

ภาคผนวก ง

ใบรับรองผลการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

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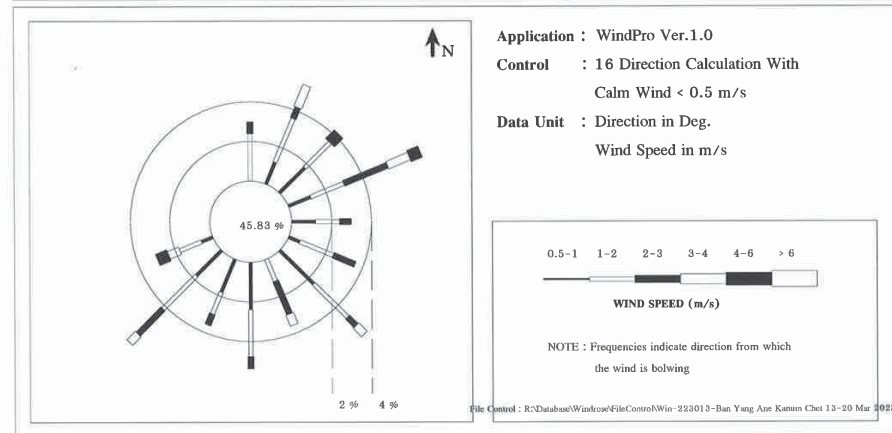
ความเร็วและทิศทางลม



## Meteorological Monitoring Results : Wind Rose MTR-CCE

Location : Ban Yang Ane Kanum Chet      Monitor period : 13-20 Mar 2023  
Wind Speed Model : NRG Symphonie      Serial No : A4905  
Wind Direction Model : NRG Symphonie      Serial No : A4905

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	0.0000	0.0238	0.0060	0.0000	0.0000	0.0000	0.0298
NNE	0.0119	0.0238	0.0060	0.0119	0.0000	0.0000	0.0536
NE	0.0179	0.0179	0.0000	0.0000	0.0060	0.0000	0.0417
ENE	0.0119	0.0179	0.0238	0.0119	0.0060	0.0000	0.0714
E	0.0119	0.0119	0.0060	0.0000	0.0000	0.0000	0.0298
ESE	0.0060	0.0179	0.0119	0.0000	0.0000	0.0000	0.0357
SE	0.0238	0.0238	0.0060	0.0060	0.0000	0.0000	0.0595
SSE	0.0000	0.0119	0.0179	0.0060	0.0000	0.0000	0.0357
S	0.0238	0.0238	0.0060	0.0000	0.0000	0.0000	0.0536
SSW	0.0179	0.0119	0.0060	0.0000	0.0000	0.0000	0.0357
SW	0.0179	0.0238	0.0179	0.0060	0.0000	0.0000	0.0655
WSW	0.0060	0.0119	0.0000	0.0060	0.0060	0.0000	0.0298
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.4583						



Ladawan H.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



## Meteorological Monitoring Results : Wind Rose MTR-CCE

Location : Ban Yang Ane Kanum Chet      Monitor period : 13-20 Mar 2023  
Wind Speed Model : NRG Symphonie      Serial No : A4905  
Wind Direction Model : NRG Symphonie      Serial No : A4905

Time	13-14 Mar 2023		14-15 Mar 2023		15-16 Mar 2023		16-17 Mar 2023	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
11:00 - 12:00	1.2	ENE	3.3	ENE	2.3	ESE	1.1	SSE
12:00 - 13:00	1.0	SE	1.3	SE	0.1	SE	1.3	NNE
13:00 - 14:00	0.6	SE	1.6	S	3.1	SE	1.8	S
14:00 - 15:00	3.7	ENE	3.1	NNE	1.7	SW	5.1	WSW
15:00 - 16:00	0.5	SE	2.7	SSE	0.7	E	0.7	SSW
16:00 - 17:00	2.5	SSE	0.8	SE	1.1	NNE	3.8	WSW
17:00 - 18:00	0.0	NNE	2.7	SW	0.0	ESE	1.9	NE
18:00 - 19:00	1.7	ENE	0.0	NNE	0.8	ESE	0.4	ESE
19:00 - 20:00	0.3	SSW	0.0	WSW	0.0	WSW	1.1	N
20:00 - 21:00	0.0	ENE	0.0	ESE	0.0	NNE	0.0	SSW
21:00 - 22:00	0.0	ENE	0.0	E	0.0	NE	0.0	NE
22:00 - 23:00	0.0	SE	0.0	E	0.0	NNE	0.5	NE
23:00 - 24:00	0.0	S	0.0	SE	0.0	SSW	0.0	NNE
00:00 - 01:00	0.0	E	0.0	SW	0.0	ESE	0.0	NE
01:00 - 02:00	0.0	SW	0.0	NE	0.0	SSW	0.0	ENE
02:00 - 03:00	0.0	E	0.0	WSW	0.0	ENE	0.0	S
03:00 - 04:00	0.0	NNE	0.0	SSE	0.0	SSW	0.0	WSW
04:00 - 05:00	0.0	S	0.0	NE	0.0	N	0.0	WSW
05:00 - 06:00	0.0	NNE	0.0	NNE	0.0	SW	0.0	N
06:00 - 07:00	0.0	ENE	0.0	S	0.0	SSW	0.0	NNE
07:00 - 08:00	1.1	NE	0.0	NE	0.0	NE	0.0	SSE
08:00 - 09:00	1.8	ESE	0.0	ENE	0.0	SSE	1.0	NNE
09:00 - 10:00	2.4	ENE	2.3	ENE	0.0	S	0.9	SW
10:00 - 11:00	2.2	N	3.1	SSE	0.8	S	2.2	SSW



Ladawan H.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team

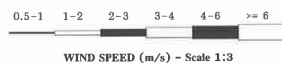


## Meteorological Monitoring Results : Wind Rose

### MTR-CCE

Location : Ban Yang Ane Kanum Chet      Monitor period : 13-20 Mar 2023  
 Wind Speed Model : NRG Symphonic      Serial No : A4905  
 Wind Direction Model : NRG Symphonic      Serial No : A4905

Time	17-18 Mar 2023		18-19 Mar 2023		19-20 Mar 2023		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
11:00 - 12:00	2.8	SSE	1.9	ENE	1.2	NNE	
12:00 - 13:00	1.3	N	4.8	ENE	5.7	NE	
13:00 - 14:00	2.3	SW	1.0	WSW	3.6	SW	
14:00 - 15:00	1.3	N	1.9	N	2.3	ENE	
15:00 - 16:00	3.1	NNE	2.1	ESE	1.5	SE	
16:00 - 17:00	0.7	ENE	1.7	SW	1.7	E	
17:00 - 18:00	0.6	NE	2.7	E	1.6	NE	
18:00 - 19:00	1.1	S	1.9	SE	2.3	SW	
19:00 - 20:00	1.4	ESE	1.1	S	1.4	SW	
20:00 - 21:00	0.5	S	0.7	SW	1.1	E	
21:00 - 22:00	1.0	SSW	0.0	SW	0.5	S	
22:00 - 23:00	0.9	SSW	1.1	SSE	0.6	SE	
23:00 - 24:00	0.8	NNE	1.4	ESE	0.0	ENE	
00:00 - 01:00	0.0	E	2.1	SE	0.0	SSW	
01:00 - 02:00	0.0	SW	0.8	WSW	0.0	NE	
02:00 - 03:00	0.0	SW	0.3	SSE	0.7	ENE	
03:00 - 04:00	0.0	SW	0.0	NNE	0.9	SW	
04:00 - 05:00	0.0	WSW	0.0	NNE	0.1	E	
05:00 - 06:00	0.0	ESE	0.0	E	0.1	NNE	
06:00 - 07:00	0.0	SW	0.0	SSW	0.0	SSW	
07:00 - 08:00	0.0	SW	1.0	SSW	0.7	NNE	
08:00 - 09:00	0.8	E	2.0	S	1.5	WSW	
09:00 - 10:00	2.2	NNE	0.6	SSW	0.9	NE	
10:00 - 11:00	2.6	ENE	1.3	SW	0.6	S	
Wind Rose							



File Control :R:\Database\Windrose\FileControl\Win-223013-Ban Yang Ane Kanum Chet 13-20 Mar 2023

Ladawan W.  
 (Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.  
 (Miss Preeda Somjai)  
 Technical Management Team



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## คุณภาพอากาศในบรรยากาศ



บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

239 ถนนวิมลทองประไพ แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800  
239 RIMKOLNGPRAPA 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	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013AMBIENT/(Mar)/TSP
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 13-20/03/2023
RECEIVED DATE	: 21/03/2023	ANALYTICAL DATE	: 21-23/03/2023
REPORT DATE	: 27/03/2023	SAMPLE CONDITION	: Good
SITE OPERATOR	: Mr. Supakit Tamooka		
LOCATION DESCRIPTION	1. Wat Bowin 2. Wat Yang-ane 3. Ban Hubborn Health Promotion Hospital 4. Ban Khao Hin School 5. Ban Yang Ane-Kanum Chet		

PARAMETER	SAMPLING DATE	UNIT	RESULT					STANDARD*	REFERENCE METHOD
			1	2	3	4	5		
TSP (24 hr)	13-14/03/2023	mg/cu.m.	0.127	0.097	0.098	0.098	0.116	0.330	High Volume Air
	14-15/03/2023	mg/cu.m.	0.157	0.110	0.101	0.111	0.124		Sampler/Gravimetric
	15-16/03/2023	mg/cu.m.	0.100	0.077	0.080	0.064	0.064		Method
	16-17/03/2023	mg/cu.m.	0.080	0.075	0.061	0.059	0.058		
	17-18/03/2023	mg/cu.m.	0.094	0.067	0.066	0.054	0.060		
	18-19/03/2023	mg/cu.m.	0.066	0.067	0.054	0.048	0.050		
	19-20/03/2023	mg/cu.m.	0.100	0.065	0.058	0.041	0.056		

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

Narisa Poowasanpetch

(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 the National Environment Board, No.24, B.E.2547 (2004).



บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

239 ถนนวิมลทองประไพ แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800  
239 RIMKOLNGPRAPA 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	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013AMBIENT/(Mar)/PM-10
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 13-20/03/2023
RECEIVED DATE	: 21/03/2023	ANALYTICAL DATE	: 21-23/03/2023
REPORT DATE	: 27/03/2023	SAMPLE CONDITION	: Good
SITE OPERATOR	: Mr. Supakit Tamooka		
LOCATION DESCRIPTION	1. Wat Bowin 2. Wat Yang-ane 3. Ban Hubborn Health Promotion Hospital 4. Ban Khao Hin School 5. Ban Yang Ane-Kanum Chet		

PARAMETER	SAMPLING DATE	UNIT	RESULT					STANDARD*	REFERENCE METHOD
			1	2	3	4	5		
PM-10 (24 hr)	13-14/03/2023	mg/cu.m.	0.069	0.067	0.062	0.076	0.063	0.120	High Volume Air
	14-15/03/2023	mg/cu.m.	0.094	0.067	0.063	0.065	0.070		Sampler (Hi-Vol PM-10)
	15-16/03/2023	mg/cu.m.	0.066	0.058	0.052	0.038	0.044		Size Selective Inlet/
	16-17/03/2023	mg/cu.m.	0.062	0.047	0.039	0.038	0.041		Gravimetric Method
	17-18/03/2023	mg/cu.m.	0.063	0.042	0.040	0.035	0.034		
	18-19/03/2023	mg/cu.m.	0.044	0.042	0.038	0.032	0.033		
	19-20/03/2023	mg/cu.m.	0.063	0.036	0.037	0.027	0.037		

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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

Location : Wat Bowin                      Monitor Period : 13-20 Mar 2023  
Analyzer Model : API 200A                      Station No : SS-01  
Serial No : 1645                      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E                      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023                      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	NO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
10:00 - 11:00	10.4	15.0	14.3	4.8	3.4	7.7	5.3
11:00 - 12:00	4.2	14.8	17.4	3.5	3.5	6.0	4.5
12:00 - 13:00	5.0	11.9	19.0	14.8	2.9	4.3	5.4
13:00 - 14:00	7.7	11.0	13.7	11.9	3.4	6.7	5.9
14:00 - 15:00	6.0	9.5	11.9	11.0	2.8	7.5	6.7
15:00 - 16:00	4.3	7.8	7.1	9.5	3.1	6.0	8.6
16:00 - 17:00	6.7	7.5	9.9	9.4	6.4	9.4	6.6
17:00 - 18:00	7.5	6.1	9.1	14.3	13.5	11.3	7.4
18:00 - 19:00	6.0	8.9	6.7	14.2	10.0	10.8	5.6
19:00 - 20:00	6.8	6.0	5.0	10.7	5.2	6.9	6.5
20:00 - 21:00	3.5	6.8	4.7	15.3	2.6	5.2	8.2
21:00 - 22:00	3.1	3.5	3.5	9.6	1.9	2.8	2.9
22:00 - 23:00	4.0	3.1	3.3	10.6	3.5	2.5	3.1
23:00 - 00:00	8.2	4.0	3.9	7.3	3.1	2.6	2.5
00:00 - 01:00	10.1	8.2	5.2	4.2	4.2	3.2	3.4
01:00 - 02:00	2.3	2.9	2.6	4.6	4.9	6.9	5.6
02:00 - 03:00	3.2	3.1	1.9	4.8	4.6	5.0	5.1
03:00 - 04:00	2.9	2.5	2.0	4.2	3.2	4.3	9.1
04:00 - 05:00	2.6	3.4	2.3	3.7	3.8	4.8	4.7
05:00 - 06:00	6.3	5.6	3.2	3.5	11.2	7.0	3.2
06:00 - 07:00	5.2	5.1	2.9	3.1	5.7	11.4	14.9
07:00 - 08:00	4.8	9.1	2.6	4.2	10.4	10.6	9.4
08:00 - 09:00	3.5	9.5	6.3	4.2	4.2	14.3	13.7
09:00 - 10:00	2.8	9.4	5.2	4.7	5.0	3.3	12.5
Average-24Hr*	5.3	7.3	6.8	7.8	5.1	6.7	6.7
Max-1Hr	10.4	15.0	19.0	15.3	13.5	14.3	14.9
Min-1Hr	2.3	2.5	1.9	3.1	1.9	2.5	2.5
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

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

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Wat Bowin                      Monitor Period : 13-20 Mar 2023  
Analyzer Model : Teledyne T100                      Station No : SS-01  
Serial No : 120                      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E                      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023                      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	SO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
10:00 - 11:00	5.9	0.8	4.2	5.1	1.8	3.9	4.3
11:00 - 12:00	6.7	1.0	4.0	4.9	1.3	5.1	3.2
12:00 - 13:00	7.2	1.5	5.1	5.0	2.9	2.1	2.9
13:00 - 14:00	6.5	1.0	5.5	5.6	3.2	3.1	2.8
14:00 - 15:00	6.5	1.1	5.4	2.3	2.3	3.1	1.3
15:00 - 16:00	6.4	1.4	5.6	2.7	2.7	4.0	2.3
16:00 - 17:00	6.4	0.9	5.9	3.9	3.9	4.7	2.4
17:00 - 18:00	6.1	0.2	5.8	3.9	3.9	4.9	2.3
18:00 - 19:00	5.9	0.8	5.3	3.5	0.8	4.5	1.9
19:00 - 20:00	6.9	0.7	4.9	1.8	7.0	4.2	2.1
20:00 - 21:00	6.6	0.8	4.5	1.3	2.5	4.9	3.6
21:00 - 22:00	7.6	1.0	4.1	0.5	1.6	5.1	2.9
22:00 - 23:00	7.5	1.0	4.0	1.2	0.3	3.4	3.8
23:00 - 00:00	2.3	5.5	5.7	0.8	2.8	6.4	1.2
00:00 - 01:00	1.7	5.8	5.9	0.1	6.0	5.8	0.3
01:00 - 02:00	3.7	5.5	6.1	1.4	2.9	3.4	3.7
02:00 - 03:00	2.8	5.7	6.1	2.9	2.3	2.9	1.2
03:00 - 04:00	2.0	6.1	6.2	3.2	1.1	4.4	0.9
04:00 - 05:00	2.3	5.4	5.9	1.3	1.9	2.4	2.5
05:00 - 06:00	2.2	5.8	5.4	3.6	1.7	3.5	1.2
06:00 - 07:00	2.1	6.0	4.8	6.5	2.5	4.2	3.0
07:00 - 08:00	2.1	6.1	4.1	3.8	4.8	5.1	1.5
08:00 - 09:00	1.0	4.5	4.0	2.2	4.1	3.5	2.9
09:00 - 10:00	1.4	4.6	3.9	2.7	4.0	2.8	2.3
Average-24Hr*	4.6	3.1	5.1	2.9	2.8	4.1	2.4
Max-1Hr	7.6	6.1	6.2	6.5	7.0	6.4	4.3
Min-1Hr	1.0	0.2	3.9	0.1	0.3	2.1	0.3
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

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

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Wat Yang Ane      Monitor Period : 13-20 Mar 2023  
Analyzer Model : Teledyne T200      Station No : SS2-01  
Serial No : 110      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	NO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
11:00 - 12:00	9.5	10.7	5.2	10.0	4.8	18.1	12.3
12:00 - 13:00	9.1	15.3	17.4	14.2	3.6	18.5	11.2
13:00 - 14:00	14.8	9.6	12.3	10.7	6.4	17.6	11.6
14:00 - 15:00	12.2	10.6	11.2	15.3	9.6	16.7	9.1
15:00 - 16:00	10.5	13.1	11.6	8.3	10.4	15.4	14.8
16:00 - 17:00	9.7	19.3	13.1	11.2	15.7	12.1	12.2
17:00 - 18:00	9.2	20.2	19.3	13.6	10.8	9.8	10.5
18:00 - 19:00	11.5	4.2	20.2	16.3	9.7	9.6	9.7
19:00 - 20:00	18.9	4.7	19.2	14.5	9.2	8.4	5.8
20:00 - 21:00	5.8	3.4	17.0	12.3	12.5	5.5	6.3
21:00 - 22:00	5.4	3.5	19.0	13.1	9.1	4.3	7.7
22:00 - 23:00	5.3	2.9	13.7	12.6	7.7	6.2	10.7
23:00 - 00:00	5.1	3.4	7.7	8.0	9.6	8.0	15.3
00:00 - 01:00	5.0	2.8	9.6	6.2	6.3	9.9	9.6
01:00 - 02:00	7.9	3.1	6.3	6.3	6.2	11.8	10.6
02:00 - 03:00	2.6	6.4	6.2	4.8	8.4	11.5	7.3
03:00 - 04:00	4.7	6.4	8.4	5.4	6.1	9.9	4.2
04:00 - 05:00	3.5	9.6	6.1	9.7	7.8	11.8	11.5
05:00 - 06:00	2.9	10.4	7.8	11.9	8.9	11.5	9.9
06:00 - 07:00	2.4	15.7	8.9	11.8	8.8	5.4	11.8
07:00 - 08:00	2.3	14.2	8.8	8.4	10.5	7.0	11.5
08:00 - 09:00	9.3	16.2	10.5	5.7	11.7	8.0	12.5
09:00 - 10:00	13.2	9.5	11.7	4.2	11.7	13.2	18.6
10:00 - 11:00	14.2	7.3	11.7	5.9	16.0	6.4	14.9
Average-24Hr*	8.1	9.3	11.8	10.0	9.2	10.7	10.8
Max-1Hr	18.9	20.2	20.2	16.3	16.0	18.5	18.6
Min-1Hr	2.3	2.8	5.2	4.2	3.6	4.3	4.2
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

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

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Wat Yang Ane      Monitor Period : 13-20 Mar 2023  
Analyzer Model : Thermo 43C      Station No : SS2-01  
Serial No : 60773-328-2      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	SO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
11:00 - 12:00	5.1	4.8	2.9	4.0	2.3	1.2	3.8
12:00 - 13:00	3.3	4.6	2.7	4.3	4.5	2.7	2.5
13:00 - 14:00	4.2	5.3	2.2	3.6	4.5	2.6	3.0
14:00 - 15:00	3.9	4.9	2.5	2.9	3.1	2.6	4.1
15:00 - 16:00	3.6	4.2	2.5	3.4	2.5	3.0	4.0
16:00 - 17:00	4.1	2.0	2.2	2.2	3.5	2.9	3.7
17:00 - 18:00	2.5	1.7	2.3	3.3	3.4	2.3	3.0
18:00 - 19:00	3.8	2.2	4.1	3.6	2.5	3.8	3.2
19:00 - 20:00	3.2	2.2	5.4	4.0	3.2	3.8	3.4
20:00 - 21:00	3.2	2.0	3.1	3.1	2.7	3.6	3.3
21:00 - 22:00	3.2	1.6	2.1	3.3	2.3	3.6	3.6
22:00 - 23:00	3.7	0.8	1.7	1.6	2.4	3.3	2.6
23:00 - 00:00	2.7	0.4	2.5	1.7	2.6	3.0	1.0
00:00 - 01:00	3.5	0.4	2.6	1.8	2.8	3.1	0.8
01:00 - 02:00	3.9	0.6	2.9	2.0	2.8	1.7	1.1
02:00 - 03:00	4.3	1.1	2.4	1.7	0.8	1.3	0.9
03:00 - 04:00	5.0	1.1	2.5	2.2	0.9	2.7	1.1
04:00 - 05:00	3.6	1.2	2.3	2.2	0.8	2.6	1.2
05:00 - 06:00	4.9	1.0	1.6	2.3	1.1	2.8	1.3
06:00 - 07:00	4.6	1.0	1.3	2.5	0.9	3.1	1.3
07:00 - 08:00	3.5	1.0	3.6	2.3	1.2	3.1	1.4
08:00 - 09:00	5.2	1.2	3.9	2.4	1.3	1.5	3.1
09:00 - 10:00	4.6	2.8	3.5	1.8	1.6	1.4	2.5
10:00 - 11:00	4.5	2.7	3.1	1.9	1.3	2.6	2.5
Average-24Hr*	3.9	2.1	2.7	2.7	2.3	2.7	2.4
Max-1Hr	5.2	5.3	5.4	4.3	4.5	3.8	4.1
Min-1Hr	2.5	0.4	1.3	1.6	0.8	1.2	0.8
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

