

ภาคผนวก ง

ใบรับรองผลการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม
ระหว่างเดือนมกราคม ถึงมิถุนายน พ.ศ.2567

ภาคผนวก ง.1

ใบรับรองผลการตรวจวัดคุณภาพอากาศจากแหล่งกำเนิด

**The Monitoring Result of Emission Concentration
100-H1**

PTT Global Chemical Public Co., Ltd.

(Branch 4 : Aromatics 1 Plant)

March 14, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	5.04	5.04	53.10	53.11	46.55
2	4.89	4.88	54.20	54.21	47.04
3	4.96	4.95	53.86	53.86	46.94
Average	4.96	4.96	53.72	53.73	46.84

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	5.04	5.04	3.72	3.70	3.24
2	4.89	4.88	3.10	3.08	2.67
3	4.96	4.95	6.54	6.52	5.68
Average	4.96	4.96	4.45	4.43	3.87

**PTT Global Chemical Public Company Limited
EMISSION TEST RESULT**

Date:	March 14, 2024	Run # :	1
Start time:	10:20 AM	Location :	100-H1
O₂ instrument Model:	AMI 70	Finish time :	10:40 AM
NO_x instrument Model:	Teledyne 200EH	Serial No.:	161212-14
SO₂ instrument Model:	API 100 AH	Serial No.:	435
Fuel Type :	Natural Gas	Serial No.:	058
		Test Operator :	Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
10:20 AM	5.75	43.26	3.67
10:21 AM	5.50	51.90	2.65
10:22 AM	5.29	52.12	2.27
10:23 AM	5.24	52.27	2.49
10:24 AM	5.15	52.54	3.06
10:25 AM	5.08	52.98	3.85
10:26 AM	5.09	53.13	4.63
10:27 AM	4.97	53.00	3.45
10:28 AM	4.88	53.59	3.10
10:29 AM	4.86	54.28	3.61
10:30 AM	4.90	54.42	3.99
10:31 AM	4.92	54.26	4.26
10:32 AM	4.96	54.23	4.47
10:33 AM	4.99	54.36	4.38
10:34 AM	4.96	54.34	4.37
10:35 AM	4.84	53.99	4.27
10:36 AM	4.81	53.75	4.08
10:37 AM	4.89	53.72	4.07
10:38 AM	4.94	54.10	3.92
10:39 AM	4.96	54.46	3.79
10:40 AM	4.92	54.50	3.75
Average	5.04	53.10	3.72

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 14, 2024
 Start time: 10:41 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 100-H1
 Finish time : 11:01 AM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 058
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
10:41 AM	4.92	54.49	3.58
10:42 AM	4.94	54.35	3.54
10:43 AM	5.00	54.31	3.43
10:44 AM	4.94	54.33	3.39
10:45 AM	4.89	54.16	3.39
10:46 AM	4.86	53.85	3.22
10:47 AM	4.86	53.88	3.13
10:48 AM	4.89	54.17	3.20
10:49 AM	4.83	54.33	3.07
10:50 AM	4.80	54.30	2.99
10:51 AM	4.86	54.25	2.92
10:52 AM	4.87	54.11	2.97
10:53 AM	4.84	54.30	2.90
10:54 AM	4.82	54.57	2.76
10:55 AM	4.83	54.48	2.68
10:56 AM	4.84	54.28	2.80
10:57 AM	4.86	54.05	2.82
10:58 AM	4.91	53.95	2.86
10:59 AM	4.86	54.03	2.97
11:00 AM	4.92	54.02	3.10
11:01 AM	5.05	53.91	3.33
Average	4.89	54.20	3.10

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 14, 2024
 Start time: 11:02 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 100-H1
 Finish time : 11:22 AM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 058
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:02 AM	5.03	53.74	3.45
11:03 AM	5.05	53.69	3.58
11:04 AM	5.14	53.76	3.64
11:05 AM	5.14	53.86	3.82
11:06 AM	5.11	53.88	3.99
11:07 AM	5.07	53.94	4.25
11:08 AM	4.99	53.88	4.55
11:09 AM	5.01	53.70	4.94
11:10 AM	5.04	53.50	4.57
11:11 AM	5.01	53.42	5.02
11:12 AM	4.93	53.63	6.59
11:13 AM	4.82	54.31	7.14
11:14 AM	4.93	54.63	7.91
11:15 AM	4.93	54.35	8.44
11:16 AM	4.91	54.11	8.78
11:17 AM	4.77	53.83	9.00
11:18 AM	4.76	53.52	9.24
11:19 AM	4.86	53.40	9.51
11:20 AM	4.83	53.79	9.85
11:21 AM	4.80	53.99	9.92
11:22 AM	4.99	54.04	9.23
Average	4.96	53.86	6.54

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/100-H1
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 100-H1	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 52.61	m	Gas Velocity	: 3.7	m/s
Diameter	: 1.44	m	Flow rate ^{1/}	: 209	Ncu.m/min
Temperature	: 183.3	°C	Excess Oxygen	: 5.0	%
Moisture	: 11.6	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE
		5.0%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	4.43	3.87	0.04	60*/12.69**	0.17**	US EPA Method 6C
Oxide of Nitrogen	ppm	53.73	46.84	0.35	200*/59.19**	0.57**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/100-H1
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2024
RECEIVED DATE	: 15/03/2024	ANALYTICAL DATE	: 19/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 100-H1	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 52.61	m	Gas Velocity	: 3.7	m/s
Diameter	: 1.44	m	Flow rate ^{1/}	: 209	Ncu.m/min
Temperature	: 183.3	°C	Excess Oxygen	: 5.0	%
Moisture	: 11.6	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE
		5.0%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	1.21	1.05	0.008	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpet)

Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
100-H1A
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 14, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.65	4.65	11.81	11.79	10.08
2	4.59	4.59	13.80	13.78	11.74
3	4.53	4.52	14.59	14.58	12.37
Average	4.59	4.59	13.40	13.38	11.40

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.65	4.65	2.36	2.34	2.00
2	4.59	4.59	2.99	2.98	2.54
3	4.53	4.52	3.31	3.30	2.80
Average	4.59	4.59	2.89	2.87	2.45

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 14, 2024
 Start time: 11:00 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 100-H1A
 Finish time : 11:20 AM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:00 AM	4.67	10.13	2.09
11:01 AM	4.63	10.22	2.02
11:02 AM	4.62	10.45	2.02
11:03 AM	4.77	10.21	2.03
11:04 AM	4.81	10.60	2.11
11:05 AM	4.69	10.94	2.17
11:06 AM	4.73	11.80	2.17
11:07 AM	4.66	10.79	2.26
11:08 AM	4.57	10.84	2.36
11:09 AM	4.72	11.43	2.34
11:10 AM	4.70	11.78	2.31
11:11 AM	4.65	13.32	2.35
11:12 AM	4.56	12.35	2.38
11:13 AM	4.60	12.55	2.40
11:14 AM	4.72	12.57	2.48
11:15 AM	4.79	12.79	2.50
11:16 AM	4.65	12.84	2.61
11:17 AM	4.54	13.04	2.73
11:18 AM	4.44	13.07	2.78
11:19 AM	4.56	13.11	2.73
11:20 AM	4.55	13.24	2.71
Average	4.65	11.81	2.36

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 14, 2024
 Start time: 11:21 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 100-H1A
 Finish time : 11:41 AM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:21 AM	4.60	13.25	2.80
11:22 AM	4.66	13.31	2.73
11:23 AM	4.54	13.33	2.77
11:24 AM	4.64	13.47	2.88
11:25 AM	4.72	13.54	2.90
11:26 AM	4.65	13.62	2.98
11:27 AM	4.63	13.66	2.98
11:28 AM	4.62	13.71	2.98
11:29 AM	4.63	13.65	2.98
11:30 AM	4.56	13.76	3.03
11:31 AM	4.65	13.80	2.98
11:32 AM	4.62	13.79	3.00
11:33 AM	4.58	13.93	2.98
11:34 AM	4.61	14.00	2.98
11:35 AM	4.56	14.00	3.05
11:36 AM	4.44	14.02	3.08
11:37 AM	4.54	14.10	3.10
11:38 AM	4.60	14.08	3.13
11:39 AM	4.52	14.17	3.11
11:40 AM	4.47	14.23	3.12
11:41 AM	4.63	14.29	3.15
Average	4.59	13.80	2.99

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 14, 2024
 Start time: 11:42 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 100-H1A
 Finish time : 12:02 PM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:42 AM	4.67	14.38	3.17
11:43 AM	4.72	14.36	3.17
11:44 AM	4.62	14.40	3.20
11:45 AM	4.54	14.37	3.18
11:46 AM	4.58	14.40	3.20
11:47 AM	4.55	14.43	3.21
11:48 AM	4.56	14.47	3.26
11:49 AM	4.60	14.49	3.32
11:50 AM	4.63	14.51	3.37
11:51 AM	4.66	14.57	3.31
11:52 AM	4.56	14.61	3.38
11:53 AM	4.47	14.51	3.38
11:54 AM	4.44	14.59	3.39
11:55 AM	4.40	14.65	3.37
11:56 AM	4.38	14.78	3.37
11:57 AM	4.42	14.86	3.41
11:58 AM	4.44	14.80	3.39
11:59 AM	4.52	14.85	3.36
12:00 PM	4.57	14.82	3.33
12:01 PM	4.48	14.86	3.36
12:02 PM	4.26	14.78	3.39
Average	4.53	14.59	3.31

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/100-H1A
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 100-H1A	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 52.61	m	Gas Velocity	: 4.4	m/s
Diameter	: 1.44	m	Flow rate ^{1/}	: 220	Ncu.m/min
Temperature	: 239.2	°C	Excess Oxygen	: 4.6	%
Moisture	: 12.3	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.6%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	2.87	2.45	0.03	60*/14.89**	0.11**	US EPA Method 6C
Oxide of Nitrogen	ppm	13.38	11.40	0.09	200*/99.84**	0.53**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/100-H1A
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2024
RECEIVED DATE	: 15/03/2024	ANALYTICAL DATE	: 19/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 100-H1A	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 52.61	m	Gas Velocity	: 4.4	m/s
Diameter	: 1.44	m	Flow rate ^{1/}	: 220	Ncu.m/min
Temperature	: 239.2	°C	Excess Oxygen	: 4.6	%
Moisture	: 12.3	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.6%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	1.15	0.98	0.008	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
150-H1/H2
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 14, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	3.84	3.84	37.10	37.10	30.23
2	3.81	3.80	36.08	36.08	29.33
3	3.85	3.83	36.54	36.54	29.75
Average	3.83	3.82	36.57	36.57	29.77

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	3.84	3.84	5.24	5.21	4.24
2	3.81	3.80	6.50	6.42	5.22
3	3.85	3.83	6.66	6.52	5.31
Average	3.83	3.82	6.13	6.05	4.92

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 14, 2024
 Start time: 1:30 PM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 150-H1/H2
 Finish time : 1:50 PM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:30 PM	3.96	36.77	4.03
1:31 PM	3.86	37.35	4.12
1:32 PM	3.82	37.28	4.32
1:33 PM	3.79	37.03	4.43
1:34 PM	3.80	36.96	4.66
1:35 PM	3.81	36.83	4.86
1:36 PM	3.87	37.09	5.07
1:37 PM	3.82	37.50	5.15
1:38 PM	3.82	37.68	5.24
1:39 PM	3.85	37.63	5.29
1:40 PM	3.89	37.68	5.44
1:41 PM	3.92	37.87	5.55
1:42 PM	3.91	37.89	5.60
1:43 PM	3.84	37.75	5.59
1:44 PM	3.82	37.26	5.65
1:45 PM	3.89	36.75	5.73
1:46 PM	3.79	36.66	5.76
1:47 PM	3.79	36.62	5.81
1:48 PM	3.78	36.48	5.87
1:49 PM	3.78	36.32	5.89
1:50 PM	3.78	35.80	6.02
Average	3.84	37.10	5.24

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 14, 2024

Start time: 1:51 PM

O₂ instrument Model: AMI 70

NO_x instrument Model: API 200 AH

SO₂ instrument Model: API 100 AH

Fuel Type : Natural Gas

Location : 150-H1/H2

Finish time : 2:11 PM

Serial No.: 121121-10

Serial No.: 314

Serial No.: 132

Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:51 PM	3.76	35.02	6.06
1:52 PM	3.78	34.86	6.10
1:53 PM	3.77	34.83	6.19
1:54 PM	3.76	34.66	6.25
1:55 PM	3.85	34.57	6.30
1:56 PM	3.78	34.54	6.38
1:57 PM	3.80	34.55	6.44
1:58 PM	3.76	35.54	6.46
1:59 PM	3.73	36.28	6.45
2:00 PM	3.80	36.60	6.51
2:01 PM	3.85	36.55	6.49
2:02 PM	3.86	36.67	6.54
2:03 PM	3.81	37.04	6.63
2:04 PM	3.81	37.03	6.69
2:05 PM	3.86	36.97	6.70
2:06 PM	3.86	37.07	6.68
2:07 PM	3.88	37.14	6.74
2:08 PM	3.85	37.08	6.74
2:09 PM	3.80	36.96	6.68
2:10 PM	3.78	36.85	6.72
2:11 PM	3.82	36.77	6.68
Average	3.81	36.08	6.50

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 14, 2024

Start time: 2:12 PM

O₂ instrument Model: AMI 70

NO_x instrument Model: API 200 AH

SO₂ instrument Model: API 100 AH

Fuel Type : Natural Gas

Location : 150-H1/H2

Finish time : 2:32 PM

Serial No.: 121121-10

Serial No.: 314

Serial No.: 132

Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
2:12 PM	3.83	36.65	6.71
2:13 PM	3.83	36.62	6.71
2:14 PM	3.87	36.75	6.72
2:15 PM	3.80	36.65	6.74
2:16 PM	3.82	36.39	6.74
2:17 PM	3.84	36.55	6.70
2:18 PM	3.88	36.72	6.77
2:19 PM	3.87	36.67	6.76
2:20 PM	3.92	36.73	6.71
2:21 PM	3.90	36.88	6.59
2:22 PM	3.90	37.05	6.16
2:23 PM	3.88	36.70	6.30
2:24 PM	3.85	35.95	6.44
2:25 PM	3.90	35.56	6.55
2:26 PM	3.81	35.93	6.73
2:27 PM	3.86	36.33	6.70
2:28 PM	3.87	36.63	6.77
2:29 PM	3.84	36.82	6.81
2:30 PM	3.82	36.74	6.81
2:31 PM	3.79	36.55	6.80
2:32 PM	3.83	36.50	6.71
Average	3.85	36.54	6.66

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/150-H1/H2
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 14/03/2024
RECEIVED DATE : 21/03/2024 ANALYTICAL DATE : 22/03/2024-02/04/2024
REPORT DATE : 03/04/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 150-H1/H2 OPERATOR : Mr. Song Hengchwankul
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas
STACK DESCRIPTION

Height : 35.70 m Gas Velocity : 5.3 m/s
Diameter : 1.44 m Flow rate ^{1/} : 286 Ncu.m/min
Temperature : 203.3 °C Excess Oxygen : 3.8 %
Moisture : 12.0 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		3.8%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	6.05	4.92	0.08	60*/10.37**	0.19**	US EPA Method 6C
Oxide of Nitrogen	ppm	36.57	29.77	0.33	200*/60.74**	0.80**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment,
B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/150-H1/H2
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 14/03/2024
RECEIVED DATE : 15/03/2024 ANALYTICAL DATE : 19/03/2024
REPORT DATE : 21/03/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 150-H1/H2 OPERATOR : Mr. Supakit Tamooka
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas
STACK DESCRIPTION

Height : 35.70 m Gas Velocity : 5.3 m/s
Diameter : 1.44 m Flow rate ^{1/} : 286 Ncu.m/min
Temperature : 203.3 °C Excess Oxygen : 3.8 %
Moisture : 12.0 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		3.8%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	9.50	7.73	0.082	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
200-H1/H2/H3/H4/H5
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 13, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.26	4.21	37.30	37.30	31.06
2	4.11	4.08	36.98	36.98	30.56
3	4.06	4.05	36.66	36.66	30.24
Average	4.15	4.11	36.98	36.98	30.62

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.26	4.21	5.03	5.02	4.18
2	4.11	4.08	4.87	4.86	4.02
3	4.06	4.05	5.04	5.03	4.15
Average	4.15	4.11	4.98	4.97	4.12

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 13, 2024
 Start time: 10:50 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EM
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 200-H1/H2/H3/H4/H5
 Finish time : 11:10 AM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 1070
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
10:50 AM	4.29	37.42	4.47
10:51 AM	4.21	37.45	5.32
10:52 AM	4.19	37.35	5.25
10:53 AM	4.27	37.31	5.34
10:54 AM	4.30	37.30	4.98
10:55 AM	4.32	37.27	4.79
10:56 AM	4.27	37.30	5.35
10:57 AM	4.22	37.30	5.35
10:58 AM	4.15	37.26	5.32
10:59 AM	4.15	37.30	5.32
11:00 AM	4.27	37.78	5.33
11:01 AM	4.27	37.74	5.33
11:02 AM	4.34	37.27	4.82
11:03 AM	4.34	37.19	4.84
11:04 AM	4.27	37.18	4.57
11:05 AM	4.23	37.16	4.83
11:06 AM	4.28	37.09	4.81
11:07 AM	4.31	37.05	4.68
11:08 AM	4.31	37.07	4.93
11:09 AM	4.29	37.16	4.87
11:10 AM	4.24	37.26	5.20
Average	4.26	37.30	5.03

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 13, 2024
 Start time: 11:11 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EM
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 200-H1/H2/H3/H4/H5
 Finish time : 11:31 AM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 1070
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:11 AM	4.27	37.32	5.33
11:12 AM	4.23	37.29	5.30
11:13 AM	4.20	37.23	4.95
11:14 AM	4.10	37.23	4.27
11:15 AM	4.17	37.21	5.00
11:16 AM	4.24	37.18	4.32
11:17 AM	4.09	37.23	4.87
11:18 AM	4.02	37.30	4.73
11:19 AM	4.05	37.24	5.01
11:20 AM	4.02	37.08	5.12
11:21 AM	4.04	36.95	4.88
11:22 AM	4.11	36.89	4.91
11:23 AM	4.12	36.80	4.88
11:24 AM	4.11	36.78	4.85
11:25 AM	4.07	36.80	4.91
11:26 AM	4.07	36.75	4.91
11:27 AM	4.08	36.74	4.91
11:28 AM	4.17	36.62	4.91
11:29 AM	4.11	36.55	4.91
11:30 AM	4.04	36.66	4.88
11:31 AM	4.00	36.65	4.43
Average	4.11	36.98	4.87

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 13, 2024
 Start time: 11:32 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EM
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 200-H1/H2/H3/H4/H5
 Finish time : 11:52 AM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 1070
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:32 AM	3.98	36.46	4.56
11:33 AM	4.03	36.40	4.86
11:34 AM	4.10	36.43	5.07
11:35 AM	4.18	36.42	5.33
11:36 AM	4.06	36.53	4.85
11:37 AM	4.07	36.64	4.70
11:38 AM	4.08	36.66	5.03
11:39 AM	4.17	36.63	5.28
11:40 AM	4.10	36.64	5.28
11:41 AM	4.02	36.62	5.31
11:42 AM	4.04	36.57	5.15
11:43 AM	4.10	36.48	5.28
11:44 AM	4.13	36.44	4.87
11:45 AM	4.13	36.52	5.00
11:46 AM	4.01	36.76	5.23
11:47 AM	3.94	36.96	5.33
11:48 AM	4.07	36.97	5.16
11:49 AM	4.12	36.91	4.75
11:50 AM	4.02	36.88	4.68
11:51 AM	3.99	36.98	5.10
11:52 AM	3.99	36.95	5.00
Average	4.06	36.66	5.04

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/200-H1/H2/H3/H4/H5
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 13/03/2024
RECEIVED DATE : 21/03/2024 ANALYTICAL DATE : 22/03/2024-02/04/2024
REPORT DATE : 03/04/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 200-H1/H2/H3/H4/H5 OPERATOR : Mr. Song Hengchwankul
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas

STACK DESCRIPTION

Height : 84.00 m Gas Velocity : 6.9 m/s
Diameter : 3.42 m Flow rate ^{1/} : 2,015 Ncu.m/min
Temperature : 225.3 °C Excess Oxygen : 4.1 %
Moisture : 11.6 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.1%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	4.97	4.12	0.44	60*/26.62**	0.96**	US EPA Method 6C
Oxide of Nitrogen	ppm	36.98	30.62	2.34	200*/145.46**	3.77**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

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

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment,
B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/200-H1/H2/H3/H4/H5
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 13/03/2024
RECEIVED DATE : 14/03/2024 ANALYTICAL DATE : 16/03/2024
REPORT DATE : 21/03/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 200-H1/H2/H3/H4/H5 OPERATOR : Mr. Sittichai Sawangwongchai
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas

STACK DESCRIPTION

Height : 84.00 m Gas Velocity : 6.9 m/s
Diameter : 3.42 m Flow rate ^{1/} : 2,015 Ncu.m/min
Temperature : 225.3 °C Excess Oxygen : 4.1 %
Moisture : 11.6 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.1%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	1.81	1.50	0.109	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpech)

Technical Management Team

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

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
430-H1
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 11, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	6.45	6.38	56.63	56.64	54.22
2	6.44	6.39	56.49	56.50	54.12
3	6.37	6.33	54.16	54.17	51.68
Average	6.42	6.37	55.76	55.77	53.34

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	6.45	6.38	2.00	1.96	1.88
2	6.44	6.39	1.98	1.94	1.86
3	6.37	6.33	1.96	1.92	1.83
Average	6.42	6.37	1.98	1.94	1.86

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 11, 2024
 Start time: 1:30 PM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 430-H1
 Finish time : 1:50 PM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 058
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:30 PM	6.47	57.32	2.02
1:31 PM	6.43	57.20	2.03
1:32 PM	6.44	56.96	2.07
1:33 PM	6.46	56.70	2.06
1:34 PM	6.47	56.45	2.05
1:35 PM	6.45	56.21	2.07
1:36 PM	6.48	56.17	2.03
1:37 PM	6.45	57.55	2.04
1:38 PM	6.42	57.46	1.95
1:39 PM	6.35	57.53	1.93
1:40 PM	6.33	57.35	2.03
1:41 PM	6.39	57.12	2.09
1:42 PM	6.41	56.94	2.11
1:43 PM	6.44	56.73	2.12
1:44 PM	6.45	56.67	2.08
1:45 PM	6.46	56.58	2.02
1:46 PM	6.48	56.10	1.92
1:47 PM	6.47	55.75	1.88
1:48 PM	6.49	55.52	1.83
1:49 PM	6.51	55.41	1.84
1:50 PM	6.51	55.42	1.83
Average	6.45	56.63	2.00

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 11, 2024
 Start time: 1:51 PM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 430-H1
 Finish time : 2:11 PM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 058
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:51 PM	6.45	55.81	1.86
1:52 PM	6.43	56.22	1.84
1:53 PM	6.46	56.30	1.78
1:54 PM	6.52	56.46	1.78
1:55 PM	6.46	56.65	1.93
1:56 PM	6.61	56.69	2.03
1:57 PM	6.50	56.88	2.14
1:58 PM	6.50	56.59	2.19
1:59 PM	6.51	55.99	2.18
2:00 PM	6.50	56.03	2.22
2:01 PM	6.48	56.46	2.11
2:02 PM	6.45	56.90	2.04
2:03 PM	6.36	56.87	1.95
2:04 PM	6.37	56.70	1.95
2:05 PM	6.31	56.72	2.02
2:06 PM	6.39	56.63	1.92
2:07 PM	6.42	56.44	1.84
2:08 PM	6.34	56.45	1.91
2:09 PM	6.39	56.49	1.94
2:10 PM	6.36	56.51	1.98
2:11 PM	6.35	56.60	1.97
Average	6.44	56.49	1.98

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 11, 2024
 Start time: 2:12 PM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 430-H1
 Finish time : 2:32 PM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 058
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
2:12 PM	6.34	56.63	1.99
2:13 PM	6.34	56.63	1.96
2:14 PM	6.35	56.51	1.88
2:15 PM	6.35	56.30	1.98
2:16 PM	6.32	56.21	1.96
2:17 PM	6.32	56.46	1.99
2:18 PM	6.28	56.84	2.01
2:19 PM	6.35	56.77	2.08
2:20 PM	6.35	56.49	2.11
2:21 PM	6.37	56.20	2.01
2:22 PM	6.40	56.16	2.02
2:23 PM	6.43	56.29	1.93
2:24 PM	6.38	56.47	1.84
2:25 PM	6.34	56.70	1.86
2:26 PM	6.34	56.51	1.83
2:27 PM	6.36	56.37	1.81
2:28 PM	6.38	56.33	1.84
2:29 PM	6.39	56.18	1.92
2:30 PM	6.39	6.39	1.90
2:31 PM	6.46	57.43	2.00
2:32 PM	6.45	57.39	2.14
Average	6.37	54.16	1.96

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/430-H1
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 430-H1	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 45.00	m	Gas Velocity	: 5.9	m/s
Diameter	: 1.44	m	Flow rate ^{1/}	: 300	Ncu.m/min
Temperature	: 241.2	°C	Excess Oxygen	: 6.4	%
Moisture	: 9.5	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		6.4%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	1.94	1.86	0.03	60*/14.93**	0.25**	US EPA Method 6C
Oxide of Nitrogen	ppm	55.77	53.34	0.52	200*/93.89**	1.13**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

- Remark :**
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 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.
 4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).
 5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/430-H1
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 12/03/2024	ANALYTICAL DATE	: 13/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 430-H1	OPERATOR	: Mr. Rommadon Lemmad
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 45.00	m	Gas Velocity	: 5.9	m/s
Diameter	: 1.44	m	Flow rate ^{1/}	: 300	Ncu.m/min
Temperature	: 241.2	°C	Excess Oxygen	: 6.4	%
Moisture	: 9.5	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		6.4%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	3.70	3.54	0.033	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
380-H1/H2
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 11, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.23	4.20	28.71	28.69	23.88
2	4.22	4.19	28.54	28.53	23.73
3	4.21	4.17	28.65	28.64	23.80
Average	4.22	4.19	28.63	28.62	23.80

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.23	4.20	0.34	0.30	0.25
2	4.22	4.19	0.34	0.30	0.25
3	4.21	4.17	0.34	0.29	0.24
Average	4.22	4.19	0.34	0.30	0.25

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 1
Date: March 11, 2024
Location : 380-H1/H2
Start time: 11:10 AM
Finish time : 11:30 AM
O₂ instrument Model: AMI 70
Serial No.: 121121-10
NO_x instrument Model: API 200 AH
Serial No.: 314
SO₂ instrument Model: API 100 AH
Serial No.: 132
Fuel Type : Natural Gas
Test Operator : Song H.

Time, min	O ₂ (%)	NOx (ppm)	SO2 (ppm)
11:10 AM	4.28	28.44	0.34
11:11 AM	4.22	27.87	0.34
11:12 AM	4.23	28.26	0.34
11:13 AM	4.27	28.16	0.34
11:14 AM	4.18	28.16	0.34
11:15 AM	4.19	28.55	0.34
11:16 AM	4.22	29.11	0.34
11:17 AM	4.20	28.78	0.34
11:18 AM	4.29	29.04	0.34
11:19 AM	4.29	28.64	0.34
11:20 AM	4.23	28.76	0.34
11:21 AM	4.33	27.59	0.34
11:22 AM	4.22	28.54	0.34
11:23 AM	4.27	29.05	0.34
11:24 AM	4.21	29.57	0.34
11:25 AM	4.21	29.00	0.34
11:26 AM	4.27	29.29	0.34
11:27 AM	4.19	29.67	0.34
11:28 AM	4.17	28.98	0.34
11:29 AM	4.26	28.94	0.34
11:30 AM	4.18	28.46	0.34
Average	4.23	28.71	0.34

Signature 
(Miss Katesarin Vorradetwittaya)
Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 11, 2024
 Start time: 11:31 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 380-H1/H2
 Finish time : 11:51 AM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:31 AM	4.28	28.88	0.34
11:32 AM	4.20	29.96	0.34
11:33 AM	4.31	28.90	0.34
11:34 AM	4.18	28.94	0.34
11:35 AM	4.32	28.59	0.34
11:36 AM	4.24	29.29	0.34
11:37 AM	4.22	29.25	0.34
11:38 AM	4.22	28.95	0.34
11:39 AM	4.14	27.44	0.34
11:40 AM	4.24	27.65	0.34
11:41 AM	4.18	29.61	0.34
11:42 AM	4.18	30.07	0.34
11:43 AM	4.20	29.38	0.34
11:44 AM	4.17	28.44	0.34
11:45 AM	4.19	28.54	0.34
11:46 AM	4.20	28.43	0.34
11:47 AM	4.16	28.37	0.34
11:48 AM	4.29	27.77	0.34
11:49 AM	4.21	27.16	0.34
11:50 AM	4.23	26.67	0.34
11:51 AM	4.23	27.09	0.34
Average	4.22	28.54	0.34

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 11, 2024
 Start time: 11:52 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 380-H1/H2
 Finish time : 12:12 PM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:52 AM	4.15	28.26	0.34
11:53 AM	4.25	28.27	0.34
11:54 AM	4.19	28.65	0.34
11:55 AM	4.22	28.88	0.34
11:56 AM	4.22	29.42	0.34
11:57 AM	4.22	28.64	0.34
11:58 AM	4.26	27.16	0.34
11:59 AM	4.22	27.97	0.34
12:00 PM	4.23	29.07	0.34
12:01 PM	4.29	28.56	0.34
12:02 PM	4.19	28.24	0.34
12:03 PM	4.26	29.44	0.34
12:04 PM	4.23	28.52	0.34
12:05 PM	4.14	27.67	0.34
12:06 PM	4.25	28.54	0.34
12:07 PM	4.14	30.13	0.34
12:08 PM	4.18	30.53	0.34
12:09 PM	4.20	28.97	0.34
12:10 PM	4.17	28.76	0.34
12:11 PM	4.26	28.61	0.34
12:12 PM	4.20	27.32	0.34
Average	4.21	28.65	0.34

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/380-H1/H2
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 380-H1/H2	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 37.50	m	Gas Velocity	: 6.1	m/s
Diameter	: 1.88	m	Flow rate ^{1/}	: 481	Ncu.m/min
Temperature	: 292.5	°C	Excess Oxygen	: 4.2	%
Moisture	: 10.7	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.2%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	0.30	0.25	0.01	60*/11.61**	0.27**	US EPA Method 6C
Oxide of Nitrogen	ppm	28.62	23.80	0.43	200*/59.25**	0.99**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/380-H1/H2
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 12/03/2024	ANALYTICAL DATE	: 13/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 380-H1/H2	OPERATOR	: Mr. Rommadon Lemmad
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 37.50	m	Gas Velocity	: 6.1	m/s
Diameter	: 1.88	m	Flow rate ^{1/}	: 481	Ncu.m/min
Temperature	: 292.5	°C	Excess Oxygen	: 4.2	%
Moisture	: 10.7	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.2%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	6.13	5.10	0.089	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)
Analyst

(Miss Narisa Poowasanpet)
Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
432-H1
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 14, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.13	4.07	59.27	59.30	48.98
2	4.09	4.03	59.34	59.36	48.91
3	4.09	4.03	59.71	59.72	49.21
Average	4.10	4.04	59.44	59.46	49.03

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.13	4.07	5.14	5.12	4.23
2	4.09	4.03	5.14	5.11	4.21
3	4.09	4.03	5.26	5.23	4.31
Average	4.10	4.04	5.18	5.15	4.25

