

ภาคผนวก ง

ใบรับรองผลการตรวจวัดและวิเคราะห์คุณภาพสิ่งแวดล้อม

ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ

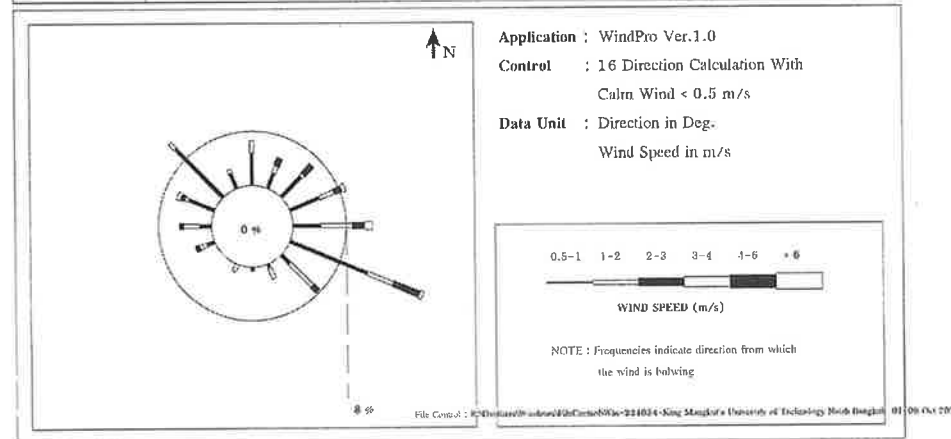


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 01-08 Oct 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5092
 Wind Direction Model : Novalynx WS-25 Serial No : A5092

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0476	0.0179	0.0000	0.0000	0.0000	0.0000	0.0655
NNE	0.0238	0.0119	0.0119	0.0000	0.0000	0.0000	0.0476
NE	0.0417	0.0060	0.0179	0.0000	0.0000	0.0000	0.0655
ENE	0.0476	0.0238	0.0119	0.0060	0.0000	0.0000	0.0893
E	0.0417	0.0476	0.0179	0.0119	0.0000	0.0000	0.1190
ESE	0.1250	0.0417	0.0417	0.0060	0.0000	0.0000	0.2143
SE	0.0179	0.0476	0.0119	0.0000	0.0000	0.0000	0.0774
SSE	0.0060	0.0179	0.0000	0.0000	0.0000	0.0000	0.0238
S	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
SSW	0.0000	0.0119	0.0000	0.0000	0.0000	0.0000	0.0119
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0119	0.0119	0.0060	0.0000	0.0000	0.0000	0.0298
W	0.0179	0.0238	0.0060	0.0000	0.0000	0.0000	0.0476
WNW	0.0417	0.0060	0.0060	0.0000	0.0000	0.0000	0.0595
NW	0.1012	0.0119	0.0000	0.0000	0.0000	0.0000	0.1131
NNW	0.0238	0.0060	0.0000	0.0000	0.0000	0.0000	0.0298
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 01-08 Oct 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5092
 Wind Direction Model : Novalynx WS-25 Serial No : A5092

Time	01-02 Oct 2024		02-03 Oct 2024		03-04 Oct 2024		04-05 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
13:00 - 14:00	3.1	E	2.6	E	2.3	ESE	1.9	NW
14:00 - 15:00	0.5	ESE	2.5	SE	1.7	SSE	0.6	WNW
15:00 - 16:00	1.7	SSE	1.9	ENE	2.1	SE	0.5	ESE
16:00 - 17:00	2.9	ESE	2.0	ESE	1.9	SE	2.2	NE
17:00 - 18:00	1.8	SE	1.3	SE	1.3	ESE	1.6	N
18:00 - 19:00	2.2	E	1.4	ESE	1.4	SE	0.6	NNW
19:00 - 20:00	0.5	S	1.9	ESE	0.8	E	0.7	WNW
20:00 - 21:00	1.6	E	0.7	ESE	0.7	ESE	0.5	N
21:00 - 22:00	1.1	ESE	1.0	ESE	0.6	ESE	0.6	WNW
22:00 - 23:00	1.6	SE	0.8	SE	0.6	ESE	0.6	NW
23:00 - 24:00	0.8	SE	2.3	ESE	0.6	ESE	0.7	NW
00:00 - 01:00	0.6	ESE	1.6	SE	0.6	ESE	0.7	NW
01:00 - 02:00	0.7	ESE	1.9	SE	0.7	ESE	0.7	NNW
02:00 - 03:00	1.6	WSW	0.9	E	0.6	ESE	0.7	WNW
03:00 - 04:00	0.6	WSW	1.3	E	0.6	ESE	0.5	NW
04:00 - 05:00	0.8	ENE	1.2	ESE	0.7	ESE	2.2	NNE
05:00 - 06:00	0.6	ENE	0.5	ESE	1.3	W	0.7	N
06:00 - 07:00	0.7	ENE	1.1	ENE	0.6	W	0.9	NW
07:00 - 08:00	1.9	E	1.8	N	0.7	WNW	2.0	NE
08:00 - 09:00	2.5	ESE	0.5	NW	1.3	WSW	1.0	N
09:00 - 10:00	1.9	ENE	1.7	E	1.7	E	1.8	NE
10:00 - 11:00	1.3	SSE	0.5	E	3.1	ENE	0.7	WNW
11:00 - 12:00	1.8	ESE	1.8	E	2.0	ESE	1.0	SSW
12:00 - 13:00	1.7	SE	2.1	ESE	0.5	E	1.0	E

Wind Rose



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

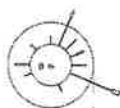
Location : King Mongkut's University of Technology North Bangkok Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25 Serial No : A5092

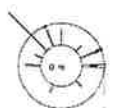
Wind Direction Model : Novalynx WS-25 Serial No : A5092

Time	05-06 Oct 2024		06-07 Oct 2024		07-08 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
13:00 - 14:00	0.6	SSE	1.8	SSW	2.1	WNW
14:00 - 15:00	0.8	N	1.6	E	3.2	WNW
15:00 - 16:00	3.2	ESE	0.5	ENE	2.1	ENE
16:00 - 17:00	1.0	W	0.6	NE	2.1	WSW
17:00 - 18:00	1.7	W	1.7	NNW	0.5	W
18:00 - 19:00	0.5	WSW	0.6	N	1.8	NNE
19:00 - 20:00	0.9	E	0.7	NW	0.5	NE
20:00 - 21:00	0.6	E	0.5	NW	0.5	ENE
21:00 - 22:00	0.5	ESE	0.7	NNW	0.5	ENE
22:00 - 23:00	0.6	ESE	0.6	NNW	0.6	NE
23:00 - 24:00	0.6	ESE	0.6	NW	0.6	E
00:00 - 01:00	0.6	ESE	0.6	WNW	0.7	N
01:00 - 02:00	0.7	ESE	0.5	NW	0.7	NE
02:00 - 03:00	0.7	ESE	0.5	NW	0.7	NE
03:00 - 04:00	1.2	NNE	0.6	NW	0.7	N
04:00 - 05:00	0.5	NNE	0.5	NW	0.8	NW
05:00 - 06:00	0.5	NNE	0.7	W	0.6	NW
06:00 - 07:00	0.6	NNE	2.2	E	0.7	NW
07:00 - 08:00	0.6	NE	1.2	W	0.5	NW
08:00 - 09:00	0.5	ENE	0.5	ENE	2.5	NE
09:00 - 10:00	0.5	NE	0.9	N	0.5	N
10:00 - 11:00	0.7	NNE	3.3	E	1.4	WNW
11:00 - 12:00	1.9	NW	0.7	SE	2.0	W
12:00 - 13:00	1.0	ENE	2.9	ENE	2.1	NNE

Wind Rose



12 g



12 g



File Control R:\Data\Windrose\4-Created\Win-224034-King Mongkut's University of Technology North Bangkok 01-08 Oct 2024

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 01-08 Oct 2024

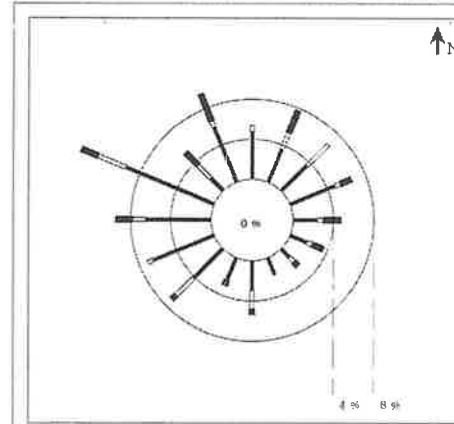
Wind Speed Model : Novalynx WS-25

Serial No : A5086

Wind Direction Model : Novalynx WS-25

Serial No : A5086

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	0.0476	0.0060	0.0000	0.0000	0.0000	0.0000	0.0536
NNE	0.0357	0.0179	0.0238	0.0000	0.0000	0.0000	0.0774
NE	0.0357	0.0298	0.0000	0.0000	0.0000	0.0000	0.0655
ENE	0.0476	0.0060	0.0119	0.0000	0.0000	0.0000	0.0655
E	0.0298	0.0060	0.0179	0.0000	0.0000	0.0000	0.0476
ESE	0.0179	0.0060	0.0119	0.0000	0.0000	0.0000	0.0357
SE	0.0119	0.0060	0.0060	0.0000	0.0000	0.0000	0.0238
SSE	0.0179	0.0000	0.0000	0.0000	0.0000	0.0000	0.0179
S	0.0298	0.0179	0.0060	0.0000	0.0000	0.0000	0.0536
SSW	0.0298	0.0000	0.0060	0.0000	0.0000	0.0000	0.0298
SW	0.0417	0.0238	0.0060	0.0000	0.0000	0.0000	0.0714
WSW	0.0655	0.0060	0.0000	0.0000	0.0000	0.0000	0.0714
W	0.0655	0.0119	0.0179	0.0000	0.0000	0.0000	0.0952
WNW	0.0952	0.0298	0.0179	0.0000	0.0000	0.0000	0.1429
NW	0.0179	0.0179	0.0179	0.0000	0.0000	0.0000	0.0536
NNW	0.0595	0.0060	0.0298	0.0000	0.0000	0.0000	0.0952
CALM	0.0000						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Control R:\Data\Windrose\4-Created\Win-224034-Soi Ruam Pattana 01-08 Oct 2024

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

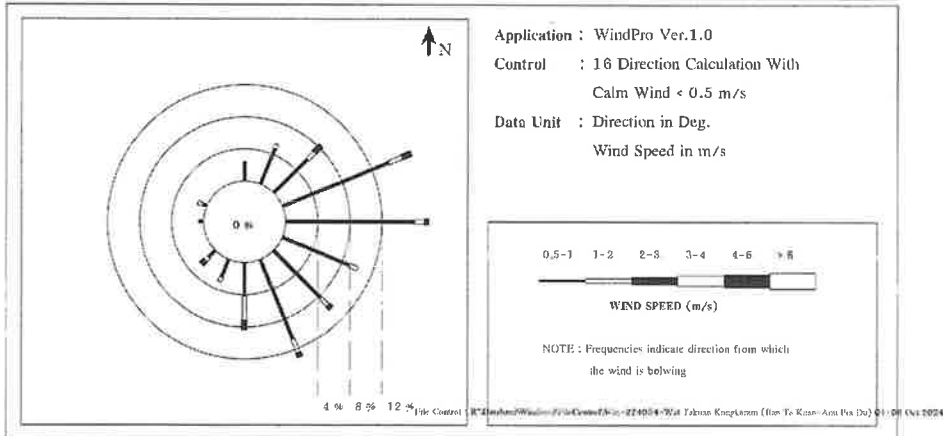
MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25 Serial No : A4904

Wind Direction Model : Novalynx WS-25 Serial No : A4904

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	0.0238	0.0000	0.0000	0.0000	0.0000	0.0000	0.0238
NNE	0.0476	0.0060	0.0000	0.0000	0.0000	0.0000	0.0536
NE	0.0595	0.0119	0.0119	0.0000	0.0000	0.0000	0.0833
ENE	0.1429	0.0179	0.0119	0.0000	0.0000	0.0000	0.1726
E	0.1607	0.0119	0.0060	0.0000	0.0000	0.0000	0.1786
ESE	0.0893	0.0119	0.0000	0.0000	0.0000	0.0000	0.1012
SE	0.0833	0.0119	0.0060	0.0000	0.0000	0.0000	0.1012
SSE	0.1071	0.0179	0.0060	0.0000	0.0000	0.0000	0.1310
S	0.0417	0.0298	0.0119	0.0000	0.0000	0.0000	0.0833
SSW	0.0238	0.0060	0.0000	0.0000	0.0000	0.0000	0.0298
SW	0.0119	0.0060	0.0060	0.0000	0.0000	0.0000	0.0238
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
WNW	0.0060	0.0060	0.0000	0.0000	0.0000	0.0000	0.0119
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	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

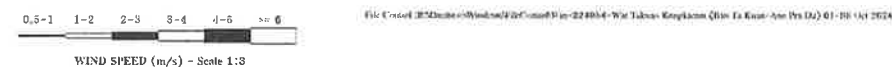
MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25 Serial No : A4904

Wind Direction Model : Novalynx WS-25 Serial No : A4904

Time	01-02 Oct 2024		02-03 Oct 2024		03-04 Oct 2024		04-05 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
12:00 - 13:00	0.7	SE	1.6	S	1.3	SSE	0.6	ESE
13:00 - 14:00	0.5	ESE	1.5	ESE	1.7	ENE	2.3	S
14:00 - 15:00	1.6	S	0.5	SSE	1.5	SSE	1.2	SE
15:00 - 16:00	0.7	SSE	0.5	SSE	0.7	SE	1.7	NNE
16:00 - 17:00	0.7	SSE	0.5	SSE	0.5	ESE	0.7	NE
17:00 - 18:00	1.6	SSW	0.7	S	0.6	E	0.6	E
18:00 - 19:00	0.6	S	0.6	ESE	2.0	ENE	0.6	NNE
19:00 - 20:00	2.1	SSE	0.6	SSE	2.2	E	0.5	ENE
20:00 - 21:00	0.5	SSE	0.7	E	0.5	ESE	0.6	N
21:00 - 22:00	0.5	SSE	0.7	SE	0.6	E	0.5	NE
22:00 - 23:00	1.3	S	0.6	SSE	0.7	E	0.5	ENE
23:00 - 24:00	0.8	NNE	0.7	S	1.9	NE	0.5	NE
00:00 - 01:00	2.0	SW	1.1	S	0.6	E	0.7	ENE
01:00 - 02:00	0.5	SW	0.8	SSE	0.5	E	0.7	N
02:00 - 03:00	0.6	SW	0.5	SSE	0.5	ENE	0.5	ENE
03:00 - 04:00	0.6	SSW	0.6	SSE	0.6	ENE	0.5	ENE
04:00 - 05:00	0.6	SSW	0.6	SE	0.7	ENE	0.6	ENE
05:00 - 06:00	2.0	S	0.8	E	0.6	ENE	0.6	ENE
06:00 - 07:00	0.6	SE	1.6	E	0.7	ENE	0.7	E
07:00 - 08:00	0.5	ESE	0.7	ESE	0.5	ENE	0.6	NE
08:00 - 09:00	0.7	SE	1.6	ENE	0.8	SE	0.5	NE
09:00 - 10:00	0.5	SE	0.6	ENE	0.6	ESE	0.6	NE
10:00 - 11:00	0.5	S	0.5	ENE	2.4	NE	0.5	E
11:00 - 12:00	1.8	ENE	0.6	ENE	0.8	SSE	1.8	ESE



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takum Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25

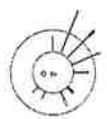
Serial No : A4904

Wind Direction Model : Novalynx WS-25

Serial No : A4904

Time	05-06 Oct 2024		06-07 Oct 2024		07-08 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
12:00 - 13:00	0.6	SSE	0.5	S	0.7	SSE
13:00 - 14:00	1.2	SW	0.6	ESE	1.5	S
14:00 - 15:00	0.7	SSW	0.5	SE	0.7	SSW
15:00 - 16:00	2.4	NE	0.6	ESE	2.1	ENE
16:00 - 17:00	0.7	NE	0.5	SE	0.7	E
17:00 - 18:00	0.6	NE	0.5	ESE	0.7	E
18:00 - 19:00	2.4	SE	0.5	ESE	0.5	E
19:00 - 20:00	1.7	E	0.6	ESE	0.7	E
20:00 - 21:00	0.7	NNE	0.7	E	0.7	E
21:00 - 22:00	0.7	ENE	0.6	S	0.5	E
22:00 - 23:00	0.6	NNE	0.5	ESE	0.7	E
23:00 - 24:00	0.5	NNE	0.7	SE	0.5	E
00:00 - 01:00	0.5	NE	0.5	S	0.7	E
01:00 - 02:00	0.7	E	0.7	SSE	0.7	E
02:00 - 03:00	0.6	NE	0.6	E	0.5	E
03:00 - 04:00	0.6	N	0.6	SE	0.5	E
04:00 - 05:00	0.7	ENE	0.5	ESE	0.7	E
05:00 - 06:00	0.7	ENE	0.6	SSE	0.7	E
06:00 - 07:00	0.5	ENE	0.7	SE	0.6	ENE
07:00 - 08:00	0.7	N	0.7	SE	0.7	ENE
08:00 - 09:00	0.5	NNE	1.8	NE	0.5	ENE
09:00 - 10:00	0.5	NNE	0.5	ENE	1.0	WNW
10:00 - 11:00	0.6	NNE	1.0	SE	0.5	WNW
11:00 - 12:00	1.0	SSE	0.7	SSE	0.6	W

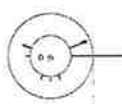
Wind Rose



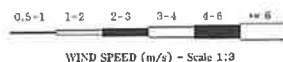
12 %



12 %



20 %



WIND SPEED (m/s) - Scale 1:2

File Control (R:\Database\Windrose\Windrose\Win-224054-Wat Takum Kongkaram (Ban Ta Kuan-Aou Pra Du) 01-08 Oct 2024

(Signature)

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Signature)

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Boundary at NE of Plant (1-8)

Monitor period : 01-08 Oct 2024

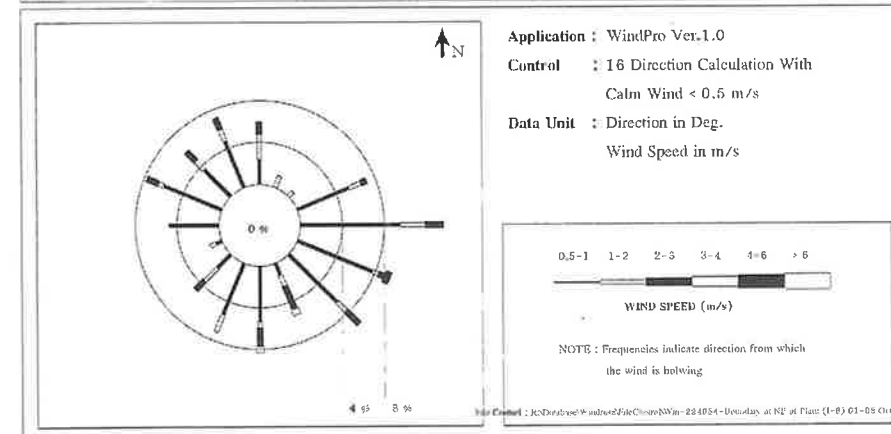
Wind Speed Model : Novalynx WS-25

Serial No : A4907

Wind Direction Model : Novalynx WS-25

Serial No : A4907

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5 - 1 m/s	1 - 2 m/s	2 - 3 m/s	3 - 4 m/s	4 - 6 m/s	More than 6	
N	0.0238	0.0238	0.0119	0.0000	0.0000	0.0000	0.0595
NNE	0.0000	0.0119	0.0000	0.0000	0.0000	0.0000	0.0119
NE	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
ENE	0.0536	0.0119	0.0060	0.0000	0.0000	0.0000	0.0714
E	0.0952	0.0238	0.0179	0.0000	0.0000	0.0000	0.1369
ESE	0.0774	0.0060	0.0060	0.0000	0.0060	0.0000	0.0952
SE	0.0655	0.0119	0.0179	0.0000	0.0000	0.0000	0.0952
SSE	0.0119	0.0119	0.0238	0.0060	0.0000	0.0000	0.0536
S	0.0536	0.0060	0.0179	0.0060	0.0000	0.0000	0.0833
SSW	0.0536	0.0179	0.0000	0.0000	0.0000	0.0000	0.0714
SW	0.0179	0.0179	0.0119	0.0000	0.0000	0.0000	0.0476
WSW	0.0060	0.0060	0.0000	0.0000	0.0000	0.0000	0.0119
W	0.0476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0476
WNW	0.0595	0.0060	0.0119	0.0000	0.0000	0.0000	0.0774
NW	0.0357	0.0119	0.0119	0.0000	0.0000	0.0000	0.0595
NNW	0.0476	0.0119	0.0119	0.0000	0.0000	0.0000	0.0714
CALM				0.0000			



(Signature)

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Signature)

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Boundary at NE of Plant (I-8)

Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25

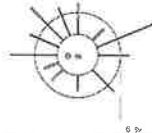
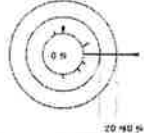
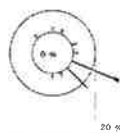
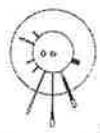
Serial No : A4907

Wind Direction Model : Novalynx WS-25

Serial No : A4907

Time	01-02 Oct 2024		02-03 Oct 2024		03-04 Oct 2024		04-05 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
10:00 - 11:00	4.8	ESE	0.6	S	0.7	ENE	1.9	WSW
11:00 - 12:00	2.4	SSE	0.7	ESE	0.5	E	0.6	S
12:00 - 13:00	3.2	S	0.6	SE	2.1	E	0.8	SE
13:00 - 14:00	1.2	SSE	1.9	SSW	0.8	E	0.5	SE
14:00 - 15:00	1.6	SSW	0.6	ESE	0.7	E	0.6	E
15:00 - 16:00	3.6	SSE	2.6	ESE	0.5	E	1.7	NE
16:00 - 17:00	2.8	S	0.7	ESE	0.5	E	0.7	ENE
17:00 - 18:00	1.7	SSW	0.7	ESE	0.5	E	0.6	ENE
18:00 - 19:00	0.7	S	0.5	ESE	0.7	E	0.5	N
19:00 - 20:00	0.9	SSW	0.6	SE	0.7	E	0.7	ENE
20:00 - 21:00	0.6	WSW	0.7	ESE	0.7	E	1.5	NW
21:00 - 22:00	0.6	S	0.6	ESE	0.6	E	0.6	NW
22:00 - 23:00	0.7	SSW	0.7	SE	0.6	E	0.7	W
23:00 - 24:00	0.7	S	0.5	ESE	1.5	E	0.5	WNW
00:00 - 01:00	0.5	SSW	0.6	SE	0.9	E	0.5	W
01:00 - 02:00	0.6	SSW	0.5	SE	0.7	E	0.5	NW
02:00 - 03:00	0.6	SW	0.7	SE	0.7	E	0.7	NNW
03:00 - 04:00	1.3	WNW	0.6	ESE	0.6	S	0.5	W
04:00 - 05:00	0.7	WNW	0.5	ESE	0.9	NNW	0.5	WNW
05:00 - 06:00	0.6	NW	1.3	NW	2.4	N	0.6	NNW
06:00 - 07:00	2.5	SSE	1.0	NNE	0.5	N	0.7	E
07:00 - 08:00	0.7	S	1.2	N	0.6	ENE	0.5	ENE
08:00 - 09:00	2.1	SSE	1.8	E	1.9	ESE	1.1	SW
09:00 - 10:00	0.6	S	0.6	ENE	0.5	SE	1.7	N

Wind Rose



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

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Boundary at NE of Plant (I-8)

Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25

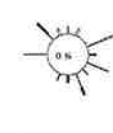
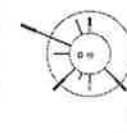
Serial No : A4907

Wind Direction Model : Novalynx WS-25

Serial No : A4907

Time	05-06 Oct 2024		06-07 Oct 2024		07-08 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
10:00 - 11:00	0.9	W	2.0	E	0.5	ESE
11:00 - 12:00	0.6	SSW	1.8	SW	0.7	SSE
12:00 - 13:00	0.8	SE	0.5	SSW	0.7	ESE
13:00 - 14:00	2.3	SW	2.1	NNW	0.9	SSW
14:00 - 15:00	2.5	N	2.1	SE	0.8	W
15:00 - 16:00	2.5	SE	1.9	SSW	0.7	NW
16:00 - 17:00	2.5	WNW	2.1	NNW	0.6	N
17:00 - 18:00	0.5	WNW	0.7	WNW	1.6	ENE
18:00 - 19:00	0.7	NNW	1.2	N	1.6	E
19:00 - 20:00	1.6	S	2.0	S	0.7	ESE
20:00 - 21:00	0.6	SW	0.5	SSW	0.7	SE
21:00 - 22:00	0.7	S	0.7	SSW	0.6	SSE
22:00 - 23:00	0.5	SW	1.6	E	1.8	NNW
23:00 - 24:00	2.2	SE	1.7	NNW	2.4	S
00:00 - 01:00	2.0	SW	0.5	NNW	2.5	SSE
01:00 - 02:00	1.1	N	0.7	NNW	1.3	NNE
02:00 - 03:00	0.5	W	0.6	N	0.9	W
03:00 - 04:00	0.7	WNW	2.5	E	1.8	ENE
04:00 - 05:00	0.7	WNW	1.1	SW	0.7	ENE
05:00 - 06:00	0.7	WNW	0.9	WNW	0.5	ENE
06:00 - 07:00	0.7	NNW	0.5	NW	2.4	NW
07:00 - 08:00	1.1	SE	0.7	NW	0.7	W
08:00 - 09:00	2.5	WNW	0.6	NNW	2.2	ENE
09:00 - 10:00	0.7	WNW	1.7	SE	2.4	NW

Wind Rose



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

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team

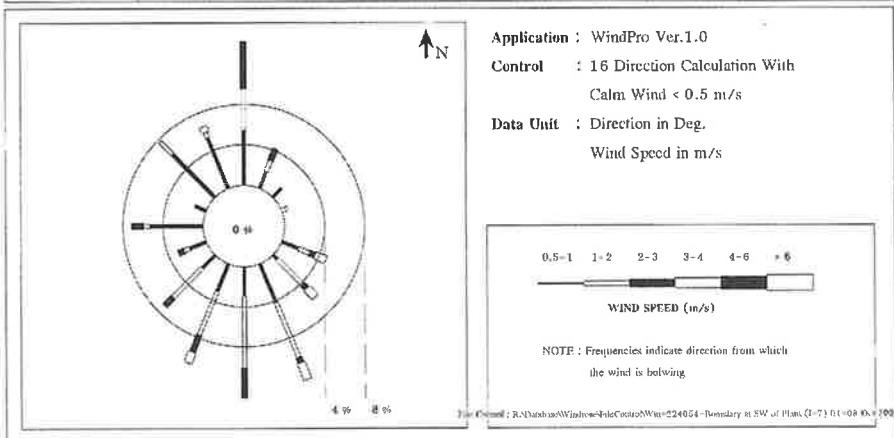


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Boundary at SW of Plant (1-7) Monitor period : 01-08 Oct 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5091
 Wind Direction Model : Novalynx WS-25 Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0586	0.0417	0.0476	0.0000	0.0000	0.0000	0.1429
NNE	0.0179	0.0119	0.0119	0.0000	0.0000	0.0000	0.0417
NE	0.0119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0119
ENE	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0179	0.0119	0.0060	0.0119	0.0000	0.0000	0.0476
SE	0.0060	0.0357	0.0060	0.0119	0.0000	0.0000	0.0595
SSE	0.0417	0.0595	0.0060	0.0179	0.0000	0.0000	0.1250
S	0.0298	0.0714	0.0298	0.0000	0.0000	0.0000	0.1310
SSW	0.0298	0.0476	0.0179	0.0119	0.0000	0.0000	0.1071
SW	0.0179	0.0417	0.0119	0.0000	0.0000	0.0000	0.0714
WSW	0.0179	0.0060	0.0060	0.0000	0.0000	0.0000	0.0298
W	0.0536	0.0060	0.0119	0.0000	0.0000	0.0000	0.0714
WNW	0.0119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0119
NW	0.0595	0.0179	0.0000	0.0000	0.0000	0.0000	0.0774
NNW	0.0536	0.0060	0.0000	0.0060	0.0000	0.0000	0.0655
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



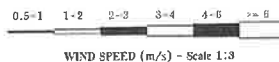
Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Boundary at SW of Plant (1-7) Monitor period : 01-08 Oct 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5091
 Wind Direction Model : Novalynx WS-25 Serial No : A5091

Time	01-02 Oct 2024		02-03 Oct 2024		03-04 Oct 2024		04-05 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
11:00 - 12:00	1.6	SSE	1.7	SW	2.2	SE	1.8	SSW
12:00 - 13:00	1.9	SW	1.8	S	3.1	SSE	0.7	W
13:00 - 14:00	1.8	SSW	1.2	SW	1.3	S	1.1	NNE
14:00 - 15:00	0.9	SSE	2.0	S	1.8	SSE	1.6	SW
15:00 - 16:00	1.3	SSE	2.0	SSW	3.9	ESE	1.1	NW
16:00 - 17:00	2.9	S	0.6	SSW	3.0	SSE	1.4	SSE
17:00 - 18:00	1.9	SSE	1.6	SSE	3.1	SE	1.7	S
18:00 - 19:00	3.3	SSE	0.6	SSE	0.7	SSE	1.2	W
19:00 - 20:00	1.1	SSW	3.1	ESE	1.4	SE	0.7	NW
20:00 - 21:00	1.6	S	2.1	ESE	0.7	SE	0.7	NW
21:00 - 22:00	1.9	SSE	1.7	SSE	0.7	SSE	0.7	NW
22:00 - 23:00	0.6	S	1.8	SSW	1.5	SSW	0.6	NW
23:00 - 24:00	1.5	SSW	2.5	S	0.5	SSE	0.6	NNW
00:00 - 01:00	0.7	SSW	1.7	S	1.4	S	0.7	NNW
01:00 - 02:00	0.6	WSW	1.1	S	1.2	S	0.7	N
02:00 - 03:00	0.5	WSW	0.5	SSW	0.7	S	1.9	N
03:00 - 04:00	2.2	N	1.1	SSW	1.8	SSW	1.6	N
04:00 - 05:00	2.5	W	0.8	SSW	1.4	NNW	0.6	NW
05:00 - 06:00	1.3	NNE	0.6	SSW	2.1	N	0.7	N
06:00 - 07:00	2.2	S	1.5	SE	2.1	N	0.5	NNE
07:00 - 08:00	1.3	S	0.8	S	1.8	SSE	0.6	NE
08:00 - 09:00	2.1	SSW	2.4	N	0.8	W	1.2	WSW
09:00 - 10:00	2.9	SSW	0.5	NNW	0.5	W	2.4	N
10:00 - 11:00	0.7	SSE	0.7	SSE	1.2	SE	2.0	WSW

Wind Rose



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Boundary at SW of Plant (I-7) Monitor period : 01-08 Oct 2024

Wind Speed Model : Novalynx WS-25

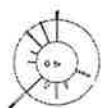
Serial No : A5091

Wind Direction Model : Novalynx WS-25

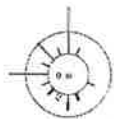
Serial No : A5091

Time	05-06 Oct 2024		06-07 Oct 2024		07-08 Oct 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
11:00 - 12:00	3.4	SSW	2.6	SW	1.6	SE
12:00 - 13:00	1.6	S	3.0	SSW	3.4	SE
13:00 - 14:00	1.7	SW	0.6	WNW	1.3	S
14:00 - 15:00	1.9	NW	2.5	S	1.7	N
15:00 - 16:00	1.7	SSE	0.7	W	3.0	NNW
16:00 - 17:00	0.9	N	1.8	NW	0.6	N
17:00 - 18:00	0.6	NNW	0.5	NW	1.3	ENE
18:00 - 19:00	0.5	N	0.9	NNE	1.2	SE
19:00 - 20:00	2.0	SW	0.7	W	0.7	S
20:00 - 21:00	0.5	SW	0.7	W	0.5	ESE
21:00 - 22:00	0.6	SW	0.7	WSW	0.7	ESE
22:00 - 23:00	0.6	SW	1.3	N	1.6	N
23:00 - 24:00	1.8	ESE	1.7	N	1.9	SW
00:00 - 01:00	1.3	SW	0.6	N	1.8	SE
01:00 - 02:00	0.7	NNW	0.7	N	0.7	NE
02:00 - 03:00	0.7	WNW	0.5	NNW	2.2	N
03:00 - 04:00	0.7	N	0.8	ESE	2.4	NNE
04:00 - 05:00	0.5	NW	0.5	W	2.3	N
05:00 - 06:00	0.5	NW	1.0	N	0.9	NNE
06:00 - 07:00	0.7	NNW	0.7	N	0.8	NNW
07:00 - 08:00	1.6	S	0.5	W	0.7	NW
08:00 - 09:00	2.4	N	0.6	NW	2.0	NNE
09:00 - 10:00	0.6	W	2.8	SSE	2.3	W
10:00 - 11:00	1.9	ESE	0.6	S	0.5	NNW

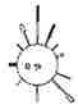
Wind Rose



12 %



12 %



WIND SPEED (m/s) - Scale 1:5

File Control : K:\Data\Site\Windrose\SiteControl\Win - 224054 - Boundary at SW of Plant (I-7) 01-08 Oct 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist(Miss Preeda Somjai)
Technical Management Teamบริษัท ซีคอต จำกัด
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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REFERENCE NO.	: 224004 Amb (Cert.) NMHC/Oct 2024
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 01-07/10/2024
RECEIVED DATE	: 11/10/2024	ANALYTICAL DATE	: 15/10/2024
REPORT DATE	: 18/10/2024	SAMPLE CONDITION	: Normal
SITE OPERATOR	: Mr. Siwanon Kulawong		
LOCATION DESCRIPTION	: 1. Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	2. Boundary at NE of Plant (I-8)		
	3. Boundary at SW of Plant (I-7)		