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

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Ban Hubhorn Health Promotion Hospital      Monitor Period : 13-20 Mar 2023  
Analyzer Model : API 200A      Station No : Shelter 17  
Serial No : 074      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	NO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
13:00 - 14:00	12.3	16.1	14.9	9.6	16.0	18.6	7.7
14:00 - 15:00	14.9	15.5	16.3	9.6	18.1	14.9	11.7
15:00 - 16:00	16.3	13.3	17.1	8.3	18.5	16.3	18.0
16:00 - 17:00	17.1	8.9	18.5	7.6	17.6	17.1	14.3
17:00 - 18:00	18.5	8.9	11.5	18.5	16.7	18.5	12.9
18:00 - 19:00	11.5	11.5	9.2	18.5	15.4	18.5	17.7
19:00 - 20:00	11.2	13.0	12.5	20.7	12.1	20.7	11.9
20:00 - 21:00	12.6	17.4	9.1	17.6	9.8	6.9	10.8
21:00 - 22:00	15.4	6.1	7.7	16.7	9.6	7.6	9.7
22:00 - 23:00	6.3	7.0	7.2	15.4	6.3	6.8	7.9
23:00 - 00:00	6.2	5.2	4.5	12.1	6.2	6.9	7.8
00:00 - 01:00	8.4	7.7	4.8	9.8	8.4	6.4	7.7
01:00 - 02:00	5.5	8.6	5.0	9.6	5.5	2.4	7.4
02:00 - 03:00	4.3	8.7	4.8	6.3	4.3	2.1	1.5
03:00 - 04:00	6.2	10.8	5.0	6.2	6.2	1.9	3.3
04:00 - 05:00	9.8	5.0	4.6	8.4	8.0	2.1	7.0
05:00 - 06:00	9.6	6.3	9.6	6.1	9.9	2.0	5.7
06:00 - 07:00	11.9	6.2	7.6	7.8	11.8	1.8	4.4
07:00 - 08:00	10.8	8.4	7.2	8.9	11.5	1.8	14.0
08:00 - 09:00	17.6	5.5	6.1	8.8	9.9	1.7	11.4
09:00 - 10:00	19.6	8.0	9.6	10.5	11.8	1.9	7.4
10:00 - 11:00	17.6	9.9	7.6	11.7	11.5	1.7	7.8
11:00 - 12:00	17.7	11.8	12.6	11.7	12.5	12.5	10.4
12:00 - 13:00	8.0	12.3	10.8	13.6	16.9	9.1	8.7
Average-24Hr*	12.1	9.7	9.3	11.4	11.4	8.3	9.5
Max-1Hr	19.6	17.4	18.5	20.7	18.5	20.7	18.0
Min-1Hr	4.3	5.0	4.5	6.1	4.3	1.7	1.5
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

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

Ladawan N.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Ban Hubhorn Health Promotion Hospital      Monitor Period : 13-20 Mar 2023  
Analyzer Model : Thermo 43C      Station No : Shelter 17  
Serial No : 60771-328-2      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	SO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
13:00 - 14:00	2.4	1.3	7.3	2.3	2.7	4.2	3.8
14:00 - 15:00	5.1	2.9	7.5	1.1	1.2	3.5	2.2
15:00 - 16:00	6.6	3.2	5.7	1.9	7.5	1.8	2.7
16:00 - 17:00	5.2	2.3	4.2	1.7	5.7	1.3	4.6
17:00 - 18:00	3.1	2.7	6.3	5.4	4.2	1.4	2.6
18:00 - 19:00	5.0	3.9	6.8	7.0	6.3	2.9	4.6
19:00 - 20:00	5.2	3.9	7.8	1.3	6.8	3.2	6.4
20:00 - 21:00	5.2	0.8	2.0	5.0	7.8	2.3	5.9
21:00 - 22:00	4.8	7.0	1.8	1.3	1.3	2.7	6.3
22:00 - 23:00	7.1	2.5	4.2	3.6	3.6	3.9	3.0
23:00 - 00:00	4.8	1.6	3.5	3.0	3.0	3.9	1.4
00:00 - 01:00	5.4	0.3	1.8	3.5	4.8	3.5	3.5
01:00 - 02:00	3.2	2.8	1.3	1.8	5.7	1.8	2.4
02:00 - 03:00	1.4	6.0	0.5	1.3	1.9	1.3	2.8
03:00 - 04:00	2.4	2.9	1.2	0.5	6.2	0.5	2.2
04:00 - 05:00	3.9	2.3	0.8	1.2	4.8	1.2	1.7
05:00 - 06:00	2.6	1.1	0.1	0.8	6.4	0.8	2.0
06:00 - 07:00	4.6	1.9	1.4	0.1	5.9	0.1	1.8
07:00 - 08:00	6.4	1.7	2.9	1.4	6.3	1.4	2.0
08:00 - 09:00	5.9	2.5	3.2	2.9	3.0	2.9	3.3
09:00 - 10:00	6.3	5.4	4.6	3.2	2.1	3.2	1.6
10:00 - 11:00	3.0	3.8	2.4	2.9	1.7	1.3	3.0
11:00 - 12:00	2.1	5.3	3.9	3.2	2.0	3.6	2.1
12:00 - 13:00	1.8	2.1	2.9	2.3	1.8	6.5	1.8
Average-24Hr*	4.3	2.9	3.5	2.4	4.3	2.5	3.1
Max-1Hr	7.1	7.0	7.8	7.0	7.8	6.5	6.4
Min-1Hr	1.4	0.3	0.1	0.1	1.2	0.1	1.4
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

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

Ladawan N.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Ban Khao Hin School      Monitor Period : 13-20 Mar 2023  
Analyzer Model : API 200A      Station No : SS2-08  
Serial No : 2387      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	NO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
14:00 - 15:00	2.5	4.0	3.1	5.5	3.5	4.7	7.4
15:00 - 16:00	3.3	3.4	2.5	5.2	2.2	1.6	1.1
16:00 - 17:00	1.1	2.9	1.2	2.3	1.6	0.9	1.1
17:00 - 18:00	3.2	5.2	1.4	4.6	1.6	8.8	1.2
18:00 - 19:00	1.7	5.0	2.1	6.8	3.0	9.3	1.3
19:00 - 20:00	0.8	4.4	2.4	3.9	2.1	2.8	2.1
20:00 - 21:00	3.7	3.5	3.6	3.7	3.2	1.9	1.9
21:00 - 22:00	2.9	5.9	3.7	3.6	2.6	2.1	1.5
22:00 - 23:00	6.7	4.6	3.8	3.5	2.8	5.4	2.7
23:00 - 00:00	2.1	3.4	0.5	3.6	3.3	1.4	1.8
00:00 - 01:00	0.9	3.6	0.5	3.7	3.1	1.4	2.7
01:00 - 02:00	2.9	3.1	0.6	3.7	4.3	1.5	2.2
02:00 - 03:00	2.9	3.7	1.0	4.2	2.7	0.9	1.9
03:00 - 04:00	2.2	3.5	0.9	3.7	2.4	0.9	1.3
04:00 - 05:00	1.9	6.3	1.1	3.9	2.0	2.5	1.4
05:00 - 06:00	1.3	4.7	9.0	3.6	6.6	1.2	1.2
06:00 - 07:00	2.1	3.7	3.7	5.6	1.5	1.9	1.5
07:00 - 08:00	1.9	2.4	2.4	6.3	2.2	2.4	1.9
08:00 - 09:00	1.5	4.7	8.2	4.0	2.4	4.5	1.9
09:00 - 10:00	3.2	3.6	5.0	3.7	8.2	2.5	5.6
10:00 - 11:00	3.0	2.3	10.6	3.6	5.0	3.8	3.7
11:00 - 12:00	4.8	2.9	3.5	3.4	10.6	5.5	2.8
12:00 - 13:00	1.8	4.5	3.4	3.2	3.5	4.2	1.1
13:00 - 14:00	2.6	3.6	4.7	3.4	3.4	8.6	0.7
Average-24Hr*	2.5	4.0	3.3	4.1	3.5	3.4	2.2
Max-1Hr	6.7	6.3	10.6	6.8	10.6	9.3	7.4
Min-1Hr	0.8	2.3	0.5	2.3	1.5	0.9	0.7
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

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

Ladawan N.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Ban Khao Hin School      Monitor Period : 13-20 Mar 2023  
Analyzer Model : API 100A      Station No : SS2-08  
Serial No : 1715      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	SO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
14:00 - 15:00	2.3	2.8	3.3	2.2	0.7	0.1	2.2
15:00 - 16:00	2.0	2.1	3.2	1.2	0.5	0.8	1.5
16:00 - 17:00	2.4	1.9	2.4	1.8	0.6	0.2	1.1
17:00 - 18:00	1.2	0.9	2.4	1.4	0.2	0.6	0.5
18:00 - 19:00	2.0	1.8	5.7	1.2	0.2	1.1	1.5
19:00 - 20:00	1.3	1.8	8.3	1.5	0.9	0.8	1.5
20:00 - 21:00	1.2	1.4	4.6	1.0	0.8	0.7	2.6
21:00 - 22:00	0.9	0.6	2.8	1.3	0.1	1.1	2.6
22:00 - 23:00	1.7	0.7	2.5	1.4	0.3	0.2	0.2
23:00 - 00:00	1.5	0.1	2.6	1.6	0.5	0.1	0.5
00:00 - 01:00	2.0	0.1	2.4	2.0	0.1	0.5	0.2
01:00 - 02:00	2.4	0.3	2.7	1.7	0.5	0.7	0.6
02:00 - 03:00	3.5	0.2	2.8	1.3	0.3	0.6	0.4
03:00 - 04:00	3.9	0.4	2.2	1.0	0.4	1.7	0.5
04:00 - 05:00	3.5	0.5	2.1	1.2	0.3	0.8	0.7
05:00 - 06:00	3.5	0.2	1.5	1.1	0.7	0.3	0.4
06:00 - 07:00	2.8	0.1	1.3	1.4	0.2	0.4	0.3
07:00 - 08:00	3.2	0.2	1.8	1.2	0.6	1.3	0.7
08:00 - 09:00	3.9	0.1	2.3	1.4	1.0	0.8	0.4
09:00 - 10:00	3.5	2.7	2.6	1.1	1.4	0.6	0.1
10:00 - 11:00	2.9	2.5	2.6	1.6	0.7	0.6	0.1
11:00 - 12:00	3.0	3.5	3.3	2.2	0.3	2.4	1.5
12:00 - 13:00	2.8	2.7	3.6	2.6	1.0	1.9	2.1
13:00 - 14:00	3.7	2.5	3.4	3.0	0.9	2.3	0.6
Average-24Hr*	2.5	1.3	3.0	1.6	0.6	0.9	1.0
Max-1Hr	3.9	3.5	8.3	3.0	1.4	2.4	2.6
Min-1Hr	0.9	0.1	1.3	1.0	0.1	0.1	0.1
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

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

Ladawan N.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Ban Yang Ane Kanum Chet      Monitor Period : 13-20 Mar 2023  
Analyzer Model : API 200A      Station No : Shelter 17  
Serial No : 1505      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	NO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
11:00 - 12:00	10.4	14.3	14.0	9.4	10.6	15.4	10.2
12:00 - 13:00	10.4	11.8	12.9	8.2	10.0	12.1	12.1
13:00 - 14:00	10.4	9.6	10.4	8.5	8.6	9.1	10.4
14:00 - 15:00	8.7	8.5	15.0	8.8	8.2	9.4	9.9
15:00 - 16:00	8.4	8.3	14.1	8.4	10.5	9.3	9.2
16:00 - 17:00	8.2	8.2	14.3	8.0	10.2	10.3	11.4
17:00 - 18:00	8.5	11.4	16.8	8.3	9.1	10.7	12.3
18:00 - 19:00	8.8	13.6	8.9	8.5	9.3	12.8	9.0
19:00 - 20:00	13.5	13.9	8.9	11.2	8.0	10.1	7.6
20:00 - 21:00	13.1	13.3	9.6	10.0	9.9	8.8	9.1
21:00 - 22:00	13.6	12.9	6.3	10.9	9.8	10.5	8.8
22:00 - 23:00	12.8	11.9	6.2	9.8	9.6	11.7	5.3
23:00 - 00:00	12.2	6.0	8.4	9.6	6.3	8.6	6.4
00:00 - 01:00	11.5	7.5	5.5	6.3	6.2	4.8	7.7
01:00 - 02:00	10.9	10.6	4.3	6.2	8.4	4.2	6.0
02:00 - 03:00	11.3	11.6	6.2	8.4	5.5	5.6	5.2
03:00 - 04:00	11.6	12.0	8.0	5.5	4.3	3.9	4.4
04:00 - 05:00	11.7	8.8	9.5	4.3	9.6	5.9	3.1
05:00 - 06:00	11.1	5.2	8.9	6.2	7.6	10.6	1.9
06:00 - 07:00	12.5	4.9	9.5	8.2	7.2	6.7	1.7
07:00 - 08:00	12.6	13.8	9.9	8.6	6.1	6.4	9.9
08:00 - 09:00	13.1	14.3	8.8	10.7	9.6	9.6	11.6
09:00 - 10:00	14.8	15.2	9.9	8.1	7.6	10.8	9.2
10:00 - 11:00	14.4	15.3	9.3	8.3	16.7	7.6	8.6
Average-24Hr*	11.4	11.0	9.8	8.3	8.7	9.0	8.0
Max-1Hr	14.8	15.3	16.8	11.2	16.7	15.4	12.3
Min-1Hr	8.2	4.9	4.3	4.3	4.3	3.9	1.7
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

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

Ladawan N.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team



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

Location : Ban Yang Ane Kanum Chet      Monitor Period : 13-20 Mar 2023  
Analyzer Model : API 100A      Station No : Shelter 17  
Serial No : 377      Site Operator : Mr.Supakit Tamooka

Calibrator Model : Teledyne 700E      Serial No : 587  
Calibration Gas Cylinder I.D.: EB0108319  
Certified Date : 09 Jan 2023      Cal Concentration (ppb) : 0,100,200,400  
Expire Date : 08 Jan 2024

Time	SO2 Concentration (ppb)						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
11:00 - 12:00	3.6	3.9	3.2	3.5	3.6	1.6	3.6
12:00 - 13:00	3.1	3.3	3.5	3.7	3.3	2.1	2.0
13:00 - 14:00	3.2	4.4	2.7	3.6	3.6	2.3	2.6
14:00 - 15:00	3.5	3.9	3.0	2.5	2.1	1.8	3.1
15:00 - 16:00	3.3	2.2	3.0	2.0	2.0	2.1	2.2
16:00 - 17:00	3.7	2.3	2.7	2.4	2.3	1.8	1.9
17:00 - 18:00	2.3	2.6	3.0	2.1	2.2	1.7	1.5
18:00 - 19:00	2.8	3.2	5.0	1.8	2.1	2.5	2.2
19:00 - 20:00	2.6	3.1	6.8	2.6	1.7	2.4	2.2
20:00 - 21:00	2.6	2.7	3.8	1.8	1.4	2.1	3.0
21:00 - 22:00	2.2	2.2	2.4	2.0	1.1	2.1	3.0
22:00 - 23:00	2.9	1.1	2.2	2.8	1.3	1.9	1.2
23:00 - 00:00	3.0	0.4	3.8	2.9	1.4	1.9	1.4
00:00 - 01:00	3.3	0.3	2.8	2.4	1.2	2.3	1.2
01:00 - 02:00	3.4	0.6	3.9	3.0	1.7	1.9	1.5
02:00 - 03:00	3.9	2.0	3.1	2.2	1.3	1.8	1.1
03:00 - 04:00	4.7	2.1	2.7	3.2	1.4	2.9	1.5
04:00 - 05:00	4.5	2.3	2.6	2.5	1.2	2.3	1.6
05:00 - 06:00	4.6	2.0	2.1	2.7	1.6	2.1	2.2
06:00 - 07:00	3.5	1.7	2.0	2.9	1.2	2.3	2.3
07:00 - 08:00	3.7	1.6	2.4	2.5	1.5	2.9	2.5
08:00 - 09:00	4.5	2.0	2.8	2.4	1.8	2.5	2.1
09:00 - 10:00	4.3	4.0	3.0	2.6	2.1	2.2	1.7
10:00 - 11:00	3.7	3.7	3.0	3.1	1.6	2.1	1.8
Average-24Hr*	3.5	2.4	3.1	2.6	1.9	2.2	2.1
Max-1Hr	4.7	4.4	6.8	3.7	3.6	2.9	3.6
Min-1Hr	2.2	0.3	2.0	1.8	1.1	1.6	1.1
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

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

Ladawan N.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Preeda S.  
(Miss Preeda Somjai)  
Technical Management Team

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## คุณภาพอากาศจากแหล่งกำเนิด





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

STACK AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: SECOT Co., Ltd.	REQUEST SERVICE No.	: 0442/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: US.EPA Method 23
SAMPLING DATE	: 14/03/2023	ANALYTICAL DATE	: 23/03/2023-21/04/2023
RECEIVED DATE	: 17/03/2023	SAMPLE CONDITION	: Normal
REPORT DATE	: 22/04/2023	FILE CODE	: 223096_STK_March
VOLUME OF DEY GAS AT STP	: 2.567 Nm <sup>3</sup>	% OXYGEN SAMPLING	: 10.00
NAME LOCATION	: Boiler		

Compound	DETECTION LIMIT	AMOUNT	AMOUNT	7% OXYGEN	TEF	TEQ (I-TEF)	7% OXYGEN
	ng/sample <sup>1/</sup>	ng/sample <sup>1/</sup>	ng/Nm <sup>3</sup>	(ng/Nm <sup>3</sup> )	(I-TEF) <sup>2/</sup>	(ng-I-TEQ/Nm <sup>3</sup> )	(ng-I-TEQ/Nm <sup>3</sup> )
<b>PCDDs</b>							
2,3,7,8-TCDD	< 0.00230	< 0.00230	< 0.0009	< 0.00114	1	< 0.0009	< 0.00114
1,2,3,7,8-PeCDD	< 0.00300	< 0.00300	< 0.00117	< 0.00149	0.5	< 0.00058	< 0.00075
1,2,3,4,7,8-HxCDD	< 0.00600	< 0.00600	< 0.00234	< 0.00299	0.1	< 0.000234	< 0.000299
1,2,3,6,7,8-HxCDD	< 0.00600	< 0.00600	< 0.00234	< 0.00299	0.1	< 0.000234	< 0.000299
1,2,3,7,8,9-HxCDD	< 0.00600	< 0.00600	< 0.00234	< 0.00299	0.1	< 0.000234	< 0.000299
1,2,3,4,6,7,8-HpCDD	< 0.00680	< 0.00680	< 0.00265	< 0.00338	0.01	< 0.000026	< 0.000034
OCDD	< 0.0280	< 0.0280	< 0.01091	< 0.01394	0.001	< 0.0000109	< 0.0000139
<b>Total PCDDs</b>							
<b>PCDFs</b>							
2,3,7,8-TCDF	< 0.00400	< 0.00400	< 0.00156	< 0.00199	0.1	< 0.000156	< 0.000199
1,2,3,7,8-PeCDF	< 0.00550	< 0.00550	< 0.00214	< 0.00274	0.05	< 0.000107	< 0.000137
2,3,4,7,8-PeCDF	< 0.00550	< 0.00550	< 0.00214	< 0.00274	0.5	< 0.00107	< 0.001367
1,2,3,4,7,8-HxCDF	< 0.00500	< 0.00500	< 0.00195	< 0.00249	0.1	< 0.000195	< 0.000249
1,2,3,6,7,8-HxCDF	< 0.00500	< 0.00500	< 0.00195	< 0.00249	0.1	< 0.000195	< 0.000249
2,3,4,6,7,8-HxCDF	< 0.00500	< 0.00500	< 0.00195	< 0.00249	0.1	< 0.000195	< 0.000249
1,2,3,7,8,9-HxCDF	< 0.00500	< 0.00500	< 0.00195	< 0.00249	0.1	< 0.000195	< 0.000129
1,2,3,4,6,7,8-HpCDF	< 0.00650	< 0.00650	< 0.00253	< 0.00324	0.01	< 0.000025	< 0.0000324
1,2,3,4,7,8,9-HpCDF	< 0.00480	< 0.00480	< 0.00187	< 0.00239	0.01	< 0.0000187	< 0.0000239
OCDF	< 0.040	< 0.040	< 0.01558	< 0.01991	0.001	< 0.0000156	< 0.00001991
<b>Total PeCDFs</b>							
<b>Total PCDDs + PCDFs</b>							
						< 0.0044	< 0.0055

Methods for the Determination of Polychlorinated Dibenz-p-Dioxins, Polychlorinated Dibenzofurans From Stationary Sources : US.EPA Methods 23.2017

Mr. Song Hengchwankul  
Sampling By  
REG.NO. 3-239-0-7242

(Mrs. Araya Tipparak)  
Technical Management Team  
REG. NO. 3-239-0-5863

Remark : 1. Reported analysis refers to submitted sample only.  
2. This report shall not be reproduce, except in full, without official approval.

