:** June 4, 2024  
**Start time:** 2:11 PM  
**O<sub>2</sub> instrument Model:** AMI 70  
**NO<sub>x</sub> instrument Model:** TELEDYNE 200 EM  
**SO<sub>2</sub> instrument Model:** API 100 AH  
**CO instrument Model:** API 300 A  
**Fuel Type :** Natural Gas

**Run # : 2**  
**Location :** HRSG 11  
**Finish time :** 2:31 PM  
**Serial No.:** 161212-14  
**Serial No.:** 435  
**Serial No.:** 058  
**Serial No.:** 1070  
**Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)	CO (ppm)
2:11 PM	13.23	10.71	0.41	1.61
2:12 PM	13.19	10.73	0.43	1.38
2:13 PM	13.23	10.47	0.41	0.91
2:14 PM	13.25	10.22	0.41	1.08
2:15 PM	13.25	10.20	0.41	1.34
2:16 PM	13.25	10.42	0.40	1.59
2:17 PM	13.24	10.53	0.36	1.23
2:18 PM	13.24	10.45	0.36	1.32
2:19 PM	13.25	10.34	0.34	0.94
2:20 PM	13.25	10.28	0.34	1.23
2:21 PM	13.25	10.31	0.34	1.14
2:22 PM	13.25	10.37	0.30	1.46
2:23 PM	13.25	10.26	0.30	1.37
2:24 PM	13.25	10.14	0.30	1.03
2:25 PM	13.25	10.22	0.25	1.12
2:26 PM	13.25	10.34	0.24	0.85
2:27 PM	13.25	10.35	0.24	1.44
2:28 PM	13.25	10.33	0.24	1.29
2:29 PM	13.25	10.68	0.22	0.94
2:30 PM	13.25	11.00	0.18	1.07
2:31 PM	13.25	10.73	0.18	1.07
<b>Average</b>	13.24	10.43	0.32	1.21

Signature   
 ( Miss Katesarin Vorradetwittaya )  
 Environmental Scientist

## BANGKOK COGENERATION CO., LTD., (Branch 2) EMISSION TEST RESULT

**Date:** June 4, 2024  
**Start time:** 2:32 PM  
**O<sub>2</sub> instrument Model:** AMI 70  
**NO<sub>x</sub> instrument Model:** TELEDYNE 200 EM  
**SO<sub>2</sub> instrument Model:** API 100 AH  
**CO instrument Model:** API 300 A  
**Fuel Type :** Natural Gas

**Run # : 3**  
**Location :** HRSG 11  
**Finish time :** 2:52 PM  
**Serial No.:** 161212-14  
**Serial No.:** 435  
**Serial No.:** 058  
**Serial No.:** 1070  
**Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)	CO (ppm)
2:32 PM	13.25	10.72	0.18	1.06
2:33 PM	13.25	10.81	0.18	1.03
2:34 PM	13.25	10.74	0.17	1.33
2:35 PM	13.25	10.59	0.15	1.07
2:36 PM	13.25	10.57	0.14	1.10
2:37 PM	13.28	10.62	0.14	1.40
2:38 PM	13.33	10.72	0.14	0.99
2:39 PM	13.35	10.79	0.14	1.03
2:40 PM	13.35	10.75	0.14	0.99
2:41 PM	13.35	10.76	0.11	1.17
2:42 PM	13.35	10.86	0.07	1.37
2:43 PM	13.35	10.92	0.10	1.25
2:44 PM	13.35	10.86	0.09	1.19
2:45 PM	13.35	10.68	0.07	1.12
2:46 PM	13.35	10.93	0.07	1.08
2:47 PM	13.35	10.96	0.07	1.09
2:48 PM	13.35	10.50	0.32	1.86
2:49 PM	13.25	10.64	0.34	1.86
2:50 PM	13.25	10.65	0.38	1.90
2:51 PM	13.25	10.74	0.38	1.85
2:52 PM	13.25	10.84	0.38	1.98
<b>Average</b>	13.30	10.75	0.18	1.32

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd.	REF. NO.	: 224004_Cert-Stack/TSP_Jun 24
	Branch 2 (BCC2)	SAMPLING DATE	: 04/06/2024
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 05-06/06/2024
RECEIVED DATE	: 05/06/2024	SAMPLE CONDITION	: Normal
REPORT DATE	: 12/06/2024	FUEL TYPE	: Natural Gas
SOURCE DESCRIPTION	: Combustion	STACK LOCATION	: HRSO 12
OPERATOR	: Mr. Song Hanghchwankun		

STACK DESCRIPTION					
Height	: 40.0	m	Gas Velocity	: 14.1	m/s
Diameter	: 3.30	m	Flow Rate*	: 5,335	Ncu.m/min
Temperature	: 79.3	°C	Excess Oxygen	: 13.2	%

PARAMETER	UNITS	RESULTS*		STANDARDS <sup>1/</sup>	REFERENCE METHODS
		13.2%O <sub>2</sub>	7%O <sub>2</sub>	7%O <sub>2</sub>	
Total Suspended Particulate	mg/Ncu.m.	2.47	4.47	60	US. EPA Method 5

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO. 2-239-0-0021

Naisha Poowasanpetch

(Miss Naisha Poowasanpetch)

Technical Management Team

REG.NO. 2-239-0-0010

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3. \* At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. <sup>1/</sup> Notification of the Ministry of Industry, B.E.2549 and the Ministry of Natural Resources and Environment, B.E.2549.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd.	REF. NO.	: 224004_Cert-Stack/PM-10_Jun 24
	Branch 2 (BCC2)	SAMPLING DATE	: 04/06/2024
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 05-06/06/2024
RECEIVED DATE	: 05/06/2024	SAMPLE CONDITION	: Normal
REPORT DATE	: 12/06/2024	FUEL TYPE	: Natural Gas
SOURCE DESCRIPTION	: Combustion	STACK LOCATION	: HRSO 12
OPERATOR	: Mr. Song Hanghchwankun		

STACK DESCRIPTION					
Height	: 40.0	m	Gas Velocity	: 14.1	m/s
Diameter	: 3.30	m	Flow Rate*	: 5,335	Ncu.m/min
Temperature	: 79.3	°C	Excess Oxygen	: 13.2	%

PARAMETER	UNITS	RESULTS*		STANDARDS	REFERENCE METHODS
		13.2%O <sub>2</sub>	7%O <sub>2</sub>	7%O <sub>2</sub>	
Particulate matter less than 10 microns	mg/Ncu.m.	1.13	2.05	-	US. EPA Method 201A

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO. 2-239-0-0021

Naisha Poowasanpetch

(Miss Naisha Poowasanpetch)

Technical Management Team

REG.NO. 2-239-0-0010

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4. - Standard is not specified.



**The Monitoring Result of Emission Concentration**  
**HRSG 12**  
**BANGKOK COGENERATION CO., LTD., (Branch 2)**  
**June 4, 2024**

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	13.21	13.08	9.78	9.76	17.35
2	13.26	13.22	9.81	9.78	17.70
3	13.29	13.34	9.69	9.66	17.76
<b>Average</b>	<b>13.25</b>	<b>13.21</b>	<b>9.76</b>	<b>9.73</b>	<b>17.60</b>

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	13.21	13.08	0.20	0.17	0.30
2	13.26	13.22	0.52	0.49	0.89
3	13.29	13.34	0.34	0.30	0.55
<b>Average</b>	<b>13.25</b>	<b>13.21</b>	<b>0.35</b>	<b>0.32</b>	<b>0.58</b>

Run Number	Oxygen content (%)		Carbonmonoxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	13.21	13.08	1.52	1.48	2.63
2	13.26	13.22	1.58	1.55	2.81
3	13.29	13.34	1.37	1.34	2.46
<b>Average</b>	<b>13.25</b>	<b>13.21</b>	<b>1.49</b>	<b>1.46</b>	<b>2.63</b>

**BANGKOK COGENERATION CO., LTD., (Branch 2)**  
**EMISSION TEST RESULT**

Date: June 4, 2024  
 Start time: 10:40 AM  
 O<sub>2</sub> instrument Model: AMI 70  
 NO<sub>x</sub> instrument Model: TELEDYNE 200 EM  
 SO<sub>2</sub> instrument Model: API 100 AH  
 CO instrument Model: API 300 A  
 Fuel Type : Natural Gas

Run #: 1  
 Location : HRSG 12  
 Finish time : 11:00 AM  
 Serial No.: 161212-14  
 Serial No.: 435  
 Serial No.: 058  
 Serial No.: 1070  
 Test Operator : Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)	CO (ppm)
10:40 AM	13.16	9.60	0.14	1.61
10:41 AM	13.15	9.79	0.14	1.57
10:42 AM	13.19	9.78	0.08	1.52
10:43 AM	13.15	9.60	0.07	1.49
10:44 AM	13.15	9.83	0.02	1.48
10:45 AM	13.15	10.26	0.04	1.50
10:46 AM	13.22	10.38	0.05	1.50
10:47 AM	13.15	10.09	0.09	1.45
10:48 AM	13.18	9.91	0.10	1.43
10:49 AM	13.22	9.81	0.14	1.48
10:50 AM	13.25	9.67	0.16	1.51
10:51 AM	13.25	9.53	0.18	1.52
10:52 AM	13.25	9.42	0.20	1.50
10:53 AM	13.25	9.92	0.24	1.52
10:54 AM	13.21	10.50	0.26	1.52
10:55 AM	13.25	10.46	0.29	1.48
10:56 AM	13.25	9.73	0.30	1.51
10:57 AM	13.25	9.18	0.45	1.53
10:58 AM	13.25	9.19	0.44	1.51
10:59 AM	13.25	9.30	0.41	1.57
11:00 AM	13.25	9.38	0.43	1.65
<b>Average</b>	<b>13.21</b>	<b>9.78</b>	<b>0.20</b>	<b>1.52</b>

Signature 

( Miss Katesarin Vorradetwittaya )  
 Environmental Scientist

## BANGKOK COGENERATION CO., LTD., (Branch 2)

### EMISSION TEST RESULT

**Run # : 2**  
**Date:** June 4, 2024 **Location :** HRSG 12  
**Start time:** 11:01 AM **Finish time :** 11:21 AM  
**O<sub>2</sub> instrument Model:** AMI 70 **Serial No.:** 161212-14  
**NO<sub>x</sub> instrument Model:** TELEDYNE 200 EM **Serial No.:** 435  
**SO<sub>2</sub> instrument Model:** API 100 AH **Serial No.:** 058  
**CO instrument Model:** API 300 A **Serial No.:** 1070  
**Fuel Type :** Natural Gas **Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)	CO (ppm)
11:01 AM	13.25	9.43	0.44	1.69
11:02 AM	13.25	9.44	0.48	1.77
11:03 AM	13.25	9.67	0.50	1.82
11:04 AM	13.25	9.89	0.50	1.81
11:05 AM	13.25	9.82	0.51	1.76
11:06 AM	13.25	9.44	0.55	1.34
11:07 AM	13.25	9.23	0.55	1.41
11:08 AM	13.22	9.42	0.56	1.47
11:09 AM	13.24	9.67	0.54	1.64
11:10 AM	13.25	9.59	0.55	1.53
11:11 AM	13.25	9.37	0.54	1.47
11:12 AM	13.25	9.74	0.56	1.47
11:13 AM	13.25	10.01	0.56	1.63
11:14 AM	13.28	9.76	0.53	1.59
11:15 AM	13.31	9.80	0.53	1.55
11:16 AM	13.26	9.91	0.53	1.65
11:17 AM	13.26	10.25	0.49	1.20
11:18 AM	13.26	10.51	0.49	1.63
11:19 AM	13.26	10.52	0.47	1.51
11:20 AM	13.26	10.35	0.47	1.67
11:21 AM	13.26	10.26	0.47	1.65
Average	13.26	9.81	0.52	1.58

Signature   
 ( Miss Katesarin Vorradetwittaya )  
 Environmental Scientist

## BANGKOK COGENERATION CO., LTD., (Branch 2)

### EMISSION TEST RESULT

**Run # : 3**  
**Date:** June 4, 2024 **Location :** HRSG 12  
**Start time:** 11:22 AM **Finish time :** 11:42 AM  
**O<sub>2</sub> instrument Model:** AMI 70 **Serial No.:** 161212-14  
**NO<sub>x</sub> instrument Model:** TELEDYNE 200 EM **Serial No.:** 435  
**SO<sub>2</sub> instrument Model:** API 100 AH **Serial No.:** 058  
**CO instrument Model:** API 300 A **Serial No.:** 1070  
**Fuel Type :** Natural Gas **Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)	CO (ppm)
11:22 AM	13.27	10.21	0.47	1.73
11:23 AM	13.26	9.93	0.46	1.27
11:24 AM	13.26	9.91	0.44	1.52
11:25 AM	13.26	10.04	0.41	1.62
11:26 AM	13.26	10.05	0.40	1.25
11:27 AM	13.28	9.92	0.40	1.26
11:28 AM	13.26	9.78	0.40	1.38
11:29 AM	13.26	9.81	0.36	1.26
11:30 AM	13.26	9.73	0.35	1.45
11:31 AM	13.26	9.75	0.35	1.40
11:32 AM	13.26	9.95	0.35	1.10
11:33 AM	13.30	10.00	0.34	1.63
11:34 AM	13.34	9.77	0.33	1.40
11:35 AM	13.26	9.82	0.33	1.32
11:36 AM	13.26	10.10	0.28	1.17
11:37 AM	13.33	9.91	0.28	1.46
11:38 AM	13.36	9.10	0.27	1.32
11:39 AM	13.36	8.86	0.28	1.26
11:40 AM	13.36	8.66	0.23	1.40
11:41 AM	13.29	8.69	0.23	1.41
11:42 AM	13.26	9.53	0.23	1.13
Average	13.29	9.69	0.34	1.37

Signature   
 ( Miss Katesarin Vorradetwittaya )  
 Environmental Scientist

## ภาคผนวก ง.2

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ใบรับรองผลการตรวจวิเคราะห์  
คุณภาพอากาศในบรรยากาศทั่วไป

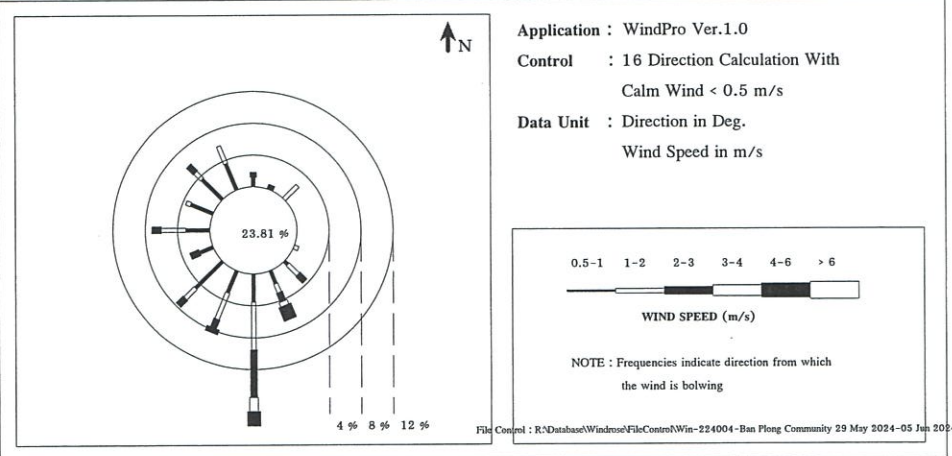




## Meteorological Monitoring Results : Wind Rose MTR-BCC2

Location : Ban Plong Community      Monitor period : 29 May 2024-05 Jun 2024  
Wind Speed Model : Novalynx WS-25      Serial No : A5092  
Wind Direction Model : Novalynx WS-25      Serial No : A5092

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	Total
N	0.0119	0.0000	0.0060	0.0000	0.0000	0.0000	0.0179
NNE	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000	0.0060
NE	0.0000	0.0238	0.0000	0.0000	0.0000	0.0000	0.0238
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
SE	0.0060	0.0179	0.0119	0.0000	0.0000	0.0000	0.0357
SSE	0.0179	0.0119	0.0119	0.0060	0.0179	0.0000	0.0655
S	0.0357	0.0595	0.0595	0.0179	0.0179	0.0000	0.1905
SSW	0.0298	0.0357	0.0119	0.0000	0.0060	0.0000	0.0833
SW	0.0476	0.0179	0.0119	0.0000	0.0000	0.0000	0.0774
WSW	0.0179	0.0000	0.0119	0.0000	0.0000	0.0000	0.0298
W	0.0298	0.0298	0.0119	0.0000	0.0000	0.0000	0.0714
WNW	0.0298	0.0060	0.0000	0.0000	0.0000	0.0000	0.0357
NW	0.0357	0.0119	0.0119	0.0000	0.0000	0.0000	0.0595
NNW	0.0357	0.0238	0.0000	0.0000	0.0000	0.0000	0.0595
CALM	0.2381						



(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

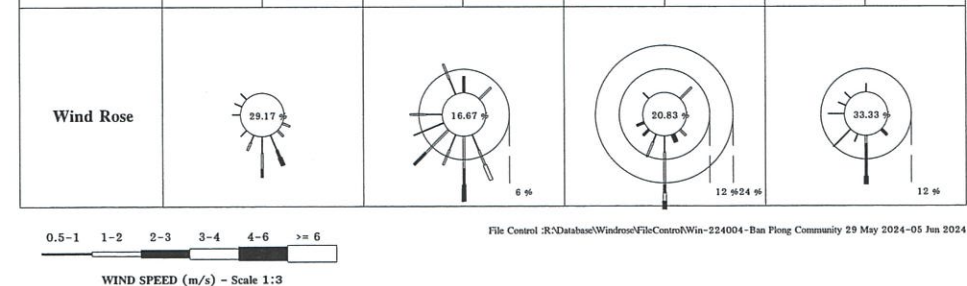
(Miss Preeda Somjai)  
Technical Management Team



## Meteorological Monitoring Results : Wind Rose MTR-BCC2

Location : Ban Plong Community      Monitor period : 29 May 2024-05 Jun 2024  
Wind Speed Model : Novalynx WS-25      Serial No : A5092  
Wind Direction Model : Novalynx WS-25      Serial No : A5092