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 14, 2024
 Start time: 1:00 PM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 432-H1
 Finish time : 1:20 PM
 Serial No.: 071023-47
 Serial No.: 433
 Serial No.: 118
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:00 PM	4.13	59.21	5.59
1:01 PM	4.19	59.28	5.71
1:02 PM	4.12	59.47	5.09
1:03 PM	4.16	59.54	5.07
1:04 PM	4.09	59.50	5.07
1:05 PM	4.11	59.45	5.11
1:06 PM	4.17	59.40	4.98
1:07 PM	4.21	59.34	5.17
1:08 PM	4.22	59.28	5.16
1:09 PM	4.19	59.23	5.13
1:10 PM	4.09	59.07	5.08
1:11 PM	4.05	59.01	5.07
1:12 PM	4.04	59.22	5.11
1:13 PM	4.06	59.15	5.12
1:14 PM	4.07	59.20	5.08
1:15 PM	4.21	59.36	5.11
1:16 PM	4.13	59.39	5.08
1:17 PM	4.11	59.27	5.07
1:18 PM	4.13	59.13	5.00
1:19 PM	4.09	59.05	5.01
1:20 PM	4.12	59.05	5.03
Average	4.13	59.27	5.14

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited EMISSION TEST RESULT

Date: March 14, 2024
Start time: 1:21 PM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Run # : 2
Location : 432-H1
Finish time : 1:41 PM
Serial No.: 071023-47
Serial No.: 433
Serial No.: 118
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:21 PM	4.09	58.89	5.08
1:22 PM	4.11	58.69	5.15
1:23 PM	4.11	58.92	5.04
1:24 PM	4.09	58.94	4.96
1:25 PM	4.10	58.96	4.98
1:26 PM	4.15	59.09	5.10
1:27 PM	4.19	58.98	5.13
1:28 PM	4.19	59.13	5.17
1:29 PM	4.13	59.53	5.08
1:30 PM	4.12	59.56	5.22
1:31 PM	4.02	59.53	5.02
1:32 PM	4.00	59.60	5.17
1:33 PM	4.00	59.41	5.07
1:34 PM	4.00	59.31	5.11
1:35 PM	4.02	59.42	5.16
1:36 PM	4.01	59.47	5.22
1:37 PM	4.05	59.41	5.26
1:38 PM	4.05	59.51	5.25
1:39 PM	4.08	59.79	5.22
1:40 PM	4.16	59.93	5.31
1:41 PM	4.16	60.03	5.28
Average	4.09	59.34	5.14

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited EMISSION TEST RESULT

Date: March 14, 2024
Start time: 1:42 PM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Run # : 3
Location : 432-H1
Finish time : 2:02 PM
Serial No.: 071023-47
Serial No.: 433
Serial No.: 118
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
1:42 PM	4.19	60.04	5.31
1:43 PM	4.12	59.91	5.21
1:44 PM	4.06	59.82	5.21
1:45 PM	4.09	59.93	5.20
1:46 PM	4.08	59.95	5.16
1:47 PM	4.14	59.76	5.22
1:48 PM	4.15	59.74	5.22
1:49 PM	4.13	59.73	5.30
1:50 PM	4.13	59.86	5.24
1:51 PM	4.08	60.02	5.20
1:52 PM	4.08	60.01	5.28
1:53 PM	4.05	59.95	5.30
1:54 PM	4.04	59.69	5.30
1:55 PM	4.05	59.55	5.39
1:56 PM	4.10	59.51	5.36
1:57 PM	4.15	59.47	5.32
1:58 PM	4.10	59.34	5.26
1:59 PM	4.05	59.28	5.36
2:00 PM	4.06	59.38	5.27
2:01 PM	4.06	59.43	5.20
2:02 PM	4.03	59.49	5.22
Average	4.09	59.71	5.26

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/432-H1
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 432-H1	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 40.84	m	Gas Velocity	: 7.8	m/s
Diameter	: 2.03	m	Flow rate ^{1/}	: 756	Ncu.m/min
Temperature	: 244.8	°C	Excess Oxygen	: 4.0	%
Moisture	: 12.9	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.0%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	5.15	4.25	0.17	60*/11.33**	0.31**	US EPA Method 6C
Oxide of Nitrogen	ppm	59.46	49.03	1.41	200*/88.50**	1.74**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/432-H1
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/03/2024
RECEIVED DATE	: 15/03/2024	ANALYTICAL DATE	: 19/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 432-H1	OPERATOR	: Mr. Rommadon Lemmad
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 40.84	m	Gas Velocity	: 7.8	m/s
Diameter	: 2.03	m	Flow rate ^{1/}	: 756	Ncu.m/min
Temperature	: 244.8	°C	Excess Oxygen	: 4.0	%
Moisture	: 12.1	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.0%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	10.47	8.63	0.238	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)
Analyst

(Miss Narisa Poowasanpetch)
Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
432-H2
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 14, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	3.98	3.94	23.27	23.26	19.06
2	4.01	3.98	23.33	23.32	19.16
3	4.03	4.02	23.61	23.60	19.43
Average	4.00	3.98	23.40	23.39	19.22

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	3.98	3.94	4.04	4.01	3.29
2	4.01	3.98	4.21	4.17	3.43
3	4.03	4.02	4.27	4.22	3.48
Average	4.00	3.98	4.18	4.13	3.40

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 14, 2024
 Start time: 10:50 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 432-H2
 Finish time : 11:10 AM
 Serial No.: 111117-2
 Serial No.: 441
 Serial No.: 060
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
10:50 AM	3.92	23.38	4.13
10:51 AM	3.98	23.35	4.08
10:52 AM	3.97	23.16	4.10
10:53 AM	4.01	23.05	4.09
10:54 AM	4.03	23.28	4.11
10:55 AM	4.02	23.35	4.07
10:56 AM	4.04	23.34	4.01
10:57 AM	4.00	23.45	4.03
10:58 AM	4.04	23.27	4.02
10:59 AM	4.00	23.32	4.14
11:00 AM	4.00	23.46	4.07
11:01 AM	3.97	23.29	4.14
11:02 AM	3.94	23.21	4.02
11:03 AM	3.95	23.07	3.98
11:04 AM	3.90	22.97	3.90
11:05 AM	3.94	23.14	3.90
11:06 AM	3.99	23.21	3.95
11:07 AM	3.96	23.35	4.00
11:08 AM	3.98	23.48	3.99
11:09 AM	3.94	23.29	4.04
11:10 AM	3.93	23.23	4.16
Average	3.98	23.27	4.04

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 14, 2024
Start time: 11:11 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: API 200 AH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 432-H2
Finish time : 11:31 AM
Serial No.: 111117-2
Serial No.: 441
Serial No.: 060
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:11 AM	3.85	23.13	4.11
11:12 AM	3.86	22.93	4.16
11:13 AM	3.98	22.93	4.20
11:14 AM	3.94	23.25	4.12
11:15 AM	4.04	23.44	4.03
11:16 AM	4.05	23.57	4.22
11:17 AM	4.07	23.32	4.27
11:18 AM	4.04	23.52	4.19
11:19 AM	3.96	23.56	4.22
11:20 AM	3.97	23.20	4.16
11:21 AM	3.99	23.24	4.38
11:22 AM	4.00	23.30	4.31
11:23 AM	3.97	23.33	4.25
11:24 AM	4.04	23.47	4.34
11:25 AM	4.00	23.31	4.31
11:26 AM	3.97	23.21	4.21
11:27 AM	4.03	23.12	4.14
11:28 AM	4.09	23.33	4.18
11:29 AM	4.08	23.51	4.26
11:30 AM	4.10	23.64	4.22
11:31 AM	4.10	23.69	4.22
Average	4.01	23.33	4.21

Signature 
(Miss Katesarin Vorradetwittaya)
Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 14, 2024
Start time: 11:32 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: API 200 AH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 432-H2
Finish time : 11:52 AM
Serial No.: 111117-2
Serial No.: 441
Serial No.: 060
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:32 AM	4.13	23.72	4.17
11:33 AM	4.07	23.61	4.29
11:34 AM	3.97	23.33	4.25
11:35 AM	3.98	23.35	4.32
11:36 AM	4.00	23.55	4.34
11:37 AM	4.01	23.56	4.29
11:38 AM	4.03	23.72	4.25
11:39 AM	4.07	23.66	4.32
11:40 AM	4.00	23.60	4.34
11:41 AM	3.96	23.63	4.34
11:42 AM	3.97	23.42	4.34
11:43 AM	4.06	23.41	4.24
11:44 AM	4.09	23.70	4.23
11:45 AM	4.06	23.71	4.27
11:46 AM	4.08	23.92	4.17
11:47 AM	4.02	23.62	4.17
11:48 AM	4.00	23.44	4.18
11:49 AM	4.04	23.79	4.16
11:50 AM	3.97	23.80	4.24
11:51 AM	3.99	23.51	4.29
11:52 AM	4.09	23.71	4.43
Average	4.03	23.61	4.27

Signature 
(Miss Katesarin Vorradetwittaya)
Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/432-H2
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 14/03/2024
RECEIVED DATE : 21/03/2024 ANALYTICAL DATE : 22/03/2024-02/04/2024
REPORT DATE : 03/04/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 432-H2 OPERATOR : Mr. Song Hengchwankul
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas
STACK DESCRIPTION

Height : 32.06 m Gas Velocity : 6.0 m/s
Diameter : 1.28 m Flow rate^{1/} : 212 Ncu.m/min
Temperature : 289.0 °C Excess Oxygen : 4.0 %
Moisture : 13.2 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.0%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	4.13	3.40	0.04	60*/11.56**	0.08**	US EPA Method 6C
Oxide of Nitrogen	ppm	23.39	19.22	0.16	200*/84.46**	0.42**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/432-H2
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 14/03/2024
RECEIVED DATE : 15/03/2024 ANALYTICAL DATE : 19/03/2024
REPORT DATE : 21/03/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 432-H2 OPERATOR : Mr. Rommadon Lemmad
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas
STACK DESCRIPTION

Height : 32.06 m Gas Velocity : 6.0 m/s
Diameter : 1.28 m Flow rate^{1/} : 212 Ncu.m/min
Temperature : 289.0 °C Excess Oxygen : 4.0 %
Moisture : 13.2 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		4.0%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	0.81	0.67	0.005	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)
Analyst

(Miss Narisa Poowasanpetch)
Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

**The Monitoring Result of Emission Concentration
432-H3**

PTT Global Chemical Public Co., Ltd.

(Branch 4 : Aromatics 1 Plant)

March 11, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	7.92	7.93	50.49	50.51	54.13
2	7.89	7.90	50.13	50.15	53.62
3	7.89	7.90	50.05	50.07	53.54
Average	7.90	7.91	50.22	50.24	53.76

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	7.92	7.93	3.27	3.25	3.48
2	7.89	7.90	3.88	3.86	4.13
3	7.89	7.90	3.54	3.51	3.75
Average	7.90	7.91	3.56	3.54	3.79

**PTT Global Chemical Public Company Limited
EMISSION TEST RESULT**

Date: <u>March 11, 2024</u>	Run # : <u>1</u>
Start time: <u>11:00 AM</u>	Location : <u>432-H3</u>
O₂ instrument Model: <u>AMI 70</u>	Finish time : <u>11:20 AM</u>
NO_x instrument Model: <u>Teledyne 200 EM</u>	Serial No.: <u>161212-14</u>
SO₂ instrument Model: <u>API 100 AH</u>	Serial No.: <u>435</u>
Fuel Type : <u>Natural Gas</u>	Serial No.: <u>058</u>
	Test Operator : <u>Pisanu S.</u>

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:00 AM	8.10	50.06	2.62
11:01 AM	8.00	50.41	2.57
11:02 AM	7.97	50.59	2.61
11:03 AM	7.92	50.85	2.67
11:04 AM	7.99	50.99	2.66
11:05 AM	7.93	50.90	2.62
11:06 AM	7.88	50.89	2.63
11:07 AM	7.96	50.80	2.68
11:08 AM	7.88	50.70	2.71
11:09 AM	7.91	50.64	2.76
11:10 AM	7.92	50.66	3.56
11:11 AM	7.88	50.77	3.52
11:12 AM	7.89	50.65	3.47
11:13 AM	7.89	50.51	3.66
11:14 AM	7.87	50.46	4.03
11:15 AM	7.88	50.21	4.03
11:16 AM	7.86	50.02	4.02
11:17 AM	7.88	50.03	4.01
11:18 AM	7.89	50.00	3.97
11:19 AM	7.85	50.08	3.97
11:20 AM	7.89	50.16	3.99
Average	7.92	50.49	3.27

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 11, 2024
Start time: 11:21 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EM
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 432-H3
Finish time : 11:41 AM
Serial No.: 161212-14
Serial No.: 435
Serial No.: 058
Test Operator : Pisanu S.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:21 AM	7.85	50.23	3.97
11:22 AM	7.86	50.20	3.97
11:23 AM	7.90	50.14	3.97
11:24 AM	7.87	50.20	3.97
11:25 AM	7.93	50.24	3.97
11:26 AM	7.91	50.52	3.93
11:27 AM	7.93	50.78	3.97
11:28 AM	7.93	50.78	4.04
11:29 AM	7.88	50.76	4.01
11:30 AM	7.86	50.59	3.95
11:31 AM	7.88	50.35	3.91
11:32 AM	7.87	50.22	3.86
11:33 AM	7.90	50.21	3.85
11:34 AM	7.89	50.15	3.80
11:35 AM	7.87	49.73	3.79
11:36 AM	7.92	49.49	3.77
11:37 AM	7.90	49.53	3.75
11:38 AM	7.92	49.61	3.75
11:39 AM	7.90	49.64	3.72
11:40 AM	7.91	49.64	3.73
11:41 AM	7.91	49.69	3.73
Average	7.89	50.13	3.88

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 11, 2024
Start time: 11:42 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EM
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 432-H3
Finish time : 12:02 PM
Serial No.: 161212-14
Serial No.: 435
Serial No.: 058
Test Operator : Pisanu S.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:42 AM	7.89	49.80	3.70
11:43 AM	7.84	49.63	3.68
11:44 AM	7.86	49.48	3.65
11:45 AM	7.83	49.51	3.62
11:46 AM	7.84	49.45	3.59
11:47 AM	7.87	49.26	3.61
11:48 AM	7.89	49.18	3.62
11:49 AM	7.90	49.37	3.56
11:50 AM	7.89	49.56	3.56
11:51 AM	7.92	49.66	3.57
11:52 AM	7.89	49.84	3.53
11:53 AM	7.88	49.95	3.51
11:54 AM	7.91	49.98	3.50
11:55 AM	7.88	50.34	3.50
11:56 AM	7.91	50.64	3.46
11:57 AM	7.88	50.68	3.45
11:58 AM	7.88	50.66	3.44
11:59 AM	7.92	50.85	3.47
12:00 PM	7.92	51.08	3.44
12:01 PM	7.89	51.08	3.41
12:02 PM	7.92	51.03	3.44
Average	7.89	50.05	3.54

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/432-H3
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 432-H3	OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 46.05	m	Gas Velocity	: 9.4	m/s
Diameter	: 2.66	m	Flow rate ^{1/}	: 1,728	Ncu.m/min
Temperature	: 199.3	°C	Excess Oxygen	: 7.9	%
Moisture	: 13.0	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		7.9%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	3.54	3.79	0.27	60*/12.88**	0.61**	US EPA Method 6C
Oxide of Nitrogen	ppm	50.24	53.76	2.72	200*/94.63**	3.22**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/432-H3
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 12/03/2024	ANALYTICAL DATE	: 13/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 432-H3	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 46.05	m	Gas Velocity	: 9.4	m/s
Diameter	: 2.66	m	Flow rate ^{1/}	: 1,728	Ncu.m/min
Temperature	: 199.3	°C	Excess Oxygen	: 7.9	%
Moisture	: 13.0	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		7.9%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	13.77	14.73	0.715	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
320-H1/H2
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 11, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	3.01	2.95	36.77	36.77	28.47
2	2.91	2.85	37.28	37.28	28.71
3	2.87	2.81	37.42	37.42	28.75
Average	2.93	2.87	37.16	37.16	28.65

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	3.01	2.95	0.21	0.14	0.11
2	2.91	2.85	0.21	0.15	0.12
3	2.87	2.81	0.23	0.18	0.14
Average	2.93	2.87	0.22	0.16	0.12

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 11, 2024
 Start time: 11:10 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EM
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 320-H1/H2
 Finish time : 11:30 AM
 Serial No.: 161212-14
 Serial No.: 435
 Serial No.: 058
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:10 AM	3.21	35.43	0.21
11:11 AM	3.18	35.82	0.21
11:12 AM	3.16	35.76	0.21
11:13 AM	3.10	35.81	0.15
11:14 AM	3.03	35.61	0.15
11:15 AM	3.04	35.93	0.22
11:16 AM	2.99	36.00	0.26
11:17 AM	2.93	36.76	0.24
11:18 AM	2.95	37.30	0.22
11:19 AM	2.99	37.72	0.22
11:20 AM	3.04	37.04	0.21
11:21 AM	3.04	37.29	0.21
11:22 AM	3.04	37.37	0.21
11:23 AM	2.97	37.29	0.21
11:24 AM	2.97	37.23	0.21
11:25 AM	2.92	37.22	0.21
11:26 AM	2.97	37.36	0.21
11:27 AM	2.94	37.32	0.21
11:28 AM	2.91	37.26	0.21
11:29 AM	2.89	37.35	0.21
11:30 AM	2.87	37.38	0.21
Average	3.01	36.77	0.21

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited EMISSION TEST RESULT

Run # : 2
Date: March 11, 2024
Start time: 11:31 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EM
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas
Location : 320-H1/H2
Finish time : 11:51 AM
Serial No.: 161212-14
Serial No.: 435
Serial No.: 058
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:31 AM	2.82	37.39	0.21
11:32 AM	2.82	37.53	0.21
11:33 AM	2.82	37.60	0.21
11:34 AM	2.87	37.53	0.21
11:35 AM	2.90	37.42	0.21
11:36 AM	2.94	37.47	0.21
11:37 AM	2.93	37.61	0.21
11:38 AM	2.96	37.65	0.21
11:39 AM	2.99	37.57	0.21
11:40 AM	2.98	37.41	0.21
11:41 AM	3.00	37.24	0.21
11:42 AM	2.95	37.23	0.21
11:43 AM	2.93	37.26	0.21
11:44 AM	2.90	37.16	0.21
11:45 AM	2.84	36.97	0.21
11:46 AM	2.81	36.82	0.21
11:47 AM	2.89	36.82	0.19
11:48 AM	2.88	36.93	0.23
11:49 AM	2.91	36.94	0.21
11:50 AM	2.98	37.10	0.21
11:51 AM	3.01	37.27	0.21
Average	2.91	37.28	0.21

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited EMISSION TEST RESULT

Run # : 3
Date: March 11, 2024
Start time: 11:52 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EM
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas
Location : 320-H1/H2
Finish time : 12:12 PM
Serial No.: 161212-14
Serial No.: 435
Serial No.: 058
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:52 AM	2.94	37.35	0.21
11:53 AM	2.93	37.38	0.21
11:54 AM	2.93	37.28	0.21
11:55 AM	2.84	37.14	0.18
11:56 AM	2.87	37.16	0.22
11:57 AM	2.93	37.41	0.21
11:58 AM	2.84	37.53	0.21
11:59 AM	2.91	37.44	0.21
12:00 PM	2.87	37.44	0.21
12:01 PM	2.84	37.41	0.29
12:02 PM	2.80	37.33	0.42
12:03 PM	2.77	37.26	0.21
12:04 PM	2.74	37.36	0.21
12:05 PM	2.85	37.38	0.21
12:06 PM	2.94	37.72	0.21
12:07 PM	3.01	37.23	0.31
12:08 PM	2.83	37.62	0.21
12:09 PM	2.89	37.62	0.21
12:10 PM	2.92	37.75	0.21
12:11 PM	2.84	37.62	0.21
12:12 PM	2.86	37.49	0.21
Average	2.87	37.42	0.23

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/320-H1/H2
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 320-H1/H2	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas

STACK DESCRIPTION

Height	: 36.28	m	Gas Velocity	: 7.9	m/s
Diameter	: 1.74	m	Flow rate ^{1/}	: 512	Ncu.m/min
Temperature	: 315.0	°C	Excess Oxygen	: 2.9	%
Moisture	: 10.8	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE
		2.9%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	0.16	0.12	0.004	60*/12.39**	0.28**	US EPA Method 6C
Oxide of Nitrogen	ppm	37.16	28.65	0.60	200*/66.49**	1.08**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/320-H1/H2
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/03/2024
RECEIVED DATE	: 12/03/2024	ANALYTICAL DATE	: 13/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 320-H1/H2	OPERATOR	: Mr. Rommadon Lemmad
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas

STACK DESCRIPTION

Height	: 36.28	m	Gas Velocity	: 7.9	m/s
Diameter	: 1.74	m	Flow rate ^{1/}	: 512	Ncu.m/min
Temperature	: 315.0	°C	Excess Oxygen	: 2.9	%
Moisture	: 10.8	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE
		2.9%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	6.17	4.75	0.095	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)

Analyst

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
390-H1
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 12, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	5.82	5.82	24.08	24.06	22.18
2	5.68	5.66	23.54	23.53	21.46
3	5.64	5.60	23.60	23.59	21.43
Average	5.72	5.69	23.74	23.73	21.69

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	5.82	5.82	2.25	2.22	2.05
2	5.68	5.66	2.26	2.22	2.02
3	5.64	5.60	2.15	2.09	1.90
Average	5.72	5.69	2.22	2.18	1.99

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 12, 2024
 Start time: 10:50 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 390-H1
 Finish time : 11:10 AM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
10:50 AM	5.89	23.57	2.18
10:51 AM	5.79	23.93	2.18
10:52 AM	5.77	24.04	2.18
10:53 AM	5.85	23.87	2.20
10:54 AM	5.88	23.95	2.27
10:55 AM	5.76	23.55	2.25
10:56 AM	5.82	23.63	2.27
10:57 AM	5.84	24.10	2.26
10:58 AM	5.89	24.02	2.26
10:59 AM	5.90	23.68	2.25
11:00 AM	5.92	24.12	2.27
11:01 AM	5.93	24.44	2.27
11:02 AM	5.93	23.86	2.27
11:03 AM	5.89	23.75	2.26
11:04 AM	5.86	23.79	2.27
11:05 AM	5.79	24.55	2.26
11:06 AM	5.75	24.56	2.23
11:07 AM	5.71	24.71	2.26
11:08 AM	5.67	24.51	2.27
11:09 AM	5.72	24.73	2.25
11:10 AM	5.76	24.26	2.24
Average	5.82	24.08	2.25

Signature 

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 12, 2024
 Start time: 11:11 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 390-H1
 Finish time : 11:31 AM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:11 AM	5.80	24.36	2.26
11:12 AM	5.71	24.00	2.27
11:13 AM	5.65	23.94	2.27
11:14 AM	5.71	24.28	2.27
11:15 AM	5.65	23.86	2.27
11:16 AM	5.66	23.48	2.27
11:17 AM	5.69	23.36	2.27
11:18 AM	5.74	23.42	2.27
11:19 AM	5.80	23.61	2.25
11:20 AM	5.73	23.20	2.27
11:21 AM	5.69	23.18	2.27
11:22 AM	5.67	23.29	2.27
11:23 AM	5.73	23.28	2.27
11:24 AM	5.70	23.10	2.25
11:25 AM	5.70	23.15	2.26
11:26 AM	5.70	23.38	2.27
11:27 AM	5.65	23.49	2.23
11:28 AM	5.55	23.84	2.25
11:29 AM	5.44	23.50	2.26
11:30 AM	5.54	23.34	2.26
11:31 AM	5.70	23.34	2.26
Average	5.68	23.54	2.26

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 12, 2024
 Start time: 11:32 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: API 200 AH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Location : 390-H1
 Finish time : 11:52 AM
 Serial No.: 121121-10
 Serial No.: 314
 Serial No.: 132
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:32 AM	5.71	23.04	2.25
11:33 AM	5.71	23.61	2.21
11:34 AM	5.65	23.62	2.17
11:35 AM	5.63	23.30	2.18
11:36 AM	5.62	22.97	2.17
11:37 AM	5.68	22.60	2.17
11:38 AM	5.67	23.15	2.17
11:39 AM	5.74	23.35	2.17
11:40 AM	5.65	23.68	2.17
11:41 AM	5.53	23.18	2.17
11:42 AM	5.52	23.34	2.17
11:43 AM	5.63	23.60	2.17
11:44 AM	5.65	23.72	2.17
11:45 AM	5.71	23.38	2.17
11:46 AM	5.68	23.55	2.17
11:47 AM	5.69	24.01	2.10
11:48 AM	5.65	24.26	2.07
11:49 AM	5.60	24.52	2.08
11:50 AM	5.58	24.98	2.09
11:51 AM	5.62	24.55	2.08
11:52 AM	5.62	23.27	2.07
Average	5.64	23.60	2.15

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/390-H1
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 12/03/2024
RECEIVED DATE : 21/03/2024 ANALYTICAL DATE : 22/03/2024-02/04/2024
REPORT DATE : 03/04/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 390-H1 OPERATOR : Mr. Song Hengchwankul
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas

STACK DESCRIPTION

Height : 34.80 m Gas Velocity : 3.0 m/s
Diameter : 0.89 m Flow rate^{1/} : 60 Ncu.m/min
Temperature : 220.3 °C Excess Oxygen : 5.7 %
Moisture : 10.4 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		5.7%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	2.18	1.99	0.006	60*/11.50**	0.03**	US EPA Method 6C
Oxide of Nitrogen	ppm	23.73	21.69	0.04	200*/79.99**	0.15**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

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

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).

5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/390-H1
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 12/03/2024
RECEIVED DATE : 13/03/2024 ANALYTICAL DATE : 16/03/2024
REPORT DATE : 21/03/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 390-H1 OPERATOR : Mr. Sittichai Sawangwongchai
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas

STACK DESCRIPTION

Height : 34.80 m Gas Velocity : 3.0 m/s
Diameter : 0.89 m Flow rate^{1/} : 60 Ncu.m/min
Temperature : 220.3 °C Excess Oxygen : 5.7 %
Moisture : 10.4 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		5.7%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	1.82	1.66	0.003	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)
Analyst

(Miss Narisa Poowasanpetch)
Technical Management Team

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

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

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
390-H2
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 12, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	6.43	6.38	34.32	34.31	32.84
2	6.44	6.42	34.21	34.20	32.83
3	6.39	6.40	34.29	34.28	32.86
Average	6.42	6.40	34.27	34.26	32.85

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	6.43	6.38	4.12	4.11	3.93
2	6.44	6.42	4.13	4.11	3.95
3	6.39	6.40	4.43	4.40	4.22
Average	6.42	6.40	4.23	4.21	4.03

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Date: March 12, 2024
 Start time: 10:50 AM
 O₂ instrument Model: AMI 70
 NO_x instrument Model: Teledyne 200 EH
 SO₂ instrument Model: API 100 AH
 Fuel Type : Natural Gas

Run # : 1
 Location : 390-H2
 Finish time : 11:10 AM
 Serial No.: 071023-47
 Serial No.: 433
 Serial No.: 118
 Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
10:50 AM	6.45	34.60	4.12
10:51 AM	6.41	34.54	4.10
10:52 AM	6.25	34.79	3.93
10:53 AM	6.34	34.96	3.82
10:54 AM	6.40	34.47	3.93
10:55 AM	6.36	34.12	4.03
10:56 AM	6.29	34.11	4.37
10:57 AM	6.32	34.09	4.22
10:58 AM	6.41	34.11	4.39
10:59 AM	6.54	34.12	4.63
11:00 AM	6.43	34.14	4.22
11:01 AM	6.26	34.42	4.84
11:02 AM	6.47	34.47	4.28
11:03 AM	6.50	34.22	4.23
11:04 AM	6.66	34.17	3.85
11:05 AM	6.55	34.16	3.88
11:06 AM	6.45	34.33	3.91
11:07 AM	6.60	34.28	3.89
11:08 AM	6.42	34.24	3.92
11:09 AM	6.49	34.16	4.01
11:10 AM	6.45	34.14	4.05
Average	6.43	34.32	4.12

Signature 

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 12, 2024
Start time: 11:11 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 390-H2
Finish time : 11:31 AM
Serial No.: 071023-47
Serial No.: 433
Serial No.: 118
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:11 AM	6.53	34.20	3.98
11:12 AM	6.46	33.92	3.95
11:13 AM	6.45	33.83	4.09
11:14 AM	6.36	34.07	4.03
11:15 AM	6.40	34.27	4.02
11:16 AM	6.43	34.18	4.04
11:17 AM	6.33	34.28	4.05
11:18 AM	6.36	34.47	4.18
11:19 AM	6.40	34.62	4.28
11:20 AM	6.52	34.33	4.15
11:21 AM	6.43	34.22	4.20
11:22 AM	6.51	34.40	4.12
11:23 AM	6.31	34.35	4.16
11:24 AM	6.43	34.19	4.20
11:25 AM	6.49	34.10	4.16
11:26 AM	6.53	34.23	4.16
11:27 AM	6.48	34.03	4.14
11:28 AM	6.45	33.99	4.21
11:29 AM	6.43	34.15	4.25
11:30 AM	6.45	34.28	4.13
11:31 AM	6.46	34.32	4.18
Average	6.44	34.21	4.13

Signature 
(Miss Katesarin Vorradetwittaya)
Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 12, 2024
Start time: 11:32 AM
O₂ instrument Model: AMI 70
NO_x instrument Model: Teledyne 200 EH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 390-H2
Finish time : 11:52 AM
Serial No.: 071023-47
Serial No.: 433
Serial No.: 118
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
11:32 AM	6.45	34.23	4.21
11:33 AM	6.39	34.15	4.28
11:34 AM	6.46	34.11	4.25
11:35 AM	6.44	34.19	4.33
11:36 AM	6.42	34.16	4.34
11:37 AM	6.44	34.14	4.49
11:38 AM	6.39	34.30	4.40
11:39 AM	6.32	34.54	4.37
11:40 AM	6.31	34.45	4.47
11:41 AM	6.31	34.11	4.41
11:42 AM	6.45	33.98	4.42
11:43 AM	6.41	33.98	4.36
11:44 AM	6.39	34.40	4.44
11:45 AM	6.32	34.63	4.53
11:46 AM	6.35	34.70	4.31
11:47 AM	6.41	34.55	4.51
11:48 AM	6.33	34.34	4.58
11:49 AM	6.40	34.35	4.59
11:50 AM	6.46	34.35	4.68
11:51 AM	6.45	34.21	4.53
11:52 AM	6.37	34.13	4.46
Average	6.39	34.29	4.43

Signature 
(Miss Katesarin Vorradetwittaya)
Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/390-H2
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 12/03/2024
RECEIVED DATE : 21/03/2024 ANALYTICAL DATE : 22/03/2024-02/04/2024
REPORT DATE : 03/04/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 390-H2 OPERATOR : Mr. Song Hengchwankul
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas
STACK DESCRIPTION

Height : 30.00 m Gas Velocity : 5.9 m/s
Diameter : 0.94 m Flow rate^{1/} : 126 Ncu.m/min
Temperature : 239.8 °C Excess Oxygen : 6.4 %
Moisture : 11.8 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		6.4%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	4.21	4.03	0.02	60*/12.26**	0.06**	US EPA Method 6C
Oxide of Nitrogen	ppm	34.26	32.85	0.14	200*/59.71**	0.21**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

- Remark :** 1. Reported analysis refers to submitted sample only.
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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.
4. * Notification of Ministry of Industry, B.E.2549 (2006) and Notification of Ministry of Natural Resource and Environment, B.E.2549 (2006) (at 7 % O₂).
5. ** The assigned value in EIA report.