3. <sup>1/</sup> Analysis were performed by Eurofins Food Testing Thailand Co., Ltd.

<sup>1/</sup> DETECTION LIMIT (ng/sample) < - Concentration below the indicated limit of quantification (LOQ).

4. <sup>2/</sup> TEF (TOXIC EQUIVALENCY FACTOR< TEQ (TOXIC EQUIVALENCY) USE IS ACCORDING TO NATO/CCMS,1988 (I-TEF).



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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013MTR_Stack/Mar/PM
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-18/03/2023
REPORT DATE	: 23/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0 m	Gas Velocity	: 14.3 m/s
Diameter	: 1.5 m	Flow rate <sup>1/</sup>	: 842.4 Ncu.m./min
Temperature	: 166.8 °C	Excess Oxygen	: 10.3 %
Moisture	: 17.6 %		

PARAMETER	UNIT	RESULT <sup>1/</sup>			STANDARD		REFERENCE
		10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s	
Particulate matter	mg/Ncu.m.	0.84	1.10	0.01	12 <sup>2/</sup> (70 <sup>3/</sup> )	0.22 <sup>2/</sup>	U.S. EPA Method 5

(Miss Phatchara Samanchan)

Analyst

REG.NO.3-239-0-8183

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.3-239-0-6419

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> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.

4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/Hg
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-21/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0	m	Gas Velocity	: 14.3	m/s
Diameter	: 1.5	m	Flow rate <sup>1/</sup>	: 842.4	Ncu.m./min
Temperature	: 166.8	°C	Excess Oxygen	: 10.3	%
Moisture	: 17.6	%			

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>			STANDARD		REFERENCE
			(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	
								METHOD
Hg	mg/Ncu.m	< 0.0003	< 0.0003	< 0.0004	< 0.000004	0.05 <sup>2/</sup> , <sup>3/</sup>	0.001 <sup>2/</sup>	U.S. EPA Method 29

*Krisana Chanthoom*

(Miss Krisana Chanthoom)

Analyst

REG.NO.จ-239-9-7802

*Narisa Poowasanpetch*

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-9-6419

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

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3. <sup>1/</sup> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.

4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/Pb
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-22/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0	m	Gas Velocity	: 14.3	m/s
Diameter	: 1.5	m	Flow rate <sup>1/</sup>	: 842.4	Ncu.m./min
Temperature	: 166.8	°C	Excess Oxygen	: 10.3	%
Moisture	: 17.6	%			

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>			STANDARD		REFERENCE
			(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	
								METHOD
Pb	mg/Ncu.m	< 0.02	0.03	0.04	0.0004	0.5 <sup>2/</sup> , <sup>3/</sup>	0.01 <sup>2/</sup>	U.S. EPA Method 29

*Krisana Chanthoom*

(Miss Krisana Chanthoom)

Analyst

REG.NO.จ-239-9-7802

*Narisa Poowasanpetch*

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-9-6419

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

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3. <sup>1/</sup> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.

4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



บริษัท ซีคอต จำกัด  
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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/Cd
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-22/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0	m	Gas Velocity	: 14.3	m/s
Diameter	: 1.5	m	Flow rate <sup>1/</sup>	: 842.4	Ncu.m./min
Temperature	: 166.8	°C	Excess Oxygen	: 10.3	%
Moisture	: 17.6	%			

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>			STANDARD		REFERENCE
			(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s
Cd	mg/Ncu.m	< 0.004	< 0.004	< 0.0052	< 0.00006	0.05 <sup>2/, 3/</sup>	0.001 <sup>2/</sup>	U.S. EPA Method 29

(Miss Krisana Chanthoom)

Analyst

REG.NO.จ-239-ท-7802

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ท-6419

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

- This report shall not be reproduced, except in full, without official approval.
- <sup>1/</sup> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.
- <sup>2/</sup> The assigned value in EIA report.
- <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/HCl
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 20/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0	m	Gas Velocity	: 14.3	m/s
Diameter	: 1.5	m	Flow rate <sup>1/</sup>	: 842.4	Ncu.m./min
Temperature	: 166.8	°C	Excess Oxygen	: 10.3	%
Moisture	: 17.6	%			

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>			STANDARD		REFERENCE
			(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s
HCl	ppm	< 0.007	0.397	0.519	0.0083	8 <sup>2/</sup> (25 <sup>3/</sup> )	0.22 <sup>2/</sup>	U.S. EPA Method 26A

(Miss Phatchara Samanchan)

Analyst

REG.NO.จ-239-ท-8183

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ท-6419

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

- This report shall not be reproduced, except in full, without official approval.
- <sup>1/</sup> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.
- <sup>2/</sup> The assigned value in EIA report.
- <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).

**Monitoring Results of Emission Concentration  
Boiler Stack  
Chonburi Clean Energy Co.,Ltd.  
March 14, 2023**

Run Number	Oxygen content (%)		Oxides 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	9.71	9.76	78.99	79.03	98.61
2	10.99	11.02	55.67	55.69	78.35
3	10.00	9.99	73.37	73.42	93.54
<b>Average</b>	<b>10.23</b>	<b>10.26</b>	<b>69.35</b>	<b>69.38</b>	<b>90.61</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	9.71	9.76	0.62	0.59	0.74
2	10.99	11.02	0.55	0.53	0.75
3	10.00	9.99	0.99	0.97	1.24
<b>Average</b>	<b>10.23</b>	<b>10.26</b>	<b>0.72</b>	<b>0.70</b>	<b>0.91</b>

**Chonburi Clean Energy Co.,Ltd.  
EMISSION TEST RESULT**

Date: March 14, 2023  
 Start time: 10:50 AM  
 O<sub>2</sub> instrument Model: AMI 70  
 NO<sub>x</sub> instrument Model: API 200 AH  
 SO<sub>2</sub> instrument Model: API 100 AH  
 Fuel Type : Industrial waste

Run # : 1  
 Location : Boiler Stack  
 Finish time : 11:10 AM  
 Serial No.: 111117-2  
 Serial No.: 314  
 Serial No.: 060  
 Test Operator : Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)
10:50 AM	9.87	71.90	0.50
10:51 AM	9.60	79.52	0.55
10:52 AM	9.31	82.80	0.58
10:53 AM	9.18	87.66	0.58
10:54 AM	9.57	79.65	0.52
10:55 AM	9.74	75.17	0.48
10:56 AM	9.69	72.31	0.44
10:57 AM	9.53	71.80	0.47
10:58 AM	9.39	78.59	0.59
10:59 AM	8.78	99.87	0.80
11:00 AM	8.54	109.87	0.94
11:01 AM	9.06	97.33	1.03
11:02 AM	9.55	82.68	0.89
11:03 AM	9.60	82.77	0.74
11:04 AM	9.77	80.09	0.63
11:05 AM	10.12	73.36	0.53
11:06 AM	10.42	65.19	0.46
11:07 AM	10.13	74.34	0.50
11:08 AM	10.32	72.17	0.59
11:09 AM	10.68	65.49	0.64
11:10 AM	11.05	56.27	0.65
<b>Average</b>	<b>9.71</b>	<b>78.99</b>	<b>0.62</b>

Signature Ladawan W.

( Miss Ladawan Wongcharoen )

Environmental Scientist

## Chonburi Clean Energy Co.,Ltd. EMISSION TEST RESULT

**Date:** March 14, 2023 **Run # :** 2  
**Start time:** 11:11 AM **Location :** Boiler Stack  
**O<sub>2</sub> instrument Model:** AMI 70 **Finish time :** 11:31 AM  
**NO<sub>x</sub> instrument Model:** API 200 AH **Serial No.:** 111117-2  
**SO<sub>2</sub> instrument Model:** API 100 AH **Serial No.:** 314  
**Fuel Type :** Industrial waste **Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)
11:11 AM	10.94	56.18	0.61
11:12 AM	10.98	54.23	0.59
11:13 AM	11.58	47.57	0.53
11:14 AM	11.83	47.09	0.46
11:15 AM	12.14	44.12	0.39
11:16 AM	11.87	46.31	0.33
11:17 AM	10.54	60.98	0.44
11:18 AM	10.54	59.32	0.58
11:19 AM	10.47	65.36	0.78
11:20 AM	10.19	74.75	0.93
11:21 AM	9.99	77.59	0.98
11:22 AM	10.41	63.50	0.87
11:23 AM	10.99	49.65	0.66
11:24 AM	11.44	39.71	0.49
11:25 AM	11.17	45.90	0.42
11:26 AM	11.13	52.48	0.38
11:27 AM	11.01	59.68	0.36
11:28 AM	10.69	62.87	0.38
11:29 AM	10.93	58.72	0.39
11:30 AM	11.10	50.46	0.41
11:31 AM	10.90	52.70	0.48
<b>Average</b>	10.99	55.67	0.55

Signature Ladawan W.

( Miss Ladawan Wongcharoen )

Environmental Scientist

## Chonburi Clean Energy Co.,Ltd. EMISSION TEST RESULT

**Date:** March 14, 2023 **Run # :** 3  
**Start time:** 11:32 AM **Location :** Boiler Stack  
**O<sub>2</sub> instrument Model:** AMI 70 **Finish time :** 11:52 AM  
**NO<sub>x</sub> instrument Model:** API 200 AH **Serial No.:** 111117-2  
**SO<sub>2</sub> instrument Model:** API 100 AH **Serial No.:** 314  
**Fuel Type :** Industrial waste **Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)
11:32 AM	10.79	55.55	0.61
11:33 AM	10.77	52.20	0.71
11:34 AM	10.70	47.97	0.84
11:35 AM	10.37	58.05	0.89
11:36 AM	9.99	72.29	0.84
11:37 AM	9.39	86.50	0.79
11:38 AM	9.32	87.73	0.71
11:39 AM	9.07	99.18	0.66
11:40 AM	9.30	96.14	0.72
11:41 AM	9.50	93.58	0.86
11:42 AM	9.45	96.31	1.34
11:43 AM	9.62	91.36	1.62
11:44 AM	9.55	89.08	1.44
11:45 AM	9.99	75.60	1.18
11:46 AM	10.40	65.15	0.93
11:47 AM	10.62	57.45	0.80
11:48 AM	10.44	61.60	0.74
11:49 AM	10.24	64.80	0.84
11:50 AM	10.06	69.84	1.15
11:51 AM	10.12	67.23	1.49
11:52 AM	10.32	53.14	1.71
<b>Average</b>	10.00	73.37	0.99

Signature Ladawan W.

( Miss Ladawan Wongcharoen )

Environmental Scientist



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SECOT CO., LTD.

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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013MTR_Stack/Mar/PM
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-18/03/2023
REPORT DATE	: 23/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0 m	Gas Velocity	: 14.3 m/s
Diameter	: 1.5 m	Flow rate <sup>1/</sup>	: 842.4 Ncu.m./min
Temperature	: 166.8 °C	Excess Oxygen	: 10.3 %
Moisture	: 17.6 %		

PARAMETER	UNIT	RESULT <sup>1/</sup>			STANDARD		REFERENCE
		10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s	
Particulate matter	mg/Ncu.m.	0.84	1.10	0.01	12 <sup>2/</sup> (70 <sup>3/</sup> )	0.22 <sup>2/</sup>	U.S. EPA Method 5

Phatchara Samanchan  
(Miss Phatchara Samanchan)

Analyst

REG.NO.จ-239-ก-8183

Narisa Poowasanpetch  
(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ก-6419

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> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.

4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/Hg
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-21/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0 m	Gas Velocity	: 14.3 m/s
Diameter	: 1.5 m	Flow rate <sup>1/</sup>	: 842.4 Ncu.m./min
Temperature	: 166.8 °C	Excess Oxygen	: 10.3 %
Moisture	: 17.6 %		

PARAMETER	UNIT	ND (non-detectable)	RESULT <sup>1/</sup>			STANDARD		REFERENCE
			10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s	
Hg	mg/Ncu.m	< 0.0003	< 0.0003	< 0.0004	< 0.000004	0.05 <sup>2/,3/</sup>	0.001 <sup>2/</sup>	U.S. EPA Method 29

Krisana Chanthoom  
(Miss Krisana Chanthoom)

Analyst

REG.NO.จ-239-ก-7802

Narisa Poowasanpetch  
(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ก-6419

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5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).





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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/Pb
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-22/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0	m	Gas Velocity	: 14.3	m/s
Diameter	: 1.5	m	Flow rate <sup>1/</sup>	: 842.4	Ncu.m./min
Temperature	: 166.8	°C	Excess Oxygen	: 10.3	%
Moisture	: 17.6	%			

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>				STANDARD		REFERENCE
			(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s	
Pb	mg/Ncu.m	< 0.02	0.03	0.04	0.0004	0.5 <sup>2/,3/</sup>	0.01 <sup>2/</sup>		U.S. EPA Method 29

(Miss Krisana Chanthoom)

Analyst

REG.NO.จ-239-ก-7802

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ก-6419

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4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/Cd
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 17-22/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste

STACK DESCRIPTION

Height	: 50.0	m	Gas Velocity	: 14.3	m/s
Diameter	: 1.5	m	Flow rate <sup>1/</sup>	: 842.4	Ncu.m./min
Temperature	: 166.8	°C	Excess Oxygen	: 10.3	%
Moisture	: 17.6	%			

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>				STANDARD		REFERENCE
			(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s	
Cd	mg/Ncu.m	< 0.004	< 0.004	< 0.0052	< 0.00006	0.05 <sup>2/,3/</sup>	0.001 <sup>2/</sup>		U.S. EPA Method 29

(Miss Krisana Chanthoom)

Analyst

REG.NO.จ-239-ก-7802

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ก-6419

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4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).



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SECOT CO.,LTD.

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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

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCER NO.	: 223013MTR_Stack/Mar/HCl
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2023
RECEIVED DATE	: 17/03/2023	ANALYTICAL DATE	: 20/03/2023
REPORT DATE	: 22/03/2023	SAMPLE CONDITION	: Good
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Thatsana Haphonram
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Industrial Waste
STACK DESCRIPTION			
Height	: 50.0 m	Gas Velocity	: 14.3 m/s
Diameter	: 1.5 m	Flow rate <sup>1/</sup>	: 842.4 Ncu.m./min
Temperature	: 166.8 °C	Excess Oxygen	: 10.3 %
Moisture	: 17.6 %		

PARAMETER	UNIT	ND	RESULT <sup>1/</sup>			STANDARD		REFERENCE
		(non-detectable)	10.3%O <sub>2</sub>	7%O <sub>2</sub>	g/s	7%O <sub>2</sub>	g/s	
HCl	ppm	< 0.007	0.397	0.519	0.0083	8 <sup>2/</sup> (25 <sup>3/</sup> )	0.22 <sup>2/</sup>	U.S. EPA Method 26A

Phatchara Samanchan  
(Miss Phatchara Samanchan)

Analyst

REG.NO.จ-239-ถ-8183

Naris Poowasanpetch  
(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ถ-6419

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3. <sup>1/</sup> At standard pressure of 760 mm.Hg and temperature of 25 °C, dry basis.

4. <sup>2/</sup> The assigned value in EIA report.

5. <sup>3/</sup> Emission Standard prescribed by Ministry of Natural Resources and Environment, 2010 (B.E.2553).

MTR\_Boiler\_Stack/Sum1/03-04-23

Monitoring Results of Emission Concentration  
Boiler Stack  
Chonburi Clean Energy Co.,Ltd.  
March 14, 2023

Run Number	Oxygen content (%)		Oxides 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	9.71	9.76	78.99	79.03	98.61
2	10.99	11.02	55.67	55.69	78.35
3	10.00	9.99	73.37	73.42	93.54
Average	10.23	10.26	69.35	69.38	90.61

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	9.71	9.76	0.62	0.59	0.74
2	10.99	11.02	0.55	0.53	0.75
3	10.00	9.99	0.99	0.97	1.24
Average	10.23	10.26	0.72	0.70	0.91



## Chonburi Clean Energy Co.,Ltd. EMISSION TEST RESULT

**Date:** March 14, 2023 **Run # :** 1  
**Start time:** 10:50 AM **Location :** Boiler Stack  
**O<sub>2</sub> instrument Model:** AMI 70 **Finish time :** 11:10 AM  
**NO<sub>x</sub> instrument Model:** API 200 AH **Serial No.:** 111117-2  
**SO<sub>2</sub> instrument Model:** API 100 AH **Serial No.:** 314  
**Fuel Type :** Industrial waste **Serial No.:** 060  
**Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)
10:50 AM	9.87	71.90	0.50
10:51 AM	9.60	79.52	0.55
10:52 AM	9.31	82.80	0.58
10:53 AM	9.18	87.66	0.58
10:54 AM	9.57	79.65	0.52
10:55 AM	9.74	75.17	0.48
10:56 AM	9.69	72.31	0.44
10:57 AM	9.53	71.80	0.47
10:58 AM	9.39	78.59	0.59
10:59 AM	8.78	99.87	0.80
11:00 AM	8.54	109.87	0.94
11:01 AM	9.06	97.33	1.03
11:02 AM	9.55	82.68	0.89
11:03 AM	9.60	82.77	0.74
11:04 AM	9.77	80.09	0.63
11:05 AM	10.12	73.36	0.53
11:06 AM	10.42	65.19	0.46
11:07 AM	10.13	74.34	0.50
11:08 AM	10.32	72.17	0.59
11:09 AM	10.68	65.49	0.64
11:10 AM	11.05	56.27	0.65
<b>Average</b>	9.71	78.99	0.62

Signature Ladawan W.

( Miss Ladawan Wongcharoen )

Environmental Scientist

## Chonburi Clean Energy Co.,Ltd. EMISSION TEST RESULT

**Date:** March 14, 2023 **Run # :** 2  
**Start time:** 11:11 AM **Location :** Boiler Stack  
**O<sub>2</sub> instrument Model:** AMI 70 **Finish time :** 11:31 AM  
**NO<sub>x</sub> instrument Model:** API 200 AH **Serial No.:** 111117-2  
**SO<sub>2</sub> instrument Model:** API 100 AH **Serial No.:** 314  
**Fuel Type :** Industrial waste **Serial No.:** 060  
**Test Operator :** Song H.

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)
11:11 AM	10.94	56.18	0.61
11:12 AM	10.98	54.23	0.59
11:13 AM	11.58	47.57	0.53
11:14 AM	11.83	47.09	0.46
11:15 AM	12.14	44.12	0.39
11:16 AM	11.87	46.31	0.33
11:17 AM	10.54	60.98	0.44
11:18 AM	10.54	59.32	0.58
11:19 AM	10.47	65.36	0.78
11:20 AM	10.19	74.75	0.93
11:21 AM	9.99	77.59	0.98
11:22 AM	10.41	63.50	0.87
11:23 AM	10.99	49.65	0.66
11:24 AM	11.44	39.71	0.49
11:25 AM	11.17	45.90	0.42
11:26 AM	11.13	52.48	0.38
11:27 AM	11.01	59.68	0.36
11:28 AM	10.69	62.87	0.38
11:29 AM	10.93	58.72	0.39
11:30 AM	11.10	50.46	0.41
11:31 AM	10.90	52.70	0.48
<b>Average</b>	10.99	55.67	0.55

Signature Ladawan W.

( Miss Ladawan Wongcharoen )

Environmental Scientist

## Chonburi Clean Energy Co.,Ltd.

### EMISSION TEST RESULT

<b>Date:</b> <u>March 14, 2023</u>	<b>Run # :</b> <u>3</u>
<b>Start time:</b> <u>11:32 AM</u>	<b>Location :</b> <u>Boiler Stack</u>
<b>O<sub>2</sub> instrument Model:</b> <u>AMI 70</u>	<b>Finish time :</b> <u>11:52 AM</u>
<b>NO<sub>x</sub> instrument Model:</b> <u>API 200 AH</u>	<b>Serial No.:</b> <u>111117-2</u>
<b>SO<sub>2</sub> instrument Model:</b> <u>API 100 AH</u>	<b>Serial No.:</b> <u>314</u>
<b>Fuel Type :</b> <u>Industrial waste</u>	<b>Serial No.:</b> <u>060</u>
	<b>Test Operator :</b> <u>Song H.</u>

Time, min	O <sub>2</sub> (%)	NO <sub>x</sub> (ppm)	SO <sub>2</sub> (ppm)
11:32 AM	10.79	55.55	0.61
11:33 AM	10.77	52.20	0.71
11:34 AM	10.70	47.97	0.84
11:35 AM	10.37	58.05	0.89
11:36 AM	9.99	72.29	0.84
11:37 AM	9.39	86.50	0.79
11:38 AM	9.32	87.73	0.71
11:39 AM	9.07	99.18	0.66
11:40 AM	9.30	96.14	0.72
11:41 AM	9.50	93.58	0.86
11:42 AM	9.45	96.31	1.34
11:43 AM	9.62	91.36	1.62
11:44 AM	9.55	89.08	1.44
11:45 AM	9.99	75.60	1.18
11:46 AM	10.40	65.15	0.93
11:47 AM	10.62	57.45	0.80
11:48 AM	10.44	61.60	0.74
11:49 AM	10.24	64.80	0.84
11:50 AM	10.06	69.84	1.15
11:51 AM	10.12	67.23	1.49
11:52 AM	10.32	53.14	1.71
<b>Average</b>	10.00	73.37	0.99

Signature Ladawan W.