PARAMETER	SAMPLING DATE	UNITS	ND Non-detectable	RESULTS			REFERENCE METHOD
				1	2	3	
Non-methane	01/10/2024	ppm	<0.05	0.18	0.27	0.25	Flame Ionization
Hydrocarbon	02/10/2024	ppm	<0.05	0.20	0.15	0.19	Detection Method
(NMHC)	03/10/2024	ppm	<0.05	0.08	0.18	0.24	
	04/10/2024	ppm	<0.05	0.15	0.10	0.19	
	05/10/2024	ppm	<0.05	0.26	0.21	0.22	
	06/10/2024	ppm	<0.05	0.22	0.29	0.28	
	07/10/2024	ppm	<0.05	0.24	0.24	0.20	

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : 224004 Amb (Cert.)/MTBE/Oct 2024
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 01-07/10/2024
RECEIVED DATE : 11/10/2024 ANALYTICAL DATE : 16/10/2024
REPORT DATE : 18/10/2024 SAMPLE CONDITION : Normal
SITE OPERATOR : Mr. Siwanon Kulawong
LOCATION DESCRIPTION : 1. Wat Takuan Kongkarom (Ban Ta Kuan-Aou Pra Du)
2. Boundary at NE of Plant (I-8)
3. Boundary at SW of Plant (I-7)

PARAMETER	SAMPLING DATE	UNITS	ND Non-detectable	RESULTS			REFERENCE METHOD
				1	2	3	
Methyl Tertiary	01/10/2024	ppm	<0.01	ND	ND	ND	Modif.NIOSH 1615/
Butyl Ether	02/10/2024	ppm	<0.01	ND	ND	ND	GC FID
(MTBE)	03/10/2024	ppm	<0.01	ND	ND	ND	
	04/10/2024	ppm	<0.01	ND	ND	ND	
	05/10/2024	ppm	<0.01	ND	ND	ND	
	06/10/2024	ppm	<0.01	ND	ND	ND	
	07/10/2024	ppm	<0.01	ND	ND	ND	

Sudaporn S.
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : 224004 Amb (Cert.)/THC/Oct 2024
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 01-07/10/2024
RECEIVED DATE : 11/10/2024 ANALYTICAL DATE : 15/10/2024
REPORT DATE : 18/10/2024 SAMPLE CONDITION : Normal
SITE OPERATOR : Mr. Siwanon Kulawong
LOCATION DESCRIPTION : 1. King Mongkut's University of Technology North Bangkok (Rayong)
2. Soi Ruam Pattana

PARAMETER	SAMPLING DATE	UNITS	ND Non-detectable	REFERENCE		METHOD
				1	2	
Total Hydrocarbon	01/10/2024	ppm	<0.10	2.05	2.20	Flame Ionization
(THC)	02/10/2024	ppm	<0.10	2.31	2.27	Detection Method
	03/10/2024	ppm	<0.10	2.18	2.01	
	04/10/2024	ppm	<0.10	2.13	3.19	
	05/10/2024	ppm	<0.10	2.21	2.18	
	06/10/2024	ppm	<0.10	2.28	2.15	
	07/10/2024	ppm	<0.10	2.05	2.00	

Sudaporn S.
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.
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Ambient Air Monitoring Results : Oxides of Nitrogen

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)	Monitor Period : 01-08 Oct 2024						
Analyzer Model : API 200A	Station No : SCT-14						
Serial No : 1645	Site Operator : Mr. Siwanon Kulawong						
Calibrator Model : Teledyne 700E	Serial No : 587						
Calibration Gas Cylinder I.D. : EB0102326							
Certified Date : 05 Jan 2024	Cal Concentration (ppb) : 0,100,200,400						
Expire Date : 04 Jan 2025							
Time	NOx Concentration (ppm)						
	01-02 Oct 2024	02-03 Oct 2024	03-04 Oct 2024	04-05 Oct 2024	05-06 Oct 2024	06-07 Oct 2024	07-08 Oct 2024
12:00 - 13:00	0.0069	0.0108	0.0165	0.0094	0.0085	0.0065	0.0112
13:00 - 14:00	0.0113	0.0099	0.0163	0.0075	0.0061	0.0116	0.0045
14:00 - 15:00	0.0182	0.0072	0.0097	0.0135	0.0061	0.0084	0.0119
15:00 - 16:00	0.0133	0.0116	0.0094	0.0280	0.0041	0.0122	0.0287
16:00 - 17:00	0.0198	0.0085	0.0111	0.0076	0.0062	0.0124	0.0317
17:00 - 18:00	0.0266	0.0232	0.0060	0.0192	0.0181	0.0116	0.0209
18:00 - 19:00	0.0119	0.0073	0.0196	0.0301	0.0091	0.0102	0.0224
19:00 - 20:00	0.0109	0.0272	0.0259	0.0301	0.0116	0.0275	0.0298
20:00 - 21:00	0.0156	0.0120	0.0301	0.0127	0.0161	0.0236	0.0322
21:00 - 22:00	0.0188	0.0100	0.0210	0.0217	0.0166	0.0133	0.0301
22:00 - 23:00	0.0198	0.0114	0.0120	0.0111	0.0267	0.0069	0.0242
23:00 - 00:00	0.0145	0.0113	0.0138	0.0110	0.0128	0.0065	0.0255
00:00 - 01:00	0.0101	0.0118	0.0103	0.0136	0.0132	0.0076	0.0219
01:00 - 02:00	0.0099	0.0076	0.0084	0.0071	0.0063	0.0049	0.0040
02:00 - 03:00	0.0081	0.0059	0.0093	0.0068	0.0052	0.0075	0.0107
03:00 - 04:00	0.0086	0.0074	0.0103	0.0094	0.0086	0.0134	0.0113
04:00 - 05:00	0.0122	0.0077	0.0081	0.0061	0.0072	0.0059	0.0087
05:00 - 06:00	0.0121	0.0066	0.0050	0.0055	0.0065	0.0090	0.0051
06:00 - 07:00	0.0056	0.0110	0.0099	0.0043	0.0077	0.0087	0.0098
07:00 - 08:00	0.0158	0.0119	0.0113	0.0054	0.0128	0.0123	0.0211
08:00 - 09:00	0.0065	0.0196	0.0079	0.0074	0.0073	0.0114	0.0084
09:00 - 10:00	0.0089	0.0201	0.0136	0.0081	0.0041	0.0049	0.0073
10:00 - 11:00	0.0105	0.0062	0.0056	0.0046	0.0075	0.0085	0.0121
11:00 - 12:00	0.0076	0.0174	0.0106	0.0036	0.0086	0.0105	0.0118
Average-24Hr*	0.0128	0.0118	0.0126	0.0116	0.0099	0.0105	0.0167
Max-1Hr	0.0266	0.0272	0.0301	0.0301	0.0287	0.0275	0.0322
Min-1Hr	0.0056	0.0059	0.0050	0.0036	0.0041	0.0049	0.0040
Standard-1Hr							
Standard-24Hr							

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Oxides of Nitrogen

MTR-BST Site 1

Location : Boundary at NE of Plant (1-8)	Monitor Period : 01-08 Oct 2024						
Analyzer Model : API 200AU	Station No : Shelter 16						
Serial No : 144	Site Operator : Mr. Siwanon Kulawong						
Calibrator Model : Teledyne 700E				Serial No : 587			
Calibration Gas Cylinder I.D. : EB0102326							
Certified Date : 05 Jan 2024				Cal Concentration (ppb) : 0,100,200,400			
Expire Date : 04 Jan 2025							
Time	NOx Concentration (ppm)						
	01-02 Oct 2024	02-03 Oct 2024	03-04 Oct 2024	04-05 Oct 2024	05-06 Oct 2024	06-07 Oct 2024	07-08 Oct 2024
10:00 - 11:00	0.0107	0.0104	0.0220	0.0134	0.0115	0.0088	0.0119
11:00 - 12:00	0.0089	0.0101	0.0127	0.0074	0.0066	0.0066	0.0100
12:00 - 13:00	0.0200	0.0198	0.0189	0.0066	0.0083	0.0198	0.0062
13:00 - 14:00	0.0167	0.0063	0.0119	0.0214	0.0102	0.0049	0.0120
14:00 - 15:00	0.0176	0.0187	0.0217	0.0211	0.0101	0.0121	0.0205
15:00 - 16:00	0.0224	0.0201	0.0181	0.0068	0.0050	0.0193	0.0302
16:00 - 17:00	0.0252	0.0288	0.0089	0.0296	0.0214	0.0146	0.0281
17:00 - 18:00	0.0192	0.0111	0.0280	0.0237	0.0180	0.0121	0.0280
18:00 - 19:00	0.0126	0.0243	0.0314	0.0278	0.0171	0.0257	0.0316
19:00 - 20:00	0.0202	0.0195	0.0303	0.0117	0.0180	0.0288	0.0321
20:00 - 21:00	0.0196	0.0175	0.0271	0.0242	0.0295	0.0193	0.0313
21:00 - 22:00	0.0156	0.0216	0.0189	0.0127	0.0255	0.0046	0.0263
22:00 - 23:00	0.0191	0.0180	0.0108	0.0193	0.0178	0.0050	0.0166
23:00 - 00:00	0.0103	0.0209	0.0184	0.0121	0.0194	0.0081	0.0240
00:00 - 01:00	0.0065	0.0112	0.0093	0.0105	0.0090	0.0065	0.0068
01:00 - 02:00	0.0126	0.0108	0.0127	0.0120	0.0105	0.0076	0.0189
02:00 - 03:00	0.0060	0.0127	0.0074	0.0110	0.0099	0.0202	0.0082
03:00 - 04:00	0.0113	0.0084	0.0123	0.0113	0.0087	0.0093	0.0064
04:00 - 05:00	0.0134	0.0102	0.0101	0.0097	0.0108	0.0069	0.0071
05:00 - 06:00	0.0105	0.0111	0.0103	0.0089	0.0179	0.0088	0.0143
06:00 - 07:00	0.0216	0.0200	0.0087	0.0080	0.0212	0.0111	0.0228
07:00 - 08:00	0.0087	0.0117	0.0083	0.0090	0.0094	0.0167	0.0114
08:00 - 09:00	0.0100	0.0202	0.0099	0.0070	0.0102	0.0082	0.0084
09:00 - 10:00	0.0177	0.0075	0.0121	0.0068	0.0072	0.0043	0.0165
Average-24Hr*	0.0150	0.0155	0.0158	0.0140	0.0139	0.0123	0.0180
Max-1Hr	0.0252	0.0288	0.0314	0.0296	0.0295	0.0288	0.0321
Min-1Hr	0.0060	0.0075	0.0074	0.0066	0.0050	0.0043	0.0062
Standard-1Hr	-						
Standard-24Hr	-						

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Oxides of Nitrogen

MTR-BST Site 1

Location : Boundary at SW of Plant (I-7) Monitor Period : 01-08 Oct 2024
 Analyzer Model : Teledyne T200 Station No : SS2-05
 Serial No : 110 Site Operator : Mr. Siwanon Kulawong

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

Time	NOx Concentration (ppm)						
	01-02 Oct 2024	02-03 Oct 2024	03-04 Oct 2024	04-05 Oct 2024	05-06 Oct 2024	06-07 Oct 2024	07-08 Oct 2024
11:00 - 12:00	0.0088	0.0101	0.0134	0.0177	0.0075	0.0072	0.0138
12:00 - 13:00	0.0086	0.0099	0.0177	0.0090	0.0052	0.0071	0.0173
13:00 - 14:00	0.0212	0.0192	0.0197	0.0086	0.0085	0.0179	0.0051
14:00 - 15:00	0.0111	0.0081	0.0116	0.0206	0.0116	0.0060	0.0088
15:00 - 16:00	0.0173	0.0179	0.0172	0.0227	0.0071	0.0168	0.0216
16:00 - 17:00	0.0199	0.0109	0.0112	0.0079	0.0082	0.0094	0.0302
17:00 - 18:00	0.0255	0.0240	0.0080	0.0300	0.0112	0.0116	0.0266
18:00 - 19:00	0.0217	0.0061	0.0266	0.0197	0.0108	0.0138	0.0248
19:00 - 20:00	0.0094	0.0290	0.0195	0.0225	0.0122	0.0258	0.0302
20:00 - 21:00	0.0197	0.0096	0.0226	0.0107	0.0111	0.0207	0.0311
21:00 - 22:00	0.0194	0.0182	0.0226	0.0280	0.0234	0.0121	0.0315
22:00 - 23:00	0.0155	0.0142	0.0117	0.0173	0.0196	0.0084	0.0253
23:00 - 00:00	0.0208	0.0123	0.0122	0.0091	0.0110	0.0084	0.0247
00:00 - 01:00	0.0096	0.0107	0.0198	0.0196	0.0185	0.0064	0.0206
01:00 - 02:00	0.0095	0.0104	0.0093	0.0091	0.0088	0.0058	0.0063
02:00 - 03:00	0.0072	0.0097	0.0068	0.0086	0.0060	0.0077	0.0170
03:00 - 04:00	0.0091	0.0087	0.0083	0.0075	0.0081	0.0187	0.0106
04:00 - 05:00	0.0114	0.0086	0.0090	0.0095	0.0084	0.0068	0.0073
05:00 - 06:00	0.0100	0.0101	0.0088	0.0070	0.0064	0.0050	0.0089
06:00 - 07:00	0.0096	0.0108	0.0080	0.0098	0.0124	0.0061	0.0104
07:00 - 08:00	0.0176	0.0191	0.0082	0.0073	0.0161	0.0099	0.0227
08:00 - 09:00	0.0087	0.0198	0.0087	0.0044	0.0099	0.0121	0.0092
09:00 - 10:00	0.0094	0.0170	0.0102	0.0087	0.0087	0.0082	0.0114
10:00 - 11:00	0.0188	0.0101	0.0090	0.0074	0.0052	0.0071	0.0178
Average-24Hr*	0.0142	0.0134	0.0133	0.0134	0.0106	0.0106	0.0180
Max-1Hr	0.0255	0.0290	0.0266	0.0300	0.0234	0.0258	0.0315
Min-1Hr	0.0072	0.0061	0.0065	0.0044	0.0052	0.0050	0.0051
Standard-1Hr	-						
Standard-24Hr	-						

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor Period : 01-08 Oct 2024
 Analyzer Model : API 200A Station No : SCT-14
 Serial No : 1845 Site Operator : Mr. Siwanon Kulawong

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

Time	NO2 Concentration (ppm)						
	01-02 Oct 2024	02-03 Oct 2024	03-04 Oct 2024	04-05 Oct 2024	05-06 Oct 2024	06-07 Oct 2024	07-08 Oct 2024
12:00 - 13:00	0.0048	0.0058	0.0113	0.0053	0.0050	0.0032	0.0066
13:00 - 14:00	0.0086	0.0082	0.0110	0.0059	0.0032	0.0099	0.0021
14:00 - 15:00	0.0127	0.0060	0.0065	0.0090	0.0023	0.0038	0.0097
15:00 - 16:00	0.0090	0.0069	0.0084	0.0143	0.0027	0.0099	0.0145
16:00 - 17:00	0.0126	0.0075	0.0093	0.0037	0.0041	0.0087	0.0230
17:00 - 18:00	0.0215	0.0171	0.0047	0.0123	0.0102	0.0099	0.0138
18:00 - 19:00	0.0080	0.0052	0.0122	0.0212	0.0072	0.0075	0.0132
19:00 - 20:00	0.0074	0.0185	0.0180	0.0203	0.0091	0.0178	0.0223
20:00 - 21:00	0.0103	0.0084	0.0216	0.0067	0.0102	0.0153	0.0243
21:00 - 22:00	0.0110	0.0079	0.0133	0.0130	0.0124	0.0063	0.0223
22:00 - 23:00	0.0109	0.0088	0.0080	0.0070	0.0177	0.0052	0.0170
23:00 - 00:00	0.0098	0.0089	0.0090	0.0087	0.0082	0.0061	0.0175
00:00 - 01:00	0.0056	0.0090	0.0071	0.0095	0.0091	0.0054	0.0126
01:00 - 02:00	0.0074	0.0063	0.0049	0.0058	0.0041	0.0020	0.0019
02:00 - 03:00	0.0042	0.0035	0.0062	0.0045	0.0023	0.0053	0.0060
03:00 - 04:00	0.0066	0.0051	0.0062	0.0061	0.0047	0.0095	0.0080
04:00 - 05:00	0.0076	0.0035	0.0066	0.0045	0.0055	0.0029	0.0048
05:00 - 06:00	0.0073	0.0046	0.0039	0.0036	0.0050	0.0040	0.0010
06:00 - 07:00	0.0045	0.0065	0.0062	0.0022	0.0060	0.0042	0.0053
07:00 - 08:00	0.0107	0.0092	0.0067	0.0028	0.0098	0.0076	0.0122
08:00 - 09:00	0.0051	0.0121	0.0035	0.0034	0.0027	0.0093	0.0049
09:00 - 10:00	0.0042	0.0121	0.0092	0.0037	0.0019	0.0032	0.0047
10:00 - 11:00	0.0090	0.0043	0.0045	0.0022	0.0055	0.0052	0.0078
11:00 - 12:00	0.0051	0.0106	0.0080	0.0023	0.0041	0.0074	0.0070
Average-24Hr*	0.0085	0.0082	0.0086	0.0074	0.0063	0.0071	0.0110
Max-1Hr	0.0215	0.0185	0.0216	0.0212	0.0177	0.0178	0.0243
Min-1Hr	0.0042	0.0035	0.0035	0.0022	0.0019	0.0020	0.0010
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr	-						

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-BST Site 1

Location : Boundary at NE of Plant (I-8) Monitor Period : 01-08 Oct 2024
Analyzer Model : API 200AU Station No : Shelter 16
Serial No : 144 Site Operator : Mr. Siwanon Kulawong

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

Time	NO2 Concentration (ppm)						
	01-02 Oct 2024	02-03 Oct 2024	03-04 Oct 2024	04-05 Oct 2024	05-06 Oct 2024	06-07 Oct 2024	07-08 Oct 2024
10:00 - 11:00	0.0081	0.0079	0.0120	0.0090	0.0066	0.0042	0.0094
11:00 - 12:00	0.0082	0.0077	0.0099	0.0054	0.0045	0.0050	0.0071
12:00 - 13:00	0.0117	0.0134	0.0126	0.0048	0.0066	0.0106	0.0049
13:00 - 14:00	0.0100	0.0054	0.0073	0.0118	0.0066	0.0023	0.0090
14:00 - 15:00	0.0109	0.0131	0.0135	0.0172	0.0082	0.0095	0.0128
15:00 - 16:00	0.0192	0.0128	0.0104	0.0056	0.0036	0.0111	0.0239
16:00 - 17:00	0.0175	0.0228	0.0063	0.0207	0.0122	0.0096	0.0186
17:00 - 18:00	0.0130	0.0088	0.0220	0.0180	0.0107	0.0099	0.0205
18:00 - 19:00	0.0078	0.0149	0.0232	0.0192	0.0120	0.0175	0.0228
19:00 - 20:00	0.0147	0.0139	0.0233	0.0088	0.0103	0.0198	0.0247
20:00 - 21:00	0.0191	0.0109	0.0192	0.0191	0.0219	0.0117	0.0237
21:00 - 22:00	0.0101	0.0121	0.0107	0.0092	0.0196	0.0032	0.0188
22:00 - 23:00	0.0104	0.0113	0.0086	0.0125	0.0110	0.0041	0.0114
23:00 - 00:00	0.0074	0.0135	0.0108	0.0098	0.0115	0.0046	0.0152
00:00 - 01:00	0.0058	0.0086	0.0076	0.0060	0.0060	0.0042	0.0028
01:00 - 02:00	0.0081	0.0068	0.0082	0.0075	0.0060	0.0061	0.0111
02:00 - 03:00	0.0068	0.0082	0.0047	0.0072	0.0068	0.0114	0.0068
03:00 - 04:00	0.0072	0.0061	0.0083	0.0069	0.0054	0.0054	0.0043
04:00 - 05:00	0.0084	0.0062	0.0077	0.0057	0.0067	0.0026	0.0041
05:00 - 06:00	0.0075	0.0083	0.0054	0.0042	0.0107	0.0040	0.0096
06:00 - 07:00	0.0135	0.0107	0.0075	0.0062	0.0121	0.0091	0.0130
07:00 - 08:00	0.0068	0.0097	0.0070	0.0061	0.0065	0.0103	0.0091
08:00 - 09:00	0.0078	0.0104	0.0087	0.0042	0.0066	0.0065	0.0067
09:00 - 10:00	0.0104	0.0064	0.0081	0.0057	0.0050	0.0025	0.0107
Average-24Hr*	0.0098	0.0105	0.0109	0.0095	0.0089	0.0077	0.0125
Max-1Hr	0.0175	0.0228	0.0233	0.0207	0.0219	0.0198	0.0247
Min-1Hr	0.0058	0.0054	0.0047	0.0042	0.0036	0.0025	0.0028
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr							

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-BST Site 1

Location : Boundary at SW of Plant (I-7) Monitor Period : 01-08 Oct 2024
Analyzer Model : Teledyne T200 Station No : SS2-05
Serial No : 110 Site Operator : Mr. Siwanon Kulawong

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

Time	NO2 Concentration (ppm)						
	01-02 Oct 2024	02-03 Oct 2024	03-04 Oct 2024	04-05 Oct 2024	05-06 Oct 2024	06-07 Oct 2024	07-08 Oct 2024
11:00 - 12:00	0.0055	0.0057	0.0097	0.0102	0.0037	0.0050	0.0091
12:00 - 13:00	0.0055	0.0074	0.0105	0.0057	0.0023	0.0044	0.0101
13:00 - 14:00	0.0137	0.0130	0.0103	0.0056	0.0060	0.0107	0.0029
14:00 - 15:00	0.0099	0.0067	0.0070	0.0120	0.0069	0.0043	0.0060
15:00 - 16:00	0.0116	0.0127	0.0106	0.0141	0.0055	0.0109	0.0151
16:00 - 17:00	0.0123	0.0092	0.0093	0.0048	0.0042	0.0077	0.0236
17:00 - 18:00	0.0157	0.0160	0.0082	0.0211	0.0091	0.0072	0.0178
18:00 - 19:00	0.0125	0.0047	0.0207	0.0139	0.0095	0.0089	0.0178
19:00 - 20:00	0.0081	0.0203	0.0141	0.0153	0.0081	0.0200	0.0251
20:00 - 21:00	0.0118	0.0064	0.0128	0.0076	0.0093	0.0140	0.0241
21:00 - 22:00	0.0131	0.0103	0.0136	0.0192	0.0158	0.0098	0.0239
22:00 - 23:00	0.0101	0.0093	0.0088	0.0101	0.0140	0.0036	0.0174
23:00 - 00:00	0.0131	0.0096	0.0096	0.0073	0.0096	0.0034	0.0178
00:00 - 01:00	0.0057	0.0092	0.0106	0.0114	0.0101	0.0029	0.0115
01:00 - 02:00	0.0084	0.0062	0.0068	0.0044	0.0045	0.0033	0.0021
02:00 - 03:00	0.0049	0.0054	0.0048	0.0045	0.0050	0.0045	0.0106
03:00 - 04:00	0.0067	0.0053	0.0072	0.0055	0.0033	0.0110	0.0065
04:00 - 05:00	0.0084	0.0060	0.0069	0.0067	0.0050	0.0040	0.0036
05:00 - 06:00	0.0074	0.0066	0.0039	0.0044	0.0028	0.0038	0.0039
06:00 - 07:00	0.0060	0.0061	0.0068	0.0050	0.0099	0.0039	0.0065
07:00 - 08:00	0.0102	0.0121	0.0039	0.0049	0.0106	0.0062	0.0142
08:00 - 09:00	0.0071	0.0123	0.0047	0.0033	0.0051	0.0074	0.0076
09:00 - 10:00	0.0045	0.0110	0.0076	0.0096	0.0054	0.0044	0.0095
10:00 - 11:00	0.0120	0.0077	0.0040	0.0058	0.0032	0.0034	0.0101
Average-24Hr*	0.0093	0.0092	0.0088	0.0086	0.0071	0.0069	0.0124
Max-1Hr	0.0157	0.0203	0.0207	0.0211	0.0158	0.0200	0.0251
Min-1Hr	0.0045	0.0047	0.0039	0.0033	0.0028	0.0029	0.0021
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr							

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

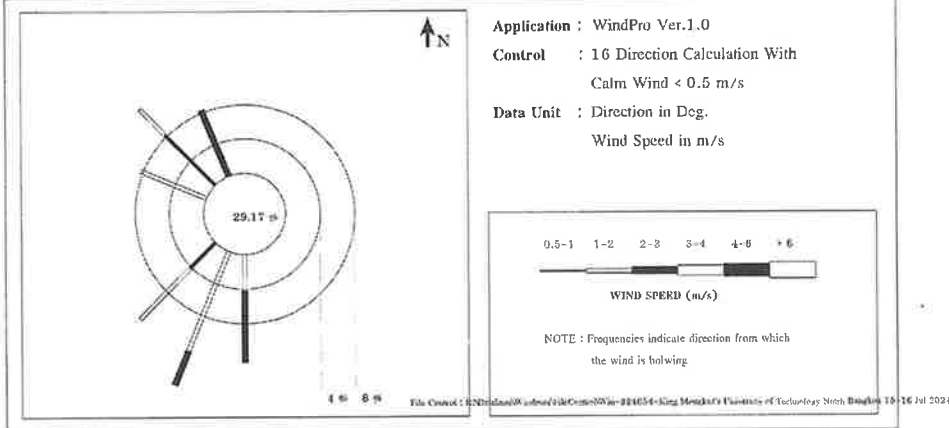
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 15-16 Jul 2024
Wind Speed Model : Novalynx NL-32 Serial No : 15102801
Wind Direction Model : Novalynx NL-32 Serial No : 15102801

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0417	0.0833	0.0000	0.0000	0.0000	0.1250
SSW	0.0000	0.1250	0.0417	0.0000	0.0000	0.0000	0.1667
SW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
NW	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
NNW	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
CALM	0.2917						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 15-16 Jul 2024
Wind Speed Model : Novalynx NL-32 Serial No : 15102801
Wind Direction Model : Novalynx NL-32 Serial No : 15102801

Time	15-16 Jul 2024	
	WS(m/s)	WD
10:00 - 11:00	1.2	WNW
11:00 - 12:00	0.7	SW
12:00 - 13:00	0.4	SSW
13:00 - 14:00	2.3	S
14:00 - 15:00	2.6	S
15:00 - 16:00	1.2	NW
16:00 - 17:00	0.5	NW
17:00 - 18:00	1.2	WNW
18:00 - 19:00	1.8	S
19:00 - 20:00	2.3	NNW
20:00 - 21:00	2.5	NNW
21:00 - 22:00	0.6	NW
22:00 - 23:00	0.1	S
23:00 - 24:00	0.2	S
00:00 - 01:00	1.4	SSW
01:00 - 02:00	2.8	SSW
02:00 - 03:00	1.2	SSW
03:00 - 04:00	1.7	SW
04:00 - 05:00	0.3	S
05:00 - 06:00	0.1	SW
06:00 - 07:00	1.2	SW
07:00 - 08:00	1.4	SSW
08:00 - 09:00	0.2	SW
09:00 - 10:00	0.4	SW

Wind Rose



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 15-16 Jul 2024

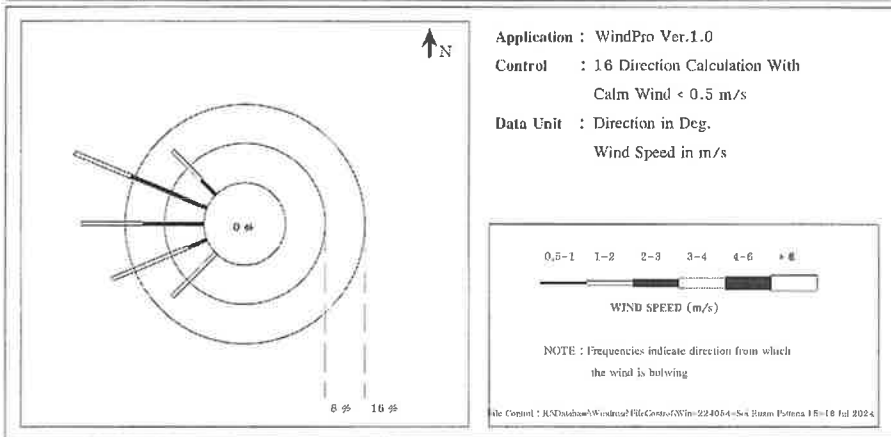
Wind Speed Model : Campbell CR510

Serial No : 1632

Wind Direction Model : Campbell CR510

Serial No : 1632

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.1250	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.0417	0.1667	0.0000	0.0000	0.0000	0.0000	0.2083
W	0.1250	0.1250	0.0000	0.0000	0.0000	0.0000	0.2500
WNW	0.1667	0.1250	0.0000	0.0000	0.0000	0.0000	0.2917
NW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 15-16 Jul 2024

Wind Speed Model : Campbell CR510

Serial No : 1632

Wind Direction Model : Campbell CR510

Serial No : 1632

Time	15-16 Jul 2024	
	WS(m/s)	WD
11:00 - 12:00	1.1	SW
12:00 - 13:00	1.2	SW
13:00 - 14:00	1.5	W
14:00 - 15:00	1.5	WSW
15:00 - 16:00	1.5	SW
16:00 - 17:00	1.7	WSW
17:00 - 18:00	1.3	WSW
18:00 - 19:00	1.7	WNW
19:00 - 20:00	1.6	W
20:00 - 21:00	0.9	W
21:00 - 22:00	0.7	WSW
22:00 - 23:00	0.8	WNW
23:00 - 24:00	0.8	WNW
00:00 - 01:00	0.7	WNW
01:00 - 02:00	0.8	NW
02:00 - 03:00	1.1	NW
03:00 - 04:00	1.0	NW
04:00 - 05:00	0.9	W
05:00 - 06:00	1.1	W
06:00 - 07:00	1.2	WNW
07:00 - 08:00	1.3	WSW
08:00 - 09:00	1.4	WNW
09:00 - 10:00	0.9	W
10:00 - 11:00	0.9	WNW

Wind Rose



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

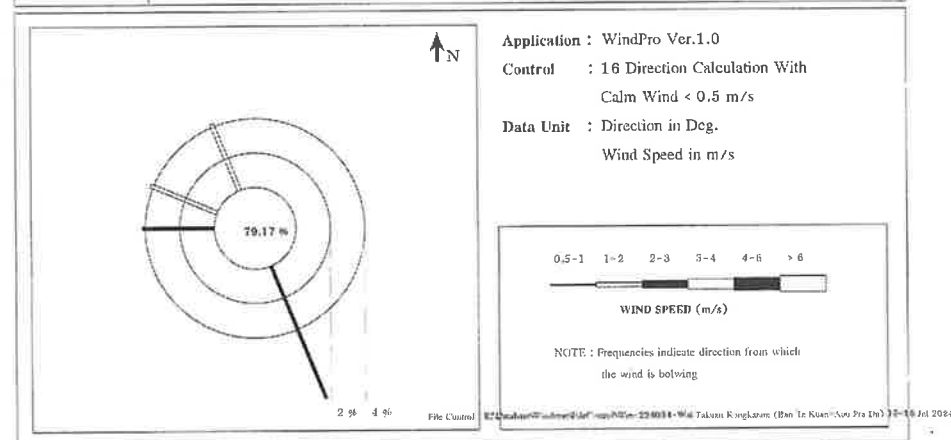


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 15-16 Jul 2024
 Wind Speed Model : Novalynx NL-32 Serial No : 17112001
 Wind Direction Model : Novalynx NL-32 Serial No : 17112001

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.7917						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 15-16 Jul 2024
 Wind Speed Model : Novalynx NL-32 Serial No : 17112001
 Wind Direction Model : Novalynx NL-32 Serial No : 17112001

Time	15-16 Jul 2024	
	WS(m/s)	WD
11:00 - 12:00	0.1	NW
12:00 - 13:00	0.3	WNW
13:00 - 14:00	0.4	WNW
14:00 - 15:00	0.1	WNW
15:00 - 16:00	0.2	W
16:00 - 17:00	0.4	NW
17:00 - 18:00	1.2	WNW
18:00 - 19:00	0.1	WNW
19:00 - 20:00	0.2	NNW
20:00 - 21:00	0.1	NNE
21:00 - 22:00	0.2	SE
22:00 - 23:00	0.5	SSE
23:00 - 24:00	0.7	SSE
00:00 - 01:00	0.1	SSE
01:00 - 02:00	0.1	SSE
02:00 - 03:00	0.2	S
03:00 - 04:00	0.3	WNW
04:00 - 05:00	0.1	NW
05:00 - 06:00	0.4	NW
06:00 - 07:00	0.5	W
07:00 - 08:00	0.1	W
08:00 - 09:00	0.1	WNW
09:00 - 10:00	1.5	NNW
10:00 - 11:00	0.2	NNW



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1465/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 15-16/07/2024	ANALYTICAL DATE	: 21/07/2024
SAMPLING TIME	: 10:50-10:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 17/07/2024	FILE CODE	: 224054 TO-15 July
REPORT DATE	: 24/07/2024		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		King Mongkut's University of Technology North Bangkok (KMUTNB (Rayong))		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	4.57	10.10	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18, B.E.2551(2008), which was published in the Royal Government

Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1465/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 15-16/07/2024	ANALYTICAL DATE	: 21/07/2024
SAMPLING TIME	: 12:46-13:20	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 17/07/2024	FILE CODE	: 224054 TO-15 July
REPORT DATE	: 24/07/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Sai Ruam Puttana		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	3.87	8.56	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

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239 RIMKLONGPRAPO ROAD, BANGSUE, BANGKOK 10800, THAILAND

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1465/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 15-16/07/2024	ANALYTICAL DATE	: 21/07/2024
SAMPLING TIME	: 11:53-12:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 17/07/2024	FILE CODE	: 224054_TD-15_July
REPORT DATE	: 24/07/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Method TO-15 (1999)

Siriwan Chimsanga
(Miss Siriwan Chimsanga)

Analyst

NT
(Mrs. Araya Tippanuk)

Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18, B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).