Time	29-30 May 2024		30-31 May 2024		May 31-Jun 01 2024		01-02 Jun 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
14:00 - 15:00	1.2	SSW	2.2	SW	0.4	W	4.4	S
15:00 - 16:00	1.0	SE	1.9	SSE	2.0	WSW	0.4	W
16:00 - 17:00	0.6	SSE	1.1	S	0.6	SSW	2.8	SE
17:00 - 18:00	0.2	WNW	0.3	W	1.0	S	2.0	S
18:00 - 19:00	1.5	S	0.3	SE	0.1	NNW	2.7	S
19:00 - 20:00	0.2	WNW	1.1	NNW	0.5	NW	2.5	S
20:00 - 21:00	2.1	S	0.7	SSW	0.2	W	0.1	SE
21:00 - 22:00	0.6	S	0.6	WSW	0.3	NNW	2.4	S
22:00 - 23:00	0.3	SSW	2.0	N	1.8	NE	0.6	SSW
23:00 - 24:00	1.0	S	0.4	S	1.3	NE	0.6	SW
00:00 - 01:00	0.2	SSE	0.9	W	0.6	S	0.3	S
01:00 - 02:00	0.1	SSW	1.1	SW	1.3	SSW	0.4	W
02:00 - 03:00	0.5	WNW	1.3	S	0.3	W	0.9	WNW
03:00 - 04:00	0.2	WNW	0.9	NNW	1.1	SE	0.5	W
04:00 - 05:00	0.6	NW	0.4	SW	1.8	S	0.3	NNW
05:00 - 06:00	0.5	SSE	4.4	S	2.8	S	0.1	NNE
06:00 - 07:00	0.1	WNW	1.1	NE	1.4	S	1.8	S
07:00 - 08:00	0.5	SW	3.3	SSE	4.6	S	0.4	WSW
08:00 - 09:00	1.9	ESE	1.2	SW	4.5	SSE	0.6	W
09:00 - 10:00	0.8	S	1.6	SSW	3.0	S	0.5	SW
10:00 - 11:00	0.6	W	2.5	S	2.7	SW	0.7	NW
11:00 - 12:00	0.6	SSW	1.5	W	1.4	SSW	0.5	SW
12:00 - 13:00	4.6	SSE	0.7	SSE	1.4	S	0.5	N
13:00 - 14:00	2.2	SSE	0.5	WSW	0.8	S	0.3	SSW



(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



## Meteorological Monitoring Results : Wind Rose

### MTR-BCC2

Location : Ban Plong Community      Monitor period : 29 May 2024-05 Jun 2024  
Wind Speed Model : Novalynx WS-25      Serial No : A5092  
Wind Direction Model : Novalynx WS-25      Serial No : A5092

Time	02-03 Jun 2024		03-04 Jun 2024		04-05 Jun 2024		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
14:00 – 15:00	0.6	SW	0.4	S	2.1	SSW	
15:00 – 16:00	2.4	NW	1.5	SSW	1.6	W	
16:00 – 17:00	0.3	WNW	0.7	WNW	0.9	SE	
17:00 – 18:00	1.4	W	0.4	NNW	1.8	SSW	
18:00 – 19:00	0.4	SW	0.2	WNW	1.8	NE	
19:00 – 20:00	0.7	NW	1.3	SW	1.8	S	
20:00 – 21:00	1.7	W	1.9	NNW	2.1	SE	
21:00 – 22:00	1.6	NW	0.6	NNW	3.3	S	
22:00 – 23:00	0.5	NW	0.4	NNW	2.1	SSE	
23:00 – 24:00	0.4	WNW	0.4	NNW	3.9	S	
00:00 – 01:00	0.3	W	0.3	NNW	0.9	NNW	
01:00 – 02:00	0.6	NW	2.0	S	2.1	NNE	
02:00 – 03:00	0.7	S	1.9	W	1.7	WNW	
03:00 – 04:00	0.4	WSW	0.6	W	0.3	WNW	
04:00 – 05:00	1.0	SSE	0.6	WNW	1.0	NNW	
05:00 – 06:00	2.5	NW	2.5	S	0.5	WSW	
06:00 – 07:00	0.4	NW	0.4	SSW	0.6	WNW	
07:00 – 08:00	1.9	NNW	0.6	SW	1.2	SE	
08:00 – 09:00	2.4	W	0.6	S	0.5	SSW	
09:00 – 10:00	0.6	SW	2.2	W	1.1	NW	
10:00 – 11:00	0.5	NNW	0.7	N	0.2	SW	
11:00 – 12:00	0.3	NNW	0.6	NNW	4.8	SSW	
12:00 – 13:00	0.5	NNW	2.1	SSW	4.6	SSE	
13:00 – 14:00	2.6	S	0.6	SW	2.2	WSW	
Wind Rose							



WIND SPEED (m/s) - Scale 1:3

File Control :R:\Database\Windrose\FileControl\Win-224004-Ban Plong Community 29 May 2024-05 Jun 2024

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



บริษัท ซีคอต จำกัด

SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

### AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : Bangkok Cogeneration Co., Ltd.      REFERENCE NO. : 224004 Amb (Cert.)/TSP/May 2024  
(BCC2)      SAMPLING DATE : 29/05/2024-05/06/2024  
SAMPLING BY : SECOT Co., Ltd.      ANALYTICAL DATE : 10-13/06/2024  
RECEIVED DATE : 10/06/2024      SAMPLE CONDITION : Normal  
REPORT DATE : 17/06/2024      SITE OPERATOR : Mr. Siwanon Kulawong  
LOCATION DESCRIPTION : 1. Wat Map Chalute  
2. Wat Sophon Wanaram  
3. Ban Plong Community  
4. Wat Nong Feab

PARAMETER	SAMPLING DATE	UNITS	RESULTS				STANDARD*	REFERENCE METHODS
			1	2	3	4		
TSP (24 hr)	29-30/05/2024	mg/m <sup>3</sup>	0.053	0.022	0.038	0.022	0.330	High Volume Air
	30-31/05/2024	mg/m <sup>3</sup>	0.041	0.022	0.028	0.022		Sampler/Gravimetric
	31/05/2024-01/06/2024	mg/m <sup>3</sup>	0.033	0.033	0.025	0.021		Method
	01-02/06/2024	mg/m <sup>3</sup>	0.032	0.025	0.026	0.022		
	02-03/06/2024	mg/m <sup>3</sup>	0.036	0.026	0.033	0.017		
	03-04/06/2024	mg/m <sup>3</sup>	0.041	0.028	0.042	0.027		
	04-05/06/2024	mg/m <sup>3</sup>	0.048	0.028	0.040	0.021		

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. \* Notification of National Environment Board, No.24, B.E.2547 (2004).





บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd.	REFERENCE NO.	: 224004 Amb (Cert.)/PM-10/May 2024
	(BCC2)	SAMPLING DATE	: 29/05/2024-05/06/2024
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 10-13/06/2024
RECEIVED DATE	: 10/06/2024	SAMPLE CONDITION	: Normal
REPORT DATE	: 17/06/2024	SITE OPERATOR	: Mr. Siwanon Kulawong
LOCATION DESCRIPTION	1. Wat Map Chalute		
	2. Wat Sophon Wanaram		
	3. Ban Plong Community		
	4. Wat Nong Feab		

PARAMETER	SAMPLING DATE	UNITS	RESULTS				STANDARD*	REFERENCE METHODS
			1	2	3	4		
PM-10 (24 hr)	29-30/05/2024	mg/m <sup>3</sup>	0.030	0.016	0.023	0.016	0.120	High Volume Air Sampler
	30-31/05/2024	mg/m <sup>3</sup>	0.030	0.017	0.020	0.013		(Hi-Vol PM-10 Size
	31/05/2024-01/06/2024	mg/m <sup>3</sup>	0.026	0.025	0.022	0.014		Selective Inlet)/
	01-02/06/2024	mg/m <sup>3</sup>	0.026	0.017	0.019	0.015		Gravimetric Method
	02-03/06/2024	mg/m <sup>3</sup>	0.034	0.016	0.031	0.013		
	03-04/06/2024	mg/m <sup>3</sup>	0.039	0.018	0.035	0.019		
	04-05/06/2024	mg/m <sup>3</sup>	0.036	0.018	0.030	0.017		

Phatchara Samanchan  
(Miss Phatchara Samanchan)

Analyst

Narisa Poowasanpeth  
(Miss Narisa Poowasanpeth)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. \* Notification of National Environment Board, No.24, B.E.2547 (2004).

R:\Database\Ambient\FileControl\Amb-224004-Wat Map Chalute-SO2 29 May 2024-05 Jun 2024



Ambient Air Monitoring Results : Sulfur dioxide  
MTR-BCC2

Location	: Wat Map Chalute	Monitor Period	: 29 May 2024-05 Jun 2024
Analyzer Model	: Thermo 43C	Station No	: SS2-01
Serial No	: 0607415773	Site Operator	: Mr. Siwanon Kulawong

Calibrator Model	: Teledyne 700E	Serial No	: 587
Calibration Gas Cylinder I.D.:	EB0102326		
Certified Date	: 05 Jan 2024	Cal Concentration (ppb)	: 0,100,200,400
Expire Date	: 04 Jan 2025		

Time	SO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
13:00 - 14:00	0.0029	0.0051	0.0019	0.0144	0.0030	0.0046	0.0140
14:00 - 15:00	0.0023	0.0206	0.0021	0.0149	0.0121	0.0048	0.0161
15:00 - 16:00	0.0056	0.0047	0.0189	0.0050	0.0042	0.0043	0.0177
16:00 - 17:00	0.0045	0.0057	0.0082	0.0100	0.0223	0.0033	0.0127
17:00 - 18:00	0.0076	0.0047	0.0081	0.0038	0.0080	0.0016	0.0057
18:00 - 19:00	0.0037	0.0031	0.0022	0.0123	0.0030	0.0041	0.0034
19:00 - 20:00	0.0021	0.0031	0.0029	0.0178	0.0107	0.0153	0.0087
20:00 - 21:00	0.0027	0.0057	0.0050	0.0029	0.0019	0.0145	0.0038
21:00 - 22:00	0.0135	0.0067	0.0038	0.0039	0.0053	0.0089	0.0035
22:00 - 23:00	0.0106	0.0169	0.0023	0.0026	0.0075	0.0031	0.0056
23:00 - 00:00	0.0029	0.0054	0.0021	0.0049	0.0056	0.0054	0.0113
00:00 - 01:00	0.0029	0.0019	0.0024	0.0045	0.0026	0.0045	0.0048
01:00 - 02:00	0.0044	0.0168	0.0051	0.0037	0.0207	0.0095	0.0026
02:00 - 03:00	0.0025	0.0039	0.0090	0.0051	0.0223	0.0051	0.0043
03:00 - 04:00	0.0185	0.0032	0.0028	0.0053	0.0017	0.0035	0.0036
04:00 - 05:00	0.0258	0.0094	0.0051	0.0033	0.0128	0.0135	0.0014
05:00 - 06:00	0.0198	0.0172	0.0058	0.0019	0.0133	0.0200	0.0057
06:00 - 07:00	0.0026	0.0103	0.0040	0.0054	0.0158	0.0132	0.0037
07:00 - 08:00	0.0156	0.0046	0.0026	0.0065	0.0020	0.0068	0.0036
08:00 - 09:00	0.0037	0.0059	0.0187	0.0146	0.0018	0.0106	0.0037
09:00 - 10:00	0.0186	0.0026	0.0071	0.0050	0.0050	0.0018	0.0036
10:00 - 11:00	0.0019	0.0052	0.0054	0.0029	0.0035	0.0023	0.0036
11:00 - 12:00	0.0045	0.0022	0.0019	0.0070	0.0055	0.0030	0.0040
12:00 - 13:00	0.0050	0.0107	0.0082	0.0067	0.0048	0.0034	0.0037

Average-24Hr*	0.0077	0.0073	0.0057	0.0069	0.0081	0.0070	0.0063
Max-1Hr	0.0258	0.0206	0.0189	0.0178	0.0223	0.0200	0.0177
Min-1Hr	0.0019	0.0019	0.0019	0.0019	0.0017	0.0016	0.0014

Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : \* Average time between 13:00-13:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



## Ambient Air Monitoring Results : Sulfur dioxide

### MTR-BCC2

Location : Wat Sopon Wanaram Monitor Period : 29 May 2024-05 Jun 2024  
 Analyzer Model : API 100A Station No : SS2-21  
 Serial No : 1715 Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E Serial No : 587  
 Calibration Gas Cylinder I.D.: EB0102326  
 Certified Date : 05 Jan 2024 Cal Concentration (ppb) : 0,100,200,400  
 Expire Date : 04 Jan 2025

Time	SO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
14:00 - 15:00	0.0052	0.0119	0.0055	0.0048	0.0032	0.0161	0.0164
15:00 - 16:00	0.0035	0.0022	0.0139	0.0154	0.0098	0.0019	0.0098
16:00 - 17:00	0.0047	0.0019	0.0062	0.0132	0.0153	0.0012	0.0130
17:00 - 18:00	0.0087	0.0027	0.0095	0.0074	0.0048	0.0012	0.0021
18:00 - 19:00	0.0028	0.0051	0.0044	0.0022	0.0035	0.0022	0.0022
19:00 - 20:00	0.0050	0.0038	0.0028	0.0022	0.0090	0.0032	0.0030
20:00 - 21:00	0.0039	0.0039	0.0025	0.0085	0.0062	0.0010	0.0028
21:00 - 22:00	0.0191	0.0073	0.0023	0.0135	0.0020	0.0038	0.0138
22:00 - 23:00	0.0066	0.0108	0.0040	0.0141	0.0195	0.0020	0.0156
23:00 - 00:00	0.0034	0.0055	0.0026	0.0014	0.0029	0.0024	0.0150
00:00 - 01:00	0.0046	0.0043	0.0046	0.0059	0.0244	0.0046	0.0131
01:00 - 02:00	0.0025	0.0185	0.0041	0.0035	0.0090	0.0016	0.0055
02:00 - 03:00	0.0042	0.0038	0.0059	0.0190	0.0049	0.0034	0.0013
03:00 - 04:00	0.0154	0.0055	0.0046	0.0169	0.0167	0.0140	0.0078
04:00 - 05:00	0.0244	0.0106	0.0031	0.0042	0.0021	0.0145	0.0042
05:00 - 06:00	0.0162	0.0156	0.0027	0.0024	0.0035	0.0083	0.0047
06:00 - 07:00	0.0019	0.0104	0.0044	0.0042	0.0088	0.0041	0.0096
07:00 - 08:00	0.0175	0.0024	0.0029	0.0029	0.0038	0.0047	0.0111
08:00 - 09:00	0.0040	0.0078	0.0053	0.0050	0.0020	0.0011	0.0022
09:00 - 10:00	0.0182	0.0021	0.0103	0.0046	0.0209	0.0098	0.0022
10:00 - 11:00	0.0055	0.0036	0.0083	0.0031	0.0243	0.0047	0.0031
11:00 - 12:00	0.0023	0.0053	0.0133	0.0014	0.0036	0.0031	0.0022
12:00 - 13:00	0.0042	0.0066	0.0190	0.0012	0.0172	0.0134	0.0031
13:00 - 14:00	0.0038	0.0044	0.0052	0.0029	0.0140	0.0138	0.0071
Average-24Hr*	0.0078	0.0065	0.0061	0.0067	0.0096	0.0057	0.0071
Max-1Hr	0.0244	0.0185	0.0190	0.0190	0.0244	0.0161	0.0164
Min-1Hr	0.0019	0.0019	0.0023	0.0012	0.0020	0.0010	0.0013
Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : \* Average time between 14:00-14:00

(Miss Katesarin Vorradetwittaya)  
 Environmental Scientist

(Miss Preeda Somjai)  
 Technical Management Team



## Ambient Air Monitoring Results : Sulfur dioxide

### MTR-BCC2

Location : Ban Plong Community Monitor Period : 29 May 2024-05 Jun 2024  
 Analyzer Model : Thermo 43C Station No : Shelter 19  
 Serial No : 60771-328-2 Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E Serial No : 587  
 Calibration Gas Cylinder I.D.: EB0102326  
 Certified Date : 05 Jan 2024 Cal Concentration (ppb) : 0,100,200,400  
 Expire Date : 04 Jan 2025

Time	SO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
14:00 - 15:00	0.0059	0.0206	0.0038	0.0031	0.0032	0.0146	0.0124
15:00 - 16:00	0.0031	0.0059	0.0168	0.0178	0.0104	0.0045	0.0071
16:00 - 17:00	0.0047	0.0031	0.0094	0.0124	0.0122	0.0057	0.0124
17:00 - 18:00	0.0113	0.0045	0.0099	0.0066	0.0044	0.0023	0.0056
18:00 - 19:00	0.0061	0.0056	0.0062	0.0065	0.0035	0.0035	0.0061
19:00 - 20:00	0.0031	0.0058	0.0045	0.0033	0.0101	0.0048	0.0029
20:00 - 21:00	0.0069	0.0053	0.0055	0.0105	0.0095	0.0051	0.0022
21:00 - 22:00	0.0171	0.0090	0.0043	0.0168	0.0025	0.0056	0.0126
22:00 - 23:00	0.0082	0.0146	0.0060	0.0212	0.0205	0.0052	0.0128
23:00 - 00:00	0.0041	0.0150	0.0060	0.0050	0.0029	0.0024	0.0170
00:00 - 01:00	0.0045	0.0030	0.0038	0.0104	0.0258	0.0028	0.0202
01:00 - 02:00	0.0033	0.0210	0.0036	0.0050	0.0094	0.0032	0.0065
02:00 - 03:00	0.0040	0.0039	0.0083	0.0138	0.0054	0.0061	0.0036
03:00 - 04:00	0.0170	0.0045	0.0042	0.0184	0.0188	0.0152	0.0110
04:00 - 05:00	0.0227	0.0100	0.0041	0.0052	0.0057	0.0140	0.0053
05:00 - 06:00	0.0217	0.0203	0.0060	0.0026	0.0032	0.0067	0.0051
06:00 - 07:00	0.0038	0.0107	0.0051	0.0055	0.0105	0.0051	0.0091
07:00 - 08:00	0.0201	0.0062	0.0051	0.0047	0.0057	0.0025	0.0196
08:00 - 09:00	0.0049	0.0118	0.0064	0.0058	0.0060	0.0023	0.0027
09:00 - 10:00	0.0129	0.0053	0.0090	0.0027	0.0263	0.0088	0.0040
10:00 - 11:00	0.0036	0.0027	0.0071	0.0028	0.0245	0.0029	0.0030
11:00 - 12:00	0.0049	0.0044	0.0179	0.0037	0.0054	0.0049	0.0027
12:00 - 13:00	0.0042	0.0089	0.0194	0.0029	0.0172	0.0184	0.0028
13:00 - 14:00	0.0041	0.0040	0.0049	0.0042	0.0122	0.0154	0.0079
Average-24Hr*	0.0084	0.0082	0.0074	0.0080	0.0106	0.0068	0.0081
Max-1Hr	0.0227	0.0210	0.0194	0.0212	0.0263	0.0184	0.0202
Min-1Hr	0.0031	0.0027	0.0036	0.0026	0.0025	0.0023	0.0022
Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : \* Average time between 14:00-14:00