( Miss Ladawan Wongcharoen )

Environmental Scientist

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ระดับเสียงทั่วไป



## Noise Monitoring Result : Community Noise

### MTR-CCE

Location : Wat Map Born Monitor Period : 13-20 Mar 2023  
 SLM Model : Cirrus CR162B Serial No : G300833  
 Site Operator : Mr.Supakit Tamooka

Calibrator Model : Cirrus CR:515 Serial No : 94296  
 Calibration Ref dB(A) : 94.0 Certified Date : 20 Dec 2022  
 SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 19 Dec 2023  
 Cal Sheet No.: CR-515-2023-029

Time	Equivalent Sound Pressure Level (dB(A))						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
12:00 - 13:00	53.9	47.0	53.2	57.3	57.1	52.9	52.0
13:00 - 14:00	54.4	51.7	64.6	52.2	58.7	51.0	52.0
14:00 - 15:00	48.5	56.4	56.8	56.4	53.9	53.9	51.6
15:00 - 16:00	49.9	57.7	56.9	57.3	52.4	51.7	53.1
16:00 - 17:00	53.1	56.3	53.3	50.4	52.7	51.4	53.7
17:00 - 18:00	52.6	55.9	59.1	53.6	53.6	52.3	56.4
18:00 - 19:00	60.5	60.6	54.5	60.4	57.3	62.0	54.3
19:00 - 20:00	47.2	47.2	52.7	46.2	55.7	51.0	53.6
20:00 - 21:00	47.8	50.8	50.0	53.0	44.7	45.2	47.7
21:00 - 22:00	44.0	47.3	43.3	49.6	49.9	44.9	43.2
22:00 - 23:00	43.6	48.6	45.3	47.4	45.2	50.0	43.9
23:00 - 00:00	44.5	48.1	48.0	45.5	46.9	47.4	45.9
00:00 - 01:00	45.3	49.9	50.0	44.6	48.7	47.8	49.2
01:00 - 02:00	42.7	45.3	45.1	43.2	47.6	44.5	48.3
02:00 - 03:00	47.8	47.1	47.2	43.8	47.7	43.8	49.9
03:00 - 04:00	49.5	48.7	50.5	45.7	42.7	44.3	45.2
04:00 - 05:00	47.3	49.0	50.4	49.2	47.8	46.8	47.1
05:00 - 06:00	46.2	50.8	45.2	61.8	49.5	64.4	48.6
06:00 - 07:00	48.0	60.2	47.1	57.5	47.4	50.4	48.8
07:00 - 08:00	50.9	57.7	48.6	53.4	51.0	59.8	52.6
08:00 - 09:00	46.8	51.4	48.8	52.2	50.9	61.6	54.4
09:00 - 10:00	51.7	61.7	52.3	51.9	57.7	54.3	47.3
10:00 - 11:00	53.5	68.0	46.7	50.9	56.1	55.4	51.3
11:00 - 12:00	51.0	56.5	51.1	52.9	55.8	52.7	50.5
Leq(24)*	51.5	57.7	54.5	54.4	53.4	55.8	51.3
Ldn	54.7	60.8	57.0	60.7	56.1	62.0	55.3
Lmax **	79.5	84.3	82.6	82.4	84.8	83.0	79.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

\*\* Maximum Sound Pressure Level between 12:00-12:00

Ladawan W.  
 (Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.  
 (Miss Preeda Somjai)  
 Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-CCE

Location : Wat Map Born Monitor Period : 13-20 Mar 2023  
 SLM Model : Cirrus CR162B Serial No : G300833  
 Site Operator : Mr.Supakit Tamooka

Calibrator Model : Cirrus CR:515 Serial No : 94296  
 Calibration Ref dB(A) : 94.0 Certified Date : 20 Dec 2022  
 SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 19 Dec 2023  
 Cal Sheet No.: CR-515-2023-029

Time	L90 (dB(A))						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
12:00 - 13:00	47.6	42.9	47.0	42.8	44.9	46.5	43.9
13:00 - 14:00	44.2	44.3	51.5	48.5	48.8	47.2	46.3
14:00 - 15:00	45.0	52.6	50.7	49.9	50.0	48.5	46.5
15:00 - 16:00	45.9	51.9	52.9	50.4	47.4	47.4	44.4
16:00 - 17:00	43.6	46.7	48.9	44.8	45.5	45.6	46.9
17:00 - 18:00	42.8	44.6	49.0	44.6	46.1	45.8	49.3
18:00 - 19:00	44.9	44.9	45.6	44.5	45.2	44.7	44.9
19:00 - 20:00	43.8	42.7	42.8	43.2	42.9	43.4	44.5
20:00 - 21:00	43.2	42.5	43.6	43.2	42.5	43.3	43.1
21:00 - 22:00	42.3	44.3	40.6	44.8	44.9	42.8	41.8
22:00 - 23:00	41.4	46.5	41.0	43.8	42.7	43.4	42.3
23:00 - 00:00	41.2	46.1	44.6	44.1	44.1	42.8	42.3
00:00 - 01:00	41.7	44.9	45.2	42.9	44.6	42.2	45.2
01:00 - 02:00	40.4	42.7	42.7	41.9	44.1	42.0	46.3
02:00 - 03:00	43.0	44.0	44.0	42.2	41.9	42.5	45.3
03:00 - 04:00	45.9	44.6	45.3	42.3	40.4	41.4	42.7
04:00 - 05:00	43.1	44.3	45.3	44.7	43.0	41.7	44.0
05:00 - 06:00	43.3	43.7	42.7	45.7	45.9	42.6	44.5
06:00 - 07:00	44.6	48.0	44.0	49.0	43.1	43.9	44.4
07:00 - 08:00	44.3	47.6	44.5	45.1	43.1	44.6	43.7
08:00 - 09:00	42.7	46.0	44.4	45.6	46.1	46.0	44.6
09:00 - 10:00	44.3	44.0	44.5	43.6	42.8	49.2	42.7
10:00 - 11:00	46.3	48.7	42.7	43.0	49.2	48.4	44.4
11:00 - 12:00	43.9	46.1	47.3	49.0	52.3	43.3	46.2
L90(avg)*	44.1	46.6	46.8	45.8	46.1	45.2	45.0

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

Ladawan W.  
 (Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.  
 (Miss Preeda Somjai)  
 Technical Management Team



## Noise Monitoring Result : Community Noise

### MTR-CCE

Location : Ban Yang Ane Kanum Chet      Monitor Period : 13-20 Mar 2023  
 SLM Model : Cirrus CR162B      Serial No : G300769  
 Site Operator : Mr.Supakit Tamooka

Calibrator Model : Cirrus CR:515      Serial No : 94296  
 Calibration Ref dB(A) : 94.0      Certified Date : 20 Dec 2022  
 SLM Reading / Adjust dB(A) : 93.7/0.0      Expire Date : 19 Dec 2023  
 Cal Sheet No.: CR-515-2023-029

Time	Equivalent Sound Pressure Level (dB(A))							
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023	
11:00 - 12:00	59.9	58.2	54.8	60.3	59.9	56.0	59.9	
12:00 - 13:00	55.7	55.6	59.0	56.2	58.9	55.7	57.8	
13:00 - 14:00	58.4	57.8	54.9	54.0	58.2	57.5	53.9	
14:00 - 15:00	59.8	57.2	65.3	60.2	61.4	53.8	55.7	
15:00 - 16:00	51.4	58.3	59.2	62.0	56.0	53.3	57.5	
16:00 - 17:00	54.9	59.5	59.2	56.9	60.6	57.4	55.9	
17:00 - 18:00	55.2	56.4	65.4	61.6	59.1	56.4	57.2	
18:00 - 19:00	65.3	63.0	66.5	62.9	60.0	57.9	56.0	
19:00 - 20:00	55.7	54.4	56.9	60.0	57.3	57.3	63.2	
20:00 - 21:00	58.4	60.8	61.3	59.4	68.1	60.9	62.8	
21:00 - 22:00	75.1	56.7	51.8	52.7	54.2	57.9	61.8	
22:00 - 23:00	65.2	51.0	51.2	59.7	54.8	58.1	52.8	
23:00 - 00:00	53.9	57.0	56.9	50.0	54.1	53.1	50.3	
00:00 - 01:00	51.7	49.2	75.1	54.5	48.9	50.8	52.4	
01:00 - 02:00	47.2	48.8	58.1	52.8	46.3	50.1	50.0	
02:00 - 03:00	47.1	57.0	51.0	46.4	46.2	50.2	52.8	
03:00 - 04:00	46.4	49.3	51.7	46.2	47.7	50.2	49.4	
04:00 - 05:00	48.9	47.4	46.5	53.2	57.0	50.3	49.8	
05:00 - 06:00	69.5	54.2	47.0	59.8	49.1	52.7	62.6	
06:00 - 07:00	63.4	65.2	55.0	62.4	48.8	59.0	71.9	
07:00 - 08:00	60.9	62.9	54.4	61.8	57.0	56.2	67.1	
08:00 - 09:00	55.3	59.4	61.9	60.0	56.6	54.1	55.1	
09:00 - 10:00	53.8	55.2	58.1	57.3	56.8	55.4	57.3	
10:00 - 11:00	62.0	56.9	55.1	54.7	57.8	54.4	55.0	
Leq(24)*	63.9	58.4	63.5	58.8	58.7	55.9	61.5	
L <sub>dn</sub>	69.1	64.1	71.8	63.9	61.1	61.1	69.2	
L <sub>max</sub> **	103.6	86.0	103.6	87.7	89.7	89.9	96.0	
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

Ladawan N.  
 (Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.  
 (Miss Preeda Somjai)  
 Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-CCE

Location : Ban Yang Ane Kanum Chet      Monitor Period : 13-20 Mar 2023  
 SLM Model : Cirrus CR162B      Serial No : G300769  
 Site Operator : Mr.Supakit Tamooka

Calibrator Model : Cirrus CR:515      Serial No : 94296  
 Calibration Ref dB(A) : 94.0      Certified Date : 20 Dec 2022  
 SLM Reading / Adjust dB(A) : 93.7/0.0      Expire Date : 19 Dec 2023  
 Cal Sheet No.: CR-515-2023-029

Time	L90 (dB(A))							
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023	
11:00 - 12:00	48.3	47.2	46.6	45.7	45.9	46.3	46.9	
12:00 - 13:00	47.2	45.8	46.1	43.7	46.4	45.6	47.5	
13:00 - 14:00	47.2	43.2	45.5	44.8	46.9	46.5	46.6	
14:00 - 15:00	47.1	43.4	47.0	46.5	47.0	46.2	49.1	
15:00 - 16:00	45.9	46.6	47.1	45.8	47.5	46.2	49.3	
16:00 - 17:00	46.0	46.5	47.4	45.9	46.6	46.4	48.7	
17:00 - 18:00	46.5	46.2	48.7	45.2	46.7	46.6	47.8	
18:00 - 19:00	46.7	46.8	45.6	47.4	44.5	45.9	46.6	
19:00 - 20:00	45.5	44.9	45.5	46.0	45.1	46.8	48.7	
20:00 - 21:00	45.0	46.1	47.2	46.5	46.2	46.4	60.9	
21:00 - 22:00	44.1	45.0	46.2	45.6	46.5	46.2	52.0	
22:00 - 23:00	43.9	44.8	46.3	45.8	46.9	46.3	47.0	
23:00 - 00:00	44.5	44.4	45.4	45.6	46.3	47.1	46.9	
00:00 - 01:00	43.9	44.8	44.1	45.8	44.9	47.7	46.7	
01:00 - 02:00	44.3	44.5	44.1	45.4	45.0	46.4	47.0	
02:00 - 03:00	44.7	44.4	44.0	45.0	44.9	47.0	47.1	
03:00 - 04:00	44.9	44.8	44.2	44.9	44.8	47.4	47.1	
04:00 - 05:00	45.6	44.8	44.3	45.2	44.4	47.4	46.8	
05:00 - 06:00	46.3	45.1	44.8	45.6	44.8	47.8	47.9	
06:00 - 07:00	49.6	48.4	46.6	49.2	44.5	47.6	68.3	
07:00 - 08:00	49.1	48.5	47.1	48.0	44.4	46.2	49.5	
08:00 - 09:00	46.7	45.8	47.1	47.1	46.9	46.0	48.0	
09:00 - 10:00	47.0	45.3	47.1	46.6	44.9	46.1	46.8	
10:00 - 11:00	47.3	44.9	45.4	45.5	43.8	46.4	47.9	
L90(avg)*	46.4	45.7	46.2	46.1	45.8	46.6	55.9	

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

Ladawan N.  
 (Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.  
 (Miss Preeda Somjai)  
 Technical Management Team



## Noise Monitoring Result : Community Noise

### MTR-CCE

Location : North Fence of Project      Monitor Period : 13-20 Mar 2023  
 SLM Model : Cirrus CR162B      Serial No : G300892  
 Site Operator : Mr.Supakit Tamooka

Calibrator Model : Cirrus CR:515      Serial No : 94296  
 Calibration Ref dB(A) : 94.0      Certified Date : 20 Dec 2022  
 SLM Reading / Adjust dB(A) : 93.7/0.0      Expire Date : 19 Dec 2023  
 Cal Sheet No.: CR-515-2023-029

Time	Equivalent Sound Pressure Level (dB(A))						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
10:00 - 11:00	61.6	58.9	60.9	58.6	62.0	59.6	59.2
11:00 - 12:00	60.3	59.4	61.4	57.0	59.2	60.8	55.7
12:00 - 13:00	58.8	58.4	59.6	59.9	56.5	56.8	61.0
13:00 - 14:00	58.7	58.4	59.5	57.5	56.3	59.7	62.3
14:00 - 15:00	58.6	57.2	57.6	56.4	57.9	57.0	55.7
15:00 - 16:00	55.8	60.1	58.1	56.3	58.7	57.1	55.6
16:00 - 17:00	56.9	59.0	59.6	57.0	56.7	55.9	53.7
17:00 - 18:00	54.4	54.8	58.3	54.7	55.0	56.2	59.4
18:00 - 19:00	56.3	55.1	56.8	55.3	55.4	55.0	61.6
19:00 - 20:00	54.8	55.0	56.9	54.5	54.7	55.1	54.2
20:00 - 21:00	54.6	54.9	54.6	54.6	54.5	55.0	54.1
21:00 - 22:00	54.8	54.7	54.5	54.4	54.4	57.9	54.0
22:00 - 23:00	54.4	55.3	54.6	54.4	54.6	67.7	54.0
23:00 - 00:00	54.5	54.5	55.1	54.7	54.6	59.7	54.3
00:00 - 01:00	54.4	54.7	54.7	54.8	54.7	55.1	54.3
01:00 - 02:00	54.7	54.4	54.9	54.3	54.2	54.9	53.9
02:00 - 03:00	54.9	54.3	55.0	54.4	54.6	54.7	54.0
03:00 - 04:00	54.8	54.4	54.8	54.6	54.6	54.3	54.1
04:00 - 05:00	55.0	54.4	55.1	54.5	54.2	55.5	54.1
05:00 - 06:00	54.8	55.0	54.6	55.2	54.7	57.1	57.3
06:00 - 07:00	55.5	55.6	54.6	55.2	55.6	54.4	59.5
07:00 - 08:00	56.2	55.5	54.3	61.5	54.9	54.6	57.4
08:00 - 09:00	57.8	58.5	58.2	59.8	57.8	59.6	58.3
09:00 - 10:00	59.3	60.5	57.8	59.1	61.0	59.5	61.1
Leq(24)*	56.9	56.9	57.3	56.8	56.7	58.8	57.6
Ldn	61.8	61.8	62.0	61.7	61.6	66.2	62.5
Lmax **	82.7	81.4	82.7	82.7	80.4	78.5	86.6
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

Ladawan W.

(Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.

(Miss Preeda Somjai)  
 Technical Management Team



## Noise Monitoring Result : Background Noise

### MTR-CCE

Location : North Fence of Project      Monitor Period : 13-20 Mar 2023  
 SLM Model : Cirrus CR162B      Serial No : G300892  
 Site Operator : Mr.Supakit Tamooka

Calibrator Model : Cirrus CR:515      Serial No : 94296  
 Calibration Ref dB(A) : 94.0      Certified Date : 20 Dec 2022  
 SLM Reading / Adjust dB(A) : 93.7/0.0      Expire Date : 19 Dec 2023  
 Cal Sheet No.: CR-515-2023-029

Time	L90 (dB(A))						
	13-14 Mar 2023	14-15 Mar 2023	15-16 Mar 2023	16-17 Mar 2023	17-18 Mar 2023	18-19 Mar 2023	19-20 Mar 2023
10:00 - 11:00	55.3	53.9	53.9	54.1	54.1	54.2	54.0
11:00 - 12:00	54.9	53.5	55.0	53.6	53.6	54.1	53.3
12:00 - 13:00	54.3	53.1	54.0	53.6	53.7	54.2	54.8
13:00 - 14:00	54.1	53.3	54.3	54.1	53.9	54.7	54.4
14:00 - 15:00	54.6	53.4	53.9	54.0	54.2	54.2	53.3
15:00 - 16:00	54.0	53.8	54.4	53.6	54.1	54.1	53.6
16:00 - 17:00	53.6	54.2	54.2	54.1	54.4	54.3	53.2
17:00 - 18:00	53.6	53.8	54.3	54.2	54.1	55.1	53.7
18:00 - 19:00	53.7	54.1	54.2	54.4	54.2	54.2	53.8
19:00 - 20:00	54.0	54.1	53.7	54.1	54.1	54.3	53.8
20:00 - 21:00	54.0	54.2	53.8	54.0	54.0	54.3	53.7
21:00 - 22:00	54.1	54.2	54.0	54.1	54.0	53.7	53.6
22:00 - 23:00	53.9	54.5	54.1	54.1	54.1	56.9	53.7
23:00 - 00:00	54.2	54.1	54.3	54.2	54.2	54.4	53.9
00:00 - 01:00	53.9	54.0	54.2	54.2	54.2	54.5	53.8
01:00 - 02:00	54.1	54.1	54.3	53.9	53.8	54.4	53.6
02:00 - 03:00	54.2	54.0	54.3	54.0	54.3	54.0	53.6
03:00 - 04:00	54.2	54.1	54.2	54.1	54.2	53.8	53.7
04:00 - 05:00	54.3	54.1	54.1	54.0	53.8	54.2	53.7
05:00 - 06:00	54.3	54.3	54.1	54.5	54.1	54.7	53.8
06:00 - 07:00	54.5	54.5	54.1	54.2	54.2	53.2	54.3
07:00 - 08:00	54.4	54.0	54.0	55.2	54.1	53.5	53.9
08:00 - 09:00	54.1	53.7	53.3	54.5	54.0	54.3	54.4
09:00 - 10:00	54.4	54.0	53.5	54.3	54.3	53.6	54.0
L90(avg)*	54.2	54.0	54.1	54.1	54.1	54.3	53.8

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

Ladawan W.

(Miss Ladawan Wongcharoen)  
 Environmental Scientist

Preeda S.

(Miss Preeda Somjai)  
 Technical Management Team

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คุณภาพน้ำทิ้ง



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	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0011/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 05/01/2023	SAMPLING TIME	: 10.15
RECEIVED DATE	: 06/01/2023	ANALYTICAL DATE	: 06-13/01/2023
REPORT DATE	: 13/01/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_January
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 (Holding Pond # 1)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD <sup>1/, 2/</sup>
Temperature	°C	2550 B	< 0.5	27.3	≤ 45
pH		4500-H <sup>+</sup> B	< 0.10	7.53	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,072	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 10
TKN	mg/l	4500-N <sub>org</sub> B	< 0.20	1.9	≤ 100
BOD <sub>5</sub>	mg/l	5210 B	< 1.0	11.2	≤ 500
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 750

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-5863

- 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 Industrial Estate Authority of Thailand No.76, B.E.2560 (2017).
  4. <sup>2/</sup> The value was assigned in EIA report.
  5. - Not available.



บริษัท ซีคอต จำกัด  
SECOT CO., LTD.