บริษัท ซีคอต จำกัด
SECOT CO.,LTD.

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : 224096MON1H-Stk/390-H2
Branch 4 (Aromatics 1 Plant)
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 12/03/2024
RECEIVED DATE : 13/03/2024 ANALYTICAL DATE : 16/03/2024
REPORT DATE : 21/03/2024 SAMPLE CONDITION : Normal
STACK LOCATION : 390-H2 OPERATOR : Mr. Sittichai Sawangwongchai
SOURCE DESCRIPTION : Combustion FUEL TYPE : Fuel gas
STACK DESCRIPTION

Height : 30.00 m Gas Velocity : 5.9 m/s
Diameter : 0.94 m Flow rate^{1/} : 126 Ncu.m/min
Temperature : 239.8 °C Excess Oxygen : 6.4 %
Moisture : 11.8 %

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE METHOD
		6.4%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	13.53	12.97	0.051	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)
Analyst

(Miss Narisa Poowasanpetch)
Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

The Monitoring Result of Emission Concentration
940-H1
PTT Global Chemical Public Co., Ltd.
(Branch 4 : Aromatics 1 Plant)
March 12, 2024

Run Number	Oxygen content (%)		Oxide of Nitrogen (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.88	4.89	96.98	97.04	84.25
2	4.91	4.91	97.26	97.33	84.61
3	4.92	4.91	97.34	97.42	84.69
Average	4.90	4.90	97.19	97.26	84.52

Run Number	Oxygen content (%)		Sulfur dioxide (ppm)		
	RM Stack Gas Conc	Corrected Gas Conc	RM Stack Gas Conc	Corrected Gas Conc @Actual O2	Corrected Gas Conc @7% O2
1	4.88	4.89	8.06	8.03	6.97
2	4.91	4.91	8.45	8.43	7.33
3	4.92	4.91	8.41	8.39	7.29
Average	4.90	4.90	8.31	8.28	7.20

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 1
Date: March 12, 2024
Location : 940-H1
Start time: 2:20 PM
Finish time : 2:40 PM
O₂ instrument Model: AMI 70
Serial No.: 121121-10
NO_x instrument Model: API 200 AH
Serial No.: 342
SO₂ instrument Model: API 100 AH
Serial No.: 132
Fuel Type : Natural Gas
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
2:20 PM	4.95	96.19	7.25
2:21 PM	4.83	97.13	7.45
2:22 PM	4.85	97.86	7.68
2:23 PM	4.83	98.63	7.80
2:24 PM	4.89	99.62	7.96
2:25 PM	4.88	93.35	7.89
2:26 PM	4.91	94.36	7.86
2:27 PM	4.86	95.37	7.78
2:28 PM	4.84	96.50	7.90
2:29 PM	4.83	97.70	8.09
2:30 PM	4.92	97.19	8.22
2:31 PM	4.91	97.26	8.22
2:32 PM	4.88	97.26	8.32
2:33 PM	4.97	97.26	8.34
2:34 PM	4.94	97.26	8.43
2:35 PM	4.90	97.26	8.36
2:36 PM	4.85	97.26	8.33
2:37 PM	4.78	97.26	8.40
2:38 PM	4.89	97.26	8.31
2:39 PM	4.90	97.26	8.36
2:40 PM	4.90	97.27	8.36
Average	4.88	96.98	8.06

Signature



(Miss Katesarin Vorradetwittaya)

Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 2

Date: March 12, 2024
Start time: 2:41 PM
O₂ instrument Model: AMI 70
NO_x instrument Model: API 200 AH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 940-H1
Finish time : 3:01 PM
Serial No.: 121121-10
Serial No.: 342
Serial No.: 132
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
2:41 PM	4.92	97.26	8.41
2:42 PM	4.88	97.26	8.37
2:43 PM	4.90	97.26	8.34
2:44 PM	4.87	97.26	8.29
2:45 PM	4.88	97.27	8.37
2:46 PM	4.92	97.27	8.36
2:47 PM	4.88	97.26	8.40
2:48 PM	4.82	97.27	8.52
2:49 PM	4.90	97.26	8.44
2:50 PM	4.85	97.26	8.50
2:51 PM	4.87	97.27	8.53
2:52 PM	4.94	97.26	8.58
2:53 PM	4.96	97.26	8.43
2:54 PM	4.94	97.26	8.46
2:55 PM	4.90	97.26	8.26
2:56 PM	4.91	97.26	8.39
2:57 PM	4.85	97.26	8.46
2:58 PM	4.90	97.26	8.57
2:59 PM	4.98	97.26	8.59
3:00 PM	4.91	97.26	8.55
3:01 PM	5.03	97.26	8.55
Average	4.91	97.26	8.45

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist

PTT Global Chemical Public Company Limited
EMISSION TEST RESULT

Run # : 3

Date: March 12, 2024
Start time: 3:02 PM
O₂ instrument Model: AMI 70
NO_x instrument Model: API 200 AH
SO₂ instrument Model: API 100 AH
Fuel Type : Natural Gas

Location : 940-H1
Finish time : 3:22 PM
Serial No.: 121121-10
Serial No.: 342
Serial No.: 132
Test Operator : Song H.

Time, min	O ₂ (%)	NO _x (ppm)	SO ₂ (ppm)
3:02 PM	4.98	97.26	8.64
3:03 PM	5.06	97.26	8.66
3:04 PM	5.03	97.26	8.60
3:05 PM	4.93	97.26	8.52
3:06 PM	4.86	97.26	8.71
3:07 PM	4.85	97.26	8.73
3:08 PM	4.81	97.26	8.65
3:09 PM	4.85	97.26	8.74
3:10 PM	4.88	97.26	8.67
3:11 PM	4.84	97.26	8.58
3:12 PM	4.88	97.26	8.54
3:13 PM	4.91	97.26	8.56
3:14 PM	4.95	97.27	8.69
3:15 PM	5.02	97.27	8.60
3:16 PM	4.99	97.27	8.53
3:17 PM	4.99	97.27	8.45
3:18 PM	4.87	97.27	8.39
3:19 PM	4.83	97.26	8.34
3:20 PM	4.81	97.27	8.35
3:21 PM	4.95	97.86	6.58
3:22 PM	4.93	98.34	7.01
Average	4.92	97.34	8.41

Signature 
 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/940-H1 (Boiler)
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 12/03/2024
RECEIVED DATE	: 21/03/2024	ANALYTICAL DATE	: 22/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 940-H1 (Boiler)	OPERATOR	: Mr. Song Hengchwankul
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 30.00	m	Gas Velocity	: 6.9	m/s
Diameter	: 1.35	m	Flow rate ^{1/}	: 338	Ncu.m/min
Temperature	: 180.0	°C	Excess Oxygen	: 4.9	%
Moisture	: 13.2	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE
		4.9%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Sulfur Dioxide	ppm	8.28	7.20	0.12	60*/10.39**	0.15**	US EPA Method 6C
Oxide of Nitrogen	ppm	97.26	84.52	1.03	200*/102.19**	1.06**	US EPA Method 7E

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

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5. ** The assigned value in EIA report.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096MON1H-Stk/940-H1 (Boiler)
	Branch 4 (Aromatics 1 Plant)		
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 12/03/2024
RECEIVED DATE	: 13/03/2024	ANALYTICAL DATE	: 16/03/2024
REPORT DATE	: 21/03/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: 940-H1 (Boiler)	OPERATOR	: Mr. Sittichai Sawangwongchai
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: Fuel gas
STACK DESCRIPTION			

Height	: 30.00	m	Gas Velocity	: 6.9	m/s
Diameter	: 1.35	m	Flow rate ^{1/}	: 338	Ncu.m/min
Temperature	: 180.0	°C	Excess Oxygen	: 4.9	%
Moisture	: 13.2	%			

PARAMETER	UNIT	RESULT ^{1/}			STANDARD		REFERENCE
		4.9%O ₂	7%O ₂	g/s	7%O ₂	g/s	
Total Volatile Organic Compounds	ppm	1.51	1.31	0.015	-	-	US. EPA Method 25A

(Miss Sudaporn Soonthorn)
Analyst

(Miss Narisa Poowasanpetch)
Technical Management Team

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ภาคผนวก ง.2

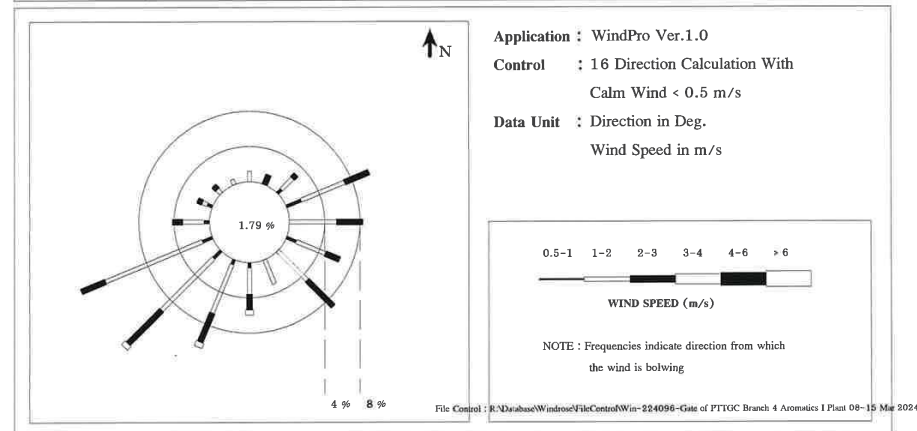
ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ



Meteorological Monitoring Results : Wind Rose MTR-PTTGC4

Location : Gate of PTTGC Branch 4 Aromatics 1 Plant Monitor period : 08-15 Mar 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	0.0000	0.0119	0.0000	0.0000	0.0000	0.0000	0.0119
NNE	0.0000	0.0000	0.0119	0.0000	0.0000	0.0000	0.0119
NE	0.0060	0.0179	0.0060	0.0000	0.0000	0.0000	0.0298
ENE	0.0179	0.0536	0.0298	0.0000	0.0000	0.0000	0.1012
E	0.0000	0.0536	0.0298	0.0000	0.0000	0.0000	0.0833
ESE	0.0119	0.0357	0.0179	0.0000	0.0000	0.0000	0.0655
SE	0.0000	0.0476	0.0417	0.0000	0.0000	0.0000	0.0893
SSE	0.0000	0.0298	0.0000	0.0000	0.0000	0.0000	0.0298
S	0.0060	0.0298	0.0179	0.0060	0.0000	0.0000	0.0595
SSW	0.0060	0.0595	0.0357	0.0060	0.0000	0.0000	0.1071
SW	0.0119	0.0833	0.0536	0.0060	0.0000	0.0000	0.1548
WSW	0.0119	0.1190	0.0298	0.0000	0.0000	0.0000	0.1607
W	0.0060	0.0238	0.0119	0.0000	0.0000	0.0000	0.0417
WNW	0.0060	0.0060	0.0060	0.0000	0.0000	0.0000	0.0179
NW	0.0000	0.0060	0.0060	0.0000	0.0000	0.0000	0.0119
NNW	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
CALM	0.0179						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

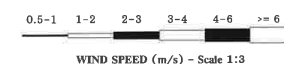
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC4

Location : Gate of PTTGC Branch 4 Aromatics 1 Plant Monitor period : 08-15 Mar 2024
Wind Speed Model : Novalynx WS-25 Serial No : A5092
Wind Direction Model : Novalynx WS-25 Serial No : A5092

Time	08-09 Mar 2024		09-10 Mar 2024		10-11 Mar 2024		11-12 Mar 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
08:00 - 09:00	1.7	S	1.5	SW	1.1	W	2.0	WSW
09:00 - 10:00	2.7	SSW	0.6	SSW	1.1	W	2.0	WSW
10:00 - 11:00	2.2	SW	1.1	S	1.4	WSW	2.4	SW
11:00 - 12:00	2.5	SSW	1.4	SW	1.6	SW	1.2	NW
12:00 - 13:00	2.5	S	2.0	SSW	4.0	SW	1.4	NNW
13:00 - 14:00	2.8	WSW	2.3	SW	3.2	S	2.3	WSW
14:00 - 15:00	2.7	S	2.2	SSW	2.4	SSW	3.9	SSW
15:00 - 16:00	2.4	WSW	2.2	SW	2.1	SW	2.4	W
16:00 - 17:00	1.8	SW	2.4	SW	1.9	SSE	2.8	SW
17:00 - 18:00	1.9	WSW	2.1	SSW	1.2	SW	1.2	WSW
18:00 - 19:00	1.2	SW	0.9	WSW	1.3	WSW	1.7	SSW
19:00 - 20:00	2.0	WNW	2.3	W	1.2	WSW	0.5	SW
20:00 - 21:00	1.2	WNW	1.3	WSW	0.6	S	1.2	SW
21:00 - 22:00	1.5	WSW	1.4	SSW	0.9	SW	1.5	SSW
22:00 - 23:00	2.5	WSW	1.1	SW	1.2	SW	0.6	SW
23:00 - 24:00	1.9	S	1.5	WSW	1.8	WSW	1.9	SW
00:00 - 01:00	1.6	S	1.3	SSW	1.6	S	1.7	SSW
01:00 - 02:00	1.5	WSW	1.1	SSW	2.0	SSW	1.5	SSW
02:00 - 03:00	2.0	SSW	1.6	SW	1.6	WSW	0.9	W
03:00 - 04:00	1.4	SW	1.6	WSW	1.4	WSW	1.2	WSW
04:00 - 05:00	1.4	WSW	1.3	W	2.1	WSW	0.9	WSW
05:00 - 06:00	1.6	SSW	1.5	W	1.7	SW	2.2	SW
06:00 - 07:00	0.4	WSW	1.4	WSW	1.7	WSW	2.0	NW
07:00 - 08:00	1.7	WSW	0.7	WNW	1.9	SW	2.6	NNE



File Control : R:\Database\Windrose\FileControl\Win-224096-Gate of PTTGC Branch 4 Aromatics 1 Plant 08-15 Mar 2024

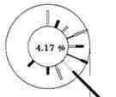
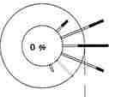
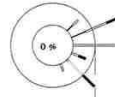



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

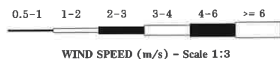
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC4

Location : Gate of PTTGC Branch 4 Aromatics I Plant Monitor period : 08-15 Mar 2024
Wind Speed Model : Novalynx WS-25 Serial No : A5092
Wind Direction Model : Novalynx WS-25 Serial No : A5092

Time	12-13 Mar 2024		13-14 Mar 2024		14-15 Mar 2024		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
08:00 - 09:00	1.2	N	2.0	E	1.2	SE	
09:00 - 10:00	0.1	WNW	2.2	ENE	1.2	SSE	
10:00 - 11:00	1.3	N	1.4	ESE	2.2	ESE	
11:00 - 12:00	2.2	NNE	1.8	ESE	2.6	ENE	
12:00 - 13:00	2.2	SE	2.5	E	2.4	SE	
13:00 - 14:00	2.4	SW	2.2	E	1.9	E	
14:00 - 15:00	1.6	SE	1.9	ESE	2.2	SE	
15:00 - 16:00	1.9	SSE	1.9	ESE	1.9	E	
16:00 - 17:00	1.2	SSE	1.6	ESE	2.1	ENE	
17:00 - 18:00	1.0	ESE	2.2	E	2.1	ENE	
18:00 - 19:00	2.2	E	2.0	NE	0.9	ENE	
19:00 - 20:00	1.7	ENE	1.0	ENE	1.3	NE	
20:00 - 21:00	2.4	ESE	1.4	NE	0.6	NE	
21:00 - 22:00	1.9	NE	1.1	ENE	0.7	ENE	
22:00 - 23:00	1.5	E	1.4	E	1.9	ENE	
23:00 - 24:00	2.5	SE	1.4	ENE	1.9	ENE	
00:00 - 01:00	2.1	SE	1.9	SE	1.4	ENE	
01:00 - 02:00	2.3	S	1.2	ENE	1.7	E	
02:00 - 03:00	2.5	SE	2.2	ENE	1.2	SE	
03:00 - 04:00	2.3	SE	1.8	SE	1.3	E	
04:00 - 05:00	1.3	SE	2.4	ESE	1.6	E	
05:00 - 06:00	0.6	ESE	1.9	SSE	1.8	E	
06:00 - 07:00	0.6	ENE	2.0	SE	1.2	SE	
07:00 - 08:00	1.0	ENE	2.5	E	1.4	ESE	
Wind Rose							
							



File Control :R:\Database\Windrose\FileControl\Win-224096-Gate of PTTGC Branch 4 Aromatics I Plant 08-15 Mar 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-PTTGC4

Location : Gate of PTTGC Branch 4 Aromatics I Plant Monitor Period : 08-15 Mar 2024
Analyzer Model : API 200A Station No : Shelter 16
Serial No : 2365 Site Operator : Mr. Phuwasdech Kaewjirakulsri

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 (ppb)						
	08-09 Mar 2024	09-10 Mar 2024	10-11 Mar 2024	11-12 Mar 2024	12-13 Mar 2024	13-14 Mar 2024	14-15 Mar 2024
08:00 - 09:00	7.8	8.2	3.0	6.2	5.5	3.9	3.3
09:00 - 10:00	2.0	5.7	6.6	9.2	10.7	3.0	1.2
10:00 - 11:00	9.4	1.5	14.4	7.5	2.8	2.7	3.7
11:00 - 12:00	8.7	17.7	14.4	5.3	2.8	4.5	4.7
12:00 - 13:00	5.4	3.4	12.7	2.5	6.1	2.7	6.4
13:00 - 14:00	8.0	3.5	12.2	10.3	2.7	3.7	7.2
14:00 - 15:00	4.8	7.0	11.3	15.8	6.9	9.5	5.9
15:00 - 16:00	7.0	5.8	19.3	28.6	9.4	13.0	4.3
16:00 - 17:00	21.4	15.0	20.0	23.0	22.5	22.0	13.9
17:00 - 18:00	17.7	22.1	25.5	17.3	19.6	20.7	22.2
18:00 - 19:00	16.7	16.8	20.0	20.0	15.9	16.4	12.7
19:00 - 20:00	12.7	19.0	7.3	13.7	16.3	20.3	20.8
20:00 - 21:00	11.5	22.6	13.5	20.1	12.2	15.3	7.6
21:00 - 22:00	8.8	17.3	14.1	9.0	18.5	8.4	12.5
22:00 - 23:00	9.6	12.1	6.7	8.9	11.5	4.0	3.7
23:00 - 00:00	5.8	9.1	4.6	6.2	9.6	4.5	15.7
00:00 - 01:00	4.5	0.3	4.6	0.4	0.6	2.7	6.1
01:00 - 02:00	4.4	4.6	5.9	5.2	6.2	11.5	16.5
02:00 - 03:00	5.2	5.5	6.7	5.1	9.3	4.5	15.6
03:00 - 04:00	4.3	5.9	1.3	4.6	1.7	2.5	1.2
04:00 - 05:00	5.1	7.2	7.3	10.3	4.9	5.8	13.6
05:00 - 06:00	5.1	9.0	8.4	16.5	5.7	4.7	17.1
06:00 - 07:00	2.9	12.2	11.0	18.6	4.6	9.1	19.4
07:00 - 08:00	4.3	12.2	2.4	15.6	6.6	10.9	25.3
Average-24Hr*	8.0	10.2	10.6	11.7	8.9	8.6	10.9
Max-1Hr	21.4	22.6	25.5	28.6	22.5	22.0	25.3
Min-1Hr	2.0	0.3	1.3	0.4	0.6	2.5	1.2
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-PTTGC4

Location : Chaklukya Community Monitor Period : 08-15 Mar 2024
Analyzer Model : API 200A Station No : Mobile 10
Serial No : 2385 Site Operator : Mr. Phuwarech Kaewjirakulsri

Calibrator Model : Teledyne 700E Serial No : 587
Calibration Gas Cylinder I.D.: EB0102326
Certified Date : 03 Jan 2024 Cal Concentration (ppb) : 0,100,200,400
Expire Date : 02 Jan 2025

Time	NO2 Concentration (ppb)						
	08-09 Mar 2024	09-10 Mar 2024	10-11 Mar 2024	11-12 Mar 2024	12-13 Mar 2024	13-14 Mar 2024	14-15 Mar 2024
16:00 - 17:00	12.3	11.0	5.2	11.1	18.6	2.7	6.0
17:00 - 18:00	12.3	12.5	5.4	14.1	19.5	4.4	4.6
18:00 - 19:00	11.3	8.3	11.1	11.3	15.7	3.6	15.6
19:00 - 20:00	15.0	10.6	11.8	11.0	14.5	11.6	19.6
20:00 - 21:00	5.8	5.2	8.2	14.0	16.6	10.7	12.2
21:00 - 22:00	6.5	6.0	4.5	14.6	7.8	10.3	11.3
22:00 - 23:00	2.9	2.9	12.1	4.0	8.3	2.6	8.0
23:00 - 00:00	5.5	3.8	5.9	7.3	7.1	5.2	3.5
00:00 - 01:00	2.3	4.7	5.3	4.5	7.3	4.4	4.4
01:00 - 02:00	1.2	8.0	9.6	3.4	7.5	3.2	3.5
02:00 - 03:00	2.2	8.6	12.1	3.4	5.3	3.7	3.4
03:00 - 04:00	1.2	3.6	6.9	5.6	4.5	3.1	2.0
04:00 - 05:00	10.0	8.8	5.5	6.6	3.4	3.7	2.8
05:00 - 06:00	10.0	2.9	6.7	7.6	9.1	2.7	13.1
06:00 - 07:00	10.3	3.6	12.0	6.0	3.6	11.1	16.0
07:00 - 08:00	8.8	5.0	6.1	1.4	9.0	14.0	15.7
08:00 - 09:00	12.9	4.7	5.0	5.2	5.7	10.1	11.4
09:00 - 10:00	3.4	7.1	6.6	3.4	1.8	3.3	6.9
10:00 - 11:00	2.6	6.5	6.3	4.4	0.8	13.2	15.8
11:00 - 12:00	3.3	5.6	6.2	3.8	1.9	7.7	4.6
12:00 - 13:00	2.7	5.7	5.3	6.8	2.2	6.1	1.9
13:00 - 14:00	3.1	8.2	6.8	6.6	5.9	2.2	5.7
14:00 - 15:00	5.2	7.5	4.9	8.2	4.1	4.2	8.5
15:00 - 16:00	1.7	7.5	4.5	7.8	4.1	5.2	2.8
Average-24Hr*	6.4	6.6	7.3	7.2	7.7	6.2	8.3
Max-1Hr	15.0	12.5	12.1	14.6	19.5	14.0	19.6
Min-1Hr	1.2	2.9	4.5	1.4	0.8	2.2	1.9
Standard-1Hr	170 ppb(320 ug/cu.m)						
Standard-24Hr	-						

Remark : * Average time between 16:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Sulfur dioxide MTR-PTTGC4

Location : Gate of PTTGC Branch 4 Aromatics I Plant Monitor Period : 08-15 Mar 2024
Analyzer Model : Teledyne 100A Station No : Shelter 16
Serial No : 2009 Site Operator : Mr. Phuwarech Kaewjirakulsri

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

Time	SO2 Concentration (ppb)						
	08-09 Mar 2024	09-10 Mar 2024	10-11 Mar 2024	11-12 Mar 2024	12-13 Mar 2024	13-14 Mar 2024	14-15 Mar 2024
08:00 - 09:00	4.7	4.6	4.5	4.0	8.2	5.6	13.6
09:00 - 10:00	5.8	4.5	4.9	4.1	5.1	3.7	15.6
10:00 - 11:00	5.1	4.3	4.7	7.2	7.1	4.0	8.3
11:00 - 12:00	5.0	4.6	4.8	5.3	9.4	3.6	4.5
12:00 - 13:00	5.1	4.2	4.8	19.1	8.1	4.0	3.5
13:00 - 14:00	4.8	10.1	4.8	8.1	4.4	3.5	3.8
14:00 - 15:00	4.8	5.1	4.8	15.3	3.2	5.0	5.4
15:00 - 16:00	4.8	7.3	4.4	11.0	5.2	5.9	8.3
16:00 - 17:00	4.7	5.6	4.5	7.1	6.3	3.8	11.7
17:00 - 18:00	4.7	4.5	5.0	4.9	6.5	3.6	5.5
18:00 - 19:00	5.1	4.3	4.8	4.2	6.3	4.0	3.4
19:00 - 20:00	5.6	5.4	5.0	4.3	7.1	3.7	3.6
20:00 - 21:00	4.9	6.3	4.6	4.1	9.1	3.7	3.4
21:00 - 22:00	4.7	5.4	5.0	4.4	13.5	4.0	3.8
22:00 - 23:00	4.5	5.6	5.9	4.2	3.2	4.1	3.9
23:00 - 00:00	4.5	4.4	3.8	3.0	3.5	3.6	2.7
00:00 - 01:00	4.2	5.6	7.1	4.2	3.9	3.4	2.8
01:00 - 02:00	4.3	4.7	3.7	5.0	3.5	3.4	2.8
02:00 - 03:00	4.2	4.6	4.0	10.8	3.8	3.2	3.0
03:00 - 04:00	4.3	5.5	4.2	9.9	3.5	3.4	3.1
04:00 - 05:00	5.3	6.4	3.8	5.0	3.4	3.4	2.9
05:00 - 06:00	4.5	4.4	3.8	9.1	3.5	3.2	3.1
06:00 - 07:00	4.4	5.7	3.9	6.4	3.8	3.7	3.0
07:00 - 08:00	4.5	5.5	4.1	10.3	13.7	4.5	3.0
Average-24Hr*	4.8	5.4	4.6	7.1	6.1	3.9	5.2
Max-1Hr	5.8	10.1	7.1	19.1	13.7	5.9	15.6
Min-1Hr	4.2	4.2	3.7	3.0	3.2	3.2	2.7
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Sulfur dioxide MTR-PTTGC4

Location : Chaklukya Community Monitor Period : 08-15 Mar 2024
Analyzer Model : Thermo 43C Station No : Mobile 10
Serial No : 60771-328-2 Site Operator : Mr. Phuwadech Kaewjirakulsi

Calibrator Model : Teledyne 700E Serial No : 587
Calibration Gas Cylinder I.D.: EB0102326
Certified Date : 04 Jan 2024 Cal Concentration (ppb) : 0,100,200,400
Expire Date : 03 Jan 2025

Time	SO2 Concentration (ppb)						
	08-09 Mar 2024	09-10 Mar 2024	10-11 Mar 2024	11-12 Mar 2024	12-13 Mar 2024	13-14 Mar 2024	14-15 Mar 2024
16:00 - 17:00	4.2	6.2	5.9	5.1	3.3	4.7	2.3
17:00 - 18:00	2.9	4.0	2.3	2.4	1.9	3.7	3.3
18:00 - 19:00	5.8	2.3	5.1	5.7	4.1	2.5	5.0
19:00 - 20:00	3.0	2.2	4.4	1.9	2.6	3.2	2.2
20:00 - 21:00	4.9	3.4	6.0	6.3	4.1	4.9	2.1
21:00 - 22:00	4.3	5.7	5.6	5.1	2.3	4.0	5.4
22:00 - 23:00	2.3	5.3	2.7	5.3	3.4	2.7	3.1
23:00 - 00:00	2.4	2.3	7.7	4.2	2.2	5.0	2.4
00:00 - 01:00	5.1	3.1	10.7	6.0	6.3	5.7	5.4
01:00 - 02:00	5.6	2.7	4.7	3.8	2.8	3.6	3.2
02:00 - 03:00	5.9	3.4	2.7	9.6	4.5	4.8	2.6
03:00 - 04:00	3.6	3.8	2.7	12.8	2.1	5.6	4.3
04:00 - 05:00	6.1	2.9	2.7	11.7	3.0	6.1	2.4
05:00 - 06:00	4.4	4.8	5.7	7.9	5.5	6.1	5.7
06:00 - 07:00	3.8	3.6	6.0	9.0	4.9	3.2	2.4
07:00 - 08:00	4.1	5.9	2.2	4.8	3.7	3.4	2.9
08:00 - 09:00	3.2	2.9	2.9	2.6	6.0	2.4	5.5
09:00 - 10:00	4.9	2.5	9.1	6.2	5.3	3.1	4.3
10:00 - 11:00	10.2	4.0	16.8	14.6	3.1	2.7	5.7
11:00 - 12:00	9.2	4.5	19.2	5.5	4.5	2.2	15.5
12:00 - 13:00	4.3	5.2	12.1	1.1	4.1	2.3	29.9
13:00 - 14:00	3.7	3.5	14.3	1.1	4.1	3.5	21.8
14:00 - 15:00	4.8	5.5	6.2	5.8	4.5	3.5	8.7
15:00 - 16:00	6.0	3.6	13.2	6.0	3.1	14.6	5.6
Average-24Hr*	4.8	3.9	7.1	6.0	3.8	4.3	6.3
Max-1Hr	10.2	6.2	19.2	14.6	6.3	14.6	29.9
Min-1Hr	2.3	2.2	2.2	1.1	1.9	2.2	2.1
Standard-1Hr	300 ppb(780 ug/cu.m)						
Standard-24Hr	120 ppb(300 ug/cu.m)						

Remark : * Average time between 16:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0044/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 18/01/2024
SAMPLING DATE : 08-09/01/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 09:30-10:05 FILE CODE : 224096_TO-15_January
RECEIVED DATE : 10/01/2024
REPORT DATE : 20/01/2024

Compound	SAMPLING LOCATION				STANDARD ($\mu\text{g}/\text{m}^3$)
	Non Detection		Branch 4 : North		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	3.81	12.17	-
Cyclohexane	0.02	0.07	10.09	34.75	-
Toluene	0.02	0.08	4.41	16.61	-
m,p-xylene	0.04	0.17	0.99	4.30	-
o-xylene	0.02	0.09	0.37	1.61	-
Total xylene	0.06	0.26	1.36	5.91	-

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

Sirhan Chimsanga
(Miss Sirhan Chimsa-nga)

Analyst

~R~
(Mrs. Araya Tippasuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0044/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 18/01/2024
SAMPLING DATE : 08-09/01/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 09:08-09:50 FILE CODE : 224096_TO-15_January
RECEIVED DATE : 10/01/2024
REPORT DATE : 20/01/2024

Compound	SAMPLING LOCATION				STANDARD ($\mu\text{g}/\text{m}^3$)
	Non Detection		Branch 4 : South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	4.49	14.34	-
Cyclohexane	0.02	0.07	1.77	6.10	-
Toluene	0.02	0.08	3.07	11.56	-
m,p-xylene	0.04	0.17	1.09	4.73	-
o-xylene	0.02	0.09	0.23	1.00	-
Total xylene	0.06	0.26	1.32	5.73	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods 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 : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0044/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 18/01/2024
SAMPLING DATE : 08-09/01/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 10:00-10:30 FILE CODE : 224096_TO-15_January
RECEIVED DATE : 10/01/2024
REPORT DATE : 20/01/2024

Compound	SAMPLING LOCATION				STANDARD (µg/m ³)
	Non Detection		Branch 8 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	3.94	12.59	
Cyclohexane	0.02	0.07	2.18	7.51	
Toluene	0.02	0.08	4.08	15.37	
m,p-xylene	0.04	0.17	1.13	4.91	
o-xylene	0.02	0.09	0.54	2.35	
Total xylene	0.06	0.26	1.67	7.26	