(Miss Katesarin Vorradetwittaya)  
 Environmental Scientist

(Miss Preeda Somjai)  
 Technical Management Team





## Ambient Air Monitoring Results : Sulfur dioxide MTR-BCC2

Location : Wat Nong Feab      Monitor Period : 29 May 2024-05 Jun 2024  
Analyzer Model : API 100A      Station No : SS2-20  
Serial No : 342      Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0102326  
Certified Date : 05 Jan 2024      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 04 Jan 2025

Time	SO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
12:00 - 13:00	0.0031	0.0047	0.0076	0.0126	0.0030	0.0202	0.0148
13:00 - 14:00	0.0049	0.0066	0.0064	0.0046	0.0037	0.0134	0.0139
14:00 - 15:00	0.0041	0.0169	0.0035	0.0054	0.0022	0.0189	0.0113
15:00 - 16:00	0.0060	0.0067	0.0141	0.0116	0.0075	0.0028	0.0094
16:00 - 17:00	0.0063	0.0046	0.0085	0.0160	0.0201	0.0022	0.0139
17:00 - 18:00	0.0104	0.0056	0.0073	0.0105	0.0035	0.0031	0.0044
18:00 - 19:00	0.0029	0.0044	0.0058	0.0050	0.0035	0.0041	0.0053
19:00 - 20:00	0.0035	0.0054	0.0057	0.0044	0.0086	0.0036	0.0042
20:00 - 21:00	0.0037	0.0056	0.0043	0.0069	0.0080	0.0028	0.0038
21:00 - 22:00	0.0166	0.0101	0.0032	0.0116	0.0040	0.0032	0.0173
22:00 - 23:00	0.0093	0.0178	0.0028	0.0204	0.0206	0.0051	0.0136
23:00 - 00:00	0.0035	0.0041	0.0024	0.0047	0.0058	0.0041	0.0126
00:00 - 01:00	0.0037	0.0046	0.0028	0.0101	0.0240	0.0031	0.0167
01:00 - 02:00	0.0054	0.0172	0.0028	0.0022	0.0095	0.0048	0.0102
02:00 - 03:00	0.0066	0.0061	0.0097	0.0192	0.0054	0.0039	0.0021
03:00 - 04:00	0.0175	0.0038	0.0037	0.0134	0.0132	0.0147	0.0080
04:00 - 05:00	0.0253	0.0095	0.0052	0.0037	0.0028	0.0156	0.0047
05:00 - 06:00	0.0138	0.0179	0.0038	0.0036	0.0051	0.0084	0.0027
06:00 - 07:00	0.0037	0.0112	0.0037	0.0023	0.0093	0.0014	0.0070
07:00 - 08:00	0.0162	0.0026	0.0040	0.0020	0.0025	0.0023	0.0181
08:00 - 09:00	0.0037	0.0093	0.0046	0.0045	0.0021	0.0039	0.0042
09:00 - 10:00	0.0208	0.0032	0.0067	0.0043	0.0208	0.0076	0.0038
10:00 - 11:00	0.0065	0.0041	0.0086	0.0055	0.0251	0.0054	0.0029
11:00 - 12:00	0.0048	0.0043	0.0188	0.0051	0.0046	0.0023	0.0035
Average-24Hr*	0.0084	0.0078	0.0061	0.0079	0.0090	0.0065	0.0087
Max-1Hr	0.0253	0.0179	0.0188	0.0204	0.0251	0.0202	0.0181
Min-1Hr	0.0029	0.0026	0.0024	0.0020	0.0021	0.0014	0.0021
Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : \* Average time between 12:00-12:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



## Ambient Air Monitoring Results : Nitrogen dioxide MTR-BCC2

Location : Wat Map Chalute      Monitor Period : 29 May 2024-05 Jun 2024  
Analyzer Model : API 200A      Station No : SS2-01  
Serial No : 1528      Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0102326  
Certified Date : 05 Jan 2024      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 04 Jan 2025

Time	NO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
13:00 - 14:00	0.0133	0.0104	0.0202	0.0138	0.0172	0.0124	0.0156
14:00 - 15:00	0.0148	0.0090	0.0162	0.0145	0.0159	0.0183	0.0113
15:00 - 16:00	0.0167	0.0081	0.0207	0.0191	0.0164	0.0180	0.0043
16:00 - 17:00	0.0219	0.0062	0.0248	0.0164	0.0185	0.0039	0.0104
17:00 - 18:00	0.0122	0.0064	0.0234	0.0040	0.0051	0.0038	0.0057
18:00 - 19:00	0.0196	0.0068	0.0134	0.0026	0.0147	0.0114	0.0125
19:00 - 20:00	0.0167	0.0073	0.0158	0.0070	0.0201	0.0092	0.0063
20:00 - 21:00	0.0101	0.0092	0.0095	0.0115	0.0071	0.0091	0.0040
21:00 - 22:00	0.0150	0.0054	0.0077	0.0067	0.0103	0.0106	0.0064
22:00 - 23:00	0.0197	0.0081	0.0051	0.0083	0.0104	0.0090	0.0087
23:00 - 00:00	0.0103	0.0025	0.0048	0.0067	0.0154	0.0129	0.0216
00:00 - 01:00	0.0135	0.0019	0.0110	0.0069	0.0104	0.0199	0.0189
01:00 - 02:00	0.0038	0.0047	0.0057	0.0113	0.0079	0.0098	0.0121
02:00 - 03:00	0.0115	0.0045	0.0044	0.0096	0.0085	0.0117	0.0128
03:00 - 04:00	0.0152	0.0045	0.0043	0.0090	0.0048	0.0119	0.0080
04:00 - 05:00	0.0111	0.0056	0.0053	0.0108	0.0042	0.0086	0.0119
05:00 - 06:00	0.0053	0.0050	0.0028	0.0107	0.0100	0.0112	0.0103
06:00 - 07:00	0.0186	0.0087	0.0085	0.0085	0.0119	0.0095	0.0110
07:00 - 08:00	0.0188	0.0193	0.0104	0.0115	0.0093	0.0122	0.0108
08:00 - 09:00	0.0076	0.0062	0.0143	0.0116	0.0122	0.0216	0.0104
09:00 - 10:00	0.0071	0.0071	0.0205	0.0079	0.0108	0.0096	0.0109
10:00 - 11:00	0.0088	0.0204	0.0171	0.0135	0.0072	0.0088	0.0107
11:00 - 12:00	0.0098	0.0097	0.0208	0.0180	0.0154	0.0134	0.0108
12:00 - 13:00	0.0076	0.0184	0.0147	0.0165	0.0196	0.0092	0.0107
Average-24Hr*	0.0129	0.0081	0.0126	0.0107	0.0118	0.0115	0.0107
Max-1Hr	0.0219	0.0204	0.0248	0.0191	0.0201	0.0216	0.0216
Min-1Hr	0.0038	0.0019	0.0028	0.0026	0.0042	0.0038	0.0040
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr	-						

Remark : \* Average time between 13:00-13:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team





## Ambient Air Monitoring Results : Nitrogen dioxide MTR-BCC2

Location : Wat Sophon Wanaram      Monitor Period : 29 May 2024-05 Jun 2024  
Analyzer Model : API 200A      Station No : SS2-21  
Serial No : 074      Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0102326  
Certified Date : 05 Jan 2024      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 04 Jan 2025

Time	NO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
14:00 - 15:00	0.0115	0.0038	0.0191	0.0043	0.0060	0.0110	0.0078
15:00 - 16:00	0.0155	0.0015	0.0171	0.0032	0.0085	0.0044	0.0118
16:00 - 17:00	0.0227	0.0070	0.0252	0.0191	0.0071	0.0075	0.0176
17:00 - 18:00	0.0135	0.0092	0.0219	0.0139	0.0064	0.0076	0.0087
18:00 - 19:00	0.0149	0.0084	0.0143	0.0126	0.0185	0.0088	0.0113
19:00 - 20:00	0.0134	0.0069	0.0107	0.0172	0.0162	0.0211	0.0131
20:00 - 21:00	0.0156	0.0093	0.0098	0.0200	0.0145	0.0145	0.0111
21:00 - 22:00	0.0185	0.0015	0.0060	0.0159	0.0191	0.0095	0.0107
22:00 - 23:00	0.0163	0.0098	0.0035	0.0147	0.0201	0.0191	0.0066
23:00 - 00:00	0.0101	0.0054	0.0041	0.0089	0.0139	0.0165	0.0056
00:00 - 01:00	0.0189	0.0032	0.0102	0.0064	0.0178	0.0028	0.0043
01:00 - 02:00	0.0038	0.0023	0.0045	0.0026	0.0051	0.0047	0.0036
02:00 - 03:00	0.0113	0.0020	0.0031	0.0056	0.0141	0.0089	0.0070
03:00 - 04:00	0.0181	0.0025	0.0034	0.0096	0.0077	0.0087	0.0050
04:00 - 05:00	0.0195	0.0035	0.0025	0.0091	0.0105	0.0118	0.0057
05:00 - 06:00	0.0036	0.0048	0.0034	0.0065	0.0105	0.0089	0.0065
06:00 - 07:00	0.0120	0.0019	0.0024	0.0094	0.0114	0.0077	0.0097
07:00 - 08:00	0.0092	0.0110	0.0083	0.0075	0.0107	0.0168	0.0176
08:00 - 09:00	0.0096	0.0073	0.0101	0.0109	0.0076	0.0144	0.0206
09:00 - 10:00	0.0064	0.0078	0.0088	0.0105	0.0112	0.0118	0.0116
10:00 - 11:00	0.0017	0.0105	0.0076	0.0069	0.0043	0.0079	0.0082
11:00 - 12:00	0.0057	0.0072	0.0096	0.0064	0.0044	0.0082	0.0078
12:00 - 13:00	0.0051	0.0127	0.0069	0.0111	0.0044	0.0048	0.0108
13:00 - 14:00	0.0052	0.0152	0.0109	0.0033	0.0092	0.0069	0.0114
Average-24Hr*	0.0118	0.0064	0.0093	0.0098	0.0108	0.0102	0.0098
Max-1Hr	0.0227	0.0152	0.0252	0.0200	0.0201	0.0211	0.0206
Min-1Hr	0.0017	0.0015	0.0024	0.0026	0.0043	0.0028	0.0036
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr	-						

Remark : \* Average time between 14:00-14:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



## Ambient Air Monitoring Results : Nitrogen dioxide MTR-BCC2

Location : Ban Plong Community      Monitor Period : 29 May 2024-05 Jun 2024  
Analyzer Model : API 200A      Station No : Shelter 19  
Serial No : 1505      Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0102326  
Certified Date : 05 Jan 2024      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 04 Jan 2025

Time	NO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
14:00 - 15:00	0.0175	0.0054	0.0201	0.0058	0.0042	0.0105	0.0107
15:00 - 16:00	0.0154	0.0059	0.0209	0.0053	0.0108	0.0039	0.0124
16:00 - 17:00	0.0231	0.0107	0.0223	0.0195	0.0079	0.0112	0.0206
17:00 - 18:00	0.0155	0.0078	0.0232	0.0185	0.0082	0.0091	0.0112
18:00 - 19:00	0.0209	0.0083	0.0194	0.0141	0.0222	0.0082	0.0110
19:00 - 20:00	0.0196	0.0073	0.0156	0.0154	0.0137	0.0194	0.0186
20:00 - 21:00	0.0134	0.0105	0.0078	0.0215	0.0172	0.0173	0.0122
21:00 - 22:00	0.0150	0.0030	0.0109	0.0169	0.0141	0.0129	0.0101
22:00 - 23:00	0.0176	0.0103	0.0055	0.0206	0.0187	0.0226	0.0044
23:00 - 00:00	0.0145	0.0050	0.0042	0.0078	0.0226	0.0137	0.0082
00:00 - 01:00	0.0179	0.0028	0.0075	0.0118	0.0141	0.0068	0.0047
01:00 - 02:00	0.0061	0.0042	0.0061	0.0071	0.0072	0.0077	0.0062
02:00 - 03:00	0.0156	0.0029	0.0060	0.0047	0.0135	0.0119	0.0070
03:00 - 04:00	0.0117	0.0035	0.0054	0.0103	0.0080	0.0120	0.0064
04:00 - 05:00	0.0154	0.0061	0.0038	0.0091	0.0113	0.0114	0.0061
05:00 - 06:00	0.0047	0.0027	0.0044	0.0109	0.0117	0.0123	0.0064
06:00 - 07:00	0.0193	0.0051	0.0032	0.0103	0.0112	0.0113	0.0095
07:00 - 08:00	0.0080	0.0193	0.0093	0.0116	0.0126	0.0197	0.0145
08:00 - 09:00	0.0076	0.0100	0.0089	0.0123	0.0080	0.0225	0.0230
09:00 - 10:00	0.0082	0.0095	0.0075	0.0101	0.0119	0.0088	0.0088
10:00 - 11:00	0.0040	0.0084	0.0108	0.0090	0.0045	0.0099	0.0116
11:00 - 12:00	0.0109	0.0076	0.0083	0.0090	0.0058	0.0114	0.0096
12:00 - 13:00	0.0052	0.0125	0.0110	0.0102	0.0073	0.0064	0.0112
13:00 - 14:00	0.0048	0.0156	0.0093	0.0047	0.0098	0.0112	0.0107
Average-24Hr*	0.0130	0.0077	0.0105	0.0115	0.0115	0.0122	0.0106
Max-1Hr	0.0231	0.0193	0.0232	0.0215	0.0226	0.0226	0.0230
Min-1Hr	0.0040	0.0027	0.0032	0.0047	0.0042	0.0039	0.0044
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr	-						

Remark : \* Average time between 14:00-14:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



## Ambient Air Monitoring Results : Nitrogen dioxide


### MTR-BCC2


Location : Wat Nong Feab      Monitor Period : 29 May 2024-05 Jun 2024  
 Analyzer Model : API 200A      Station No : SS2-20  
 Serial No : 2385      Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Teledyne 700E      Serial No : 587  
 Calibration Gas Cylinder I.D.: EB0102326  
 Certified Date : 05 Jan 2024      Cal Concentration (ppb) : 0,100,200,400  
 Expire Date : 04 Jan 2025

Time	NO2 Concentration (ppm)						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
12:00 - 13:00	0.0072	0.0046	0.0196	0.0085	0.0084	0.0065	0.0048
13:00 - 14:00	0.0089	0.0025	0.0186	0.0108	0.0026	0.0077	0.0075
14:00 - 15:00	0.0192	0.0030	0.0138	0.0054	0.0034	0.0072	0.0080
15:00 - 16:00	0.0118	0.0015	0.0206	0.0023	0.0080	0.0037	0.0090
16:00 - 17:00	0.0216	0.0065	0.0239	0.0209	0.0086	0.0095	0.0181
17:00 - 18:00	0.0101	0.0088	0.0245	0.0141	0.0082	0.0078	0.0105
18:00 - 19:00	0.0115	0.0063	0.0152	0.0145	0.0177	0.0102	0.0076
19:00 - 20:00	0.0185	0.0100	0.0139	0.0173	0.0203	0.0129	0.0221
20:00 - 21:00	0.0183	0.0058	0.0100	0.0175	0.0126	0.0154	0.0104
21:00 - 22:00	0.0143	0.0046	0.0093	0.0126	0.0153	0.0119	0.0089
22:00 - 23:00	0.0200	0.0080	0.0034	0.0136	0.0210	0.0212	0.0056
23:00 - 00:00	0.0190	0.0024	0.0060	0.0067	0.0124	0.0169	0.0039
00:00 - 01:00	0.0184	0.0039	0.0074	0.0071	0.0192	0.0040	0.0053
01:00 - 02:00	0.0041	0.0032	0.0031	0.0052	0.0037	0.0032	0.0037
02:00 - 03:00	0.0127	0.0024	0.0026	0.0033	0.0122	0.0110	0.0053
03:00 - 04:00	0.0147	0.0042	0.0041	0.0073	0.0077	0.0099	0.0059
04:00 - 05:00	0.0108	0.0030	0.0046	0.0095	0.0071	0.0120	0.0039
05:00 - 06:00	0.0034	0.0041	0.0031	0.0111	0.0090	0.0094	0.0059
06:00 - 07:00	0.0199	0.0034	0.0030	0.0089	0.0076	0.0120	0.0115
07:00 - 08:00	0.0070	0.0199	0.0068	0.0084	0.0077	0.0195	0.0209
08:00 - 09:00	0.0099	0.0100	0.0100	0.0105	0.0110	0.0157	0.0211
09:00 - 10:00	0.0073	0.0072	0.0081	0.0067	0.0083	0.0085	0.0122
10:00 - 11:00	0.0052	0.0105	0.0106	0.0081	0.0066	0.0122	0.0127
11:00 - 12:00	0.0098	0.0098	0.0063	0.0088	0.0053	0.0086	0.0123
Average-24Hr*	0.0127	0.0061	0.0104	0.0100	0.0102	0.0107	0.0099
Max-1Hr	0.0216	0.0199	0.0245	0.0209	0.0210	0.0212	0.0221
Min-1Hr	0.0034	0.0015	0.0026	0.0023	0.0026	0.0032	0.0037
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr	-						