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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	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0011/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 05/01/2023	SAMPLING TIME	: 10.15
RECEIVED DATE	: 06/01/2023	ANALYTICAL DATE	: 07-10/01/2023
REPORT DATE	: 13/01/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_January
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 (Holding Pond # 1)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD <sup>1/, 2/</sup>
Arsenic (As)	mg/l	3114 C	< 0.0001	0.0014	≤ 0.25
Cadmium (Cd)	mg/l	3120 B	< 0.001	< 0.01	≤ 0.03
Iron (Fe)	mg/l	3120 B	< 0.004	0.15	≤ 10 <sup>2/</sup>
Lead (Pb)	mg/l	3120 B	< 0.008	< 0.03	≤ 0.2
Manganese (Mn)	mg/l	3120 B	< 0.001	0.02	≤ 5
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005
Zinc (Zn)	mg/l	3120 B	< 0.003	0.15	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

(Miss Krisana Chanthoom)

Analyst

REG. NO. 2-239-ก-7802

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-5863

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Chonburi Clean Energy Co., Ltd. REQUEST SERVICE No. : 0011/66  
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab  
SAMPLING DATE : 05/01/2023 SAMPLING TIME : 10.10  
RECEIVED DATE : 06/01/2023 ANALYTICAL DATE : 06-13/01/2023  
REPORT DATE : 13/01/2023 SITE OPERATOR : Mr. Baworn Deechaiya  
SAMPLE CONDITION : Normal FILE CODE : 223013\_WW\_January  
LOCATION DESCRIPTION : 2 = บ่อพักน้ำทิ้งที่ 2 ( Holding Pond # 2 )

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 2	STANDARD <sup>1</sup> , <sup>2</sup>
Temperature	°C	2550 B	< 0.5	27.5	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	7.70	5.5-9.0
Conductivity	μS/cm	2510 B	< 1.0	430	-
Total Dissolved Solids	mg/l	2540 C	< 50	288	≤ 3,000 <sup>1</sup> , ≤ 1,300 <sup>2</sup>
Dissolved Oxygen	mg/l	4500-O G	< 0.1	6.2	≥ 4 <sup>2</sup>

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

*Araya Tipparuk*

(Mrs. Araya Tipparuk )

Technical Management Team

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Chonburi Clean Energy Co., Ltd. REQUEST SERVICE No. : 0144/66  
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab  
SAMPLING DATE : 02/02/2023 SAMPLING TIME : 14.05  
RECEIVED DATE : 03/02/2023 ANALYTICAL DATE : 03-09/02/2023  
REPORT DATE : 10/02/2023 SITE OPERATOR : Mr. Baworn Deechaiya  
SAMPLE CONDITION : Normal FILE CODE : 223013\_WW\_February  
LOCATION DESCRIPTION : 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD <sup>1</sup> , <sup>2</sup>
Temperature	°C	2550 B	< 0.5	30.5	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	7.84	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	198	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 10
TKN	mg/l	4500-N <sub>org</sub> B	< 0.20	0.18	≤ 100
BOD <sub>5</sub>	mg/l	5210 B	< 1.0	< 1.0	≤ 500
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 750

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

*Araya Tipparuk*

(Mrs. Araya Tipparuk )

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0144/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/02/2023	SAMPLING TIME	: 14.05
RECEIVED DATE	: 03/02/2023	ANALYTICAL DATE	: 03-07/02/2023
REPORT DATE	: 10/02/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_February
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND	STATION	STANDARD
			(non-detectable)	1	<sup>1/2/</sup>
Arsenic (As)	mg/l	3114 C	< 0.0001	0.0010	≤ 0.25
Cadmium (Cd)	mg/l	3120 B	< 0.001	ND	≤ 0.03
Iron (Fe)	mg/l	3120 B	< 0.004	< 0.05	≤ 10 <sup>2/</sup>
Lead (Pb)	mg/l	3120 B	< 0.008	ND	≤ 0.2
Manganese (Mn)	mg/l	3120 B	< 0.001	< 0.01	≤ 5
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005
Zinc (Zn)	mg/l	3120 B	< 0.003	< 0.02	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED. 2017 (AWWA, APHA, WEF)

  
( Miss Krisana Chanthoom )

Analyst

REG. NO. 2-239-ก-7802



( Mrs. Araya Tipparuk )

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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	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0144/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/02/2023	SAMPLING TIME	: 13.48
RECEIVED DATE	: 03/02/2023	ANALYTICAL DATE	: 03-09/02/2023
REPORT DATE	: 10/02/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_February
LOCATION DESCRIPTION	: 2 = บ่อพักน้ำทิ้งที่ 2 ( Holding Pond # 2 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND	STATION	STANDARD
			(non-detectable)	2	<sup>1/2/</sup>
Temperature	°C	2550 B	< 0.5	32.3	≤ 45
pH		4500-H <sup>1</sup> B	< 0.10	8.06	5.5-9.0
Conductivity	µS/cm	2510 B	< 1.0	1,925	
Total Dissolved Solids	mg/l	2540 C	< 50	1,285	≤ 3,000 <sup>1/</sup> , ≤ 1,300 <sup>2/</sup>
Dissolved Oxygen	mg/l	4500-O G	< 0.1	4.6	≥ 4 <sup>2/</sup>

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED. 2017 (AWWA, APHA, WEF)



( Miss Khemchuda Insorn )

Analyst

REG. NO. 2-239-ก-5976



( Mrs. Araya Tipparuk )

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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	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0328/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/03/2023	SAMPLING TIME	: 13.45
RECEIVED DATE	: 03/03/2023	ANALYTICAL DATE	: 03-10/03/2023
REPORT DATE	: 13/03/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_March
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION I	STANDARD <sup>1/</sup> , <sup>2/</sup>
Temperature	°C	2550 B	< 0.5	31.2	≤ 45
pH		4500-H <sup>+</sup> B	< 0.10	7.69	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	88	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 10
TKN	mg/l	4500-N <sub>org</sub> B	< 0.20	2.4	≤ 100
BOD <sub>5</sub>	mg/l	5210 B	< 1.0	< 1.0	≤ 500
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 750

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED. 2017 (AWWA, APHA, WEF)

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND  
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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0328/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/03/2023	SAMPLING TIME	: 13.45
RECEIVED DATE	: 03/03/2023	ANALYTICAL DATE	: 03-07/03/2023
REPORT DATE	: 13/03/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_March
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION I	STANDARD <sup>1/</sup> , <sup>2/</sup>
Arsenic (As)	mg/l	3114 C	< 0.0001	ND	≤ 0.25
Cadmium (Cd)	mg/l	3120 B	< 0.001	ND	≤ 0.03
Iron (Fe)	mg/l	3120 B	< 0.004	0.05	≤ 10 <sup>2/</sup>
Lead (Pb)	mg/l	3120 B	< 0.008	ND	≤ 0.2
Manganese (Mn)	mg/l	3120 B	< 0.001	< 0.01	≤ 5
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005
Zinc (Zn)	mg/l	3120 B	< 0.003	< 0.02	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED. 2017 (AWWA, APHA, WEF)

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0328/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/03/2023	SAMPLING TIME	: 13.38
RECEIVED DATE	: 03/03/2023	ANALYTICAL DATE	: 03-10/03/2023
REPORT DATE	: 13/03/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_March
LOCATION DESCRIPTION	: 2 = บ่อพักน้ำทิ้งที่ 2 ( Holding Pond # 2 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 2	STANDARD <sup>1), 2)</sup>
Temperature	°C	2550 B	< 0.5	31.5	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	7.05	5.5-9.0
Conductivity	µS/cm	2510 B	< 1.0	1.751	-
Total Dissolved Solids	mg/l	2540 C	< 50	1.192	≤ 3,000 <sup>1)</sup> , ≤ 1,300 <sup>2)</sup>
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.3	≥ 4 <sup>2)</sup>

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-n-5976

*Araya Tipparuk*

(Mrs. Araya Tipparuk)

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0610/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 20/04/2023	SAMPLING TIME	: 13.30
RECEIVED DATE	: 21/04/2023	ANALYTICAL DATE	: 21-28/04/2023
REPORT DATE	: 02/05/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_April
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD <sup>1), 2)</sup>
Temperature	°C	2550 B	< 0.5	33.0	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	7.91	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	366	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 10
TKN	mg/l	4500-N <sub>org</sub> B	< 0.20	0.98	≤ 100
BOD <sub>5</sub>	mg/l	5210 B	< 1.0	1.6	≤ 500
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 750

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

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(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-n-5976

*Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-5863

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0610/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 20/04/2023	SAMPLING TIME	: 13.30
RECEIVED DATE	: 21/04/2023	ANALYTICAL DATE	: 22-25/04/2023
REPORT DATE	: 02/05/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_April
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD <sup>1/, 2/</sup>
				1	
Arsenic (As)	mg/l	3114 C	< 0.0001	0.0027	≤ 0.25
Cadmium (Cd)	mg/l	3120 B	< 0.001	ND	≤ 0.03
Iron (Fe)	mg/l	3120 B	< 0.004	0.12	≤ 10 <sup>2/</sup>
Lead (Pb)	mg/l	3120 B	< 0.008	ND	≤ 0.2
Manganese (Mn)	mg/l	3120 B	< 0.001	0.01	≤ 5
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005
Zinc (Zn)	mg/l	3120 B	< 0.003	< 0.02	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED, 2017 (AWWA, APHA, WEF)

( Miss Krisana Chanthoom )

Analyst

REG. NO. 2-239-ก-7802

( Mrs. Araya Tipparak )

Technical Management Team

REG. NO. 2-239-ก-5863

- Remark :**
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  4. <sup>2/</sup> The value was assigned in EIA report.



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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	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0610/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 20/04/2023	SAMPLING TIME	: 13.26
RECEIVED DATE	: 21/04/2023	ANALYTICAL DATE	: 21-28/04/2023
REPORT DATE	: 02/05/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_April
LOCATION DESCRIPTION	: 2 = บ่อพักน้ำทิ้งที่ 2 ( Holding Pond # 2 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD <sup>1/, 2/</sup>
				2	
Temperature	°C	2550 B	< 0.5	30.2	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	7.66	5.5-9.0
Conductivity	µS/cm	2510 B	< 1.0	1,713	-
Total Dissolved Solids	mg/l	2540 C	< 50	1,224	≤ 3,000 <sup>1/</sup> ≤ 1,300 <sup>2/</sup>
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.6	≥ 4 <sup>2/</sup>

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED, 2017 (AWWA, APHA, WEF)

( Miss Khemchuda Insorn )

Analyst

REG. NO. 2-239-ก-5976

( Mrs. Araya Tipparak )

Technical Management Team

REG. NO. 2-239-ก-5863

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  5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0685/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/05/2023	SAMPLING TIME	: 09.38
RECEIVED DATE	: 05/05/2023	ANALYTICAL DATE	: 05-10/05/2023
REPORT DATE	: 11/05/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_May
LOCATION DESCRIPTION	: 1 = บ่อดักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION I	STANDARD <sup>1/, 2/</sup>
Temperature	°C	2550 B	< 0.5	31.5	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	7.78	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	723	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 10
TKN	mg/l	4500-N <sub>org</sub> B	< 0.20	2.7	≤ 100
BOD <sub>5</sub>	mg/l	5210 B	< 1.0	< 1.0	≤ 500
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 750

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

( Mrs. Araya Tipparuk )

Technical Management Team

REG. NO. 2-239-ก-5863

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5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0685/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/05/2023	SAMPLING TIME	: 09.38
RECEIVED DATE	: 05/05/2023	ANALYTICAL DATE	: 05-09/05/2023
REPORT DATE	: 11/05/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_May
LOCATION DESCRIPTION	: 1 = บ่อดักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION I	STANDARD <sup>1/, 2/</sup>
Arsenic (As)	mg/l	3114 C	< 0.0001	0.0026	≤ 0.25
Cadmium (Cd)	mg/l	3120 B	< 0.001	ND	≤ 0.03
Iron (Fe)	mg/l	3120 B	< 0.004	0.16	≤ 10 <sup>2/</sup>
Lead (Pb)	mg/l	3120 B	< 0.008	< 0.03	≤ 0.2
Manganese (Mn)	mg/l	3120 B	< 0.001	0.02	≤ 5
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005
Zinc (Zn)	mg/l	3120 B	< 0.003	0.07	≤ 5

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED., 2017 (AWWA, APHA, WEF)

( Miss Krisana Chanthoom )

Analyst

REG. NO. 2-239-ก-7802

( Mrs. Araya Tipparuk )

Technical Management Team

REG. NO. 2-239-ก-5863

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Chonburi Clean Energy Co., Ltd. REQUEST SERVICE No. : 0685/66  
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab  
SAMPLING DATE : 04/05/2023 SAMPLING TIME : 9.50  
RECEIVED DATE : 05/05/2023 ANALYTICAL DATE : 05-10/05/2023  
REPORT DATE : 11/05/2023 SITE OPERATOR : Mr. Baworn Deechaiya  
SAMPLE CONDITION : Normal FILE CODE : 223013\_WW\_May  
LOCATION DESCRIPTION : 2 = บ่อกักน้ำทิ้งที่ 2 ( Holding Pond # 2 )

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 2	STANDARD <sup>1/, 2/</sup>
Temperature	°C	2550 B	< 0.5	31.6	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	8.44	5.5-9.0
Conductivity	µS/cm	2510 B	< 1.0	1,824	-
Total Dissolved Solids	mg/l	2540 C	< 50	1,200	≤ 3,000 <sup>1/</sup> , ≤ 1,300 <sup>2/</sup>
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.3	≥ 4 <sup>2/</sup>

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED, 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

*M. Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-5863

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5. - 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 : Chonburi Clean Energy Co., Ltd. REQUEST SERVICE No. : 0989/66  
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab  
SAMPLING DATE : 16/06/2023 SAMPLING TIME : 08:25  
RECEIVED DATE : 17/06/2023 ANALYTICAL DATE : 17-27/06/2023  
REPORT DATE : 29/06/2023 SITE OPERATOR : Mr. Baworn Deechaiya  
SAMPLE CONDITION : Normal FILE CODE : 223013\_WW\_June  
LOCATION DESCRIPTION : 1 = บ่อกักน้ำทิ้งที่ 1 ( Holding Pond # 1 )

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD <sup>1/, 2/</sup>
Temperature	°C	2550 B	< 0.5	31.5	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	8.01	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	439	≤ 3,000
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 10
TKN	mg/l	4500-N <sub>mg</sub> B	< 0.20	1.2	≤ 100
BOD <sub>5</sub>	mg/l	5210 B	< 1.0	< 1.0	≤ 500
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 750

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21<sup>st</sup> ED, 2017 (AWWA, APHA, WEF)

*Khemchuda Insorn*

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

*M. Araya Tipparuk*

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-5863

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5. - Not available.



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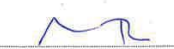
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0989/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 16/06/2023	SAMPLING TIME	: 08:25
RECEIVED DATE	: 17/06/2023	ANALYTICAL DATE	: 17-19/06/2023
REPORT DATE	: 29/06/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_June
LOCATION DESCRIPTION	: 1 = บ่อพักน้ำทิ้งที่ 1 ( Holding Pond # 1 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD <sup>1/,2/</sup>
				1	
Arsenic (As)	mg/l	3114 C	< 0.0001	0.0071	≤ 0.25
Cadmium (Cd)	mg/l	3120 B	< 0.001	ND	≤ 0.03
Iron (Fe)	mg/l	3120 B	< 0.004	0.06	≤ 10 <sup>2/</sup>
Lead (Pb)	mg/l	3120 B	< 0.008	ND	≤ 0.2
Manganese (Mn)	mg/l	3120 B	< 0.001	ND	≤ 5
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005
Zinc (Zn)	mg/l	3120 B	< 0.003	0.05	≤ 5

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

  
( Miss Krisana Chanthoom )  
Analyst  
REG. NO. 2-239-ก-7802

  
( Mrs. Araya Tipparuk )  
Technical Management Team  
REG. NO. 2-239-ก-5863

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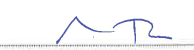
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REQUEST SERVICE No.	: 0989/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 16/06/2023	SAMPLING TIME	: 08:30
RECEIVED DATE	: 17/06/2023	ANALYTICAL DATE	: 17-27/06/2023
REPORT DATE	: 29/06/2023	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 223013_WW_June
LOCATION DESCRIPTION	: 2 = บ่อพักน้ำทิ้งที่ 2 ( Holding Pond # 2 )		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD <sup>1/,2/</sup>
				2	
Temperature	°C	2550 B	< 0.5	31.9	≤ 45
pH	-	4500-H <sup>+</sup> B	< 0.10	8.06	5.5-9.0
Conductivity	µS/cm	2510 B	< 1.0	1,485	-
Total Dissolved Solids	mg/l	2540 C	< 50	930	≤ 3,000 <sup>1/</sup> ≤ 1,300 <sup>2/</sup>
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.4	≥ 4 <sup>2/</sup>

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

  
( Miss Khemchuda Insorn )  
Analyst  
REG. NO. 2-239-ก-5976

  
( Mrs. Araya Tipparuk )  
Technical Management Team  
REG. NO. 2-239-ก-5863

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  5. - Not available.



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## คุณภาพอากาศในที่ทำงาน



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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

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0351/66
For	: Chonburi Clean Energy Co., Ltd.	Sampling Date	: 02/03/2023
Address	: 40/5 , Moo. 8, WHA Chonburi Industrial Estate 1, Bowin Sub-District, Sriracha District, Chonburi Province 20230	Received Date	: 04/03/2023
Tel/Fax	: 0-3314-0300	Test Date	: 08/03/2023
		Report Date	: 13/03/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Filtration
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND mg/m <sup>3</sup>	RESULT mg/m <sup>3</sup>	STANDARD mg/m <sup>3</sup>
Industrial waste receiving area (บริเวณพื้นที่รับกากอุตสาหกรรม)	02/03/2023 08:55-11:55	Respirable dust	NIOSH 0600 /Microbalance	< 0.25	ND	3
Industrial waste receiving area (บริเวณพื้นที่รับกากอุตสาหกรรม)	02/03/2023 08:55-09:55	Total dust	NIOSH 0500 /Microbalance	< 0.25	ND	10

Analyst By: Phatchara Samanchan  
( Miss Phatchara Samanchan )

Approved By: Narisa Poowasanetch  
( Miss Narisa Poowasanetch )  
Technical Management Team

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3. Standard of the American Conference of Governmental Industrial Hygienists 2022 : ACGIH 2022.

4. ND = non-detectable.



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ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0991/66
For	: Chonburi Clean Energy Co., Ltd.	Sampling Date	: 16/06/2023
Address	: 40/5 , Moo. 8, WHA Chonburi Industrial Estate 1, Bowin Sub-District, Sriracha District, Chonburi Province 20230	Received Date	: 17/06/2023
Tel/Fax	: 0-3314-0300	Test Date	: 19/06/2023
		Report Date	: 26/06/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Filtration
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND mg/m <sup>3</sup>	RESULT mg/m <sup>3</sup>	STANDARD mg/m <sup>3</sup>
Industrial waste receiving area (บริเวณพื้นที่รับกากอุตสาหกรรม)	16/06/2023 08:10-09:40	Respirable dust	NIOSH 0600 /Microbalance	< 0.25	ND	3
Industrial waste receiving area (บริเวณพื้นที่รับกากอุตสาหกรรม)	16/06/2023 08:10-09:40	Total dust	NIOSH 0500 /Microbalance	< 0.25	ND	10

Analyst By: Phatchara Samanchan  
( Miss Phatchara Samanchan )

Approved By: Narisa Poowasanetch  
( Miss Narisa Poowasanetch )  
Technical Management Team

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

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3. Standard of the American Conference of Governmental Industrial Hygienists 2022 : ACGIH 2022.