King Mongkut's University of Technology North Bangkok 13-14 Aug 2024



Meteorological Monitoring Results : Wind Rose
MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 13-14 Aug 2024

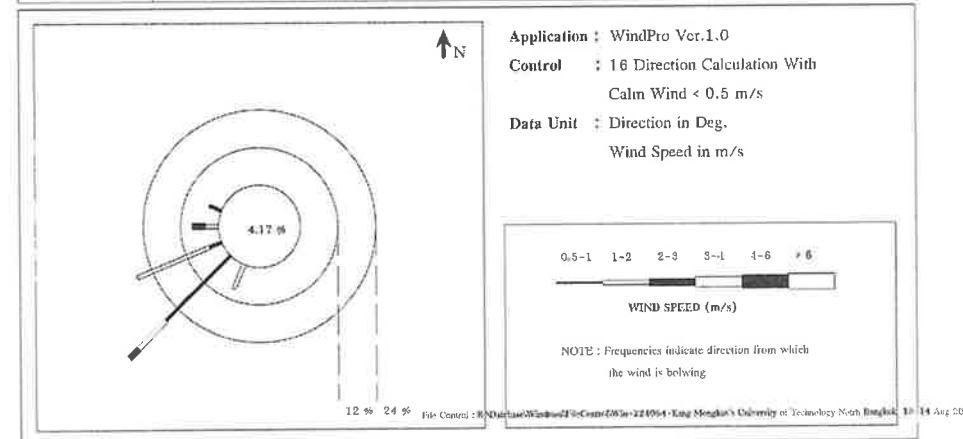
Wind Speed Model : Campbell CR510

Serial No : 10853

Wind Direction Model : Campbell CR510

Serial No : 10853

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.2917	0.1250	0.0417	0.0000	0.0000	0.0000	0.4583
WSW	0.0417	0.2500	0.0000	0.0000	0.0000	0.0000	0.2917
W	0.0000	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.0417						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Sonjai)
Technical Management Team

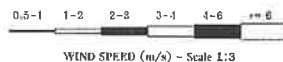
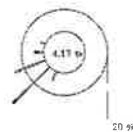


Meteorological Monitoring Results : Wind Rose MTR-BST Site 1


Location : King Mongkut's University of Technology North Bangkok Monitor period : 13-14 Aug 2024
Wind Speed Model : Campbell CR510 Serial No : 10853
Wind Direction Model : Campbell CR510 Serial No : 10853


Time	13-14 Aug 2024	
	WS(m/s)	WD
11:00 - 12:00	1.6	SSW
12:00 - 13:00	1.4	WSW
13:00 - 14:00	1.8	WSW
14:00 - 15:00	2.3	SW
15:00 - 16:00	2.6	W
16:00 - 17:00	1.8	SSW
17:00 - 18:00	1.7	SW
18:00 - 19:00	1.1	SW
19:00 - 20:00	1.0	SW
20:00 - 21:00	0.9	WNW
21:00 - 22:00	0.6	SW
22:00 - 23:00	0.5	SW
23:00 - 24:00	0.5	SW
00:00 - 01:00	0.4	SW
01:00 - 02:00	0.8	SW
02:00 - 03:00	0.6	SW
03:00 - 04:00	0.6	SW
04:00 - 05:00	0.9	SW
05:00 - 06:00	0.9	WSW
06:00 - 07:00	1.3	WSW
07:00 - 08:00	1.3	WSW
08:00 - 09:00	1.5	WSW
09:00 - 10:00	1.8	WSW
10:00 - 11:00	1.5	W

Wind Rose



File Control : K:\Data\Wind\Windrose\Windrose224054-King Mongkut's University of Technology North Bangkok 13-14 Aug 2024


(Miss Katesarin Vorradetwittaya)
Environmental Scientist

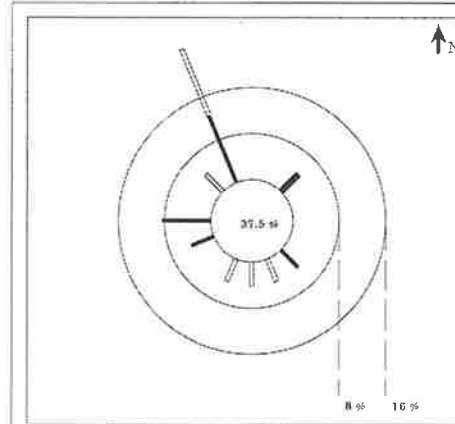

(Miss Preeda Somjai)
Technical Management Team



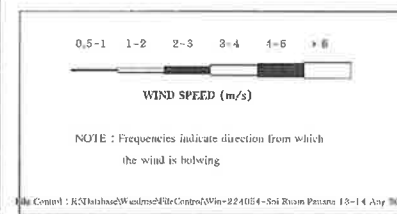
Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Soi Ruam Patana Monitor period : 13-14 Aug 2024
Wind Speed Model : Campbell CR510 Serial No : 10851
Wind Direction Model : Campbell CR510 Serial No : 10851

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NNW	0.1250	0.1250	0.0000	0.0000	0.0000	0.0000	0.2500
CALM	0.3750						




Application : WindPro Ver.1.0
Control : 16 Direction Calculation With
Calm Wind < 0.5 m/s
Data Unit : Direction in Deg.
Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Control : K:\Data\Wind\Windrose\Windrose224054-Soi Ruam Patana 13-14 Aug 2024


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Soi Ruam Pattana Monitor period : 13-14 Aug 2024
Wind Speed Model : Campbell CR510 Serial No : 10851
Wind Direction Model : Campbell CR510 Serial No : 10851

Time	13-14 Aug 2024	
	WS(m/s)	WD
11:00 - 12:00	1.1	NNW
12:00 - 13:00	1.4	NNW
13:00 - 14:00	0.2	NNW
14:00 - 15:00	0.6	NNW
15:00 - 16:00	0.4	NNW
16:00 - 17:00	1.2	NW
17:00 - 18:00	0.5	W
18:00 - 19:00	0.8	W
19:00 - 20:00	0.3	W
20:00 - 21:00	0.5	WSW
21:00 - 22:00	0.2	NW
22:00 - 23:00	0.8	NNW
23:00 - 24:00	0.4	ESE
00:00 - 01:00	0.5	SE
01:00 - 02:00	1.6	SSE
02:00 - 03:00	1.3	S
03:00 - 04:00	1.2	SSW
04:00 - 05:00	0.4	NNW
05:00 - 06:00	1.7	NNW
06:00 - 07:00	2.1	NE
07:00 - 08:00	0.2	N
08:00 - 09:00	0.3	N
09:00 - 10:00	0.6	NNW
10:00 - 11:00	0.2	N

Wind Rose



File Control : R:\Data\Wind\Wind\WindControl\Win-224054-Soi Ruam Pattana 13-14 Aug 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

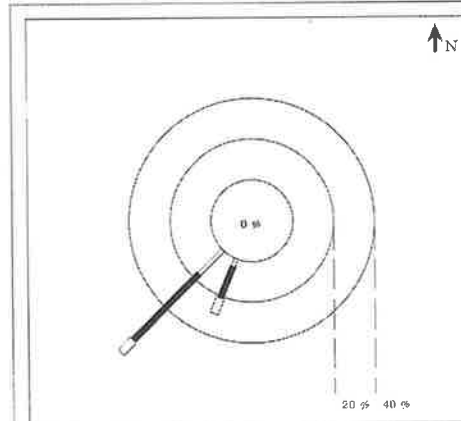
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Wat Takuan Kongkaram Monitor period : 13-14 Aug 2024
Wind Speed Model : Novalynx NL-32 Serial No : 1201
Wind Direction Model : Novalynx NL-32 Serial No : 1201

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0417	0.1667	0.0833	0.0000	0.0000	0.2917
SW	0.0000	0.1667	0.4583	0.0833	0.0000	0.0000	0.7083
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0000						



Application : WindPro Ver.1.0
Control : 16 Direction Calculation With
Calm Wind < 0.5 m/s
Data Unit : Direction in Deg.
Wind Speed in m/s



File Control : R:\Data\Wind\Wind\WindControl\Win-224054-Wat Takuan Kongkaram 13-14 Aug 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

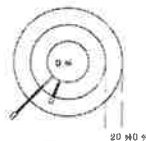


Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Wat Takuan Kongkaram Monitor period : 13-14 Aug 2024
Wind Speed Model : Novalynx NL-32 Serial No : 1201
Wind Direction Model : Novalynx NL-32 Serial No : 1201

Time	13-14 Aug 2024	
	WS(m/s)	WD
11:00 - 12:00	2.6	SSW
12:00 - 13:00	2.7	SW
13:00 - 14:00	3.0	SW
14:00 - 15:00	3.3	SW
15:00 - 16:00	3.3	SSW
16:00 - 17:00	3.2	SSW
17:00 - 18:00	2.7	SW
18:00 - 19:00	2.5	SW
19:00 - 20:00	2.7	SW
20:00 - 21:00	2.5	SW
21:00 - 22:00	2.7	SW
22:00 - 23:00	2.5	SW
23:00 - 24:00	1.3	SW
00:00 - 01:00	1.1	SW
01:00 - 02:00	1.5	SSW
02:00 - 03:00	1.6	SW
03:00 - 04:00	1.7	SW
04:00 - 05:00	2.0	SW
05:00 - 06:00	2.2	SSW
06:00 - 07:00	2.5	SSW
07:00 - 08:00	2.3	SSW
08:00 - 09:00	2.4	SW
09:00 - 10:00	2.5	SW
10:00 - 11:00	2.5	SW

Wind Rose



0.5-1 1-2 2-3 3-4 4-6 >= 6
WIND SPEED (m/s) - Scale 1:3

File Control : R:\Data\new\Windest\FileControl\Win-224054-Wat Takuan Kongkaram 13-14 Aug 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



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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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1659/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 13-14/08/2024	ANALYTICAL DATE	: 16/08/2024
SAMPLING TIME	: 11:44-11:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 15/08/2024	FILE CODE	: 224054 TO-15 August
REPORT DATE	: 19/08/2024		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		King Mongkut's University of Technology North Bangkok (KMUTNB (Rayong))		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd ed. EPA Methods TO-15, 1999

(Miss Siriwan Chimsa-nga)
Analyst

(Mrs. Araya Tipparak)
Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18, B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 1659/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 13-14/08/2024 ANALYTICAL DATE : 16/08/2024
SAMPLING TIME : 11:35-11:38 SAMPLE CONDITION : Normal
RECEIVED DATE : 15/08/2024 FILE CODE : 224054 TO-15 August
REPORT DATE : 19/08/2024

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Soi Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd, EPA Methods TO-15, 1999

Sirivan Chimsanga
(Miss Sirivan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 1659/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 13-14/08/2024 ANALYTICAL DATE : 16/08/2024
SAMPLING TIME : 11:20-11:22 SAMPLE CONDITION : Normal
RECEIVED DATE : 15/08/2024 FILE CODE : 224054 TO-15 August
REPORT DATE : 19/08/2024

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Takuan Kongkaram		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd, EPA Methods TO-15, 1999

Sirivan Chimsanga
(Miss Sirivan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

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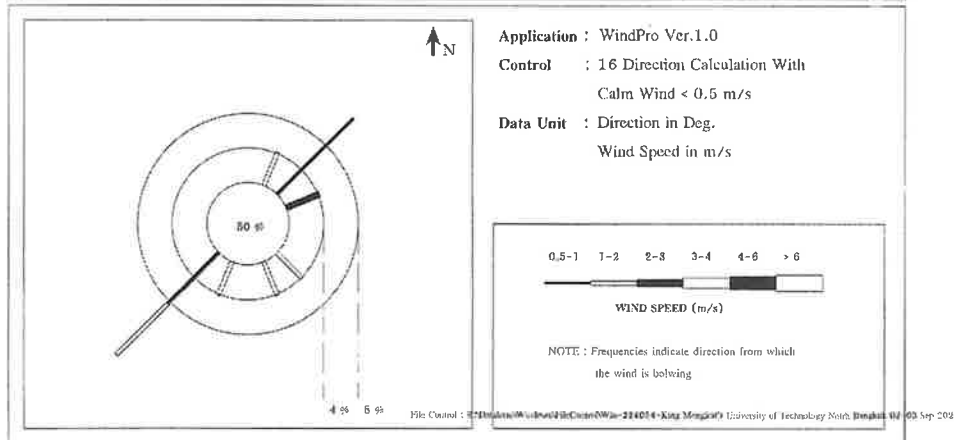


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 02-03 Sep 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5084
 Wind Direction Model : Novalynx WS-25 Serial No : A5084

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
ENE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0833	0.0833	0.0000	0.0000	0.0000	0.0000	0.1667
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.5000						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



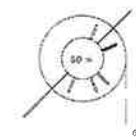
Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 02-03 Sep 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5084
 Wind Direction Model : Novalynx WS-25 Serial No : A5084

Time	02-03 Sep 2024	
	WS(m/s)	WD
14:00 - 15:00	0.3	NNE
15:00 - 16:00	1.8	SSE
16:00 - 17:00	1.4	SW
17:00 - 18:00	0.3	WSW
18:00 - 19:00	0.1	S
19:00 - 20:00	1.2	NNE
20:00 - 21:00	1.4	SE
21:00 - 22:00	0.2	SSE
22:00 - 23:00	0.4	SSW
23:00 - 24:00	0.3	NNE
00:00 - 01:00	0.5	SW
01:00 - 02:00	1.2	SW
02:00 - 03:00	1.3	SSW
03:00 - 04:00	0.6	NE
04:00 - 05:00	0.1	ENE
05:00 - 06:00	0.2	E
06:00 - 07:00	0.4	NE
07:00 - 08:00	0.2	SW
08:00 - 09:00	0.6	NE
09:00 - 10:00	0.3	E
10:00 - 11:00	0.5	NE
11:00 - 12:00	0.1	SSE
12:00 - 13:00	0.6	SW
13:00 - 14:00	2.2	ENE

Wind Rose



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team

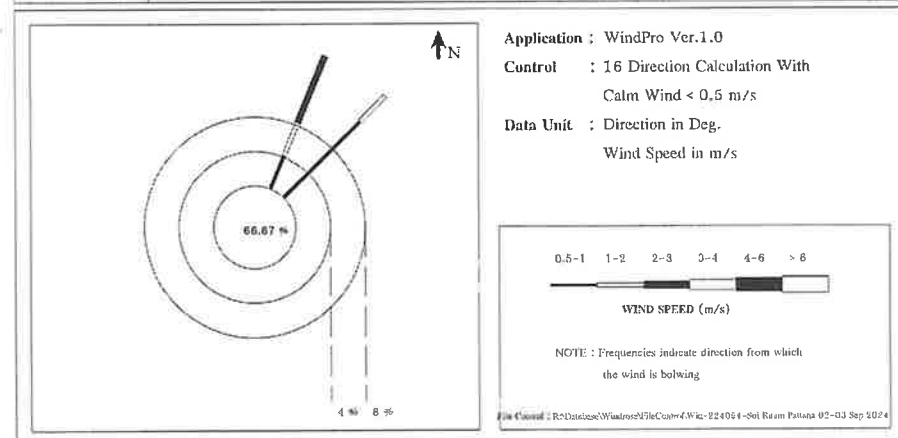


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana Monitor period : 02-03 Sep 2024
 Wind Speed Model : Novalynx NL-32 Serial No : 1208
 Wind Direction Model : Novalynx NL-32 Serial No : 1208

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0417	0.0417	0.0833	0.0000	0.0000	0.0000	0.1667
NE	0.1250	0.0417	0.0000	0.0000	0.0000	0.0000	0.1667
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.6667						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana Monitor period : 02-03 Sep 2024
 Wind Speed Model : Novalynx NL-32 Serial No : 1208
 Wind Direction Model : Novalynx NL-32 Serial No : 1208

Time	02-03 Sep 2024	
	WS(m/s)	WD
15:00 - 16:00	0.9	NNE
16:00 - 17:00	0.6	NE
17:00 - 18:00	0.1	NE
18:00 - 19:00	0.0	SSW
19:00 - 20:00	0.1	SSW
20:00 - 21:00	0.1	SSW
21:00 - 22:00	0.1	SW
22:00 - 23:00	0.0	SSW
23:00 - 24:00	0.0	SW
00:00 - 01:00	0.0	W
01:00 - 02:00	0.4	WNW
02:00 - 03:00	0.2	NNW
03:00 - 04:00	0.0	WSW
04:00 - 05:00	0.0	SW
05:00 - 06:00	0.0	WSW
06:00 - 07:00	0.0	WSW
07:00 - 08:00	0.0	SW
08:00 - 09:00	0.0	SW
09:00 - 10:00	0.6	NE
10:00 - 11:00	0.5	NE
11:00 - 12:00	1.6	NE
12:00 - 13:00	2.1	NNE
13:00 - 14:00	1.9	NNE
14:00 - 15:00	2.0	NNE



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team

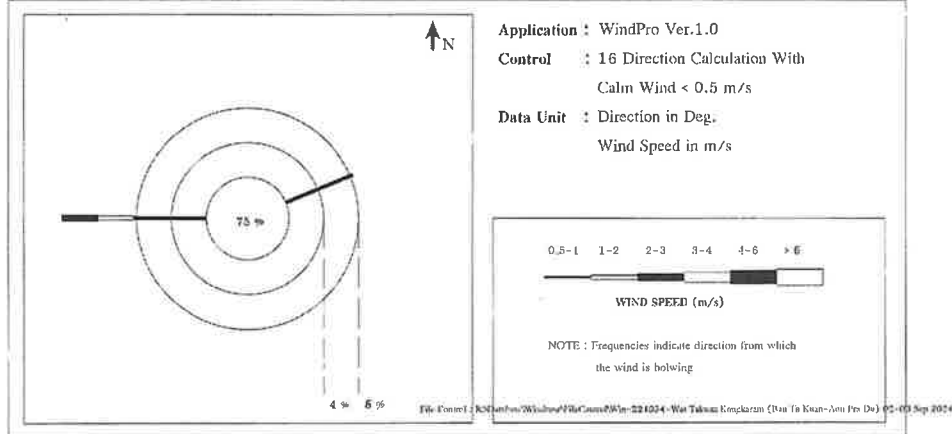


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 02-03 Sep 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5091
 Wind Direction Model : Novalynx WS-25 Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0833	0.0417	0.0417	0.0000	0.0000	0.0000	0.1667
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	0.7500						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 02-03 Sep 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5091
 Wind Direction Model : Novalynx WS-25 Serial No : A5091

Time	02-03 Sep 2024	
	WS(m/s)	WD
11:00 - 12:00	0.0	W
12:00 - 13:00	1.4	W
13:00 - 14:00	0.0	SW
14:00 - 15:00	0.0	SW
15:00 - 16:00	2.2	W
16:00 - 17:00	0.0	W
17:00 - 18:00	0.0	W
18:00 - 19:00	0.5	W
19:00 - 20:00	0.0	W
20:00 - 21:00	0.0	W
21:00 - 22:00	0.5	ENE
22:00 - 23:00	0.6	ENE
23:00 - 24:00	0.0	ENE
00:00 - 01:00	0.0	NNE
01:00 - 02:00	0.0	NNE
02:00 - 03:00	0.0	NNE
03:00 - 04:00	0.0	NNE
04:00 - 05:00	0.0	WNW
05:00 - 06:00	0.0	WNW
06:00 - 07:00	0.0	E
07:00 - 08:00	0.0	E
08:00 - 09:00	0.6	W
09:00 - 10:00	0.0	W
10:00 - 11:00	0.3	W

Wind Rose



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



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SECOT CO., LTD.

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1823/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 02-03/09/2024	ANALYTICAL DATE	: 05-06/09/2024
SAMPLING TIME	: 15:00-15:11	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 04/09/2024	FILE CODE	: 224054 TO-15 September
REPORT DATE	: 09/09/2024		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		King Mongkut's University of Technology North Bangkok (KMUTNB (Rayong))		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 3rd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1823/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 02-03/09/2024	ANALYTICAL DATE	: 05-06/09/2024
SAMPLING TIME	: 15:12-15:43	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 04/09/2024	FILE CODE	: 224054 TO-15 September
REPORT DATE	: 09/09/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Sol Ruam Pattana		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 3rd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1823/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 02-03/09/2024	ANALYTICAL DATE	: 05-06/09/2024
SAMPLING TIME	: 11:50-12:26	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 04/09/2024	FILE CODE	: 224054 TO-15 September
REPORT DATE	: 09/09/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
	ppbv	µg/m ³	Wat Takuan Kongkaram	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Sirwan Chimsa-nga
(Miss Sirwan Chimsa-nga)

Analyst

(Mrs. Araya Tippurak)

Technical Management Team

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Meteorological Monitoring Results : Wind Rose
MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 22-23 Oct 2024

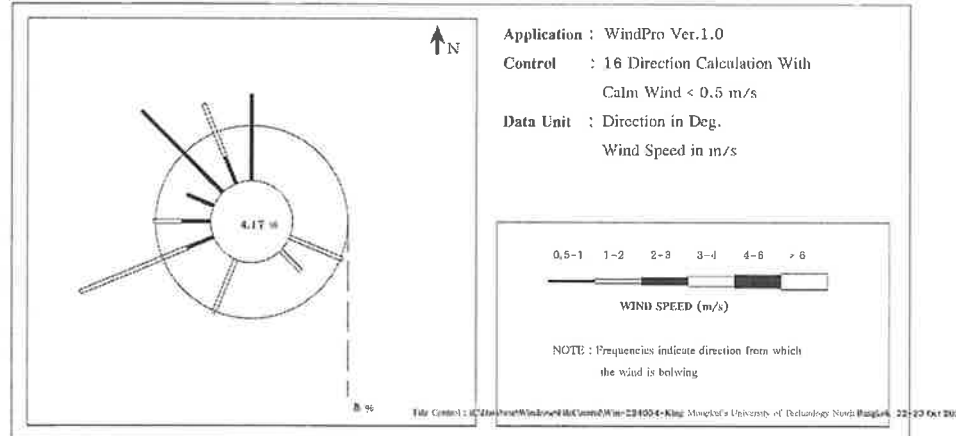
Wind Speed Model : Scarlet WS-21

Serial No : AD:67

Wind Direction Model : Scarlet WS-21

Serial No : AD:67

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5 - 1 m/s	1 - 2 m/s	2 - 3 m/s	3 - 4 m/s	4 - 6 m/s	More than 6	
N	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0417	0.1667	0.0000	0.0000	0.0000	0.0000	0.2083
W	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667
NNW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
CALM	0.0417						



(Miss Katesarin Vorradeewittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 22-23 Oct 2024

Wind Speed Model : Scarlet WS-21

Serial No : AD:67

Wind Direction Model : Scarlet WS-21

Serial No : AD:67

Time	22-23 Oct 2024	
	WS(m/s)	WD
17:00 - 18:00	0.6	WNW
18:00 - 19:00	0.6	NW
19:00 - 20:00	0.7	NW
20:00 - 21:00	0.6	NW
21:00 - 22:00	0.5	NW
22:00 - 23:00	0.4	WSW
23:00 - 24:00	0.9	W
00:00 - 01:00	1.0	W
01:00 - 02:00	1.0	WSW
02:00 - 03:00	0.8	WSW
03:00 - 04:00	1.0	WSW
04:00 - 05:00	1.3	WSW
05:00 - 06:00	1.1	WSW
06:00 - 07:00	1.1	SSW
07:00 - 08:00	1.7	ESE
08:00 - 09:00	1.8	ESE
09:00 - 10:00	1.6	SE
10:00 - 11:00	1.4	SSW
11:00 - 12:00	1.4	NNW
12:00 - 13:00	1.1	NNW
13:00 - 14:00	0.9	NNW
14:00 - 15:00	0.8	N
15:00 - 16:00	0.6	N
16:00 - 17:00	0.6	N

Wind Rose



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

File Control : R:\Database\Windm\Plot\ContestWin-224054-King Mongkut's University of Technology North Bangkok 22-23 Oct 2024

(Signature)

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Signature)

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 22-23 Oct 2024

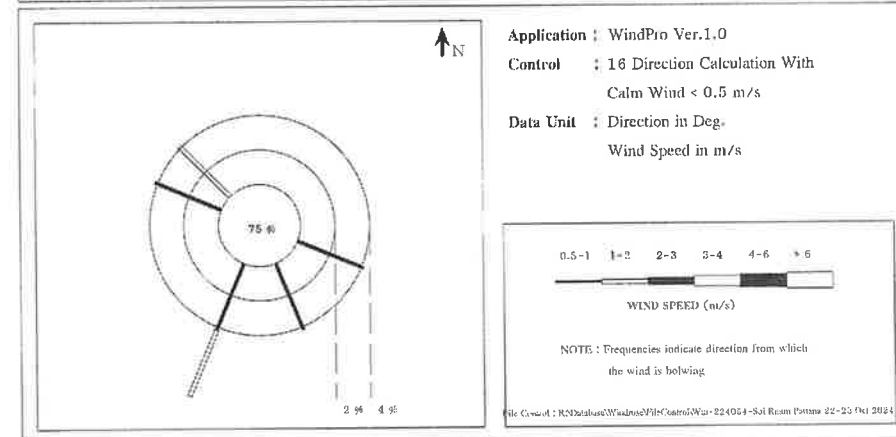
Wind Speed Model : Novalynx WS-25

Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.7500						



(Signature)

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Signature)

(Miss Preeda Somjai)
Technical Management Team

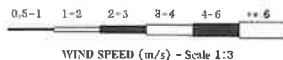
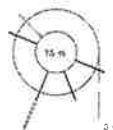


Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Soi Ruam Pattana Monitor period : 22-23 Oct 2024
Wind Speed Model : Novalynx WS-25 Serial No : A5091
Wind Direction Model : Novalynx WS-25 Serial No : A5091

Time	22-23 Oct 2024	
	WS(m/s)	WD
17:00 - 18:00	0.5	SSW
18:00 - 19:00	0.0	ESE
19:00 - 20:00	0.0	E
20:00 - 21:00	0.2	SSE
21:00 - 22:00	0.0	SSE
22:00 - 23:00	0.5	ESE
23:00 - 24:00	0.2	SW
00:00 - 01:00	0.0	W
01:00 - 02:00	0.0	WSW
02:00 - 03:00	0.1	WSW
03:00 - 04:00	0.0	NNW
04:00 - 05:00	0.3	WNW
05:00 - 06:00	0.0	NW
06:00 - 07:00	0.0	NNW
07:00 - 08:00	0.5	WNW
08:00 - 09:00	1.1	NW
09:00 - 10:00	0.0	NNW
10:00 - 11:00	0.0	NNW
11:00 - 12:00	0.0	SE
12:00 - 13:00	0.0	NE
13:00 - 14:00	1.7	SSW
14:00 - 15:00	0.9	SSE
15:00 - 16:00	0.0	W
16:00 - 17:00	0.0	WNW

Wind Rose



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

File Control R5Datahub\Windrose\FebControl\Wia-224054-Soi Ruam Pattana 22-23 Oct 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

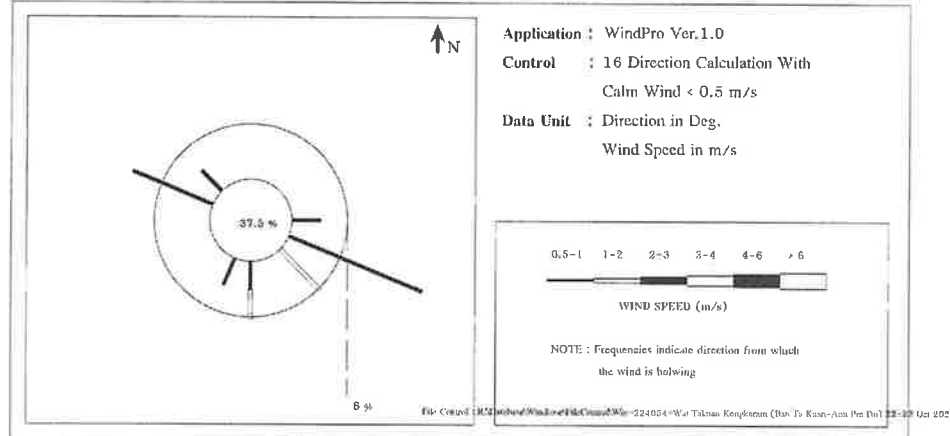
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 22-23 Oct 2024
Wind Speed Model : Scarlet WS-21 Serial No : AD:61
Wind Direction Model : Scarlet WS-21 Serial No : AD:61

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.2083	0.0000	0.0000	0.0000	0.0000	0.0000	0.2083
SE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
NW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.3750						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 22-23 Oct 2024

Wind Speed Model : Scarlet WS-21

Serial No : AD:61

Wind Direction Model : Scarlet WS-21

Serial No : AD:61

Time	22-23 Oct 2024	
	WS(m/s)	WD
16:00 - 17:00	0.5	S
17:00 - 18:00	0.1	ENE
18:00 - 19:00	0.3	E
19:00 - 20:00	0.1	ENE
20:00 - 21:00	0.1	ENE
21:00 - 22:00	0.1	E
22:00 - 23:00	0.3	ESE
23:00 - 24:00	0.3	E
00:00 - 01:00	0.1	ENE
01:00 - 02:00	0.2	ENE
02:00 - 03:00	0.5	ESE
03:00 - 04:00	0.6	ESE
04:00 - 05:00	0.8	ESE
05:00 - 06:00	0.5	E
06:00 - 07:00	0.6	ESE
07:00 - 08:00	1.1	SE
08:00 - 09:00	1.2	SE
09:00 - 10:00	1.2	S
10:00 - 11:00	0.9	SSW
11:00 - 12:00	0.8	WNW
12:00 - 13:00	0.7	WNW
13:00 - 14:00	0.8	WNW
14:00 - 15:00	0.8	NW
15:00 - 16:00	0.6	ESE

Wind Rose



File: Center R:\Database\Windows\File\center\Win-224054-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 22-23 Oct 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist(Miss Preeda Somjai)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2167/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subtranspheric Pressure Sampling
SAMPLING DATE	: 22-27/10/2024	ANALYTICAL DATE	: 25/10/2024
SAMPLING TIME	: 15:55-15:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/10/2024	FILE CODE	: 224054 TO-15 October
REPORT DATE	: 04/11/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		King Mongkut's University of Technology North Bangkok (KMUTNB (Rayong))		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Metals in Compounds in Ambient Air, EPA Method TO-15, 1999

(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2167/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/10/2024	ANALYTICAL DATE	: 25/10/2024
SAMPLING TIME	: 15:50-15:51	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/10/2024	FILE CODE	: 224054 TO-15 October
REPORT DATE	: 04/11/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Soi Ruam Paitana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd, EPA Method TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2167/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/10/2024	ANALYTICAL DATE	: 25/10/2024
SAMPLING TIME	: 15:41-15:41	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/10/2024	FILE CODE	: 224054 TO-15 October
REPORT DATE	: 04/11/2024		

Compound ^a	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
			Wat Takuan Kongkaram		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd, EPA Method TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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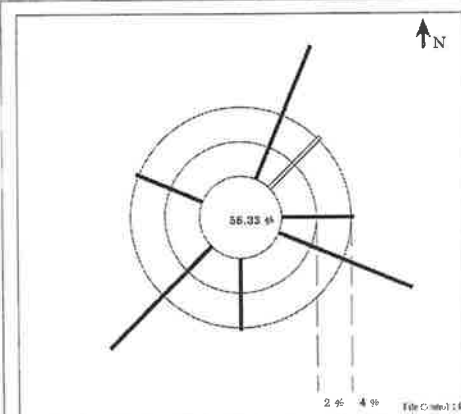


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 26-27 Nov 2024
 Wind Speed Model : NRG Symphonic Serial No : 309013914
 Wind Direction Model : NRG Symphonic Serial No : 309013914

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.5833						



Application : WindPro Ver.1.0
 Control : 16 Direction Calculation With
 Calm Wind < 0.5 m/s
 Data Unit : Direction in Deg.
 Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Content : R:\Database\Windrose\Windrose\224054-King Mongkut's University of Technology North Bangkok 26-27 Nov 2024

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



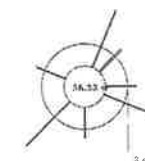
Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 26-27 Nov 2024
 Wind Speed Model : NRG Symphonic Serial No : 309013914
 Wind Direction Model : NRG Symphonic Serial No : 309013914

Time	26-27 Nov 2024	
	WS(m/s)	WD
09:00 - 10:00	0.5	E
10:00 - 11:00	0.5	S
11:00 - 12:00	0.6	ESE
12:00 - 13:00	1.2	NE
13:00 - 14:00	0.3	W
14:00 - 15:00	0.3	W
15:00 - 16:00	0.3	N
16:00 - 17:00	0.3	N
17:00 - 18:00	0.8	WNW
18:00 - 19:00	0.3	WNW
19:00 - 20:00	0.3	WNW
20:00 - 21:00	0.3	NW
21:00 - 22:00	0.3	NW
22:00 - 23:00	0.3	NW
23:00 - 24:00	0.3	WNW
00:00 - 01:00	0.3	W
01:00 - 02:00	0.3	WNW
02:00 - 03:00	0.3	W
03:00 - 04:00	0.8	SW
04:00 - 05:00	0.4	NNE
05:00 - 06:00	0.5	NNE
06:00 - 07:00	0.8	ESE
07:00 - 08:00	0.5	SW
08:00 - 09:00	0.9	NNE

Wind Rose



File Content : R:\Database\Windrose\Windrose\224054-King Mongkut's University of Technology North Bangkok 26-27 Nov 2024

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 26-27 Nov 2024

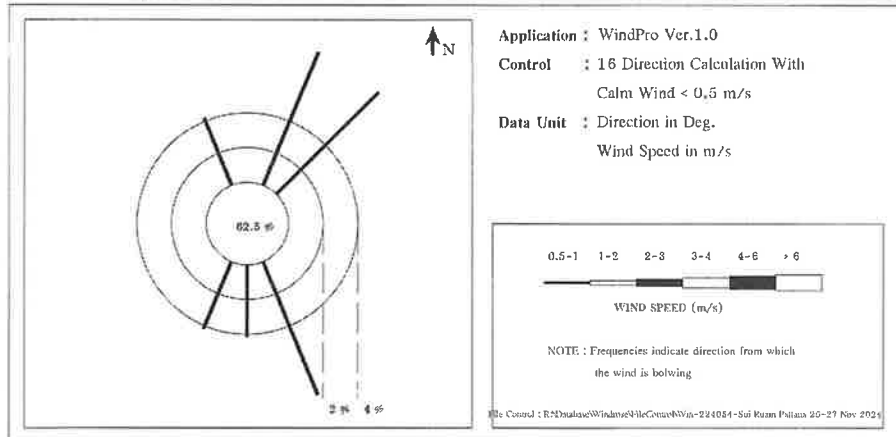
Wind Speed Model : Novalynx WS-25

Serial No : A4904

Wind Direction Model : Novalynx WS-25

Serial No : A4904

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
S	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.6250						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 26-27 Nov 2024