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods 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	: PTT Global Chemical Public Co., Ltd. (Branch 4 : Aromatics 1 Plant)	REQUEST SERVICE No.	: 0044/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 08-09/01/2024	ANALYTICAL DATE	: 18/01/2024
SAMPLING TIME	: 09:45-10:22	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 10/01/2024	FILE CODE	: 224096_TO-15_January
REPORT DATE	: 20/01/2024		

Compound	Non Detection		SAMPLING LOCATION Branch 8 : South		STANDARD ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	6.01	19.20	-
Cyclohexane	0.02	0.07	5.55	19.11	-
Toluene	0.02	0.08	4.47	16.84	-
m,p-xylene	0.04	0.17	1.03	4.47	-
o-xylene	0.02	0.09	0.56	2.43	-
Total xylene	0.06	0.26	1.59	6.90	-

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

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

AR

(Mrs. Araya Tippasuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Branch 4 : Aromatics 1 Plant)	REQUEST SERVICE No.	: 0202/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 01-02/02/2024	ANALYTICAL DATE	: 24/02/2024
SAMPLING TIME	: 09:10-09:39	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 03/02/2024	FILE CODE	: 224096_TO-15_February
REPORT DATE	: 27/02/2024		

Compound	Non Detection		SAMPLING LOCATION Branch 4 : North		STANDARD ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.57	1.82	-
Cyclohexane	0.02	0.07	4.60	15.84	-
Toluene	0.02	0.08	1.92	7.23	-
m,p-xylene	0.04	0.17	0.39	1.69	-
o-xylene	0.02	0.09	0.12	0.52	-
Total xylene	0.06	0.26	0.51	2.21	-

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

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

AR

(Mrs. Araya Tippasuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0202/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 24/02/2024
SAMPLING DATE	: 01-02/02/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 09:40-09:55	FILE CODE	: 224096_TO-15_February
RECEIVED DATE	: 03/02/2024		
REPORT DATE	: 27/02/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 4 : South		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.11	0.35	-
Cyclohexane	0.02	0.07	0.02	0.07	-
Toluene	0.02	0.08	0.17	0.64	-
m,p-xylene	0.04	0.17	0.14	0.61	-
o-xylene	0.02	0.09	0.04	0.17	-
Total xylene	0.06	0.26	0.18	0.78	-

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

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

AR

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0202/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 24/02/2024
SAMPLING DATE	: 01-02/02/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:20-10:27	FILE CODE	: 224096_TO-15_February
RECEIVED DATE	: 03/02/2024		
REPORT DATE	: 27/02/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 8 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	1.72	5.49	-
Cyclohexane	0.02	0.07	1.94	6.68	-
Toluene	0.02	0.08	1.23	4.63	-
m,p-xylene	0.04	0.17	0.43	1.87	-
o-xylene	0.02	0.09	0.69	3.00	-
Total xylene	0.06	0.26	1.12	4.87	-

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0202/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 24/02/2024
SAMPLING DATE	: 01-02/02/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:10-10:20	FILE CODE	: 224096_TO-15_February
RECEIVED DATE	: 03/02/2024		
REPORT DATE	: 27/02/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
	Branch 8 : South				
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.37	1.18	0.004
Cyclohexane	0.02	0.07	3.24	11.16	0.02
Toluene	0.02	0.08	0.37	1.39	0.02
m,p-xylene	0.04	0.17	0.19	0.83	0.04
o-xylene	0.02	0.09	0.08	0.35	0.02
Total xylene	0.06	0.26	0.27	1.18	0.06

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

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0401/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 07/03/2024
SAMPLING DATE	: 04-05/03/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 08:50-09:07	FILE CODE	: 224096_TO-15_March
RECEIVED DATE	: 06/03/2024		
REPORT DATE	: 18/03/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 4 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	1.23	3.93	
Cyclohexane	0.02	0.07	6.52	22.45	
Toluene	0.02	0.08	4.84	18.23	
m,p-xylene	0.04	0.17	0.68	2.95	
o-xylene	0.02	0.09	0.21	0.91	
Total xylene	0.06	0.26	0.89	3.86	

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

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Branch 4 : Aromatics 1 Plant)	REQUEST SERVICE No.	: 0401/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 04-05/03/2024	ANALYTICAL DATE	: 07/03/2024
SAMPLING TIME	: 09:19-09:36	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06/03/2024	FILE CODE	: 224096_TO-15_March
REPORT DATE	: 18/03/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 4 : South		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.31	0.99	-
Cyclohexane	0.02	0.07	0.19	0.65	-
Toluene	0.02	0.08	0.63	2.37	-
m,p-xylene	0.04	0.17	0.31	1.35	-
o-xylene	0.02	0.09	0.06	0.26	-
Total xylene	0.06	0.26	0.37	1.61	-

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

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

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(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Branch 4 : Aromatics 1 Plant)	REQUEST SERVICE No.	: 0401/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 04-05/03/2024	ANALYTICAL DATE	: 07/03/2024
SAMPLING TIME	: 09:58-10:01	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06/03/2024	FILE CODE	: 224096_TO-15_March
REPORT DATE	: 18/03/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 8 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	2.97	9.49	-
Cyclohexane	0.02	0.07	5.34	18.39	-
Toluene	0.02	0.08	4.97	18.72	-
m,p-xylene	0.04	0.17	5.67	24.63	-
o-xylene	0.02	0.09	0.81	3.52	-
Total xylene	0.06	0.26	6.48	28.15	-

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

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0401/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 07/03/2024
SAMPLING DATE	: 04-05/03/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:01-10:07	FILE CODE	: 224096_TO-15_March
RECEIVED DATE	: 06/03/2024		
REPORT DATE	: 18/03/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 8 : South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.81	2.59	-
Cyclohexane	0.02	0.07	1.90	6.54	-
Toluene	0.02	0.08	0.82	3.09	-
m,p-xylene	0.04	0.17	0.66	2.87	-
o-xylene	0.02	0.09	0.10	0.43	-
Total xylene	0.06	0.26	0.76	3.30	-

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

Siriwan Chimsa-nga

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Analyst

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(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0720/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 18/04/2024
SAMPLING DATE	: 09-10/04/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 11:13-10:45	FILE CODE	: 224096_TO-15_April
RECEIVED DATE	: 11/04/2024		
REPORT DATE	: 22/04/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 4 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.88	2.81	-
Cyclohexane	0.02	0.07	0.26	0.90	-
Toluene	0.02	0.08	2.76	10.40	-
m,p-xylene	0.04	0.17	0.29	1.26	-
o-xylene	0.02	0.09	0.08	0.35	-
Total xylene	0.06	0.26	0.37	1.61	-

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

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

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(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0720/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 18/04/2024
SAMPLING DATE	: 09-10/04/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:57-10:36	FILE CODE	: 224096_TO-15_April
RECEIVED DATE	: 11/04/2024		
REPORT DATE	: 22/04/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 4 : South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.11	0.35	-
Cyclohexane	0.02	0.07	0.09	0.31	-
Toluene	0.02	0.08	0.17	0.64	-
m,p-xylene	0.04	0.17	0.12	0.52	-
o-xylene	0.02	0.09	0.04	0.17	-
Total xylene	0.06	0.26	0.16	0.69	-

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

Siriwan Chimsa-nga
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Analyst

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0720/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 18/04/2024
SAMPLING DATE	: 09-10/04/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 11:40-11:15	FILE CODE	: 224096_TO-15_April
RECEIVED DATE	: 11/04/2024		
REPORT DATE	: 22/04/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 8 : North		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	4.69	14.98	-
Cyclohexane	0.02	0.07	2.31	7.96	-
Toluene	0.02	0.08	1.21	4.56	-
m,p-xylene	0.04	0.17	5.11	22.20	-
o-xylene	0.02	0.09	0.85	3.69	-
Total xylene	0.06	0.26	5.96	25.89	-

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

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Analyst

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0720/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 18/04/2024
SAMPLING DATE	: 09-10/04/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 11:51-11:22	FILE CODE	: 224096_TO-15_April
RECEIVED DATE	: 11/04/2024		
REPORT DATE	: 22/04/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 8 : South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	4.40	14.05	-
Cyclohexane	0.02	0.07	0.26	0.90	-
Toluene	0.02	0.08	0.56	2.11	-
m,p-xylene	0.04	0.17	0.37	1.61	-
o-xylene	0.02	0.09	0.08	0.35	-
Total xylene	0.06	0.26	0.45	1.96	-

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

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Analyst

Araya Tipparuk
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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 1057/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 04/06/2024
SAMPLING DATE	: 27-28/05/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 11:36-11:24	FILE CODE	: 224096_TO-15_May
RECEIVED DATE	: 29/05/2024		
REPORT DATE	: 06/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 4 North		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.22	0.70	-
Cyclohexane	0.02	0.07	30.74	105.9	-
Toluene	0.02	0.08	3.05	11.49	-
m,p-xylene	0.04	0.17	0.39	1.69	-
o-xylene	0.02	0.09	0.15	0.65	-
Total xylene	0.06	0.26	0.54	2.34	-

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

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk
(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 1057/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 04/06/2024
SAMPLING DATE : 27-28/05/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 11:25-11:15 FILE CODE : 224096_TO-15_May
RECEIVED DATE : 29/05/2024
REPORT DATE : 06/06/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 4 South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.29	0.93	-
Cyclohexane	0.02	0.07	0.22	0.76	-
Toluene	0.02	0.08	1.25	4.71	-
m,p-xylene	0.04	0.17	0.10	0.43	-
o-xylene	0.02	0.09	0.02	0.09	-
Total xylene	0.06	0.26	0.12	0.52	-

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

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

MR

(Mrs. Araya Tipparuk)

Technical Management Team

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SECOT CO., LTD.

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 1057/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 04/06/2024
SAMPLING DATE : 27-28/05/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 11:54-11:42 FILE CODE : 224096_TO-15_May
RECEIVED DATE : 29/05/2024
REPORT DATE : 06/06/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 8 North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	5.43	17.34	-
Cyclohexane	0.02	0.07	14.28	49.18	-
Toluene	0.02	0.08	2.85	10.74	-
m,p-xylene	0.04	0.17	1.94	8.43	-
o-xylene	0.02	0.09	0.15	0.65	-
Total xylene	0.06	0.26	2.09	9.08	-

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

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(Miss Siriwan Chimsa-nga)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 1057/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 04/06/2024
SAMPLING DATE	: 27-28/05/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 11:59-11:47	FILE CODE	: 224096_TO-15_May
RECEIVED DATE	: 29/05/2024		
REPORT DATE	: 06/06/2024		

Compound	SAMPLING LOCATION				STANDARD ($\mu\text{g}/\text{m}^3$)
	Non Detection		Branch 8 South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.66	2.11	-
Cyclohexane	0.02	0.07	24.34	83.82	-
Toluene	0.02	0.08	4.95	18.65	-
m,p-xylene	0.04	0.17	0.29	1.26	-
o-xylene	0.02	0.09	0.08	0.35	-
Total xylene	0.06	0.26	0.37	1.61	-

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

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(Miss Siriwan Chimsa-nga)

Analyst

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(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 1295/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 27/06/2024
SAMPLING DATE	: 24-25/06/2024	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:00-09:42	FILE CODE	: 224096_TO-15_June
RECEIVED DATE	: 26/06/2024		
REPORT DATE	: 03/07/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 4 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.26	0.83	-
Cyclohexane	0.02	0.07	19.63	67.60	-
Toluene	0.02	0.08	0.93	3.50	-
m,p-xylene	0.04	0.17	0.52	2.26	-
o-xylene	0.02	0.09	0.21	0.91	-
Total xylene	0.06	0.26	0.73	3.17	-

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

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 1295/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 27/06/2024
SAMPLING DATE : 24-25/06/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 09:40-09:20 FILE CODE : 224096_TO-15_June
RECEIVED DATE : 26/06/2024
REPORT DATE : 03/07/2024

Compound	SAMPLING LOCATION				STANDARD ($\mu\text{g}/\text{m}^3$)
	Non Detection		Branch 4 : South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.37	1.18	-
Cyclohexane	0.02	0.07	0.63	2.17	-
Toluene	0.02	0.08	0.93	3.50	-
m,p-xylene	0.04	0.17	0.41	1.78	-
o-xylene	0.02	0.09	0.08	0.35	-
Total xylene	0.06	0.26	0.49	2.13	-

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

Siriwan Chimsa-nga

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 1295/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 27/06/2024
SAMPLING DATE : 24-25/06/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 10:30-10:08 FILE CODE : 224096_TO-15_June
RECEIVED DATE : 26/06/2024
REPORT DATE : 03/07/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD (µg/m ³)
			Branch 8 : North		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.88	2.81	-
Cyclohexane	0.02	0.07	4.08	14.05	-
Toluene	0.02	0.08	1.73	6.52	-
m,p-xylene	0.04	0.17	0.21	0.91	-
o-xylene	0.02	0.09	0.08	0.35	-
Total xylene	0.06	0.26	0.29	1.26	-

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

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

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(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 1295/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING BY : SECOT Co., Ltd. ANALYTICAL DATE : 27/06/2024
SAMPLING DATE : 24-25/06/2024 SAMPLE CONDITION : Normal
SAMPLING TIME : 10:20-10:00 FILE CODE : 224096_TO-15_June
RECEIVED DATE : 26/06/2024
REPORT DATE : 03/07/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD ($\mu\text{g}/\text{m}^3$)
			Branch 8 : South		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.22	0.70	-
Cyclohexane	0.02	0.07	10.93	37.64	-
Toluene	0.02	0.08	0.67	2.52	-
m,p-xylene	0.04	0.17	0.16	0.69	-
o-xylene	0.02	0.09	0.06	0.26	-
Total xylene	0.06	0.26	0.22	0.95	-

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

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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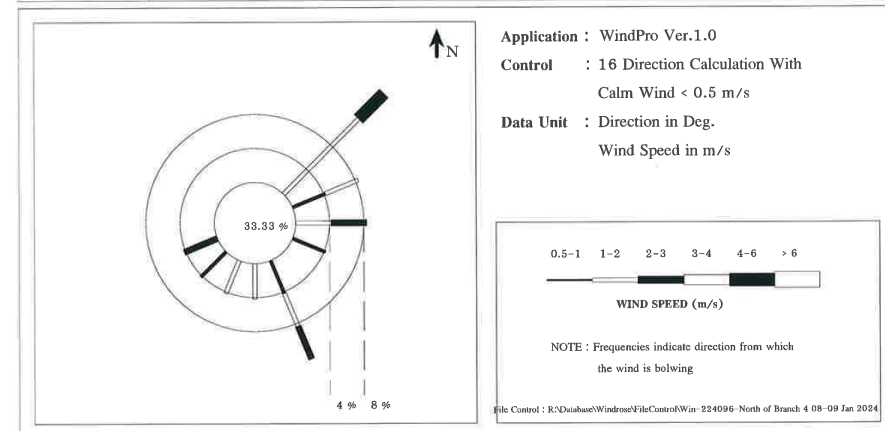
R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 08-09 Jan 2024



Meteorological Monitoring Results : Wind Rose
MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 08-09 Jan 2024
Wind Speed Model : NRG Symphonie Serial No : 1632
Wind Direction Model : NRG Symphonie Serial No : 1632

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	0.1250	0.0000	0.0000	0.0417	0.0000	0.1667
ENE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
E	0.0000	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
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	0.0417	0.0417	0.0000	0.0000	0.0000	0.1250
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
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

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

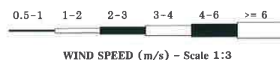
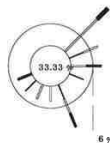


Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 08-09 Jan 2024
Wind Speed Model : NRG Symphonie Serial No : 1632
Wind Direction Model : NRG Symphonie Serial No : 1632

Time	08-09 Jan 2024	
	WS(m/s)	WD
09:00 - 10:00	1.1	NE
10:00 - 11:00	1.3	NE
11:00 - 12:00	0.0	N
12:00 - 13:00	1.9	NE
13:00 - 14:00	2.0	SSE
14:00 - 15:00	2.8	E
15:00 - 16:00	4.3	NE
16:00 - 17:00	2.3	WSW
17:00 - 18:00	0.5	ENE
18:00 - 19:00	1.0	SSE
19:00 - 20:00	1.4	SSW
20:00 - 21:00	0.5	ESE
21:00 - 22:00	1.5	ENE
22:00 - 23:00	1.2	E
23:00 - 24:00	0.7	SSE
00:00 - 01:00	0.0	N
01:00 - 02:00	0.0	N
02:00 - 03:00	0.0	N
03:00 - 04:00	0.0	N
04:00 - 05:00	0.2	ENE
05:00 - 06:00	0.4	SSE
06:00 - 07:00	0.5	SW
07:00 - 08:00	0.4	WSW
08:00 - 09:00	1.1	S

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 08-09 Jan 2024


(Miss Katesarin Vorradetwittaya)
Environmental Scientist

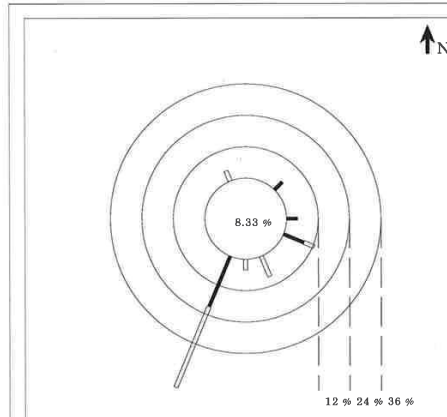

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 01-02 Feb 2024
Wind Speed Model : Novalynx WS-25 Serial No : A5091
Wind Direction Model : Novalynx WS-25 Serial No : A5091

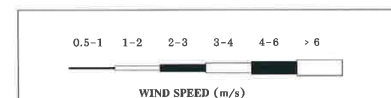
Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	Total
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.2083	0.3333	0.0000	0.0000	0.0000	0.0000	0.5417
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0833						



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:\Database\Windrose\FileControl\Win-224096-North of Branch 4 01-02 Feb 2024


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

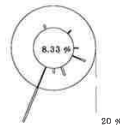


Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

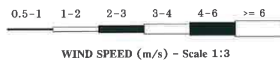
Location : North of Branch 4 Monitor period : 01-02 Feb 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A5091
 Wind Direction Model : Novalynx WS-25 Serial No : A5091

Time	01-02 Feb 2024	
	WS(m/s)	WD
10:00 - 11:00	1.5	S
11:00 - 12:00	0.8	NE
12:00 - 13:00	0.7	ESE
13:00 - 14:00	1.4	SSE
14:00 - 15:00	0.8	ESE
15:00 - 16:00	1.6	SSE
16:00 - 17:00	1.2	SSW
17:00 - 18:00	1.4	SSW
18:00 - 19:00	1.6	SSW
19:00 - 20:00	0.4	SSW
20:00 - 21:00	1.7	SSW
21:00 - 22:00	1.0	SSW
22:00 - 23:00	0.4	S
23:00 - 24:00	0.6	SSW
00:00 - 01:00	1.4	SSW
01:00 - 02:00	1.1	SSW
02:00 - 03:00	0.7	SSW
03:00 - 04:00	1.5	SSW
04:00 - 05:00	0.9	SSW
05:00 - 06:00	1.5	SSW
06:00 - 07:00	0.9	SSW
07:00 - 08:00	1.4	NNW
08:00 - 09:00	0.9	E
09:00 - 10:00	1.6	ESE

Wind Rose



20 %



File Control : R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 01-02 Feb 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

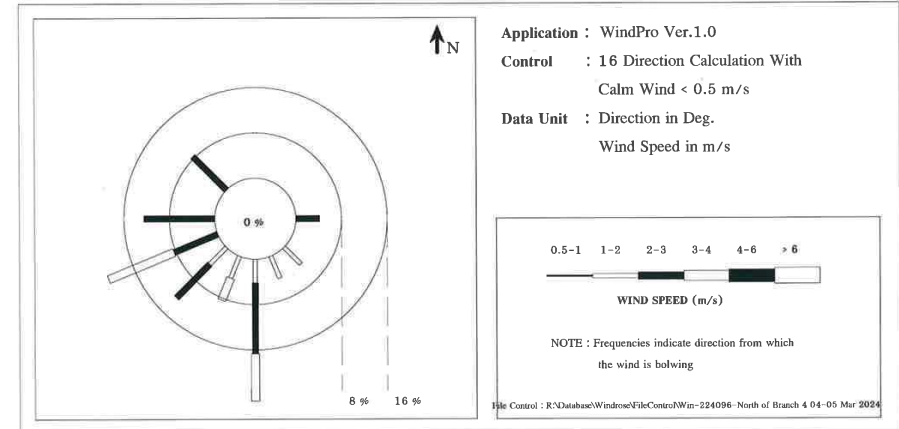
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 04-05 Mar 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						
	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	0.0000	0.0000	0.0417	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	0.0417	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	0.0417	0.1250	0.0833	0.0000	0.0000	0.2500
SSW	0.0000	0.0417	0.0000	0.0417	0.0000	0.0000	0.0833
SW	0.0000	0.0417	0.0833	0.0000	0.0000	0.0000	0.1250
WSW	0.0000	0.0000	0.0833	0.1250	0.0000	0.0000	0.2083
W	0.0000	0.0000	0.1250	0.0000	0.0000	0.0000	0.1250
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



File Control : R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 04-05 Mar 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

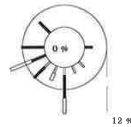


Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 04-05 Mar 2024
 Wind Speed Model : Campbell CR510 Serial No : 1632
 Wind Direction Model : Campbell CR510 Serial No : 1632

Time	04-05 Mar 2024	
	WS(m/s)	WD
08:00 - 09:00	1.1	SW
09:00 - 10:00	3.2	S
10:00 - 11:00	3.2	WSW
11:00 - 12:00	3.1	S
12:00 - 13:00	3.1	WSW
13:00 - 14:00	3.0	SSW
14:00 - 15:00	2.9	WSW
15:00 - 16:00	3.1	WSW
16:00 - 17:00	2.6	S
17:00 - 18:00	1.9	SE
18:00 - 19:00	1.7	SSE
19:00 - 20:00	1.5	S
20:00 - 21:00	2.3	W
21:00 - 22:00	2.4	W
22:00 - 23:00	2.5	SW
23:00 - 24:00	2.8	SW
00:00 - 01:00	2.8	NW
01:00 - 02:00	2.5	NW
02:00 - 03:00	2.2	WSW
03:00 - 04:00	2.4	E
04:00 - 05:00	2.0	S
05:00 - 06:00	2.2	W
06:00 - 07:00	1.8	SSW
07:00 - 08:00	2.4	S

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 04-05 Mar 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

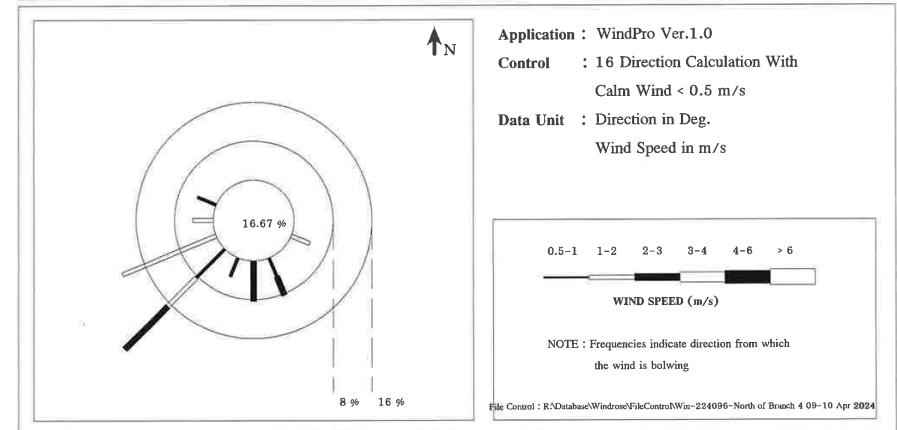
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 09-10 Apr 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						
	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0417	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	0.0417	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
SSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0833	0.0833	0.1250	0.0000	0.0000	0.0000	0.2917
WSW	0.0000	0.2083	0.0000	0.0000	0.0000	0.0000	0.2083
W	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.1667						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

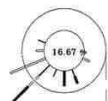


Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

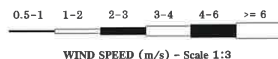
Location : North of Branch 4 Monitor period : 09-10 Apr 2024
Wind Speed Model : Novalynx WS-25 Serial No : A4907
Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	09-10 Apr 2024	
	WS(m/s)	WD
11:00 - 12:00	2.0	S
12:00 - 13:00	0.3	WSW
13:00 - 14:00	1.7	ESE
14:00 - 15:00	2.8	S
15:00 - 16:00	1.7	SW
16:00 - 17:00	2.0	SW
17:00 - 18:00	1.1	SW
18:00 - 19:00	0.7	SW
19:00 - 20:00	0.6	SW
20:00 - 21:00	0.3	S
21:00 - 22:00	0.7	SSE
22:00 - 23:00	1.3	WSW
23:00 - 24:00	0.3	S
00:00 - 01:00	1.2	WSW
01:00 - 02:00	0.9	WNW
02:00 - 03:00	0.3	SW
03:00 - 04:00	2.7	SSE
04:00 - 05:00	1.5	WSW
05:00 - 06:00	2.0	SW
06:00 - 07:00	0.5	SSW
07:00 - 08:00	2.4	SW
08:00 - 09:00	1.4	WSW
09:00 - 10:00	1.3	W
10:00 - 11:00	1.5	WSW

Wind Rose



12 %



File Control : R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 09-10 Apr 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

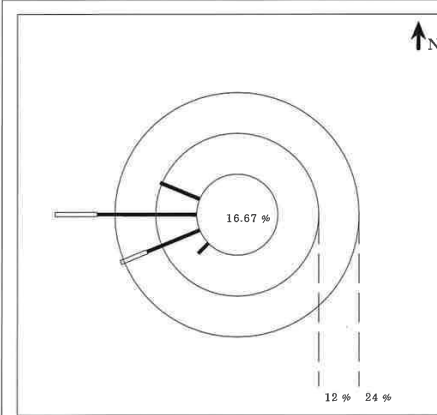
(Miss Preeda Somjai)
Technical Management Team



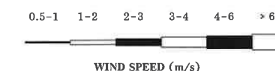
Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 27-28 May 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						
	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	0.0000	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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.1667	0.0833	0.0000	0.0000	0.0000	0.0000	0.2500
W	0.2917	0.1250	0.0000	0.0000	0.0000	0.0000	0.4167
WNW	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
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	0.1667						



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:\Database\Windrose\FileControl\Win-224096-North of Branch 4 27-28 May 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

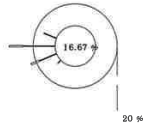
(Miss Preeda Somjai)
Technical Management Team

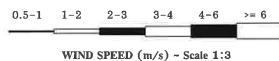


Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 27-28 May 2024
Wind Speed Model : Novalynx NL-32 Serial No : 1201
Wind Direction Model : Novalynx NL-32 Serial No : 1201


Time	27-28 May 2024	
	WS(m/s)	WD
11:00 - 12:00	0.9	W
12:00 - 13:00	1.1	W
13:00 - 14:00	1.2	WSW
14:00 - 15:00	1.1	W
15:00 - 16:00	1.1	W
16:00 - 17:00	0.9	W
17:00 - 18:00	0.9	W
18:00 - 19:00	0.5	WNW
19:00 - 20:00	0.6	WNW
20:00 - 21:00	0.5	W
21:00 - 22:00	0.6	W
22:00 - 23:00	0.5	WSW
23:00 - 24:00	0.5	SW
00:00 - 01:00	0.3	WSW
01:00 - 02:00	0.5	W
02:00 - 03:00	0.5	W
03:00 - 04:00	0.5	WSW
04:00 - 05:00	0.3	WNW
05:00 - 06:00	0.2	NW
06:00 - 07:00	0.4	SW
07:00 - 08:00	0.8	WNW
08:00 - 09:00	0.9	WSW
09:00 - 10:00	0.9	WSW
10:00 - 11:00	1.1	WSW

Wind Rose	
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File Control : R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 27-28 May 2024


(Miss Katesarin Vorradetwittaya)
Environmental Scientist

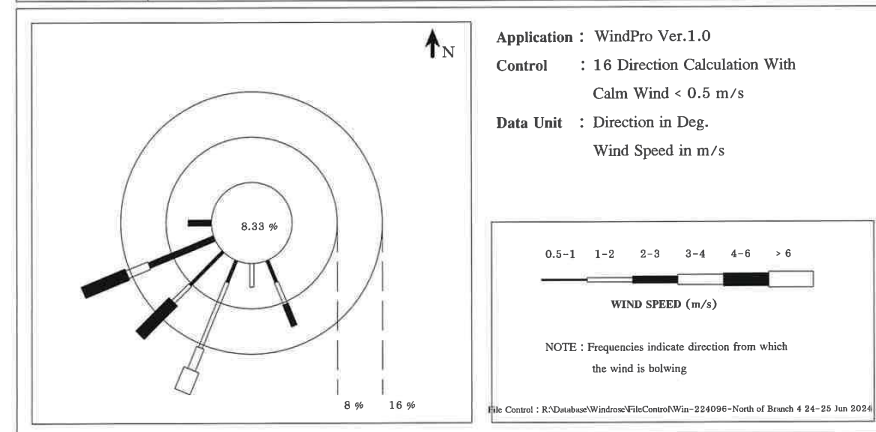

(Miss Preeda Somjai)
Technical Management Team




Meteorological Monitoring Results : Wind Rose MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 24-25 Jun 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						
	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	0.0000	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	0.0417	0.0417	0.0417	0.0000	0.0000	0.0000	0.1250
S	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0417	0.1250	0.0000	0.0417	0.0000	0.0417	0.2500
SW	0.0833	0.0417	0.0000	0.0000	0.0833	0.0000	0.2083
WSW	0.0000	0.0000	0.1250	0.0417	0.0833	0.0000	0.2500
W	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
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	0.0833						




(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



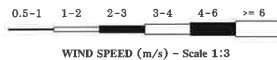
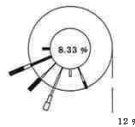
Meteorological Monitoring Results : Wind Rose

MTR-PTTGC 4

Location : North of Branch 4 Monitor period : 24-25 Jun 2024
 Wind Speed Model : Novalynx WS-25 Serial No : A4907
 Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	24-25 Jun 2024	
	WS(m/s)	WD
09:00 - 10:00	0.9	SW
10:00 - 11:00	4.5	SW
11:00 - 12:00	2.1	W
12:00 - 13:00	3.4	SSW
13:00 - 14:00	1.1	S
14:00 - 15:00	4.4	WSW
15:00 - 16:00	7.7	SSW
16:00 - 17:00	0.7	SW
17:00 - 18:00	2.3	WSW
18:00 - 19:00	4.0	WSW
19:00 - 20:00	4.3	SW
20:00 - 21:00	1.3	SSE
21:00 - 22:00	2.6	SSE
22:00 - 23:00	1.1	SW
23:00 - 24:00	1.7	SSW
00:00 - 01:00	0.1	SSW
01:00 - 02:00	1.8	SSW
02:00 - 03:00	0.6	SSW
03:00 - 04:00	1.2	SSW
04:00 - 05:00	0.3	SSW
05:00 - 06:00	0.5	SSE
06:00 - 07:00	2.9	WSW
07:00 - 08:00	3.3	WSW
08:00 - 09:00	2.5	WSW

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-224096-North of Branch 4 24-25 Jun 2024

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

ภาคผนวก ง.3

ใบรับรองผลการตรวจวัดคุณภาพน้ำ



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0051/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:31
SAMPLING DATE	: 10/01/2024	ANALYTICAL DATE	: 11-17/01/2024
RECEIVED DATE	: 11/01/2024	SITE OPERATOR	: Mr. Jeerawat Khotamhan
REPORT DATE	: 18/01/2024	FILE CODE	: 224096_WW_January
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				Equalization Tank	
pH	-	4500-H ⁺ B	< 0.10	7.29	-
Total Suspended Solids	mg/l	2540 D	< 5	45	-
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	1.2	-
BOD ₅	mg/l	5210 B	< 1.0	70.8	-
COD	mg/l	5220 C	< 15.00	103	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0130	-

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. - 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	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0051/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:00
SAMPLING DATE	: 10/01/2024	ANALYTICAL DATE	: 11-17/01/2024
RECEIVED DATE	: 11/01/2024	SITE OPERATOR	: Mr. Jeerawat Khotamhan
REPORT DATE	: 18/01/2024	FILE CODE	: 224096_WW_January
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from Final Effluent Basin	
pH	-	4500-H ⁺ B	< 0.10	7.65	5.5-9.0
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	19.28	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016) and Notification of the Ministry of Industry, B.E.2560 (2017).
 4. - Not available.