4. ND = non-detectable.

---

## ระดับเสียงภายในสถานที่ทำงาน



## Noise Monitoring Result : Working Noise MTR-CCE

Location : ST & Generator	Monitor Period : Mar 02, 2023
SLM Model : CASELLA CEL-246	Serial No : 1443618
Site Operator : Mr. Thanawut Duansaeng	
Calibrator Model : CASELLA CEL120/2	Serial No : 2839225
Calibration Ref dB(A) : 114.0	Certified Date : Jan 13, 2023
SLM Reading / Adjust dB(A) : 114.1/-0.1	Expire Date : Jan 12, 2024
Cal Sheet No.: CEL120/2-2023-021	

Time	Equivalent Sound Pressure Level (dB(A))
	Mar 02, 2023
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	83.4
08:00 - 09:00	83.2
09:00 - 10:00	83.0
10:00 - 11:00	82.8
11:00 - 12:00	82.7
12:00 - 13:00	82.8
13:00 - 14:00	82.7
14:00 - 15:00	82.3
15:00 - 16:00	82.3
16:00 - 17:00	82.4
17:00 - 18:00	82.5
18:00 - 19:00	82.5
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	82.7
Lmax **	84.0
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 Ladawan Wongcharoen)  
Environmental Scientist

(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-CCE

Location : Feed Pump of Boiler System	Monitor Period : Mar 02, 2023
SLM Model : CASELLA CEL-246	Serial No : 3173311
Site Operator : Mr. Thanawut Duansaeng	
Calibrator Model : CASELLA CEL120/2	Serial No : 2839225
Calibration Ref dB(A) : 114.0	Certified Date : Jan 13, 2023
SLM Reading / Adjust dB(A) : 114.1/-0.1	Expire Date : Jan 12, 2024
Cal Sheet No.: CEL120/2-2023-021	

Time	Equivalent Sound Pressure Level (dB(A))
	Mar 02, 2023
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	77.0
08:00 - 09:00	76.9
09:00 - 10:00	77.3
10:00 - 11:00	76.9
11:00 - 12:00	76.9
12:00 - 13:00	77.1
13:00 - 14:00	77.2
14:00 - 15:00	76.8
15:00 - 16:00	76.7
16:00 - 17:00	76.9
17:00 - 18:00	76.9
18:00 - 19:00	77.1
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	77.0
Lmax **	87.4
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 Ladawan Wongcharoen)  
Environmental Scientist

(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-CCE

Location : CW Pump                      Monitor Period : Mar 02, 2023  
SLM Model : CASELLA CEL-246                      Serial No : 1443838  
Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2                      Serial No : 2839225  
Calibration Ref dB(A) : 114.0                      Certified Date : Jan 13, 2023  
SLM Reading / Adjust dB(A) : 114.3/-0.3                      Expire Date : Jan 12, 2024  
Cal Sheet No.: CEL120/2-2023-021

Time	Equivalent Sound Pressure Level (dB(A))	
	Mar 02, 2023	
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	78.8	
08:00 - 09:00	78.8	
09:00 - 10:00	78.7	
10:00 - 11:00	78.5	
11:00 - 12:00	78.4	
12:00 - 13:00	78.2	
13:00 - 14:00	78.2	
14:00 - 15:00	78.1	
15:00 - 16:00	78.2	
16:00 - 17:00	78.2	
17:00 - 18:00	78.2	
18:00 - 19:00	78.2	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	78.4	
Lmax **	90.9	
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

Ladawan H.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Sun Sirawuttinanon  
(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-CCE

Location : Aeration Fan #1                      Monitor Period : Mar 02, 2023  
SLM Model : CASELLA CEL-246                      Serial No : 1443817  
Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2                      Serial No : 2839225  
Calibration Ref dB(A) : 114.0                      Certified Date : Jan 13, 2023  
SLM Reading / Adjust dB(A) : 114.1/-0.1                      Expire Date : Jan 12, 2024  
Cal Sheet No.: CEL120/2-2023-021

Time	Equivalent Sound Pressure Level (dB(A))	
	Mar 02, 2023	
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	84.3	
08:00 - 09:00	83.2	
09:00 - 10:00	82.5	
10:00 - 11:00	80.4	
11:00 - 12:00	79.5	
12:00 - 13:00	79.3	
13:00 - 14:00	80.0	
14:00 - 15:00	79.6	
15:00 - 16:00	81.2	
16:00 - 17:00	81.6	
17:00 - 18:00	82.0	
18:00 - 19:00	81.9	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	81.6	
Lmax **	88.2	
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

Ladawan H.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Sun Sirawuttinanon  
(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-CCE

Location : Aeration Fan #2	Monitor Period : Mar 02, 2023
SLM Model : CASELLA CEL-246	Serial No : 3173306
Site Operator : Mr. Thanawut Duansaeng	

Calibrator Model : CASELLA CEL120/2	Serial No : 2839225
Calibration Ref dB(A) : 114.0	Certified Date : Jan 13, 2023
SLM Reading / Adjust dB(A) : 114.2/-0.2	Expire Date : Jan 12, 2024
Cal Sheet No.: CEL120/2-2023-021	

Time	Equivalent Sound Pressure Level (dB(A))	
	Mar 02, 2023	
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		
08:00 - 09:00	83.2	
09:00 - 10:00	83.3	
10:00 - 11:00	84.4	
11:00 - 12:00	83.4	
12:00 - 13:00	82.6	
13:00 - 14:00	82.3	
14:00 - 15:00	81.7	
15:00 - 16:00	81.0	
16:00 - 17:00	82.9	
17:00 - 18:00	82.7	
18:00 - 19:00	83.5	
19:00 - 20:00	81.0	
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	82.8	
Lmax **	90.7	
Standard-12Hr	87 dB(A)	
Standard-Max	140 dB(A)	

Remark : \* Average time between 08:00-20:00

\*\* Maximum Sound Pressure Level between 08:00-20:00

(Miss Ladawan Wongcharoen)  
Environmental Scientist

(Miss Sununta Sirawuttinanon)  
Technical Management Team



## Noise Monitoring Result : Working Noise MTR-CCE

Location : Aeration Fan of Bag House System	Monitor Period : Mar 02, 2023
SLM Model : CASELLA CEL-246	Serial No : 3173312
Site Operator : Mr. Thanawut Duansaeng	

Calibrator Model : CASELLA CEL120/2	Serial No : 2839225
Calibration Ref dB(A) : 114.0	Certified Date : Jan 13, 2023
SLM Reading / Adjust dB(A) : 114.6/-0.6	Expire Date : Jan 12, 2024
Cal Sheet No.: CEL120/2-2023-021	

Time	Equivalent Sound Pressure Level (dB(A))	
	Mar 02, 2023	
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	77.5	
08:00 - 09:00	77.2	
09:00 - 10:00	76.4	
10:00 - 11:00	76.0	
11:00 - 12:00	76.4	
12:00 - 13:00	76.5	
13:00 - 14:00	76.5	
14:00 - 15:00	76.0	
15:00 - 16:00	75.7	
16:00 - 17:00	76.1	
17:00 - 18:00	76.0	
18:00 - 19:00	76.0	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	76.4	
Lmax **	85.8	
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 Ladawan Wongcharoen)  
Environmental Scientist

(Miss Sununta Sirawuttinanon)  
Technical Management Team




## Noise Monitoring Result : Working Noise MTR-CCE


Location : ST & Generator	Monitor Period : Jun 16, 2023
SLM Model : SCARLET ST-21D	Serial No : 820728
Site Operator : Mr.Chanapon Oakkharaplon	
Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : Sep 12, 2022
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : Sep 11, 2023
Cal Sheet No.: CR-515-2023-081	

Time	Equivalent Sound Pressure Level (dB(A))
	Jun 16, 2023
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	82.7
08:00 - 09:00	82.6
09:00 - 10:00	82.3
10:00 - 11:00	82.4
11:00 - 12:00	82.4
12:00 - 13:00	82.4
13:00 - 14:00	82.4
14:00 - 15:00	82.5
15:00 - 16:00	82.4
16:00 - 17:00	82.3
17:00 - 18:00	82.2
18:00 - 19:00	82.4
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	82.4
Lmax **	86.2
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-CCE


Location : Feed Pump of Boiler System	Monitor Period : Jun 16, 2023
SLM Model : SCARLET ST-21D	Serial No : 820722
Site Operator : Mr.Chanapon Oakkharaplon	
Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : Sep 12, 2022
SLM Reading / Adjust dB(A) : 93.7/-0.1	Expire Date : Sep 11, 2023
Cal Sheet No.: CR-515-2023-081	

Time	Equivalent Sound Pressure Level (dB(A))
	Jun 16, 2023
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	81.5
08:00 - 09:00	81.5
09:00 - 10:00	81.3
10:00 - 11:00	81.3
11:00 - 12:00	81.3
12:00 - 13:00	81.4
13:00 - 14:00	81.4
14:00 - 15:00	81.4
15:00 - 16:00	81.4
16:00 - 17:00	81.5
17:00 - 18:00	81.4
18:00 - 19:00	81.4
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	81.4
Lmax **	93.9
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-CCE

Location : CW Pump	Monitor Period : Jun 16, 2023
SLM Model : SCARLET ST-21D	Serial No : 820723
Site Operator : Mr.Chanapon Oakkharaplon	


Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : Sep 12, 2022
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : Sep 11, 2023
Cal Sheet No.: CR-515-2023-081	

Time	Equivalent Sound Pressure Level (dB(A))	
	Jun 16, 2023	
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	81.2	
08:00 - 09:00	81.3	
09:00 - 10:00	81.4	
10:00 - 11:00	81.6	
11:00 - 12:00	81.7	
12:00 - 13:00	81.4	
13:00 - 14:00	81.4	
14:00 - 15:00	81.4	
15:00 - 16:00	81.0	
16:00 - 17:00	80.2	
17:00 - 18:00	80.2	
18:00 - 19:00	81.2	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	81.2	
Lmax **	89.5	
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



## Noise Monitoring Result : Working Noise MTR-CCE

Location : Aeration Fan #1	Monitor Period : Jun 16, 2023
SLM Model : SCARLET ST-21D	Serial No : 820727
Site Operator : Mr.Chanapon Oakkharaplon	

Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : Sep 12, 2022
SLM Reading / Adjust dB(A) : 93.7/0.1	Expire Date : Sep 11, 2023
Cal Sheet No.: CR-515-2023-081	

Time	Equivalent Sound Pressure Level (dB(A))	
	Jun 16, 2023	
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	83.4	
08:00 - 09:00	83.1	
09:00 - 10:00	83.5	
10:00 - 11:00	83.8	
11:00 - 12:00	83.2	
12:00 - 13:00	82.6	
13:00 - 14:00	84.1	
14:00 - 15:00	84.3	
15:00 - 16:00	83.9	
16:00 - 17:00	82.8	
17:00 - 18:00	83.1	
18:00 - 19:00	83.4	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	83.5	
Lmax **	102.2	
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-CCE

Location : Aeration Fan #2 Monitor Period : Jun 16, 2023  
SLM Model : SCARLET ST-21D Serial No : 820725  
Site Operator : Mr.Chanapon Oakkharaplon

Calibrator Model : Cirrus CR:515 Serial No : 94296  
Calibration Ref dB(A) : 94.0 Certified Date : Sep 12, 2022  
SLM Reading / Adjust dB(A) : 93.7/-0.2 Expire Date : Sep 11, 2023  
Cal Sheet No.: CR-515-2023-081

Time	Equivalent Sound Pressure Level (dB(A))	
	Jun 16, 2023	
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	82.7	
08:00 - 09:00	82.5	
09:00 - 10:00	81.9	
10:00 - 11:00	81.8	
11:00 - 12:00	81.7	
12:00 - 13:00	81.5	
13:00 - 14:00	81.7	
14:00 - 15:00	81.8	
15:00 - 16:00	81.6	
16:00 - 17:00	82.9	
17:00 - 18:00	82.1	
18:00 - 19:00	82.0	
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	82.0	
Lmax **	92.8	
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-CCE

Location : Aeration Fan of Bag House System Monitor Period : Jun 16, 2023  
SLM Model : SCARLET ST-21D Serial No : 820726  
Site Operator : Mr.Chanapon Oakkharaplon

Calibrator Model : Cirrus CR:515 Serial No : 94296  
Calibration Ref dB(A) : 94.0 Certified Date : Sep 12, 2022  
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : Sep 11, 2023  
Cal Sheet No.: CR-515-2023-081

Time	Equivalent Sound Pressure Level (dB(A))	
	Jun 16, 2023	
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	76.7	
08:00 - 09:00	76.6	
09:00 - 10:00	52.7	
10:00 - 11:00	76.4	
11:00 - 12:00	76.5	
12:00 - 13:00	76.5	
13:00 - 14:00	76.5	
14:00 - 15:00	76.3	
15:00 - 16:00	76.3	
16:00 - 17:00	76.3	
17:00 - 18:00	75.8	
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)*	75.9	
Lmax **	96.2	
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

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## ปริมาณเสียงสะสมที่ตัวพนักงาน



**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

**NOISE MEASUREMENT REPORT : NOISE DOSE**

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013/MON1H/Noise Dose/Mar
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/03/2023	CALIBRATOR TYPE	: CIRRUS / RC:110A, PULSAR 22R
MEASUREMENT LOCATION	: Working Area	SERIAL NO.	: 95168, 79781
SITE OPERATOR	: Ms. Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	SECTION / AREA	SOUND PRESSURE LEVEL (dB(A))		
		TWA (12 hr)	% Dose	STANDARD *
Mr. Darusorn S.	Operation / ST & Generator	75.2	15.7	83.0
Mr. Sarayut Ch.	Operation / CW Pump	79.0	37.5	83.0
Mr. Jhakkaphan B.	Operation / Aeration Fan #1	81.2	63.0	83.0
Mr. Tula N.	Operation / Aeration Fan of Bag House System	71.0	5.9	83.0
Mr. Wiset T.	Operation / Feed Pump of Boiler System	78.3	31.9	83.0

*Ladawan N.*

(Miss Ladawan Wongcharoen)

Environmental Scientist

*Sun Suthmanon*

(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).
  4. TWA means Time Weighted Average.



**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

**NOISE MEASUREMENT REPORT : NOISE DOSE**

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013/MON1H/Noise Dose/Mar
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 14/03/2023	CALIBRATOR TYPE	: CIRRUS / RC:110A
MEASUREMENT LOCATION	: Working Area	SERIAL NO.	: 95168
SITE OPERATOR	: Ms. Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	SECTION / AREA	SOUND PRESSURE LEVEL (dB(A))		
		TWA (12 hr)	% Dose	STANDARD *
Mr. Thirayut S.	Operation / Aeration Fan #2	78.9	36.8	83.0

*Ladawan N.*

(Miss Ladawan Wongcharoen)

Environmental Scientist

*Sun Suthmanon*

(Miss Sununta Sirawuttinanon)

Technical Management Team

- Remark :**
1. Reported analysis refers to submitted sample only.
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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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SECOT CO., LTD.

239 ถนนวิมลทองประไพ 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

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013/MON1H/Noise Dose/Jun
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 16/06/2023	CALIBRATOR TYPE	: PULSAR 22R
MEASUREMENT LOCATION	: Working Area	SERIAL NO.	: 79781
SITE OPERATOR	: Ms. Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	SECTION / AREA	SOUND PRESSURE LEVEL (dB(A))		
		TWA (12 hr)	% Dose	STANDARD *
Mr. Kriangdet B.	Operation / ST & Generator	77.4	25.6	83.0
Mr. Jhakkaphan B.	Operation / CW Pump	76.7	22.2	83.0
Mr. Phayao S.	Operation / Aeration Fan #1	79.7	44.6	83.0
Mr. Jeerapong S.	Operation / Aeration Fan #2	82.7	89.2	83.0
Mr. Wathit S.	Operation / Aeration Fan of Bag House System	80.2	49.8	83.0
Mr. Sarayut Ch.	Operation / Feed Pump of Boiler System	82.1	77.4	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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SECOT CO.,LTD.

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

HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : Chonburi Clean Energy Co., Ltd. REFERENCE NO. : 223013\_Working/Heat/Mar  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Area Heat Stress Monitor  
MEASUREMENT DATE : 02/03/2023 MODEL NO. : JANTYTECH  
MEASUREMENT LOCATION : Industrial Waste Receiving Area SERIAL NO. : 3522210173  
SITE OPERATOR : Ms. Wiraya Patchimboon

LOCATION	TIME	MEASURED TEMPERATURE (°C)					STANDARD(°C)*
		NWB	DB	GT	WBGT <sub>in</sub>	WBGT <sub>Avg</sub>	
Industrial Waste Receiving Area	09:48-10:18	23.9	33.8	35.9	27.5	27.8	34.0
	10:18-10:48	24.1	35.0	37.2	28.0		
	10:48-11:18	23.9	34.7	37.1	27.9		
	11:18-11:48	23.5	34.7	37.5	27.7		

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Sun Sununta

(Miss Sununta Sirawuttinanon)

Technical Management Team

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- \*WBGT Standard was notified by the Ministerial of Labor B.E.2559 (2016).

NWB = Natural Wet Bulb Temperature

DB = Dry Bulb Temperature

GT = Globe Temperature

WBGT = Wet Bulb Globe Temperature

Work Load : Light work load = 34.0 °C, Moderate work load = 32.0 °C and Heavy work load = 30.0 °C



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HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : Chonburi Clean Energy Co., Ltd. REFERENCE NO. : 223013\_Working/Heat/Mar  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Area Heat Stress Monitor  
MEASUREMENT DATE : 02/03/2023 MODEL NO. : JANTYTECH  
MEASUREMENT LOCATION : Combustion Area SERIAL NO. : 3522210172  
SITE OPERATOR : Ms. Wiraya Patchimboon

LOCATION	TIME	MEASURED TEMPERATURE (°C)					STANDARD(°C)*
		NWB	DB	GT	WBGT <sub>in</sub>	WBGT <sub>Avg</sub>	
Combustion Area	09:46-10:16	23.2	31.6	31.9	25.8	26.0	34.0
	10:16-10:46	23.6	32.2	32.6	26.3		
	10:46-11:16	22.8	32.9	33.1	25.9		
	11:16-11:46	22.8	32.8	33.0	25.9		

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Sun Sununta

(Miss Sununta Sirawuttinanon)

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**HEAT STRESS MEASUREMENT REPORT**

CLIENT NAME : Chonburi Clean Energy Co., Ltd. REFERENCE NO. : 223013\_Working/Heat/Jun  
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Area Heat Stress Monitor  
MEASUREMENT DATE : 16/06/2023 MODEL NO. : JANTYTECH  
MEASUREMENT LOCATION : Industrial Waste Receiving Area SERIAL NO. : 3522210173  
SITE OPERATOR : Ms. Wiraya Patchimboon

LOCATION	TIME	MEASURED TEMPERATURE (°C)					STANDARD(°C)*
		NWB	DB	GT	WBGT <sub>in</sub>	WBGT <sub>Avg</sub>	
Industrial Waste Receiving Area	09:00-09:30	25.8	31.8	33.1	28.0	28.6	34.0
	09:30-10:00	26.7	32.5	33.7	28.8		
	10:00-10:30	26.5	32.5	33.6	28.6		
	10:30-11:00	26.9	32.9	33.9	29.0		

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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MEASUREMENT LOCATION : Combustion Area SERIAL NO. : 3522210172  
SITE OPERATOR : Ms. Wiraya Patchimboon

LOCATION	TIME	MEASURED TEMPERATURE (°C)					STANDARD(°C)*
		NWB	DB	GT	WBGT <sub>in</sub>	WBGT <sub>Avg</sub>	
Combustion Area	09:00-09:30	27.0	33.1	33.7	29.0	29.6	34.0
	09:30-10:00	27.3	33.3	33.8	29.3		
	10:00-10:30	28.0	33.8	34.4	29.9		
	10:30-11:00	28.0	34.2	34.7	30.0		

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(Miss Sununta Sirawuttinanon)

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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

LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Day)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Industrial Waste Receiving Area	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			DAYTIME		STANDARD*
			AVERAGE	MINIMUM	
Industrial Waste Receiving Area (พื้นที่รับกากอุตสาหกรรม)					
Tipping Hall	Receiving industrial waste	09:02-09:11	778	-	≥ 200
			-	570	≥ 100

Ladawan N.  
(Miss Ladawan Wongcharoen)

Environmental Scientist

Sun Suthmanon  
(Miss Sununta Sirawuttinanon)

Technical Management Team

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Day)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			DAYTIME		STANDARD
			AVERAGE	MINIMUM	
Crane Control Room (ห้องควบคุมเครน)					
Crane Control Chair	Working of controlling	09:40-09:50	451	-	≥ 300
(เก้าอี้นั่งขับเครน)			-	227	≥ 150

Ladawan N.  
(Miss Ladawan Wongcharoen)

Environmental Scientist

Sun Suthmanon  
(Miss Sununta Sirawuttinanon)

Technical Management Team

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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Night)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Industrial Waste Receiving Area	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			NIGHTTIME		STANDARD*
			AVERAGE	MINIMUM	
Industrial Waste Receiving Area (พื้นที่รับกากอุตสาหกรรม)					
Tipping Hall	Receiving industrial waste	18:49-19:00	228	-	≥ 200
			-	145	≥ 100

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Siri Sununta

(Miss Sununta Sirawuttinanon)

Technical Management Team

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MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			NIGHTTIME		STANDARD
			AVERAGE	MINIMUM	
Crane Control Room (ห้องควบคุมเครน)					
Crane Control Chair	Working of controlling	19:30-19:39	456	-	≥ 300
(เก้าอี้บังคับขั้มเครน)			-	322	≥ 150

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Siri Sununta

(Miss Sununta Sirawuttinanon)

Technical Management Team

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#### LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Day)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			DAYTIME	STANDARD*
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.1 (เก้าอี้นั่งขับเครนที่ 1)	Working of controlling	09:51	403	200-300

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Sun Sirawuttinanon  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

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MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			DAYTIME	STANDARD
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.2 (เก้าอี้นั่งขับเครนที่ 2)	Working of controlling	09:52	541	200-300

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Sun Sirawuttinanon  
(Miss Sununta Sirawuttinanon)  
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CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Night)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			NIGHTTIME	STANDARD*
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.1 (เก้าอี้นั่งขับเครนที่ 1)	Working of controlling	19:40	455	200-300

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Suk Sununta  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

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MEASUREMENT DATE	: 02/03/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			NIGHTTIME	STANDARD
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.2 (เก้าอี้นั่งขับเครนที่ 2)	Working of controlling	19:41	471	200-300

Ladawan W.  
(Miss Ladawan Wongcharoen)  
Environmental Scientist

Suk Sununta  
(Miss Sununta Sirawuttinanon)  
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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Day)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Industrial Waste Receiving Area	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			DAYTIME		STANDARD*
			AVERAGE	MINIMUM	
Industrial Waste Receiving Area (พื้นที่รับกากอุตสาหกรรม)					
Tipping Hall	Receiving industrial waste	09:13-09:20	830	-	≥ 200
			-	436	≥ 100