Wind Speed Model : Novalynx WS-25

Serial No : A4904

Wind Direction Model : Novalynx WS-25

Serial No : A4904

Time	26-27 Nov 2024	
	WS(m/s)	WD
12:00 - 13:00	0.5	NNE
13:00 - 14:00	0.5	SSE
14:00 - 15:00	0.6	SSW
15:00 - 16:00	0.6	NE
16:00 - 17:00	0.4	NNW
17:00 - 18:00	0.4	NNW
18:00 - 19:00	0.4	NNW
19:00 - 20:00	0.4	NNW
20:00 - 21:00	0.4	NNW
21:00 - 22:00	0.4	NNW
22:00 - 23:00	0.4	NNW
23:00 - 24:00	0.4	NNW
00:00 - 01:00	0.4	NNW
01:00 - 02:00	0.4	NNW
02:00 - 03:00	0.5	NNE
03:00 - 04:00	0.4	NE
04:00 - 05:00	0.8	NNW
05:00 - 06:00	0.5	NE
06:00 - 07:00	0.4	NNE
07:00 - 08:00	0.5	S
08:00 - 09:00	0.4	E
09:00 - 10:00	0.4	NNE
10:00 - 11:00	0.4	NE
11:00 - 12:00	0.5	SSE

Wind Rose



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

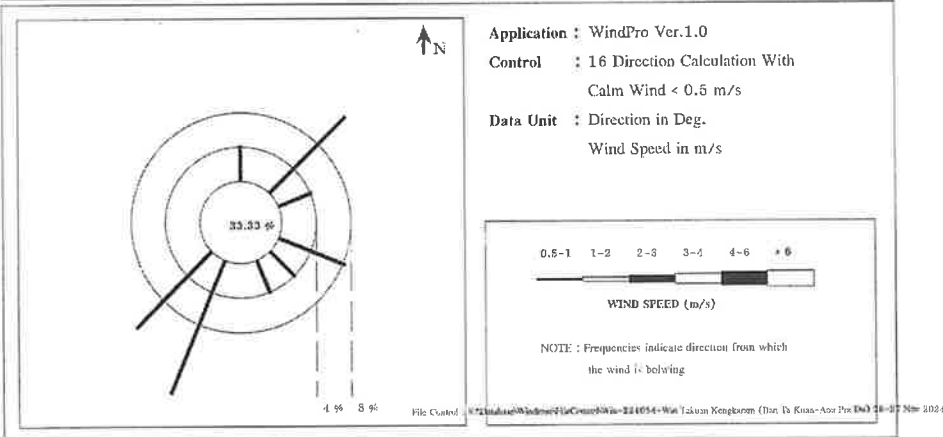


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 26-27 Nov 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5086
 Wind Direction Model : Novalynx WS-25 Serial No : A5086

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5 - 1 m/s	1 - 2 m/s	2 - 3 m/s	3 - 4 m/s	4 - 6 m/s	More than 6	
N	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
ENE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667
SW	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.3333						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



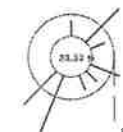
Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 26-27 Nov 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5086
 Wind Direction Model : Novalynx WS-25 Serial No : A5086

Time	26-27 Nov 2024	
	WS(m/s)	WD
11:00 - 12:00	0.6	SSW
12:00 - 13:00	0.5	SSW
13:00 - 14:00	0.5	NE
14:00 - 15:00	0.6	ESE
15:00 - 16:00	0.4	NNE
16:00 - 17:00	0.4	ESE
17:00 - 18:00	0.5	NE
18:00 - 19:00	0.5	SE
19:00 - 20:00	0.6	SW
20:00 - 21:00	0.5	N
21:00 - 22:00	0.4	N
22:00 - 23:00	0.6	SW
23:00 - 24:00	0.5	NE
00:00 - 01:00	0.5	SSW
01:00 - 02:00	0.5	ESE
02:00 - 03:00	0.6	ENE
03:00 - 04:00	0.4	NNE
04:00 - 05:00	0.5	SSE
05:00 - 06:00	0.4	SE
06:00 - 07:00	0.4	SSE
07:00 - 08:00	0.4	SE
08:00 - 09:00	0.4	SW
09:00 - 10:00	0.6	SW
10:00 - 11:00	0.5	SSW

Wind Rose



File Control : R:\Data\Windrose\Windrose\Win-224054-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 26-27 Nov 2024

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2465/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 26-27/11/2024	ANALYTICAL DATE	: 29/11/2024
SAMPLING TIME	: 12:10-11:48	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 28/11/2024	FILE CODE	: 234054 TO-15 November
REPORT DATE	: 04/12/2024		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		King Mongkut's University of Technology North Bangkok (KMUTNB (Rayong))		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	0.15	0.33	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, EPA Methods TO-15, 1999

Siriwan Chimsa-ngu
(Miss Siriwan Chimsa-ngu)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18,B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2465/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 26-27/11/2024	ANALYTICAL DATE	: 29/11/2024
SAMPLING TIME	: 12:45-12:08	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 28/11/2024	FILE CODE	: 234054 TO-15 November
REPORT DATE	: 04/12/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m³)
	Non Detection		Soi Ruam Pattana		
	ppbv	µg/m³	ppbv	µg/m³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, EPA Methods TO-15, 1999

Siriwan Chimsa-ngu
(Miss Siriwan Chimsa-ngu)

Analyst

Araya Tipparuk
(Mrs. Araya Tipparuk)

Technical Management Team

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

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3. * Notification of the Pollution Control Department, dated December 18,B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2465/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 26-27/11/2024	ANALYTICAL DATE	: 29/11/2024
SAMPLING TIME	: 11:49-11:53	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 28/11/2024	FILE CODE	: 224054 TO-15 November
REPORT DATE	: 04/12/2024		

Compound	SAMPLING LOCATION				STANDARD ^a ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Tukuan Kongkuram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	0.35	0.77	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Sirivan Chimsanga
(Miss Sirivan Chimsanga)

Analyst

(Mrs. Araya Tipparak)

Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18, B.E.2551 (2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).

R:\Database\Windrose\File\Curve\Win-224054-King Mongkut's University of Technology North Bangkok 17-18 Dec 2024



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : King Mongkut's University of Technology North Bangkok Monitor period : 17-18 Dec 2024

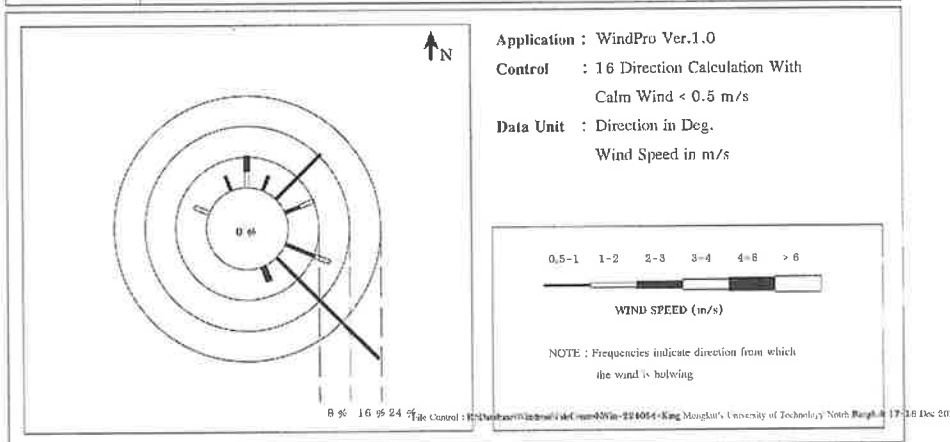
Wind Speed Model : Novalynx WS-25

Serial No : A4907

Wind Direction Model : Novalynx WS-25

Serial No : A4907

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
NNE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667
ENE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
SE	0.3750	0.0000	0.0000	0.0000	0.0000	0.0000	0.3750
SSE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

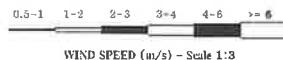
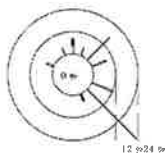
Location : King Mongkut's University of Technology North Bangkok Monitor period : 17-18 Dec 2024

Wind Speed Model : Novalynx WS-25 Serial No : A4907

Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	17-18 Dec 2024	
	WS(m/s)	WD
15:00 - 16:00	1.4	ESE
16:00 - 17:00	0.5	SE
17:00 - 18:00	0.6	SE
18:00 - 19:00	0.5	SE
19:00 - 20:00	0.7	SE
20:00 - 21:00	0.7	SE
21:00 - 22:00	0.7	SE
22:00 - 23:00	0.7	ESE
23:00 - 24:00	0.7	SE
00:00 - 01:00	0.5	SE
01:00 - 02:00	0.7	SE
02:00 - 03:00	0.6	ESE
03:00 - 04:00	0.8	NE
04:00 - 05:00	2.2	SSE
05:00 - 06:00	1.6	N
06:00 - 07:00	0.7	NNW
07:00 - 08:00	0.9	ENE
08:00 - 09:00	0.6	NNE
09:00 - 10:00	0.7	NE
10:00 - 11:00	0.5	NE
11:00 - 12:00	2.3	N
12:00 - 13:00	1.8	ENE
13:00 - 14:00	0.7	NE
14:00 - 15:00	1.4	WNW

Wind Rose



File Content: K:\Database\Windrose\File\ContestWin-224034-King Mongkut's University of Technology North Bangkok 17-18 Dec 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BST Site 1

Location : Soi Ruam Pattana

Monitor period : 17-18 Dec 2024

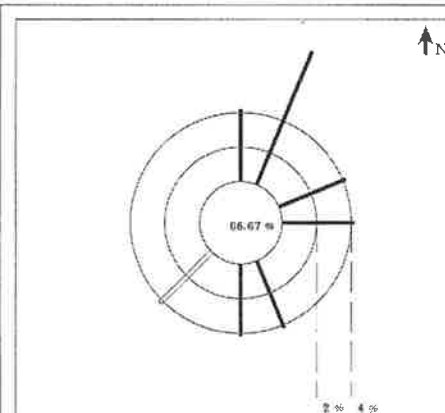
Wind Speed Model : Novalynx WS-25

Serial No : A5086

Wind Direction Model : Novalynx WS-25

Serial No : A5086

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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
E	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.6667						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Content: K:\Database\Windrose\File\ContestWin-224034-Soi Ruam Pattana 17-18 Dec 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



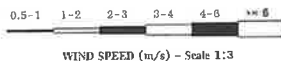
Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Soi Ruam Pattana Monitor period : 17-18 Dec 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5086
 Wind Direction Model : Novalynx WS-25 Serial No : A5086

Time	17-18 Dec 2024	
	WS(m/s)	WD
15:00 - 16:00	0.2	SSE
16:00 - 17:00	0.4	SW
17:00 - 18:00	0.1	ENE
18:00 - 19:00	0.2	SE
19:00 - 20:00	0.0	NE
20:00 - 21:00	0.0	NNE
21:00 - 22:00	0.0	WSW
22:00 - 23:00	0.4	WSW
23:00 - 24:00	0.7	E
00:00 - 01:00	1.3	SW
01:00 - 02:00	0.7	S
02:00 - 03:00	0.5	NNE
03:00 - 04:00	0.7	SSE
04:00 - 05:00	0.2	NE
05:00 - 06:00	0.6	N
06:00 - 07:00	0.0	SSW
07:00 - 08:00	0.0	N
08:00 - 09:00	0.1	NE
09:00 - 10:00	0.0	NE
10:00 - 11:00	0.3	NNE
11:00 - 12:00	0.2	NE
12:00 - 13:00	0.0	NE
13:00 - 14:00	0.5	NNE
14:00 - 15:00	0.8	ENE

Wind Rose



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

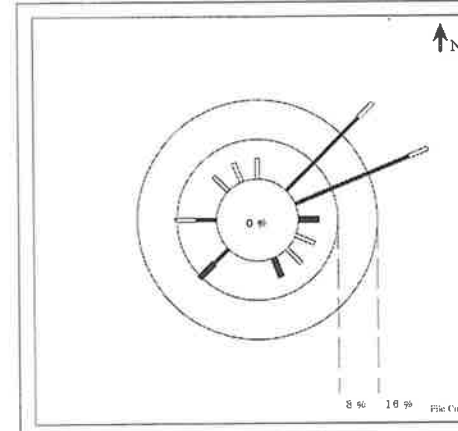


Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 17-18 Dec 2024
 Wind Speed Model : Campbell CR510 Serial No : 10851
 Wind Direction Model : Campbell CR510 Serial No : 10851

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.2083	0.0417	0.0000	0.0000	0.0000	0.0000	0.2500
ENE	0.2500	0.0417	0.0000	0.0000	0.0000	0.0000	0.2917
E	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0417	0.0000	0.0417	0.0000	0.0000	0.0000	0.0833
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0000						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.
Wind Speed in m/s



NOTE : Frequencies indicate direction from which
the wind is blowing

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BST Site 1

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 17-18 Dec 2024

Wind Speed Model : Campbell CR510

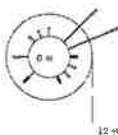
Serial No : 10851

Wind Direction Model : Campbell CR510

Serial No : 10851

Time	17-18 Dec 2024	
	WS(m/s)	WD
14:00 - 15:00	0.9	ENE
15:00 - 16:00	1.7	NNW
16:00 - 17:00	2.2	E
17:00 - 18:00	0.5	ENE
18:00 - 19:00	0.7	ENE
19:00 - 20:00	0.5	NE
20:00 - 21:00	1.1	W
21:00 - 22:00	0.5	W
22:00 - 23:00	1.5	ESE
23:00 - 24:00	2.4	SW
00:00 - 01:00	0.6	SW
01:00 - 02:00	1.9	N
02:00 - 03:00	1.5	SE
03:00 - 04:00	0.8	NE
04:00 - 05:00	0.6	ENE
05:00 - 06:00	1.8	NW
06:00 - 07:00	1.1	NE
07:00 - 08:00	0.6	NE
08:00 - 09:00	0.5	ENE
09:00 - 10:00	0.7	ENE
10:00 - 11:00	2.4	SSE
11:00 - 12:00	1.6	ENE
12:00 - 13:00	0.5	NE
13:00 - 14:00	0.6	NE

Wind Rose



0.5-1 1-2 2-3 3-4 4-6 6-12
WIND SPEED (m/s) - Scale 1:3

File Control : K21201001/Windrose/13/01/2024/17-18 Dec 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2650/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 17-18/12/2024	ANALYTICAL DATE	: 20/12/2024
SAMPLING TIME	: 14:45-16:56	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 19/12/2024	FILE CODE	: 224054 TO-15 December
REPORT DATE	: 24/12/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		King Mongkut's University of Technology North Bangkok (KMUTNB (Rayong))		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	0.23	0.51	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Method: TO-15, 1999

(Miss Sirivan Chumsa-ngai)

Analyst

(Mrs. Araya Tipparak)

Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18 B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 2650/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 17-18-12/2024	ANALYTICAL DATE	: 20-12/2024
SAMPLING TIME	: 15:30-14:53	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 19/12/2024	FILE CODE	: 224054 TO-15 December
REPORT DATE	: 24/12/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Soi Ruam Patana		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Sitiwan Chimsa-nga
(Miss Sitiwan Chimsa-nga)

Analyst

(Mrs. Araya Tipporuk)

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SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 17-18/12/2024	ANALYTICAL DATE	: 20-12/2024
SAMPLING TIME	: 15:43-16:39	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 19/12/2024	FILE CODE	: 224054 TO-15 December
REPORT DATE	: 24/12/2024		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Wat Takuan Konglaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	0.12	0.27	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Sitiwan Chimsa-nga
(Miss Sitiwan Chimsa-nga)

Analyst

(Mrs. Araya Tipporuk)

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ใบรับรองผลการตรวจวัดคุณภาพอากาศจากปล่องระบายอากาศ



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/1,3 BD (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 01/10/2024
RECEIVED DATE	: 03/10/2024	ANALYTICAL DATE	: 04/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenanpetch
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.28	m/s
Diameter	: 1.30	m	Flow Rate*	: 72.43	Ncu.m ³ /min
Temperature	: 975.0	°C	Moisture	: 10.8	%
Excess Oxygen	: 12.0	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.0%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poonwasanpetch

(Miss Narisa Poonwasanpetch)

Technical Management Team

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

4. ^{1/} Emission standard @ 7%O₂ according to EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/1,3 BD (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 02/10/2024
RECEIVED DATE	: 03/10/2024	ANALYTICAL DATE	: 04/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenanpetch
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.44	m/s
Diameter	: 1.30	m	Flow Rate*	: 74.67	Ncu.m ³ /min
Temperature	: 973.8	°C	Moisture	: 11.4	%
Excess Oxygen	: 12.2	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.2%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poonwasanpetch

(Miss Narisa Poonwasanpetch)

Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	Bangkok Synthetics Co., Ltd.	REF. NO.	224054 Cert-Stack/1,3 BD (Oct)
SAMPLING BY	SECOT Co., Ltd.	SAMPLING DATE	03/10/2024
RECEIVED DATE	04/10/2024	ANALYTICAL DATE	04/10/2024
REPORT DATE	16/10/2024	SAMPLE CONDITION	Normal
STACK LOCATION	BD Destruction Unit (Outlet)	OPERATOR	Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	Combustion	FUEL TYPE	C4-LPG

STACK DESCRIPTION

Height	30.0	m	Gas Velocity	4.32	m/s
Diameter	1.30	m	Flow Rate*	72.53	Ncu.m ³ /min
Temperature	974.5	°C	Moisture	11.1	%
Excess Oxygen	13.1	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		13.1%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	Bangkok Synthetics Co., Ltd.	REF. NO.	224054 Cert-Stack/1,3 BD (Oct)
SAMPLING BY	SECOT Co., Ltd.	SAMPLING DATE	04/10/2024
RECEIVED DATE	08/10/2024	ANALYTICAL DATE	09-10/10/2024
REPORT DATE	16/10/2024	SAMPLE CONDITION	Normal
STACK LOCATION	BD Destruction Unit (Outlet)	OPERATOR	Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	Combustion	FUEL TYPE	C4-LPG

STACK DESCRIPTION

Height	30.0	m	Gas Velocity	3.93	m/s
Diameter	1.30	m	Flow Rate*	80.50	Ncu.m ³ /min
Temperature	758.8	°C	Moisture	10.3	%
Excess Oxygen	12.1	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.1%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/1,3 BD (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 05/10/2024
RECEIVED DATE	: 08/10/2024	ANALYTICAL DATE	: 09-10/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 9.64	m/s
Diameter	: 1.30	m	Flow Rate*	: 166.85	Ncu,m/min
Temperature	: 959.2	°C	Moisture	: 9.6	%
Excess Oxygen	: 12.4	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.4%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/1,3 BD (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 06/10/2024
RECEIVED DATE	: 08/10/2024	ANALYTICAL DATE	: 09-10/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.32	m/s
Diameter	: 1.30	m	Flow Rate*	: 74.61	Ncu,m/min
Temperature	: 948.7	°C	Moisture	: 10.8	%
Excess Oxygen	: 12.5	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.5%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/I,3 BD (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 07/10/2024
RECEIVED DATE	: 09/10/2024	ANALYTICAL DATE	: 09-10/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.96	m/s
Diameter	: 1.30	m	Flow Rate*	: 84.51	Ncu.m/min
Temperature	: 953.0	°C	Moisture	: 11.3	%
Excess Oxygen	: 12.0	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.0%O ₂	7%O ₂		
1,3-Butadiene	ppm	ND (<0.01)	ND (<0.02)	0.24 ^{1/}	US.EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

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Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/NO _x (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 01/10/2024
RECEIVED DATE	: 03/10/2024	ANALYTICAL DATE	: 10/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.28	m/s
Diameter	: 1.30	m	Flow Rate*	: 72.43	Ncu.m/min
Temperature	: 975.0	°C	Moisture	: 10.8	%
Excess Oxygen	: 12.0	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.0%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	33.64	52.66	200 ^{1/} /80 ^{2/}	US.EPA Method 7

Pornnapa Budthum

(Miss Pornnapa Budthum)

Analyst

REG.NO.7-239-จ-0018

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.7-239-ท-0010

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

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

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

4. ^{1/} Notification of the Ministry of Industry, B.E.2549 (2006) and the Ministry of Natural Resources and Environment, B.E.2549 (2006) @ 7%O₂.

5. ^{2/} Emission standard @ 7%O₂ according to EIA report.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. REF. NO. : 224054 Cert-Stack/NO_x (Oct)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 02/10/2024
RECEIVED DATE : 03/10/2024 ANALYTICAL DATE : 10/10/2024
REPORT DATE : 16/10/2024 SAMPLE CONDITION : Normal
STACK LOCATION : BD Destruction Unit (Outlet) OPERATOR : Mr. Pisanu Seenampeng
SOURCE DESCRIPTION : Combustion FUEL TYPE : C4-LPG

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 4.44 m/s
Diameter : 1.30 m Flow Rate* : 74.67 Ncu.m/min
Temperature : 973.8 °C Moisture : 11.4 %
Excess Oxygen : 12.2 %

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.2%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	28.65	45.83	200 ¹ /80 ²	US.EPA Method 7

Pornnapa Budthum

(Miss Pornnapa Budthum)

Analyst

REG.NO.7-239-9-0018

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.7-239-9-0010

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5. ² Emission standard @ 7%O₂ according to EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. REF. NO. : 224054 Cert-Stack/NO_x (Oct)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 03/10/2024
RECEIVED DATE : 04/10/2024 ANALYTICAL DATE : 10/10/2024
REPORT DATE : 16/10/2024 SAMPLE CONDITION : Normal
STACK LOCATION : BD Destruction Unit (Outlet) OPERATOR : Mr. Pisanu Seenampeng
SOURCE DESCRIPTION : Combustion FUEL TYPE : C4-LPG

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 4.32 m/s
Diameter : 1.30 m Flow Rate* : 72.53 Ncu.m/min
Temperature : 974.5 °C Moisture : 11.1 %
Excess Oxygen : 13.1 %

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		13.1%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	14.30	25.55	200 ¹ /80 ²	US.EPA Method 7

Pornnapa Budthum

(Miss Pornnapa Budthum)

Analyst

REG.NO.7-239-9-0018

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.7-239-9-0010

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5. ² Emission standard @ 7%O₂ according to EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. REF. NO. : 224054 Cert-Stack/NO_x (Oct)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 04/10/2024
RECEIVED DATE : 08/10/2024 ANALYTICAL DATE : 10/10/2024
REPORT DATE : 16/10/2024 SAMPLE CONDITION : Normal
STACK LOCATION : BD Destruction Unit (Outlet) OPERATOR : Mr. Pisanu Seenampeng
SOURCE DESCRIPTION : Combustion FUEL TYPE : C4-LPG

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 3.93 m/s
Diameter : 1.30 m Flow Rate* : 80.50 Nm³/min
Temperature : 758.8 °C Moisture : 10.3 %
Excess Oxygen : 12.1 %

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.1%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	30.93	48.86	200 ^{1/} /80 ^{2/}	US.EPA Method 7

Pornnapa Buddhum

(Miss Pornnapa Buddhum)

Analyst

REG.NO.จ-239-ท-0018

Maia Pooasanpetch

(Miss Narisa Pooasanpetch)

Technical Management Team

REG.NO.จ-239-ท-0010

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5. ^{2/} Emission standard @ 7%O₂ according to EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. REF. NO. : 224054 Cert-Stack/NO_x (Oct)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 05/10/2024
RECEIVED DATE : 08/10/2024 ANALYTICAL DATE : 10/10/2024
REPORT DATE : 16/10/2024 SAMPLE CONDITION : Normal
STACK LOCATION : BD Destruction Unit (Outlet) OPERATOR : Mr. Pisanu Seenampeng
SOURCE DESCRIPTION : Combustion FUEL TYPE : C4-LPG

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 9.64 m/s
Diameter : 1.30 m Flow Rate* : 166.85 Nm³/min
Temperature : 959.2 °C Moisture : 9.6 %
Excess Oxygen : 12.4 %

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.4%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	26.76	43.61	200 ^{1/} /80 ^{2/}	US.EPA Method 7

Pornnapa Buddhum

(Miss Pornnapa Buddhum)

Analyst

REG.NO.จ-239-ท-0018

Maia Pooasanpetch

(Miss Narisa Pooasanpetch)

Technical Management Team

REG.NO.จ-239-ท-0010

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5. ^{2/} Emission standard @ 7%O₂ according to EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/NO _x (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 06/10/2024
RECEIVED DATE	: 08/10/2024	ANALYTICAL DATE	: 10/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.32	m/s
Diameter	: 1.30	m	Flow Rate*	: 74.61	Ncu.m/min
Temperature	: 948.7	°C	Moisture	: 10.8	%
Excess Oxygen	: 12.5	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.5%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	27.45	45.15	200 ^{1/} /80 ^{2/}	US EPA Method 7

Pornnapa Budthum

(Miss Pornnapa Budthum)

Analyst

REG.NO. 2-239-0-0018

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO. 2-239-0-0010

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5. ^{2/} Emission standard @ 7%O₂ according to EIA report.



บริษัท ซีคอต จำกัด
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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REF. NO.	: 224054 Cert-Stack/NO _x (Oct)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 07/10/2024
RECEIVED DATE	: 09/10/2024	ANALYTICAL DATE	: 10/10/2024
REPORT DATE	: 16/10/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: BD Destruction Unit (Outlet)	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: C4-LPG

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 4.96	m/s
Diameter	: 1.30	m	Flow Rate*	: 84.51	Ncu.m/min
Temperature	: 953.0	°C	Moisture	: 11.3	%
Excess Oxygen	: 12.0	%			

PARAMETER	UNITS	RESULTS*		STANDARD	REFERENCE METHOD
		12.0%O ₂	7%O ₂		
Oxide of Nitrogen	ppm	30.06	46.89	200 ^{1/} /80 ^{2/}	US EPA Method 7

Pornnapa Budthum

(Miss Pornnapa Budthum)

Analyst

REG.NO. 2-239-0-0018

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO. 2-239-0-0010

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ใบรับรองผลการตรวจวัดระดับเสียงทั่วไป




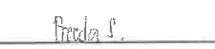
Noise Monitoring Result : Community Noise MTR-BST Site 1

Location : Boundary-N			Monitor Period : 09-16 Dec 2024				
SLM Model : Cirrus CR162B			Serial No : G302743				
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515			Serial No : 94296				
Calibration Ref dB(A) : 94.0			Certified Date : 14 Feb 2024				
SLM Reading / Adjust dB(A) : 93.7/0.0			Expire Date : 13 Feb 2025				
Cal Sheet No. : CR-515-2024-367							
Time	Equivalent Sound Pressure Level (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	67.7	67.6	67.7	66.9	67.1	67.4	66.8
14:00 - 15:00	68.1	67.6	67.7	66.9	67.2	68.2	66.6
15:00 - 16:00	67.8	67.9	67.4	67.0	67.1	66.9	66.6
16:00 - 17:00	68.1	67.7	67.1	67.0	67.2	67.0	66.8
17:00 - 18:00	66.5	67.9	68.1	67.0	66.9	67.2	66.8
18:00 - 19:00	68.3	68.2	68.8	67.0	66.9	67.0	67.0
19:00 - 20:00	66.5	68.2	67.1	66.9	66.9	67.2	67.1
20:00 - 21:00	68.2	68.4	67.0	66.8	66.9	67.1	67.2
21:00 - 22:00	66.2	68.3	67.0	66.8	66.9	67.1	67.3
22:00 - 23:00	66.0	68.4	66.9	66.9	67.0	67.1	67.5
23:00 - 00:00	68.0	68.4	66.9	66.8	67.2	67.1	67.5
00:00 - 01:00	66.2	68.5	66.9	67.0	67.3	67.2	67.6
01:00 - 02:00	68.3	68.4	66.9	67.0	67.3	67.2	67.4
02:00 - 03:00	68.3	68.5	66.9	67.1	67.3	67.2	67.4
03:00 - 04:00	68.3	68.3	67.0	67.1	67.4	67.3	67.7
04:00 - 05:00	68.4	68.5	67.0	67.1	67.5	67.2	67.6
05:00 - 06:00	68.2	68.5	67.1	67.1	67.5	67.3	67.4
06:00 - 07:00	68.3	68.7	67.0	67.0	67.3	67.4	67.3
07:00 - 08:00	68.2	68.4	66.9	67.0	67.2	67.4	67.2
08:00 - 09:00	68.0	68.3	68.9	67.0	67.4	67.3	68.4
09:00 - 10:00	68.1	68.1	68.9	67.5	67.5	67.2	68.8
10:00 - 11:00	67.7	68.7	68.0	67.2	67.4	67.1	66.9
11:00 - 12:00	67.9	68.1	67.0	67.4	67.5	67.0	67.1
12:00 - 13:00	67.7	67.9	66.8	67.1	67.0	66.7	66.8
Leq(24)*	68.1	68.2	67.1	67.0	67.2	67.2	67.4
Ldn	74.8	74.8	73.4	73.4	73.7	73.6	73.9
Lmax **	78.7	83.2	88.7	79.1	83.7	81.5	92.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 13:00-13:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

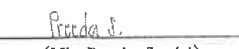


Noise Monitoring Result : Background Noise MTR-BST Site 1

Location : Boundary-N		Monitor Period : 09-16 Dec 2024					
SLM Model : Cirrus CR162B		Serial No : G302743					
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515		Serial No : 94296					
Calibration Ref dB(A) : 94.0		Certified Date : 14 Feb 2024					
SLM Reading / Adjust dB(A) : 93.7/0.0		Expire Date : 13 Feb 2025					
Cal Sheet No. : CR-515-2024-367							
Time	L90 (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	67.2	67.0	67.2	66.5	66.7	66.7	66.4
14:00 - 15:00	67.6	67.1	67.0	66.3	66.6	66.9	66.2
15:00 - 16:00	67.3	67.4	66.1	66.6	66.6	66.5	66.2
16:00 - 17:00	67.6	67.4	66.4	66.6	66.6	66.5	66.4
17:00 - 18:00	68.0	67.5	66.3	66.7	66.6	66.8	66.5
18:00 - 19:00	68.0	67.9	66.4	66.6	66.6	66.7	66.7
19:00 - 20:00	68.1	67.8	66.7	66.6	66.6	66.8	66.8
20:00 - 21:00	67.8	68.1	66.7	66.5	66.6	66.8	66.9
21:00 - 22:00	67.8	68.0	66.7	66.5	66.6	66.7	66.9
22:00 - 23:00	67.8	68.1	66.6	66.6	66.7	66.8	67.1
23:00 - 00:00	67.7	68.1	66.6	66.5	66.8	66.8	67.2
00:00 - 01:00	67.9	68.2	66.6	66.6	67.0	66.8	67.2
01:00 - 02:00	68.0	68.0	66.6	66.7	66.9	66.9	67.0
02:00 - 03:00	68.0	68.2	66.6	66.8	67.0	66.9	67.0
03:00 - 04:00	68.0	67.9	66.7	66.8	67.0	67.0	67.3
04:00 - 05:00	67.9	68.1	66.7	66.8	67.1	66.9	67.1
05:00 - 06:00	67.9	68.2	66.7	66.8	67.2	67.0	67.0
06:00 - 07:00	68.0	68.4	66.7	66.7	66.9	67.1	66.9
07:00 - 08:00	67.9	68.0	66.6	66.7	66.8	67.1	66.8
08:00 - 09:00	67.6	67.8	66.5	66.6	66.8	66.9	66.6
09:00 - 10:00	67.5	67.7	66.5	66.6	66.7	66.9	66.5
10:00 - 11:00	67.2	67.7	66.4	66.5	66.7	66.7	66.4
11:00 - 12:00	67.4	67.7	66.4	66.6	66.6	66.6	66.5
12:00 - 13:00	67.2	67.4	66.4	66.6	66.7	66.3	66.3
L90(avg)*	67.7	67.8	66.6	66.6	66.8	66.8	66.8

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


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

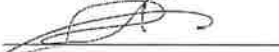


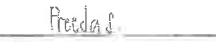
Noise Monitoring Result : Community Noise MTR-BST Site 1

Location : Boundary-S		Monitor Period : 09-16 Dec 2024					
SLM Model : Cirrus CR162B		Serial No : G300709					
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515		Serial No : 94296					
Calibration Ref dB(A) : 94.0		Certified Date : 14 Feb 2024					
SLM Reading / Adjust dB(A) : 93.7/0.0		Expire Date : 13 Feb 2025					
Cal Sheet No. : CR-515-2024-367							
Time	Equivalent Sound Pressure Level (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-16 Dec 2024	15-16 Dec 2024
13:00 - 14:00	61.1	64.8	64.6	62.6	64.5	64.6	64.0
14:00 - 15:00	62.0	64.6	63.8	63.2	62.5	64.3	63.9
15:00 - 16:00	61.8	63.4	65.2	64.6	63.0	63.6	64.0
16:00 - 17:00	61.5	64.3	64.6	62.6	62.5	63.3	63.9
17:00 - 18:00	62.6	63.8	63.0	63.2	62.3	63.7	64.0
18:00 - 19:00	62.4	62.7	62.0	61.4	61.7	63.6	63.9
19:00 - 20:00	64.2	63.1	61.4	61.8	61.0	63.7	63.6
20:00 - 21:00	60.9	64.3	62.3	61.7	62.5	63.8	63.7
21:00 - 22:00	62.9	64.1	61.6	61.4	61.8	64.2	64.1
22:00 - 23:00	64.4	63.4	64.1	63.8	63.6	63.9	63.7
23:00 - 00:00	64.3	62.8	63.1	63.1	63.6	64.0	63.8
00:00 - 01:00	65.0	63.8	62.6	62.8	63.5	63.5	64.0
01:00 - 02:00	63.7	63.6	63.4	63.3	63.9	63.9	63.4
02:00 - 03:00	63.4	63.5	63.4	63.5	64.0	63.5	63.9
03:00 - 04:00	64.4	63.3	63.7	63.2	63.8	63.7	63.9
04:00 - 05:00	64.3	63.6	63.7	63.1	63.7	63.7	64.1
05:00 - 06:00	64.5	63.7	63.6	63.0	63.6	63.6	63.9
06:00 - 07:00	65.0	64.3	64.1	64.1	63.9	64.3	63.8
07:00 - 08:00	64.8	64.8	64.0	64.2	63.7	64.8	64.3
08:00 - 09:00	65.2	65.2	64.0	64.2	63.6	65.2	64.4
09:00 - 10:00	66.6	66.6	64.0	64.4	63.8	65.3	63.8
10:00 - 11:00	64.0	64.0	62.5	62.9	64.1	65.0	62.9
11:00 - 12:00	64.0	64.7	60.6	62.9	65.2	64.4	63.0
12:00 - 13:00	63.5	63.8	61.2	61.1	63.6	63.2	62.5
Leq(24)*	63.8	64.1	63.3	63.1	63.4	64.1	63.8
Ldn	70.7	70.1	69.9	69.8	70.1	70.3	70.2
Lmax **	85.5	85.9	88.6	87.2	87.9	85.1	84.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 13:00-13:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist



(Miss Preeda Somjai)
Technical Management Team

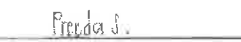


Noise Monitoring Result : Background Noise MTR-BST Site 1

Location : Boundary-S		Monitor Period : 09-16 Dec 2024					
SLM Model : Cirrus CR162B		Serial No : G300709					
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515		Serial No : 94296					
Calibration Ref dB(A) : 94.0		Certified Date : 14 Feb 2024					
SLM Reading / Adjust dB(A) : 93.7/0.0		Expire Date : 13 Feb 2025					
Cal Sheet No. : CR-515-2024-367							
Time	L90 (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	57.9	60.0	62.3	59.5	59.8	62.1	62.3
14:00 - 15:00	58.4	60.9	62.1	59.1	59.8	62.3	62.4
15:00 - 16:00	58.6	60.5	59.0	60.3	59.7	62.3	62.4
16:00 - 17:00	58.7	60.1	58.3	60.2	59.5	62.2	62.2
17:00 - 18:00	59.6	61.0	59.1	60.1	59.6	62.3	62.5
18:00 - 19:00	59.4	59.6	59.0	59.6	59.4	62.0	62.5
19:00 - 20:00	60.0	60.2	59.1	59.7	58.8	62.3	62.4
20:00 - 21:00	57.7	60.6	59.3	59.2	60.1	62.2	62.4
21:00 - 22:00	59.4	61.4	59.6	58.9	59.8	62.6	62.6
22:00 - 23:00	62.5	61.3	62.5	62.3	62.4	62.6	62.4
23:00 - 00:00	62.3	61.1	61.5	61.9	62.3	62.6	62.4
00:00 - 01:00	62.2	61.6	60.7	61.6	62.3	62.2	62.6
01:00 - 02:00	61.7	61.6	61.8	61.6	62.6	62.6	62.0
02:00 - 03:00	61.7	61.4	61.6	62.1	62.0	62.1	62.5
03:00 - 04:00	62.0	61.6	62.0	62.0	62.3	62.0	62.6
04:00 - 05:00	62.0	61.5	62.0	61.7	62.3	62.0	62.7
05:00 - 06:00	62.1	62.1	61.8	62.5	62.3	61.8	62.6
06:00 - 07:00	62.5	62.1	62.3	62.7	62.6	62.1	62.3
07:00 - 08:00	61.8	61.8	62.1	62.3	62.4	61.8	62.1
08:00 - 09:00	62.7	62.7	62.2	62.1	62.2	62.7	62.4
09:00 - 10:00	62.0	62.0	60.3	60.0	62.4	62.7	60.3
10:00 - 11:00	60.7	61.7	59.4	60.4	62.2	63.5	60.3
11:00 - 12:00	60.8	62.8	58.7	59.7	62.6	62.9	60.3
12:00 - 13:00	60.6	61.5	58.7	59.0	62.0	61.8	59.8
L90(avg)*	61.0	61.4	60.9	61.0	61.5	62.3	62.1

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


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



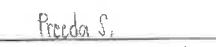
Noise Monitoring Result : Community Noise MTR-BST Site 1

Location : Boundary-E			Monitor Period : 09-16 Dec 2024				
SLM Model : Cirrus CR162B			Serial No : G300769				
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515			Serial No : 94296				
Calibration Ref dB(A) : 94.0			Certified Date : 14 Feb 2024				
SLM Reading / Adjust dB(A) : 93.7/0.0			Expire Date : 13 Feb 2025				
Cal Sheet No. : CR-515-2024-367							
Time	Equivalent Sound Pressure Level (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	62.2	62.6	62.7	65.7	62.1	61.9	61.6
14:00 - 15:00	61.6	63.3	62.4	62.9	61.7	62.0	60.6
15:00 - 16:00	60.8	61.8	61.3	63.2	62.6	62.1	61.2
16:00 - 17:00	62.0	62.6	63.0	63.1	63.0	63.0	61.9
17:00 - 18:00	63.4	63.6	63.3	63.6	63.8	64.0	63.7
18:00 - 19:00	62.6	63.0	62.1	62.6	63.8	63.3	62.3
19:00 - 20:00	61.4	62.5	61.0	61.9	62.1	62.3	61.2
20:00 - 21:00	61.3	61.9	60.8	61.6	62.0	62.3	61.0
21:00 - 22:00	61.4	61.2	59.4	60.7	62.2	61.6	60.7
22:00 - 23:00	61.1	61.5	60.1	61.0	61.6	61.2	60.3
23:00 - 00:00	60.9	60.9	59.6	60.3	61.6	61.2	60.4
00:00 - 01:00	61.1	61.1	60.1	60.3	60.9	60.7	60.6
01:00 - 02:00	61.0	60.8	60.2	60.1	61.0	60.4	60.6
02:00 - 03:00	61.1	60.9	60.1	59.6	61.3	60.6	60.6
03:00 - 04:00	61.5	60.9	60.1	60.5	61.5	60.7	60.8
04:00 - 05:00	61.7	61.3	60.4	61.0	61.4	61.2	60.9
05:00 - 06:00	62.5	62.2	61.3	61.2	62.4	61.8	61.9
06:00 - 07:00	65.3	64.6	64.3	64.0	64.8	64.1	64.7
07:00 - 08:00	66.1	65.6	65.3	65.7	65.2	64.5	65.1
08:00 - 09:00	65.4	65.8	63.8	64.2	63.5	63.5	64.4
09:00 - 10:00	63.3	63.7	64.7	62.8	63.3	62.4	63.4
10:00 - 11:00	61.6	64.1	65.4	62.7	64.1	62.7	63.0
11:00 - 12:00	62.0	62.0	62.7	64.6	62.7	62.4	63.3
12:00 - 13:00	61.0	61.1	61.7	61.5	61.9	62.2	61.8
Leq(24)*	62.5	62.7	62.3	62.6	62.7	62.3	62.2
L _{dn}	68.6	68.4	67.7	67.9	68.6	68.1	68.0
L _{max} **	87.2	94.7	94.1	93.5	88.7	88.6	84.3
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 13:00-13:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist



(Miss Preeda Somjai)
Technical Management Team

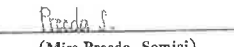


Noise Monitoring Result : Background Noise MTR-BST Site 1

Location : Boundary-E				Monitor Period : 09-16 Dec 2024			
SLM Model : Cirrus CR162B				Serial No : G300769			
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515				Serial No : 94296			
Calibration Ref dB(A) : 94.0				Certified Date : 14 Feb 2024			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 13 Feb 2025			
Cal Sheet No. : CR-515-2024-367							
Time	L90 (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	57.3	59.2	59.4	60.0	59.5	59.7	59.3
14:00 - 15:00	57.5	59.3	59.5	59.6	59.1	59.9	58.9
15:00 - 16:00	56.7	59.0	57.8	59.2	59.1	60.2	58.8
16:00 - 17:00	57.3	59.4	57.7	58.4	59.6	60.4	59.6
17:00 - 18:00	59.2	60.3	58.6	59.5	60.5	60.9	60.5
18:00 - 19:00	59.1	60.8	58.5	60.0	60.6	60.9	60.2
19:00 - 20:00	58.8	60.4	57.6	59.6	59.9	60.4	59.5
20:00 - 21:00	59.8	60.4	58.1	59.0	60.0	60.3	59.7
21:00 - 22:00	59.8	60.1	57.5	59.0	59.8	60.1	59.7
22:00 - 23:00	60.0	60.3	58.4	59.7	60.4	60.3	59.5
23:00 - 00:00	60.0	60.1	58.5	59.5	60.6	60.3	59.5
00:00 - 01:00	60.2	60.0	59.2	59.5	60.0	59.9	59.7
01:00 - 02:00	60.1	59.9	59.2	59.2	60.3	59.5	59.7
02:00 - 03:00	60.2	60.1	59.2	58.5	60.4	59.8	59.8
03:00 - 04:00	60.6	60.0	59.2	59.4	60.4	59.9	59.8
04:00 - 05:00	60.6	60.1	59.3	59.7	60.6	60.1	59.9
05:00 - 06:00	60.8	60.7	59.6	59.5	60.6	60.1	60.1
06:00 - 07:00	62.1	61.7	61.0	60.6	61.7	61.3	61.3
07:00 - 08:00	62.4	62.1	61.2	61.5	61.9	61.4	62.4
08:00 - 09:00	61.4	60.5	60.8	61.2	60.8	61.2	61.5
09:00 - 10:00	59.9	60.8	61.0	60.2	60.8	60.4	60.7
10:00 - 11:00	59.2	60.4	59.6	59.6	60.5	60.7	60.4
11:00 - 12:00	59.0	58.8	59.4	59.5	60.2	60.1	60.2
12:00 - 13:00	58.6	58.2	58.7	58.8	59.7	59.6	58.9
L90(avg)*	59.8	60.2	59.3	59.7	60.3	60.3	60.1

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


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise

MTR-BST Site 1

Location : Boundary-W		Monitor Period : 09-16 Dec 2024					
SLM Model : Cirrus CR162B		Serial No : G300990					
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515		Serial No : 94296					
Calibration Ref dB(A) : 94.0		Certified Date : 14 Feb 2024					
SLM Reading / Adjust dB(A) : 93.7/0.0		Expire Date : 13 Feb 2025					
Cal Sheet No. : CR-515-2024-367							
Time	Equivalent Sound Pressure Level (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
15:00 - 16:00	65.2	65.1	64.5	64.8	65.9	67.1	65.1
16:00 - 17:00	65.8	65.3	64.5	65.0	65.3	65.7	65.1
17:00 - 18:00	68.3	67.5	67.3	67.1	68.7	69.2	69.1
18:00 - 19:00	67.2	67.5	67.0	67.7	68.0	65.8	62.9
19:00 - 20:00	67.7	67.6	69.1	67.1	67.8	66.7	62.9
20:00 - 21:00	65.5	64.2	66.4	67.9	67.5	63.7	63.9
21:00 - 22:00	60.6	61.3	60.5	65.2	61.8	62.9	63.5
22:00 - 23:00	62.0	61.1	61.3	61.4	61.3	62.3	63.1
23:00 - 00:00	62.2	61.9	60.6	61.1	62.4	62.0	64.2
00:00 - 01:00	61.8	61.7	60.8	60.6	63.1	62.9	64.0
01:00 - 02:00	61.4	62.2	61.4	60.1	63.5	62.8	64.5
02:00 - 03:00	61.1	61.9	60.8	61.2	62.8	62.8	64.1
03:00 - 04:00	61.4	64.2	60.9	61.3	63.4	63.7	64.6
04:00 - 05:00	63.3	64.7	63.5	62.6	63.6	62.9	64.1
05:00 - 06:00	62.7	64.8	64.6	64.7	65.1	63.6	64.5
06:00 - 07:00	67.1	66.9	65.8	66.4	66.5	66.0	67.5
07:00 - 08:00	70.0	69.9	69.6	69.8	69.9	68.8	69.9
08:00 - 09:00	66.9	67.0	66.6	66.1	66.4	66.0	68.8
09:00 - 10:00	65.8	64.1	66.1	66.1	66.1	66.2	67.4
10:00 - 11:00	66.6	65.6	65.4	66.4	67.2	66.6	67.5
11:00 - 12:00	64.3	64.4	64.1	67.0	67.3	64.7	68.3
12:00 - 13:00	62.9	63.4	62.4	65.6	68.3	64.0	67.3
13:00 - 14:00	63.7	65.3	66.1	66.6	63.8	63.5	67.5
14:00 - 15:00	65.3	67.2	65.8	66.2	66.0	65.8	67.0
Leq(24)*	65.3	65.4	65.2	65.6	66.1	65.3	66.2
Ldn	70.0	70.5	69.8	70.0	70.8	70.3	71.5
Lmax **	90.4	91.5	93.4	91.8	93.3	96.2	94.9
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

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

(Miss Katesarin Vorraderwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-BST Site 1

Location : Boundary-W		Monitor Period : 09-16 Dec 2024					
SLM Model : Cirrus CR162B		Serial No : G300990					
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515				Serial No : 94296			
Calibration Ref dB(A) : 94.0				Certified Date : 14 Feb 2024			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 13 Feb 2025			
Cal Sheet No. : CR-515-2024-367							
Time	L90 (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
15:00 - 16:00	59.2	56.8	56.7	58.8	57.9	59.8	58.5
16:00 - 17:00	59.4	57.0	56.5	58.4	58.3	60.2	59.9
17:00 - 18:00	59.2	57.1	58.9	58.7	58.9	59.9	60.1
18:00 - 19:00	57.4	57.5	57.2	59.0	58.7	59.5	59.2
19:00 - 20:00	58.6	59.2	59.8	60.2	59.9	59.8	59.5
20:00 - 21:00	58.6	57.4	57.1	59.9	59.9	59.7	59.5
21:00 - 22:00	58.0	57.3	56.7	58.4	58.2	59.1	60.5
22:00 - 23:00	57.8	57.1	56.6	58.1	58.5	59.4	60.5
23:00 - 00:00	57.9	57.6	57.0	58.5	58.9	59.2	60.7
00:00 - 01:00	58.2	58.7	57.5	58.7	60.0	59.7	61.3
01:00 - 02:00	58.3	58.8	58.1	58.6	60.6	60.6	61.3
02:00 - 03:00	57.8	59.3	57.1	58.3	60.1	60.3	61.1
03:00 - 04:00	57.5	59.5	57.3	58.6	59.3	59.9	61.3
04:00 - 05:00	58.0	59.9	57.5	58.1	59.8	59.9	61.5
05:00 - 06:00	58.4	61.0	57.6	58.9	60.0	59.7	61.0
06:00 - 07:00	59.2	60.8	58.4	58.9	60.7	60.6	61.9
07:00 - 08:00	61.5	63.6	61.5	61.8	62.4	61.3	64.3
08:00 - 09:00	58.5	59.0	59.1	59.4	60.6	59.5	63.3
09:00 - 10:00	58.1	58.7	60.4	60.4	60.5	60.4	62.5
10:00 - 11:00	57.8	58.8	57.8	60.7	60.6	60.7	62.4
11:00 - 12:00	56.9	58.1	56.8	61.2	60.5	59.8	62.3
12:00 - 13:00	56.5	57.4	56.5	58.1	58.9	59.2	61.5
13:00 - 14:00	56.7	58.0	58.2	60.2	57.7	58.8	61.9
14:00 - 15:00	57.8	57.6	59.5	58.7	59.2	59.3	61.0
L90(avg)*	58.4	58.9	58.0	59.3	59.7	59.9	61.3

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

(Miss Katesarin Vorraderwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-BST Site 1

Location : Wat Takuan Kongkaram	Monitor Period : 09-16 Dec 2024
SLM Model : SCARLET ST-21D	Serial No : 820728
Site Operator : Mr.Suphanut Intraranaret	

Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : 14 Feb 2024
SLM Reading / Adjust dB(A) : 93.8/0.0	Expire Date : 13 Feb 2025
Cal Sheet No. : CR-515-2024-368	

Time	Equivalent Sound Pressure Level (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	53.2	54.2	49.4	49.7	51.8	48.3	50.2
14:00 - 15:00	48.6	54.0	56.5	51.0	54.0	47.9	47.1
15:00 - 16:00	52.9	57.9	54.5	54.8	52.5	48.3	45.6
16:00 - 17:00	49.0	56.7	50.6	51.4	50.7	49.0	46.3
17:00 - 18:00	52.3	50.7	49.4	50.4	48.9	51.6	48.3
18:00 - 19:00	46.9	48.2	51.1	47.9	49.9	45.7	46.5
19:00 - 20:00	45.6	44.7	45.1	46.1	47.1	44.9	45.6
20:00 - 21:00	46.4	45.5	45.1	46.3	46.5	44.3	45.2
21:00 - 22:00	46.7	44.7	43.7	44.4	47.2	44.3	44.3
22:00 - 23:00	44.9	44.7	43.8	44.3	48.2	45.6	45.6
23:00 - 00:00	45.3	45.1	43.9	43.9	45.1	44.9	47.5
00:00 - 01:00	43.4	44.4	43.5	42.9	44.2	42.4	43.3
01:00 - 02:00	42.6	43.5	43.2	54.7	42.3	42.9	41.6
02:00 - 03:00	43.2	45.8	42.1	52.1	42.2	43.7	41.6
03:00 - 04:00	42.9	46.1	45.4	43.1	43.6	44.1	40.4
04:00 - 05:00	43.4	48.4	50.4	43.3	42.7	50.9	40.0
05:00 - 06:00	46.8	46.8	46.3	44.8	44.0	45.4	44.1
06:00 - 07:00	52.0	50.9	51.7	50.8	55.6	51.4	50.2
07:00 - 08:00	59.1	57.4	56.8	56.7	49.9	51.2	61.1
08:00 - 09:00	52.4	55.0	52.8	50.3	49.1	49.9	55.8
09:00 - 10:00	52.7	54.6	51.8	54.1	47.6	46.8	54.3
10:00 - 11:00	53.3	55.8	51.8	52.5	49.2	52.6	53.2
11:00 - 12:00	51.0	58.1	53.0	53.7	48.3	49.5	51.6
12:00 - 13:00	55.1	53.9	57.5	58.9	47.0	48.8	53.3
Leq(24)*	51.1	52.7	51.5	51.9	49.3	48.2	51.4
Ldn	54.3	55.2	54.9	56.2	54.9	53.7	53.9
Lmax **	85.9	96.7	88.7	91.2	78.0	81.4	81.4
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 13:00-13:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-BST Site 1

Location : Wat Takuan Kongkaram	Monitor Period : 09-16 Dec 2024
SLM Model : SCARLET ST-21D	Serial No : 820728
Site Operator : Mr.Suphanut Intraranaret	

Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : 14 Feb 2024
SLM Reading / Adjust dB(A) : 93.8/0.0	Expire Date : 13 Feb 2025
Cal Sheet No. : CR-515-2024-368	

Time	L90 (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	44.3	48.4	44.5	45.0	45.0	42.3	43.1
14:00 - 15:00	43.5	47.7	47.0	45.3	47.2	42.7	41.9
15:00 - 16:00	47.3	44.5	45.5	47.9	44.7	43.2	40.9
16:00 - 17:00	44.7	47.7	45.5	45.4	45.4	43.9	43.1
17:00 - 18:00	43.8	41.1	43.0	43.9	43.1	42.9	43.4
18:00 - 19:00	43.4	42.1	43.6	44.0	43.5	43.0	43.5
19:00 - 20:00	44.2	43.3	43.8	44.4	44.1	43.0	42.7
20:00 - 21:00	44.7	43.5	43.7	44.2	43.8	42.2	42.4
21:00 - 22:00	44.3	42.9	42.6	43.3	42.9	42.2	41.2
22:00 - 23:00	43.3	42.9	42.2	43.2	42.9	43.0	41.3
23:00 - 00:00	43.2	42.6	42.8	42.2	41.7	42.4	40.0
00:00 - 01:00	42.3	42.9	42.3	41.7	40.9	39.3	39.4
01:00 - 02:00	41.2	42.3	41.7	40.9	40.5	38.3	39.0
02:00 - 03:00	41.3	42.5	41.2	40.1	39.2	38.4	36.7
03:00 - 04:00	41.3	42.8	41.3	40.3	39.1	38.6	37.0
04:00 - 05:00	41.8	42.6	41.1	40.8	38.9	38.5	37.1
05:00 - 06:00	43.0	43.5	41.6	41.8	39.9	38.7	39.0
06:00 - 07:00	45.9	46.0	44.7	45.3	43.5	44.6	43.3
07:00 - 08:00	50.7	49.8	49.6	48.2	45.4	46.1	52.1
08:00 - 09:00	47.7	49.0	47.3	45.8	44.5	45.6	50.4
09:00 - 10:00	47.1	48.3	46.7	48.1	43.5	39.9	46.9
10:00 - 11:00	47.8	49.9	46.6	47.6	43.3	46.5	48.0
11:00 - 12:00	44.4	47.0	46.1	44.2	44.1	44.5	46.3
12:00 - 13:00	48.6	45.6	46.0	45.7	43.0	43.3	48.9
L90(avg)*	45.3	45.9	44.8	44.8	43.4	42.9	45.0

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-BST Site 1

Location : Soi Ruam Pattana			Monitor Period : 09-16 Dec 2024				
SLM Model : SCARLET ST-21D			Serial No : 820729				
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515			Serial No : 94296				
Calibration Ref dB(A) : 94.0			Certified Date : 14 Feb 2024				
SLM Reading / Adjust dB(A) : 93.8/0.0			Expire Date : 13 Feb 2025				
Cal Sheet No. : CR-515-2024-368							
Time	Equivalent Sound Pressure Level (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	47.2	47.4	47.7	52.6	49.8	49.4	60.2
14:00 - 15:00	55.1	48.2	46.8	51.9	50.9	52.3	54.9
15:00 - 16:00	60.0	48.5	57.7	62.6	62.2	50.1	52.3
16:00 - 17:00	55.3	50.4	60.0	52.1	52.4	51.8	52.3
17:00 - 18:00	50.8	50.1	52.6	51.4	49.7	55.4	51.5
18:00 - 19:00	50.1	49.3	49.1	50.3	52.4	53.3	51.1
19:00 - 20:00	50.8	49.2	51.1	48.4	53.5	50.3	50.3
20:00 - 21:00	48.5	47.8	49.5	48.6	50.4	48.4	50.7
21:00 - 22:00	47.4	45.7	47.2	46.7	45.5	48.6	47.4
22:00 - 23:00	47.0	46.2	47.1	47.1	46.2	46.7	46.0
23:00 - 00:00	49.7	46.2	48.0	44.1	45.8	47.1	49.8
00:00 - 01:00	45.2	46.3	46.1	44.1	40.8	44.1	42.6
01:00 - 02:00	45.2	44.7	42.4	44.8	43.6	44.1	39.9
02:00 - 03:00	44.5	44.0	41.7	42.9	45.0	44.9	44.1
03:00 - 04:00	45.6	46.8	41.5	45.6	43.9	43.8	44.7
04:00 - 05:00	48.4	46.7	49.0	51.0	48.7	49.2	49.0
05:00 - 06:00	52.6	51.8	51.6	50.9	53.8	52.4	51.6
06:00 - 07:00	52.1	52.8	55.1	51.7	54.0	53.9	55.1
07:00 - 08:00	51.7	60.5	59.3	50.6	53.4	51.7	59.3
08:00 - 09:00	48.5	60.3	61.9	50.9	51.2	50.6	61.9
09:00 - 10:00	48.3	46.7	50.9	49.7	52.3	56.0	50.9
10:00 - 11:00	49.5	50.2	59.0	60.3	52.0	53.5	49.7
11:00 - 12:00	48.4	61.6	51.0	59.0	50.7	52.9	60.9
12:00 - 13:00	49.0	46.0	51.0	51.0	51.4	51.4	50.1
Leq(24)*	51.5	53.3	54.3	53.7	52.6	51.3	54.6
L _{dn}	56.0	56.6	57.3	56.6	56.6	55.9	57.6
L _{max} **	60.6	60.5	62.1	78.6	65.7	77.7	82.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 13:00-13:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-BST Site 1

Location : Soi Ruam Pattana				Monitor Period : 09-16 Dec 2024			
SLM Model : SCARLET ST-21D				Serial No : 820729			
Site Operator : Mr.Suphanut Intraranaret							
Calibrator Model : Cirrus CR:515				Serial No : 94296			
Calibration Ref dB(A) : 94.0				Certified Date : 14 Feb 2024			
SLM Reading / Adjust dB(A) : 93.8/0.0				Expire Date : 13 Feb 2025			
Cal Sheet No. : CR-515-2024-368							
Time	L90 (dB(A))						
	09-10 Dec 2024	10-11 Dec 2024	11-12 Dec 2024	12-13 Dec 2024	13-14 Dec 2024	14-15 Dec 2024	15-16 Dec 2024
13:00 - 14:00	38.5	38.3	40.3	43.8	41.8	42.5	47.5
14:00 - 15:00	38.4	39.5	40.3	42.9	42.7	43.6	44.1
15:00 - 16:00	39.6	39.8	42.6	45.0	44.8	42.9	44.6
16:00 - 17:00	44.2	42.0	46.1	46.1	45.5	44.8	45.9
17:00 - 18:00	44.7	45.2	43.7	44.4	44.0	46.8	47.0
18:00 - 19:00	45.1	43.9	42.8	44.4	43.7	44.8	46.5
19:00 - 20:00	44.9	42.5	43.0	43.8	43.6	44.4	44.8
20:00 - 21:00	43.0	42.5	43.5	43.8	42.7	43.8	44.8
21:00 - 22:00	43.0	42.0	43.3	42.3	41.1	43.8	42.1
22:00 - 23:00	39.9	41.5	39.4	40.5	40.1	42.3	40.9
23:00 - 00:00	38.6	39.7	36.8	36.3	39.0	40.5	39.5
00:00 - 01:00	38.5	40.8	38.5	37.5	37.9	38.3	37.3
01:00 - 02:00	37.6	39.0	37.2	36.9	37.3	37.5	37.3
02:00 - 03:00	37.6	40.7	36.2	37.0	37.9	36.8	36.9
03:00 - 04:00	37.1	42.0	36.2	36.8	36.7	36.9	36.3
04:00 - 05:00	38.6	42.7	37.4	39.8	39.2	38.6	37.4
05:00 - 06:00	44.2	44.9	40.7	42.5	44.5	43.6	40.7
06:00 - 07:00	45.2	46.8	46.4	45.6	45.8	45.1	46.4
07:00 - 08:00	42.4	43.9	46.9	45.5	44.7	45.6	46.9
08:00 - 09:00	41.8	42.8	45.8	44.3	43.9	45.5	45.8
09:00 - 10:00	40.4	41.9	44.3	44.0	44.2	45.6	44.3
10:00 - 11:00	39.9	41.2	39.5	40.6	43.6	46.8	44.0
11:00 - 12:00	39.5	40.7	41.6	39.5	42.2	44.1	43.6
12:00 - 13:00	39.3	39.6	41.5	41.6	42.5	43.3	41.3
L90(avg)*	41.8	42.3	42.6	42.9	42.8	43.7	44.0

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

ใบรับรองผลการตรวจวัดคุณภาพดิน



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:22-14:34
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-23/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW1	STANDARD ¹⁾
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1,000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1,000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE : USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED. 2003

Jularat Jaemruen

(Miss Jularat Jaemruen)

Analyst

REG. NO. 7-239-0-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)
Technical Management Team

REG. NO. 7-239-n-0004

- Remark : 1. Reported analysis refers to submitted sample only.
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3. ¹⁾ Notification of the Ministry of Industry, B.E.2559 (2016).



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 11:13-11:24
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-23/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW2	STANDARD ¹⁾
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1,000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1,000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE : USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED. 2003

Jularat Jaemruen

(Miss Jularat Jaemruen)

Analyst

REG. NO. 7-239-0-0022

Araya Tipparuk

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Technical Management Team

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 10:37-10:47
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-23/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW3	STANDARD ^u
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	-
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1,000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1,000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED. 2001

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 17:02-17:11
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-23/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW4	STANDARD ^u
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	-
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1,000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1,000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED. 2001

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

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Technical Management Team

REG. NO. 7-239-n-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:54-15:01
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-23/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_SOIL_Apil

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW5	STANDARD ¹⁾
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1,000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1,000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE¹⁾ FD-320.

Jutarat Jaermuen

(Miss Jutarat Jaermuen)

Analyst

REG. NO. 7-239-0-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-0-0004

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

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2559 (2016).



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 16:29-16:37
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-23/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_SOIL_Apil

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW6	STANDARD ¹⁾
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1,000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1,000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE¹⁾ FD-320.

Jutarat Jaermuen

(Miss Jutarat Jaermuen)

Analyst

REG. NO. 7-239-0-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-0-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2559 (2016).



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No	: 0731/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 15:57-16:05
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 19-23/04/2024
REPORT DATE	: 24/04/2024	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW7	STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1.000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1.000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Mrs. Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No	: 0731/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 15:24-15:34
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 19-23/04/2024
REPORT DATE	: 24/04/2024	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW8	STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Methyl tert-butyl ether	mg/kg	SW 846 5035A /8260D	< 0.001	ND	≤ 1.000
Methanol	mg/kg	SW 846 3550C /8015D	< 0.32	ND	≤ 1.000
Toluene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 520

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Mrs. Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No	: 0728/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 14:22-14:34
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 12, 17-18/04/2024
REPORT DATE	: 19/04/2024	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW1	STANDARD ¹⁾
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	-
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED., 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

REG. NO. 2-239-9-0022

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-n-0004

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4. - Not available.



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No	: 0728/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 11/04/2024	SAMPLING TIME	: 11:13-11:24
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 12, 17-18/04/2024
REPORT DATE	: 19/04/2024	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW2	STANDARD ¹⁾
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	-
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED., 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

REG. NO. 2-239-9-0022

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-n-0004

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0728/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 10:37-10:47
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 12, 17-18/04/2024
REPORT DATE : 19/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW3	STANDARD ¹⁾
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE: US EPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED. 2000

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Mrs. Anya Tipparak

(Mrs. Anya Tipparak)

Technical Management Team

REG. NO. 7-239-9-0004

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0728/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 17:02-17:11
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 12, 17-18/04/2024
REPORT DATE : 19/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW4	STANDARD ¹⁾
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE: US EPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED. 2000

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Mrs. Anya Tipparak

(Mrs. Anya Tipparak)

Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0728/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:54-15:01
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 12, 17-18/04/2024
REPORT DATE : 19/04/2024 SITE OPERATOR : Mr. Aniwai Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MWS	STANDARD ¹⁾
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE : USEPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED. 2003

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

(Mrs. Araya Tipparuk)

Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No : 0728/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 16:29-16:37
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 12, 17-18/04/2024
REPORT DATE : 19/04/2024 SITE OPERATOR : Mr. Aniwai Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MWS	STANDARD ¹⁾
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE : USEPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED. 2003

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-0004

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No	: 0728/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 15:57-16:05
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 12, 17-18/04/2024
REPORT DATE	: 19/04/2024	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW7	STANDARD ^u
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE : USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 7th ED. 2000.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-0004

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4. - Not available.



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No	: 0728/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 15:24-15:34
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 12, 17-18/04/2024
REPORT DATE	: 19/04/2024	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW8	STANDARD ^u
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Methyl tert-butyl ether	mg/l	6200 B	< 0.0005	ND	≤ 24
Methanol	mg/l	6200 B	< 0.50	ND	≤ 60
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0

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

REFERENCE : USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 7th ED. 2000.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-0004

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4. - Not available.

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1443/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 12/07/2024	SAMPLING TIME	: 13:25
RECEIVED DATE	: 13/07/2024	ANALYTICAL DATE	: 16/07/2024
REPORT DATE	: 25/07/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_WW_July

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION CW Return (Cooling tower)	STANDARD
Total Organic Carbon*	mg/l	5310 B	< 0.01	3.04	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21ST ED. 2017 (AWWA-APHA-WEF)

(Miss Khemchuda Inorn)

(Mrs. Araya Tipparuk)

Technical Management Team

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 2. This report shall not be reproduced, except in full, without official approval.
 3. *Total Organic Carbon analysis was performed by Faculty of Public Health, Mahidol University.
 4. - Not available.



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SECOT CO., LTD.

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Bangkok Synthetics Co., Ltd. (BST Site 1)	REQUEST SERVICE No.	: 1702/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 20/08/2024	SAMPLING TIME	: 13:41
RECEIVED DATE	: 21/08/2024	ANALYTICAL DATE	: 21-23/08/2024
REPORT DATE	: 24/08/2024	SITE OPERATOR	: Mr. Tanachot Changlor
SAMPLE CONDITION	: Normal	FILE CODE	: 224054_WW_August

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION CW Return (Cooling tower)	STANDARD
Total Organic Carbon*	mg/l	5310 B	< 0.01	19.03	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21ST ED. 2017 (AWWA-APHA-WEF)

(Miss Khemchuda Inorn)

(Mrs. Araya Tipparuk)

Technical Management Team

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 3. *Total Organic Carbon analysis was performed by Faculty of Public Health, Mahidol University.
 4. - Not available.



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

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 1736/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 23/08/2024 SAMPLING TIME : 10:42
RECEIVED DATE : 24/08/2024 ANALYTICAL DATE : 27-30/08/2024
REPORT DATE : 02/09/2024 SITE OPERATOR : Mr.Tanachot Chianglor
SAMPLE CONDITION : Normal FILE CODE : 224054_WW_August

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION CW Return (Cooling tower)	STANDARD
Total Organic Carbon*	mg/l	5310 B	< 0.01	19.36	-

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

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 4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 1864/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 06/09/2024 SAMPLING TIME : 10:26
RECEIVED DATE : 07/09/2024 ANALYTICAL DATE : 07-13/09/2024
REPORT DATE : 18/09/2024 SITE OPERATOR : Miss Wiraya Patchimboon
SAMPLE CONDITION : Normal FILE CODE : 224054_WW_September

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION CW Return (Cooling tower)	STANDARD
Total Organic Carbon*	mg/l	5310 B	< 0.01	19.20	-

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

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 4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 2044/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 04/10/2024 SAMPLING TIME : 10:29
RECEIVED DATE : 05/10/2024 ANALYTICAL DATE : 07-09/10/2024
REPORT DATE : 10/10/2024 SITE OPERATOR : Mr.Chanapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 224054_WW_October

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION CW Return (Cooling tower)	STANDARD
Total Organic Carbon*	mg/l	5310 B	< 0.01	19.23	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. 2017 (AWWA-APHA-WEF)

(Miss Khemchuda Insorn)

(Mrs. Araya Tipparuk)
Technical Management Team

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 4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 2297/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 08/11/2024 SAMPLING TIME : 10:15
RECEIVED DATE : 09/11/2024 ANALYTICAL DATE : 09-15/11/2024
REPORT DATE : 20/11/2024 SITE OPERATOR : Mr.Chunapon Oakkhamplon
SAMPLE CONDITION : Normal FILE CODE : 224054_WW_November

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION CW Return (Cooling tower)	STANDARD
Total Organic Carbon*	mg/l	5310 B	< 0.01	22.09	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. 2017 (AWWA-APHA-WEF)

(Miss Khemchuda Insorn)

(Mrs. Araya Tipparuk)
Technical Management Team

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 4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : Bangkok Synthetics Co., Ltd. (BST Site 1) REQUEST SERVICE No. : 2623/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grb
SAMPLING DATE : 13/12/2024 SAMPLING TIME : 09:52
RECEIVED DATE : 14/12/2024 ANALYTICAL DATE : 14-20/12/2024
REPORT DATE : 27/12/2024 SITE OPERATOR : Mr.Tanachot Changlor
SAMPLE CONDITION : Normal FILE CODE : 224054_WW_December

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)	CW Return (Cooling tower)	
Total Organic Carbon*	mg/l	5310 B	< 0.01	15.01	-

REFERENCE STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 19th ED. 2017 (AWWA-APHA-WEF)

(Miss Kluechuda Insom)

(Mrs. Araya Tipparuk)

Technical Management Team

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 4. - Not available.