Remark : \* Average time between 12:00-12:00

  
 (Miss Katesarin Vorradetwittaya)  
 Environmental Scientist

  
 (Miss Preeda Somjai)  
 Technical Management Team

### ภาคผนวก ง.3

## ใบรับรองผลการตรวจวัดระดับเสียงในบรรยากาศทั่วไป





## Noise Monitoring Result : Community Noise

### MTR-BCC2

Location : Wat Map Chalute      Monitor Period : 29 May 2024-05 Jun 2024  
SLM Model : Cirrus CR161B      Serial No : G301329  
Site Operator : Mr. Phuwadach Kaewjirakulsri

Calibrator Model : Cirrus CR:515      Serial No : 97097  
Calibration Ref dB(A) : 94.0      Certified Date : 04 Sep 2023  
SLM Reading / Adjust dB(A) : 94.0/-0.3      Expire Date : 03 Sep 2024  
Cal Sheet No.: CR-515-2024-155

Time	Equivalent Sound Pressure Level (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
15:00 - 16:00	48.9	51.3	52.2	52.2	52.0	51.8	52.8
16:00 - 17:00	48.5	50.8	53.0	51.7	51.4	53.6	51.6
17:00 - 18:00	45.6	49.6	55.0	52.8	51.8	55.6	53.9
18:00 - 19:00	45.4	49.2	50.1	52.7	52.3	50.5	53.0
19:00 - 20:00	47.1	49.3	50.6	51.6	50.8	51.2	54.5
20:00 - 21:00	42.8	52.3	47.7	50.3	50.7	49.9	50.9
21:00 - 22:00	41.8	54.2	52.0	50.3	53.8	49.0	49.6
22:00 - 23:00	44.4	55.3	54.4	50.6	50.6	48.5	46.9
23:00 - 00:00	42.5	55.0	63.5	50.8	49.5	46.9	54.1
00:00 - 01:00	43.3	54.1	57.1	51.0	49.5	48.7	51.8
01:00 - 02:00	49.8	54.5	58.1	51.0	52.1	45.0	47.1
02:00 - 03:00	45.4	54.9	59.2	49.8	56.1	48.5	47.4
03:00 - 04:00	52.1	55.4	60.7	54.3	50.7	48.1	49.3
04:00 - 05:00	47.7	53.3	60.0	54.7	55.3	55.4	55.9
05:00 - 06:00	47.3	52.7	57.7	55.7	55.9	54.1	53.5
06:00 - 07:00	50.3	54.0	59.2	51.0	52.8	54.6	56.4
07:00 - 08:00	48.9	53.0	55.6	50.5	51.5	51.5	51.7
08:00 - 09:00	48.5	51.4	54.3	50.0	52.1	53.2	50.2
09:00 - 10:00	46.6	51.1	54.3	53.9	51.5	51.5	53.8
10:00 - 11:00	48.0	50.5	57.5	52.9	54.3	51.3	51.4
11:00 - 12:00	48.3	54.0	51.6	51.5	55.5	54.8	54.5
12:00 - 13:00	51.2	56.0	52.3	50.3	50.4	52.8	51.7
13:00 - 14:00	50.8	55.6	53.1	50.2	51.7	50.8	55.6
14:00 - 15:00	50.1	52.9	51.8	50.4	53.0	51.9	55.9

Leq(24)*	48.1	53.4	56.7	52.0	52.7	52.0	53.0
Ldn	54.5	60.6	65.5	58.9	59.5	58.0	59.2
Lmax **	82.7	70.3	87.0	77.6	82.0	82.2	77.0

Standard-24Hr      70 dB(A)  
Standard-Max      115 dB(A)

Remark : \* Average time between 15:00-15:00

\*\* Maximum Sound Pressure Level between 15:00-15:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-BCC2

Location : Wat Map Chalute      Monitor Period : 29 May 2024-05 Jun 2024  
SLM Model : Cirrus CR161B      Serial No : G301329  
Site Operator : Mr. Phuwadach Kaewjirakulsri

Calibrator Model : Cirrus CR:515      Serial No : 97097  
Calibration Ref dB(A) : 94.0      Certified Date : 04 Sep 2023  
SLM Reading / Adjust dB(A) : 94.0/-0.3      Expire Date : 03 Sep 2024  
Cal Sheet No.: CR-515-2024-155

Time	L90 (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
15:00 - 16:00	42.3	47.6	47.6	46.3	45.4	45.8	45.0
16:00 - 17:00	42.8	47.5	48.1	46.8	44.6	47.7	44.8
17:00 - 18:00	41.6	46.7	49.9	48.7	46.7	50.1	46.4
18:00 - 19:00	41.8	46.2	46.7	49.8	48.4	46.1	47.1
19:00 - 20:00	40.8	47.1	47.7	49.0	48.1	45.0	45.9
20:00 - 21:00	40.5	49.0	44.7	48.9	48.2	44.5	46.6
21:00 - 22:00	40.3	51.2	47.1	48.6	48.8	45.5	45.5
22:00 - 23:00	41.9	52.9	53.5	49.0	48.7	46.2	44.5
23:00 - 00:00	41.0	53.2	55.6	48.5	47.7	45.1	45.1
00:00 - 01:00	41.4	52.8	55.8	48.0	47.4	44.6	45.4
01:00 - 02:00	41.3	53.0	57.3	47.2	46.6	42.6	44.8
02:00 - 03:00	42.1	53.3	56.6	46.9	46.8	43.0	43.2
03:00 - 04:00	41.9	51.5	59.4	46.2	45.7	42.9	42.3
04:00 - 05:00	42.8	50.3	56.3	50.3	49.1	45.4	43.9
05:00 - 06:00	43.7	49.2	53.3	49.1	49.1	45.0	47.4
06:00 - 07:00	43.9	50.5	51.8	46.0	47.6	45.1	46.7
07:00 - 08:00	44.8	49.4	50.8	45.7	45.9	43.7	44.3
08:00 - 09:00	44.0	48.0	48.8	45.9	46.4	44.2	45.1
09:00 - 10:00	43.5	47.7	48.0	45.8	46.8	42.3	46.0
10:00 - 11:00	43.6	47.3	47.3	45.1	46.6	42.3	46.6
11:00 - 12:00	43.7	48.2	47.1	46.3	46.2	44.1	47.3
12:00 - 13:00	46.2	51.0	47.0	45.4	45.8	43.2	46.8
13:00 - 14:00	47.7	48.6	46.3	44.3	46.5	43.5	48.9
14:00 - 15:00	47.1	46.1	46.1	44.5	47.0	44.6	51.0

L90(avg)*	43.4	50.1	52.8	47.5	47.3	45.1	46.3
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Remark : \* Average time between 15:00-15:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Community Noise

### MTR-BCC2

Location : North of Fence				Monitor Period : 29 May 2024-05 Jun 2024			
SLM Model : Cirrus CR161B				Serial No : G302635			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.8/-0.1				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-155							
Time	Equivalent Sound Pressure Level (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
11:00 - 12:00	66.7	64.4	64.9	65.4	65.1	65.3	65.2
12:00 - 13:00	64.7	64.3	64.7	65.3	64.9	65.3	65.0
13:00 - 14:00	64.4	64.3	64.6	65.2	64.9	65.1	65.1
14:00 - 15:00	64.5	64.3	64.8	65.0	65.3	65.2	65.0
15:00 - 16:00	64.8	64.3	65.0	65.1	65.3	65.2	65.3
16:00 - 17:00	64.8	64.6	65.3	65.4	65.8	65.3	65.6
17:00 - 18:00	64.9	64.8	65.4	65.4	65.7	65.7	65.5
18:00 - 19:00	65.0	64.8	65.4	65.4	65.8	65.7	65.6
19:00 - 20:00	65.1	64.9	65.5	65.5	66.5	65.8	65.7
20:00 - 21:00	65.2	64.8	65.6	65.5	66.2	65.8	65.7
21:00 - 22:00	65.1	64.7	65.7	65.6	66.0	65.9	65.6
22:00 - 23:00	65.1	64.8	65.8	65.5	66.3	65.9	65.7
23:00 - 00:00	65.0	65.0	66.4	65.5	66.2	65.9	65.7
00:00 - 01:00	65.0	65.0	67.6	65.8	66.1	65.8	65.9
01:00 - 02:00	65.0	64.9	66.9	65.7	66.2	66.0	66.0
02:00 - 03:00	65.0	64.9	66.3	65.6	66.1	66.0	66.3
03:00 - 04:00	65.1	65.0	66.2	65.6	66.0	66.3	66.4
04:00 - 05:00	65.1	65.0	66.3	65.7	66.0	66.2	66.3
05:00 - 06:00	65.3	65.0	66.1	66.1	66.0	66.2	66.2
06:00 - 07:00	65.1	65.1	66.2	66.0	66.1	65.9	66.5
07:00 - 08:00	65.3	65.0	65.8	65.6	66.1	65.8	66.4
08:00 - 09:00	65.0	65.1	65.7	65.3	65.9	65.7	66.1
09:00 - 10:00	65.0	65.2	65.4	65.3	65.5	65.7	66.0
10:00 - 11:00	64.6	65.1	65.4	65.1	65.3	66.1	66.2
Leq(24)*	65.1	64.8	65.8	65.5	65.8	65.8	65.8
Ldn	71.5	71.3	72.7	72.1	72.5	72.4	72.5
Lmax **	86.9	78.4	76.0	77.2	80.1	72.7	79.6
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : \* Average time between 11:00-11:00

\*\* Maximum Sound Pressure Level between 11:00-11:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-BCC2

Location : North of Fence				Monitor Period : 29 May 2024-05 Jun 2024			
SLM Model : Cirrus CR161B				Serial No : G302635			
Site Operator : Mr. Phuwaredech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.8/-0.1				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-155							
Time	L90 (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
11:00 - 12:00	64.4	63.9	64.4	64.9	64.6	64.6	64.5
12:00 - 13:00	64.2	63.8	64.2	64.8	64.4	64.5	64.3
13:00 - 14:00	63.9	63.8	64.2	64.7	64.5	64.3	64.2
14:00 - 15:00	63.9	63.7	64.3	64.4	64.6	64.4	64.2
15:00 - 16:00	64.3	63.9	64.5	64.7	64.4	64.4	64.3
16:00 - 17:00	64.3	64.1	64.8	64.8	64.9	64.5	64.5
17:00 - 18:00	64.4	64.3	64.9	65.0	64.8	64.8	64.6
18:00 - 19:00	64.5	64.5	65.1	65.0	65.0	64.9	64.8
19:00 - 20:00	64.7	64.5	65.1	65.0	65.3	64.9	64.9
20:00 - 21:00	64.8	64.4	65.2	65.1	65.2	65.1	64.9
21:00 - 22:00	64.7	64.3	65.3	65.2	65.3	65.1	64.8
22:00 - 23:00	64.7	64.4	65.4	65.1	65.5	65.1	64.8
23:00 - 00:00	64.6	64.6	65.8	65.0	65.3	65.2	64.8
00:00 - 01:00	64.6	64.6	66.4	65.5	65.2	65.0	64.9
01:00 - 02:00	64.6	64.5	66.2	65.4	65.3	65.0	65.2
02:00 - 03:00	64.7	64.6	65.9	65.2	65.2	65.1	65.6
03:00 - 04:00	64.7	64.6	65.8	65.3	65.2	65.1	65.5
04:00 - 05:00	64.7	64.6	65.9	65.4	65.3	65.2	65.3
05:00 - 06:00	64.8	64.5	65.4	65.7	65.2	65.2	65.1
06:00 - 07:00	64.7	64.6	65.7	65.5	65.2	65.1	65.3
07:00 - 08:00	64.4	64.5	65.3	65.1	65.1	64.9	65.4
08:00 - 09:00	64.4	64.6	65.1	64.8	64.9	64.7	65.0
09:00 - 10:00	64.3	64.8	64.6	64.8	64.7	65.0	64.7
10:00 - 11:00	64.0	64.7	65.0	64.7	64.6	64.8	65.1
L90(avg)*	64.5	64.4	65.2	65.1	65.0	64.9	64.9

Remark : \* Average time between 11:00-11:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team





## Noise Monitoring Result : Community Noise

### MTR-BCC2

Location : South of Fence	Monitor Period : 29 May 2024-05 Jun 2024
SLM Model : Cirrus CR161B	Serial No : G302356
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 92.9/0.8	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-155	


Time	Equivalent Sound Pressure Level (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
09:00 - 10:00	55.7	53.5	54.5	55.1	53.7	54.5	58.1
10:00 - 11:00	56.0	52.9	54.3	53.3	52.9	54.8	55.8
11:00 - 12:00	54.9	52.8	54.5	53.6	54.0	55.1	55.5
12:00 - 13:00	55.0	53.1	54.1	53.4	52.4	54.7	54.8
13:00 - 14:00	55.9	55.8	55.2	53.2	51.9	55.8	54.9
14:00 - 15:00	55.7	55.3	54.3	54.2	52.2	55.2	54.6
15:00 - 16:00	55.9	53.5	55.3	53.2	53.8	53.5	55.0
16:00 - 17:00	56.2	54.3	55.7	53.5	53.7	54.8	60.4
17:00 - 18:00	56.7	54.4	54.9	53.0	52.7	55.3	61.2
18:00 - 19:00	56.3	56.3	54.3	54.6	54.4	55.1	60.6
19:00 - 20:00	55.0	55.2	55.4	53.7	54.6	54.9	56.7
20:00 - 21:00	53.4	55.3	54.9	54.8	53.9	54.5	55.9
21:00 - 22:00	53.5	54.9	55.2	54.9	53.7	53.7	55.2
22:00 - 23:00	53.9	54.3	56.2	54.6	55.6	54.5	57.3
23:00 - 00:00	53.8	53.8	57.6	54.3	54.2	53.4	54.0
00:00 - 01:00	53.0	53.1	62.8	54.3	52.9	52.7	54.7
01:00 - 02:00	52.0	52.9	59.5	54.2	54.3	53.0	54.6
02:00 - 03:00	52.8	53.5	59.3	55.1	53.4	52.1	53.3
03:00 - 04:00	52.0	52.4	59.0	55.9	52.8	53.2	52.7
04:00 - 05:00	52.3	52.5	59.6	55.5	54.1	53.1	52.6
05:00 - 06:00	52.6	54.3	58.5	55.6	53.9	53.0	54.6
06:00 - 07:00	52.1	51.7	54.3	53.5	52.2	52.1	52.6
07:00 - 08:00	52.4	52.6	53.9	51.9	53.0	53.5	53.1
08:00 - 09:00	52.6	54.4	54.4	54.2	54.9	55.7	54.0


Leq(24)*	54.4	54.0	56.9	54.2	53.6	54.2	56.3
Ldn	59.6	59.8	65.1	61.1	60.2	59.8	61.3
Lmax **	74.0	70.9	72.8	81.2	78.1	67.9	74.6

Standard-24Hr	70 dB(A)
Standard-Max	115 dB(A)

Remark : \* Average time between 09:00-09:00

\*\* Maximum Sound Pressure Level between 09:00-09:00

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-BCC2


Location : South of Fence	Monitor Period : 29 May 2024-05 Jun 2024
SLM Model : Cirrus CR161B	Serial No : G302356
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 92.9/0.8	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-155	

Time	L90 (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
09:00 - 10:00	54.7	52.8	53.4	53.1	52.7	53.8	54.5
10:00 - 11:00	54.5	52.0	53.6	52.5	52.0	54.3	55.1
11:00 - 12:00	54.3	52.0	53.8	52.9	52.5	54.2	54.1
12:00 - 13:00	54.3	52.1	53.5	52.6	51.2	54.0	54.1
13:00 - 14:00	55.0	51.9	54.6	52.6	51.2	55.3	53.8
14:00 - 15:00	55.1	53.8	53.6	52.5	51.5	53.3	53.0
15:00 - 16:00	55.4	52.6	53.9	52.4	52.7	52.6	53.1
16:00 - 17:00	55.4	53.2	54.2	52.6	52.6	53.4	55.8
17:00 - 18:00	55.5	52.5	52.4	52.3	52.2	53.9	60.1
18:00 - 19:00	54.5	53.0	51.8	53.3	51.5	52.6	60.0
19:00 - 20:00	53.3	51.8	52.2	53.2	53.4	53.8	55.5
20:00 - 21:00	52.8	52.5	53.8	53.6	52.6	53.4	54.9
21:00 - 22:00	52.7	51.7	54.2	54.3	52.2	52.8	54.2
22:00 - 23:00	53.0	52.2	55.2	54.2	55.3	54.1	54.2
23:00 - 00:00	53.0	52.7	56.9	53.7	51.7	52.6	53.4
00:00 - 01:00	51.7	52.4	57.3	53.4	51.8	51.6	52.9
01:00 - 02:00	51.4	51.9	57.8	53.7	54.0	52.3	54.0
02:00 - 03:00	51.3	52.2	58.3	54.5	52.7	51.4	52.9
03:00 - 04:00	51.0	52.7	58.2	55.3	52.1	51.4	52.3
04:00 - 05:00	51.0	51.8	58.9	55.1	53.7	51.8	51.9
05:00 - 06:00	51.2	52.4	55.6	54.1	51.9	51.9	53.2
06:00 - 07:00	50.9	51.1	53.4	52.5	51.7	51.6	51.9
07:00 - 08:00	51.4	51.2	52.9	51.2	51.7	52.7	52.1
08:00 - 09:00	51.2	53.1	53.5	52.1	54.5	51.8	53.2

L90(avg)*	53.4	52.3	55.2	53.3	52.6	53.1	54.8
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Remark : \* Average time between 09:00-09:00

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Community Noise

### MTR-BCC2

Location : East of Fence Monitor Period : 29 May 2024-05 Jun 2024  
 SLM Model : Cirrus CR161B Serial No : G301339  
 Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515 Serial No : 97097  
 Calibration Ref dB(A) : 94.0 Certified Date : 04 Sep 2023  
 SLM Reading / Adjust dB(A) : 92.0/1.7 Expire Date : 03 Sep 2024  
 Cal Sheet No.: CR-515-2024-155