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

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MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			DAYTIME		STANDARD
			AVERAGE	MINIMUM	
Crane Control Room (ห้องควบคุมเครน)					
Crane Control Chair	Working of controlling	09:23-09:33	443	-	≥ 300
(เก้าอี้นั่งขับเครน)			-	281	≥ 150

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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บริษัท ซีคोट 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	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Night)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Industrial Waste Receiving Area	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			NIGHTTIME		STANDARD*
			AVERAGE	MINIMUM	
Industrial Waste Receiving Area (พื้นที่รับกากอุตสาหกรรม)					
Tipping Hall	Receiving industrial waste	19:39-19:45	260	-	≥ 200
			-	206	≥ 100

  
(Miss Katesarin Vorradetwittaya)  
Environmental Scientist

  
(Miss Sununta Sirawuttinanon)  
Technical Management Team

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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Night)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)		
			NIGHTTIME		STANDARD
			AVERAGE	MINIMUM	
Crane Control Room (ห้องควบคุมเครน)					
Crane Control Chair	Working of controlling	19:32-19:35	496	-	≥ 300
(เก้าอี้นั่งขับเครน)			-	419	≥ 150

  
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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Day)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LIGHT INTENSITY (LUX)

LOCATION	TYPE OF WORK	TIME		
			DAYTIME	STANDARD*
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.1 (เก้าอี้นั่งขับเครนที่ 1)	Working of controlling	09:19	483	200-300

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Day)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LIGHT INTENSITY (LUX)

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			DAYTIME	STANDARD*
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.2 (เก้าอี้นั่งขับเครนที่ 2)	Working of controlling	09:19	493	200-300

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Night)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			NIGHTTIME	STANDARD*
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.1 (เก้าอี้นั่งขับเครนที่ 1)	Working of controlling	19:30	516	200-300

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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LIGHT INTENSITY MEASUREMENT REPORT

CLIENT NAME	: Chonburi Clean Energy Co., Ltd.	REFERENCE NO.	: 223013-Light(Night)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Digital Light Meter
MEASUREMENT DATE	: 16/06/2023	MODEL	: 407026
MEASUREMENT LOCATION	: Crane Control Room	SERIAL NO.	: A 051050
SITE OPERATOR	: Miss Wiraya Patchimboon		

LOCATION	TYPE OF WORK	TIME	LIGHT INTENSITY (LUX)	
			NIGHTTIME	STANDARD
Crane Control Room (ห้องควบคุมเครน)				
Crane Control Chair No.2 (เก้าอี้นั่งขับเครนที่ 2)	Working of controlling	19:30	576	200-300

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Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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ภาคผนวก จ

ใบแสดงการตรวจเทียบเครื่องมือ



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

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 12, 2023

Hi-Vol Pump No. : BH-015 Indicator No. : CM-01

Amb. Temp (°C) : 27 Press (mmHg) : 760

Calibration by : Mr.Nattachai C.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	19.00	12.50	58.84	1,117.96	361.00	
13	15.80	9.90	52.68	832.34	249.64	
10	12.60	7.70	46.61	587.29	158.76	
7	8.60	4.90	37.44	321.98	73.96	
5	5.40	2.90	29.10	157.14	29.16	
Sum	61.40	37.90	224.67	3,016.71	872.52	

Calibrated by : Nattachai C. Approved by : Nattaya K.



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

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 12, 2023

Hi-Vol Pump No. : BH-019 Indicator No. : CM-01

Amb. Temp (°C) : 27 Press (mmHg) : 760

Calibration by : Mr.Nattachai C.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	17.40	12.00	57.68	1,003.63	302.76	
13	15.40	10.10	53.20	819.28	237.16	
10	11.80	7.80	46.90	553.42	139.24	
7	7.80	4.90	37.44	292.03	60.84	
5	5.00	2.80	28.62	143.10	25.00	
Sum	57.40	37.60	223.84	2,811.46	765.00	

Calibrated by : Nattachai C. Approved by : Nattaya K.



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

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 12, 2023

Hi-Vol Pump No. : BH-028 Indicator No. : CM-01

Amb. Temp (°C) : 27 Press (mmHg) : 760

Calibration by : Mr.Nattachai C.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	19.60	12.20	58.15	1,139.74	384.16	
13	15.60	9.90	52.68	821.81	243.36	
10	12.20	7.50	46.02	561.44	148.84	
7	8.20	5.00	37.81	310.04	67.24	
5	4.20	3.00	29.58	124.24	17.64	
Sum	59.80	37.60	224.24	2,957.27	861.24	

Calibrated by : Nattachai C. Approved by : Mr. Haya K.



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

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 11, 2023

Hi-Vol Pump No. : BH-030 Indicator No. : CM-01

Amb. Temp (°C) : 27 Press (mmHg) : 760

Calibration by : Mr.Nattachai C.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	20.20	13.10	60.21	1,148.80	408.04	
13	16.60	10.50	54.21	865.90	262.40	
10	13.00	8.10	47.77	607.80	163.80	
7	8.60	5.20	38.53	316.00	67.20	
5	5.00	3.20	30.50	146.40	23.00	
Sum	63.40	40.10	231.22	3,084.90	924.44	

Calibrated by : Nattachai C. Approved by : Mr. Haya K.



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

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 11, 2023

Hi-Vol Pump No. : BH-033 Indicator No. : CM-01

Amb. Temp (°C) : 27 Press (mmHg) : 760

Calibration by : Mr.Nattachai C.

Plate	Indicate (X) ( cm. )	True H <sub>2</sub> O ( in. )	Actual Flow (Y) (cfm)	XY	X <sup>2</sup>	Remark
18	17.80	13.60	61.32	945.20	256.00	
13	14.20	10.80	54.96	748.30	196.00	
10	11.00	8.40	48.63	528.60	125.40	
7	7.00	5.30	38.89	274.80	51.80	
5	4.20	3.20	30.50	120.20	17.64	
Sum	54.20	41.30	234.30	2,617.10	646.84	

Calibrated by : Nattachai C. Approved by : Mr. Haya K.



## CONTROL UNIT CALIBRATION (Metric units, mm)

Date 16 Jan 23

Barometric press, Pb

Initial	Final	Average
<u>759</u>	<u>759</u>	<u>759</u>

mmHg

### Dry Gas Meter Data

Console No. M50-06

Metering System ID

DGM Number 333249

DGM Model MST-C2-1

Calibrated by : Montri P.

### Reference Dry Gas Meter Data

Serial No. 358794

Model S110

Correction factor (Yr) 1.0079

Last Calibration Date 9 Dec 22

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V <sub>r</sub> Liters	DGM Volume V <sub>m</sub> Liters	Temperature (°C)				Time Θ min	DGM Correction factor (Y)	ΔH@ mm
			Ref DGM T <sub>r</sub>	Dry Gas Meter					
				Inlet T <sub>i</sub>	Outlet T <sub>o</sub>	Avg T <sub>m</sub>			
12.5	100.1	100.9	25	25	24	24.5	8.60	0.9968	41.8649
25.0	100.0	100.4	25	25	24	24.5	6.13	0.9998	42.6722
50.0	100.1	100.6	25	25	24	24.5	4.53	0.9963	46.5503
76.0	99.9	100.4	25	25	24	24.5	3.75	0.9949	48.5425
100.0	100.0	99.3	25	25	24	24.5	3.75	1.0031	45.5096
150.0	100.2	98.7	25	25	24	24.5	2.58	1.0070	45.2316

Average 0.9997 45.0618

Approved by : Ladawan W.

Sheet No. : CAL-PI-PS20-02/2023



## PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 06-01-2023

Calibrated duct No.: 1

Calibration Standard Pitot tube data

Pitot No. : Std-01

Coefficient (Cp) : 1

Type S Pitot No. : PS20-02

Calibrated by : Mr. Montri P.

## A Side Calibration

Run No.	$\Delta P_{std}$ (mm H <sub>2</sub> O)	$\Delta P_s$ (mm H <sub>2</sub> O)	Cp(s)	Deviation, $\delta$ Cp(s) - Cp(A)
1	7.50	10.75	0.8353	0.0032
2	7.50	11.00	0.8257	-0.0064
3	7.50	10.75	0.8353	0.0032

C<sub>P(A),avg</sub> 0.8321

## B Side Calibration

Run No.	$\Delta P_{std}$ (mm H <sub>2</sub> O)	$\Delta P_s$ (mm H <sub>2</sub> O)	Cp(s)	Deviation, $\delta$ Cp(s) - Cp(B)
1	7.50	10.75	0.8353	-0.0033
2	7.50	10.50	0.8452	0.0066
3	7.50	10.75	0.8353	-0.0033

C<sub>P(B),avg</sub> 0.8386

| CP(A)-CP(B) | = 0.0065

C<sub>P(Avg)</sub> = 0.8353

Approved by : Ladawan W.

\*\*\*  $\delta$  must be  $\leq 0.01$  for the test to be acceptable \*\*\*  
 \*\*\* | Cp(A)-Cp(B) | must also be  $< 0.01$  if average of Cp(A) and Cp(B) is not used \*\*\*

Sheet No. : CAL-M5007/01/23

CONTROL UNIT CALIBRATION  
(Metric units, mm)

Date 10 Jan 23

Initial Final Average  
 Barometric press, Pb 757 757 757 mmHg

## Dry Gas Meter Data

Console No. M50-07

Serial No. 358794

Metering System ID

Model S110

DGM Number 90331

Correction factor (Yr) 1.0079

DGM Model MST-C2-1

Last Calibration Date 9 Dec 22

Calibrated by Montri P.

## Reference Dry Gas Meter Data

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V <sub>r</sub> Liters	DGM Volume V <sub>m</sub> Liters	Temperature (°C)				Time ⊙ min	DGM Correction factor (Y)	ΔH@ mm
			Ref DGM T <sub>r</sub>	Dry Gas Meter					
				Inlet T <sub>i</sub>	Outlet T <sub>o</sub>	Avg T <sub>m</sub>			
12.5	100.1	101.7	25	25	24	24.5	8.93	0.9884	45.3322
25.0	99.9	100.6	25	25	24	24.5	6.43	0.9964	47.1706
50.0	100.0	100.9	25	25	24	24.5	4.62	0.9922	48.4861
76.0	100.3	100.6	25	25	24	24.5	3.72	0.9955	47.5272
100.0	100.1	99.7	25	25	24	24.5	3.72	1.0006	46.9823
150.0	100.3	100.0	25	25	24	24.5	2.70	0.9948	49.4744

Average 0.9947 47.4955

Approved by : Ladawan W.





## PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 06-01-2023

Calibrated duct No.: 1

Calibration Standard Pitot tube data

Pitot No. : Std-01

Coefficient (Cp) : 1

Type S Pitot No. : PS20-01

Calibrated by : Mr. Montri P.

## A Side Calibration

Run No.	$\Delta P_{std}$ (mm H <sub>2</sub> O)	$\Delta P_s$ (mm H <sub>2</sub> O)	Cp(s)	Deviation, $\delta$ Cp(s) - Cp(A)
1	7.50	10.75	0.8353	-0.0033
2	7.50	10.50	0.8452	0.0066
3	7.50	10.75	0.8353	-0.0033

C<sub>P(A),avg</sub> 0.8386

## B Side Calibration

Run No.	$\Delta P_{std}$ (mm H <sub>2</sub> O)	$\Delta P_s$ (mm H <sub>2</sub> O)	Cp(s)	Deviation, $\delta$ Cp(s) - Cp(B)
1	7.50	10.50	0.8452	0.0033
2	7.50	10.75	0.8353	-0.0066
3	7.50	10.50	0.8452	0.0033

C<sub>P(B),avg</sub> 0.8419

| CP(A)-CP(B) | = 0.0033

C<sub>P(Avg)</sub> = 0.8402

Approved by : Ladawan W.

\*\*\*  $\delta$  must be  $\leq 0.01$  for the test to be acceptable \*\*\*  
 \*\*\* | Cp(A)-Cp(B) | must also be  $< 0.01$  if average of Cp(A) and Cp(B) is to be used \*\*\*

THE LINDE GROUP

Certificate Of Analysis  
Special Gases Mixture

## Customer Details

Name:

Address:

Customer Tag No.:

Secot Co., Ltd.

House No.239, Rimklongprapa Rd, Bang Sue,  
Bang Sue, Bangkok10800

## Certificate Details

Number:	0333/19	Date of Issue:	5-Feb-2019	Expired date:	5-Feb-2027
Material Details					
Production Order:	90152421	Material Code:	533100-AL-44	Cylinder No.:	D339462
Gas content:	6.900 M <sup>3</sup>	Filling pressure:	145.0 Bar	Valve:	CGA 350 BRASS
Cylinder Owner:	LINDE	Cylinder Material:	Aluminum	Cylinder Size:	50 L

## Laboratory Report

## Analytical Result

Component	Normal Concentration	Analysis Result <sup>1</sup>	Uncertainty <sup>2</sup>	Method of Analysis <sup>3</sup>	Assay Date
Carbon Monoxide	80.0 ppm	80.9 ppm	$\pm 1\%$ relative	(6) I-PB-352	4-Feb-2019
Nitrogen	Balance				

Reference Standard  
Carbon Monoxide  
in Nitrogen

## Reference Standard used in Assay

Cylinder number 2580015G  
Concentration 99.5  $\pm$  0.8 ppm  
Expired date 20-Aug-2020Instrument/Make/Model  
FTIR Spectrometers Nicolet iS50Analytical Instruments used in Assay  
Analytical Principle  
FTIR-COLast Multipoint Calibration  
4-Feb-2019

## Recommend usage condition

Minimum utilization: 5% of actual content or before expire date whichever comes first.

Storage condition: Keep in well ventilation and secure area.

## Comments

When reordering, please quote the material number

## Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified. The Assay of this Standard has been performed in accordance with the EPA Traceability Protocol EPA-600/R-12/531 for the Assay and Certification of Gaseous Calibration Standards using procedure G1
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

Sukanya Parinyasoonorn  
Signatory for and on behalf of Linde (Thailand) Co., Ltd.

Page 1 of 1

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PB-002/F006  
Iss.H/2, 01 March 2018

บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

โทรสาร: 02-25370078

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนบางนา-ตราด กม. 6.5 แขวงบางนา  
 ถนนสุขุมวิท 10540 กรุงเทพมหานคร (66) 2338-6100 โทรสาร (66) 2338-6333  
 โทรสาร: 105 หมู่ 5 แขวงบางนา ถนนสุขุมวิท 24180  
 โทรสาร (66) 38.570-479-93 โทรสาร (66) 38.570-323

Linde (Thailand) Public Company Limited

PIC Registration no. 0107537000785

15<sup>th</sup> Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangnae  
 Bangplee, Samutprakarn 10540, Tel (66) 2338-6100 Fax (66) 2338-6333  
 Wellgrow Plant: 105 Moo 5, T.Bangsamak, A.Bangpakong, Chachoengsao 24180  
 Thailand, Tel (66) 38.570-479-93 Fax (66) 38.570-323

THE LINDE GROUP

Linde

### Certificate Of Analysis

Special Gases Mixture

## Customer Details

Name: Secot Co., Ltd. Address: 239, Rimklongprapa Rd., Bangsue, Bangkok 10800 Customer Tag No.:

## Certificate Details

Number: 2947/21 Date of Issue: 13-Jul-2021 Expiry date: 13-Jul-2023  
Material Details  
Production Order: 90166595 Material Code: 640300-SK-44 Cylinder No.: A00861SK  
Gas content: 5.52 M<sup>3</sup> Filling pressure: 145.0 bar Valve: CGA 660 SS  
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

## Laboratory Report

## Analytical Result

Component	Normal Concentration	Analysis Result <sup>1</sup>	Uncertainty <sup>2</sup>	Method of Analysis <sup>3</sup>	Assay Date
Nitric Oxide	40.0 ppm	39.5 ppm	± 1% relative	(6) I-PB-352	6-Jul & 13-Jul-21
Other NOx impurity In Nitrogen		Less than 1.9 ppm			

## Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Nitric Oxide In Nitrogen	2660645G	25.65 ± 0.26 ppm	6-Aug-2021

## Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-NO	24-Jun-2021

## Recommend usage condition

Minimum utilization: 5% of actual content or before expire date whichever comes first.  
Storage condition: Keep in well ventilation and secure area.

## Comments

When reordering, please quote the material number

## Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified. The Assay of this Standard has been performed in accordance with the EPA Traceability Protocol EPA-600/R-12/531 for the Assay and Certification of Gaseous Calibration Standards using procedure G1  
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.  
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

Sukanya Parinyasontorn

Signatory for and on behalf of Linde (Thailand) Co., Ltd.

PB-002/F006

Iss:K/1, 01 July 2021

Linde (Thailand) Public Company Limited

PLC Registration no. 0107537000785

15<sup>th</sup> Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangkaew

Bangplee, Samutprakarn 10540, Tel (66) 2338-6100 Fax (66) 2338-6333

Wellgrow Plant: 105 Moo 5, T.Bangsamak, A.Bangpakong, Chachoengsao 24180

Thailand, Tel (66) 38.570-479-93 Fax (66) 38.570-323

Page 1 of 1

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ฉบับนี้ (ฉบับภาษาไทย) จำกัด (มหาชน)

นี้และ/หรือการนำข้อมูลไปใช้โดยไม่ได้รับอนุญาต

วันที่ 15 พฤษภาคม 2565 ถึง 2/3 มย 14 ถนนบางนา-ตราด กม. 6.5 ตำบลบางนา

อ.บางพลี อ.สมุทรปราการ 10540 โทรศัพท์ (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 มย 5 ต.บางสมัก อ.บางปะกง จ.ฉะเชิงเทรา 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

THE LINDE GROUP

Linde

### Certificate Of Analysis

Special Gases Mixture

## Customer Details

Name: Secot Co., Ltd. Address: 239, Rimklongprapa Rd., Bangsue, Bangkok 10800 Customer Tag No.:

## Certificate Details

Number: 0225/22 Date of Issue: 31-Jan-2022 Expiry date: 31-Jan-2024  
Material Details  
Production Order: 90169721 Material Code: 614500-SK-44 Cylinder No.: A00932SK  
Gas content: 5.52 M<sup>3</sup> Filling pressure: 145.0 bar Valve: CGA 660 SS  
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

## Laboratory Report

## Analytical Result

Component	Normal Concentration	Analysis Result <sup>1</sup>	Uncertainty <sup>2</sup>	Method of Analysis <sup>3</sup>	Assay Date
Nitric Oxide	80.0 ppm	83.3 ppm	± 1% relative	(6) I-PB-352	24-Jan & 31-Jan-22
Other NOx impurity In Nitrogen		Less than 4.1 ppm			

## Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Nitric Oxide In Nitrogen	1228205G	50.87 ± 0.25 ppm	6-May-2023

## Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-NO	10-Jan-2022

## Recommend usage condition

Minimum utilization: 5% of actual content or before expire date whichever comes first.  
Storage condition: Keep in well ventilation and secure area.

## Comments

When reordering, please quote the material number

## Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified. The Assay of this Standard has been performed in accordance with the EPA Traceability Protocol EPA-600/R-12/531 for the Assay and Certification of Gaseous Calibration Standards using procedure G1  
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.  
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

Sukanya Parinyasontorn

Signatory for and on behalf of Linde (Thailand) Co., Ltd.

PB-002/F006

Iss:K/2, 15 Oct 2021

Linde (Thailand) Public Company Limited

PLC Registration no. 0107537000785

15<sup>th</sup> Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangkaew

Bangplee, Samutprakarn 10540, Tel (66) 2338-6100 Fax (66) 2338-6333

Wellgrow Plant: 105 Moo 5, T.Bangsamak, A.Bangpakong, Chachoengsao 24180

Thailand, Tel (66) 38.570-479-93 Fax (66) 38.570-323

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ฉบับนี้ (ฉบับภาษาไทย) จำกัด (มหาชน)

นี้และ/หรือการนำข้อมูลไปใช้โดยไม่ได้รับอนุญาต

วันที่ 15 พฤษภาคม 2565 ถึง 2/3 มย 14 ถนนบางนา-ตราด กม. 6.5 ตำบลบางนา

อ.บางพลี อ.สมุทรปราการ 10540 โทรศัพท์ (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 มย 5 ต.บางสมัก อ.บางปะกง จ.ฉะเชิงเทรา 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

THE LINDE GROUP

Linde

Certificate Of Analysis  
Special Gases Mixture

Customer Details		Address:		Customer Tag No.:	
Name:		239, Rimklongprapa Rd., Bangsue, Bangkok			
Secot Co.,Ltd.		10800			
Certificate Details					
Number:	0275/22	Date of Issue:	4-Feb-2022	Expiry date:	4-Feb-2026
Material Details					
Production Order:	90169722	Material Code:	631500-SK-44	Cylinder No.:	D636195
Gas content:	5.52 M <sup>3</sup>	Filling pressure:	145.0 bar	Valve:	CGA 660 SS
Cylinder Owner:	LINDE	Cylinder Material:	Spectra seal	Cylinder Size:	40 L
Laboratory Report					
Analytical Result					
Component	Normal Concentration	Analysis Result <sup>1</sup>	Uncertainty <sup>2</sup>	Method of Analysis <sup>3</sup>	Assay Date
Sulphur Dioxide In Nitrogen	20.0 ppm	20.4 ppm	± 1% relative	(6) I-PB-352	28-Jan & 4-Feb-22
Reference Standard used in Assay					
Reference Standard	Cylinder number	Concentration		Expiry date:	
Sulphur Dioxide In Nitrogen	145754SG	25.03 ± 0.25 ppm		18-Aug-2022	
Analytical Instruments used in Assay					
Instrument/Make/Model	Analytical Principle		Last Multipoint Calibration		
FTIR Spectrometers Nicolet iS50	FTIR-SO2		27-Jan-2022		

## Recommend usage condition

Minimum utilization: 5% of actual content or before expire date whichever comes first.  
Storage condition: Keep in well ventilation and secure area.