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

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0051/67
	: (Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:41
SAMPLING DATE	: 10/01/2024	ANALYTICAL DATE	: 11-17/01/2024
RECEIVED DATE	: 11/01/2024	SITE OPERATOR	: Mr. Jecrawat Khotamhan
REPORT DATE	: 18/01/2024	FILE CODE	: 224096_WW_January
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from 940-XC1	
pH		4500-H ⁺ B	< 0.10	7.82	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,324	≤ 31,060 ^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	19.28	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016) and Notification of the Ministry of Industry, B.E.2560 (2017).
 4. ^{2/} Total Dissolved Solids (TDS) shall be increased from TDS in receiving water not exceeding 5,000 mg/l (TDS valve in the last month in receiving water = 26,060 mg/l).
 5. - Not available.



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

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0228/67
	: (Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:40
SAMPLING DATE	: 07/02/2024	ANALYTICAL DATE	: 08-14/02/2024
RECEIVED DATE	: 08/02/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 15/02/2024	FILE CODE	: 224096_WW_February
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				Equalization Tank	
pH		4500-H ⁺ B	< 0.10	7.53	
Total Suspended Solids	mg/l	2540 D	< 5	12	
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	
BOD ₅	mg/l	5210 B	< 1.0	32.4	
COD	mg/l	5220 C	< 15.00	77.95	
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0010	

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :**
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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0228/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:35
SAMPLING DATE	: 07/02/2024	ANALYTICAL DATE	: 08-14/02/2024
RECEIVED DATE	: 08/02/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 15/02/2024	FILE CODE	: 224096_WW_February
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from Final Effluent Basin	
pH	-	4500-H ⁺ B	< 0.10	7.82	5.5-9.0
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	1.1	≤ 20
COD	mg/l	5220 C	< 15.00	< 15.00	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-ก-0004

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 4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0228/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:50
SAMPLING DATE	: 07/02/2024	ANALYTICAL DATE	: 08-14/02/2024
RECEIVED DATE	: 08/02/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 15/02/2024	FILE CODE	: 224096_WW_February
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from 940-XC1	
pH	-	4500-H ⁺ B	< 0.10	8.16	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,598	≤ 34,060 ^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
BOD ₅	mg/l	5210 B	< 1.0	1.3	≤ 20
COD	mg/l	5220 C	< 15.00	< 15.00	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-ก-0004

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 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016) and Notification of the Ministry of Industry, B.E.2560 (2017).
 4. ^{2/} Total Dissolved Solids (TDS) shall be increased from TDS in receiving water not exceeding 5,000 mg/l (TDS valve in the last month in receiving water = 29,060 mg/l).
 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0416/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:50
SAMPLING DATE	: 06/03/2024	ANALYTICAL DATE	: 07-13/03/2024
RECEIVED DATE	: 07/03/2024	SITE OPERATOR	: Miss Thipsuda Wannakran
REPORT DATE	: 14/03/2024	FILE CODE	: 224096_WW_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Equalization Tank	STANDARD
pH	-	4500-H ⁺ B	< 0.10	6.97	-
Total Suspended Solids	mg/l	2540 D	< 5	30	-
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	81.4	-
COD	mg/l	5220 C	< 15.00	130	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0047	-

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0416/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:40
SAMPLING DATE	: 06/03/2024	ANALYTICAL DATE	: 07-13/03/2024
RECEIVED DATE	: 07/03/2024	SITE OPERATOR	: Miss Thipsuda Wannakran
REPORT DATE	: 14/03/2024	FILE CODE	: 224096_WW_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent from Final Effluent Basin	STANDARD ^{1/}
pH	-	4500-H ⁺ B	< 0.10	7.77	5.5-9.0
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	18.45	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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 4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0416/67
: (Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 10:00
SAMPLING DATE : 06/03/2024 ANALYTICAL DATE : 07-13/03/2024
RECEIVED DATE : 07/03/2024 SITE OPERATOR : Miss Thipsuda Wannakran
REPORT DATE : 14/03/2024 FILE CODE : 224096_WW_March
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from 940-XC1	
pH	-	4500-H ⁺ B	< 0.10	8.14	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,506	≤ 25,660 ^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	15.71	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)
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REG. NO. 2-239-ก-0005

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3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016) and
Notification of the Ministry of Industry, B.E.2560 (2017).
4. ^{2/} Total Dissolved Solids (TDS) shall be increased from TDS in receiving water not exceeding 5,000 mg/l
(TDS valve in the last month in receiving water = 20,660 mg/l).
5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0642/67
: (Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 09:48
SAMPLING DATE : 03/04/2024 ANALYTICAL DATE : 04-11/04/2024
RECEIVED DATE : 04/04/2024 SITE OPERATOR : Miss Wiraya Patchimboon
REPORT DATE : 17/04/2024 FILE CODE : 224096_WW_April
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				Equalization Tank	
pH	-	4500-H ⁺ B	< 0.10	7.17	-
Total Suspended Solids	mg/l	2540 D	< 5	31	-
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	88.6	-
COD	mg/l	5220 C	< 15.00	153	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0049	-

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

Khemchuda Insorn

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0642/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:33
SAMPLING DATE	: 03/04/2024	ANALYTICAL DATE	: 04-11/04/2024
RECEIVED DATE	: 04/04/2024	SITE OPERATOR	: Miss Wiraya Patchimboon
REPORT DATE	: 17/04/2024	FILE CODE	: 224096_WW_April
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from Final Effluent Basin	
pH	-	4500-H ⁺ B	< 0.10	7.94	5.5-9.0
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	1.4	≤ 20
COD	mg/l	5220 C	< 15.00	24.66	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

Araya Tipparuk

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Technical Management Team

REG. NO. 7-239-ก-0004

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4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0642/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:12
SAMPLING DATE	: 03/04/2024	ANALYTICAL DATE	: 04-11/04/2024
RECEIVED DATE	: 04/04/2024	SITE OPERATOR	: Miss Wiraya Patchimboon
REPORT DATE	: 17/04/2024	FILE CODE	: 224096_WW_April
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from 940-XC1	
pH	-	4500-H ⁺ B	< 0.10	7.85	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,562	≤ 36,020 ^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
BOD ₅	mg/l	5210 B	< 1.0	1.7	≤ 20
COD	mg/l	5220 C	< 15.00	32.13	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

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4. ^{2/} Total Dissolved Solids (TDS) shall be increased from TDS in receiving water not exceeding 5,000 mg/l (TDS valve in the last month in receiving water = 31,020 mg/l).

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0841/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 10:07
SAMPLING DATE : 02/05/2024 ANALYTICAL DATE : 03-10/05/2024
RECEIVED DATE : 03/05/2024 SITE OPERATOR : Mr. Baworn Deechaiya
REPORT DATE : 13/05/2024 FILE CODE : 224096_WW_May
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)	Equalization Tank	
pH	-	4500-H ⁺ B	< 0.10	6.97	-
Total Suspended Solids	mg/l	2540 D	< 5	33	-
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	72.3	-
COD	mg/l	5220 C	< 15.00	156	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0104	-

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0841/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 09:59
SAMPLING DATE : 02/05/2024 ANALYTICAL DATE : 03-10/05/2024
RECEIVED DATE : 03/05/2024 SITE OPERATOR : Mr. Baworn Deechaiya
REPORT DATE : 13/05/2024 FILE CODE : 224096_WW_May
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from Final Effluent Basin	
pH	-	4500-H ⁺ B	< 0.10	7.61	5.5-9.0
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	18.68	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016) and
Notification of the Ministry of Industry, B.E.2560 (2017).
4. - Not available.



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

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0998/67
	: (Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:30
SAMPLING DATE	: 20/05/2024	ANALYTICAL DATE	: 21-27/05/2024
RECEIVED DATE	: 21/05/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 27/05/2024	FILE CODE	: 224096_WW_May
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from 940-XC1	
pH	-	4500-H ⁺ B	< 0.10	8.08	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	1,022	≤ 35,080 ^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	24.26	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016) and
Notification of the Ministry of Industry, B.E.2560 (2017).

4. ^{2/} Total Dissolved Solids (TDS) shall be increased from TDS in receiving water not exceeding 5,000 mg/l
(TDS valve in the last month in receiving water = 30,080 mg/l).

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 1127/67
	: (Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:35
SAMPLING DATE	: 05/06/2024	ANALYTICAL DATE	: 06-13/06/2024
RECEIVED DATE	: 06/06/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 14/06/2024	FILE CODE	: 224096_WW_June
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				Equalization Tank	
pH	-	4500-H ⁺ B	< 0.10	7.01	-
Total Suspended Solids	mg/l	2540 D	< 5	113	-
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	75.4	-
COD	mg/l	5220 C	< 15.00	187	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0316	-

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 1127/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:30
SAMPLING DATE	: 05/06/2024	ANALYTICAL DATE	: 06-13/06/2024
RECEIVED DATE	: 06/06/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 14/06/2024	FILE CODE	: 224096_WW_June
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from Final Effluent Basin	
pH	-	4500-H ⁺ B	< 0.10	7.96	5.5-9.0
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
Sulfide as H ₂ S	mg/l	4500-S ²⁻ F	< 0.20	ND	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	< 15.00	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0008	≤ 0.005

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 1127/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:40
SAMPLING DATE	: 05/06/2024	ANALYTICAL DATE	: 06-13/06/2024
RECEIVED DATE	: 06/06/2024	SITE OPERATOR	: Mr.Chanapon Oakkharaplon
REPORT DATE	: 14/06/2024	FILE CODE	: 224096_WW_June
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent from 940-XC1	
pH	-	4500-H ⁺ B	< 0.10	8.07	5.5-9.0
Total Dissolved Solids	mg/l	2540 C	< 50	856	≤ 30,620 ^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	< 5	≤ 50
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 20
COD	mg/l	5220 C	< 15.00	20.63	≤ 120
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	≤ 0.005

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

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 4. ^{2/} Total Dissolved Solids (TDS) shall be increased from TDS in receiving water not exceeding 5,000 mg/l (TDS valve in the last month in receiving water = 25,620 mg/l).
 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0841/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 12:04
SAMPLING DATE : 02/05/2024 ANALYTICAL DATE : 03-10/05/2024
RECEIVED DATE : 03/05/2024 SITE OPERATOR : Mr. Baworn Deechaiya
REPORT DATE : 13/05/2024 FILE CODE : 224096_WW_May
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	Upstream	
Temperature	°C	2550 B	< 0.5	37.4	-
pH	-	4500-H ⁺ B	< 0.10	8.90	-
Total Suspended Solids	mg/l	2540 D	< 5	22	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	2.0	-
COD	mg/l	5220 C	< 15.00	18.68	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	0.0008	-

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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3. ^{1/} The Standard Values of Surface Water Quality for Class 5, Notification by the National Environment Board No.8, B.E.2537 (1994).

4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0841/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 12:17
SAMPLING DATE : 02/05/2024 ANALYTICAL DATE : 03-10/05/2024
RECEIVED DATE : 03/05/2024 SITE OPERATOR : Mr. Baworn Deechaiya
REPORT DATE : 13/05/2024 FILE CODE : 224096_WW_May
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	Downstream	
Temperature	°C	2550 B	< 0.5	37.7	-
pH	-	4500-H ⁺ B	< 0.10	9.00	-
Total Suspended Solids	mg/l	2540 D	< 5	12	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	1.8	-
COD	mg/l	5220 C	< 15.00	< 15.00	-
Mercury (Hg)	mg/l	3112 B	< 0.0005	ND	-

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

(Miss Khemchuda Insorn)

Analyst

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(Mrs. Araya Tipparuk)

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0058/67
	: (Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 11:05
SAMPLING DATE	: 11/01/2024	ANALYTICAL DATE	: 15-16/01/2024
RECEIVED DATE	: 12/01/2024	SITE OPERATOR	: Miss Wiraya Patchimboon
REPORT DATE	: 17/01/2024	FILE CODE	: 223096_CW_November
SAMPLE CONDITION	: Normal		

LOCATION DESCRIPTION 1.ระยะห่างจากจุดระบายน้ำทิ้งของนิคมฯมาบตาพุด (ปากคลองชะกหมาก) 500 เมตร

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Total Dissolved Solids	mg/l	2540 C	< 25	29,060	

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

(Miss Khemchuda Insorn)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0244/67
	: (Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 11:20
SAMPLING DATE	: 08/02/2024	ANALYTICAL DATE	: 12-13/02/2024
RECEIVED DATE	: 09/02/2024	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 15/02/2024	FILE CODE	: 223096_CW_November
SAMPLE CONDITION	: Normal		

LOCATION DESCRIPTION 1.ระยะห่างจากจุดระบายน้ำทิ้งของนิคมฯมาบตาพุด (ปากคลองชะกหมาก) 500 เมตร

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Total Dissolved Solids	mg/l	2540 C	< 25	20,660	

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

(Miss Khemchuda Insorn)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0503/67
: (Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 11:32
SAMPLING DATE : 14/03/2024 ANALYTICAL DATE : 15-16/03/2024
RECEIVED DATE : 15/03/2024 SITE OPERATOR : Miss Salisa Ainree
REPORT DATE : 18/03/2024 FILE CODE : 224096_CW_March
SAMPLE CONDITION : Normal

LOCATION DESCRIPTION 1. ระยะห่างจากจุดระบายน้ำทิ้งของนิคมมาบตาพุด (ปากคลองชักหามาก) 500 เมตร

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Total Dissolved Solids	mg/l	2540 C	< 25	31,020	

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0725/67
: (Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 11:30
SAMPLING DATE : 11/04/2024 ANALYTICAL DATE : 12-13/04/2024
RECEIVED DATE : 12/04/2024 SITE OPERATOR : Mr. Watcharakon Pramakhate
REPORT DATE : 19/04/2024 FILE CODE : 224096_CW_Apiri
SAMPLE CONDITION : Normal

LOCATION DESCRIPTION 1. ระยะห่างจากจุดระบายน้ำทิ้งของนิคมมาบตาพุด (ปากคลองชักหามาก) 500 เมตร

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Total Dissolved Solids	mg/l	2540 C	< 25	30,080	

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

Araya Tipparuk

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0898/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 09:32
SAMPLING DATE : 09/05/2024 ANALYTICAL DATE : 10-11/05/2024
RECEIVED DATE : 10/05/2024 SITE OPERATOR : Mr. Baworn Deechaiya
REPORT DATE : 17/05/2024 FILE CODE : 224096_CW_Apirl
SAMPLE CONDITION : Normal
LOCATION DESCRIPTION : 1.ระยะห่างจากจุดระบายน้ำทิ้งของนิคมฯมาบตาพุด (ปากคลองชากหมาก) 500 เมตร

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Total Dissolved Solids	mg/l	2540 C	< 25	25,620	

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

NT

(Mrs. Araya Tipparuk)

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 1203/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 11:30
SAMPLING DATE : 13/06/2024 ANALYTICAL DATE : 17-18/06/2024
RECEIVED DATE : 15/06/2024 SITE OPERATOR : Mr.Chanapon Oakkharaplon
REPORT DATE : 19/06/2024 FILE CODE : 224096_CW_June
SAMPLE CONDITION : Normal
LOCATION DESCRIPTION : 1.ระยะห่างจากจุดระบายน้ำทิ้งของนิคมฯมาบตาพุด (ปากคลองชากหมาก) 500 เมตร

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Total Dissolved Solids	mg/l	2540 C	< 25	30,720	

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

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

NT

(Mrs. Araya Tipparuk)

Technical Management Team

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

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

3. - Not available.

ภาคผนวก ง.4

ใบรับรองผลการตรวจวัดคุณภาพน้ำใต้ดิน



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

GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.:	0613/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 11:27-11:44
SAMPLING DATE	: 28/03/2024	ANALYTICAL DATE	: 03/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 05/04/2024	FILE CODE	: 224096_GW_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-01	STANDARD ^{1/}
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0
m-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
o-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
p-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
Total Xylenes	mg/l	6200 B	< 0.0006	ND	≤ 24

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 24th ED. 2017 (AWWA, APHA, WEF)

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ๖-239-๖-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๖-0004

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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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.:	0613/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 11:27-11:44
SAMPLING DATE	: 28/03/2024	ANALYTICAL DATE	: 03/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 05/04/2024	FILE CODE	: 224096_GW_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-01	STANDARD ^{1/}
Mercury (Hg)	mg/l	3112 B	< 0.0001	ND	≤ 0.7

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 24th ED. 2017 (AWWA, APHA, WEF)

(Miss Krisana Chanthoom)

Analyst

REG. NO. ๖-239-๖-0017

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๖-0004

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

GROUND WATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0613/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 10:04-10:19
SAMPLING DATE : 28/03/2024 ANALYTICAL DATE : 03/04/2024
RECEIVED DATE : 30/03/2024 SITE OPERATOR : Mr. Jeerawat Khothamhan
REPORT DATE : 05/04/2024 FILE CODE : 224096_GW_March
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-06	STANDARD ^{1/}
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0
m-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
o-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
p-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
Total Xylenes	mg/l	6200 B	< 0.0006	ND	≤ 24

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

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

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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GROUND WATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0613/67
(Branch 4 : Aromatics 1 Plant) SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 10:04-10:19
SAMPLING DATE : 28/03/2024 ANALYTICAL DATE : 03/04/2024
RECEIVED DATE : 30/03/2024 SITE OPERATOR : Mr. Jeerawat Khothamhan
REPORT DATE : 05/04/2024 FILE CODE : 224096_GW_March
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-06	STANDARD ^{1/}
Mercury (Hg)	mg/l	3112 B	< 0.0001	ND	≤ 0.7

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

(Miss Krisana Chanthoom)

Analyst
REG. NO. 7-239-0-0017

(Mrs. Araya Tipparuk)

Technical Management Team
REG. NO. 7-239-0-0004

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

GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No. :	0970/67
	(Branch 8 : Tank Farm Plant)	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:35-10:49
SAMPLING DATE	: 17/05/2024	ANALYTICAL DATE	: 18/05/2024
RECEIVED DATE	: 18/05/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 31/05/2024	FILE CODE	: 224096_GW_May
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-10	STANDARD ^{1/}
Benzene	mg/l	6200 B	< 0.0002	0.0494	≤ 0.2
Toluene	mg/l	6200 B	< 0.0002	0.0003	≤ 5.0
m-Xylene	mg/l	6200 B	< 0.0002	0.0002	≤ 24
o-Xylene	mg/l	6200 B	< 0.0002	0.0007	≤ 24
p-Xylene	mg/l	6200 B	< 0.0002	0.0002	≤ 24
Total Xylenes	mg/l	6200 B	< 0.0006	0.0011	≤ 24

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

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

REG. NO. 2-239-0-0022

MR
(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-0-0004

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No. :	0970/67
	(Branch 8 : Tank Farm Plant)	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:35-10:49
SAMPLING DATE	: 17/05/2024	ANALYTICAL DATE	: 20/05/2024
RECEIVED DATE	: 18/05/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 31/05/2024	FILE CODE	: 224096_GW_May
SAMPLE CONDITION	: Normal		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-10	STANDARD ^{1/}
Mercury (Hg)	mg/l	3112 B	< 0.0001	ND	≤ 0.7

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

K Oh
(Miss Krisana Chanthoom)

Analyst

REG. NO. 2-239-0-0017

MR
(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-0-0004

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

GROUND WATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0613/67
(Branch 8 : Tank Farm Plant) SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 09:27-09:42
SAMPLING DATE : 29/03/2024 ANALYTICAL DATE : 03/04/2024
RECEIVED DATE : 30/03/2024 SITE OPERATOR : Mr. Jeerawat Khotamhan
REPORT DATE : 05/04/2024 FILE CODE : 224096_GW_March
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-13	STANDARD ^{1/}
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Toluene	mg/l	6200 B	< 0.0002	ND	≤ 5.0
m-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
o-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
p-Xylene	mg/l	6200 B	< 0.0002	ND	≤ 24
Total Xylenes	mg/l	6200 B	< 0.0006	ND	≤ 24

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0613/67
(Branch 8 : Tank Farm Plant) SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 09:27-09:42
SAMPLING DATE : 29/03/2024 ANALYTICAL DATE : 03/04/2024
RECEIVED DATE : 30/03/2024 SITE OPERATOR : Mr. Jeerawat Khotamhan
REPORT DATE : 05/04/2024 FILE CODE : 224096_GW_March
SAMPLE CONDITION : Normal

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW-13	STANDARD ^{1/}
Mercury (Hg)	mg/l	3112 B	< 0.0001	ND	≤ 0.7

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

Krisana Chanthoom

(Miss Krisana Chanthoom)

Analyst

REG. NO. 7-239-9-0017

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

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ภาคผนวก ง.5

ใบรับรองผลการตรวจวัดคุณภาพดิน



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:00-10:05
SAMPLING DATE	: 28/03/2024	ANALYTICAL DATE	: 02/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-01	STANDARD
Benzene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 15^{1/}$, $\leq 5^{2/}$
Toluene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 520^{1/}$, $\leq 40,140^{2/}$
m-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
o-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
p-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
Total Xylenes	mg/kg	SW 846 5035A / 8260 D	< 0.00075	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$

Reference method : Test Methods of Evaluating Solid Waste , Physical/Chemical Methods SW-846 , 3rd edition, US EPA 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

REG. NO. 2-239-0-0022

Mrs. Araya Tipparuk
(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-0-0004

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 3. ^{1/} Notification of the Ministry of Industry, B.E.2559 (2016).
 4. ^{2/} Notification of the National Environment Board, B.E.2564 (2021) for Soil Class 2.



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:00-10:05
SAMPLING DATE	: 28/03/2024	ANALYTICAL DATE	: 03/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-01	STANDARD
Mercury (Hg)	mg/kg	7471 B	< 0.05	ND	$\leq 610^{1/}$, $\leq 263^{2/}$

Reference method : Test Methods of Evaluating Solid Waste , Physical/Chemical Methods SW-846 , 3rd edition, US EPA 2020.

Miss Krisana Chanthoom
(Miss Krisana Chanthoom)

Analyst

REG. NO. 2-239-0-0017

Mrs. Araya Tipparuk
(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-0-0004

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 4. ^{2/} Notification of the National Environment Board, B.E.2564 (2021) for Soil Class 2.



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:23-09:28
SAMPLING DATE	: 28/03/2024	ANALYTICAL DATE	: 02/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-06	STANDARD
Benzene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 15^{1/}$, $\leq 5^{2/}$
Toluene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 520^{1/}$, $\leq 40,140^{2/}$
m-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
o-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
p-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
Total Xylenes	mg/kg	SW 846 5035A / 8260 D	< 0.00075	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$

Reference method : Test Methods of Evaluating Solid Waste , Physical/Chemical Methods SW-846 , 3rd edition, US EPA 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

REG. NO. 2-239-ก-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :
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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:23-09:28
SAMPLING DATE	: 28/03/2024	ANALYTICAL DATE	: 03/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-06	STANDARD
Mercury (Hg)	mg/kg	7471 B	< 0.05	ND	$\leq 610^{1/}$, $\leq 263^{2/}$

Reference method : Test Methods of Evaluating Solid Waste , Physical/Chemical Methods SW-846 , 3rd edition, US EPA 2020.

Krisana Chanthoom
(Miss Krisana Chanthoom)

Analyst

REG. NO. 2-239-ก-0017

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :
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 3. ^{1/} Notification of the Ministry of Industry, B.E.2559 (2016).
 4. ^{2/} Notification of the National Environment Board, B.E.2564 (2021) for Soil Class 2.



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SECOT CO., LTD.

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

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

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:50-10:00
SAMPLING DATE	: 29/03/2024	ANALYTICAL DATE	: 02/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-10	STANDARD
Benzene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 15^{1/}$, $\leq 5^{2/}$
Toluene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 520^{1/}$, $\leq 40,140^{2/}$
m-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
o-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
p-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
Total Xylenes	mg/kg	SW 846 5035A / 8260 D	< 0.00075	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$

Reference method : Test Methods of Evaluating Solid Waste, Physical/Chemical Methods SW-846, 3rd edition, US EPA 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ๖-239-๖-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๓-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:50-10:00
SAMPLING DATE	: 29/03/2024	ANALYTICAL DATE	: 03/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-10	STANDARD
Mercury (Hg)	mg/kg	7471 B	< 0.05	ND	$\leq 610^{1/}$, $\leq 263^{2/}$

Reference method : Test Methods of Evaluating Solid Waste, Physical/Chemical Methods SW-846, 3rd edition, US EPA 2020.

Krisana Chanthoom

(Miss Krisana Chanthoom)

Analyst

REG. NO. ๖-239-๖-0017

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๓-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:23-09:26
SAMPLING DATE	: 29/03/2024	ANALYTICAL DATE	: 02/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-13	STANDARD
Benzene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 15^{1/}$, $\leq 5^{2/}$
Toluene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 520^{1/}$, $\leq 40,140^{2/}$
m-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
o-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
p-Xylene	mg/kg	SW 846 5035A / 8260 D	< 0.00025	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$
Total Xylenes	mg/kg	SW 846 5035A / 8260 D	< 0.00075	ND	$\leq 210^{1/}$, $\leq 2,478^{2/}$

Reference method : Test Methods of Evaluating Solid Waste , Physical/Chemical Methods SW-846 , 3rd edition, US EPA 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-0-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-0-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0615/67
	(Branch 4 : Aromatics 1 Plant)	SAMPLING METHOD	: Hand Auger
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09:23-09:26
SAMPLING DATE	: 29/03/2024	ANALYTICAL DATE	: 03/04/2024
RECEIVED DATE	: 30/03/2024	SITE OPERATOR	: Mr. Jeerawat Khothamhan
REPORT DATE	: 10/04/2024	FILE CODE	: 224096_Soil_March
SAMPLE CONDITION	: Normal		

PARAMETER	UNITS	ANALYSIS METHODS	ND (non-detectable)	STATION MW-13	STANDARD
Mercury (Hg)	mg/kg	7471 B	< 0.05	ND	$\leq 610^{1/}$, $\leq 263^{2/}$

Reference method : Test Methods of Evaluating Solid Waste , Physical/Chemical Methods SW-846 , 3rd edition, US EPA 2020.

(Miss Krisana Chanthoom)

Analyst

REG. NO. 7-239-0-0017

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-0-0004

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ภาคผนวก ง.6

ใบรับรองผลการตรวจวัดระดับเสียงทั่วไป



Noise Monitoring Result : Community Noise

MTR-PTTGC 4


Location : Northern Area of PTTGC Branch 4 Aramatics	Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR161B	Serial No : G301250
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050	

Time	Equivalent Sound Pressure Level (dB(A))							
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024	
13:00 - 14:00	65.1	65.2	67.0	63.5	62.6	65.2	67.1	
14:00 - 15:00	65.2	66.2	65.4	64.6	61.6	64.3	65.0	
15:00 - 16:00	66.8	66.3	64.9	64.3	61.2	64.7	65.0	
16:00 - 17:00	67.0	67.4	67.3	65.8	63.1	66.0	64.1	
17:00 - 18:00	66.0	67.7	67.2	65.4	64.8	66.6	65.2	
18:00 - 19:00	63.0	64.5	65.8	65.5	65.1	66.9	66.8	
19:00 - 20:00	61.9	62.5	62.9	64.4	63.8	65.6	67.3	
20:00 - 21:00	61.7	60.3	61.6	60.3	61.0	63.0	64.5	
21:00 - 22:00	60.5	60.4	61.2	60.3	59.8	60.8	62.6	
22:00 - 23:00	61.7	60.5	60.8	62.3	59.8	60.2	61.7	
23:00 - 00:00	58.9	58.5	60.3	60.5	59.6	60.3	59.2	
00:00 - 01:00	58.8	58.6	59.0	57.9	60.1	58.6	59.3	
01:00 - 02:00	58.2	59.0	58.5	57.4	58.4	58.1	58.3	
02:00 - 03:00	58.8	59.3	58.9	59.0	57.4	57.6	57.0	
03:00 - 04:00	60.3	59.6	58.9	57.7	57.4	57.6	57.6	
04:00 - 05:00	67.3	63.7	59.6	60.0	59.2	58.3	57.6	
05:00 - 06:00	69.1	70.7	66.7	64.7	60.5	61.8	59.1	
06:00 - 07:00	68.6	69.5	69.1	68.5	68.0	68.3	61.3	
07:00 - 08:00	64.7	65.7	67.1	66.9	70.2	70.1	69.3	
08:00 - 09:00	64.4	64.7	63.9	63.6	67.3	69.0	69.0	
09:00 - 10:00	65.2	65.8	63.7	63.3	65.4	64.7	67.4	
10:00 - 11:00	64.5	65.4	64.2	62.3	64.6	64.4	65.5	
11:00 - 12:00	65.7	65.4	63.9	62.9	65.6	63.9	64.7	
12:00 - 13:00	64.9	64.6	64.4	61.6	63.8	64.4	63.8	
Leq(24)*	64.7	65.1	64.5	63.5	63.9	64.8	64.7	
Ldn	71.1	71.4	70.0	69.3	68.6	69.1	67.6	
Lmax **	92.2	92.1	95.8	92.3	97.4	97.5	96.8	
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-PTTGC 4

Location : Northern Area of PTTGC Branch 4 Aramatics	Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR161B	Serial No : G301250
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050	

Time	L90 (dB(A))							
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024	
13:00 - 14:00	57.0	58.0	56.7	56.2	55.0	56.8	58.6	
14:00 - 15:00	57.9	57.1	57.4	56.4	54.9	56.1	56.9	
15:00 - 16:00	60.1	58.9	58.6	56.5	55.2	56.3	57.0	
16:00 - 17:00	59.3	59.0	60.1	57.5	55.9	57.5	56.5	
17:00 - 18:00	57.2	59.4	59.7	57.4	55.8	59.2	58.7	
18:00 - 19:00	55.8	56.1	57.0	56.3	55.9	58.7	58.9	
19:00 - 20:00	55.4	55.2	55.4	55.2	55.4	56.3	58.9	
20:00 - 21:00	55.3	55.0	55.3	54.7	54.9	55.2	56.0	
21:00 - 22:00	55.1	54.9	54.8	55.0	54.7	54.9	55.0	
22:00 - 23:00	55.0	54.6	54.5	54.8	54.6	55.0	55.0	
23:00 - 00:00	55.0	54.4	54.7	55.1	54.8	54.9	54.9	
00:00 - 01:00	54.8	54.6	54.6	54.8	54.9	54.2	54.2	
01:00 - 02:00	54.4	54.6	54.8	54.9	54.7	54.0	54.0	
02:00 - 03:00	54.3	54.7	53.5	54.9	54.5	54.3	54.1	
03:00 - 04:00	54.3	54.7	53.6	54.9	54.5	54.4	54.3	
04:00 - 05:00	55.9	55.4	54.2	55.0	54.6	54.4	54.7	
05:00 - 06:00	62.5	62.7	57.0	55.5	54.8	54.6	54.6	
06:00 - 07:00	60.5	62.7	60.7	60.1	58.7	57.7	54.7	
07:00 - 08:00	56.4	57.9	57.9	56.5	63.6	63.4	61.3	
08:00 - 09:00	56.1	56.8	56.3	55.6	59.3	60.5	62.7	
09:00 - 10:00	56.8	56.6	55.9	55.9	56.9	56.7	59.4	
10:00 - 11:00	55.2	56.5	55.8	55.6	56.4	56.1	58.5	
11:00 - 12:00	57.1	56.0	54.5	55.2	56.8	56.5	56.8	
12:00 - 13:00	58.2	57.0	56.6	54.2	55.4	55.3	55.4	
L90(avg)*	57.3	57.5	56.7	56.0	56.6	57.1	57.4	