Time	Equivalent Sound Pressure Level (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
10:00 - 11:00	58.5	55.9	57.2	57.5	57.0	57.2	58.0
11:00 - 12:00	56.2	54.8	56.7	56.7	55.4	57.3	56.8
12:00 - 13:00	55.8	55.4	54.7	55.7	58.4	64.1	58.4
13:00 - 14:00	55.9	55.3	55.5	55.2	55.0	57.0	56.4
14:00 - 15:00	56.5	56.5	55.1	56.2	55.3	56.7	56.4
15:00 - 16:00	56.6	55.7	55.6	57.6	57.3	59.7	62.3
16:00 - 17:00	56.5	55.5	55.8	55.8	55.5	55.2	57.0
17:00 - 18:00	56.4	55.9	56.0	56.1	55.6	55.8	57.1
18:00 - 19:00	56.9	56.4	56.9	59.3	61.5	57.1	59.8
19:00 - 20:00	56.4	55.8	57.0	56.6	56.2	56.6	57.2
20:00 - 21:00	56.3	55.9	57.0	56.4	56.2	56.4	57.0
21:00 - 22:00	55.8	55.3	57.0	56.1	57.0	57.8	56.8
22:00 - 23:00	55.6	55.4	58.0	56.1	56.6	56.9	56.7
23:00 - 00:00	56.1	56.6	59.7	56.3	56.0	58.9	56.3
00:00 - 01:00	55.5	55.4	64.2	55.9	55.5	55.8	56.4
01:00 - 02:00	55.6	55.6	59.7	55.8	55.4	56.6	56.2
02:00 - 03:00	55.1	55.6	58.6	55.8	55.6	56.0	56.7
03:00 - 04:00	55.2	55.9	58.6	56.3	55.7	55.1	56.1
04:00 - 05:00	55.0	55.8	58.2	57.5	55.5	55.3	56.1
05:00 - 06:00	56.0	57.9	58.3	58.8	55.8	56.6	57.4
06:00 - 07:00	56.6	56.5	58.3	58.5	57.4	57.8	57.4
07:00 - 08:00	56.0	56.5	57.7	56.7	57.8	57.3	57.7
08:00 - 09:00	55.9	56.4	57.5	56.0	56.7	56.9	57.5
09:00 - 10:00	55.9	56.6	57.6	60.7	55.8	58.7	65.1
Leq(24)*	56.2	56.0	58.1	57.0	56.7	57.7	58.3
Ldn	62.2	62.5	65.9	63.4	62.6	63.4	63.5
Lmax **	70.9	66.9	76.7	93.2	92.6	97.9	95.4
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : \* Average time between 10:00-10:00

\*\* Maximum Sound Pressure Level between 10:00-10:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-BCC2

Location : East of Fence Monitor Period : 29 May 2024-05 Jun 2024  
 SLM Model : Cirrus CR161B Serial No : G301339  
 Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515 Serial No : 97097  
 Calibration Ref dB(A) : 94.0 Certified Date : 04 Sep 2023  
 SLM Reading / Adjust dB(A) : 92.0/1.7 Expire Date : 03 Sep 2024  
 Cal Sheet No.: CR-515-2024-155

Time	L90 (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
10:00 - 11:00	56.7	54.6	55.7	55.5	54.7	54.6	56.3
11:00 - 12:00	55.1	53.5	55.4	55.9	54.6	56.5	55.7
12:00 - 13:00	54.8	54.0	53.3	54.2	53.2	55.4	54.5
13:00 - 14:00	54.9	54.1	53.8	54.2	53.8	55.9	54.6
14:00 - 15:00	55.2	54.2	54.0	54.3	54.5	55.7	54.9
15:00 - 16:00	55.7	54.2	54.4	54.9	53.8	54.2	55.3
16:00 - 17:00	55.6	54.4	54.8	55.0	54.6	54.1	55.7
17:00 - 18:00	55.4	54.8	54.9	55.1	54.7	54.8	56.0
18:00 - 19:00	55.6	55.1	55.5	55.6	55.4	55.4	56.3
19:00 - 20:00	55.6	54.8	55.7	55.6	55.5	55.9	56.0
20:00 - 21:00	55.5	54.7	56.2	55.4	55.0	55.8	56.1
21:00 - 22:00	54.7	54.1	56.2	55.4	56.2	55.9	55.5
22:00 - 23:00	54.6	54.2	57.3	55.3	55.8	56.4	55.6
23:00 - 00:00	54.7	55.8	58.8	55.5	55.1	56.0	55.2
00:00 - 01:00	54.5	54.5	60.0	55.1	54.4	55.1	55.3
01:00 - 02:00	54.8	54.2	58.3	54.7	54.5	55.1	55.4
02:00 - 03:00	54.3	54.8	57.9	55.0	54.6	55.0	56.1
03:00 - 04:00	54.3	54.0	57.9	55.4	54.8	54.3	55.5
04:00 - 05:00	54.1	54.8	57.5	56.7	54.6	54.6	55.4
05:00 - 06:00	54.4	54.9	57.3	57.7	54.4	55.2	55.5
06:00 - 07:00	55.7	55.8	57.5	57.6	56.4	56.8	56.7
07:00 - 08:00	55.2	55.8	56.9	55.8	56.2	56.3	57.0
08:00 - 09:00	55.0	55.4	56.5	55.0	55.8	56.2	56.5
09:00 - 10:00	54.8	54.8	55.9	54.9	54.9	57.1	56.7
L90(avg)*	55.1	54.7	56.6	55.5	55.0	55.6	55.8

Remark : \* Average time between 10:00-10:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team





## Noise Monitoring Result : Community Noise

### MTR-BCC2

Location : West of Fence Monitor Period : 29 May 2024-05 Jun 2024  
SLM Model : Cirrus CR161B Serial No : G302648  
Site Operator : Mr. Phuwarech Kaewjirakulsri

Calibrator Model : Cirrus CR:515 Serial No : 97097  
Calibration Ref dB(A) : 94.0 Certified Date : 04 Sep 2023  
SLM Reading / Adjust dB(A) : 93.6/0.1 Expire Date : 03 Sep 2024  
Cal Sheet No.: CR-515-2024-155

Time	Equivalent Sound Pressure Level (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
10:00 - 11:00	62.5	62.3	62.1	62.6	63.5	68.7	63.2
11:00 - 12:00	62.5	62.0	61.8	62.6	62.6	65.3	62.3
12:00 - 13:00	62.1	61.8	61.5	62.2	62.3	62.3	61.9
13:00 - 14:00	62.1	61.7	61.4	62.1	62.4	68.5	62.1
14:00 - 15:00	62.1	61.8	61.6	62.3	62.5	66.6	61.5
15:00 - 16:00	62.4	61.9	61.8	62.4	62.2	66.1	61.7
16:00 - 17:00	62.2	62.2	62.0	62.2	62.6	67.6	61.9
17:00 - 18:00	62.3	62.3	62.1	62.4	62.4	64.0	62.7
18:00 - 19:00	62.8	62.4	62.6	62.2	62.6	62.6	62.5
19:00 - 20:00	62.6	62.3	63.8	62.3	62.5	62.6	62.8
20:00 - 21:00	62.5	62.3	64.6	62.5	62.5	62.7	62.4
21:00 - 22:00	62.3	62.0	69.3	62.3	62.6	62.8	62.5
22:00 - 23:00	62.4	62.2	71.5	62.3	62.9	63.0	62.5
23:00 - 00:00	63.4	62.5	71.8	62.4	62.8	62.7	62.4
00:00 - 01:00	64.0	62.2	72.9	62.4	62.5	62.4	62.8
01:00 - 02:00	63.9	62.1	72.9	62.4	62.6	62.7	62.6
02:00 - 03:00	63.1	62.1	73.1	62.3	62.5	62.5	63.1
03:00 - 04:00	62.4	62.1	68.9	62.2	62.5	62.4	62.8
04:00 - 05:00	62.4	62.3	72.0	62.4	62.5	62.5	62.6
05:00 - 06:00	62.5	62.2	70.4	62.4	62.5	62.8	62.6
06:00 - 07:00	62.7	62.1	63.9	62.3	62.6	62.8	62.5
07:00 - 08:00	62.3	62.3	63.3	62.2	62.5	62.7	62.7
08:00 - 09:00	62.3	62.3	62.9	62.1	63.8	64.5	62.7
09:00 - 10:00	62.3	62.1	62.7	62.5	68.4	64.7	62.8

Leq(24)*	62.6	62.2	68.2	62.3	63.1	64.5	62.5
Ldn	69.3	68.6	77.3	68.8	69.1	69.6	69.0
Lmax **	76.5	73.6	77.4	73.3	79.9	82.3	81.8

Standard-24Hr 70 dB(A)  
Standard-Max 115 dB(A)

Remark : \* Average time between 10:00-10:00

\*\* Maximum Sound Pressure Level between 10:00-10:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-BCC2

Location : West of Fence Monitor Period : 29 May 2024-05 Jun 2024  
SLM Model : Cirrus CR161B Serial No : G302648  
Site Operator : Mr. Phuwarech Kaewjirakulsri

Calibrator Model : Cirrus CR:515 Serial No : 97097  
Calibration Ref dB(A) : 94.0 Certified Date : 04 Sep 2023  
SLM Reading / Adjust dB(A) : 93.6/0.1 Expire Date : 03 Sep 2024  
Cal Sheet No.: CR-515-2024-155

Time	L90 (dB(A))						
	29-30 May 2024	30-31 May 2024	31-01 Jun 2024	01-02 Jun 2024	02-03 Jun 2024	03-04 Jun 2024	04-05 Jun 2024
10:00 - 11:00	61.8	61.8	61.6	61.9	61.9	64.5	62.3
11:00 - 12:00	61.6	61.5	61.2	62.0	62.1	61.9	61.8
12:00 - 13:00	61.7	61.3	61.0	61.8	61.8	61.8	61.4
13:00 - 14:00	61.6	61.2	60.9	61.8	61.9	62.0	61.3
14:00 - 15:00	61.5	61.3	61.0	62.0	61.9	64.0	61.0
15:00 - 16:00	61.8	61.3	61.3	62.0	61.7	62.9	61.1
16:00 - 17:00	61.7	61.7	61.5	61.9	62.1	64.2	61.4
17:00 - 18:00	61.9	61.9	61.6	62.1	62.0	62.0	61.8
18:00 - 19:00	62.2	62.0	62.2	61.9	62.2	62.1	61.9
19:00 - 20:00	62.2	61.8	62.6	62.0	62.1	62.2	62.3
20:00 - 21:00	62.1	61.7	64.1	62.2	62.1	62.4	62.0
21:00 - 22:00	61.9	61.5	63.9	62.0	62.2	62.5	62.0
22:00 - 23:00	61.9	61.7	71.2	62.0	62.5	62.6	62.0
23:00 - 00:00	61.9	62.1	71.3	62.2	62.3	62.4	62.0
00:00 - 01:00	61.6	61.8	72.1	62.0	62.2	62.0	62.0
01:00 - 02:00	61.7	61.7	67.6	62.1	62.2	62.1	62.2
02:00 - 03:00	61.7	61.7	67.6	62.0	62.1	62.0	62.7
03:00 - 04:00	62.0	61.6	67.3	62.0	62.1	62.0	62.4
04:00 - 05:00	61.9	61.8	66.4	62.1	62.2	62.2	62.2
05:00 - 06:00	62.1	61.7	65.5	62.1	62.1	62.3	62.1
06:00 - 07:00	62.0	61.7	63.4	61.9	62.0	62.4	62.1
07:00 - 08:00	61.9	61.9	62.3	61.9	62.1	62.2	62.2
08:00 - 09:00	61.9	61.8	62.3	61.8	62.2	63.2	62.1
09:00 - 10:00	61.8	61.6	62.1	61.7	62.5	62.9	62.0

L90(avg)*	61.9	61.7	65.9	62.0	62.1	62.6	61.9
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Remark : \* Average time between 10:00-10:00

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Preeda Somjai)  
Technical Management Team

## ภาคผนวก ง.4

### ใบรับรองผลการตรวจวิเคราะห์คุณภาพน้ำทิ้ง



บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800  
239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC 2)	REQUEST SERVICE No.	: 0003/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 03/01/2024	SAMPLING TIME	: 09:43
RECEIVED DATE	: 04/01/2024	ANALYTICAL DATE	: 04-09/01/2024
REPORT DATE	: 09/01/2024	SITE OPERATOR	: Miss Mareeyanee Hawae
SAMPLE CONDITION	: Normal	FILE CODE	: 224004_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION บ่อพักน้ำทิ้งของโครงการ	STANDARD <sup>1/</sup>
Flow Rate	m <sup>3</sup> /hr	-	-	13	-
Temperature	°C	2550 B	< 0.5	30.9	≤ 40
pH	-	4500-H <sup>+</sup> B	< 0.10	7.61	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,702	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	6	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23<sup>rd</sup> ED. 2017 (AWWA, APHA, WEF)

*Khemchuda Inorn*

(Miss Khemchuda Inorn)

Analyst

REG. NO. 7-239-ก-0005

*Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. <sup>1/</sup> Notification of the Ministry of the Natural Resources and Environment, B.E.2565 (2022).

4. - Not available .



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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC 2)	REQUEST SERVICE No.	: 0226/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 07/02/2024	SAMPLING TIME	: 08:35
RECEIVED DATE	: 08/02/2024	ANALYTICAL DATE	: 08-14/02/2024
REPORT DATE	: 15/02/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
SAMPLE CONDITION	: Normal	FILE CODE	: 224004_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION บ่อพักน้ำทิ้งของโครงการ	STANDARD <sup>1/</sup>
Flow Rate	m <sup>3</sup> /hr	-	-	20	-
Temperature	°C	2550 B	< 0.5	36.2	≤ 40
pH	-	4500-H <sup>+</sup> B	< 0.10	7.71	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	2,030	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23<sup>rd</sup> ED. 2017 (AWWA, APHA, WEF)

*Khemchuda Inorn*

(Miss Khemchuda Inorn)

Analyst

REG. NO. 7-239-ก-0005

*Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

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3. <sup>1/</sup> Notification of the Ministry of the Natural Resources and Environment, B.E.2565 (2022).

4. - Not available .





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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC 2)	REQUEST SERVICE No.	: 0414/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 06/03/2024	SAMPLING TIME	: 08:30
RECEIVED DATE	: 07/03/2024	ANALYTICAL DATE	: 07-13/03/2024
REPORT DATE	: 13/03/2024	SITE OPERATOR	: Miss Thipsuda Wannakran
SAMPLE CONDITION	: Normal	FILE CODE	: 224004_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION บ่อกักน้ำทิ้งของโครงการ	STANDARD <sup>1/</sup>
Flow Rate	m <sup>3</sup> /hr	-	-	15.0	-
Temperature	°C	2550 B	< 0.5	34.4	≤ 40
pH	-	4500-H <sup>+</sup> B	< 0.10	7.98	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	2,162	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	10	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23<sup>rd</sup> ED. 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

*Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

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3. <sup>1/</sup> Notification of the Ministry of the Natural Resources and Environment, B.E.2565 (2022).

4. - Not available .



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SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800  
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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC 2)	REQUEST SERVICE No.	: 0644/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 03/04/2024	SAMPLING TIME	: 09:49
RECEIVED DATE	: 04/04/2024	ANALYTICAL DATE	: 04-10/04/2024
REPORT DATE	: 11/04/2024	SITE OPERATOR	: Miss Mareeyanee Hawae
SAMPLE CONDITION	: Normal	FILE CODE	: 224004_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION บ่อกักน้ำทิ้งของโครงการ	STANDARD <sup>1/</sup>
Flow Rate	m <sup>3</sup> /hr	-	-	17	-
Temperature	°C	2550 B	< 0.5	33.1	≤ 40
pH	-	4500-H <sup>+</sup> B	< 0.10	8.08	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,456	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	10	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23<sup>rd</sup> ED. 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

*Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

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3. <sup>1/</sup> Notification of the Ministry of the Natural Resources and Environment, B.E.2565 (2022).

4. - Not available .



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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC 2)	REQUEST SERVICE No.	: 0891/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 08/05/2024	SAMPLING TIME	: 08:45
RECEIVED DATE	: 09/05/2024	ANALYTICAL DATE	: 09-16/05/2024
REPORT DATE	: 17/05/2024	SITE OPERATOR	: Miss Mareeyanee Hawae
SAMPLE CONDITION	: Normal	FILE CODE	: 224004_WW_May

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD <sup>1/</sup>
		METHODS	(non-detectable)	บ่อพักน้ำทิ้งของโครงการ	
Flow Rate	m <sup>3</sup> /hr	-	-	19	-
Temperature	°C	2550 B	< 0.5	34.9	≤ 40
pH	-	4500-H <sup>+</sup> B	< 0.10	7.70	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,854	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	14	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23<sup>rd</sup> ED. 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

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3. <sup>1/</sup> Notification of the Ministry of the Natural Resources and Environment, B.E.2565 (2022).  
4. - Not available .



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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC 2)	REQUEST SERVICE No.	: 1126/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 05/06/2024	SAMPLING TIME	: 08:30
RECEIVED DATE	: 06/06/2024	ANALYTICAL DATE	: 06-12/06/2024
REPORT DATE	: 14/06/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
SAMPLE CONDITION	: Normal	FILE CODE	: 224004_WW_June

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD <sup>1/</sup>
		METHODS	(non-detectable)	บ่อพักน้ำทิ้งของโครงการ	
Flow Rate	m <sup>3</sup> /hr	-	-	12	-
Temperature	°C	2550 B	< 0.5	33.7	≤ 40
pH	-	4500-H <sup>+</sup> B	< 0.10	7.51	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,405	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	10	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23<sup>rd</sup> ED. 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

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4. - Not available .