ใบรับรองผลการตรวจวัดระดับเสียงเฉลี่ยตลอดระยะเวลาการทำงาน



Noise Monitoring Result : Working Noise MTR-BST Site 1


Location : BDU-DMF Compressor Monitor Period : Sep 10, 2024
SLM Model : SCARLET ST-21D Serial No : 820725
Site Operator : Miss Salisa Ainree


Calibrator Model : Cirrus CR:515 Serial No : 94296
Calibration Ref dB(A) : 94.0 Certified Date : 14 Feb 2024
SLM Reading / Adjust dB(A) : 93.8/0.0 Expire Date : 13 Feb 2025
Cal Sheet No. : CR-515-2024-248

Time	Equivalent Sound Pressure Level (dB(A))	
	Sep 10, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00	79.9	
10:00 - 11:00	80.5	
11:00 - 12:00	79.9	
12:00 - 13:00	79.9	
13:00 - 14:00	80.0	
14:00 - 15:00	80.1	
15:00 - 16:00	80.2	
16:00 - 17:00	80.2	
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	80.1	
Lmax **	104.2	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 09:00-17:00

** Maximum Sound Pressure Level between 09:00-17:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BST Site 1

Location : BDU-DMF Heat Exchanger Monitor Period : Sep 10, 2024
SLM Model : SCARLET ST-21D Serial No : 820723
Site Operator : Miss Salisa Ainree

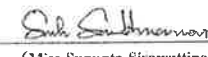
Calibrator Model : Cirrus CR:515 Serial No : 94296
Calibration Ref dB(A) : 94.0 Certified Date : 14 Feb 2024
SLM Reading / Adjust dB(A) : 93.8/0.0 Expire Date : 13 Feb 2025
Cal Sheet No. : CR-515-2024-248

Time	Equivalent Sound Pressure Level (dB(A))	
	Sep 10, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00	81.6	
10:00 - 11:00	82.0	
11:00 - 12:00	81.9	
12:00 - 13:00	81.9	
13:00 - 14:00	82.0	
14:00 - 15:00	82.0	
15:00 - 16:00	81.9	
16:00 - 17:00	81.9	
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	81.9	
Lmax **	89.9	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 09:00-17:00

** Maximum Sound Pressure Level between 09:00-17:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BST Site 1

Location : BDU-DMF Steam Line		Monitor Period : Sep 10, 2024	
SLM Model : SCARLET ST-21D		Serial No : 820727	
Site Operator : Miss Salisa Aintree			
Calibrator Model : Cirrus CR:515		Serial No : 94296	
Calibration Ref dB(A) : 94.0		Certified Date : 14 Feb 2024	
SLM Reading / Adjust dB(A) : 93.8/0.0		Expire Date : 13 Feb 2025	
Cal Sheet No. : CR-515-2024-248			
Time	Equivalent Sound Pressure Level (dB(A))		
	Sep 10, 2024		
00:00 - 01:00			
01:00 - 02:00			
02:00 - 03:00			
03:00 - 04:00			
04:00 - 05:00			
05:00 - 06:00			
06:00 - 07:00			
07:00 - 08:00			
08:00 - 09:00			
09:00 - 10:00		82.0	
10:00 - 11:00		81.6	
11:00 - 12:00		82.2	
12:00 - 13:00		82.1	
13:00 - 14:00		82.4	
14:00 - 15:00		82.2	
15:00 - 16:00		82.3	
16:00 - 17:00		82.2	
17:00 - 18:00			
18:00 - 19:00			
19:00 - 20:00			
20:00 - 21:00			
21:00 - 22:00			
22:00 - 23:00			
23:00 - 24:00			
Leq(8)*		82.1	
Lmax **		91.5	
Standard-8Hr		90 dB(A)	
Standard-Max		140 dB(A)	

Remark : * Average time between 09:00-17:00

** Maximum Sound Pressure Level between 09:00-17:00

(Signature)
(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Signature)
(Miss Sunanta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BST Site 1

Location : BDU-NMP Compressor		Monitor Period : Sep 10, 2024		
SLM Model : SCARLET ST-21D		Serial No : 820722		
Site Operator : Miss Salisa Ainree				
Calibrator Model : Cirrus CR:515		Serial No : 94296		
Calibration Ref dB(A) : 94.0		Certified Date : 14 Feb 2024		
SLM Reading / Adjust dB(A) : 93.8/0.0		Expire Date : 13 Feb 2025		
Cal Sheet No. : CR-515-2024-248				
Time	Equivalent Sound Pressure Level (dB(A))			
	Sep 10, 2024			
00:00 - 01:00				
01:00 - 02:00				
02:00 - 03:00				
03:00 - 04:00				
04:00 - 05:00				
05:00 - 06:00				
06:00 - 07:00				
07:00 - 08:00				
08:00 - 09:00				
09:00 - 10:00				88.4
10:00 - 11:00				88.7
11:00 - 12:00				88.8
12:00 - 13:00				89.0
13:00 - 14:00				89.1
14:00 - 15:00				89.1
15:00 - 16:00				88.6
16:00 - 17:00				88.9
17:00 - 18:00				
18:00 - 19:00				
19:00 - 20:00				
20:00 - 21:00				
21:00 - 22:00				
22:00 - 23:00				
23:00 - 24:00				
Leq(8)*	88.8			
Lmax **	101.9			
Standard-8Hr	90 dB(A)			
Standard-Max	140 dB(A)			

Remark : * Average time between 09:00-17:00

** Maximum Sound Pressure Level between 09:00-17:00

(Signature)
(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Signature)
(Miss Sunanta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BST Site 1

Location : BDU-NMP Heat Exchanger	Monitor Period : Sep 10, 2024
SLM Model : SCARLET ST-21D	Serial No : 820728
Site Operator : Miss Salisa Ainree	

Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : 14 Feb 2024
SLM Reading / Adjust dB(A) : 93.8/0.0	Expire Date : 13 Feb 2025
Cal Sheet No. : CR-515-2024-248	

Time	Equivalent Sound Pressure Level (dB(A))	
	Sep 10, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00	84.2	
10:00 - 11:00	84.0	
11:00 - 12:00	83.9	
12:00 - 13:00	84.1	
13:00 - 14:00	84.0	
14:00 - 15:00	84.2	
15:00 - 16:00	84.4	
16:00 - 17:00	84.5	
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	84.2	
Lmax **	89.1	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 09:00-17:00

** Maximum Sound Pressure Level between 09:00-17:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BST Site 1

Location : BDU-NMP Steam Line	Monitor Period : Sep 10, 2024
SLM Model : SCARLET ST-21D	Serial No : 820729
Site Operator : Miss Salisa Ainree	

Calibrator Model : Cirrus CR:515	Serial No : 94296
Calibration Ref dB(A) : 94.0	Certified Date : 14 Feb 2024
SLM Reading / Adjust dB(A) : 93.8/0.0	Expire Date : 13 Feb 2025
Cal Sheet No. : CR-515-2024-248	

Time	Equivalent Sound Pressure Level (dB(A))	
	Sep 10, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00	82.5	
10:00 - 11:00	82.5	
11:00 - 12:00	82.7	
12:00 - 13:00	82.4	
13:00 - 14:00	82.2	
14:00 - 15:00	82.4	
15:00 - 16:00	82.7	
16:00 - 17:00	82.8	
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	82.5	
Lmax **	92.0	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 09:00-17:00

** Maximum Sound Pressure Level between 09:00-17:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team

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เฉลี่ยตลอดเวลาการทำงาน
(Time Weighted Average-TWA)



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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Sep24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 30/09/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift A				
ID 51716	07.36-19.00	70.6	81.7	83.0

(Miss Katesarin Vorradeitwittaya)

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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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Sep24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 30/09/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift A				
ID 52731	07.38-19.00	22.3	76.7	83.0

(Miss Katesarin Vorradeitwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Sep24
 MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
 MEASUREMENT DATE : 30/09/2024 CALIBRATOR TYPE : RC 110A
 MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
 SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift A				
ID 631292	07.36-19.00	13.9	74.7	83.0

(Miss Katesarin Vorradeetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
 MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
 MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : 22R
 MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
 SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 39112	07.27-19.00	12.9	74.4	83.0

(Miss Katesarin Vorradeetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 41255	07.22-19.00	46.6	79.9	83.0

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(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 41262	07.12-19.00	19.8	76.2	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 54812	07.32-19.00	17.8	75.8	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 571061	07.34-19.00	15.5	75.2	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 621243	07.41-19.00	85.4	82.6	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 621250	07.39-19.00	27.2	77.6	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 621256	07.33-19.00	13.2	74.5	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 01/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 621272	07,36-19.00	69,6	81,7	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 43454	08.01-16.01	0.4	61.0	85.0

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Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 52728	08.11-16.11	0.0	48.7	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 54837	08.04-16.04	18.4	77.7	85.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 611203	08.09-16.09	5.1	72.1	85.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 621238	08.07-16.07	5.8	72.7	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 651421	08.16-16.16	2.6	69.2	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 661477	08.00-16.00	7.3	73.6	85.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 40204	07.57-15.57	15.0	76.8	85.0


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Technical Management Team

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

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 42436	07.58-15.58	34.9	80.4	85.0

(Miss Katesarin Vorraderwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift D				
ID 51708	07.10-19.00	23.0	76.9	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 571062	07.59-15.59	19.2	77.9	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift D				
ID 54814	07.21-19.00	63.3	81.3	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift D				
ID 611202	07.13-19.00	45.1	79.8	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD ^a
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
EPM1 : Day				
ID 48619	08.10-16.10	31,7	80.0	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
EPM1 : Day				
ID 49643	08.06-16.06	34.9	80.4	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
EPM1 : Day				
ID 641372	08.03-16.03	3.9	70.9	85.0

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(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
EPM1 : Day				
ID 651411	08.02-16.02	0.0	51.7	85.0


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Environmental Scientist


(Miss Sununta Sirawutinanon)
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NOISE MEASUREMENT RESULT : NOISE DOSE

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MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 641323	07.12-19.00	30.5	78.1	83.0


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Environmental Scientist


(Miss Sununta Sirawutinanon)
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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REFERENCE NO.	: BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 03/10/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BST Site 1	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 39118	07.21-19.00	0.4	59.6	83.0

(Miss Katesarin Vorradeiwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REFERENCE NO.	: BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 03/10/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BST Site 1	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 39142	07.07-19.00	2.3	66.9	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 40198	07.36-19.00	62.2	81.2	83.0

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MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 41265	07.35-19.00	20.2	76.3	83.0

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MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 52737	07.08-19.00	17.4	75.7	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 621244	07.20-19.00	41.1	79.4	83.0

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

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
 MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
 MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
 MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
 SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 621245	07.21-19.00	26.4	77.5	83.0

(Miss Katesarin Vorradctwittaya)

Environmental Scientist

(Miss Sununta Siravuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
 MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
 MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
 MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
 SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 621248	07.05-19.00	16.5	75.5	83.0

(Miss Katesarin Vorradctwittaya)

Environmental Scientist

(Miss Sununta Siravuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 631316	07.10-19.00	59.7	81.0	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 641320	07.10-19.00	78.1	82.2	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 641322	07.25-19.00	16.1	75.3	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift B				
ID 43453	07.05-19.00	76.3	82.1	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift B				
ID 561025	07.01-19.00	41.5	79.4	83.0


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Environmental Scientist


(Miss Sununta Sirawuttinanon)
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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 42438	07.57-15.57	8.7	74.4	85.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 47586	07.57-15.57	11.2	75.5	85.0

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

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 611205	08.13-16.13	15.6	77.0	85.0

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Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REFERENCE NO.	: BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 04/10/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BST Site 1	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 621239	08.07-16.07	59.9	82.8	85.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: Bangkok Synthetics Co., Ltd.	REFERENCE NO.	: BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 04/10/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BST Site 1	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift B				
ID 651412	06.56-19.00	19.5	76.2	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 631300	08.00-16.00	27.8	79.5	85.0


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Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 04/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
EPM2 : Day				
ID 43455	08.04-16.04	1.4	66.6	85.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 39134	07.18-19.00	45.0	79.8	83.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 41264	07.13-19.00	25.5	77.3	83.0


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Environmental Scientist


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 42431	07.16-19.00	14.7	75.0	83.0

(Miss Katesarin Vorraderwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 54811	07.36-19.00	57.3	80.8	83.0

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(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 571053	07.20-19.00	43.9	79.7	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 621242	07.21-19.00	30.0	78.0	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 651446	07.10-19.00	38.1	79.1	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 07/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 661463	07.22-19.00	10.5	73.5	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MFS : Shift A				
ID 37077	07.09-19.00	1.5	65.2	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MFS : Shift A				
ID 41272	07.27-19.00	9.5	73.0	83.0

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 561002	07.04-19.00	32.2	78.3	83.0

(Miss Katesarin Vorradeetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 621246	07.05-19.00	46.5	79.9	83.0

(Miss Katesarin Vorradeetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 621253	07.07-19.00	70.3	81.7	83.0


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Environmental Scientist


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 621255	07.06-19.00	62.0	81.2	83.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 621258	07.03-19.00	69.6	81.7	83.0


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Environmental Scientist


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 621259	07.08-19.00	70.6	81.7	83.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift A				
ID 621269	07.07-19.00	28.4	77.8	83.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 : Day				
ID 661455	08.04-16.04	8.2	74.2	85.0


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Environmental Scientist


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 08-09/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Airnee CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 40209	19.22-07.00	5.2	70.4	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Oct24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 15/10/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift C				
ID 52727	07.08-19.00	9.2	72.9	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 12/11/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 : Shift C				
ID 48615	06.51-18.52	23.5	77.0	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 13/11/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 621252	07.18-19.00	38.2	79.1	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 13/11/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 661457	07.19-19.00	21.8	76.6	83.0


(Miss Katesarin Vorradetwittaya)

Environmental Scientist


(Miss Sumanta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 13/11/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 79781
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift C				
ID 621247	07.16-19.00	29.5	78.0	83.0


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Environmental Scientist


(Miss Sumanta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 14/11/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift B				
ID 621257	07.09-19.00	30.2	78.1	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 18/11/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 641321	07.14-19.00	63.9	81.3	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : Bangkok Synthetics Co., Ltd. REFERENCE NO. : BST (Site 1)-224054-Cert-NsDose/Nov24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 18/11/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BST Site 1 SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF5 : Shift D				
ID 41260	07.16-19.00	25.0	77.2	83.0


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawutinanon)
Technical Management Team

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1697/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 19/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District , Rayong Province	Received Date	: 20/08/2024
		Test Date	: 21/08/2024
Tel/Fax	: 038-949200	Report Date	: 26/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Lab (BST) : R-110	19/08/2024 08.30-17.00	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1726/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 22/08/2024
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district , Muang District , Rayong Province 21150	Received Date	: 23/08/2024
		Test Date	: 23/08/2024
Tel/Fax	: 0-3869-8698	Report Date	: 30/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
C-1401 : BD Plant	22/08/2024 08:50-16:50	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1
BDU-NMP:Extrictive Distillation : C-2241	22/08/2024 09:05-17:05	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1
BDU-NMP: BD Purification : C-2245	22/08/2024 09:00-17:00	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1740/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 23/08/2024
Address	: Mop Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 24/08/2024
Tel/Fax	: 038-949200	Test Date	: 27/08/2024
		Report Date	: 30/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
Tar Loading (V-9941)	23/08/2024 08:50-16:50	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0910/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 19/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 20/08/2024
Tel/Fax	: 038-949200	Test Date	: 24/08/2024
		Report Date	: 26/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
Lab (BST) : R-110	19/08/2024 08:30-16:40	Methyl tert-butyl ether	NIOSH 1615/GC FID	< 0.02	ND	50

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1740/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 23/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District , Rayong Province	Received Date	: 24/08/2024
		Test Date	: 24/08/2024
Tel/Fax	: 038-949200	Report Date	: 30/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
C-3001	23/08/2024 08:44-16:44	Methyl tert-butyl ether	NIOSH 1615/GC FID	< 0.02	ND	50

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By: Naisha Poowasanpetch
(Miss Naisha Poowasanpetch)
Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1697/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 19/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District , Rayong Province	Received Date	: 20/08/2024
		Test Date	: 22/08/2024
Tel/Fax	: 038-949200	Report Date	: 26/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Lab (BST) : R-110	19/08/2024 08.30-17.00	Methanol	NIOSH 2000/GC FID	< 0.04	ND	200

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By: Naisha Poowasanpetch
(Miss Naisha Poowasanpetch)
Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1740/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 23/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District , Rayong Province	Received Date	: 24/08/2024
		Test Date	: 26/08/2024
Tel/Fax	: 038-949200	Report Date	: 30/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
T-3001: Slop Tank	23/08/2024 08:42-16:42	Methanol	NIOSH 2000/GC FID	< 0.04	ND	200

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).
4. ND = non-detectable.



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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1697/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 19/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District , Rayong Province	Received Date	: 20/08/2024
		Test Date	: 21/08/2024
Tel/Fax	: 038-949200	Report Date	: 26/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
Lab (BST) : R-110	19/08/2024 08.30-17.00	Toluene	NIOSH 1501/GC FID	< 0.02	ND	200

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
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Technical Management Team

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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.	: 1740/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 23/08/2024
Address	: Map Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 24/08/2024
		Test Date	: 27/08/2024
Tel/Fax	: 038-949200	Report Date	: 30/08/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
T-1504 : ห้องเก็บ Toluene	23/08/2024 08:53-16:53	Toluene	NIOSH 1501/GC FID	< 0.02	0.08	200

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Naing Poowasanpetch
(Miss Narisa Poowasanpetch)

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2134/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 18/10/2024
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 19/10/2024
		Test Date	: 22/10/2024
Tel/Fax	: 0-3869-8698	Report Date	: 24/10/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Lab (BST) : R-110	18/10/2024 08:30-16:50	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	0.08	1

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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(Miss Narisa Poowasanpetch)

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2256/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 05/11/2024
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 07/11/2024
		Test Date	: 12/11/2024
Tel/Fax	: 0-3869-8698	Report Date	: 15/11/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
C-1401 : BD Plant	05/11/2024 08:41-16:41	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1
BDU-NMP:Extractive Distillation : C-2241	05/11/2024 08:44-16:44	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1
BDU-NMP: BD Purification : C-2245	05/11/2024 08:46-16:46	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2213/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 31/10/2024
Address	: Map Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 01/11/2024
		Test Date	: 04/11/2024
Tel/Fax	: 038-949200	Report Date	: 07/11/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Tar Loading (V-9941)	31/10/2024 08:55-16:55	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2134/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 18/10/2024
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 19/10/2024
Tel/Fax	: 0-3869-8698	Test Date	: 24/10/2024
		Report Date	: 24/10/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Lab (BST) : R-110	18/10/2024 08:30-16:50	Methyl tert-butyl ether	NIOSH 1615/GC FID	< 0.02	ND	50

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2213/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 31/10/2024
Address	: Map Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 01/11/2024
Tel/Fax	: 038-949200	Test Date	: 02/11/2024
		Report Date	: 07/11/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
C-3001	31/10/2024 08:58-16:58	Methyl tert-butyl ether	NIOSH 1615/GC FID	< 0.02	ND	50

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
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3. American Conference of Governmental Industrial Hygienists 2022 (ACGIH 2022).
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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2134/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 18/10/2024
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 19/10/2024
		Test Date	: 22/10/2024
Tel/Fax	: 0-3869-8698	Report Date	: 24/10/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Lsh (BST): R-110	18/10/2024 08:30-17:00	Methanol	NIOSH 2000/GC FID	< 0.04	ND	200

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2213/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 31/10/2024
Address	: Map Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 01/11/2024
		Test Date	: 04/11/2024
Tel/Fax	: 038-949200	Report Date	: 07/11/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
T-3001: Slop Tank	31/10/2024 09:05-17:05	Methanol	NIOSH 2000/GC FID	< 0.04	ND	200

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

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 2548/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 04/12/2024
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 06/12/2024
		Test Date	: 10/12/2024
Tel/Fax	: 0-3869-8698	Report Date	: 13/12/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
Lab (BST) : R-110	04/12/2024 09:20-17:25	Toluene	NIOSH 1501/GC FID	< 0.02	ND	200

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 2213/67
For	: Bangkok Synthetics Co., Ltd. (BST Site 1)	Sampling Date	: 31/10/2024
Address	: Map Ta Phut Industrial Estate, Muang District, Rayong Province	Received Date	: 01/11/2024
		Test Date	: 04/11/2024
Tel/Fax	: 038-949200	Report Date	: 07/11/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
T-1504 : ถังเก็บ Toluene	31/10/2024 08:59-16:59	Toluene	NIOSH 1501/GC FID	< 0.02	ND	200

Analyst By : Sudaporn S.
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Approved By : Narisa Poowasanpetch
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ภาคผนวก จ

ใบแสดงการตรวจเทียบเครื่องมือ



Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.

Agilent 7890 GC Preventive Maintenance Checklist



Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about Agilent Technologies services, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The Agilent Community is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful Agilent Resource Center web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our Support Home page <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the Agilent YouTube channel at <https://www.youtube.com/user/agilent>.
- 7890B Manuals are also available on Agilent.com:
 - o Safety https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - o Installation and First Startup https://www.agilent.com/cs/library/usermanuals/public/7890B_Installation.pdf
 - o Operation Manual https://www.agilent.com/cs/library/usermanuals/public/7890B_Operation.pdf
 - o Maintaining Your GC https://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20GCuide.pdf



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 Agile Document Number: D0013618
 DE number: 44146 759722222
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Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page.
- Complete the total number of pages field in the Service Completion section.
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.

System Information

- ☒ Check this box if an instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID

GC7890A

US10943001

Instrument System Site and Location

Secret Co, Ltd. Instrument room.

List System Component Product Numbers

List the Serial Number of each Component

1. G3440A
 2. G4513A
 3. G4514A

US10943001
 CN11350133
 CN93901235

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☒ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans - the Inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ☒ For the Inlets installed, perform inlet maintenance as defined in the 7890 manual – "Maintaining Your GC" - for the Inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these Inlets: Split/Splitless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the inlet and flush or replace the tubing between the inlet and the split vent trap.
- ☒ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the Ignitor shows any buildup of sample or corrosion, replace the Ignitor. Examine the FID collector and castle assemblies for contamination – clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual".
If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record if test passed or failed in the results table.

ALS Maintenance

- ☐ Section NOT applicable
- ☒ Check all cabling and configuration settings between GC, tray, and injectors.
- ☒ Vacuum or remove any dust, especially around fans.
- ☒ Check operation of all fans.
- ☒ Check syringe for smooth plunger operation.
- ☒ Check for smooth operation of the needle support – clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values. Results should be similar or lower than the detector outputs recorded prior to PM.
- ☒ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☐ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	N/A	17.4
Back detector output	N/A	28.2 34.2
AUX detector output	N/A	N/A
Pressure decay test	Expected test result	Actual test result
Front Inlet pressure decay test	Pass	Pass
Back Inlet pressure decay test	Pass	Pass

7890 Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part description	Part Number	Product or model# where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	1
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	N/A
PP Inlet PM kit	5188-6498	7890A/B	N/A
Split vent trap PM kit, single cartridge (for MML, PTV & V)	5188-6495	7890A/B	N/A
MML Cleaning Kit	G3510-60820	7890A/B	N/A
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	N/A
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	N/A
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	1
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	N/A
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	1
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	N/A
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	N/A
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	N/A

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

Service Completion

Service request number 6006041153 Date service completed 29 May 2023
Agilent signature [Signature] Customer signature [Signature]
Total number of pages in this document 9 pages



Certificate of Completion

Learner Name:	Saenguthai Saeng Tanak
Title Of Course:	AN-ASP/CB/CSE-GC-1-001-M: 7890/7820 GC and OL GC Standalone Chemstation I&F/Service
Completion Date:	November 23, 2014
Certified By Company:	Learning at Agilent

All Service and Support training certificates have the following specific limitations.

A certificate for Service and Support training is only valid while employed by Agilent Technologies or while working as an Agilent-authorized service provider, through which the service employee has ongoing access to Agilent's Safety Alerts, Service Notes, internal technical updates, update training, current documentation, technical support, current parts, and parts updates. Completion of training alone, without being employed by Agilent Technologies, does not qualify an individual to safely install, service or maintain Agilent products.



Agilent CrossLab Start Up Services Agilent 7890 Gas Chromatograph Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.



GC-MS (CTO-15)



Agilent 7890 GC Preventive Maintenance Checklist

Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about Agilent Technologies services, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The Agilent Community is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful Agilent Resource Center web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our Support Home page <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the Agilent YouTube channel at <https://www.youtube.com/user/agilent>.
- 7890B Manuals are also available on Agilent.com:
 - o Safety https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - o Installation and First Startup https://www.agilent.com/cs/library/usermanuals/Public/7890B_Installation.pdf
 - o Operation Manual https://www.agilent.com/cs/library/usermanuals/Public/7890B_Operation.pdf
 - o Maintaining Your GC https://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20Guide.pdf

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DE number: 44166.759722222
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Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page.
- Complete the total number of pages field in the Service Completion section.
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.

System Information

- ☐ Check this box if an Instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID	7890A GC System / GCMS
Instrument System Site and Location	SECOT Co., Ltd.

List System Component Product Numbers	List the Serial Numbers of each Component
1. G3440A	CN10750035
2. N/A	N/A
3. N/A	N/A
4. N/A	N/A
5. N/A	N/A
6. N/A	N/A
7. N/A	N/A
8. N/A	N/A
9. N/A	N/A
10. N/A	N/A

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☐ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans – the Inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ☒ For the Inlets installed, perform Inlet maintenance as defined in the 7890 manual – "Maintaining Your GC" – for the Inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these Inlets: Split/Spillless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the Inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the Inlet and flush or replace the tubing between the Inlet and the split vent trap.
- ☐ If the GC includes a Flame Ionization Detector (FID), replace the Jet. If the Ignitor shows any buildup of sample or corrosion, replace the Ignitor. Examine the FID collector and capillary assemblies for contamination – clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual".
If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record if test passed or failed in the results table.

ALS Maintenance

- ☒ Section NOT applicable
- ☐ Check all cabling and configuration settings between GC, tray, and injectors.
- ☐ Vacuum or remove any dust, especially around fans.
- ☐ Check operation of all fans.
- ☐ Check syringe for smooth plunger operation.
- ☐ Check for smooth operation of the needle support – clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values.
Results should be similar or lower than the detector outputs recorded prior to PM.
- ☐ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector/Signal Output	Before PM Service	After PM Service
Front detector output	N/A	N/A
Back detector output	N/A	N/A
AUX detector output	N/A	N/A
Pressure decay test	Expected test result	Actual test result
Front inlet pressure decay test	Pass	Pass
Back inlet pressure decay test	Pass	Pass

7890 Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part description	Part number	Product or model where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	6188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	1
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	N/A
PP Inlet PM kit	5188-6498	7890A/B	N/A
Split vent trap PM kit, single cartridge (for MMI, PTV & VI)	5188-6495	7890A/B	N/A
MMI Cleaning Kit	G3510-60620	7890A/B	N/A
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	N/A
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	N/A
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	N/A
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	N/A
Standard .011-Inch FID Jet for capillary FID base	G1531-80560	7890A/B	N/A
High Temperature .018-Inch FID Jet for capillary FID base	G1531-80620	7890A/B	N/A
Standard .018-Inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	N/A
Standard .011-Inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	N/A
High Temperature .018-Inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	N/A
NPD Jet, universal fit, .011-Inch ID	G1534-80580	7890A/B	N/A
NPD Jet, universal fit, .011-Inch ID Extended tip	G1534-80590	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	N/A

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

N/A

Service Completion

Service request number 6008041193 Date service completed 15 Jun, 2023Agilent signature [Signature] Customer signature Shyam C.Total number of pages in this document 10

Do not include this section/page in the published, customer-facing PDF version.

This page is only relevant for Agilent source documents for document control purposes and is NOT intended for customer viewing. Refer to the SPIFPM checklist Authoring Guide for more information.

Document Control Logs

Revision Log

Revision	Date	Author	Reason for update
Revision of document	Date of issuance	Author of document	Author to describe main features/changes made for this specific revision
1.0 Draft	4-Mar-2011	Dave Park	Migrated the content of revision A.01.05 to the new Agilent template. Reviewed by subject matter expert, Dave Park.
1.1 Draft	20-Jan-2015	Dave Park	Added Split Vent trap to MMI, PTV and VE - also PTV and FID PM Parts
1.2 Draft	31-March-2015	Dave Park	Added Ultra Inert Gold Seal and Liner to SS + Consumables
A.01.11	10-Dec-2015	Dave Park	Added step to perform maintenance on the Split Vent Tube and .018" FID Jet part numbers - Fixed broken web links
2.00	30-Dec-2020	Gary Boardman	Updated New Template and terminology change: Familiarization to Introduction. Create New Agile Document Numbers DD007063

Approval Log

Revision	Approver	Title of approver
Add revision number	Add approver name here	Add approver's function or title here
A.01.06	Don Gage	Product support manager
A.01.09	Kai Meng	Product support manager
A.01.10	Suneetha Tippireddy	Product support manager
A.01.11	Suneetha Tippireddy	Product support manager
2.00	Josh Roark	GC Product Support Manager

Designated Evaluation Log

Revision	Designated Evaluator (DE)	Title of DE	DE Number
Add revision number	Add name	Add function or title	Add DE number here
2.00	Michael Zumwalt	CrossLab Start Up Services Application Consulting Lead	44166.759722222



Agilent CrossLab Start Up Services

Agilent GCMS Preventive Maintenance Checklist



Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.



Agilent GCMS Preventive Maintenance Checklist

Introduction

Select the appropriate PM to be done and then perform the checklist under that section

- ☐ Interim Preventive Maintenance 6 months
☒ Major Preventive Maintenance Yearly

This checklist covers the following model(s):

Type	Model
SQ	5973 Series MSD
SQ	5975 Series MSD
SQ	5977 Series MSD
TQ	7000 Series MS/MS
TQ	7010 Series MS/MS
QTOF	7200 Series QTOF
QTOF	7250 Series QTOF

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures. Customers are responsible for regular maintenance and are encouraged to observe the service representative.
- Any parts not included in the Parts Lists section of this document are not part of the recommended Preventive Maintenance service nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.



Important Customer Web Links

- For more information about Agilent Technologies services, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-rep-ek>
- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful Agilent Resource Center web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>
- Need technical support, FAQs, supplies? – visit our Support Home page at <http://www.agilent.com/search/support>
- Get answers. Share insights. Build connections: Join the Agilent Community at <https://community.agilent.com/welcome>

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance services in the most logical order relevant to the individual system service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Preventive maintenance is a factory recommended procedure designed to reduce the likelihood of electromechanical failures. Failure to perform preventive maintenance may reduce the long-term reliability of certain instruments and systems. Two preventative maintenances (PMs) per year are recommended, the Major PM Service will be performed annually with an Interim PM performed 6 months after the Major PM.

System Information

- ☐ Check this box if an Instrument configuration report is attached instead of completing the table.

Instrument System Name and ID	5975C MSD
Instrument System Site and Location	SECOT Co., Ltd.

List System Component Product Numbers	List the Serial Numbers of each Component
1. GS172A	US74638080
2. N/A	N/A
3. N/A	N/A
4. N/A	N/A
5. N/A	N/A
6. N/A	N/A
7. N/A	N/A
8. N/A	N/A

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components and settings as defined by current Service Notes
- ☒ Check for firmware updates and verify with customers if they would like them installed. Firmware update(s) are strongly recommended.

Customer Responsibilities

Customers should ensure that all necessary operating supplies, consumables, and usage-dependent items such as gases, vials, syringes, calibrant solution and solvents required for successful preventive maintenance are available. A customer representative should be available while the preventive maintenance is being performed.

Important notice for customers

The customer should complete the following before the Support Provider arrives on site:

- ☒ Perform an autotune and retain the printed tune report just prior to the start of the PM to verify performance of the equipment.

Note: It is recommended to have the customer run the autotune and tune evaluation prior to the PM and then start the vent cycle so that the instrument will be ready for the service representative.

Definition of the Task/Recommended items within the document

Task	Recommended	
Yes	No	Interim / Major / As needed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Yes selected means that the task was done or the part was required.

No selected means that the task was not done or the part was not required.

Interim selected means that this task is recommended to be done at 6-month intervals.

Major selected means that this task is recommended to be done yearly; if the customer would like a service to be done at the 6-month interval then the service could be purchased.

As needed selected means that the task was done or the part was used as needed. For example, there could be two types of filters that could be used and this was the one selected.

Preventive Maintenance Procedures

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Perform general inspection of system for cleanliness.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discuss any problems the customer is having with the instrument.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Review customer maintenance records and exclude maintenance on recently serviced items.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Review the most recent autotune report. This will give a starting point for evaluating spectral peaks, baseline noise, peak shape, mass assignments and resolution.

Yes/No	Interim/Major	GCMS	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Record instrument model no.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Record instrument serial no.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Record Rough Vacuum
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Record Manifold Vacuum
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Type of Column Installed

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify that calibration peaks were seen prior to starting the PM.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vent the instrument.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inspect vacuum hoses, pump, exhaust tubing, and power cords for excessive wear.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Visually inspect calibrant levels – PFIBA PFDTD (if appl.), IRM (if appl.). Refill if available.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Look for any obvious external damage or problems.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Clean air intake(s). Cosmetic cover(s) may need to be removed.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify system line voltage meets instrument specifications. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check for evidence of oil leakage. Check pump gasket for leakage.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drain and replace mechanical pump oil.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace Oil Mist Filter if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discuss with customer the need for more frequent oil changes if the oil is dirty.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Don't use mist filters with Chemical Ionization.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed. Visually confirm that no oil returns up vacuum hose.

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Clear air flow paths of dust.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	If vacuum is poor, then replace the diaphragm pump.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace the tips seal on the IDP pump.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace the Exhaust Filter if required.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discuss with customer the need for more frequent changes, if needed.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inform customer that pump gas ballast should be installed all the time.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fans
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remove dust from fans and vent covers.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify fans are functional and that there is enough space around the instrument for proper cooling.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Source cleaning
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open analyzer and remove the source.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Disassemble, Clean, Re-assemble source.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Re-install source and close analyzer.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Filters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace RMSG-2 Helium gas filter – If applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace RMSG-2 Nitrogen gas filter – If applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace RMSG-2 Hydrogen gas filter – If applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CP17988 – Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium, Bracket, Mount, and Filter – If applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CP17974 – Gas Clean Filter Kit GC/MS 1/8" Mount and Filter – If applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CP17973 – Gas Clean Filter Replacement Filter – If applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5190-90/1 – Methane Gas Filter – If applicable.

Guidance: If gas filter is replaced, write the change date on the filter using a permanent marker.

Yes/No	Interim/Minor	Major	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pump system back down. Wait until system stability has been achieved.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Verify system vacuum reading(s) via the gauge controller.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Leak Check
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Verify system in manual tune (Compare against previous tune file report(s))
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Change to Tune and verify that all temperatures, pressures, and gas flows reach method set points
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Check manually that you have calibration peaks.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EI Autotune Performed

Guidance: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument setup and checkout.

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook. Record the PM event in the Smart Alerts logbook, if applicable.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review this service, parts replaced, and test results obtained with the customer.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comment box. Systems in a compliant environment may need additional documentation.

Agilent Test Results Table

Test Description	Expected Test Result	Actual Test Result
Atune and Evaluation	Pass	Pass
N/A	N/A	N/A

Agilent Consumed Parts List Table

☐ Section not applicable

Part Description	Part Number	Product or Model where used	Quantity consumed
Agilent Vacuum Fluid	5191-5851	Rough Pump	1
N/A	N/A	N/A	N/A

Signature Page

Service Engineer Comments (optional)

If there are any specific points you wish to note as part of performing the installation or other items of interest for the customer, please write in this box.

N/A

Service Completion

Service request number 6006041183 Date service completed 15 Jun, 2023

Agilent signature [Signature] Customer signature Shihuan C.

Total number of pages in this document 12

Parts – As needed as part of the PM

Common MS Filters and Seals – 5973/5975/5977/7000/7010/7200/7250 Series

Yes/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Helium gas filter – If required	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	Nitrogen gas filter – If required	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	Big Universal Trap, 1/8" fittings, Hydrogen, If required	RMSHY-2
<input type="checkbox"/>	<input type="checkbox"/>	Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium Bracket, Mount and Filter – If required	CP17988
<input type="checkbox"/>	<input type="checkbox"/>	Gas Clean Filter Kit GC/MS 1/8 in (complete replacement kit) – If required	CP17974
<input type="checkbox"/>	<input type="checkbox"/>	Gas Clean GS/MS Filter – If required	CP17973
<input type="checkbox"/>	<input type="checkbox"/>	Chemical Ionization Gas Purifier (CI systems) – If required	5190-0071
<input type="checkbox"/>	<input type="checkbox"/>	Agilent AVF Platinum, 1 quart	5191-5851

Gas filters need to be changed only if required

MS Maintenance Supplies for 5973/5975/5977 Series

Yes/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Diffusion pump fluid (Diffusion Pump Models)	6040-0809 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	IDP-3 Tip Seal Replacement Kit (IDP-3 Dry Pump Models)	G7077-67018
<input type="checkbox"/>	<input type="checkbox"/>	IDP-3 Tip Seal Replacement Kit (no tools – CSD P/N)	S190-9561
<input type="checkbox"/>	<input type="checkbox"/>	IDP-3 Tip Seal Replacement Kit (no tools – VPD P/N)	IDP3TS
<input type="checkbox"/>	<input type="checkbox"/>	Filter element for IDP-3	REPLSLRFILTER2
<input type="checkbox"/>	<input type="checkbox"/>	DS42 Oil Mist Eliminator 3/4G & 3/8	SR03706556
<input type="checkbox"/>	<input type="checkbox"/>	Exhaust oil mist trap (thread) Edwards/Pfeiffer	G1099-90039

MS Maintenance Supplies for 7000/7010 Series

Yes/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Nitrogen gas filter	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	IDP-10 Tip Seal Replacement Kit (IDP-10 Dry Scroll Pump Models)	G7004-67023
<input type="checkbox"/>	<input type="checkbox"/>	IDP-10 Tip Seal Replacement Kit (no tools – VPD P/N)	X3807-67000
<input type="checkbox"/>	<input type="checkbox"/>	Oil Mist Filter RV5	G6600-60043
<input type="checkbox"/>	<input type="checkbox"/>	Filter element for the IDP-10	REPLSLRFILTER1

MS Maintenance Supplies for 7200/7250 Series

Yes/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Nitrogen gas filter – If required	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	RIS Probe Maintenance Kit (7200 Series only)	G7005-60170
<input type="checkbox"/>	<input type="checkbox"/>	DS202 Oil Mist Eliminator	SR03706800
<input type="checkbox"/>	<input type="checkbox"/>	IDP-15 Tip Seal Replacement Kit (IDP-15 Dry Pump Models)	G190-9613
<input type="checkbox"/>	<input type="checkbox"/>	IDP-15 Tip Seal Replacement Kit (no tools – VPD P/N)	X3815-67000
<input type="checkbox"/>	<input type="checkbox"/>	Filter element for SH-110/SH-112/IDP-15 exhaust silencer	REPLSLRFILTER
<input type="checkbox"/>	<input type="checkbox"/>	DS 3/8 MAG. PLUG AND GASKET	SR03701824

MS Maintenance Supplies for JetClean

Yes/No	Interim/Major/As needed	Description	Part number
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Big Universal Trap, 1/8" fittings, Hydrogen, if required	RMSHY-2
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Consumable Parts Reference – Purchasable by customer, not included as part of PM

Common MSD Maintenance Supplies 5973/5975/5977/7000/7010/7200/7250 Series

Yes/No	Interim	Major	AS needed	Description	Part number
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	El High Temperature Filaments	57005-60001 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	HEB El Filaments	57002-60001
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LE-El Filaments	63850-60021
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	GI High Temperature Filament - all MSDs	67005-60072
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PF1BA GCMS Tuning Standard calibrant	05971-60571
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PF1D0 calibrant, 1 mL	8500-8510
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PFET-IRM calibrant for GC-OTOF D.5 mL	5190-0531

• MSD Maintenance Supplies 5973/5975/5977 Series

Yes/No	Interim	Major	As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal (tip and spring combo)	61999-00412
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal (tip only)	63870-20542
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal spring (spring only)	61999-20023
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Repeller insulator	61099-20133 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lens insulator/holder (HES)	67002-20074
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ring heater/sensor assembly (HES)	67002-60043
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ceramic insulator for Extractor (HES)	67002-20064
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Cap, Threaded	63870-20547
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Base, Threaded	63870-20548

MS Maintenance Supplies for 7000/7010 Series

Yes/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal - 7000	G1999-60412
<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal - 7010	G7002-60412
<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal (tip only)	G3870-20542
<input type="checkbox"/>	<input type="checkbox"/>	Cl Interface tip seal spring (spring only)	G1999-20023
<input type="checkbox"/>	<input type="checkbox"/>	Repolar insulator - 7000	G1099-20133 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	Lens insulator/holder (HES)	G7002-20074
<input type="checkbox"/>	<input type="checkbox"/>	Ring heater/sensor assembly (HES)	G7002-50043
<input type="checkbox"/>	<input type="checkbox"/>	Ceramic insulator for Extractor (HES)	G7002-20064
<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Cap, Threaded	G3870-20587
<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Base, Threaded	G3870-20548

MS Maintenance Supplies for 7200 Series

Yes/No				Supplier: 233 0001 0073		Part number
Yes/No	Interim/Major/As needed	Description				Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Extractor Lens Insulator	G7005-20133
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ion Focus Insulator	G7005-20442
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ring Heater/Sensor Assembly	G7005-60110
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RIS Xfer Tip	G7005-20542
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RIS Xfer Tip Spring	G7005-20024

MS Maintenance Supplies for 7250 Series

Year/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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MS Maintenance Supplies for Intuvo 9000 MS Systems

Yes/No	Interim/Major/As needed	Description	Part number
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>		Swaged MS Tail - Packaged	G459D-60009
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>		Swaged MS Tail (HES) - Packaged	G459D-60109

Common MS Maintenance Supplies

Parts required:					Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Abrasive paper, 30 um	5061-5895
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Alumina powder	393706201
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cloth, clean (pkg of 15)	05980-60051
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cloths, cleaning (pkg of 300)	9310-4828
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cotton swabs (pkg of 100)	S080-5400
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gloves, clean, large	8650-0030
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gloves, clean, small	8650-0029

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E04NI99E15AC084 Reference Number: 82-401409170-1
Cylinder Number: EB0102328 Cylinder Volume: 144.4 CF
Laboratory: 124 - Riverton (SAP) - NJ Cylinder Pressure: 2015 PSIG
PGVP Number: B52019 Valve Outlet: 660
Gas Code: CO,NO,NOX,SO2,BALN Certification Date: Feb 05, 2019

Expiration Date: Feb 05, 2027

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

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

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	50.00 PPM	51.01 PPM	G1	+/- 0.8% NIST Traceable	01/28/2019, 02/05/2019
NITRIC OXIDE	50.00 PPM	50.86 PPM	G1	+/- 0.8% NIST Traceable	01/28/2019, 02/05/2019
SULFUR DIOXIDE	50.00 PPM	50.87 PPM	G1	+/- 1.0% NIST Traceable	01/28/2019, 02/05/2019
CARBON MONOXIDE	0.5000 %	0.5050 %	G1	+/- 0.7% NIST Traceable	01/31/2019
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	13080205	CC401847	4950 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Feb 15, 2019
PRM	12367	APEX1099237	9.82 PPM NITROGEN DIOXIDE/AIR	+/- 2.0%	Jun 02, 2017
NTRM	12010724	KAL004497	50.03 PPM NITRIC OXIDE/NITROGEN	+/- 0.8%	Mar 12, 2024
GMIS	1114201601	CC506710	4.871 PPM NITROGEN DIOXIDE/NITROGEN	+/- 2.0%	Nov 14, 2019
NTRM	14010327	KAL004376	49.08 PPM SULFUR DIOXIDE/NITROGEN	+/- 1.0%	Apr 17, 2024

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

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Siemens Ultramat 6 J3-599 COHIGH	NDIR	Jan 16, 2019
Nicolet 6700 APW1100391 NO	FTIR	Jan 10, 2019
Nicolet 6700 APW1100391 NO2	FTIR	Jan 10, 2019
Nicolet 6700 APW1100391 SO2	FTIR	Jan 10, 2019

Triad Data Available Upon Request

PERMANENT NOTES: PRODUCED IN ACCORDANCE WITH ISO17025 REQUIREMENTS

NOTES:

Gross Weight: 27806.3 grams

Net Weight: 4733.2 grams

This calibration std. has been certified in accordance with the May 2012 EPA Traceability Protocol document EPA-600/R-12/531. All testing processes and measurements conform to the requirements of ISO/IEC 17025 and to Airgas ISO 9001:2008 and relate only to items identified on this certificate. This document shall not be reproduced in full without written approval of the Issuer.



TESTING CERT No. 3082.05

[Signature]
Approved for Release

Page 1 of 82-401409170-1



CONTROL UNIT CALIBRATION (Metric units, mm)

Date 6 Jan 24

Initial Final Average
Barometric press, Pb 759 759 759 mmHg

Dry Gas Meter Data

Reference Dry Gas Meter Data

Console No. M50-06 Serial No. 358794
Metering System ID Model S110
DGM Number 917415 Correction factor (Yr) 1.0068
DGM Model MST-C2-1 Last Calibration Date 26 Oct 23
Calibrated by : Montri P.

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V _r Liters	DGM Volume V _m Liters	Temperature (°C)				Time @ min	DGM Correction factor (Y)	ΔH@ mm
			Ref DGM T _r	Dry Gas Meter					
				Inlet T _i	Outlet T _o	Avg T _m			
12.5	100.2	101.7	25	25	24	24.5	8.87	0.9901	44.4570
25.0	100.1	102.0	25	25	24	24.5	6.52	0.9854	48.0383
50.0	100.3	101.1	25	25	24	24.5	4.72	0.9935	50.1707
76.0	99.3	99.3	25	25	24	24.5	3.70	0.9987	47.9159
100.0	100.1	101.6	25	25	24	24.5	3.70	0.9816	49.8135
150.0	100.2	100.2	25	25	24	24.5	2.67	0.9919	48.1679

Average 0.9902 48.0939

Approved by : *[Signature]*

Sheet No. : CAL-PI-LL10-01/2024



PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 09-01-2024

Calibration Duct No.: CD-0123

Calibration Standard Pitot tube data

Pitot No. : Std-02

Coefficient (Cp) : 0.99

Type S Pitot No. : LL10-01

Calibrated by : Mr. Montri P.

A Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(A)
1	15.00	20.50	0.8468	0.0000
2	15.00	20.50	0.8468	0.0000
3	15.00	20.50	0.8468	0.0000

C_{P(A),avg} 0.8468

B Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(B)
1	15.00	20.50	0.8468	0.0000
2	15.00	20.50	0.8468	0.0000
3	15.00	20.50	0.8468	0.0000

C_{P(B),avg} 0.8468

| CP(A)-CP(B) | = 0.0000

C_{P(Avg)} = 0.8468

Approved by :

*** δ must be ≤ 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 ***

Sheet No. : CR-515-2024-367



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Dec 9, 24

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref. Calibrated (dB)	Eff. Calibrated (dB)
Cirrus	CR:515	94296	1000.00	94.0	93.7

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
14	Cirrus	CR162B	G300709	93.7	0.0
15	Cirrus	CR162B	G300769	93.7	0.0
19	Cirrus	CR162B	G300990	93.7	0.0
39	Cirrus	CR162B	G302743	93.7	0.0

Calibrated by :

Approved by :

Preeda S.



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Dec 9, 24

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref.Calibrated (dB)	Eff.Calibrated (dB)
Cirrus	CR:515	94296	1000.00	94.0	93.8

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
7	SCARLET	ST-21D	820728	93.8	0.0
8	SCARLET	ST-21D	820729	93.8	0.0

Calibrated by :

Approved by :

Preeda S.



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Sep 10, 24

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref.Calibrated (dB)	Eff.Calibrated (dB)
Cirrus	CR:515	94296	1000.00	94.0	93.8

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
1	SCARLET	ST-21D	820722	93.8	0.0
2	SCARLET	ST-21D	820723	93.8	0.0
4	SCARLET	ST-21D	820725	93.8	0.0
6	SCARLET	ST-21D	820727	93.8	0.0
7	SCARLET	ST-21D	820728	93.8	0.0
8	SCARLET	ST-21D	820729	93.8	0.0

Calibrated by :

Approved by :

Suk Suthanwan



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

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

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

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



Certificate No.: CP20240083EA

Operation No.: CP2024020056

Certificate of Calibration

Equipment: Sound Calibrator

Manufacturer: Cirrus Research Plc

Model/Type: CR:515

Serial No.: 94296

ID No.: -

Customer: SECOT Co.,Ltd.

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

Received Date: 8 February 2024

Calibrated Date: 14 February 2024

Issued Date: 20 February 2024

Calibrated by: Ms. Juntaporn Kunhakom

Approved by:

(Mr. Sittichai Swaksuriyawong)
Group Manager

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

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ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20240083EA

Calibration Report

Equipment: Sound Calibrator

Manufacturer: Cirrus Research Plc

Model/Type: CR:515

Serial No.: 94296

ID No.: -

Ambient Temperature: (23 ± 2) °C

Relative Humidity: (50 ± 15) %

Pressure: (101.3 ± 1.5) kPa

Method of Calibration :-

IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2661000	AA-1006-23	7 June 2024
2) Waveform Generator	33511B	MY52302264	CK20230039EA	27 June 2024
3) Audio Analyzing DMM	2015-P	4079144	E1U231797	23 April 2024
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P230024 CD20230196EA	20 March 2024 23 July 2024

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

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

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

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

Result of Calibration:-

1. Function : Sound pressure level

Normal	Specified Sound	Measured value	Deviated value ^[1]	Acceptance limit ^[3]
Frequency (Hz)	Pressure level (dB)	(dB)	(dB)	(dB)
1000	94	93.89	-0.11	± 0.25

2. Function : Frequency

Normal Sound	Specified Frequency	Measured value	Deviated value ^[2]	Acceptance limit ^[3]
Pressure level (dB)	(Hz)	(Hz)	(%)	(%)
94	1000	1000.34	0.03	± 0.70

Certificate No.: CP20240083EA

Calibration Report

3. Function : Total distortion + noise

Normal Sound Pressure level (dB)	Normal Frequency (Hz)	Measured value ^[4] (%)	Acceptance limit ^[5] (%)
94	1000	0.68	2.50

Uncertainty of measurement

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

- Note:
- [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - [2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - [3] The acceptance limit is for the deviated value.
 - [4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - [5] The acceptance limit is for the Measured value.
- Remarks:
- 1. Acceptance limit was IEC 60942:2017 Class 1.
 - 2. Maximum-permitted uncertainty of measurement was IEC 60942:2017 Class 1.
 - 3. The coverage factor $k = 2.00$


-- End of Report --



PinAAcle 900T Preventive Maintenance Report

Company Name: Secot.co.th.
Instrument Location: Instrument room.
239 Rimkhlong Prapa Road, Bang Sue, Bangkok 10800
Instrument Serial No.: PTDS23051001
Date: 27-Mar-2024

PinAAcle 900T Preventive Maintenance (PM)			
Company Name:	Secot.co.th.		
Address: (Instrument Location):	239 Rimkhlong Prapa Road, Bang Sue, Bangkok 10800		
Serial Number:	PTDS23051001	PM Number:	1 OF 2 W
Customer Name (If applicable):	K.Araya	Telephone Number:	0-2910-5021-6
Customer Support Engineer Name:	K.Piyawit	Service Order Number:	WO-02706368
Date PM Performed: (DD-MMM-YYYY)	27-Mar-2024	Next PM Due Date: (DD-MMM-YYYY)	27-Sep-2024
Standard Labor Hours to Complete PM:	5 hours		

Part Number	Release	Publication Date	
09370143 Rev.9	A	January 2018	

Scope

The purpose of this PM is to ensure the continued functionality of the PinAAcle 900T by inspecting and replacing any worn or damaged parts. This service should only be performed by a trained representative of PerkinElmer.

The customer should save their method before the PM begins.

General Instructions:

The customer must provide the engineer operational data to demonstrate recent instrument performance prior to starting the PM. Always check with the customer before making any changes that may affect the customer's analysis or calibration, including a current back-up of system software and/or data files. The completed document should be signed by an authorized PerkinElmer and customer representative and left with the customer. Update the PM sticker and Instrument logbook as required.

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Component List

Component / Specific Model	Serial #	Configuration Notes
PinAAcle 900T	PTDS23051001	Synglistix v.5.10

Parts Lists

Parts included with the PM		
Part Number (If applicable)	Description	Quantity
B0501696	Fan Filters	N/A
B3002013	THGA Contact Cylinders	N/A
B3141064	Glycerol for THGA Cooling	N/A
N3160156	O-Ring Kits for Sampling Introduction (Stainless Steels Nebulizer)	N/A
N3160157	O-Ring Kits for Sampling Introduction (Plastic Nebulizer)	N/A
N9301714	Replacement Acetylene Filter Cartridge	N/A
TH001022	Replacement Air Filter Cartridge	N/A

Additional Reagents and Standards Required for PM				
Part Number (If applicable)	Description	Quantity	Batch/Lot #	Expired Date (MM/YY)
N9300183	1000 mg/L Copper Standard	AR	27-39CRY1	30-Apr-2025
N9300244	GFAAS Mixed Standard	AR	60-004CRY1	28-Feb-2025

Additional Reagents and Standards Required for PM (Customer Support Solution)				
Part Number (If applicable)	Description	Quantity	Batch/Lot #	Expiration Date (MM/YY)
N/A	DI Water	250 ml.	AR	AR
N/A	0.5% HNO ₃	250 ml.	AR	AR

Additional Tools Required for PM			
Part Number (If applicable)	Description	Quantity	Serial #
N1013000	0.2A Neutral density filter	1	MGO-056
N1013002	1.0A Neutral density filter	1	MG2-258
B3100652 Or N9307029	Electronic Flow Meter	1	MY2231FC07
B0505495	Test Jlg	1	N/A
03030997	System 2 EDL Driver	1	03030997
N3050605	As System 2 EDL	1	16148
N3050121	Cu Lumina HCL	1	092216-010130
N3050109	Ba Lumina HCL	1	102416-040160
N3050139	K Lumina HCL	1	110716-010060
N3050152	NI Lumina HCL	1	100516-030190
N3050119	Cr Lumina HCL	1	030621-020190

Procedure Checklist

Use (✓) to check off those steps in the checklist that have been completed.

1. General:

- ☒ Review the instrument performance with the customer and document any recent problems.
- ☒ Inspect the customer log book and make any appropriate PM entries.
- ☒ Perform general inspection of system for cleanliness.

2. PC Instrument Software:

- ☒ Instrument Software user files/databases archived, packed, and/or deleted as needed.

3. Mechanical:

- ☒ Inspect and clean all fans and filters. Replace filters if necessary
- ☒ Inspect all gas and water lines for leaks and/or wear. Replace if needed. Thoroughly inspect all quick connects. Replace the Y connector, P/N 09921079, if needed.
- ☒ Clean exterior of the instrument.

3.1 Flame Technique

- ☒ Inspect the burner head, burner chamber, and nebulizer. Clean if needed as stated in the Hardware Guide.
- ☒ Check burner head dimensions with the feeler gauge as stated in the Hardware Guide in the Maintenance chapter section on cleaning the burner head and checking sloth width. Replace if out of specification
- ☒ Check the condition of the end cap, burner head, and nebulizer O-rings. Replace if necessary.
- ☒ Check the drain system for signs of wear. Replace worn or damaged parts.
- ☒ Visually check for proper flame conditions when igniting the Air-C₂H₂ and N₂O-C₂H₂ flames (if applicable).

3.2 THGA Technique

- ☒ Inspect the pole pieces and clean where the pole pieces contact the furnace. Replace the pole piece p-rings as needed, P/N's B0501018 & B0501250. Grease the O-rings as needed with Apiezon L grease, P/N 09905148
- ☒ Inspect the four insulation pads on the front contact housing of the THGA in furnace. If the pads are missing replace the THGA furnace or replace the insulator pads on the furnace.
- ☒ Inspect the graphite tube and clean the contact cylinders. Replace if necessary.
- ☒ Check internal and external gas flows with the Electronic Gas Flow Meter and the Gas Flow Test Probe as described in the Service Manual. Correct if necessary.
- ☒ Check furnace open/close function.
- ☒ Verify the operation of the GFTV Camera for proper operation and viewing alignment in the furnace camera Tube View window. Align if needed.
- ☒ Check the operation of the Halogen Light ASSY for the GFTV Camera. Replace if needed.
- ☒ Check the water level/quality in the recirculation (if applicable). Add distilled water if necessary.
- ☒ Check the cooling system fluid flow rate with the FCS In-Line Flow Meter for proper levels if needed. Refer to SDB# COSY008.STN

- ☒ Perform Cooling System maintenance if needed per SDB# COSY005.STN.
- ☒ Check auto sampler operation.
- ☒ Perform an auto sampler check valve test as described in the Service Manual.
- ☒ Lubricate the spindles of the auto sampler pumps and all moving parts of the tray mechanics as described in the Service Manual.
- ☒ Inspect the auto sampler sampling capillary as described in the Service Manual. Replace if necessary.

4. Electrical:

- ☒ Inspect PC boards. Clean if necessary.
- ☒ Carefully check all internal and external cable connections.
- ☒ Check instrument firmware revisions upgrade to current levels (if necessary)
- ☒ Run Diagnostics Test within the Advanced function of the Spectrometer page. Check the results in the service log folder in the Spectrometer BM Log Viewer.

5. Optics:

- ☒ Inspect and clean the sample compartment windows, if needed.
- ☒ Inspect and clean the furnace windows, if needed.
- ☒ Inspect and clean the GFTV camera lens, if needed.
- ☒ Inspect optics. Clean or replace if necessary.

6. Gasses:

- ☒ Verify that the Gasses supplied to the instrument are within the pressure and purity specifications found in the PinAAcle 900 Series Pre-installation Checklist SDB.
- ☒ Verify that the air filter element is dry. Replace if necessary.

7. Flame Interlock Check:

Description: Check to ensure that all safety Interlocks are closed.

Parameter	Specification	Test Results	Pass/Fail
Flame Sensor	Air/Gas flame correctly shuts down	Active	Passed
Drain Sensor	Air/Gas flame correctly shuts down	Active	Passed
Nebulizer Sensor	Air/Gas flame correctly shuts down	Active	Passed
CH ₄ Pressure Sensor	Air/Gas flame correctly shuts down	Active	Passed
Air Pressure Sensor	Air/Gas flame correctly shuts down	Active	Passed
Burner Head Sensor	Excessive Nitrous oxide is measured and the flame interlock shuts down	Active	Passed

8. After PM Performance tests [Flame]:

8.1 Detector Linearity with Barium

Description: Ensures that the detector is linear in the Visible Range.

Parameter	Specification	Certificate Value at 553.6 nm (Abs.)	Test Results	Pass/Fail
RD AND File	As furnished	1.0154	0.9921	Passed
R2 AND File	As furnished	0.1806	0.2037	Passed

8.2 Baseline Noise at 1.0 Absorbance with Barium

Description: Ensures that a high absorbance will not produce excessive noise.

Parameter	Specification	Results	Pass/Fail
Standard Deviation	≤ 0.001	0.0031	Passed

8.3 AA Baseline Noise with Copper

Description: Check baseline noise.

Parameter	Specification	Results	Pass/Fail
Standard Deviation	≤ 0.001	0.0005	Passed

8.4 D₂ Background Compensation with Copper

Description: Verifies the Instruments ability to compensate for Background absorption.

Parameter	Specification	Results	Pass/Fail
Standard Deviation	≤ 0.001	0.0004	Passed

8.5 AA-BG Baseline Noise with Copper

Description: Ensures that background correction does not produce excessive noise.

Parameter	Specification	Results	Pass/Fail
Standard Deviation	≤ 0.001	0.0001	Passed

8.6 AA-BG Baseline Noise with Arsenic

Description: Ensures that background correction does not produce excessive noise at a low wavelength.

Parameter	Specification	Results	Pass/Fail
Standard Deviation	≤ 0.005	0.0004	Not Applicable

8.7 Flame Sensitivity

Description: Instrument Sensitivity checked against Copper standard.

Standard Copper Sensitivity	Specification	Results (Abs)	Pass/Fail
5µg/L Sensitivity (SS Neb) (Applicable)	≥ 0.750 Abs	N/A	Not Applicable
2µg/L Sensitivity (FS Neb) (Not Applicable)	≥ 0.250 Abs	0.3541	Passed

9. After PM Performance tests [THGA]:

9.1 Furnace Gas Flows

Description: Ensures the flow rates are within specification.

Parameter	Specification	Test Results	Pass/Fail
Internal Flow Rate	250 ml/min ± 25 ml/min	250	Passed
External Flow Rate	100 ml/min ± 10 ml/min	99	Passed

9.2 Chromium Baseline Noise

Description: Signal to noise check.

Parameter	Specification	Results	Pass/Fail
Baseline Noise	≤ 0.005 Abs	0.0004	Passed
Standard Deviation	≤ 0.005	0.0001	Passed

9.3 Chromium Characteristic Mass and Precision

Description: Calculate the characteristic mass using the characteristic mass tool and precision from the integrated absorbance values.

Parameter	Specification	Results	Pass/Fail
Characteristic Mass	≥ 0.900 mg/g	4.90	Passed
Precision	≤ 2.0%	0.82	Passed

9.4 Copper Characteristic Mass and Zeeman Ratio

Description: Calculate the characteristic mass using the characteristic mass tool and check the Zeeman Ratio.

Parameter	Specification	Results	Pass/Fail
Copper Result	≤ 16.5 µg/L (0.044%)	14.20	Passed
Zeeman Ratio	≥ 0.60 ± 0.04	0.5430	Passed

10. Review:

- ☒ Review with the customer PM work performed.
- ☒ Review with the customer routine maintenance procedures.
- ☒ Discuss recommended customer supplied materials to have on hand.
- ☒ Attach PM sticker.

Additional Comments

Additional Comments Regarding the PM	
Zeeman Ratio	$= \frac{\text{Atomic Signal (Peak area)}}{\text{Atomic Signal (Peak area)} + \text{Background Signal (Peak area)}}$
	$= \frac{0.1545}{0.1545 + 0.1300}$
	$= 0.5430$

Review

<p><i>The preventive maintenance checks and if applicable performance tests for PinAAcle 900T have been completed.</i></p> <p><i>This PinAAcle 900T Passes <input type="checkbox"/> Falls <input type="checkbox"/> the preventive maintenance.</i></p>	
Review of Preventive Maintenance:	
Authorized PerkinElmer Representative:	<p><i>P. J.</i></p> <p>Date: 27-Mar-2024 (DD-MM-YYYY)</p>
Authorized Customer Representative:	<p><i>S. J.</i></p> <p>Date: 27-Mar-2024 (DD-MM-YYYY)</p>

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **26 March 2024**

CERTIFICATE NUMBER **211259**

NoiseMeters

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

Page 1 of 2

Approved signatory

N.Smith

Electronically signed:

N.D. Smith

doseBadge Reader : IEC 60942:2003

Instrument information

Manufacturer: Cirrus Research plc

Notes:

Model: RC:110A

Serial number: 95167

Class: 2

Test summary

Date of calibration: 25 March 2024

The doseBadge reader detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

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

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

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

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

Notes:

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

CERTIFICATE OF CALIBRATION

Certificate Number:

211259

Page 2 of 2

Environmental conditions

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

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

Test equipment

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

Initial Acoustic Results

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

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

Adjusted Acoustic Results

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

Functionality Results

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

End of results

CERTIFICATE OF CALIBRATION

ISSUED BY Noisemeters

DATE OF ISSUE 29 April 2024

CERTIFICATE NUMBER 213338

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

Page 1 of 2

Approved signatory

N.Smith

Electronically signed:



doseBadge Reader : IEC 60942:2003

Instrument information

Manufacturer: Pulsar Instruments

Notes:

Model: Model 22R

Serial number: 79781

Class: 2

Test summary

Date of calibration: 29 April 2024

The doseBadge reader detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK224 manufactured by Cirrus Research plc.

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

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

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

Notes:

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

CERTIFICATE OF CALIBRATION

Certificate Number:
213338

Page 2 of 2

Environmental conditions

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

Before Pressure: 100.34 kPa Temperature: 22.4 °C Humidity: 38.5 %
After Pressure: 100.34 kPa Temperature: 22.7 °C Humidity: 36.3 %

Test equipment

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

Initial Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	113.94	113.93	113.94	113.94	-0.06	±0.75	0.11 dB
Distortion (%)	< 4.00	0.49	0.49	0.49	0.49	0.49	+4.00	0.13 %
Frequency (Hz)	1000.0	998.9	998.9	998.9	998.9	-1.1	±20.0	0.1 Hz

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

Adjusted Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	114.01	113.98	113.98	113.99	-0.01	±0.75	0.11 dB
Distortion (%)	< 4.00	0.49	0.49	0.49	0.49	0.49	+4.00	0.13 %
Frequency (Hz)	1000.0	998.9	999.0	998.9	998.9	-1.1	±20.0	0.1 Hz

Functionality Results

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

End of results



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-67/0303

MTC.No.23-67/0303-02

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 : 13 February 2024 Condition of measured item : Normal

Calibration date : 6 March 2024

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 643/65	1-Jun-24	TISTR
Molbox/Pressure Transducer/UpStream	MP-0076-23	2-Apr-25	NIMT
Primary Flow Calibrator S/N 117982	MW-0034-23	11-Jun-25	NIMT

Calibrated by : *Terasak Panna*

(Mr.Terasak Panna)

Approved by : *Ms. Kirana Luanghirun*

(Ms.Kirana Luanghirun)

Director

Mechanical Engineering Standards Laboratory

Ref. 2013267021300639002

Issued Date 11 March 2024

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-67/0303

2/2

MTC.No.23-67/0303-02

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

Ambient condition : Temperature (23 ± 3) °C , Relative humidity (55 ± 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 (ml/min)	Standard Value (ml/min)	Temperature (°C)	Pressure (hPa)	Deviation (%)	Uncertainty (%)
19.854*	19.920	25.169	1006.69	-0.33	1.1
49.990	50.384	25.058	1006.80	-0.78	1.1
99.770	99.036	25.047	1006.89	+0.74	0.99
199.87	192.51	24.984	1007.03	+3.82	1.0
401.92	384.44	24.959	1007.30	+4.55	0.99

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 calibration point is not the scope of accreditation.

The end of calibration certificate.

TB.

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FM.BLMTC.002 Rev.4

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-67/0383

MTC.No.23-67/0383

Number of page(s) 2

CALIBRATION CERTIFICATE

Nomenclature : DRYCAL

Manufacturer : Mesa Labs

Serial No. : 114069

Model : Defender 520-H

Scale range : 300 ml/min to 30,000 ml/min

Subdivision : (0.0001, 0.001) L/min

Submitted by : SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,

Bangkok 10800, Thailand.