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-PTTGC 4

Location : Southern Area of PTTGC Branch 4 Aromatics

Monitor Period : 14-21 Feb 2024

SLM Model : Cirrus CR161B

Serial No : G301331

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 97097

Calibration Ref dB(A) : 94.0

Certified Date : 04 Sep 2023

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : 03 Sep 2024

Cal Sheet No.: CR-515-2024-050

Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
13:00 - 14:00	52.5	51.8	51.9	52.2	58.0	58.2	52.3
14:00 - 15:00	52.3		52.1	53.6	58.0	58.1	52.3
15:00 - 16:00	53.3	52.1	52.2	56.2	58.1	58.2	52.0
16:00 - 17:00	53.0	52.4	52.6	58.6	58.1	58.1	52.2
17:00 - 18:00	54.4	53.6	52.8	58.9	58.2	58.1	51.8
18:00 - 19:00	53.9	53.7	51.7	59.1	58.5	58.5	53.0
19:00 - 20:00	55.1	53.3	51.6	59.0	58.7	58.7	53.1
20:00 - 21:00	56.1	53.2	52.5	59.0	58.7	58.7	52.6
21:00 - 22:00	54.2	54.7	52.5	59.0	58.9	58.8	52.1
22:00 - 23:00	53.4	53.3	52.9	59.0	58.9	58.9	53.6
23:00 - 00:00	53.6	53.5	53.2	58.8	59.0	59.0	54.6
00:00 - 01:00	53.8	53.3	53.7	58.9	59.0	57.9	53.3
01:00 - 02:00	54.2	53.6	52.6	58.9	59.0	53.1	53.1
02:00 - 03:00	53.2	53.6	52.5	58.9	59.0	53.5	52.6
03:00 - 04:00	53.1	53.3	52.6	58.8	59.1	53.6	53.3
04:00 - 05:00	55.3	53.1	52.8	58.7	58.9	52.9	53.2
05:00 - 06:00	54.7	53.2	52.8	58.6	58.9	53.2	52.3
06:00 - 07:00	53.8	52.8	52.8	58.5	59.0	53.7	52.6
07:00 - 08:00	52.7	52.5	52.6	58.4	58.9	55.3	52.8
08:00 - 09:00	51.9	52.6	53.3	58.3	58.7	54.3	52.8
09:00 - 10:00	51.2	52.7	53.2	61.7	58.4	53.4	52.8
10:00 - 11:00	50.8	51.1	52.7	58.2	58.0	52.9	53.0
11:00 - 12:00	53.9	50.8	52.0	58.5	58.2	52.2	52.3
12:00 - 13:00	51.8	51.3	52.2	58.1	58.3	52.1	52.2
Leq(24)*	53.6	52.9	52.6	58.5	58.6	56.6	52.8
Ldn	60.3	59.6	59.2	65.1	65.3	62.5	59.5
Lmax **	75.0	74.4	76.4	79.5	68.1	70.5	74.1
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-PTTGC 4

Location : Southern Area of PTTGC Branch 4 Aromatics

Monitor Period : 14-21 Feb 2024

SLM Model : Cirrus CR161B

Serial No : G301331

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 97097

Calibration Ref dB(A) : 94.0

Certified Date : 04 Sep 2023

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : 03 Sep 2024

Cal Sheet No.: CR-515-2024-050

Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
13:00 - 14:00	50.7	50.1	50.4	50.7	56.3	56.4	50.7
14:00 - 15:00	50.7	50.5	50.2	51.5	56.2	56.1	50.8
15:00 - 16:00	50.9	50.5	50.4	52.8	56.3	56.6	50.3
16:00 - 17:00	51.4	50.7	50.8	57.1	56.5	56.5	50.4
17:00 - 18:00	51.8	51.6	50.8	57.5	56.7	56.8	50.5
18:00 - 19:00	52.2	51.8	50.2	57.7	57.2	57.2	51.6
19:00 - 20:00	53.2	51.6	50.3	57.3	57.4	57.5	51.6
20:00 - 21:00	54.1	51.9	50.8	57.4	57.5	57.6	51.2
21:00 - 22:00	52.8	52.7	51.0	57.6	57.8	57.5	50.9
22:00 - 23:00	52.2	52.2	51.4	57.7	57.8	57.4	51.9
23:00 - 00:00	52.1	52.3	51.8	57.6	57.9	57.4	52.3
00:00 - 01:00	52.7	52.2	51.8	57.5	57.9	52.3	51.9
01:00 - 02:00	52.9	52.4	51.4	57.5	57.9	51.9	51.7
02:00 - 03:00	52.0	52.5	51.4	57.5	57.8	51.9	51.2
03:00 - 04:00	52.1	52.3	51.5	57.5	57.9	52.0	51.2
04:00 - 05:00	53.4	52.1	51.4	57.5	57.8	51.7	51.1
05:00 - 06:00	53.5	52.2	51.3	57.4	57.9	51.8	51.0
06:00 - 07:00	52.5	51.9	51.5	57.4	58.0	51.8	51.3
07:00 - 08:00	51.8	51.3	51.3	57.1	58.1	54.0	51.5
08:00 - 09:00	50.9	51.1	51.7	56.9	57.6	52.5	51.6
09:00 - 10:00	50.0	50.8	51.8	56.9	57.1	52.1	51.4
10:00 - 11:00	49.6	49.8	51.3	56.5	56.6	51.2	51.4
11:00 - 12:00	49.9	49.5	50.6	56.5	56.7	50.6	50.4
12:00 - 13:00	50.3	49.9	50.7	56.3	56.5	50.2	50.6
L90(avg)*	52.0	51.5	51.1	56.9	57.4	55.0	51.2

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-PTTGC 4


Location : Eastern Area of PTTGC Branch 4 Aromatics	Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR161B	Serial No : G302628
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050	

Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
13:00 - 14:00	68.0	67.8	67.8	67.4	67.7	67.9	67.3
14:00 - 15:00	67.9	67.6	67.7	67.5	67.5	68.0	67.5
15:00 - 16:00	68.2	67.6	67.7	67.5	67.5	68.0	67.7
16:00 - 17:00	68.0	67.8	67.7	67.3	67.5	67.6	67.6
17:00 - 18:00	67.8	67.9	67.8	67.4	67.3	67.5	67.5
18:00 - 19:00	67.8	67.9	67.8	67.6	67.2	67.5	67.6
19:00 - 20:00	68.0	68.0	67.9	67.6	67.4	67.6	67.4
20:00 - 21:00	68.2	67.8	67.6	67.3	67.4	67.5	67.5
21:00 - 22:00	68.2	67.6	67.6	67.3	67.4	67.5	67.3
22:00 - 23:00	68.0	67.7	67.5	67.4	67.5	67.4	67.3
23:00 - 00:00	68.1	67.7	67.5	67.4	67.4	67.4	67.3
00:00 - 01:00	68.1	67.7	67.5	67.3	67.4	67.4	67.4
01:00 - 02:00	68.1	67.7	67.5	67.4	67.5	67.3	67.3
02:00 - 03:00	68.0	67.7	67.6	67.5	67.5	67.1	67.4
03:00 - 04:00	68.1	67.6	67.6	67.4	67.4	67.1	67.4
04:00 - 05:00	68.0	67.6	67.6	67.4	67.4	67.3	67.4
05:00 - 06:00	68.0	67.8	67.6	67.4	67.4	67.3	67.4
06:00 - 07:00	68.4	68.0	67.8	67.6	67.5	67.4	67.5
07:00 - 08:00	68.0	67.8	67.7	67.7	67.8	67.6	67.5
08:00 - 09:00	68.0	67.6	67.5	67.5	67.5	67.7	67.7
09:00 - 10:00	67.8	67.7	67.7	67.7	68.6	67.6	67.6
10:00 - 11:00	67.8	67.5	67.4	67.9	67.6	67.7	67.6
11:00 - 12:00	67.6	67.6	67.5	67.5	67.6	67.5	67.6
12:00 - 13:00	67.8	67.5	67.4	67.4	67.5	67.4	67.5
Leq(24)*	68.0	67.7	67.6	67.5	67.5	67.5	67.5
Ldn	74.5	74.1	74.0	73.8	73.9	73.8	73.8
Lmax **	85.6	86.5	85.1	84.2	82.4	96.5	83.7
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-PTTGC 4

Location : Eastern Area of PTTGC Branch 4 Aromatics	Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR161B	Serial No : G302628
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050	

Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
13:00 - 14:00	67.5	67.3	67.1	67.0	67.1	67.1	66.9
14:00 - 15:00	67.4	67.1	67.2	67.0	67.0	67.3	67.0
15:00 - 16:00	67.6	67.2	67.2	67.0	67.1	67.2	67.0
16:00 - 17:00	67.6	67.3	67.2	66.9	67.1	67.1	67.0
17:00 - 18:00	67.4	67.5	67.3	67.0	67.0	67.1	67.0
18:00 - 19:00	67.5	67.5	67.3	67.1	66.9	67.1	67.0
19:00 - 20:00	67.7	67.6	67.4	67.1	67.0	67.2	67.0
20:00 - 21:00	67.9	67.5	67.3	67.0	67.1	67.2	67.1
21:00 - 22:00	67.9	67.3	67.3	67.0	67.1	67.1	67.0
22:00 - 23:00	67.7	67.4	67.2	67.1	67.2	67.1	67.0
23:00 - 00:00	67.8	67.4	67.1	67.1	67.1	67.1	67.0
00:00 - 01:00	67.9	67.4	67.2	67.0	67.1	67.1	67.0
01:00 - 02:00	67.8	67.4	67.2	67.1	67.2	67.0	67.0
02:00 - 03:00	67.7	67.3	67.3	67.1	67.2	66.8	67.1
03:00 - 04:00	67.8	67.3	67.2	67.0	67.1	66.9	67.1
04:00 - 05:00	67.7	67.3	67.3	67.1	67.2	67.0	67.1
05:00 - 06:00	67.6	67.4	67.3	67.1	67.0	67.0	67.2
06:00 - 07:00	67.7	67.5	67.3	67.2	67.1	67.1	67.2
07:00 - 08:00	67.6	67.3	67.1	67.1	67.3	67.1	67.2
08:00 - 09:00	67.6	67.2	67.0	67.1	67.0	67.1	67.2
09:00 - 10:00	67.3	67.2	67.0	67.1	67.0	67.0	67.1
10:00 - 11:00	67.3	67.0	67.0	67.3	67.1	66.9	67.1
11:00 - 12:00	67.2	67.1	67.1	67.0	67.0	66.9	67.1
12:00 - 13:00	67.2	67.1	67.0	67.0	67.0	66.9	66.9
L90(avg)*	67.6	67.3	67.2	67.1	67.1	67.1	67.1

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-PTTGC 4

Location : Western Area of PTTGC Branch 4 Aromatics	Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR161B	Serial No : G303385
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050	

Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
13:00 - 14:00	68.9	69.1	68.1	68.5	68.6	68.9	68.7
14:00 - 15:00	69.4	69.0	69.9	68.4	72.7	68.8	68.5
15:00 - 16:00	69.0	68.4	68.9	68.2	69.2	69.6	68.8
16:00 - 17:00	68.8	69.0	68.5	68.1	68.6	69.1	68.9
17:00 - 18:00	69.2	68.3	68.4	68.2	68.6	68.7	69.0
18:00 - 19:00	69.0	68.6	68.5	68.1	68.2	68.6	68.6
19:00 - 20:00	68.1	68.6	68.2	68.5	68.3	69.5	68.4
20:00 - 21:00	68.2	69.1	68.5	68.8	68.6	69.3	68.2
21:00 - 22:00	68.5	68.6	68.7	68.2	68.7	69.7	68.6
22:00 - 23:00	68.2	68.8	68.3	68.1	68.7	69.1	68.5
23:00 - 00:00	68.1	69.3	68.1	68.0	68.8	68.1	68.7
00:00 - 01:00	68.1	69.2	68.4	68.3	69.9	68.4	68.7
01:00 - 02:00	68.2	68.9	68.1	68.4	70.9	68.1	68.5
02:00 - 03:00	68.1	69.4	68.2	68.3	71.3	68.3	68.5
03:00 - 04:00	68.1	69.1	68.0	68.3	70.9	68.5	69.0
04:00 - 05:00	68.3	69.3	68.0	68.2	71.4	68.2	68.8
05:00 - 06:00	68.7	73.9	68.0	68.2	69.9	68.1	68.7
06:00 - 07:00	68.4	71.0	68.1	68.2	71.2	68.1	69.2
07:00 - 08:00	70.6	70.1	68.1	68.1	69.9	68.1	68.8
08:00 - 09:00	69.3	69.9	68.2	68.2	69.7	68.2	69.0
09:00 - 10:00	68.5	69.4	68.3	68.4	69.6	68.2	72.2
10:00 - 11:00	68.8	68.5	67.9	69.4	70.2	68.5	73.2
11:00 - 12:00	68.6	68.4	68.3	72.3	69.2	69.4	70.3
12:00 - 13:00	68.8	68.2	68.3	68.3	69.0	69.3	70.1
Leq(24)*	68.7	69.5	68.4	68.6	69.8	68.7	69.4
Ldn	74.8	76.5	74.6	74.7	76.7	74.8	75.3
Lmax **	81.4	86.8	87.6	91.1	97.6	81.8	83.1
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-PTTGC 4

Location : Western Area of PTTGC Branch 4 Aromatics	Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR161B	Serial No : G303385
Site Operator : Mr. Phuwadech Kaewjirakulsri	
Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050	

Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
13:00 - 14:00	68.1	68.3	67.7	67.8	67.9	68.2	67.9
14:00 - 15:00	68.4	68.1	68.2	67.8	68.2	68.1	67.8
15:00 - 16:00	68.3	67.8	68.2	67.7	68.1	69.0	68.0
16:00 - 17:00	68.2	68.2	67.8	67.7	68.0	68.3	68.1
17:00 - 18:00	68.4	67.9	67.8	67.8	68.1	68.2	68.4
18:00 - 19:00	68.3	68.1	67.8	67.7	67.7	68.2	67.9
19:00 - 20:00	67.6	68.1	67.7	68.0	67.8	68.8	67.9
20:00 - 21:00	67.7	68.6	67.9	68.2	68.1	68.5	67.7
21:00 - 22:00	68.0	68.0	68.1	67.7	68.4	68.6	67.9
22:00 - 23:00	67.7	68.1	67.8	67.7	68.4	68.3	68.0
23:00 - 00:00	67.7	68.5	67.7	67.6	68.4	67.7	68.1
00:00 - 01:00	67.7	68.2	67.8	67.8	68.7	67.9	68.1
01:00 - 02:00	67.8	68.2	67.7	67.8	69.3	67.7	67.9
02:00 - 03:00	67.7	68.5	67.6	67.7	69.7	67.8	68.0
03:00 - 04:00	67.6	68.4	67.6	67.7	68.7	67.9	68.2
04:00 - 05:00	67.8	68.4	67.6	67.6	68.4	67.8	68.1
05:00 - 06:00	68.0	70.9	67.5	67.6	68.2	67.7	68.0
06:00 - 07:00	67.8	69.3	67.6	67.6	69.3	67.7	68.4
07:00 - 08:00	69.1	68.9	67.6	67.5	69.1	67.7	68.0
08:00 - 09:00	68.5	68.6	67.6	67.5	68.5	67.8	68.0
09:00 - 10:00	67.8	68.8	67.7	67.9	68.9	67.7	69.6
10:00 - 11:00	68.0	67.8	67.5	68.8	68.9	68.0	70.9
11:00 - 12:00	67.9	67.8	67.8	68.5	68.8	68.4	68.9
12:00 - 13:00	68.1	67.7	67.7	67.8	68.1	68.4	69.2
L90(avg)*	68.0	68.4	67.8	67.8	68.5	68.1	68.4

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-PTTGC 4

Location : Gate of PTTGC Branch 8 Aromatics Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR162B Serial No : G301014
Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050

Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
15:00 - 16:00	69.4	68.7	67.9	67.6	70.3	68.2	68.0
16:00 - 17:00	69.6	68.7	69.0	68.1	69.4	68.8	68.7
17:00 - 18:00	69.6	68.6	68.8	68.7	67.8	68.6	68.8
18:00 - 19:00	69.3	68.5	68.3	68.5	67.7	68.6	68.5
19:00 - 20:00	68.5	67.9	68.1	68.1	67.7	68.2	68.2
20:00 - 21:00	68.7	67.4	67.9	67.7	67.4	67.9	67.7
21:00 - 22:00	67.7	67.3	66.8	67.1	66.9	67.2	67.0
22:00 - 23:00	67.9	67.7	66.6	66.8	66.7	67.2	66.8
23:00 - 00:00	66.9	67.2	66.3	66.5	66.6	66.9	66.9
00:00 - 01:00	66.5	66.9	66.5	68.6	66.4	66.9	66.9
01:00 - 02:00	66.4	66.6	66.5	70.6	66.1	66.8	66.8
02:00 - 03:00	66.3	66.6	66.7	70.7	66.1	66.6	66.6
03:00 - 04:00	67.7	66.2	66.3	70.6	66.3	66.6	66.5
04:00 - 05:00	67.7	66.1	66.4	70.6	66.1	67.0	66.6
05:00 - 06:00	68.1	66.3	67.0	70.7	66.7	67.1	67.1
06:00 - 07:00	69.4	68.2	68.8	71.3	68.1	68.7	68.4
07:00 - 08:00	69.9	68.9	69.2	71.6	68.8	69.2	69.1
08:00 - 09:00	69.5	68.2	68.8	71.1	68.6	68.6	69.2
09:00 - 10:00	68.7	67.9	67.8	70.8	67.6	68.1	68.4
10:00 - 11:00	68.7	68.3	67.5	70.7	67.8	68.0	68.3
11:00 - 12:00	69.2	67.8	67.7	70.9	68.9	68.3	68.3
12:00 - 13:00	68.3	67.3	67.3	70.4	67.2	67.4	67.6
13:00 - 14:00	68.5	68.1	67.4	70.3	67.7	68.0	67.3
14:00 - 15:00	67.4	67.9	67.3	70.3	67.5	67.6	67.6
Leq(24)*	68.5	67.7	67.6	69.8	67.7	67.8	67.8
Ldn	74.2	73.5	73.5	76.3	73.3	73.7	73.6
Lmax **	93.6	85.7	93.0	90.8	90.6	85.9	88.4
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-PTTGC 4

Location : Gate of PTTGC Branch 8 Aromatics Monitor Period : 14-21 Feb 2024
SLM Model : Cirrus CR162B Serial No : G301014
Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-050

Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
15:00 - 16:00	67.9	66.2	66.2	65.8	69.7	66.0	65.8
16:00 - 17:00	67.2	66.4	66.4	66.3	66.1	66.3	66.0
17:00 - 18:00	67.3	66.4	66.4	66.3	66.3	66.4	66.4
18:00 - 19:00	67.0	66.5	66.1	66.4	66.3	66.4	66.5
19:00 - 20:00	66.8	66.5	66.2	66.4	66.5	66.5	66.1
20:00 - 21:00	66.5	66.4	66.3	66.2	66.4	66.4	66.2
21:00 - 22:00	66.4	66.4	66.1	66.3	66.4	66.4	66.1
22:00 - 23:00	66.5	66.5	65.7	65.9	65.7	66.4	66.1
23:00 - 00:00	66.0	66.5	65.8	65.9	66.0	66.4	66.0
00:00 - 01:00	65.9	66.3	65.8	65.9	65.9	66.1	66.3
01:00 - 02:00	66.0	65.6	66.0	70.4	65.1	66.4	66.3
02:00 - 03:00	66.0	66.0	66.0	70.4	65.3	65.8	66.1
03:00 - 04:00	67.3	65.6	65.8	70.3	65.7	66.2	66.1
04:00 - 05:00	67.3	65.0	66.0	70.3	65.6	66.4	66.0
05:00 - 06:00	67.4	65.5	66.3	70.3	65.7	66.3	66.3
06:00 - 07:00	67.6	65.8	66.4	70.5	65.8	66.3	66.3
07:00 - 08:00	67.5	66.3	66.2	70.4	65.9	66.4	66.2
08:00 - 09:00	67.4	66.0	66.3	70.1	65.9	66.2	66.4
09:00 - 10:00	67.2	65.9	66.2	70.2	65.3	66.0	66.4
10:00 - 11:00	67.2	65.8	65.9	70.2	65.6	65.8	66.2
11:00 - 12:00	67.3	65.5	65.9	70.0	66.0	65.9	66.0
12:00 - 13:00	66.8	65.1	65.5	69.8	65.2	65.3	65.8
13:00 - 14:00	67.1	65.7	65.8	69.8	65.7	65.4	65.5
14:00 - 15:00	65.5	65.6	65.4	69.7	65.6	65.5	65.9
L90(avg)*	66.9	66.0	66.0	68.9	66.1	66.1	66.1

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise


MTR-PTTGC 4

Location : Northern Area of PTTGC Branch 8 Aromatics				Monitor Period : 14-21 Feb 2024			
SLM Model : Cirrus CR162B				Serial No : G300769			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-050							
Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
14:00 - 15:00	65.8	65.5	65.1	66.5	65.8	66.2	65.5
15:00 - 16:00	65.8	65.6	65.2	66.6	66.3	66.5	66.7
16:00 - 17:00	66.1	65.9	65.8	66.8	66.5	66.7	70.0
17:00 - 18:00	66.6	66.4	66.1	66.9	66.4	66.8	67.8
18:00 - 19:00	66.8	66.8	66.2	66.9	66.6	66.8	67.7
19:00 - 20:00	66.9	66.8	66.3	66.8	66.7	66.8	67.8
20:00 - 21:00	67.0	66.7	66.3	67.0	66.9	66.8	67.4
21:00 - 22:00	67.0	66.8	66.3	67.0	66.8	66.7	67.1
22:00 - 23:00	66.8	66.8	65.9	66.5	66.6	66.8	66.9
23:00 - 00:00	65.6	66.8	66.3	65.9	66.0	66.7	66.6
00:00 - 01:00	65.2	66.9	66.6	65.9	65.9	66.8	66.4
01:00 - 02:00	65.3	66.9	66.7	65.9	65.9	66.8	66.1
02:00 - 03:00	65.3	66.8	66.4	65.8	65.9	66.8	66.0
03:00 - 04:00	65.4	66.9	66.6	65.8	66.0	66.9	66.4
04:00 - 05:00	65.4	67.0	66.6	65.8	65.9	66.9	66.5
05:00 - 06:00	65.5	66.9	66.8	65.9	65.9	67.0	68.5
06:00 - 07:00	65.4	67.0	66.7	65.8	65.7	66.8	68.1
07:00 - 08:00	64.8	66.7	66.8	65.5	66.1	66.6	68.2
08:00 - 09:00	64.5	71.9	66.7	65.8	66.3	66.8	67.2
09:00 - 10:00	64.6	66.9	66.2	66.6	66.2	66.2	66.6
10:00 - 11:00	64.4	66.3	65.5	65.9	67.2	65.9	66.5
11:00 - 12:00	65.1	65.0	65.3	65.6	66.3	64.3	66.5
12:00 - 13:00	65.4	64.9	65.7	65.5	65.6	64.5	66.5
13:00 - 14:00	65.5	64.8	65.8	65.4	65.7	64.7	66.6
Leq(24)*	65.7	66.9	66.2	66.2	66.2	66.5	67.2
Ldn	72.0	73.3	72.9	72.4	72.5	73.2	73.4
Lmax **	75.6	91.7	77.3	74.6	82.0	78.6	87.4
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 14:00-14:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team




Noise Monitoring Result : Background Noise

MTR-PTTGC 4

Location : Northern Area of PTTGC Branch 8 Aromatics				Monitor Period : 14-21 Feb 2024			
SLM Model : Cirrus CR162B				Serial No : G300769			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-050							
Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
14:00 - 15:00	65.3	64.9	64.3	65.9	65.1	65.5	64.7
15:00 - 16:00	65.3	65.1	64.5	66.0	65.7	65.9	65.2
16:00 - 17:00	65.7	65.4	65.1	66.3	66.0	66.2	66.2
17:00 - 18:00	66.1	65.8	65.4	66.4	65.9	66.3	66.3
18:00 - 19:00	66.3	66.3	65.7	66.4	66.1	66.4	66.3
19:00 - 20:00	66.5	66.3	65.7	66.4	66.3	66.3	66.4
20:00 - 21:00	66.5	66.3	65.8	66.5	66.4	66.3	66.5
21:00 - 22:00	66.6	66.3	65.7	66.6	66.4	66.3	66.4
22:00 - 23:00	65.4	66.4	65.1	65.3	65.5	66.4	66.4
23:00 - 00:00	64.9	66.4	65.3	65.2	65.4	66.3	65.7
00:00 - 01:00	64.7	66.5	66.0	65.3	65.4	66.4	65.9
01:00 - 02:00	64.7	66.4	66.2	65.3	65.3	66.3	65.1
02:00 - 03:00	64.7	66.3	65.8	65.2	65.4	66.4	65.3
03:00 - 04:00	64.7	66.5	66.1	65.2	65.4	66.5	65.6
04:00 - 05:00	64.8	66.5	66.2	65.2	65.3	66.5	65.7
05:00 - 06:00	65.0	66.5	66.3	65.3	65.3	66.5	66.3
06:00 - 07:00	64.6	66.5	66.2	65.1	65.0	66.3	66.0
07:00 - 08:00	64.3	66.2	66.2	64.9	64.9	66.1	66.3
08:00 - 09:00	63.9	66.5	66.2	64.8	65.5	66.2	66.2
09:00 - 10:00	64.0	66.3	65.4	66.0	65.5	65.7	65.8
10:00 - 11:00	63.7	65.6	65.0	65.3	66.0	64.3	65.7
11:00 - 12:00	64.6	64.2	64.8	65.0	65.6	63.5	65.8
12:00 - 13:00	64.8	64.2	65.1	64.8	65.0	63.8	65.8
13:00 - 14:00	64.9	64.2	65.1	64.9	65.1	64.0	66.0
L90(avg)*	65.2	66.0	65.6	65.6	65.6	65.9	65.9

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


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise

MTR-PTTGC 4

Location : Southern Area of PTTGC Branch 8 Aromatics				Monitor Period : 14-21 Feb 2024			
SLM Model : Cirrus CR162B				Serial No : G302737			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-050							
Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
14:00 - 15:00	61.9	58.3	60.8	62.3	53.5	55.3	56.2
15:00 - 16:00	55.6	54.8	55.5	62.3	53.9	54.6	57.2
16:00 - 17:00	55.0	54.8	56.7	55.6	54.1	55.0	56.7
17:00 - 18:00	55.0	55.4	54.9	56.3	55.4	54.8	57.8
18:00 - 19:00	54.3	53.9	54.2	54.9	53.7	53.9	57.5
19:00 - 20:00	53.2	56.5	53.2	54.0	53.6	60.4	55.4
20:00 - 21:00	52.5	52.9	53.0	53.7	53.2	61.9	55.2
21:00 - 22:00	52.5	53.1	53.6	53.4	53.3	61.9	55.3
22:00 - 23:00	52.7	52.7	53.2	53.7	53.2	61.9	55.2
23:00 - 00:00	52.4	52.8	53.3	53.2	53.1	57.6	53.5
00:00 - 01:00	52.1	52.7	53.2	53.1	52.9	52.9	54.1
01:00 - 02:00	52.1	53.3	57.3	53.5	52.9	52.9	53.3
02:00 - 03:00	53.9	53.2	55.0	56.7	57.8	53.4	53.9
03:00 - 04:00	56.0	55.2	53.7	53.8	57.6	54.8	55.6
04:00 - 05:00	53.5	53.5	54.6	55.6	55.5	55.1	55.2
05:00 - 06:00	55.2	57.3	57.8	55.8	55.6	56.0	57.2
06:00 - 07:00	55.7	55.7	56.5	55.4	55.7	61.1	56.9
07:00 - 08:00	55.9	55.7	56.1	57.4	59.1	57.1	57.8
08:00 - 09:00	57.4	57.9	55.0	55.6	57.5	59.8	58.0
09:00 - 10:00	63.2	56.2	54.3	54.8	56.1	56.8	56.3
10:00 - 11:00	54.0	55.3	53.9	55.1	57.7	57.9	57.8
11:00 - 12:00	53.6	53.6	53.5	54.3	54.1	54.9	56.7
12:00 - 13:00	55.7	53.9	54.8	54.3	56.3	55.5	56.7
13:00 - 14:00	57.3	56.7	61.3	54.2	56.1	56.0	57.4
Leq(24)*	56.2	55.1	55.9	56.3	55.5	57.8	56.3
Ldn	61.0	61.0	61.9	61.5	61.8	64.0	61.9
Lmax **	83.8	80.8	79.7	82.9	81.5	85.5	83.0
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 14:00-14:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-PTTGC 4

Location : Southern Area of PITGC Branch 8 Aromatics				Monitor Period : 14-21 Feb 2024			
SLM Model : Cirrus CR162B				Serial No : G302737			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-050							
Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
14:00 - 15:00	55.4	53.9	54.0	61.8	52.4	53.3	54.4
15:00 - 16:00	53.8	53.5	53.9	61.9	52.4	53.2	54.7
16:00 - 17:00	53.5	53.4	53.8	53.5	52.7	53.3	55.0
17:00 - 18:00	53.4	53.4	53.5	53.7	52.7	53.2	55.1
18:00 - 19:00	53.1	52.8	52.8	53.4	52.6	52.8	55.0
19:00 - 20:00	52.1	52.2	52.1	52.8	52.6	53.5	54.6
20:00 - 21:00	51.9	52.1	52.1	52.4	52.4	61.6	54.5
21:00 - 22:00	51.8	52.1	52.6	52.4	52.3	61.6	54.6
22:00 - 23:00	52.1	52.0	52.3	52.7	52.3	61.6	54.6
23:00 - 00:00	51.8	52.0	52.4	52.3	52.2	52.8	52.6
00:00 - 01:00	51.6	52.0	52.3	52.2	52.1	52.1	53.0
01:00 - 02:00	51.6	52.2	52.6	52.7	52.2	52.1	52.4
02:00 - 03:00	52.0	51.9	52.7	52.4	52.3	52.2	52.6
03:00 - 04:00	52.4	52.0	52.5	52.3	52.3	52.5	52.8
04:00 - 05:00	52.0	52.0	52.8	53.0	52.5	52.7	53.0
05:00 - 06:00	53.4	53.9	54.4	53.4	53.5	53.5	54.3
06:00 - 07:00	53.3	54.1	54.9	53.3	54.2	55.2	55.2
07:00 - 08:00	52.7	53.4	53.9	53.0	55.0	55.0	54.3
08:00 - 09:00	52.1	53.6	53.5	54.0	54.4	54.8	55.4
09:00 - 10:00	53.1	53.7	53.1	53.7	54.2	53.9	54.2
10:00 - 11:00	52.6	52.9	52.7	53.7	53.9	53.9	54.6
11:00 - 12:00	52.2	52.3	52.3	53.5	52.8	53.9	54.9
12:00 - 13:00	53.0	52.5	52.9	53.5	52.7	54.3	55.1
13:00 - 14:00	54.0	53.1	53.4	53.5	53.0	54.3	55.0
L90(avg)*	52.8	52.9	53.1	55.0	53.0	55.8	54.3