## ภาคผนวก ง.5

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### ใบรับรองผลการตรวจวัดระดับเสียงในพื้นที่ปฏิบัติงาน





## Noise Monitoring Result : Working Noise

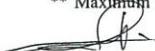
### MTR-BCC2


Location : Gas Turbine Generator No.11	Monitor Period : Apr 03, 2024
SLM Model : Cirrus CR162B	Serial No : G301014
Site Operator : Mr. Watcharakan Pramakhate	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : Sep 04, 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : Sep 03, 2024
Cal Sheet No.: CR-515-2024-079	

Time	Equivalent Sound Pressure Level (dB(A))
	Apr 03, 2024
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	73.9
08:00 - 09:00	74.1
09:00 - 10:00	79.0
10:00 - 11:00	74.0
11:00 - 12:00	73.9
12:00 - 13:00	74.2
13:00 - 14:00	74.2
14:00 - 15:00	74.2
15:00 - 16:00	74.0
16:00 - 17:00	73.8
17:00 - 18:00	74.0
18:00 - 19:00	74.2
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	74.8
Lmax **	81.9
Standard-12Hr	87 dB(A)
Standard-Max	140 dB(A)

Remark : \* Average time between 07:00-19:00

\*\* Maximum Sound Pressure Level between 07:00-19:00

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise

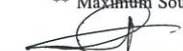
### MTR-BCC2


Location : Gas Turbine Generator No.12	Monitor Period : Apr 03, 2024
SLM Model : Cirrus CR162B	Serial No : G300709
Site Operator : Mr. Watcharakan Pramakhate	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : Sep 04, 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : Sep 03, 2024
Cal Sheet No.: CR-515-2024-079	

Time	Equivalent Sound Pressure Level (dB(A))
	Apr 03, 2024
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	74.0
08:00 - 09:00	73.8
09:00 - 10:00	74.0
10:00 - 11:00	73.9
11:00 - 12:00	74.0
12:00 - 13:00	74.1
13:00 - 14:00	79.0
14:00 - 15:00	73.8
15:00 - 16:00	73.9
16:00 - 17:00	73.9
17:00 - 18:00	74.2
18:00 - 19:00	74.0
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	74.7
Lmax **	77.3
Standard-12Hr	87 dB(A)
Standard-Max	140 dB(A)

Remark : \* Average time between 07:00-19:00

\*\* Maximum Sound Pressure Level between 07:00-19:00

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-BCC2


Location : Steam Turbine Generator      Monitor Period : Apr 03, 2024  
SLM Model : SCARLET ST-21D      Serial No : 820726  
Site Operator : Mr. Watcharakan Pramakhate


Calibrator Model : Cirrus CR:515      Serial No : 97097  
Calibration Ref dB(A) : 94.0      Certified Date : Sep 04, 2023  
SLM Reading / Adjust dB(A) : 93.8/0.0      Expire Date : Sep 03, 2024  
Cal Sheet No.: CR-515-2024-080

Time	Equivalent Sound Pressure Level (dB(A))	
	Apr 03, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00	81.4	
08:00 - 09:00	81.6	
09:00 - 10:00	81.3	
10:00 - 11:00	82.8	
11:00 - 12:00	80.9	
12:00 - 13:00	81.1	
13:00 - 14:00	81.1	
14:00 - 15:00	82.8	
15:00 - 16:00	81.1	
16:00 - 17:00	81.6	
17:00 - 18:00	81.3	
18:00 - 19:00	82.8	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	81.7	
Lmax **	105.0	
Standard-12Hr	87 dB(A)	
Standard-Max	140 dB(A)	

Remark : \* Average time between 07:00-19:00

\*\* Maximum Sound Pressure Level between 07:00-19:00

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-BCC2


Location : Auxiliary Boiler      Monitor Period : Apr 03, 2024  
SLM Model : SCARLET ST-21D      Serial No : 820723  
Site Operator : Mr. Watcharakan Pramakhate


Calibrator Model : Cirrus CR:515      Serial No : 97097  
Calibration Ref dB(A) : 94.0      Certified Date : Sep 04, 2023  
SLM Reading / Adjust dB(A) : 93.8/0.0      Expire Date : Sep 03, 2024  
Cal Sheet No.: CR-515-2024-080

Time	Equivalent Sound Pressure Level (dB(A))	
	Apr 03, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00	55.5	
08:00 - 09:00	60.9	
09:00 - 10:00	61.5	
10:00 - 11:00	64.4	
11:00 - 12:00	61.1	
12:00 - 13:00	61.1	
13:00 - 14:00	60.9	
14:00 - 15:00	61.5	
15:00 - 16:00	61.7	
16:00 - 17:00	61.8	
17:00 - 18:00	61.7	
18:00 - 19:00	61.8	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	61.5	
Lmax **	91.5	
Standard-12Hr	87 dB(A)	
Standard-Max	140 dB(A)	

Remark : \* Average time between 07:00-19:00

\*\* Maximum Sound Pressure Level between 07:00-19:00

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

## ภาคผนวก ง.6

### ใบรับรองผลการตรวจวัดระดับเสียงเฉลี่ยตลอดระยะเวลาการทำงาน






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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME : Bangkok Cogeneration Co., Ltd. (BCC2) REFERENCE NO. : 224004\_Cert-Noise Dose/Apr 24  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter  
MEASUREMENT DATE : 25/04/2024 CALIBRATOR TYPE : RC 110A  
MEASUREMENT LOCATION : Cogeneration Energy Facility, Branch 2 SERIAL NO. : 95167  
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	RESPONSIBILITY/AREA	TIME	% DOSE	SOUND PRESSURE LEVEL (dBA)	
				TWA (12 hr)	STANDARD*
2200725	Operator Production	08.14-19.57	15.0	75.0	83.0

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

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3. \*Notification of the Department of Labour Protection and Welfare, B.E.2561 (2018).  
4. TWA means Time Weighted Average.




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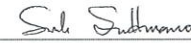
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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME : Bangkok Cogeneration Co., Ltd. (BCC2) REFERENCE NO. : 224004\_Cert-Noise Dose/Apr 24  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter  
MEASUREMENT DATE : 25/04/2024 CALIBRATOR TYPE : RC 110A  
MEASUREMENT LOCATION : Cogeneration Energy Facility, Branch 2 SERIAL NO. : 95167  
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	RESPONSIBILITY/AREA	TIME	% DOSE	SOUND PRESSURE LEVEL (dBA)	
				TWA (8 hr)	STANDARD*
23007730	Operator Maintenance	09.00-17.00	3.3	70.3	85.0

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

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4. TWA means Time Weighted Average.

## ภาคผนวก ง.7

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### ใบรับรองผลการตรวจวัดระดับความร้อนในพื้นที่ปฏิบัติงาน



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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : Bangkok Cogeneration Co., Ltd. REFERENCE NO. : 224004-Heat (Cert)/WBGT-Apr 2024  
(BCC2)  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : WBGT Meter  
MEASUREMENT DATE : 03/04/2024 MODEL NO. : JT2011-E2A  
SITE OPERATOR : Miss Mareeyanee Hawae SERIAL NO. : 3522210174

LOCATION	TIME	MEASURED TEMPERATURE (°C)				STANDARD (°C) *	
		NWB	DB	GT	WBGT <sub>out</sub>	WBGT <sub>Avg</sub>	WBGT
HRSG 11	10.03-10.33	27.8	33.1	33.9	29.6	29.7	34.0
	10.33-11.03	27.4	32.6	33.9	29.2		
	11.03-11.33	28.3	33.3	33.8	29.9		
	11.33-12.03	28.1	33.7	35.3	30.1		

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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3. \* WBGT standard was notified by the Ministerial Regulations of Labour, B.E.2559 (2016).

4. NWB = Natural Wet Bulb Temperature

DB = Dry Bulb Temperature

GT = Globe Temperature

WBGT = Wet Bulb Globe Temperature

5. Work Load - Light work load = 34°C, Moderate work load = 32°C and Heavy work load = 30°C




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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : Bangkok Cogeneration Co., Ltd. REFERENCE NO. : 224004-Heat (Cert)/WBGT-Apr 2024  
(BCC2)  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : WBGT Meter  
MEASUREMENT DATE : 03/04/2024 MODEL NO. : JT2011-E2A  
SITE OPERATOR : Miss Mareeyanee Hawae SERIAL NO. : 3522210181

LOCATION	TIME	MEASURED TEMPERATURE (°C)				STANDARD (°C) *	
		NWB	DB	GT	WBGT <sub>out</sub>	WBGT <sub>Avg</sub>	WBGT
HRSG 12	10.08-10.38	28.0	32.7	33.2	29.5	29.6	34.0
	10.38-11.08	27.8	33.2	33.9	29.6		
	11.08-11.38	27.5	32.7	33.9	29.3		
	11.38-12.08	28.4	33.4	33.8	30.0		

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

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4. NWB = Natural Wet Bulb Temperature

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WBGT = Wet Bulb Globe Temperature

5. Work Load - Light work load = 34°C, Moderate work load = 32°C and Heavy work load = 30°C





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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : Bangkok Cogeneration Co., Ltd. REFERENCE NO. : 224004-Heat (Cert)/WBGT-Apr 2024  
(BCC2)  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : WBGT Meter  
MEASUREMENT DATE : 03/04/2024 MODEL NO. : JT2011-E2A  
SITE OPERATOR : Miss Mareeyanee Hawae SERIAL NO. : 3522210177

LOCATION	TIME	MEASURED TEMPERATURE (°C)				STANDARD (°C) *	
		NWB	DB	GT	WBGT <sub>In</sub>	WBGT <sub>Avg</sub>	WBGT
Steam Turbine Generator	10.14-10.44	29.0	35.4	35.8	31.0	31.1	34.0
	10.44-11.14	29.1	35.6	35.9	31.1		
	11.14-11.44	29.1	35.8	36.1	31.2		
	11.44-12.14	29.1	35.8	36.2	31.2		

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Sununta Sirawuttinanon)  
Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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WBGT = Wet Bulb Globe Temperature

5. Work Load - Light work load = 34°C, Moderate work load = 32°C and Heavy work load = 30°C



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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : Bangkok Cogeneration Co., Ltd. REFERENCE NO. : 224004-Heat (Cert)/WBGT-Apr 2024  
(BCC2)  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : WBGT Meter  
MEASUREMENT DATE : 03/04/2024 MODEL NO. : JT2011-E2A  
SITE OPERATOR : Miss Mareeyanee Hawae SERIAL NO. : 3522210179

LOCATION	TIME	MEASURED TEMPERATURE (°C)				STANDARD (°C) *	
		NWB	DB	GT	WBGT <sub>out</sub>	WBGT <sub>Avg</sub>	WBGT
Auxiliary Boiler	10.12-10.42	29.6	33.4	39.9	32.0	32.5	34.0
	10.42-11.12	30.5	34.3	41.7	33.1		
	11.12-11.42	30.4	34.1	42.3	33.2		
	11.42-12.12	29.1	33.3	40.5	31.8		

(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

(Miss Sununta Sirawuttinanon)  
Technical Management Team

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4. NWB = Natural Wet Bulb Temperature

DB = Dry Bulb Temperature

GT = Globe Temperature

WBGT = Wet Bulb Globe Temperature

5. Work Load - Light work load = 34°C, Moderate work load = 32°C and Heavy work load = 30°C

## ภาคผนวก ง.8

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ใบรับรองผลการตรวจวัดความเข้มของแสงสว่าง  
ภายในสถานประกอบการ



บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC2)	REFERENCE NO.	: Cert-224004/Light-Day/Apr 24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Lux Meter
MEASUREMENT DATE	: 03/04/2024	MODEL	: 407026
MEASUREMENT LOCATION	: Cogeneration Energy Facility, Branch 2	SERIAL NO.	: A 051053
SITE OPERATOR	: Miss Mareeyanee Hawae		

LOCATION	DATE	TIME	LIGHT INTENSITY (LUX)			
			AVERAGE VALUE	STANDARD*	MINIMUM VALUE	STANDARD*
<b>Office 1<sup>st</sup> Floor</b>						
ห้องประชุม 3	03/04/2024	09.04	413	≥ 300	381	≥ 150
ห้องอาหาร	03/04/2024	09.08	599	≥ 300	310	≥ 150
ทางเดิน ชั้น 1	03/04/2024	09.06	254	≥ 100	163	≥ 50
<b>Office 2<sup>nd</sup> Floor</b>						
ห้องประชุม 1	03/04/2024	08.24	789	≥ 300	602	≥ 150
ห้องประชุม 2	03/04/2024	08.18	825	≥ 300	722	≥ 150
ทางเดินหน้าห้องประชุม 2	03/04/2024	08.37	251	≥ 100	187	≥ 50
ทางเดิน ชั้น 2	03/04/2024	08.39	797	≥ 100	712	≥ 50
ทางเดินหน้าบันได ชั้น 2	03/04/2024	08.41	167	≥ 100	141	≥ 50
ทางเดินหน้า CCR ชั้น 2	03/04/2024	08.42	266	≥ 100	217	≥ 50

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

- Remark :**
1. Reported analysis refers to submitted sample only.
  2. This report shall not be reproduced, except in full, without official approval.
  3. \* Notification of the Department of Labour Protection and Welfare, B.E.2561 (2018) :

The standards of light intensity in general area and process area (Table 1).



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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Bangkok Cogeneration Co., Ltd. (BCC2)	REFERENCE NO.	: Cert-224004/Light-Day/Apr 24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 03/04/2024	MODEL	: 407026
MEASUREMENT LOCATION	: Cogeneration Energy Facility, Branch 2	SERIAL NO.	: A 051053
SITE OPERATOR	: Miss Mareeyanee Hawae		

LOCATION	DATE	TIME	LIGHT INTENSITY (LUX)	
			RESULTS	STANDARD*
Office 2 <sup>nd</sup> Floor				
โต๊ะ Control Panel 1	03/04/2024	08.34	749	400-500
โต๊ะ Control Panel 2	03/04/2024	08.34	414	400-500
โต๊ะ Control Panel 3	03/04/2024	08.35	581	400-500
โต๊ะ Control Panel 4	03/04/2024	08.35	639	400-500
โต๊ะ Shift Sup.	03/04/2024	08.33	842	400-500
โต๊ะทำงานคุณสมชาติ	03/04/2024	08.21	414	400-500
โต๊ะทำงานคุณชุตติกาญจน์	03/04/2024	08.22	445	400-500
โต๊ะทำงานคุณกิตติชัย	03/04/2024	08.20	814	400-500
โต๊ะทำงานคุณพิภพ	03/04/2024	08.22	835	400-500
โต๊ะทำงานคุณสุภักดิ์	03/04/2024	08.23	726	400-500
โต๊ะทำงานคุณทวีทรัพย์	03/04/2024	08.23	979	400-500
โต๊ะทำงานคุณสมเกียรติ	03/04/2024	08.27	995	400-500

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The standards of light intensity for employee in working area using specific sighting for working (Table 2).





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## LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME : Bangkok Cogeneration Co., Ltd. (BCC2) REFERENCE NO. : Cert-224004/Light-Day/Apr 24  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Digital Light Meter  
MEASUREMENT DATE : 03/04/2024 MODEL : 407026  
MEASUREMENT LOCATION : Cogeneration Energy Facility, Branch 2 SERIAL NO. : A 051053  
SITE OPERATOR : Miss Mareeyanee Hawae

LOCATION	DATE	TIME	LIGHT INTENSITY (LUX)	
			RESULTS	STANDARD*
Office 2 <sup>nd</sup> Floor (ต่อ)				
โต๊ะทำงานคุณยุทธพงษ์	03/04/2024	08.28	951	400-500
โต๊ะทำงานคุณณัฐนิชา	03/04/2024	08.29	482	400-500
โต๊ะทำงานคุณกิตติมา	03/04/2024	08.29	607	400-500
โต๊ะทำงานคุณรัชภูมิ	03/04/2024	08.29	467	400-500
โต๊ะทำงานคุณสันติพงษ์	03/04/2024	08.30	533	400-500
โต๊ะทำงานคุณ โสภณ	03/04/2024	08.30	487	400-500
โต๊ะทำงานคุณนพรัตน์	03/04/2024	08.31	473	400-500

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The standards of light intensity for employee in working area using specific sighting for working (Table 2).

ภาคผนวก จ

ใบแสดงการตรวจเทียบเครื่องมือ



## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 8, 2024  
 Hi-Vol Pump No. : BH-025 Indicator No. : CM-01  
 Amb. Temp (°C) : 34 Press (mmHg) : 757  
 Calibration by : Mr.Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	14.20	9.50	51.46	730.73	201.64	
13	11.80	7.70	46.61	550.00	139.24	
10	9.00	5.80	40.62	365.58	81.00	
7	5.80	3.70	32.70	189.66	33.64	
5	3.40	2.40	26.59	90.41	11.56	
Sum	44.20	29.10	197.98	1,926.38	467.08	

Calibrated by : Suphanut I. Approved by : Wittaya K.



## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 6, 2024  
 Hi-Vol Pump No. : BH-009 Indicator No. : CM-01  
 Amb. Temp (°C) : 30 Press (mmHg) : 761  
 Calibration by : Mr.Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	19.60	12.90	59.76	1,171.30	384.16	
13	15.60	10.20	53.45	833.82	243.36	
10	12.00	7.80	46.90	562.80	144.00	
7	8.00	5.00	37.81	302.48	64.00	
5	4.80	3.00	29.58	141.98	23.04	
Sum	60.00	38.90	227.50	3,012.38	858.56	

Calibrated by : Suphanut I. Approved by : Wittaya K.





## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 6, 2024  
Hi-Vol Pump No. : BH-011 Indicator No. : CM-01  
Amb. Temp (°C) : 33 Press (mmHg) : 761  
Calibration by : Mr.Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	16.20	12.80	59.53	964.39	262.44	
13	13.20	10.10	53.20	702.24	174.24	
10	10.40	7.60	46.31	481.62	108.16	
7	7.20	4.80	37.07	266.90	51.84	
5	4.40	3.00	29.58	130.15	19.36	
Sum	51.40	38.30	225.69	2,545.31	616.04	

Calibrated by : Suphanut I. Approved by : Wittaya K.



## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 6, 2024  
Hi-Vol Pump No. : BH-036 Indicator No. : CM-01  
Amb. Temp (°C) : 33 Press (mmHg) : 761  
Calibration by : Mr.Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	21.00	12.70	59.30	1,245.30	441.00	
13	17.80	10.10	53.20	946.96	316.84	
10	14.00	7.60	46.31	648.34	196.00	
7	9.60	5.00	37.81	362.98	92.16	
5	6.40	3.10	30.04	192.26	40.96	
Sum	68.80	38.50	226.66	3,395.83	1,086.96	

Calibrated by : Suphanut I. Approved by : Wittaya K.



## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 6, 2024  
Hi-Vol Pump No. : BH-001 Indicator No. : CM-01  
Amb. Temp (°C) : 33 Press (mmHg) : 761  
Calibration by : Mr.Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	19.40	12.70	59.30	1,150.42	376.36	
13	16.20	10.00	52.94	857.63	262.44	
10	12.80	7.70	46.64	596.99	163.84	
7	8.20	4.90	37.44	307.01	67.24	
5	5.40	3.00	29.58	159.73	29.16	
Sum	62.00	38.30	225.90	3,071.78	899.04	

Calibrated by : Suphanut I. Approved by : Wittaya K.



## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 8, 2024  
Hi-Vol Pump No. : BH-014 Indicator No. : CM-01  
Amb. Temp (°C) : 34 Press (mmHg) : 757  
Calibration by : Mr.Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	16.20	11.90	57.45	930.69	262.44	
13	14.20	9.80	52.42	744.36	201.64	
10	10.60	7.10	44.81	474.99	112.36	
7	6.80	4.50	35.93	244.32	46.24	
5	4.60	2.70	28.12	129.35	21.16	
Sum	52.40	36.00	218.73	2,523.72	643.84	

Calibrated by : Suphanut I. Approved by : Wittaya K.



## High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 6, 2024  
 Hi-Vol Pump No. : BH-020 Indicator No. : CM-01  
 Amb. Temp (°C) : 30 Press (mmHg) : 761  
 Calibration by : Mr. Suphanut I.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	18.40	12.00	57.68	1,061.31	338.56	
13	15.20	9.60	51.89	788.73	231.04	
10	11.80	6.70	43.56	514.01	139.24	
7	8.20	4.40	35.55	291.51	67.24	
5	5.40	2.70	28.12	151.85	29.16	
Sum	59.00	35.40	216.80	2,807.41	805.24	

Calibrated by : Suphanut I. Approved by : Witaya K.



Airgas Specialty Gases  
 Airgas USA, LLC  
 600 Union Landing Road  
 Cinnaminson, NJ 08077-0000  
 Airgas.com

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Part Number: E04NI99E15AC084 Reference Number: 82-401409170-1  
 Cylinder Number: EB0102326 Cylinder Volume: 144.4 CF  
 Laboratory: 124 - Riverton (SAP) - NJ Cylinder Pressure: 2015 PSIG  
 PGVP Number: B52019 Valve Outlet: 660  
 Gas Code: CO,NO,NOX,SO2,BALN Certification Date: Feb 05, 2019

Expiration Date: Feb 05, 2027

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	51.01 PPM	G1	+/- 0.9% NIST Traceable	01/28/2019, 02/05/2019
NITRIC OXIDE	50.00 PPM	50.86 PPM	G1	+/- 0.9% NIST Traceable	01/28/2019, 02/05/2019
SULFUR DIOXIDE	50.00 PPM	50.87 PPM	G1	+/- 1.0% NIST Traceable	01/28/2019, 02/05/2019
CARBON MONOXIDE	0.5000 %	0.5050 %	G1	+/- 0.7% NIST Traceable	01/31/2019
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	13060206	CC401947	4950 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Feb 15, 2019
PRM	12367	APEX1099237	9.82 PPM NITROGEN DIOXIDE/AIR	+/- 2.0%	Jun 02, 2017
NTRM	12010724	KAL004497	50.03 PPM NITRIC OXIDE/NITROGEN	+/- 0.8%	Mar 12, 2024
GMIS	1114201601	CC506710	4.971 PPM NITROGEN DIOXIDE/NITROGEN	+/- 2.0%	Nov 14, 2019
NTRM	14010327	KAL004376	49.08 PPM SULFUR DIOXIDE/NITROGEN	+/- 1.0%	Apr 17, 2024
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		
Siemens Ultramat 6 J3-599 COHIGH	NDIR		Jan 18, 2019		
Nicolet 6700 APW1100391 NO	FTIR		Jan 10, 2019		
Nicolet 6700 APW1100391 NO2	FTIR		Jan 10, 2019		
Nicolet 6700 APW1100391 SO2	FTIR		Jan 10, 2019		

Triad Data Available Upon Request

PERMANENT NOTES: PRODUCED IN ACCORDANCE WITH ISO17025 REQUIREMENTS

### NOTES:

Gross Weight: 27806.3 grams

Net Weight: 4733.2 grams

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 9001:2008 and relate only to items identified on this certificate. This document shall not be reproduced in full without written approval of the issuer.



**ACCREDITED**

TESTING CERT No. 3082.05

Witaya K.  
 Approved for Release





## SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Apr 3, 24

## ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref.Calibrated (dB)	Eff.Calibrated (dB)
Cirrus	CR:515	97097	1000.00	94.0	93.7

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
14	Cirrus	CR162B	G300709	93.7	0.0
20	Cirrus	CR162B	G301014	93.7	0.0

Calibrated by :

Approved by :



## SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: May 28, 24

## ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref.Calibrated (dB)	Eff.Calibrated (dB)
Cirrus	CR:515	97097	1000.00	94.0	93.7

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
8	Cirrus	CR161B	G301329	94.0	-0.3
11	Cirrus	CR161B	G301339	92.0	1.7
32	Cirrus	CR161B	G302356	92.9	0.8
35	Cirrus	CR161B	G302635	93.8	-0.1
38	Cirrus	CR161B	G302648	93.6	0.1

Calibrated by :

Approved by :



ELECTRICAL AND ELECTRONICS INSTITUTE  
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

975 Moo 4, Bangpoo Industrial Estate, Soi 8, Sukhumvit Road km 37,

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

Tel: +66 2709 4860 Fax: +66 2324 0917



Certificate No.: CP20230345EA

Operation No.: CP2023080023

## Certificate of Calibration

Equipment: Sound Calibrator

Manufacturer: Cirrus Research Plc

Model/Type: CR:515

Serial No.: 97097

ID No.: -

Customer: SECOT Co.,Ltd.

Address: 239 Rimklongprapa Rd., Bangsue,  
Bangkok 10800 Thailand

Received Date: 28 August 2023

Calibrated Date: 4 September 2023

Issued Date: 8 September 2023

Calibrated by: Ms. Juntaporn Kunhakom

Approved by: \_\_\_\_\_

( Mr. Sittichai Swaksuriyawong )

Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor ( $k$ ) providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.



ELECTRICAL AND ELECTRONICS INSTITUTE  
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20230345EA

## Calibration Report

Equipment: Sound Calibrator

Manufacturer: Cirrus Research Plc

Model/Type: CR:515

Serial No.: 97097

ID No.: -

Ambient Temperature: ( 23 ± 2 ) °C

Relative Humidity: ( 50 ± 15 ) %

Pressure: (101.3 ± 1.5) kPa

Method of Calibration :-

IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2787490	AA-1024-22	6 November 2023
2) Waveform Generator	33511B	MY52302264	CK20230039EA	27 June 2024
3) Audio Analyzing DMM	2015-P	000136E	E1U225466	2 December 2023
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P230024 CD20230196EA	20 March 2024 23 July 2024

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

3. This certification is traceable to the international system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute; NSC Accredited Calibration No.0119

### Result of Calibration:-

1. Function : Sound pressure level

Normal	Specified Sound	Measured value	Deviated value <sup>[1]</sup>	Acceptance limit <sup>[3]</sup>
Frequency (Hz)	Pressure level (dB)	(dB)	(dB)	(dB)
1000	94	94.13	0.13	±0.25

2. Function : Frequency

Normal Sound	Specified Frequency	Measured value	Deviated value <sup>[2]</sup>	Acceptance limit <sup>[3]</sup>
Pressure level (dB)	(Hz)	(Hz)	(%)	(%)
94	1000	1000.3	0.0	±0.7



ELECTRICAL AND ELECTRONICS INSTITUTE  
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20230345EA

Calibration Report

3. Function : Total distortion + noise

Normal	Normal	Measured value <sup>[4]</sup>	Acceptance limit <sup>[5]</sup>
Sound Pressure level (dB)	Frequency (Hz)	(%)	(%)
94	1000	1.0	2.5

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.15 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	0.50 %

- Note: [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.  
[2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.  
[3] The acceptance limit is for the deviated value.  
[4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.  
[5] The acceptance limit is for the Measured value.

- Remarks: 1. Acceptance limit was IEC 60942:2017 Class 1.  
2. Maximum-permitted uncertainty of measurement was IEC 60942:2017 Class 1.  
3. The coverage factor  $k = 2.00$

-- End of Report --

CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhaprachasan 3 Rd., Bangpood, Pakkred, Nonthaburi 11120

Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : calibratech-cal@yahoo.com, calibratech-cal@hotmail.com



Certificate of Calibration

Certificate No. : 67-420019-1

Page : 1 of 2

Submitted by :

Secot Co.,Ltd.

239 RimKlongprapa Road, Bangsue, Bangkok 10800 Thailand

Equipment :

pH Meter with electrode

pH meter

Manufacturer : Mettler Toledo

Model : Seven2Go S2

Range : N/A pH

Resolution : 0.01 pH

Serial No. : B924795409

ID No. : PH No.12

Electrode

Model : InLab Expert Go

Serial No. : 3051249

Environment :

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

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

Date of Received : 13 February 2024

Date of Calibration : 20 February 2024

Date of Issue : 20 February 2024

Calibrated by : Permpon Chanpu

Calibration Method : In-house method CAL-M4201 direct measurement by using standard voltage calibrator and using certified reference material (CRM)

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Multiproduct Calibrator

ID No.	Cert. No.	Due Date	Traceability
440001	23E1240	24 Mar 2025	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution

pH	Cert. No.	Lot No.	Exp. Date	Traceability
4.008	61293328	944535	27 Nov 2025	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
6.986	61281486	944537	17 Nov 2024	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
9.997	61281073	944536	17 Nov 2024	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by :

( Surachai Promthong )

Laboratory Manager

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full except with the prior written approval of the Calibratech Co.,Ltd.





# CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhprachasan 3 Rd., Bangpood, Pakkred, Nonthaburi 11120

Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : calibratech.cal@yahoo.com, calibratech.cal@hotmail.com

## Certificate of Calibration

Certificate No. : 67-420019-1

Page : 2 of 2

### Result of Calibration :

UUC Condition As-Received : Good

Function : Electrical measurement

pH meter

Performing standard curve by Multiproduct Calibrator at pH (4,7,10)

Adjustment Curve at nominal pH	Applied Voltage ( mV )	Nominal Value ( pH )	UUC Reading		Correction ( mV )	Uncertainty ( ± mV )
			( pH )	( mV )		
4, 7, 10	177.4800	4	4.00	177	0	0.58
	0.0000	7	7.00	0	0	0.58
	-177.4800	10	10.00	-177	0	0.58

Function : pH meter with electrode

Performing a three - buffer standard curve using buffer nominal pH (4,7,10)

Adjustment Curve at nominal pH	Standard Buffer ( pH )	UUC Reading ( pH )	Correction ( pH )	Uncertainty ( ± pH )
4, 7, 10	4.008	4.01	0.00	0.0097
	6.986	7.00	-0.01	0.011
	9.997	10.01	-0.01	0.014

### Remark

UUC : Unit Under Calibration

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

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

- oOo -

NA



CAL-F0031-03

# CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhprachasan 3 Rd., Bangpood, Pakkred, Nonthaburi 11120

Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : calibratech.cal@yahoo.com, calibratech.cal@hotmail.com

## Certificate of Calibration

Certificate No. : 67-400100-1

Page : 1 of 2

Submitted by : Secot Co.,Ltd.

239 RimKlongprapa Road, Bangsue, Bangkok 10800 Thailand

Equipment : Temperature Indicator with Thermistor Probe (Temp pH)

Temperature Indicator

Manufacturer : Mettler Toledo

Model : Seven2Go S2

Range : N/A

Resolution : 0.1 °C

Serial No. : B924795409

ID No. : PH No.12

Thermistor Probe

Model : InLab Expert Go

Sheath Material : Plastic

Diameter : 10 mm.

Length : 120 mm,

Serial No. : 3051249

ID No. : PH No.12

Environment : Ambient Temperature : (23 ± 2) °C

Relative Humidity : (50 ± 15) %

Line Voltage : (220 ± 22) VAC

Date of Received : 13 February 2024

Date of Calibration : 20 February 2024

Date of Issue : 20 February 2024

Calibrated by : Chortip Samchusri

Calibration Method : This instrument was calibrated by In-house method comparison technique CAL-M4003 by compared with PRT in the liquid bath at the constant controlled temperature.

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Platinum Resistance Thermometer (PRT)

ID No.	Cert. No.	Due Date	Traceability
400002	TT-0074-22	20 Jun 2024	National Institute of Metrology Thailand (NIMT)

2. Standard Digital Thermometer

ID No.	Cert. No.	Due Date	Traceability
400003	23E1866	01 Jun 2025	National Institute of Metrology Thailand (NIMT)
400004	23E1866	01 Jun 2025	National Institute of Metrology Thailand (NIMT)

Approved by :

( Surachai Promthong )

Laboratory Manager

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full except with the prior written approval of the Calibratech Co.,Ltd.



CAL-F0031-03

# CAL

Calibratech Co.,Ltd.

7/106-7 Moo 2, Sukhprachusan 3 Rd., Bangpood, Pakkred, Nonthaburi 11120

Tel.(02) 964-6211 Fax.(02) 964-5155, e-mail : calibratech\_cal@yahoo.com, calibratech\_cal@hotmail.com

## Certificate of Calibration

Certificate No. : 67-400100-1

Page : 2 of 2

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

Immersion Depth ( mm. )	Standard Reading ( °C )	UUC Reading ( °C )	Correction ( °C )	Uncertainty ( ± °C )
100	25.0020	25.3	-0.3	0.11
100	30.0015	30.3	-0.3	0.11
100	35.0023	35.3	-0.3	0.11

### Remark

UUC : Unit Under Calibration

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

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

- o O o -

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อุตสาหกรรมพัฒนาอาหารเพื่อสุขภาพ  
ศูนย์บริการห้องปฏิบัติการอุตสาหกรรมอาหาร  
Foundation for Industrial Development National Food Institute  
Food Industrial Laboratory Service Center



## Calibration Certificate

Certificate No.: 2304081-002-01  
Client name: SECOT CO., LTD.  
Address: 239 Rimklongprapa Road,  
Bangsue, Bangkok 10800

Page 1 of 3

Equipment: Water Bath

Manufacturer: MEMMERT

Model: WB 29

Serial No.: I698.0051

ID No.: N/A

Order No.: 2304081

Operation No.: 2304081-002

Date of Receipt: 27 July 2023

Date of Calibration: 27 July 2023

Calibrated by Mr.Worapob Sooktong  
Scientist

Approved by *Handwritten signature*  
( Mr.Pheraphat Tuanjit )  
Manager, Division of Calibration Laboratory  
Responsible for the Technical Management Team

Date of Issue: 7 August 2023

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

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

F-CS-009 Revision: 01 Date: 20-04-65

2008 ถนนพหลโยธิน 35 แขวงจตุจักร เขตจตุจักร กรุงเทพมหานคร 10700  
2008 Soi 35, Arun Amarin Road, Bang Yi Khan Subdistrict, Bang Phai District, Bangkok 10700, Thailand  
Tel : +66(0) 2422 8888 Fax : +66(0) 2422 8545



nfi.or.th



## Calibration Report

**Certificate No.:** 2304081-002-01  
**Equipment:** Water Bath  
Model: WB 29 Serial No.: I698.0051  
Resolution: 0.1 °C ID No.: N/A  
Manufacturer: MEMMERT  
**Date of Calibration:** 27 July 2023 Page 2 of 3

**Location:** Laboratory, SECOT CO., LTD.  
**Environment Condition:**  
Ambient Temperature ( 24 ± 1 ) °C  
Relative Humidity ( 58 ± 2 ) %  
Line Voltage ( 229 ± 1 ) Volt

### Condition of this results of Calibration:

- This instrument was calibrated by insert 5 standard thermometer into its liquid bath and calibration according to W-TE-011 based on ASTM E715-80 (2016): Standard Specification for Gravity-Convection and Forced-Circulation Water Baths.  
- The temperature scale used is ITS - 90.  
- All data show below were final values and the initial data may be obtained upon request.

### 2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY49016894	TE 660380-01	22 April 2024	NATIONAL FOOD INSTITUTE
	RTD	RTD#201-205 / CH#201-205			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated item : Good

### UUC Description:

Time of Record 1 Hour 9 Minute At 95.0 °C

7. Result of Calibration : ☒ Without adjustment  
☐ After adjustment

*Handwritten signature*



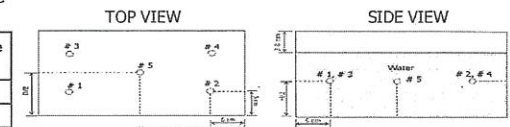
## Calibration Report

**Certificate No.:** 2304081-002-01  
**Equipment:** Water Bath  
Model: WB 29 Serial No.: I698.0051  
Resolution: 0.1 °C ID No.: N/A  
Manufacturer: MEMMERT  
**Date of Calibration:** 27 July 2023 Page 3 of 3

**Calibration point:** 95.0 °C

### Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
Min	23.0	56.3	227.5
Max	25.0	60.2	229.6



Sensor Installation Location

Table1 : Reporting of Temperature

Calibration Point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.5 is REF)					Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	
95.0	95.03	94.96	95.10	94.97	95.02	0.28

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
95.0	94.9	95.1	95.0	0.18	0.080	0.47

**Note** The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity)"

UUC\* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

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.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

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

----- End -----

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Request Service No. 099/67

Page 1 of 3

### Calibration Certificate

Nomenclature : Brand : Mettler Toledo Type : Top-Loading Electronic Balance

Model : AG245 Serial No. : 1117293916 (198129-0)

Submitted by : Laboratory of SECOT CO., LTD.

Location of Calibration : BAL Room , 6<sup>th</sup> Floor, Secot Co., Ltd.

Calibration range : 0 – 200 g Scale division : 0.00001 g (41g)/ 0.0001 g (210g)

Calibration date : May 24,2024

Reference Standard No. M2310081S,M2402083S,M2302167S,M2403062N,M2303005N

Traceable to : Metrological Center SCI ECO Services Company Limited.

Thai Calibration Services CO., LTD.