## Comments

When reordering, please quote the material number

## Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified. The Assay of this Standard has been performed in accordance with the EPA Traceability Protocol EPA-600/R-12/531 for the Assay and Certification of Gaseous Calibration Standards using procedure G1  
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.  
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

Page 1 of 1

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บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่จดทะเบียนการค้า: 0107537000785

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนบางนา-ตราด กม. 6.5 บางนา

เลขหมายโทรศัพท์: 02-238-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 หมู่ 5 ตำบลบางพลีใหญ่ อำเภอบางพลี จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Sukanya Parinyasoonontorn

Signatory for and on behalf of Linde (Thailand) Co., Ltd.

Linde (Thailand) Public Company Limited

PLC Registration no. 0107537000785

15<sup>th</sup> Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangkok

Bangplee, Samutprakarn 10540, Tel (66) 2338-6100 Fax (66) 2338-6333

Wellgrow Plant: 105 Moo 5, T.Bangsamak, A.Bangpakong, Chachoengsao 24180

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

PB-002/F006

Iss:K/2, 15 Oct 2021

THE LINDE GROUP

Linde

Certificate Of Analysis  
Special Gases Mixture

Customer Details					
Name:		Address:	239 Rimklongpropa Rd. Bangsue Khet Bangsue Bangkok 10800		
Secot Co., Ltd.				Customer Tag No.:	
Certificate Details					
Number:	0484/23	Date of Issue:	22-Feb-2023	Expiry date:	21-Feb-2027
Material Details					
Production Order:	90176403	Material Code:	478100-J-62	Cylinder No.:	12360
Gas content:	6.520 M <sup>3</sup> (nominal)	Filling pressure:	145 bar (g)	Valve:	CGA 590 BRASS
Cylinder Owner:	LINDE	Cylinder Material:	STEEL	Cylinder Size:	47 L
Laboratory Report					
Component	Normal Concentration	Analysis Result <sup>1</sup>	Uncertainty <sup>2</sup>	Method of Analysis <sup>3</sup>	
Oxygen In Nitrogen	8.00%	7.94%	± 2% relative	(1) SG-O-01	
Recommend usage condition					
Minimum utilization:	5% of actual content or before expire date whichever comes first.				
Storage condition:	Keep in well ventilation and secure area.				
Comments					

## Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified.  
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.  
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

Sukanya Parinyasoonontorn

Signatory for and on behalf of Linde (Thailand) Co., Ltd.

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PB-002/F004

Iss:K/2, 15 Oct 2021

บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่จดทะเบียนการค้า: 0107537000785

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนบางนา-ตราด กม. 6.5 บางนา

เลขหมายโทรศัพท์: 02-238-6100 โทรสาร (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 หมู่ 5 ตำบลบางพลีใหญ่ อำเภอบางพลี จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Linde (Thailand) Public Company Limited

PLC Registration no. 0107537000785

15<sup>th</sup> Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangkok

Bangplee, Samutprakarn 10540, Tel (66) 2338-6100 Fax (66) 2338-6333

Wellgrow Plant: 105 Moo 5, T.Bangsamak, A.Bangpakong, Chachoengsao 24180

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323



Sheet No. : CR-515-2023-029



## SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Mar 13, 23

### SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
Cirrus	CR:515	94296	94.0	1000

No.	Brand	Model	Serial No.	Effective Calibration Level (dB)	SLM Reading (dB)	Offset (dB)
15	Cirrus	CR162B	G300769	93.7	93.7	0.0
16	Cirrus	CR162B	G300833	93.7	93.7	0.0
18	Cirrus	CR162B	G300892	93.7	93.7	0.0

Calibrated by : Ladawan H. Approved by : Preeda S.



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-66/0270

MTC.No.23-66/0270-02

Number of page(s) 2

## CALIBRATION CERTIFICATE

### Nomenclature : DRYCAL

Manufacturer : Mesa Labs

Serial No.: 160100

Model : Defender 520-L

Scale range : 5 ml/min to 500 ml/min

Subdivision : ( 0.001, 0.01) ml/min

Submitted by : SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,

Bangkok 10800, Thailand.

Received date : 23 February 2023 Condition of measured item : Normal

Calibration date : 8 March 2023

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 643/65	1-Jun-24	TISTR
Primary Flow Calibrator S/N 117982	MW-0011-21	8-Apr-23	NIMT

The results relate only to the items tested/calibrated or value assigned.

Advertising the Report/Certificate and publicity of the results except in full are prohibited unless written permission is obtained from the governor of TISTR.

### Head Office

35 Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang,  
Changwat Pathumthani 12120, Thailand  
Tel. (66) 0 2577 9000  
Fax. (66) 0 2577 9009  
E-mail : rumpai@tistr.or.th Website:www.tistr.or.th

### Office/Laboratory

Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road,  
Amphoe Muang, Changwat Samutprakan 10280, Thailand  
Tel. (66) 0 2323 1672-80 ext. 115, 116  
Fax. (66) 0 2323 9165  
E-mail : mtc@tistr.or.th

### Office

196 Phahonyothin Road, Chatuchak, Bangkok 10900,  
Thailand  
Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217  
Fax. (66) 0 2579 8592  
E-mail : sumalee@tistr.or.th



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-66/0270

2/2

MTC.No.23-66/0270-02

**Calibration point :** (20, 50, 100, 200, 400) ml/min

**Ambient condition :** Temperature (  $23 \pm 3$  ) °C , Relative humidity (  $55 \pm 15$  ) %

Atmospheric pressure ( 1010±13) hPa

**Calibration method :** The flowmeter (UUC) was calibrated by comparison method with standard flowmeter according to CP-370.01.

The reported value is the value that converted to value at reference condition within pressure and temperature of the actual gas entering the UUC

**Measurement data :**

UUC Value	Standard Value	Temperature	Pressure	Deviation	Uncertainty
(ml/min)	(ml/min)	(°C)	(hPa)	(%)	(%)
20.138	19.883	24.930	1008.44	+1.28	1.17
51.152	50.908	24.920	1008.44	+0.48	1.02
101.04	100.71	24.897	1008.43	+0.33	1.06
200.25	199.64	24.904	1008.54	+0.31	1.01
401.00	396.85	24.837	1008.80	+1.05	1.00

The reported expanded uncertainties are based on standard uncertainties multiplied by a coverage factor  $k=2$ , which provides a level of confidence of approximately 95%.

The end of calibration certificate.

The results relate only to the items tested/calibrated or value assigned.

Advertising the Report/Certificate and publicity of the results except in full are prohibited unless written permission is obtained from the governor of TISTR.

**Head Office**

35 Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang,  
Changwat Pathumthani 12120, Thailand  
Tel. (66) 0 2577 9000  
Fax. (66) 0 2577 9009  
E-mail : rumpai@tistr.or.th Website:www.tistr.or.th

**Office/Laboratory**

Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road,  
Amphoe Muang, Changwat Samutprakan 10280, Thailand  
Tel. (66) 0 2323 1672-80 ext. 115, 116  
Fax. (66) 0 2323 9165  
E-mail : mtc@tistr.or.th

**Office**

196 Phahonyothin Road, Chatuchak, Bangkok 10900,  
Thailand  
Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217  
Fax. (66) 0 2579 8592  
E-mail : sumalee@tistr.or.th

FM.BL.MTC.002 Rev.4

Sheet No. : CEL120/2-2023-021



## SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Mar 2, 23

### SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)		
CASELLA	CEL120/2	2839225	114.0	1000		
No.	Brand	Model	Serial No.	Microphone Serial No.	SLM Reading (dB)	dB Adjust
2	CASELLA	CEL-246	1443618	1443618	114.1	-0.1
4	CASELLA	CEL-246	1443817	1443817	114.1	-0.1
5	CASELLA	CEL-246	1443838	1443838	114.3	-0.3
14	CASELLA	CEL-246	3173306	3173306	114.2	-0.2
15	CASELLA	CEL-246	3173311	3173311	114.1	-0.1
16	CASELLA	CEL-246	3173312	3173312	114.6	-0.6

Calibrated by :

Ladanan H.

Approved by :

Suk Suthanwan

CEL-120-2-2023-021/CA/08/03/2023

SECOT CO., LTD.

239 Rimklongprapa Rd. Bangsue, Bangkok, 10800, THAILAND  
Tel: (662) 959-3600 Fax: (662) 959-3535  
E-Mail: envserv@secot.com.th

Sheet No. : CR-515-2023-081



## SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Jun 16, 23

### SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
Cirrus	CR:515	94296	94.0	1000

No.	Brand	Model	Serial No.	Effective Calibration Level (dB)	SLM Reading (dB)	Offset (dB)
1	SCARLET	ST-21D	820722	93.7	93.7	-0.1
2	SCARLET	ST-21D	820723	93.7	93.7	0.0
4	SCARLET	ST-21D	820725	93.7	93.7	-0.2
5	SCARLET	ST-21D	820726	93.7	93.7	0.0
6	SCARLET	ST-21D	820727	93.7	93.7	0.1
7	SCARLET	ST-21D	820728	93.7	93.7	0.0

Calibrated by :

Approved by :

## CERTIFICATE OF CALIBRATION

ISSUED BY Noisemeters

DATE OF ISSUE 06/04/22

CERTIFICATE NUMBER 172693

NoiseMeters

NoiseMeters  
Acoustic House  
Bridlington Road  
Hunmanby  
YO14 0PH  
United Kingdom  
www.noisemeters.com

Page 1 of 1

Test engineer:  
Nigel Smith  
Electronically signed:

## doseBadge Reader

### Instrument

Manufacturer: Pulsar Instruments Plc  
Model Number: Model 22R

Serial Number: 79781  
Notes:

### Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.

Date of Calibration: 06 April 2022

### Functionality Results

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

### Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	113.80	999.4	0.46
Adjusted	114.00	999.4	0.46
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

### Environmental Conditions

Pressure: 100.10 kPa  
Temperature: 22.8 °C  
Humidity: 42.5 %

### 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

ISSUED BY **Noisemeters**  
DATE OF ISSUE **06/04/22** CERTIFICATE NUMBER **172690**

**NoiseMeters**

**NoiseMeters**  
Acoustic House  
Bridlington Road  
Hunmanby  
YO14 0PH  
United Kingdom  
www.noisemeters.com

Page 1 of 1

Test engineer:  
Nigel Smith  
Electronically signed:



## doseBadge Reader

### Instrument

Manufacturer: Cirrus Research plc Serial Number: 95168  
Model Number: RC:110A Notes:

### Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.

Date of Calibration: 06 April 2022

### Functionality Results

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

### Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	113.90	993.3	0.46
Adjusted	114.00	993.3	0.46
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

### Environmental Conditions

Pressure: 98.30 kPa  
Temperature: 22.6 °C  
Humidity: 42.3 %

### 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

ISSUED BY **Noisemeters**  
DATE OF ISSUE **16 March 2023** CERTIFICATE NUMBER **189327**

**NoiseMeters**

**NoiseMeters**  
Acoustic House  
Bridlington Road  
Hunmanby  
YO14 0PH  
United Kingdom  
www.noisemeters.com

Page 1 of 1

Test engineer:  
Nigel Smith  
Electronically signed:



## doseBadge Reader

### Instrument

Manufacturer: Cirrus Research plc Serial Number: 95168  
Model Number: RC:110A Notes:

### Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.

Date of Calibration: 16 March 2023

### Functionality Results

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

### Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	113.90	999.3	0.61
Adjusted	114.00	999.2	0.61
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

### Environmental Conditions

Pressure: 99.27 kPa  
Temperature: 23.3 °C  
Humidity: 37.6 %

### 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%.



## Factory Calibration Certificate

## Instrument information

Name **WET BULB GLOBE TEMPERATURE (WBGT) METER**  
Series No **3522210172**  
Type **JT2011-E2A**

## 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	30.1	-0.1	0.2
	35.0	35.2	-0.2	0.2
	40.0	39.9	0.1	0.2
	45.0	45.1	-0.1	0.2
DRY	25.0	25.2	-0.2	0.2
	30.0	29.9	0.1	0.2
	35.0	35.1	-0.1	0.2
	40.0	39.8	0.2	0.2
	45.0	44.9	0.1	0.2
GLOBE	25.0	24.8	0.2	0.2
	30.0	29.8	0.2	0.2
	35.0	35.1	-0.1	0.2
	40.0	39.9	0.1	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: 30 March 2021, Calibration Certificate No. : RA21H-AB1000009  
This Certificate is traceable to NCMT North China, Certificate No.: RA20J-AK000073

Calibration Engineer: 

Date: January 18, 2023



## Factory Calibration Certificate

## Instrument information

Name **WET BULB GLOBE TEMPERATURE (WBGT) METER**  
Series No **3522210173**  
Type **JT2011-E2A**

## 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	24.8	0.2	0.2
	30.0	29.8	0.2	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
DRY	25.0	24.8	0.2	0.2
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	30.0	29.8	0.2	0.2
	35.0	35.2	-0.2	0.2
	40.0	40.1	-0.1	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,  
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Calibration Engineer: 

Date: January 18, 2023



**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)

# CALIBRATION CERTIFICATE

Issued date: 16 December 2022

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

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

Request No: **C-2212 - 567**Laboratory No.: **CAL- 567**

Date of Request: 13 December 2022.

Date of Calibration: 15 December 2022.

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

Nomenclature : Digital Light Meter

Serial No. : A 051050

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 22 August 2022, can be traceable to International System of Unit (SI) through National Institute of Metrology (Thailand), Certificate No.: TP-1023-22.**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 %.

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)Request No: **C-2212 - 567**

Serial No.: A 051050

Laboratory No.: **CAL - 567****Results :**

UUC Range	Standard (lx)	Unit Under Calibration Reading (lx)	Correction (lx)	Uncertainty of Measurement ( $\pm 1x$ )
2000	0	0	0	0.6
	100	101	- 1	2.0 % of Reading
	500	505	- 5	
	1000	1002	- 2	
	1500	1497	+ 3	
	2000	1980	+ 20	

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

**Calibration result approved by**  
(Mr. Yuttana Tholueng)**Approved on behalf of  
International Testing Service Co., Ltd**  
(Mr. Pichit Vivat-Anant)  
**Managing Director**

Page 2 of 2

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ภาคผนวก จ

## วิธีการตรวจวัดและวิเคราะห์ผลกระทบสิ่งแวดล้อม

**ตารางที่ จ-1** สรุปวิธีการตรวจวัดและมาตรฐานวิธีวิเคราะห์ผลกระทบสิ่งแวดล้อม  
โครงการกำจัดกากอุตสาหกรรมที่ไม่อันตรายโดยแปรรูปเป็นพลังงานไฟฟ้า  
บริษัท ชลบุรี คลีน เอ็นเนอร์ยี่ จำกัด

พารามิเตอร์	วิธีตรวจวัด	วิธีและมาตรฐานวิเคราะห์
<b>1. คุณภาพอากาศในบรรยากาศ</b> <ul style="list-style-type: none"> <li>ฝุ่นละอองรวม</li> <li>ฝุ่นละอองขนาดเล็กไม่เกิน 10 ไมครอน</li> <li>ก๊าซซัลเฟอร์ไดออกไซด์</li> <li>ก๊าซไนโตรเจนไดออกไซด์</li> <li>ความเร็วและทิศทางลม</li> </ul>	<ul style="list-style-type: none"> <li>Gravimetric High-Volume Air Sampler</li> <li>Gravimetric High-Volume Air Sample (Hi-Vol PM-10 Size Selective Inlet)</li> <li>Instrumental Reference Method</li> <li>Instrumental Reference Method</li> <li>Cup Anemometer / Anodized Aluminium Vane</li> </ul>	<ul style="list-style-type: none"> <li>Pre-Post Weight Difference</li> <li>Pre-Post Weight Difference</li> <li>UV Fluorescence</li> <li>Chemiluminescence</li> <li>Wind Speed &amp; Wind Direction Recorder</li> <li>ASTM:D5741-96</li> </ul>
<b>2. คุณภาพอากาศจากปล่องระบายอากาศเสีย</b> <ul style="list-style-type: none"> <li>ฝุ่นละออง</li> <li>ก๊าซออกไซด์ของไนโตรเจน</li> <li>ก๊าซซัลเฟอร์ไดออกไซด์</li> <li>ก๊าซไฮโดรเจนคลอไรด์</li> <li>ไดออกซิน/ฟิวแรน</li> <li>ปรอท</li> <li>แคดเมียม</li> <li>ตะกั่ว</li> </ul>	<ul style="list-style-type: none"> <li>Isokinetic Stack Sampling Technique</li> <li>Instrumental Reference Method</li> <li>Instrumental Reference Method</li> <li>Impingers Method</li> <li>Isokinetic Stack Sampling</li> <li>Stack Sampling</li> <li>Stack Sampling</li> <li>Stack Sampling</li> </ul>	<ul style="list-style-type: none"> <li>Pre-Post Weight Difference/U.S.EPA. Method 5</li> <li>Chemiluminescence/U.S.EPA. method 7E</li> <li>UV Fluorescence/U.S.EPA. method 6C</li> <li>IC / U.S.EPA.method 26</li> <li>HRMS / U.S.EPA.method 23</li> <li>Cold Vapor AAS/U.S.EPA. Method 29</li> <li>Flame AAS/U.S.EPA. Method 29</li> <li>Flame AAS/U.S.EPA. Method 29</li> </ul>
<b>3. คุณภาพอากาศในสถานประกอบการ</b> <ul style="list-style-type: none"> <li>Total Dust</li> <li>Respiratory Dust</li> </ul>	<ul style="list-style-type: none"> <li>Low Volume Air Sampler Method</li> <li>Low Volume Air Sampler, Cyclone Method</li> </ul>	<ul style="list-style-type: none"> <li>Pre-Post Weight Difference / NIOSH 0500</li> <li>Microbalance / NIOSH 0600</li> </ul>

**ตารางที่ จ-1 (ต่อ)**

พารามิเตอร์	วิธีตรวจวัดคุณภาพสิ่งแวดล้อม	วิธีและมาตรฐานวิเคราะห์
<b>4. ระดับเสียง</b> <ul style="list-style-type: none"> <li>- Leq(8), Leq(12), Leq(24), L<sub>90</sub>, Lmax</li> <li>- Noise Dose</li> </ul>	Sound Pressure Level Meter  Noise Dosimeter	Integrated Sound Level Meter  TWA (ระดับเสียงเฉลี่ยตลอดเวลาการทำงาน)
<b>5. คุณภาพน้ำทิ้ง</b> <ul style="list-style-type: none"> <li>- อุณหภูมิ</li> <li>- ค่าความเป็นกรด-ด่าง</li> <li>- สารที่ละลายได้ทั้งหมด</li> <li>- ออกซิเจนละลาย</li> <li>- ความนำไฟฟ้า</li> <li>- ค่านีโอดี</li> <li>- ค่าซีโอดี</li> <li>- สารแขวนลอย</li> <li>- ค่าทีเคเอ็น</li> <li>- คำน้ำมัน/ไขมัน</li> <li>- ปริมาณทั้งหมด (Total Hg)</li> <li>- เหล็ก (Fe)</li> <li>- แมงกานีส (Mn)</li> <li>- อาร์เซนิก (As)</li> <li>- ตะกั่ว (Pb)</li> <li>- แคดเมียม (Cd)</li> <li>- สังกะสี (Zn)</li> </ul>	Grab Sampling Grab Sampling	Thermometer / 2550 pH Meter / 4500-H <sup>+</sup> B Evaporation (temperature 103-105 °C) / 2540 C Membrane Electrode Method / 4500-O G Laboratory Method / 2510 B Membrane Electrode Method at 20 °C, 5 days / 5210 B Close Reflux / 5220 D Glass Fiber Filter Disc / 2540 D Kjeldahl Method / 4500-N <sub>org</sub> B <sub>without NH3 Removal</sub> Partition Gravimetric Method/ 5520 B Cold Vapour Atomic Absorption Spectrometry / 3112 B ICP / 3120 B ICP / 3120 B Hydride Generation Atomic absorption Spectrometry / 3114C GF AAS Method / 3120 B ICP Method / 3120 B ICP Method / 3120 B
<b>6. ความร้อน</b> <ul style="list-style-type: none"> <li>- WBGT</li> </ul>	Area heat stress monitor	WBGT-Index
<b>7. แสงสว่าง</b> <ul style="list-style-type: none"> <li>- Lux</li> </ul>	Lux meter	Lux