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise

MTR-PTTGC 4

Location : Western Area of PITGC Branch 8 Aromatics				Monitor Period : 14-21 Feb 2024			
SLM Model : Cirrus CR162B				Serial No : G300709			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-050							
Time	Equivalent Sound Pressure Level (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
15:00 - 16:00	69.8	69.6	69.7	69.9	70.6	71.2	70.5
16:00 - 17:00	69.8	69.6	69.8	69.9	70.7	70.8	70.0
17:00 - 18:00	69.8	69.8	69.8	69.6	70.7	70.6	70.3
18:00 - 19:00	70.0	69.9	69.8	69.5	69.5	71.3	69.7
19:00 - 20:00	69.9	69.8	69.7	69.8	69.6	69.6	69.6
20:00 - 21:00	69.9	69.8	69.7	69.9	69.8	69.8	69.9
21:00 - 22:00	69.9	69.6	69.7	69.9	69.8	69.7	70.1
22:00 - 23:00	69.9	69.6	69.6	69.8	69.7	69.7	69.7
23:00 - 00:00	69.9	69.5	69.6	69.6	69.6	69.6	69.6
00:00 - 01:00	69.8	69.6	69.6	69.6	69.6	69.4	69.4
01:00 - 02:00	69.9	69.6	69.8	69.5	69.7	69.6	69.4
02:00 - 03:00	69.8	69.6	69.9	69.6	70.0	69.4	69.5
03:00 - 04:00	69.8	69.6	69.9	69.6	69.9	69.4	69.5
04:00 - 05:00	69.8	69.7	69.9	69.6	69.7	69.4	69.5
05:00 - 06:00	69.7	69.8	69.9	69.7	69.7	69.6	69.4
06:00 - 07:00	69.9	69.8	70.5	69.9	69.7	69.6	69.5
07:00 - 08:00	69.7	69.8	69.6	69.8	69.6	69.6	69.5
08:00 - 09:00	69.5	69.7	69.7	69.5	69.5	69.4	69.5
09:00 - 10:00	69.9	70.1	70.0	69.7	69.8	70.0	70.1
10:00 - 11:00	70.2	69.9	70.1	69.7	69.9	71.2	72.5
11:00 - 12:00	69.7	69.5	69.4	69.6	69.5	70.1	70.1
12:00 - 13:00	69.0	69.3	69.0	69.1	68.9	68.9	69.9
13:00 - 14:00	69.7	69.3	69.9	69.7	70.2	69.0	70.1
14:00 - 15:00	70.8	69.4	69.7	71.8	71.6	70.1	70.1
Leq(24)*	69.8	69.7	69.8	69.8	69.9	69.9	69.9
Ldn	76.2	76.1	76.3	76.1	76.2	76.0	76.0
Lmax **	82.6	83.4	90.7	85.9	85.3	86.5	84.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-PTTGC 4

Location : Western Area of PTTGC Branch 8 Aromatics				Monitor Period : 14-21 Feb 2024			
SLM Model : Cirrus CR162B				Serial No : G300709			
Site Operator : Mr. Phuwadech Kaewjirakulsri							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 04 Sep 2023			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 03 Sep 2024			
Cal Sheet No.: CR-515-2024-050							
Time	L90 (dB(A))						
	14-15 Feb 2024	15-16 Feb 2024	16-17 Feb 2024	17-18 Feb 2024	18-19 Feb 2024	19-20 Feb 2024	20-21 Feb 2024
15:00 - 16:00	69.5	69.1	69.3	69.1	68.8	69.6	69.2
16:00 - 17:00	69.5	69.3	69.5	69.4	69.1	69.4	69.3
17:00 - 18:00	69.6	69.6	69.5	69.2	69.1	69.2	69.4
18:00 - 19:00	69.7	69.7	69.6	69.3	69.3	69.5	69.5
19:00 - 20:00	69.7	69.6	69.5	69.5	69.4	69.4	69.4
20:00 - 21:00	69.7	69.6	69.4	69.7	69.6	69.5	69.5
21:00 - 22:00	69.7	69.4	69.5	69.6	69.6	69.5	69.7
22:00 - 23:00	69.7	69.4	69.5	69.6	69.5	69.5	69.6
23:00 - 00:00	69.7	69.4	69.4	69.4	69.4	69.4	69.4
00:00 - 01:00	69.6	69.4	69.4	69.4	69.4	69.4	69.4
01:00 - 02:00	69.7	69.4	69.6	69.4	69.5	69.4	69.4
02:00 - 03:00	69.5	69.5	69.6	69.4	69.8	69.6	69.6
03:00 - 04:00	69.6	69.5	69.7	69.4	69.7	69.5	69.7
04:00 - 05:00	69.6	69.6	69.8	69.4	69.5	69.5	69.7
05:00 - 06:00	69.4	69.7	69.7	69.1	69.5	69.4	69.7
06:00 - 07:00	69.4	69.6	69.6	69.1	69.5	69.4	69.5
07:00 - 08:00	69.4	69.6	69.5	69.2	69.4	69.3	69.4
08:00 - 09:00	69.3	69.5	69.4	69.2	69.2	69.2	69.3
09:00 - 10:00	69.3	69.7	69.4	69.2	69.3	69.3	69.5
10:00 - 11:00	69.4	69.7	69.4	69.5	69.3	69.2	69.4
11:00 - 12:00	68.9	69.1	69.0	69.0	69.0	68.7	69.4
12:00 - 13:00	68.7	69.1	68.8	68.6	68.6	68.6	69.5
13:00 - 14:00	68.8	69.0	69.2	68.7	68.6	68.6	69.7
14:00 - 15:00	69.0	69.1	69.0	69.0	69.1	68.8	69.6
L90(avg)*	69.4	69.4	69.4	69.3	69.3	69.3	69.5

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

ภาคผนวก ง.7

ใบรับรองผลการตรวจวัดระดับเสียงภายในสถานประกอบการ



Noise Monitoring Result : Working Noise

MTR-PTTGC4

LOCATION	: Gate House B	MEASUREMENT DATE : 23-05-2024
SLM MODEL	: SCARLET TECH ST-21D	SERIAL No. : 820729
SITE OPERATOR	: Miss Wiraya Patchimboon	

CALIBRATOR MODEL	: Cirrus CR:515	SERIAL No. : 97097
CALIBRATION REF/EFF dB(A)	: 94.0/93.8	CERTIFIED DATE : 04-09-2023
SLM READING/ADJUST dB(A)	: 93.8/0.0	EXPIRE DATE : 03-09-2024
CAL SHEET No.	: CAL-2405-0035-01	

TIME	EQUIVALENT SOUND PRESSURE LEVEL (dB(A))	
	23-05-2024	
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	74.1	
10:00 - 11:00	72.0	
11:00 - 12:00	71.8	
12:00 - 13:00	74.4	
13:00 - 14:00	73.0	
14:00 - 15:00	72.9	
15:00 - 16:00	73.9	
16:00 - 17:00	73.2	
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 - 00:00		
Leq(8)	73.3	
Lmax	108.4	
Standard*	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Notification of Ministry of Industry, B.E.2546

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise

MTR-PTTGC4

LOCATION	: Pump Station & Metering Station	MEASUREMENT DATE : 05-06-2024
SLM MODEL	: SCARLET TECH ST-21D	SERIAL No. : 820723
SITE OPERATOR	: Miss Mareeyanee Hawac	

CALIBRATOR MODEL	: Cirrus CR:515	SERIAL No. : 97097
CALIBRATION REF/EFF dB(A)	: 94.0/93.8	CERTIFIED DATE : 04-09-2023
SLM READING/ADJUST dB(A)	: 93.8/0.0	EXPIRE DATE : 03-09-2024
CAL SHEET No.	: CAL-2406-0163-01	

TIME	EQUIVALENT SOUND PRESSURE LEVEL (dB(A))	
	05-06-2024	
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	83.1	
09:00 - 10:00	83.0	
10:00 - 11:00	83.4	
11:00 - 12:00	83.1	
12:00 - 13:00	84.0	
13:00 - 14:00	83.1	
14:00 - 15:00	84.0	
15:00 - 16:00	83.4	
16:00 - 17:00		
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 - 00:00		
Leq(8)	83.4	
Lmax	93.9	
Standard*	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Notification of Ministry of Industry, B.E.2546

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise

MTR-PTTGC4

LOCATION	: Truck Loading Station	MEASUREMENT DATE	: 05-06-2024
SLM MODEL	: SCARLET TECH ST-21D	SERIAL No.	: 820722
SITE OPERATOR	: Miss Mareeyanee Hawae		
CALIBRATOR MODEL	: Cirrus CR:515	SERIAL No.	: 97097
CALIBRATION REF/EFF dB(A)	: 94.0/93.8	CERTIFIED DATE	: 04-09-2023
SLM READING/ADJUST dB(A)	: 93.8/0.0	EXPIRE DATE	: 03-09-2024
CAL SHEET No.	: CAL-2406-0163-01		

TIME	EQUIVALENT SOUND PRESSURE LEVEL (dB(A))
	05-06-2024
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	71.0
09:00 - 10:00	74.1
10:00 - 11:00	77.6
11:00 - 12:00	63.0
12:00 - 13:00	65.2
13:00 - 14:00	67.2
14:00 - 15:00	66.7
15:00 - 16:00	63.8
16:00 - 17:00	
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 - 00:00	
Leq(8)	71.5
Lmax	105.9
Standard*	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Notification of Ministry of Industry, B.E.2546


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise


MTR-PTTGC4

LOCATION	: Gate House B	MEASUREMENT DATE	: 23-05-2024
SLM MODEL	: SCARLET TECH ST-21D	SERIAL No.	: 820729
SITE OPERATOR	: Miss Wiraya Patchimboon		
CALIBRATOR MODEL	: Cirrus CR:515	SERIAL No.	: 97097
CALIBRATION REF/EFF dB(A)	: 94.0/93.8	CERTIFIED DATE	: 04-09-2023
SLM READING/ADJUST dB(A)	: 93.8/0.0	EXPIRE DATE	: 03-09-2024
CAL SHEET No.	: CAL-2405-0035-01		

TIME	EQUIVALENT SOUND PRESSURE LEVEL (dB(A))
	23-05-2024
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	74.1
10:00 - 11:00	72.0
11:00 - 12:00	71.8
12:00 - 13:00	74.4
13:00 - 14:00	73.0
14:00 - 15:00	72.9
15:00 - 16:00	73.9
16:00 - 17:00	73.2
17:00 - 18:00	73.2
18:00 - 19:00	72.5
19:00 - 20:00	73.4
20:00 - 21:00	73.3
21:00 - 22:00	
22:00 - 23:00	
23:00 - 00:00	
Leq(12)	73.2
Lmax	108.4
Standard*	87 dB(A)
Standard-Max	140 dB(A)

Remark : * Notification of Ministry of Industry, B.E.2546


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise


MTR-PTTGC4

LOCATION	: Pump Station & Metering Station	MEASUREMENT DATE	: 05-06-2024
SLM MODEL	: SCARLET TECH ST-21D	SERIAL No.	: 820723
SITE OPERATOR	: Miss Mareeyanee Hawae		
CALIBRATOR MODEL	: Cirrus CR:515	SERIAL No.	: 97097
CALIBRATION REF/EFF dB(A)	: 94.0/93.8	CERTIFIED DATE	: 04-09-2023
SLM READING/ADJUST dB(A)	: 93.8/0.0	EXPIRE DATE	: 03-09-2024
CAL SHEET No.	: CAL-2406-0163-01		

TIME	EQUIVALENT SOUND PRESSURE LEVEL (dB(A))	
	05-06-2024	
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	83.1	
09:00 - 10:00	83.0	
10:00 - 11:00	83.4	
11:00 - 12:00	83.1	
12:00 - 13:00	84.0	
13:00 - 14:00	83.1	
14:00 - 15:00	84.0	
15:00 - 16:00	83.4	
16:00 - 17:00	83.0	
17:00 - 18:00	84.0	
18:00 - 19:00	83.1	
19:00 - 20:00	83.1	
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 00:00		
Leq(12)	83.4	
Lmax	93.9	
Standard*	87 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Notification of Ministry of Industry, B.E.2546


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise


MTR-PTTGC4

LOCATION	: Truck Loading Station	MEASUREMENT DATE	: 05-06-2024
SLM MODEL	: SCARLET TECH ST-21D	SERIAL No.	: 820722
SITE OPERATOR	: Miss Mareeyanee Hawae		
CALIBRATOR MODEL	: Cirrus CR:515	SERIAL No.	: 97097
CALIBRATION REF/EFF dB(A)	: 94.0/93.8	CERTIFIED DATE	: 04-09-2023
SLM READING/ADJUST dB(A)	: 93.8/0.0	EXPIRE DATE	: 03-09-2024
CAL SHEET No.	: CAL-2406-0163-01		

TIME	EQUIVALENT SOUND PRESSURE LEVEL (dB(A))	
	05-06-2024	
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	71.0	
09:00 - 10:00	74.1	
10:00 - 11:00	77.6	
11:00 - 12:00	63.0	
12:00 - 13:00	65.2	
13:00 - 14:00	67.2	
14:00 - 15:00	66.7	
15:00 - 16:00	63.8	
16:00 - 17:00	70.4	
17:00 - 18:00	70.0	
18:00 - 19:00	65.9	
19:00 - 20:00	65.8	
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 00:00		
Leq(12)	70.7	
Lmax	105.9	
Standard*	87 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Notification of Ministry of Industry, B.E.2546


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team

ภาคผนวก ง.8

ใบรับรองผลการตรวจวัดระดับเสียงที่ลูกจ้างได้รับ
เฉลี่ยตลอดระยะเวลาการทำงาน (TWA)

**บริษัท ซีคอต จำกัด****SECOT CO., LTD.**

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

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

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096/MON1H/Noise Dose
	(Branch 4 : Aromatics I Plant)		
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 08-02-24	CALIBRATOR TYPE	: Cirrus RC:110A
MEASUREMENT LOCATION	: PTTGC4 Plant	SERIAL NO.	: 95168
SITE OPERATOR	: Miss Mareeyanee Hawae	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	AREA/PLANT	SOUND PRESSURE LEVEL (dB(A))		
		TWA (12-hr)	%DOSE	STANDARD *
ID : 26002469	Reformer 1	78.9	37.3	83.0
ID : 26008131	Reformer 1	77.0	24.0	83.0
ID : 26002047	Reformer 2	82.6	86.2	83.0
ID : 26002438	Utility	79.6	43.6	83.0
ID : 26001320	WWT	73.2	10.0	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

- Remark :**
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 - 3.* Notification of Department of Labour Protection and Welfare B.E.2561 (2018).
 4. TWA means Time Weighted Average.

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

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096/MON1H/Noise Dose
	(Branch 4 : Aromatics I Plant)		
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 09-02-24	CALIBRATOR TYPE	: Cirrus RC:110A
MEASUREMENT LOCATION	: PTTGC4 Plant	SERIAL NO.	: 95168
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	AREA/PLANT	SOUND PRESSURE LEVEL (dB(A))		
		TWA (12-hr)	%DOSE	STANDARD *
ID : 26002461	Aromatics 1	68.7	3.5	83.0
ID : 26006412	Aromatics 1	66.4	2.1	83.0
ID : 26002083	Aromatics 2	72.5	8.4	83.0
ID : 26009138	Aromatics 2	76.0	18.9	83.0
ID : 26002468	Aromatics 3	73.4	10.4	83.0
ID : 26006582	Aromatics 3	74.9	14.6	83.0
ID : 26002090	Unit 390	74.3	12.7	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 REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096/MON1H/Noise Dose
	(Aromatics I Plant)		
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 15-03-2024	CALIBRATOR TYPE	: Pulsar Model 22R
MEASUREMENT LOCATION	: PTTGC4 Plant	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	AREA/PLANT	SOUND PRESSURE LEVEL (dB(A))		
		TWA (12-hr)	%DOSE	STANDARD *
ID : 26001395	Reformer 2	80.3	51.1	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 REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096/MON1H/Noise Dose
	(Branch 4 : Aromatics I Plant)		
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 08-02-24	CALIBRATOR TYPE	: Cirrus RC:110A
MEASUREMENT LOCATION	: PTTGC4 Plant	SERIAL NO.	: 95168
SITE OPERATOR	: Miss Mareeyanee Hawae	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	AREA/PLANT	SOUND PRESSURE LEVEL (dB(A))		
		TWA (8-hr)	%DOSE	STANDARD *
ID : 26002469	Reformer 1	80.7	37.3	85.0
ID : 26008131	Reformer 1	78.8	24.0	85.0
ID : 26002047	Reformer 2	84.4	86.2	85.0
ID : 26002438	Utility	81.4	43.6	85.0
ID : 26001320	WWT	75.0	10.0	85.0

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team

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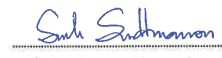
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NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096/MON1H/Noise Dose
	(Branch 4 : Aromatics I Plant)		
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 09-02-24	CALIBRATOR TYPE	: Cirrus RC:110A, Pulsar Model 22R
MEASUREMENT LOCATION	: PTTGC4 Plant	SERIAL NO.	: 95168, 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	AREA/PLANT	SOUND PRESSURE LEVEL (dB(A))		
		TWA (8-hr)	%DOSE	STANDARD *
ID : 26002461	Aromatics 1	70.5	3.5	85.0
ID : 26006412	Aromatics 1	68.2	2.1	85.0
ID : 26002083	Aromatics 2	74.3	8.4	85.0
ID : 26009138	Aromatics 2	77.8	18.9	85.0
ID : 26002468	Aromatics 3	75.2	10.4	85.0
ID : 26006582	Aromatics 3	76.7	14.6	85.0
ID : 26002090	Unit 390	76.1	12.7	85.0
ID : 98003262	Workshop	74.4	8.5	85.0


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team

Remark :

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- 3.* Notification of Department of Labour Protection and Welfare B.E.2561 (2018).
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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REFERENCE NO.	: 224096/MON1H/Noise Dose
	(Aromatics 1 Plant)		
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 15-03-2024	CALIBRATOR TYPE	: Pulsar Model 22R
MEASUREMENT LOCATION	: PTTGC4 Plant	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @ 1kHz

USER NAME	AREA/PLANT	SOUND PRESSURE LEVEL (dB(A))		
		TWA (8-hr)	%DOSE	STANDARD *
ID : 26001395	Reformer 2	82.1	51.1	85.0


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team

Remark :

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

ภาคผนวก ง.9

ใบรับรองผลการตรวจวัดคุณภาพอากาศภายในสถานประกอบการ

คุณภาพอากาศภายในสถานประกอบการแบบติดตั้งกับพื้นที่



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

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0261/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 09/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 14/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

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
Loading Area สถานี 8	09/02/2024	Benzene	NIOSH 1501/GC FID	< 0.02	ND	1
	09:48-13:48	Toluene	NIOSH 1501/GC FID	< 0.02	ND	200
		Total xylene	NIOSH 1501/GC FID	< 0.03	ND	100
		Cyclohexane	NIOSH 1500/GC FID	< 0.01	1.68	300

Analyst By :

Sudaporn S.

(Miss Sudaporn Soonthorn)

Approved By :

Narisa Poowasanpeth

(Miss Narisa Poowasanpeth)

Technical Management Team

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

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

3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).

4. ND = non-detectable.



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SECOT CO., LTD.

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

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

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 1026/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 24/05/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 27/05/2024
		Test Date	: 28/05/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 05/06/2024

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
Loading Area สถานี 8	24/05/2024	Benzene	NIOSH 1501/GC FID	< 0.02	ND	1
	09:45-13:45	Toluene	NIOSH 1501/GC FID	< 0.02	ND	200
		Total xylene	NIOSH 1501/GC FID	< 0.03	ND	100
		Cyclohexane	NIOSH 1500/GC FID	< 0.01	ND	300

Analyst By :

Sudaporn S.

(Miss Sudaporn Soonthorn)

Approved By :

Narisa Poowasanpeth

(Miss Narisa Poowasanpeth)

Technical Management Team

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คุณภาพอากาศภายในสถานประกอบการแบบติดตัวบุคคล



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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

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

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0262/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 08/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 13/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
ID : 26008131	08/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	0.31	1
Area : Reformer 1	08:00-14:00	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
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

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0262/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 08/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 13/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
ID : 26002422	08/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Reformer 2	08:00-14:00	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
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

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0262/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 09/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 13/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26006412	09/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area: Aromatics 1	08:39-12:39	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
ID : 26002063	09/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Aromatics 2	08:44-12:44	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
ID : 26002468	09/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area: Aromatics 3	08:46-12:46	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100



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ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0262/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 08/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 13/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26001320	08/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area: Water treatment	08:00-14:00	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

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Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpeth
(Miss Narisa Poowasanpeth)
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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.	: 0262/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 09/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 13/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26001495	09/02/2024	Cyclohexane	ISO 16200-2/GC FID	< 0.04	ND	300
Area : Cyclohexane	09:33-13:33					

Analyst By: Sudaporn S.
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Approved By: Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
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ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 0262/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 09/02/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueang Rayong , Rayong 21150	Received Date	: 12/02/2024
		Test Date	: 13/02/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 20/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26002080	09/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area: Unit 390	09:20-13:20	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By: Narisa 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	: RND/SECOT Co., Ltd.	Request Service No.	: 0355/67
For	: PTT Global Chemical Public Co.,Ltd. (Branch 8 : Tank Farm Plant)	Sampling Date	: 23/02/2024
Address	: No.11, I-4 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueng Rayong , Rayong Province 21150	Received Date	: 27/02/2024
		Test Date	: 01/03/2024
Tel/Fax	: 0-3897-1000 / -	Report Date	: 05/03/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26002641	23/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Tank Farm Operator	08:05-16:05	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
		Cyclohexane	ISO 16200-2/GC FID	< 0.04	ND	300
ID : 26001550	23/02/2024	Benzene	OSHA 1005/GC FID	< 0.04	0.10	1
Area : Loading area Operator	08:00-16:00	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
		Cyclohexane	ISO 16200-2/GC FID	< 0.04	ND	300

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	: RND/SECOT Co., Ltd.	Request Service No.	: 1027/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 23/05/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 27/05/2024
		Test Date	: 28/05/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 05/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26002351	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Reformer 1	10:11-14:11	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
ID : 26001173	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Reformer 2	10:52-14:52	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

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	: RND/SECOT Co., Ltd.	Request Service No.	: 1027/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 23/05/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 27/05/2024
		Test Date	: 28/05/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 05/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26006412	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Aromatics 1	09:47-13:47	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
ID : 26002448	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Aromatics 2	09:48-13:48	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100
ID : 26009138	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Aromatics 3	10:07-14:07	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

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 : cnvserv@secot.co.th

ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 1027/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 23/05/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Muang Rayong , Rayong 21150	Received Date	: 27/05/2024
		Test Date	: 28/05/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 05/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26002438	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area : Water treatment	10:50-14:50	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
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ANALYSIS/TEST REPORT

Customer	: RND/SECOT Co., Ltd.	Request Service No.	: 1027/67
For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 23/05/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueang Rayong , Rayong 21150	Received Date	: 27/05/2024
		Test Date	: 28/05/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 05/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26002083	23/05/2024	Cyclohexane	ISO 16200-2/GC FID	< 0.04	ND	300
Area : Cyclohexane	10:32-14:32					

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
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Technical Management Team

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ANALYSIS/TEST REPORT

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For	: PTT Global Chemical Public Co., Ltd. (Branch 4 :Aromatics 1 Plant)	Sampling Date	: 23/05/2024
Address	: No.4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueang Rayong , Rayong 21150	Received Date	: 27/05/2024
		Test Date	: 28/05/2024
Tel/Fax	: 0-3897-2370 / 0-3897-4111	Report Date	: 05/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
ID : 26002468	23/05/2024	Benzene	OSHA 1005/GC FID	< 0.04	ND	1
Area: Unit 390	10:30-14:30	Toluene	OSHA 111/GC FID	< 0.04	ND	200
		Total xylene	OSHA 1002/GC FID	< 0.08	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

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

- Remark : 1. Reported analysis refers to submitted sample only.
2. This report shall not be reproduced, except in full, without official approval.
3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).
4. ND = non-detectable.

ภาคผนวก จ

เอกสารแสดงการตรวจเทียบเครื่องมือการตรวจวัดคุณภาพสิ่งแวดล้อม

Sheet No. : CAL-M5006/01/24



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 6 Jan 24

Initial Final Average
Barometric press, Pb 759 759 759 mmHg

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 :

Sheet No. : CAL-PI-LL10-02/2024



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. : LL10-02

Calibrated by : Mr. Montri P.

A Side Calibration

Run No.	ΔPstd (mm H ₂ O)	ΔPs (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(A)
1	15.00	20.50	0.8468	-0.0035
2	15.00	20.50	0.8468	-0.0035
3	15.00	20.00	0.8574	0.0070

C_{P(A),avg} 0.8504

B Side Calibration

Run No.	ΔPstd (mm H ₂ O)	ΔPs (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) | = 0.0035

C_{P(Avg)} = 0.8486

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. : CAL-M5008/01/24



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 5 Jan 24

Initial Final Average
Barometric press, Pb 759 759 759 mmHg

Dry Gas Meter Data

Console No. M50-08

Metering System ID

DGM Number 975906

DGM Model ES-110

Calibrated by : Montri P.

Reference Dry Gas Meter Data

Serial No. 358794

Model S110

Correction factor (Yr) 1.0068

Last Calibration Date 26 Oct 23

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	100.1	102.2	25	25	24	24.5	9.22	0.9844	48.0841
25.0	100.1	100.1	25	25	24	24.5	6.52	1.0041	48.0479
50.0	100.2	102.6	25	25	24	24.5	4.82	0.9775	52.4775
76.0	100.2	100.1	25	25	24	24.5	3.88	0.9998	51.8067
100.0	99.9	99.4	25	25	24	24.5	3.88	1.0019	50.9929
150.0	100.1	98.6	25	25	24	24.5	2.73	1.0073	50.7076
Average								0.9958	50.3527

Approved by :

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.	ΔPstd (mm H ₂ O)	ΔPs (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.	ΔPstd (mm H ₂ O)	ΔPs (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 not used ***

THE LINDE GROUP

Linde

Certificate Of Analysis

Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0484/23 Date of Issue: 22-Feb-2023 Expiry date: 21-Feb-2027
Material Details
Production Order: 90176403 Material Code: 478100-J-62 Cylinder No.: 12360
Gas content: 6.520 M³ (nominal) Filling pressure: 145 bar (g) Valve: CGA 590 BRASS
Cylinder Owner: LINDE Cylinder Material: STEEL Cylinder Size: 47 L

Laboratory Report

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³
Oxygen	8.00%	7.94%	± 2% relative	(1) SG-O-01
In Nitrogen				

Recommend usage condition

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

Storage condition: Keep in well ventilation and secure area.

Comments

Note:

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

Sukanya Parinyasoonorn

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

Page 1 of 1

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PB-002/F004

Iss:K/2, 15 Oct 2021

บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่ใบอนุญาตประกอบกิจการ: 0107537000785

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

บางนา เขตคลองเตย กรุงเทพมหานคร 10540 โทรศัพท์ (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิตก๊าซ: 105 หมู่ 5 ตำบลบางนาเหนือ อำเภอบางนา จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Linde (Thailand) Public Company Limited

P.L.C. Registration no. 0107537000785

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

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

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

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

THE LINDE GROUP

Linde

Certificate Of Analysis

Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0527/23 Date of Issue: 8-Mar-2023 Expiry date: 8-Mar-2026
Material Details
Production Order: 90176406 Material Code: 511600-SK-34 Cylinder No.: A00878SK
Gas content: 5.20 M³ Filling pressure: 137.0 bar Valve: CGA 660 SS
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

Laboratory Report

Analytical Result

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Nitric Oxide	40.0 ppm	39.8 ppm	± 1% relative	(6) I-PB-352	1-Mar & 8-Mar-23
Other NOx impurity		Less than 1.9 ppm			
Carbon Monoxide	40.0 ppm	42.0 ppm	± 1% relative	(6) I-PB-352	1-Mar-2023
In Nitrogen					

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Nitric Oxide	133261SG	25.61 ± 0.13 ppm	6-May-2023
Carbon Monoxide	ND52320	25.03 ± 0.13 ppm	7-Oct-2023
In Nitrogen			

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-NO	28-Feb-2023
FTIR Spectrometers Nicolet iS50	FTIR-CO	25-Feb-2023

Recommend usage condition

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

Storage condition: Keep in well ventilation and secure area.