Received date : 2 April 2024

Condition of measured item : Normal

Calibration date : 7 May 2024

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 643/65	1-Jun-24	TISTR
Molbox/Pressure Transducer/UpStream	MP-0076-23	2-Apr-25	NIMT
Primary Flow Calibrator S/N 119216	MW-0035-23	31-May-25	NIMT

Calibrated by : Terasak Panna

(Mr.Terasak Panna)

Approved by :

(Ms.Kirana Kuanghirun)

Director

Mechanical Engineering Standards Laboratory

Ref. 20132670420197001

Issued Date 13 May 2024

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-67/0383

2/2

MTC.No.23-67/0383

Calibration point : (1.5, 5.0, 10, 15, 25) L/min

Ambient condition : Temperature (23 ± 3) °C , Relative humidity (55 ± 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 (L/min)	Standard Value (L/min)	Temperature (°C)	Pressure (hPa)	Deviation (%)	Uncertainty (%)
1.5116	1.4904	25.492	1007.32	+1.42	0.93
5.0284	4.9847	25.446	1007.65	+0.88	0.92
10.072	10.027	25.442	1008.43	+0.45	0.92
15.109	15.087	25.457	1009.62	+0.15	0.91
25.206	25.160	25.520	1013.18	+0.18	0.91

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.

Ts.

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ภาคผนวก จ

หนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
จากกรมโรงงานอุตสาหกรรม



ที่ อก ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒ ๐ กรกฎาคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ซีคอฟ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๗ เมษายน ๒๕๖๖

- สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๙ แผ่น

ตามหนังสือที่อ้างถึง บริษัท ซีคอฟ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙ สถานที่ ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ซีคอฟ จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๘ ราย ตามสิ่งที่ส่งมาด้วย ๒
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย น้ำใต้ดิน อากาศเสีย สิ่งปฏิกูล หรือวัสดุที่ไม่ใช้แล้ว และดิน ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ พฤษภาคม ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายประสม ดำรงพงษ์)

กองวิจัยและเตือนภัยมลพิษโรงงาน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๕๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ซีคอฟ จำกัด

เลขทะเบียน ว-๒๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖

ลงวันที่ ๒ ๐ กรกฎาคม ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย

- ๑) นายขรรชัย เกรียงไกรอุดม
๒) นางสมฤดี เกรียงไกรอุดม
๓) นางอารยา ทิพรัักษ์
๔) นางสาวเชมชุตตา อินทร์ศร
๕) นางสาวปรีดา สมใจ
๖) นางสาวอรุณญา มาตา
๗) นางสาวลดาวัลย์ วงศ์เจริญ
๘) นางสาวณัฏฐพร เกตะวันดี
๙) นางสาวนริสา ภูวสรเพ็ชญ์
๑๐) นางสาวศิริวรรณ นิมสง่า

- ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๒
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๓
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๔
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๕
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๖
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๗
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๘
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๐๙
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๑๐
ทะเบียนเลขที่ ว-๒๓๙-ก-๐๐๑๑

วิมล

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ชีคอฟ จำกัด

เลขทะเบียน ว-๒๓๙

ที่ ออก ๐๓๑๐(๑)/ ๑๑ ๐ ๑ ๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๘ ราย

- ๑) นางสาวสุตาพร สุนทร
- ๒) นางสาวสุรดาทิพย์ เทียนเตี้ย
- ๓) นางสาวสุนันทา ศิริพัฒนานนท์
- ๔) นายบรร ดิษฐ์ยะ
- ๕) นางสาวเกศรินทร์ วรเดชวิทยา
- ๖) นายอนันต์ วัฒนวันนา
- ๗) นายชิตพล สมประสงค์
- ๘) นางสาวศศิธร พรหมประเสริฐ
- ๙) นายศิวนนท์ กลวงษ์
- ๑๐) นางสาวอลิษา คณิธรานนท์
- ๑๑) นางสาวสิริวรรณ แก้วชิงดวง
- ๑๒) นางสาวปัทมวรรณ สุวรรณวิโรจน์
- ๑๓) นางสาวกนิษฐา เจริญเชื้อ
- ๑๔) นายวัชรกานต์ ประมาคเต
- ๑๕) นายทอง เฮงขวัญกุล
- ๑๖) นางสาวกฤษณา จันทุม
- ๑๗) นางสาวพรนภา บุตรธรรม
- ๑๘) นางสาวธาริณี อาจปลิว
- ๑๙) นายธนโชติ ช่างล้อ
- ๒๐) นางสาวพัชรา สมานพันธ์
- ๒๑) นางสาวจุฑารัตน์ แจ่มเรือน
- ๒๒) นางสาวณิสดา กุ้ยอ่อน
- ๒๓) นายกิตติพงศ์ ตะเกิงสุข
- ๒๔) นายจิรวัฒน์ โคตรคำหาญ
- ๒๕) นายชนะพล อัครผล
- ๒๖) นางสาวทิพย์สุดา วรรมการ
- ๒๗) นายสิทธิชัย สว่างวงศ์ไชย
- ๒๘) นายพิษณุ สีนามเพ็ง
- ๒๙) นายรัตนชัย ขอบทำกิจ
- ๓๐) นายธนาวุฒิ ตัวนแสง
- ๓๑) นายณัฐชัย ไชยโคตร
- ๓๒) นายณัฐดนัย กฤษณะโลม
- ๓๓) นายศุภชัย สุขใหม่
- ๓๔) นายรอมฎอน เหล็กหมาด
- ๓๕) นางสาวสุภาวดี บัวแก้ว
- ๓๖) นางสาวมาเรียมณี ฮาแว
- ๓๗) นางสาววิระยา ปัจฉิมบุรณ์
- ๓๘) นางสาวศลิษา อินทรีย์

- ทะเบียนเลขที่
- ว-๒๓๙-จ-๐๐๐๑
 - ว-๒๓๙-จ-๐๐๐๓
 - ว-๒๓๙-จ-๐๐๐๔
 - ว-๒๓๙-จ-๐๐๐๕
 - ว-๒๓๙-จ-๐๐๐๖
 - ว-๒๓๙-จ-๐๐๐๗
 - ว-๒๓๙-จ-๐๐๐๘
 - ว-๒๓๙-จ-๐๐๐๙
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 - ว-๒๓๙-จ-๐๐๓๙

3/10/16

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ชีคอฟ จำกัด

เลขทะเบียน ว-๒๓๙

ที่ ออก ๐๓๑๐(๑)/ ๑๑ ๐ ๑ ๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๕๕ รายการ

น้ำเสีย จำนวน 45 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
2	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
3	Barium	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
4	α-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
5	β-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
6	δ-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
7	γ-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method ^[4] 2) 5-Day BOD Test, Membrane Electrode Method ^[4]
9	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
10	Chemical Oxygen Demand	1) Open Reflux, Titrimetric method ^[4] 2) Closed Reflux, Colorimetric method ^[4] 3) Closed Reflux, Titrimetric Method ^[4]
11	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
12	Chromium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
13	Color	ADMI Weighted-Ordinate Spectrophotometric Method ^[4]
14	Copper	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
15	Cyanide	Distillation, Colorimetric method ^[4]
16	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
18	4,4'-DDT	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4] 1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
19	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
20	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
21	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
22	Endosulfan Sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
23	Endrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
24	Endrin Aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
25	Formaldehyde	Distillation, Colorimetric Method ^[3]
26	Free Chlorine	1) Iodometric Method ^[4] 2) DPD Colorimetric Method ^[4]
27	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
28	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
29	Hexavalent Chromium	1) Colorimetric Method ^[4] 2) Extraction, Air-Acetylene Flame Method ^[4]
30	Lead	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
31	Manganese	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
32	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[4]
33	Methoxychlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
34	Nickel	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] <i>วิธีใหม่</i>

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
		3) Digestion, Inductively Coupled Plasma Method ^[4]
35	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method ^[4] 2) Soxhlet Extraction Method ^[4]
36	pH	Electrometric Method ^[4]
37	Phenols	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4]
38	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
39	Sulfide	1) Iodometric method ^[4] 2) Methylene blue method ^[4]
40	Temperature	Laboratory and Field Methods ^[4]
41	Total Dissolved Solids	Dried at 180 °C ^[4]
42	Total Kjeldahl Nitrogen	1) Macro Kjeldahl Method ^[4] 2) Semi-Micro Kjeldahl Method ^[4]
43	Total Suspended Solids	Dried at 103-105 °C ^[4]
44	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^[4] 3) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4]
45	Zinc	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4] <i>วิธีใหม่</i>

น้ำใต้ดิน จำนวน 125 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
2	Acetone	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
3	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
5	Antimony	Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
8	Barium	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ^[4] 2) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
10	Benzene	Purge and Trap Gas Chromatographic/Mass spectrometric Method ^[4]
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] วัณ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
13	Benzoic acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
15	Benzo(g,h,i)perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
16	Beryllium	Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
19	Bromodichloromethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
20	Bromoform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
21	Butanol	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
22	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
23	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
25	Carbon disulfide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
26	Carbon tetrachloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4] วัณ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
29	Chlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
30	Chlorodibromomethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
31	Chloroform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
33	Chromium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
34	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method; Colorimetric Method; Calculation ^[4]
35	Chromium (VI)	1) Colorimetric Method ^[4] 2) Extraction, Air-Acetylene Flame Method ^[4]
36	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
37	Cyanide	1) Distillation, Titrimetric Method ^[4] 2) Distillation, Colorimetric Method ^[4]
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
39	DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
40	DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
41	DDT	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
43	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
44	1,2-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
45	1,3-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
46	1,4-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
47	3,3'-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
48	1,1-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
49	1,2-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
50	1,1-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
51	cis-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
52	trans-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
54	1,2-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
55	1,3-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
56	1,3-Dichloropropene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
57	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
58	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
63	Di-n-Octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
64	Endosulfan	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid...

2) Liquid-Liquid...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
		2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
65	Endrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
66	Ethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
69	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
70	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
72	Hexachloro-1,3-butadiene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
73	n-Hexane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
74	α-HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
75	β-HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid...

2) Liquid-Liquid...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
76	γ-HCH	2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] 1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
77	Hexachlorocyclopentadiene	2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
81	Lead	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
82	Manganese	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
83	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[4]
84	Methanol	Purge and Trap Gas Chromatographic/ Mass spectrometric Method ^[4]
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
86	Methyl bromide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]

87 Methylene chloride...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
87	Methylene chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
90	Methyl tert-butyl ether	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
92	Nickel	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
95	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
96	Polychlorinated Biphenyls - PCB-1016 - PCB-1221 - PCB-1232 - PCB-1242 - PCB-1248 - PCB-1254 - PCB-1260	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
98	pH	Electrometric method ^[4]

99 Phenanthrene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
100	Phenol	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4] 3) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
102	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
103	Silver	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
104	Styrene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
105	1,1,2,2-Tetrachloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
106	Tetrachloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
107	Toluene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
108	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[12,25]
109	TPH (C ₈ -C ₁₆)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[9,21] 2) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass spectrometric Method ^[9,25]
110	TPH (C ₁₆ -C ₃₅)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[9,21] <i>วิธีนี้</i>

2) Separatory...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
		2) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass spectrometric Method ^[9,25]
111	1,2,4-Trichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
112	1,1,1-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
113	1,1,2-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
114	Trichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
115	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
116	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
117	1,3,5-Trimethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
118	Vanadium	Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
119	Vinyl acetate	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
120	Vinyl chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
121	m-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
122	o-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
123	p-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
124	Xylene (Total)	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4] <i>วิธีนี้</i>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
125	Zinc	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]

อากาศเสีย (ปล่อยระบาย) จำนวน 27 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
2	Arsenic	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
3	Beryllium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
4	Cadmium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
5	Carbon monoxide	Instrumental Analyzer Method ^[5]
6	Chlorine	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
7	Chromium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 31m

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
8	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
9	Copper	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
10	Cresol	Adsorption Sampling, Gas Chromatographic Method ^[5]
11	Dioxin/Furans	Isokinetic Sampling ^[5]
12	Hydrogen chloride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
13	Hydrogen Fluoride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
14	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[5]
15	Lead	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
16	Manganese	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
17	Mercury	Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[5]
18	Nickel	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 31m

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Opacity	Ringelmann's Method ^[2]
20	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic acid Method ^[5] 2) Absorption Sampling, Ion Chromatographic Method ^[5] 3) Instrumental Analyzer Method ^[5]
21	Selenium	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
22	Sulfur dioxide	1) Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5] 2) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5] 3) Instrumental Analyzer Method ^[5]
23	Sulfuric acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5]
24	Tin	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
25	Total Suspended Particulate	1) Isokinetic Sampling, Gravimetric Method ^[5] 2) Paired Train, Isokinetic Sampling, Gravimetric Method ^[5]
26	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
27	Xylene	1) Adsorption Sampling, Gas Chromatographic Method ^[5] 2) Adsorption Sampling, Gas Chromatographic/Mass Spectrometric Method ^[5]

สิ่งปฏิกูล...

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 34 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,6,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,6,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
2	Antimony	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
3	Arsenic	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
4	Barium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15]

2) Waste Extraction...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
5	Beryllium	2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 4) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 5) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 6) Digestion, Inductively Coupled Plasma Method ^[7,14]
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
8	Chromium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] <i>เพิ่ม</i>

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
9	Chromium (III)	3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation ^[1,6,15,17] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation ^[1,6,14,17] 3) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation ^[7,8,15,17] 4) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation ^[7,8,14,17]
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method ^[1,17] 2) Alkaline Digestion, Colorimetric Method ^[8,17]
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
12	Copper	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14] <i>เพิ่ม</i>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
13	2,4-D	1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,25]
14	DDD	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]

17 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
20	Lead	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14]

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
21	Lindane	3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[1,18] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[19] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
23	Methoxychlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]


24 Molybdenum...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
24	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
25	Nickel	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
26	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,23] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,23]
27	Pentachlorophenol	1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,25] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25]
28	pH	Electrometric Method ^[31,32]
29	Selenium	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,20] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,20]


4) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
30	Silver	4) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
31	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
32	Trichloroethylene	1) Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[1,12,26] 2) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[12,26]
33	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
34	Zinc	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]

ดิน จำนวน 124 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27] 

2 Acetone...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
3	Aldrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
4	Anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
5	Antimony	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
7	Atrazine	Ultrasonic Extraction, Gas Chromatographic Method ^[11,24]
8	Barium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
9	Benz(a)anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
10	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
11	Benzo(b)fluoranthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
12	Benzo(k)fluoranthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
13	Benzoic acid	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27] 

14 Benzo(a)pyrene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
14	Benzo(a)pyrene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
15	Benzo(g,h,i)perylene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
16	Beryllium	Digestion, Inductively Coupled Plasma Method ^[7,14]
17	Bis(2-chloroethyl)ether	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
18	Bis(2-ethylhexyl)phthalate	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
22	Butyl benzyl phthalate	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
23	Cadmium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
24	Carbazole	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
25	Carbon disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
27	Chlordane	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
28	p-Chloroaniline	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
31	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
32	2-Chlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
33	Chromium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
34	Chromium (III)	1) Digestion, Flame Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^[7,8,15,17] 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[7,8,14,17]
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method ^[8,17]
36	Chrysene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
37	Cyanide	1) Extraction, Distillation, Titrimetric Method ^[28,29,30] 2) Extraction, Distillation, Colorimetric Method ^[28,29,30]
38	2,4-D	Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[24]
39	DDD	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	DDE	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
41	DDT	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
42	Dibenz(a,h)anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
43	Di-n-butyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
47	3,3'-Dichlorobenzidine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
53	2,4-Dichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]

54 1,2-Dichloropropane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
57	Dieldrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
58	Diethyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
59	2,4-Dimethylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
60	2,4-Dinitrophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
61	2,4-Dinitrotoluene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
62	2,6-Dinitrotoluene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
63	Di-n-Octyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
64	Endosulfan	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
65	Endrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]

67 Fluoranthene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
67	Fluoranthene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
68	Fluorene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
69	Heptachlor	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
70	Heptachlor epoxide	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
71	Hexachlorobenzene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
74	α-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
75	β-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
76	γ-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
77	Hexachlorocyclopentadiene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]

78 Hexachloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
78	Hexachloroethane	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
79	Indeno(1,2,3-cd)pyrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
80	Isophorone	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
81	Lead	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
82	Manganese	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[9] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
84	Methanol	Ultrasonic Extraction, Direct Aqueous Injection, Gas Chromatographic Method ^[11,21]
85	Methoxychlor	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
86	Methyl bromide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
87	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
88	2-Methylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
89	2-Methylnaphthalene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]

90 Methyl tert-butyl ether...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
90	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
91	Naphthalene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
92	Nickel	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
93	Nitrobenzene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
94	N-Nitrosodiphenylamine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
95	N-Nitrosodi-n-propylamine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
96	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	Soxhlet Extraction, Gas Chromatographic Method ^(10,23)
97	Pentachlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽²⁴⁾
98	Phenanthrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
99	Phenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
100	Pyrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
101	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(7,20)

2) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
102	Silver	2) Digestion, Inductively Coupled Plasma Method ^(7,14) 1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
103	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
106	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
107	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
108	TPH (C ₈ -C ₁₆)	1) Soxhlet Extraction, Gas Chromatographic Method ^(10,21) 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^(10,26)
109	TPH (C ₁₆ -C ₃₅)	1) Soxhlet Extraction, Gas Chromatographic Method ^(10,21) 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^(10,26)
110	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
111	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
112	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
113	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)

114 2,4,5-Trichlorophenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
114	2,4,5-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
115	2,4,6-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
116	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
117	Vanadium	Digestion, Inductively Coupled Plasma Method ^(7,14)
118	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass spectrometric Method ^(13,26)
119	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
120	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
121	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
122	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
123	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
124	Zinc	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14) <i>พิมพ์</i>

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ที่ อก ๐๓๑๐(๑)/ ๕๐๕๔



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๗ พฤษภาคม ๒๕๖๗

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ซีคोट จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๑ พฤษภาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท ซีคोट จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙
สถานที่ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร
ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
จำนวน ๒ ราย ได้แก่

๑) นายวัชรกานต์ ประมาศเต

ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๑๕

๒) นายรัตนชัย ขอบทำกิจ

ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๓๐

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นายพรยศ กลิ่นกรอง)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๘

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กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๑ พฤศจิกายน ๒๕๖๗

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ซีคोट จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๕ พฤศจิกายน ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท ซีคोट จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙
สถานที่ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ขอยกเลิกบุคลากร
ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
จำนวน ๓ ราย ได้แก่

๑) นางสาวพัชรา สมานฉันท์

ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๒๑

๒) นางสาวสุภาวดี บัวแก้ว

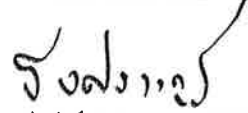
ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๓๖

๓) นางสาวมาเรียณี ฮาแว

ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๓๗

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นายธีรทัศน์ อิศรางกูร ณ อยุธยา)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๘

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ภาคผนวก ข

ใบรับรองความสามารถห้องปฏิบัติการและขอบข่ายการรับรอง
ห้องปฏิบัติการทดสอบ ตามมาตรฐาน ISO/IEC 17025
จากสำนักงานมาตรฐานอุตสาหกรรม (สมอ.)



แบบ กมช./สนอ.๒
Form NSC/TISI 2

ใบรับรองเลขที่ 24-LB0026
(Certificate No.)

ใบรับรองระบบงาน (Certificate of Accreditation)

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้
(Issues this certificate to)

บริษัท ซีคอบ จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)

ตั้งอยู่เลขที่
(Address)

๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร
(239 Rimklongprapa Road, Bangsue, Bangsue, Bangkok)

ได้รับการรับรองความสามารถ
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๗๐๒๕ - ๒๕๖๑
(Standard No. TIS 17025-2561 (2018) (ISO/IEC 17025: 2017))

ข้อกำหนดทั่วไปว่าด้วยความสามารถของ ห้องปฏิบัติการทดสอบและห้องปฏิบัติการสอบเทียบ
(General requirements for the competence of testing and calibration laboratories)

หมายเลขการรับรองที่ ทดสอบ ๐๓๙๔
(Accreditation No. Testing 0394)

โดยมีรายละเอียดสาขาและขอบข่ายที่ใบรับรอง แสดงไว้ใน QR CODE และ www.tisi.go.th
(Details of the scheme and scope of the certificate are shown in QR CODE and www.tisi.go.th)

ออกให้ ณ วันที่ ๖ ธันวาคม พ.ศ. ๒๕๖๓
(Issue date : 6 December B.E. 2566 (2023))

(นายวีระศักดิ์ เพ็งหล้า)

ผู้อำนวยการสำนักงานคณะกรรมการการมาตรฐานแห่งชาติ
ปฏิบัติราชการแทน
เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



Signed by สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม (สมอ.)
Thai Industrial Standards Institute (TISI)
Date: 2023-12-06T06:49:04.476+07:00

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry Thailand, Thai Industrial Standards Institute)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)
ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)



ชื่อห้องปฏิบัติการ
(Laboratory Name)
หมายเลขการรับรองที่
(Accreditation No.)

บริษัท ซีคอบ จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)
ทดสอบ 0394
(Testing 0394)

ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร (Permanent)
☐นอกสถานที่ (Site)
☐ชั่วคราว (Temporary)

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

☐เคลื่อนที่ (Mobile)
☐หลายสถานที่ (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสังแวดล้อม (environmental field) 1. น้ำและน้ำเสีย (water and wastewater)	- โลหะหนัก (heavy metals) • สารหนู (Arsenic, As) 0.000 5 mg/L ถึง 0.090 0 mg/L • สารหนู (Arsenic, As) 0.05 mg/L ถึง 4.50 mg/L • แบเรียม (Barium, Ba) 0.02 mg/L ถึง 4.50 mg/L • แคดเมียม (Cadmium, Cd) 0.01 mg/L ถึง 4.50 mg/L • โครเมียม (Chromium, Cr) 0.01 mg/L ถึง 4.50 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA , AWWA, WEF, 23 rd edition , 2017, Part 3030 F and Part 3114 C - Standard Methods for the Examination of Water and Wastewater, APHA , AWWA, WEF, 23 rd edition , 2017, Part 3030 E and Part 3120 B

กระทรวงอุตสาหกรรมสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry, Thai Industrial Standards Institute)

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร
(Permanent)

☐นอกสถานที่
(Site)

☐ชั่วคราว
(Temporary)

☐เคลื่อนที่
(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสสิ่งแวดล้อม (environmental field)</p> <p>1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)</p>	<p>- โลหะหนัก (heavy metals)</p> <ul style="list-style-type: none"> ทองแดง (Copper, Cu) 0.02 mg/L ถึง 4.50 mg/L เหล็ก (Iron, Fe) 0.05 mg/L ถึง 9.00 mg/L ตะกั่ว (Lead, Pb) 0.03 mg/L ถึง 4.50 mg/L แมงกานีส (Manganese, Mn) 0.01 mg/L ถึง 9.00 mg/L นิกเกิล (Nickel, Ni) 0.01 mg/L ถึง 4.50 mg/L สังกะสี (Zinc, Zn) 0.02 mg/L ถึง 9.00 mg/L 	<p>- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, Part 3030 E and Part 3120 B</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร
(Permanent)

☐นอกสถานที่
(Site)

☐ชั่วคราว
(Temporary)

☐เคลื่อนที่
(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสสิ่งแวดล้อม (environmental field)</p> <p>1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)</p> <p>2. บริเวณทำงาน (workplace)</p>	<p>- ซีไอดี (Chemical oxygen demand, COD) 100 mg/L ถึง 4 000 mg/L</p> <p>- ฝุ่นละอองรวม (Total dust) 0.10 mg/filter ถึง 2.00 mg/filter</p> <p>- ฝุ่นละอองขนาดเล็ก (Respirable dust) 0.10 mg/filter ถึง 2.00 mg/filter</p>	<p>- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, Part 5220 D</p> <p>- NIOSH Manual of Analytical Methods (NMAM), method 0500, 4th edition, 15th August 1994 (Exclude Sampling)</p> <p>- NIOSH Manual of Analytical Methods (NMAM), method 0600, 4th edition, 15th January 1998 (Exclude Sampling)</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ ถาวร
(Permanent)

☐ นอกสถานที่
(Site)

☐ชั่วคราว
(Temporary)

☐เคลื่อนที่
(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>2. บริเวณทำงาน (ต่อ) (workplace) (cont.)</p>	<ul style="list-style-type: none"> เบนซีน (Benzene) 1.10 µg/tube ถึง 420 µg/tube โทลูอีน (Toluene) 1.10 µg/tube ถึง 420 µg/tube โทไทร์ไซลีน (Total xylenes) 2.20 µg/tube ถึง 840 µg/tube เมตา, พารา-ไซลีน (m, p- Xylene) 1.10 µg/tube ถึง 420 µg/tube ออร์โธ-ไซลีน (o- Xylene) 1.10 µg/tube ถึง 420 µg/tube 	<ul style="list-style-type: none"> NIOSH Manual of Analytical Methods (NMAM), method 1501, 4th edition, 15th March 2003 (Exclude Sampling)
<p>3. ปล่องระบายอากาศ (stack)</p>	<ul style="list-style-type: none"> ซัลเฟอร์ไดออกไซด์ (Sulfur dioxide) 1.00 mg/L ถึง 16 000 mg/L (solution) 	<ul style="list-style-type: none"> US.EPA, Code of Federal Regulations, 40 CFR 60 appendix A, method 6, July 2019 (Exclude Sampling)

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ ถาวร
(Permanent)

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(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>3. ปล่องระบายอากาศ (ต่อ) (stack) (cont.)</p>	<ul style="list-style-type: none"> ไฮโดรเจนฟลูออไรด์ (Hydrogen fluoride) 5 µg/sample ถึง 400 µg/sample ไฮโดรเจนคลอไรด์ (Hydrogen chloride) 5 µg/sample ถึง 400 µg/sample 	<ul style="list-style-type: none"> WI-7.2-1-22 based on US.EPA, Code of Federal Regulations, 40 CFR 60 appendix A, method 26, 2019 (Exclude Sampling)

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

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ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร
(Permanent)

☒นอกสถานที่
(Site)

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(Mobile)

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(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ambient air)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> คลอโรอีเทน (Chloroethene) 0.05 $\mu\text{g}/\text{m}^3$ ถึง 51.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) 1,3-บิวทาไดเ็น (1,3-butadiene) 0.04 $\mu\text{g}/\text{m}^3$ ถึง 44.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) โบรมอมีเทน (Bromomethane) 0.08 $\mu\text{g}/\text{m}^3$ ถึง 77.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) อะคลอลีน (Acrolein) 0.05 $\mu\text{g}/\text{m}^3$ ถึง 45.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร
(Permanent)

☒นอกสถานที่
(Site)

☐ชั่วคราว
(Temporary)

☐เคลื่อนที่
(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> อะครีโลไนไตรล์ (Acrylonitrile) 0.04 $\mu\text{g}/\text{m}^3$ ถึง 43.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) ไดคลอโรมีเทน (Dichloromethane) 0.14 $\mu\text{g}/\text{m}^3$ to 69.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) คาร์บอนไดซัลไฟด์ (Carbon disulfide) 0.06 $\mu\text{g}/\text{m}^3$ ถึง 62.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) ไตรคลอโรมีเทน (Trichloromethane) 0.20 $\mu\text{g}/\text{m}^3$ ถึง 97.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,2-ไดคลอโรอีเทน (1,2-dichloroethane) 0.08 $\mu\text{g}/\text{m}^3$ ถึง 80.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from)
(30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร
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☒นอกสถานที่
(Site)

☐ชั่วคราว
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(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<ul style="list-style-type: none"> สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs) เบนซีน (Benzene) 0.06 $\mu\text{g}/\text{m}^3$ ถึง 63.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) คาร์บอนเตตระคลอไรด์ (Carbon tetrachloride) 0.25 $\mu\text{g}/\text{m}^3$ ถึง 125 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) ไตรคลอโรเอทิลีน (Trichloroethylene) 0.21 $\mu\text{g}/\text{m}^3$ ถึง 107 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,2-ไดคลอโรโพรเพน (1,2-dichloropropane) 0.18 $\mu\text{g}/\text{m}^3$ ถึง 92.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) เตตระคลอโรเอทิลีน (Tetrachloroethylene) 0.27 $\mu\text{g}/\text{m}^3$ ถึง 135 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)



ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from)
(30 October B.E.2566 (2023))

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ถาวร
(Permanent)

☒นอกสถานที่
(Site)

☐ชั่วคราว
(Temporary)

☐เคลื่อนที่
(Mobile)

☐หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<ul style="list-style-type: none"> สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs) 1,2-ไดโบรมีเอเทน (1,2-dibromoethane) 0.31 $\mu\text{g}/\text{m}^3$ ถึง 153 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,1,2,2-เตตระคลอโรเอทิลีน (1,1,2,2-tetrachloroethane) 0.69 $\mu\text{g}/\text{m}^3$ ถึง 137 $\mu\text{g}/\text{m}^3$ (0.10 ppbv ถึง 20.00 ppbv) เบนซิลคลอไรด์ (Benzyl chloride) 0.52 $\mu\text{g}/\text{m}^3$ ถึง 103 $\mu\text{g}/\text{m}^3$ (0.10 ppbv ถึง 20.00 ppbv) 1,4-ไดคลอโรเบนซีน (1,4-dichlorobenzene) 0.24 $\mu\text{g}/\text{m}^3$ ถึง 120 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

ภาคผนวก ข

ใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์การทำงาน
จากกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กภ.บุญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน
ใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง

ใบอนุญาตเลขที่ ๐๕๐๓-๐๓-๒๕๖๕-๐๑๔๘

อนุญาตให้.....บริษัท ซีเคพี จำกัด.....

เลขทะเบียนนิติบุคคล.....๐๑๐๕๕๓๖๐๐๐๙๗๖.....
ตั้งอยู่เลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร.....
เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนด
มาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
เกี่ยวกับความร้อน แสงสว่าง และเสียง พ.ศ. ๒๕๕๙ ในการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง
ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย
และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๕ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพจน์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

ป-๑๑-๐๔๐๓-๐๔๘-๐๑-๖๕

(ลงนาม)..... (นายทะเบียน)

(นายศักดิ์ศิลป์ ตูลาธร)

ตำแหน่ง ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง

ของบริษัท ซีคอท จำกัด

ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๘

- | | |
|-------------------|---------------|
| ๑. นางสาวสุนันทา | ศิริคุณานนท์ |
| ๒. นางสาวกนิษฐา | เจริญเชื้อ |
| ๓. นางสาวปัทมวรรณ | สุวรรณวิโรจน์ |
| ๔. นางสาวอลิษา | คณิธรานนท์ |
| ๕. นางสาวชนิตา | ทล่ำสาย |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพนธ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากร (เพิ่มเติม)
แนบท้ายใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง

ของบริษัท ซีคอท จำกัด

ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๘

- | | |
|-------------------|-------------|
| ๓. นางสาวศลิษา | อินริย์ |
| ๒. นางสาวมาริยาณี | ฮาแว |
| ๓. นางสาววิระยา | ปัจฉิมบุรณ์ |

ทั้งนี้ ตั้งแต่วันที่ ๑๓ มกราคม พ.ศ. ๒๕๖๖ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๓ มกราคม พ.ศ. ๒๕๖๖



(นายสมพนธ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กภ.บุญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๐๒๐๑-๐๓-๒๕๖๕-๐๐๔๙

อนุญาตให้ บริษัท จีเคอที จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๓๑๐๐๙๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนมิตรภาพสาย ๖ แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๕๖ ในการเป็นผู้ให้บริการตรวจวัดระดับความเข้มข้น
ของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับ
กฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๔ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

๒-๑๑-๐๒๐๑-๐๔๙-๐๓-๖๕

(ลงนาม)

(นายทะเบียน)

(นายศักดิ์ศิลป์ ตูลาธร)

ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน
และสถานที่เก็บรักษาสารเคมีอันตราย
ของบริษัท ซีคोट จำกัด
ใบอนุญาตเลขที่ ๐๒๐๑-๐๓-๒๕๖๕-๐๐๔๙

๑. นายชิตพล	สมประสงค์
๒. นายอนิวัฒน์	พิมวันนา
๓. นายศิวะนนท์	กุลวงษ์
๔. นายวัชรกานต์	ประมาคะเต
๕. นายธนโชติ	ช่างลื้อ
๖. นายกิตติพงศ์	ละเกิงสุข
๗. นายจิรวุฒิ	โคตรคำหาญ
๘. นายสุภกิจ	ดีะมูกา
๙. นางสาวธัญลักษณ์	โยธา
๑๐. นางสาวทิพย์สุดา	วรรณการ
๑๑. นางสาวสายธาร	ภูเขียว
๑๒. นายภาคภูมิ	แทนไทย
๑๓. นายธนาวุฒิ	ด่วนแสง
๑๔. นายรัตนชัย	ชอบทำกิจ

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กภ.ญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการวิเคราะห์ระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๐๒๐๒-๐๓-๒๕๖๕-๐๐๓๔

อนุญาตให้ บริษัท ซีคोट จำกัด

เลขทะเบียนนิติบุคคล ๐๑๑๕๕๓๖๐๐๐๘๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนวิมลคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๕๖ ในการเป็นผู้ให้บริการวิเคราะห์ระดับความเข้มข้น
ของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับ
กฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๔ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการวิเคราะห์ระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน

และสถานที่เก็บรักษาสารเคมีอันตราย

ของบริษัท ซีคูท จำกัด

ใบอนุญาตเลขที่ ๐๒๐๒-๐๓-๒๕๖๕-๐๐๓๔

๑. นางสาวนริสา	ภูสรวรเพ็ชญ์
๒. นางอารยา	ทิพย์รักษ์
๓. นางสาวศิริวรรณ	ฉิมสง่า
๔. นางสาวสุธาทิพย์	เทียนเตี้ย
๕. นางสาวพรนภา	บุตธรรม
๖. นางสาวธารณี	อาจปลิว
๗. นางสาวกฤษณา	จันทุม
๘. นางสาวพัชรา	สมานฉันท
๙. นางสาวฉนิษฐา	ก้อยอ่อน
๑๐. นางสาวศศิภา	ใจดี
๑๑. นางสาวจุฑารัตน์	แจ่มเรือน
๑๒. นางสาวณัฐศิริ	เลิศธีรพัฒน์
๑๓. นางสาวสิญญลักษณ์	อินทรประสิทธิ์
๑๔. นางสาวสุดาพร	สุนทร

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพจน์ กวางแก้ว)

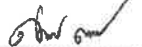
รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

ข-๑๑-๐๒๐๒-๐๓๔-๐๑-๖๕

(ลงนาม)



(นายทะเบียน)

(นายศักดิ์ศิลป์ ตูลาธร)

ผู้อำนวยการกองความปลอดภัยแรงงาน