Ambient Condition : Temperature 24.20 – 24.70 °C

Humidity 50.70 – 52.00 % RH

Calibrated By : *Pornnapa Budthum* Approved By : *Narisa Poowasanpetch*

(Miss Pornnapa Budthum)

(Miss Narisa Poowasanpetch)

Testing Officer

Chief of Technical Management

Date : 25/05/2024

Date : 25/05/2024

Issued Date : May 25,2024

### Measurement Report

Request Service No. 099/67

Page 2 of 3

Description : Brand : Mettler Toledo

Type : Top-Loading Electronic Balance

Model : AG245

Serial No. : 1117293916 (198129-0)

Calibration range : 0 – 200 g

Scale division : 0.00001 g (41g)/ 0.0001 g (210g)

Calibration date : May 24,2024

Ambient Condition : Temperature 24.20-24.70 °C Relative humidity 50.70-52.00 % RH

Measurement data :

#### 1. Repeatability of Reading :

Load (g)	Standard Deviation of Reading (g)	Maximum Difference between Successive Reading (g)
50	0.000125	0.0004
100	0.000105	0.0003
150	0.000125	0.0003
200	0.000173	0.0005

#### 2. Off-Center Loading :

A Mass of 50.0000 g was placed and moved to various position on the pan.

Unit : g

Center	Front	Left	Back	Right	Center	Maximum Difference
50.00010	50.00032	50.00048	50.00002	50.00008	50.00020	0.00038

Issued Date : May 25,2024

## 3. Departure from Nominal Value :

Reading (g)	Correction (g)	Uncertainty (+/- g)
0	0.000000	$\pm 0.000034$
0.5	0.000022	$\pm 0.000033$
1	0.000037	$\pm 0.000018$
10	-0.000067	$\pm 0.000036$
20	-0.000060	$\pm 0.000044$
40	-0.000193	$\pm 0.000072$
60	-0.00032	$\pm 0.00011$
80	-0.00033	$\pm 0.00013$
100	-0.00048	$\pm 0.00015$
120	-0.00049	$\pm 0.00017$
140	-0.00040	$\pm 0.00022$
160	-0.00054	$\pm 0.00023$
180	-0.00053	$\pm 0.00024$
200	-0.00084	$\pm 0.00027$

Calibrated by : Bongpa Puthum

(Miss Pornnapa Budthum)

Testing Officer

Date : 25/05/2024Approved By : Naimee Poowasanpetch

(Miss Narisa Poowasanpetch)

Chief of Technical Management

Date : 25/05/2024

Issued Date : May 25, 2024



## Calibration Certificate

Nomenclature : Brand : Sartorius Type : Top-Loading Electronic Balance

Model : BSA224S-CW Serial No. : 32191636

Submitted by : Laboratory of SECOT CO., LTD.

Location of Calibration : BAL Room , 6<sup>th</sup> Floor, Secot Co., Ltd.

Calibration range : 0 – 200 g Scale division : 0.0001 g (220 g)

Calibration date : May 22, 2023

Reference Standard No. M2402083S, M2302167S, M2403062N, M2303005N

Traceable to : Thai Calibration services Co., Ltd

Ambient Condition : Temperature 23.41-24.71 °C

Humidity 48.2-53.1 % RH

Calibrated By : Khemchuda Insorn

(Miss Khemchuda Insorn)

Testing Officer

Date : 22/05/2024Approved By : Naimee Poowasanpetch

(Miss Narisa Poowasanpetch)

Chief of Technical Management

Date : 23/05/2024

Issued Date : May 23, 2024

## Measurement Report

Request Service No.100/67

Page 2 of 3

Description : Brand : Sartorius

Type : Top-Loading Electronic Balance

Model : BSA224S-CW

Serial No. : 32191636

Calibration range : 0 – 200 g

Scale division : 0.0001 g (220 g)

Calibration date : May 22,2023

Ambient Condition : Temperature 23.41-24.71 °C Relative humidity 48.2-53.1 % RH

Measurement data :

### 1. Repeatability of Reading :

Load (g)	Standard Deviation of Reading (g)	Maximum Difference between Successive Reading (g)
50	0.00007	0.0002
100	0.00005	0.0001
150	0.00005	0.0001
200	0.00005	0.0001

### 2. Off-Center Loading :

A Mass of 50.0000 g was placed and moved to various position on the pan.

Unit : g

Center	Front	Left	Back	Right	Center	Maximum Difference
49.99990	49.99992	49.99988	49.99992	49.99990	49.99992	0.00004

Issued Date : May 24,2024

Request Service No. 100/67

Page 3 of 3

### 3. Departure from Nominal Value :

Reading (g)	Correction (g)	Uncertainty (+/- g)
0	0.00000	± 0.00007
1	+ 0.00003	± 0.00007
5	+ 0.00004	± 0.00008
10	+ 0.00008	± 0.00008
20	+ 0.00003	± 0.00009
40	+ 0.00012	± 0.00010
60	+ 0.00004	± 0.00012
80	+ 0.00005	± 0.00013
100	+ 0.00006	± 0.00016
120	+ 0.00007	± 0.00018
140	+ 0.00008	± 0.00020
160	+ 0.00006	± 0.00022
180	+ 0.00007	± 0.00024
200	+ 0.00010	± 0.00027

Calibrated by :

*Khemchuda Insorn*

Approved By :

*Narisa Poowasanpetch*

(Miss Khemchuda Insorn)

(Miss Narisa Poowasanpetch)

Testing Officer

Chief of Technical Management

Date : 27/05/2024

Date : 23/05/2024

Issued Date : May 23,2024



# CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **26 March 2024**

CERTIFICATE NUMBER **211259**

**Noisemeters**

NoiseMeters  
Acoustic House  
Bridlington Road  
Hunmanby  
YO14 0PH  
United Kingdom  
[www.noisemeters.com](http://www.noisemeters.com)

Page 1 of 2

Approved signatory  
N.Smith  
Electronically signed:



## doseBadge Reader : IEC 60942:2003

### Instrument information

**Manufacturer:** Cirrus Research plc

**Notes:**

**Model:** RC:110A

**Serial number:** 95167

**Class:** 2

### Test summary

**Date of calibration:** 25 March 2024

The doseBadge reader detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942\_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

The doseBadge Reader has been shown to conform to the Class 2 requirements for periodic testing, described in Annex B of IEC 60942:2003 for the sound pressure level(s) and frequency(ies) stated, for the environmental conditions under which the tests were performed.

However, as public evidence was not available, from a testing organisation responsible for pattern approval, to demonstrate that the model of doseBadge Reader conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, no general statement or conclusion can be made about conformance of the doseBadge Reader to the requirements of IEC 60942:2003.

**Notes:**

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a coverage probability of approximately 95%.

# CERTIFICATE OF CALIBRATION

Certificate Number:

**211259**

Page 2 of 2

### Environmental conditions

The following conditions were recorded at the time of the test:

**Before** Pressure: 99.26 kPa Temperature: 22.1 °C Humidity: 33.4 %  
**After** Pressure: 99.26 kPa Temperature: 22.1 °C Humidity: 34.6 %

### Test equipment

Equipment	Manufacturer	Model	Serial number
Distortion Meter	Keithley	2015	0839263
Acoustic Calibrator	Bruel and Kjaer	4231	2610257
Environmental Monitor	Comet	T7510	21962628

### Initial Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	113.41	113.54	113.55	<b>113.50</b>	-0.50	±0.75	0.11 dB
Distortion (%)	< 4.00	0.49	0.50	0.55	<b>0.51</b>	0.51	+4.00	0.13 %
Frequency (Hz)	1000.0	990.5	990.5	990.4	<b>990.5</b>	-9.5	±20.0	0.1 Hz

The measured quantities or deviations (as applicable), extended by the expanded combined uncertainty of measurement, must not exceed the corresponding tolerance.

### Adjusted Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	113.99	113.99	113.98	<b>113.99</b>	-0.01	±0.75	0.11 dB
Distortion (%)	< 4.00	0.42	0.41	0.41	<b>0.42</b>	0.42	+4.00	0.13 %
Frequency (Hz)	1000.0	990.3	990.4	990.3	<b>990.4</b>	-9.6	±20.0	0.1 Hz

### Functionality Results

Function	Result
Keypad	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

End of results



## Instrument information

JANTYTECH  
捷通科技

Name	WET BULB GLOBE TEMPERATURE (WBGT)METER
Series No	3522210174
Type	JT2011-E2A
Customer	SECOT CO., LTD.
Address	239 Rim Klong Prapa Road, Bang Sue, Bang Sue, Bangkok 10800

## Integrity check of instrument

Appearance	✓
Parts integrity	✓
Screen display or touch	✓
Instrument button	✓
Power supply	✓
battery	✓
Data storage and export	✓
Deviation degree of comparison test with standard instrument	✓

## Calibration Results

UUC Sensor	Standard Temperature ( °C )	UUC Reading ( °C )	Correction ( °C )	Uncertainty ( ± °C )
WET	25.0	25.1	-0.1	0.2
	30.0	29.8	0.2	0.2
	35.0	35.1	-0.1	0.2
	40.0	40.1	-0.1	0.2
	45.0	44.8	0.2	0.2
DRY	25.0	24.9	0.1	0.2
	30.0	29.8	0.2	0.2
	35.0	34.9	0.1	0.2
	40.0	39.8	0.2	0.2
	45.0	45.1	-0.1	0.2
GLOBE	25.0	24.9	0.1	0.2
	30.0	29.8	0.2	0.2
	35.0	34.9	0.1	0.2
	40.0	39.8	0.2	0.2
	45.0	44.9	0.1	0.2

Environmental conditions: temperature: 26 °C±2°C, relative humidity: 30% RH±10RH%

Reference Standard : Standard Mercury Thermometers, Manufacturer: BGRI, Model: STA, SN : 2-56,  
Calibrated Date : 20 February 2023, Calibration Certificate No. : RA21H-AB1000009

This Certificate is traceable to NCMT North China, Certificate No.: RA20J-AK000075

Calibration Engineer : 

Date : January 16, 2024



## Instrument information

JANTYTECH  
捷通科技

Name	WET BULB GLOBE TEMPERATURE (WBGT)METER
Series No	3522210177
Type	JT2011-E2A
Customer	SECOT CO., LTD.
Address	239 Rim Klong Prapa Road, Bang Sue, Bang Sue, Bangkok 10800

## Integrity check of instrument

Appearance	✓
Parts integrity	✓
Screen display or touch	✓
Instrument button	✓
Power supply	✓
battery	✓
Data storage and export	✓
Deviation degree of comparison test with standard instrument	✓

## Calibration Results

UUC Sensor	Standard Temperature ( °C )	UUC Reading ( °C )	Correction ( °C )	Uncertainty ( ± °C )
WET	25.0	25.1	-0.1	0.2
	30.0	30.2	-0.2	0.2
	35.0	34.9	0.1	0.2
	40.0	39.8	0.2	0.2
	45.0	44.9	0.1	0.2
DRY	25.0	25.1	-0.1	0.2
	30.0	30.2	-0.2	0.2
	35.0	34.9	0.1	0.2
	40.0	39.8	0.2	0.2
	45.0	44.8	0.2	0.2
GLOBE	25.0	25.1	-0.1	0.2
	30.0	30.2	-0.2	0.2
	35.0	34.9	0.1	0.2
	40.0	40.2	-0.2	0.2
	45.0	45.1	-0.1	0.2

Environmental conditions: temperature: 26 °C±2°C, relative humidity: 30% RH±10RH%

Reference Standard : Standard Mercury Thermometers, Manufacturer: BGRI, Model: STA, SN : 2-56,  
Calibrated Date : 20 February 2023, Calibration Certificate No. : RA21H-AB1000009

This Certificate is traceable to NCMT North China, Certificate No.: RA20J-AK000075

Calibration Engineer : 

Date : January 16, 2024





## Instrument information

JANTYTECH  
捷通科技

Name	WET BULB GLOBE TEMPERATURE (WBGT)METER
SeriesNo	3522210179
Type	JT2011-E2A
Customer	SECOT CO., LTD.
Address	239 Rim Klong Prapa Road, Bang Sue, Bang Sue, Bangkok 10800

## Integrity check of instrument

Appearance	✓
Parts integrity	✓
Screen display or touch	✓
Instrument button	✓
Power supply	✓
battery	✓
Data storage and export	✓
Deviation degree of comparison testwith standard instrument	✓

## Calibration Results

UUC Sensor	Standard Temperature ( °C )	UUC Reading ( °C )	Correction ( °C )	Uncertainty ( ± °C )
WET	25.0	24.8	0.2	0.2
	30.0	30.1	-0.1	0.2
	35.0	34.8	0.2	0.2
	40.0	40.1	-0.1	0.2
	45.0	45.1	-0.1	0.2
DRY	25.0	25.1	-0.1	0.2
	30.0	29.9	0.1	0.2
	35.0	35.1	-0.1	0.2
	40.0	40.2	-0.2	0.2
	45.0	44.8	0.2	0.2
GLOBE	25.0	24.8	0.2	0.2
	30.0	29.8	0.2	0.2
	35.0	34.8	0.2	0.2
	40.0	40.1	-0.1	0.2
	45.0	45.2	-0.2	0.2

Environmental conditions: temperature: 26 °C±2°C, relative humidity: 30% RH±10RH%

Reference Standard : Standard Mercury Thermometers, Manufacturer: BGRI, Model: STA, SN : 2-56,  
Calibrated Date : 20 February 2023, Calibration Certificate No. : RA21H-AB1000009

This Certificate is traceable to NCMT North China, Certificate No.: RA20J-AK000073

Calibration Engineer : 

Date : January 16, 2024

质检专用章

## Instrument information

JANTYTECH  
捷通科技

Name	WET BULB GLOBE TEMPERATURE (WBGT)METER
SeriesNo	3522210181
Type	JT2011-E2A
Customer	SECOT CO., LTD.
Address	239 Rim Klong Prapa Road, Bang Sue, Bang Sue, Bangkok 10800

## Integrity check of instrument

Appearance	✓
Parts integrity	✓
Screen display or touch	✓
Instrument button	✓
Power supply	✓
battery	✓
Data storage and export	✓
Deviation degree of comparison testwith standard instrument	✓

## Calibration Results

UUC Sensor	Standard Temperature ( °C )	UUC Reading ( °C )	Correction ( °C )	Uncertainty ( ± °C )
WET	25.0	24.9	0.1	0.2
	30.0	29.8	0.2	0.2
	35.0	34.9	0.1	0.2
	40.0	40.1	-0.1	0.2
	45.0	45.1	-0.1	0.2
DRY	25.0	25.1	-0.1	0.2
	30.0	30.2	-0.2	0.2
	35.0	35.2	-0.2	0.2
	40.0	40.2	-0.2	0.2
	45.0	44.9	0.1	0.2
GLOBE	25.0	24.9	0.1	0.2
	30.0	29.9	0.1	0.2
	35.0	34.9	0.1	0.2
	40.0	40.1	-0.1	0.2
	45.0	45.2	-0.2	0.2

Environmental conditions: temperature: 26 °C±2°C, relative humidity: 30% RH±10RH%

Reference Standard : Standard Mercury Thermometers, Manufacturer: BGRI, Model: STA, SN : 2-56,  
Calibrated Date : 20 February 2023, Calibration Certificate No. : RA21H-AB1000009

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Calibration Engineer : 

Date : January 16, 2024

质检专用章



**INTERNATIONAL TESTING SERVICE CO., LTD**1213/388 Ladprao 94 Ladprao Rd. Wangtonglang Bangkok 10310  
Tel 0-2559-2095 Fax 0-2559-2096E-mail : sale@itest-lab.com web site : [www.itest-lab.com](http://www.itest-lab.com)NSC-TISI-TIS 17025  
CALIBRATION 129

# CALIBRATION CERTIFICATE

Issued date: 15 January 2024

Client Name : **SECOT CO., LTD.**

Address : 239 Rimklongprapa Rd.,Bangsue, Bangkok 10800 Thailand.

Request No: **C-2401 - 011**Laboratory No.: **CAL - 011**

Date of Request: 11 January 2024.

Date of Calibration: 12 January 2024.

**1. Unit Under Calibration (UUC) :**

Nomenclature : Digital Light Meter

Serial No.: A 051053

Maker : EXTECH

Model : 407026

**2. Place of Calibration:** Photometry Standard Laboratory, INTERNATIONAL TESTING SERVICE CO., LTD.**3. Range of Calibration:** 1 Range**4. Condition of Laboratory:** Ambient temperature:  $(25 \pm 2)$  °C and relative humidity  $(60 \pm 20)$  %.**5. Reference Standard:** Standard Tungsten Halogen Lamp, Serial No.: 504010, which was calibrated on 14 June 2023, can be traceable to International System of Unit (SI) through National Institute of Metrology (Thailand), Certificate No.: TP-1027-23.**6. Support Equipment:**

1. Photometric bench, 6.3 meter long.
2. DC. power supply, Serial No.: EJ 19A 009, Model: GPR-25H 300, Maker: GW INSTEK.
3. Digital Multimeter, Model: 34401A, S/N: MY44011212 and MY44011215.
4. Foot Candle / Lux Meter, Model: 407026, S/N: Q 558437, Maker: EXTECH.

**7. Calibration Procedure:**

The measurement was done in accordance with WI-CP-01. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level of confidence of approximately 95 %.

Page 1 of 2

The Results shown in this certification report refer only to the equipment(s) calibrated unless otherwise stated  
This Calibration Certificate cannot be reproduced, except in full, without permission of company.

**INTERNATIONAL TESTING SERVICE CO., LTD**1213/388 Ladprao 94 Ladprao Rd. Wangtonglang Bangkok 10310  
Tel 0-2559-2095 Fax 0-2559-2096E-mail : sale@itest-lab.com web site : [www.itest-lab.com](http://www.itest-lab.com)NSC-TISI-TIS 17025  
CALIBRATION 129Request No: **C-2401 - 011**

Serial No.: A 051053

Laboratory No.: **CAL - 011****Results :**

UUC Range	Standard (lx)	UUC Reading (lx)		Correction (lx)	Uncertainty of Measurement ( $\pm$ lx)
		Before adjust	After adjust		
2000	0	0	0	0	0.60
	100	92	100	0	2.9 % of Reading
	496	455	494	+2	
	988	908	987	+1	
	1478	1368	1482	-4	
	1966	1831	1983	-17	

Note : 1. The results relate only to the items calibrated.  
2. Zero adjust before used.

Calibration result approved by

Approved on behalf of  
International Testing Service Co., Ltd  
(Mr. Uttana Tholueng)  
(Mr. Pichit Vivat-Anant)  
Managing Director

Page 2 of 2

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