Comments

When reordering, please quote the material number

Note:

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

Sukanya Parinyasoonorn

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

Page 1 of 1

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PB-002/F006

บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่ใบอนุญาตประกอบกิจการ: 0107537000785

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

บางนา เขตคลองเตย กรุงเทพมหานคร 10540 โทรศัพท์ (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิตก๊าซ: 105 หมู่ 5 ตำบลบางนาเหนือ อำเภอบางนา จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Linde (Thailand) Public Company Limited

P.L.C. Registration no. 0107537000785

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

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

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

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0275/22 Date of Issue: 4-Feb-2022 Expiry date: 4-Feb-2026
Material Details
Production Order: 90169722 Material Code: 631500-SK-44 Cylinder No.: D636195
Gas content: 5.52 M³ Filling pressure: 145.0 bar Valve: CGA 660 SS
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

Laboratory Report

Analytical Result

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Sulphur Dioxide In Nitrogen	20.0 ppm	20.4 ppm	± 1% relative	(6) I-PB-352	28-Jan & 4-Feb-22

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Sulphur Dioxide In Nitrogen	1457545G	25.03 ± 0.25 ppm	18-Aug-2022

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-SO2	27-Jan-2022

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified. The Assay of this Standard has been performed in accordance with the EPA Traceability Protocol EPA-600/R-12/S31 for the Assay and Certification of Gaseous Calibration Standards using procedure G1
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

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บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่จดทะเบียนการค้า 0107537000785

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

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

โรงงานผลิต: 105 หมู่ 5 ตำบลบางพลี อำเภอบางพลี จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Sukanya Parinyasoonporn

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

Linde (Thailand) Public Company Limited

PLC Registration no. 0107537000785

15th Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangkuew

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

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

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

PB-002/F006

Iss:K/2, 15 Oct 2021

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0529/23 Date of Issue: 7-Mar-2023 Expiry date: 7-Mar-2026
Material Details
Production Order: 90176407 Material Code: 436700-SK-34 Cylinder No.: A00818SK
Gas content: 5.23 M³ Filling pressure: 137.0 bar Valve: CGA 660 SS
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

Laboratory Report

Analytical Result

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Nitric Oxide	80.0 ppm	79.5 ppm	± 1% relative	(6) I-PB-352	27-Feb & 7-Mar-23
Other NOx impurity		Less than 3.9 ppm			
Carbon Monoxide In Nitrogen	80.0 ppm	81.1 ppm	± 1% relative	(6) I-PB-352	27-Feb-2023

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Nitric Oxide	2560035G	50.89 ± 0.41 ppm	13-Dec-2024
Carbon Monoxide In Nitrogen	ND46423	50.20 ± 0.26 ppm	4-May-2024

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-NO	27-Jan & 1-Mar-23
FTIR Spectrometers Nicolet iS50	FTIR-CO	22-Feb-2023

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

1. All results expressed in this report are on mole/mole basis, unless otherwise specified. The Assay of this Standard has been performed in accordance with the EPA Traceability Protocol EPA-600/R-12/S31 for the Assay and Certification of Gaseous Calibration Standards using procedure G1
2. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The measurement of this material is traceable to the SI through the reference gas standard which is traceable to Swiss National Standard of Mass or other recognised national metrology institutes.
3. (1) Gas Chromatography, (2) Paramagnetic Oxygen Analyzer, (3) Electrochemical Oxygen Analyzer, (4) Electrochemical Moisture Analyzer, (5) Total Hydrocarbon Analyzer, (6) Other - Specified

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บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่จดทะเบียนการค้า 0107537000785

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

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

โรงงานผลิต: 105 หมู่ 5 ตำบลบางพลี อำเภอบางพลี จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Sukanya Parinyasoonporn

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

Linde (Thailand) Public Company Limited

PLC Registration no. 0107537000785

15th Floor, Bangna Tower A, 2/3 Moo 14, Bangna Trad KM. 6.5 Road, Bangkuew

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

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

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

PB-002/F006

Iss:K/2, 15 Oct 2021

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0610/23 Date of Issue: 21-Mar-2023 Expiry date: 21-Mar-2031
Material Details
Production Order: 90176409 Material Code: 445100-SK-44 Cylinder No.: D869384
Gas content: 5.52 M³ Filling pressure: 145.0 bar Valve: CGA 660 SS
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

Laboratory Report

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Sulphur Dioxide In Nitrogen	80.0 ppm	83.5 ppm	± 1% relative	(6) I-PB-352	14-Mar & 21-Mar-23

Analytical Result

Reference Standard
Sulphur Dioxide In Nitrogen
Reference Standard
Cylinder number: 256240 Concentration: 52.73 ± 0.42 ppm Expiry date: 6-May-2023

Analytical Instruments used in Assay

Instrument/Make/Model: FTIR Spectrometers Nicolet iS50 Analytical Principle: FTIR-SO2 Last Multipoint Calibration: 16-Feb & 17-Mar-23

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

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

Page 1 of 1

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บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่ใบแจ้งหนี้: 0107537000785

วันที่ 15 มกราคม 2567 ถึง 2/3 หมู่ 14 ถนนพหลโยธิน-ศรีนครินทร์ กม. 6.5 ต.บางพลีใหญ่

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

โรงงานผลิต: 105 หมู่ 5 ต.บางพลีใหญ่ อ.บางพลี จ.สมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Sukanya Parinyasoontorn

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

Linde (Thailand) Public Company Limited

P.L.C. Registration No. 0107537000785

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

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

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

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

PB-002/F006

Iss:K/2, 15 Oct 2021

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0483/23 Date of Issue: 22-Feb-2023 Expiry date: 21-Feb-2027
Material Details
Production Order: 90176403 Material Code: 478100-J-62 Cylinder No.: 51108
Gas content: 6.520 M³ (nominal) Filling pressure: 145 bar (g) Valve: CGA 590 BRASS
Cylinder Owner: LINDE Cylinder Material: STEEL Cylinder Size: 47 L

Laboratory Report

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³
Oxygen In Nitrogen	8.00%	7.93%	± 2% relative	(1) SG-O-01

Recommend usage condition

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

Comments

Note:

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

Sukanya Parinyasoontorn

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

Page 1 of 1

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PB-002/F004
Iss:K/2, 15 Oct 2021

บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่ใบแจ้งหนี้: 0107537000785

วันที่ 15 มกราคม 2567 ถึง 2/3 หมู่ 14 ถนนพหลโยธิน-ศรีนครินทร์ กม. 6.5 ต.บางพลีใหญ่

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

โรงงานผลิต: 105 หมู่ 5 ต.บางพลีใหญ่ อ.บางพลี จ.สมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Linde (Thailand) Public Company Limited

P.L.C. Registration No. 0107537000785

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

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

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

Thailand, Tel (66) 38.570-479-93

Fax (66) 38.570-323

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0528/23 Date of Issue: 8-Mar-2023 Expiry date: 8-Mar-2026
Material Details
Production Order: 90176406 Material Code: 511600-SK-34 Cylinder No.: A00722SK
Gas content: 5.20 M³ Filling pressure: 137.0 bar Valve: CGA 660 SS
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

Laboratory Report

Analytical Result

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Nitric Oxide	40.0 ppm	39.6 ppm	± 1% relative	(6) I-PB-352	1-Mar & 8-Mar-23
Other NOx impurity		Less than 1.9 ppm			
Carbon Monoxide	40.0 ppm	41.9 ppm	± 1% relative	(6) I-PB-352	1-Mar-2023
In Nitrogen					

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Nitric Oxide	133261SG	25.61 ± 0.13 ppm	6-May-2023
Carbon Monoxide	ND52320	25.03 ± 0.13 ppm	7-Oct-2023
In Nitrogen			

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-NO	28-Feb-2023
FTIR Spectrometers Nicolet iS50	FTIR-CO	25-Feb-2023

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

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

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

Page 1 of 1

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บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่ใบแจ้งหนี้: 010753700785

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนพหลโยธิน-ลาดพร้าว กม. 6.5 แขวงลาดพร้าว

เขตคลองจั่น กรุงเทพมหานคร 10540 โทรศัพท์ (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 หมู่ 5 ตำบลหนองปรือ อำเภอบางพลี จังหวัดสมุทรปราการ 10540

Linde (Thailand) Public Company Limited Iss:K/2, 15 Oct 2021

P.C. Registration No. 010753700785

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

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

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

PB-002/F006

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

Customer Details

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

Certificate Details

Number: 0741/23 Date of Issue: 29-Mar-2023 Expiry date: 29-Mar-2027
Material Details
Production Order: 90176408 Material Code: 608400-SK-44 Cylinder No.: D519508
Gas content: 5.52 M³ Filling pressure: 145.0 bar Valve: CGA 660 SS
Cylinder Owner: LINDE Cylinder Material: Spectra seal Cylinder Size: 40 L

Laboratory Report

Analytical Result

Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Sulphur Dioxide	40.0 ppm	40.2 ppm	± 1% relative	(6) I-PB-352	22-Mar & 29-Mar-23
In Nitrogen					

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Sulphur Dioxide	256240	52.73 ± 0.42 ppm	6-May-2023
In Nitrogen			

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-SO2	17-Mar-2023

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

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

Page 1 of 1

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บริษัท ลินด์ (ประเทศไทย) จำกัด (มหาชน)

เลขที่ใบแจ้งหนี้: 010753700785

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนพหลโยธิน-ลาดพร้าว กม. 6.5 แขวงลาดพร้าว

เขตคลองจั่น กรุงเทพมหานคร 10540 โทรศัพท์ (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 หมู่ 5 ตำบลหนองปรือ อำเภอบางพลี จังหวัดสมุทรปราการ 10540

โทรศัพท์ (66) 38.570-479-93 โทรสาร (66) 38.570-323

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

Linde (Thailand) Public Company Limited Iss:K/2, 15 Oct 2021

P.C. Registration No. 010753700785

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

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

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

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

PB-002/F006

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

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

Certificate Details					
Number:	0530/23	Date of Issue:	7-Mar-2023	Expiry date:	7-Mar-2026
Material Details					
Production Order:	90176407	Material Code:	436700-SK-34	Cylinder No.:	A009295K
Gas content:	5.23 M ³	Filling pressure:	137.0 bar	Valve:	CGA 660 SS
Cylinder Owner:	LINDE	Cylinder Material:	Spectra seal	Cylinder Size:	40 L

Laboratory Report

Analytical Result					
Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Nitric Oxide	80.0 ppm	79.8 ppm	± 1% relative	(6) I-PB-352	27-Feb & 7-Mar-23
Other NOx impurity		Less than 3.9 ppm			
Carbon Monoxide In Nitrogen	80.0 ppm	81.1 ppm	± 1% relative	(6) I-PB-352	27-Feb-2023

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Nitric Oxide	2560035G	50.89 ± 0.41 ppm	13-Dec-2024
Carbon Monoxide In Nitrogen	ND46423	50.20 ± 0.26 ppm	4-May-2024

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-NO	27-Jan & 1-Mar-23
FTIR Spectrometers Nicolet iS50	FTIR-CO	22-Feb-2023

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

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

Page 1 of 1

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บริษัท สันติ (ประเทศไทย) จำกัด (มหาชน)

รหัสเอกสาร: 0107537000785

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนพหลโยธิน-ลาดพร้าว กม. 6.5 แขวงคลอง

บางพลี เขตอุตสาหกรรม 10540 กรุงเทพมหานคร โทร (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 หมู่ 5 ตำบลพุดใหญ่ อำเภอบางพลี จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Sukanya Parinyasontorn

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

Linde (Thailand) Public Company Limited

P.L.C. Registration No. 0107537000785

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

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

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

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

PB-002/F006

Iss:K/2, 15 Oct 2021

THE LINDE GROUP

Linde

Certificate Of Analysis
Special Gases Mixture

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

Certificate Details					
Number:	0273/22	Date of Issue:	4-Feb-2022	Expiry date:	4-Feb-2030
Material Details					
Production Order:	90169723	Material Code:	445100-SK-44	Cylinder No.:	D636047
Gas content:	5.52 M ³	Filling pressure:	145.0 bar	Valve:	CGA 660 SS
Cylinder Owner:	LINDE	Cylinder Material:	Spectra seal	Cylinder Size:	40 L

Laboratory Report

Analytical Result					
Component	Normal Concentration	Analysis Result ¹	Uncertainty ²	Method of Analysis ³	Assay Date
Sulphur Dioxide In Nitrogen	80.0 ppm	81.0 ppm	± 1% relative	(6) I-PB-352	28-Jan & 4-Feb-22

Reference Standard used in Assay

Reference Standard	Cylinder number	Concentration	Expiry date:
Sulphur Dioxide In Nitrogen	256240	52.73 ± 0.42 ppm	6-May-2023

Analytical Instruments used in Assay

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIR Spectrometers Nicolet iS50	FTIR-SO2	10-Jan-2022

Recommend usage condition

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

Comments

When reordering, please quote the material number

Note:

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

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บริษัท สันติ (ประเทศไทย) จำกัด (มหาชน)

รหัสเอกสาร: 0107537000785

ชั้น 15 อาคารทาวเวอร์ 2/3 หมู่ 14 ถนนพหลโยธิน-ลาดพร้าว กม. 6.5 แขวงคลอง

บางพลี เขตอุตสาหกรรม 10540 กรุงเทพมหานคร โทร (66) 2338-6100 โทรสาร (66) 2338-6333

โรงงานผลิต: 105 หมู่ 5 ตำบลพุดใหญ่ อำเภอบางพลี จังหวัดสมุทรปราการ 24180

โทรศัพท์ (66) 38.570-479-93

โทรสาร (66) 38.570-323

Sukanya Parinyasontorn

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Linde (Thailand) Public Company Limited

P.L.C. Registration No. 0107537000785

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

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

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

PB-002/F006

Iss:K/2, 15 Oct 2021

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

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

Expiration Date: Feb 05, 2027

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 800/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

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

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	50.00 PPM	51.01 PPM	G1	+/- 0.9% NIST Traceable	01/28/2019, 02/05/2019
NITRIC OXIDE	50.00 PPM	50.86 PPM	G1	+/- 0.9% NIST Traceable	01/28/2019, 02/05/2019
SULFUR DIOXIDE	50.00 PPM	50.87 PPM	G1	+/- 1.0% NIST Traceable	01/28/2019, 02/05/2019
CARBON MONOXIDE	0.5000 %	0.5050 %	G1	+/- 0.7% NIST Traceable	01/31/2019
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	13060206	CC401947	4950 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Feb 15, 2019
PRM	12367	APEX1099237	9.82 PPM NITROGEN DIOXIDE/AIR	+/- 2.0%	Jun 02, 2017
NTRM	12010724	KAL004497	50.03 PPM NITRIC OXIDE/NITROGEN	+/- 0.8%	Mar 12, 2024
GMIS	1114201601	CC506710	4.971 PPM NITROGEN DIOXIDE/NITROGEN	+/- 2.0%	Nov 14, 2019
NTRM	14010327	KAL004376	49.08 PPM SULFUR DIOXIDE/NITROGEN	+/- 1.0%	Apr 17, 2024

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

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Siemens Ultramat 6 J3-599 COHIGH	NDIR	Jan 18, 2019
Nicolet 6700 APW1100391 NO	FTIR	Jan 10, 2019
Nicolet 6700 APW1100391 NO2	FTIR	Jan 10, 2019
Nicolet 6700 APW1100391 SO2	FTIR	Jan 10, 2019

Triad Data Available Upon Request
PERMANENT NOTES:PRODUCED IN ACCORDANCE WITH ISO17025 REQUIREMENTS

NOTES:

Gross Weight: 27806.3 grams

Net Weight: 4733.2 grams

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


TESTING CERT No. 3082.05

Approved for Release

Page 1 of 82-401409170-1


SOUND LEVEL METER CALIBRATION
Calibration Location: SECOT

Calibration Date: Feb 14, 24

ACOUSTIC CALIBRATOR

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

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
6	Cirrus	CR161B	G301250	93.7	0.0
9	Cirrus	CR161B	G301331	93.7	0.0
14	Cirrus	CR162B	G300709	93.7	0.0
15	Cirrus	CR162B	G300769	93.7	0.0
20	Cirrus	CR162B	G301014	93.7	0.0
31	Cirrus	CR161B	G302628	93.7	0.0
41	Cirrus	CR162B	G302737	93.7	0.0
45	Cirrus	CR161B	G303385	93.7	0.0

Calibrated by :
Approved by :



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: 23-05-2024

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref. Calibrated (dB)	Eff. Calibrated (dB)
Cirrus	CR:515	97097	1000.00	94	93.8

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
1	SCARLET TECH	ST-21D	820729	93.8	0.0

Calibrated by :

Approved by :



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: 05-06-2024

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref. Calibrated (dB)	Eff. Calibrated (dB)
Cirrus	CR:515	97097	1000.00	94	93.8

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
1	SCARLET TECH	ST-21D	820723	93.8	0.0
2	SCARLET TECH	ST-21D	820722	93.8	0.0

Calibrated by :

Approved by :

CERTIFICATE OF CALIBRATION

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

NoiseMeters

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

Page 1 of 1

Test engineer:
Nigel Smith
Electronically signed:



doseBadge Reader

Instrument

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

Calibration Procedure

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

Date of Calibration: 16 March 2023

Functionality Results

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

Calibration Results

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

Environmental Conditions

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

Notes

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

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**
DATE OF ISSUE **28 April 2023** CERTIFICATE NUMBER **191319**

NoiseMeters

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

Page 1 of 1

Test engineer:
Rebecca Thomas
Electronically signed:



doseBadge Reader

Instrument

Manufacturer: Pulsar Instruments Plc Serial Number: 79781
Model Number: Model 22R Notes:

Calibration Procedure

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

Date of Calibration: 26 April 2023

Functionality Results

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

Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Result	114.00	999.0	0.47
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

No adjustments were made during this calibration.

Environmental Conditions

Pressure: 101.00 kPa
Temperature: 22.4 °C
Humidity: 33.7 %

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%.



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-66/0270

MTC.No.23-66/0270-01

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 : 23 February 2023

Condition of measured item : Normal

Calibration date : 7 March 2023

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 643/65	1-Jun-24	TISTR
Primary Flow Calibrator S/N 119521	MW-0012-21	31-Mar-23	NIMT
Primary Flow Calibrator S/N 119216	MW-0013-21	25-Mar-23	NIMT

Calibrated by : Terasak Panna

(Mr.Terasak Panna)

Approved by :

(Ms.Kirana Luanghirun)

Director

Mechanical Engineering Standards Laboratory

Ref. 2013266022300798001

Issued Date 13 March 2023

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

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-66/0270

2/2

MTC.No.23-66/0270-01

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 (%)
1.5038	1.5112	24.852	1008.50	-0.49	0.86
5.0113	5.0314	24.854	1008.82	-0.40	0.86
10.077	10.058	24.851	1009.71	+0.19	0.96
15.071	15.038	24.900	1010.91	+0.22	0.96
25.077	24.983	24.914	1014.55	+0.38	0.96

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.

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-66/0270

MTC.No.23-66/0270-02

Number of page(s) 2

CALIBRATION CERTIFICATE

Nomenclature : DRYCAL

Manufacturer : Mesa Labs

Serial No.: 160100

Model : Defender 520-L

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

Subdivision : (0.001, 0.01) ml/min

Submitted by : SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,
Bangkok 10800, Thailand.

Received date : 23 February 2023

Condition of measured item : Normal

Calibration date : 8 March 2023

Standard :

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

Calibrated by : Terasak Panna

(Mr.Terasak Panna)

Approved by : Ms.Kirana Luanghirun

(Ms.Kirana Luanghirun)

Director

Mechanical Engineering Standards Laboratory

Ref. 2013266022300798002

Issued Date 13 March 2023

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-66/0270

2/2

MTC.No.23-66/0270-02

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

Ambient condition : Temperature (23 ± 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 (%)
20.138	19.883	24.930	1008.44	+1.28	1.17
51.152	50.908	24.920	1008.44	+0.48	1.02
101.04	100.71	24.897	1008.43	+0.33	1.06
200.25	199.64	24.904	1008.54	+0.31	1.01
401.00	396.85	24.837	1008.80	+1.05	1.00

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

The end of calibration certificate.

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 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 Luanghirun)

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 Soi 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.

Tb.

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ภาคผนวก จ

ใบอนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
จากกรมโรงงานอุตสาหกรรม



ที่ อก ๐๓๑๐(๑)/ ๑๑๐๑๖

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๒๐ กรกฎาคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ชีคอฟ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๗ เมษายน ๒๕๖๖

สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผน
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผน
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๑๔ แผน
ตามหนังสือที่อ้างถึง บริษัท ชีคอฟ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๒๓๙ สถานที่ตั้งเลขที่ ๒๓๙ ถนนวิมลคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ไม่พบข้อบกพร่อง จึงออกใบอนุญาตต่ออายุห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๔ 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

(นายประจักษ์ คำทรัพย์)
ผู้อำนวยการกองส่งเสริมและสนับสนุนโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๕๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๕๓๐ ๖๓๑๒ ต่อ ๒๑๑๕

ไปรษณีย์อิเล็กทรอนิกส์ saraban@dw.mail.go.th



"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"



เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ชีคอฟ จำกัด

เลขทะเบียน ๖-๒๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑๐๑๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย

๑) นายชรรชัย เกียรติกรอุดม

๒) นางสมฤดี เกียรติกรอุดม

๓) นางอารยา ทิพย์รักษ์

๔) นางสาวเชษฐา อินทร์

๕) นางสาวเบรดา สมใจ

๖) นางสาวอรุณดา มาตา

๗) นางสาวลดาวัลย์ วงศ์เจริญ

๘) นางสาวณิชากร เกตุรัตน์

๙) นางสาววันวิสา ภูวทรัพย์ชัย

๑๐) นางสาวศิริวรรณ อิมสง่า

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๒

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๓

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๔

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๕

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๖

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๗

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๘

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๙

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๑๐

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๑๑

3/กข

สิ่งที่ส่งมาด้วย ๒

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ชีคอฟ จำกัด

เลขทะเบียน ๖-๒๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑๐๑๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๔ ราย

๑) นางสาวสุภาพร สุนทร

๒) นางสาวสุภาภรณ์ เทียนเตี้ย

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๔) นายบรรลือ ศิขะยะ

๕) นางสาวเกศรินทร์ วรเดชาวิยา

๖) นายอนันต์ วัฒนินา

๗) นายชิตพล สมประสงค์

๘) นางสาวศศิธร พรหมประเสริฐ

๙) นายศิระนันทน์ ภูวรักษ์

๑๐) นางสาวอริษา คณิราภรณ์

๑๑) นางสาวสิริวรรณ แก้วจิตรงวง

๑๒) นางสาวปัทมวรรณ สุวรรณโรจน์

๑๓) นางสาวกัญญา เจริญเชื้อ

๑๔) นายวิฑูรย์ ประจักษ์

๑๕) นายชอง เสงษ์กุล

๑๖) นางสาวกฤษณา จันทน์

๑๗) นางสาวพรนภา บุตรธรรม

๑๘) นางสาวอริณี อาจพิริย

๑๙) นายอนิชาต ช่างหล่อ

๒๐) นางสาวพัชรา สมานอินทร์

๒๑) นางสาวจุฑาภรณ์ แจ่มเรือน

๒๒) นางสาวจณิสตา กุ้ยอ่อน

๒๓) นายกิตติพงศ์ ทะเกียสุข

๒๔) นายจิรวัฒน์ โคตรคำหาญ

๒๕) นายชเนพล อัครผล

๒๖) นางสาวทิพย์สุภา วรรณการ

๒๗) นายสิทธิชัย สว่างศรีไชย

๒๘) นายพิษณุ สีนามเพ็ง

๒๙) นายรัตนชัย ขอบท่ากิจ

๓๐) นายอนามันต์ ศวันแสง

๓๑) นายณัฐชัย ไชยโคตร

๓๒) นายณัฐดนัย ฤกษ์เฉลิม

๓๓) นายศุภชัย สุขโหม

๓๔) นายอรุณภูมิ เหล็กหมาก

๓๕) นางสาวสุภาวดี บัวแก้ว

๓๖) นางสาวมาลีรัตน์ ฮาแว

๓๗) นางสาววิระยา ปิณฑมูรณ์

๓๘) นางสาวสุภา อิมรัมย์

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๑

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๒

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๓

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๔

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๕

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๖

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๗

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๘

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๐๙

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๑๐

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ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๒๐

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ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๒๒

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๒๓

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๒๔

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ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๓๗

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๓๘

ทะเบียนเลขที่ ๖-๒๓๙-๕-๐๐๓๙

3/กข

สิ่งที่ส่งมาด้วย ๓

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ชีคอฟ จำกัด

เลขทะเบียน ๖-๒๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑๐๑๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๑๔๔ รายการ

น้ำเสีย จำนวน 45 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
2	Arsenic	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ⁽⁴⁾
3	Barium	2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ⁽⁴⁾
4	α-BHC	2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
5	β-BHC	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
6	δ-BHC	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
7	γ-BHC	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾

3/กข

ลำดับที่	สารพิษ	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⁾

17 4,4'-DDE...

ลำดับที่	สารพิษ	วิธีวิเคราะห์
17	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
18	4,4'-DDT	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⁾

25 Formaldehyde...

ลำดับที่	สารพิษ	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⁾

3) Digestion...

ลำดับที่	สารพิษ	วิธีวิเคราะห์
35	Oil & Grease	3) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 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⁾

น้ำเค็ม 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⁾ 3mg/l

13 Benzoic acid...

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⁾ 3mg/l

27 Chlordane...

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⁾ 3mg/l

37 Cyanide...

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⁾ 3mg/l

50 1,1-Dichloroethylene...

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⁾ <i>อิมพลี</i>

2) Liquid-Liquid...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
65	Endrin	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
66	Ethylbenzene	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
67	Fluoranthene	Purge and Trap 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⁾ <i>อิมพลี</i>

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⁾ <i>อิมพลี</i>

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⁾ <i>อิมพลี</i>

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 ₉ -C ₉)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(12,25)
109	TPH (C ₉ -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 ₃₃)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(9,21) วิกิพี

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⁾ วิกิพี

125 Zinc ...

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⁾ วิกิพี

8 Cobalt...

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	Absorption 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⁾ วิกิพี

19 Opacity...

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) 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]
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]

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]

13 2,4-D...

ลำดับที่	สารพิษ	วิธีวิเคราะห์
13	2,4-D	1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,25) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽²⁵⁾
14	DDD	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	สารพิษ	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	สารพิษ	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	สารพิษ	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 ^(1,9,22) 2) Soxhlet Extraction, Gas Chromatographic Method ^(10,22)
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 ^(1,12,28) 2) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(12,28)
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)

คืน 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 ^(7,14) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(7,14) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
7	Atrazine	Ultrasonic Extraction, Gas Chromatographic Method ^(11,26)
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) 

28 p-Chloroaniline...

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) 

40 DDE...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	DDE	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
41	DDT	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
42	Dibenz(a,h)anthracene	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
43	Di-n-butyl phthalate	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
44	1,2-Dichlorobenzene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
45	1,3-Dichlorobenzene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
47	3,3'-Dichlorobenzidine	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
48	1,1-Dichloroethane	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
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)
58	Diethyl phthalate	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
59	2,4-Dimethylphenol	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
60	2,4-Dinitrophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
61	2,4-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
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)
65	Endrin	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
66	Ethylbenzene	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
		2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
		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)
70	Heptachlor epoxide	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
71	Hexachlorobenzene	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
72	Hexachloro-1,3-butadiene	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
73	n-Hexane	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
74	α-HCH	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
75	β-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
76	γ-HCH	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
77	Hexachlorocyclopentadiene	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
		2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
		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)
82	Manganese	2) Digestion, Inductively Coupled Plasma Method ^(7,14)
83	Mercury	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15)
84	Methanol	2) Digestion, Inductively Coupled Plasma Method ^(7,14)
85	Methoxychlor	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽¹⁹⁾
86	Methyl bromide	2) Digestion, Inductively Coupled Plasma Method ^(7,14)
87	Methylene chloride	Ultrasonic Extraction, Direct Aqueous Injection, Gas Chromatographic Method ^(11,21)
88	2-Methylphenol	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22)
89	2-Methylnaphthalene	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
		Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
		Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
		Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
		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 ₉ -C ₁₆)	1) Soxhlet Extraction, Gas Chromatographic Method ^(10,21) 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^(10,26)
109	TPH (C ₁₇ -C ₃₀)	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)

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ภาคผนวก ช

ใบรับรองความสามารถห้องปฏิบัติการและขอบข่ายการรับรอง
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เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
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(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. ๒๕๖๖
(Issue date : 6 December B.E. 2566 (2023))

(นายวีระศักดิ์ เพ็งหล่ง)

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ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



Signed by สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม (สมอ.)
Thai Industrial Standards Institute (TISI)
Date: 2023-12-06T08:49:04.476+07:00

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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)

บริษัท ซีคอต จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)

หมายเลขการรับรองที่
(Accreditation No.)

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
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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (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>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)</p>	<p>- ซีโอดี (Chemical oxygen demand, COD) 100 mg/L ถึง 4 000 mg/L</p>	<p>- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition , 2017, Part 5220 D</p>
<p>2. บริเวณทำงาน (workplace)</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>- 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>

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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 โทโครไซลีน (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)

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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)

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสังแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ambient air)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> คลอโรอีทีน (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-บิวทาไดเอิน (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) อะครอลีน (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>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสังแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> อะคริโลไนไตรล์ (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>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds ,VOCs)</p> <ul style="list-style-type: none"> • 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>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds ,VOCs)</p> <ul style="list-style-type: none"> • 1,2-ไดโบรมโอเอเทน (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-เตตระคลอโรเอเทน (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 ซ

ใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์
สถานะการทำงานเกี่ยวกับระดับเสียง และสารเคมี



แบบ กบ.บญ
ฉ.1/คสค

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการปฏิบัติงานเกี่ยวกับระดับเสียง

ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๔

อนุญาตให้ บริษัท จีคอฟ จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๓๖๐๐๐๙๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนวิมลคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร
เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานเกี่ยวกับความวุ่น แสงสว่าง และเสียง พ.ศ. ๒๕๕๙ ในการตรวจวัดและวิเคราะห์ผลการปฏิบัติงานเกี่ยวกับระดับเสียง ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๕ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการปฏิบัติงานเกี่ยวกับระดับเสียง
ของบริษัท จีคอฟ จำกัด
ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๔

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|-------------------|---------------|
| ๑. นางสาวสุนันทา | ศิริวัฒนานนท์ |
| ๒. นางสาวกนิษฐา | เจริญเชื้อ |
| ๓. นางสาวปัทมวรรณ | สุวรรณวิโรจน์ |
| ๔. นางสาวอลิษา | คณิวรานนท์ |
| ๕. นางสาวชนิดา | หล้าสาย |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากร (เพิ่มเติม)
แนบท้ายใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการปฏิบัติงานเกี่ยวกับระดับเสียง
ของบริษัท จีคอฟ จำกัด
ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๔

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| ๑. นางสาวศลิษา | อินริย์ |
| ๒. นางสาวมาเรียณี | ยาแว |
| ๓. นางสาววิระยา | ปัจฉิมบุรณ์ |

ทั้งนี้ ตั้งแต่วันที่ ๑๓ มกราคม พ.ศ. ๒๕๖๖ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๑๓ มกราคม พ.ศ. ๒๕๖๖

(นายสมพงษ์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กบ.บญ
ฉ.1/คสค

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๐๒๐๑-๐๓-๒๕๖๕-๐๐๔๔

อนุญาตให้ บริษัท จีคอฟ จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๓๖๐๐๐๙๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนวิมลคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร
เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๖๖ ในการเป็นผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๔ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน
และสถานที่เก็บรักษาสารเคมีอันตราย
ของบริษัท ซีคอต จำกัด
ใบอนุญาตเลขที่ ๐๒๐๑-๐๓-๒๕๖๕-๐๐๕๙

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| ๑. นายชิตพล | สมประสงค์ |
| ๒. นายอนิวัฒน์ | พิมวันนา |
| ๓. นายศิวะนันท์ | กุลวงษ์ |
| ๔. นายวิชรกานต์ | ประมาคะเด |
| ๕. นายธนโชติ | ช่างหล่อ |
| ๖. นายกิตติพงศ์ | ตะเกิงสุข |
| ๗. นายจิรวัฒน์ | โคตรคำหาญ |
| ๘. นายศุภกิจ | ดีธัญญา |
| ๙. นางสาววิญญ์ลักษณ์ | โยธา |
| ๑๐. นางสาวพิชญ์สุดา | วรรณการ |
| ๑๑. นางสาวสายธาร | ภูเขียว |
| ๑๒. นายภาคภูมิ | แทนไทย |
| ๑๓. นายธนวุฒิ | ด่วนแสง |
| ๑๔. นายวิรัตน์ชัย | ชอบทำกิจ |

ทั้งนี้ ตั้งแต่วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กบ.บุญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการวัดระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๐๒๐๒-๐๓-๒๕๖๕-๐๐๓๔

อนุญาตให้ บริษัท ซีคอต จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๓๖๖๐๐๙๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนวิมลคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๕๖ ในการเป็นผู้ให้บริการวัดระดับความเข้มข้น
ของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับ
กฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๔ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน
และสถานที่เก็บรักษาสารเคมีอันตราย
ของบริษัท ซีคอต จำกัด
ใบอนุญาตเลขที่ ๐๒๐๒-๐๓-๒๕๖๕-๐๐๓๔

- | | |
|--------------------------|-----------------|
| ๑. นางสาวนริสา | ภูสรวรเพ็ชร์ |
| ๒. นางอารยา | ทิพย์รักษ์ |
| ๓. นางสาวศิริวรรณ | ฉิมสง่า |
| ๔. นางสาวสุธาทิพย์ | เทียนเตี้ย |
| ๕. นางสาวพจนภา | บุศรธรรม |
| ๖. นางสาวอารีย์ | อาจปลิว |
| ๗. นางสาวกฤษณา | จันทร์หม |
| ๘. นางสาวพัชรา | สมานฉันท |
| ๙. นางสาวจณิสตา | กัญอ่อน |
| ๑๐. นางสาวศศิภา | ใจดี |
| ๑๑. นางสาวจุฑารัตน์ | แจ้งเรือน |
| ๑๒. นางสาวณัฐศิริ | เลิศวิวัฒน์ |
| ๑๓. นางสาวสิริอุบลลักษณ์ | อินทระประสิทธิ์ |
| ๑๔. นางสาวสุตาพร | สุนทร |

ทั้งนี้ ตั้งแต่วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน