
ภาคผนวก ข-3

ใบรับรองผลการตรวจวิเคราะห์

ระดับเสียงโดยทั่วไป



Report No. : 2022-5003541-3 / 008-1 (Page 1 of 2) Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Ambient Noise Level

MEASURED DATE : March 7-14, 2022

MEASURED LOCATION : Raw water reservoir

MEASURED BY :

CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Calibration Value Reference: 94.12 dB(A) Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)

SOUND LEVEL METER NO. : Model CR:161B Serial No. G300759

Time	Noise Level [dB(A)]												Standard
	March 7-8, 2022			March 8-9, 2022			March 9-10, 2022			March 10-11, 2022			
	Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90	
09:00-10:00	69.7	100.6	62.8	62.6	70.7	61.7	66.4	77.4	61.7	64.0	81.1	63.0	
10:00-11:00	62.9	64.6	62.4	61.4	65.1	60.7	64.7	73.2	61.3	67.6	80.1	64.6	
11:00-12:00	62.7	64.9	62.1	61.4	65.6	60.6	61.5	63.7	60.7	66.6	69.8	65.4	
12:00-13:00	62.4	64.4	61.8	61.5	75.0	60.6	61.2	64.0	60.5	65.7	67.4	65.1	
13:00-14:00	62.0	64.0	61.2	62.5	64.4	61.6	62.0	64.4	61.3	65.8	67.9	65.0	
14:00-15:00	62.0	64.1	61.4	62.7	68.2	62.0	61.8	64.7	61.0	65.0	66.8	64.3	
15:00-16:00	62.2	63.7	61.7	62.9	65.7	62.2	63.6	84.7	61.4	66.3	69.8	65.4	
16:00-17:00	62.5	64.4	62.0	62.9	71.2	62.2	65.4	68.6	64.7	65.6	68.2	64.6	
17:00-18:00	62.7	68.4	62.1	62.9	74.7	62.1	65.3	67.2	64.8	63.9	69.9	63.0	
18:00-19:00	67.2	75.4	64.0	67.4	71.1	63.7	68.3	71.9	65.5	66.6	70.2	64.0	
19:00-20:00	64.0	67.1	63.2	64.9	65.9	64.4	63.2	65.6	62.5	63.6	64.9	63.2	
20:00-21:00	64.0	74.5	63.1	65.2	66.6	64.7	62.8	64.0	62.5	64.8	66.2	64.0	
21:00-22:00	67.9	80.1	65.5	65.5	67.7	65.0	63.2	64.8	62.7	63.8	65.8	62.2	
22:00-23:00	63.5	74.1	62.6	65.3	66.6	65.0	65.0	66.6	63.4	61.4	63.0	61.0	
23:00-24:00	64.2	70.0	63.4	65.4	66.2	65.1	65.5	66.8	65.1	61.3	63.5	61.0	
24:00-01:00	65.4	66.7	64.8	65.5	66.3	65.1	66.0	67.1	65.6	61.2	64.5	60.7	
01:00-02:00	66.0	67.1	65.6	65.5	66.3	65.1	66.2	77.9	65.7	61.7	69.2	60.2	
02:00-03:00	65.5	66.8	65.0	65.9	67.3	65.2	66.1	67.4	65.7	60.1	62.2	59.8	
03:00-04:00	64.9	66.2	64.4	65.9	66.9	65.6	66.1	66.9	65.8	60.5	66.1	59.5	
04:00-05:00	65.1	67.5	64.5	66.2	67.7	65.7	66.3	67.9	66.0	61.5	66.1	59.7	
05:00-06:00	66.0	67.7	65.6	67.7	70.5	66.9	66.5	69.9	65.9	65.3	72.9	62.1	
06:00-07:00	65.7	67.4	65.2	65.9	69.5	65.2	65.4	68.7	64.9	64.6	70.2	63.6	
07:00-08:00	66.4	78.1	65.3	66.4	69.0	65.5	66.1	69.6	64.9	65.5	67.6	64.4	
08:00-09:00	64.8	78.4	63.4	64.5	66.6	62.6	63.8	67.0	63.2	64.3	71.6	63.1	
Leq 24 hrs	65.1	-	-	64.9	-	-	65.0	-	-	64.5	-	-	70 ^{1/2}
L90	-	-	61.2	-	-	60.6	-	-	60.5	-	-	59.5	-
			65.6			66.9			66.0			65.4	
Lmax	-	100.6	-	-	75.0	-	-	84.7	-	-	81.1	-	115 ^{1/2}

Source : ^{1/} Notification of the National Environment Board, No. 15 B.E. 2540 (1997).

^{2/} Notification of Ministry of Industry regarding the Standard of Nuisance Noise and Noise Level from Factory, B.E. 2548

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t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

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Report No. : 2022-5003541-3 / 008-1 (Page 2 of 2) Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Ambient Noise Level **MEASURED DATE :** March 7-14, 2022
MEASURED LOCATION : Raw water reservoir **MEASURED BY :**
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc
 Calibration Value Reference: 94.12 dB(A) Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B Serial No. G300759

SOUND LEVEL METER NO. : model CR: 161B

Serial No. G300739

Time	Noise Level [dB(A)]									Standard
	March 11-12, 2022			March 12-13, 2022			March 13-14, 2022			
	Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90	
09:00-10:00	62.4	64.4	61.7	62.7	80.0	61.8	57.2	74.3	56.4	
10:00-11:00	62.0	64.8	61.4	63.3	65.2	62.7	57.9	78.3	56.7	
11:00-12:00	62.9	83.0	61.8	62.7	65.4	61.9	56.7	60.2	55.8	
12:00-13:00	63.8	65.5	63.2	62.6	64.6	61.9	55.4	58.2	54.7	
13:00-14:00	64.1	66.3	63.4	62.7	64.4	62.0	55.2	59.3	54.2	
14:00-15:00	63.9	66.8	63.2	62.7	66.4	61.8	55.3	77.4	54.3	
15:00-16:00	63.3	65.8	62.6	62.9	65.6	62.3	55.0	60.2	54.2	
16:00-17:00	63.7	65.3	63.2	63.1	65.2	62.5	55.4	62.0	54.5	
17:00-18:00	63.8	70.0	63.2	63.3	65.0	62.8	55.6	60.9	54.8	
18:00-19:00	66.7	71.4	64.1	66.8	70.9	63.6	64.7	69.4	57.7	
19:00-20:00	62.9	65.0	62.2	63.4	64.9	62.9	56.9	72.0	54.4	
20:00-21:00	62.5	63.8	62.1	63.7	68.3	62.3	55.0	57.9	54.1	
21:00-22:00	61.8	63.7	60.5	62.7	64.9	62.0	55.7	59.1	54.9	
22:00-23:00	60.3	61.9	59.8	63.0	64.8	62.5	58.1	63.1	56.6	
23:00-24:00	60.3	61.9	59.9	63.1	64.3	62.7	57.8	63.6	55.5	
24:00-01:00	60.2	68.7	59.7	63.5	64.9	63.1	56.4	59.1	56.0	
01:00-02:00	60.5	62.8	59.5	63.5	64.9	63.1	56.4	59.2	56.0	
02:00-03:00	59.5	67.1	59.0	63.3	64.6	62.8	56.2	59.3	55.7	
03:00-04:00	59.1	63.3	58.4	62.8	64.1	62.4	56.5	59.7	55.8	
04:00-05:00	60.5	66.6	58.8	63.9	67.1	62.9	61.5	67.2	58.8	
05:00-06:00	64.9	70.8	62.2	64.9	69.8	63.9	64.2	71.5	61.9	
06:00-07:00	64.3	69.3	63.2	61.7	72.2	60.5	62.5	68.5	59.1	
07:00-08:00	65.2	68.2	64.1	60.7	65.8	59.7	65.0	73.8	61.1	
08:00-09:00	63.1	70.0	62.3	58.3	66.3	57.1	63.3	65.4	62.7	
Leq 24 hrs	63.0	-	-	63.2	-	-	59.6	-	-	70 ^{1/2}
L90	-	-	58.4 64.1	-	-	57.1 63.9	-	-	54.1 62.7	-
Lmax	-	83.0	-	-	80.0	-	-	78.3	-	115 ^{1/2}

Source : ^{1/} Notification of the National Environment Board, No. 15 B.E. 2540 (1997).
^{2/} Notification of Ministry of Industry regarding the Standard of Nuisance Noise and Noise Level from Factory, B.E. 2548

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E 243680

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

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Report No. : 2022-5003541-3 / 008-2 (Page 1 of 2) Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Ambient Noise Level
MEASURED DATE : March 7-14, 2022
MEASURED LOCATION : Wat Kokmayom
MEASURED BY :
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc
 Calibration Value Reference: 94.12 dB(A) Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B Serial No. G300763

SOUND LEVEL METER NO. _____			Model CR-101B			Serial No. G350763			Noise Level [dB(A)]				Standard
Time	March 7-8, 2022			March 8-9, 2022			March 9-10, 2022			March 10-11, 2022			
	Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90	
10:00-11:00	49.8	69.2	45.4	53.4	71.2	48.5	50.7	64.7	45.2	49.0	70.7	44.9	
11:00-12:00	50.7	78.9	44.4	52.1	70.9	46.5	52.5	77.8	44.9	48.0	64.7	44.1	
12:00-13:00	50.1	66.1	45.8	52.2	74.1	45.1	54.7	81.0	44.6	50.2	71.9	44.2	
13:00-14:00	49.7	74.6	43.5	49.2	67.6	45.1	47.9	63.5	44.2	50.1	71.8	44.3	
14:00-15:00	47.7	62.9	43.9	48.9	62.3	45.0	51.6	70.2	46.1	52.2	72.7	44.1	
15:00-16:00	50.8	66.6	44.3	51.3	75.1	45.2	51.3	64.3	45.1	52.7	74.8	45.9	
16:00-17:00	73.5	82.3	46.1	76.3	84.9	45.4	74.8	95.2	46.3	73.3	83.4	48.1	
17:00-18:00	57.6	89.9	47.5	51.4	66.5	46.0	53.6	78.1	45.5	52.9	77.8	47.4	
18:00-19:00	55.1	85.2	47.3	52.3	73.7	45.7	54.2	83.2	46.5	50.5	74.6	46.1	
19:00-20:00	54.6	72.3	47.8	60.4	68.9	55.5	53.6	75.4	47.1	57.6	68.2	46.7	
20:00-21:00	55.3	74.1	51.6	60.5	73.9	59.8	55.5	70.6	51.6	56.7	70.9	51.9	
21:00-22:00	67.9	78.4	50.2	59.2	70.1	49.2	56.2	68.2	52.4	54.6	71.8	53.2	
22:00-23:00	58.4	70.2	53.4	56.7	74.4	50.5	62.4	69.7	52.3	57.4	72.7	52.5	
23:00-24:00	56.7	76.4	48.5	51.1	57.7	49.1	64.0	65.2	62.7	53.1	67.7	52.1	
24:00-01:00	49.9	72.8	45.7	55.9	60.0	49.2	62.8	65.1	48.7	52.7	57.7	51.6	
01:00-02:00	52.6	57.4	45.8	57.5	66.4	50.4	65.1	70.9	48.0	52.8	59.2	51.3	
02:00-03:00	53.3	64.2	51.9	56.3	60.9	55.2	63.6	71.4	47.6	58.9	69.1	47.0	
03:00-04:00	56.9	58.5	56.5	53.9	58.2	51.7	68.8	73.1	48.3	60.2	78.9	46.1	
04:00-05:00	58.3	74.1	50.0	60.1	69.8	49.8	60.0	72.8	51.6	62.9	72.3	53.7	
05:00-06:00	58.6	74.1	55.8	57.5	70.0	53.0	61.9	75.4	59.0	63.6	67.9	61.9	
06:00-07:00	58.4	70.2	51.3	55.9	73.2	49.1	60.1	75.4	50.7	57.1	75.7	49.5	
07:00-08:00	57.7	70.2	52.5	56.5	69.0	51.3	55.9	69.0	50.5	55.3	72.4	49.8	
08:00-09:00	54.1	72.4	50.2	51.3	67.2	46.5	51.2	68.1	46.2	51.9	71.1	46.7	
09:00-10:00	53.5	75.1	49.3	51.2	69.2	45.8	49.3	67.7	45.4	50.1	70.7	45.3	
Leq 24 hrs	61.7	-	-	63.4	-	-	63.7	-	-	61.3	-	-	70 ^{1/2}
L90	-	-	43.5	-	-	45.0	-	-	44.2	-	-	44.1	-
			56.5			59.8			58.2			61.9	
Lmax	-	89.9	-	-	84.9	-	-	95.2	-	-	83.4	-	115 ^{1/2}

Source: ^{1/} Notification of the National Environment Board, No. 15 B.E. 2540 (1997).
^{2/} Notification of Ministry of Industry regarding the Standard of Nuisance Noise and Noise Level from Factory, B.E. 2548

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 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com



Report No. : 2022-5003541-3 / 008-2 (Page 2 of 2) Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Ambient Noise Level
MEASURED DATE : March 7-14, 2022
MEASURED LOCATION : Wat Kokmayom
MEASURED BY :
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc
 Calibration Value Reference: 94.12 dB(A) Pre Cal. : 93.7 dB(A), Post Cal. : 93.7 dB(A)
SOUND LEVEL METER NO. : Model CR:161B Serial No. G300763

NOISE LEVEL METER NO. _____ MODEL CR-101D Serial No. 0000700										
Time	Noise Level [dB(A)]									Standard
	March 11-12, 2022			March 12-13, 2022			March 13-14, 2022			
	Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90	
10:00-11:00	55.0	78.8	44.6	51.2	74.1	41.6	52.1	70.1	44.2	
11:00-12:00	49.3	72.2	44.3	47.2	66.0	41.1	50.3	73.1	43.0	
12:00-13:00	48.7	67.9	43.7	50.9	70.0	41.1	50.3	66.9	43.8	
13:00-14:00	50.2	75.2	44.0	48.8	67.6	41.7	52.3	78.1	43.0	
14:00-15:00	47.9	65.5	43.4	54.0	73.5	41.0	53.3	73.9	43.3	
15:00-16:00	49.7	68.5	43.0	49.4	72.8	41.0	54.2	77.2	42.8	
16:00-17:00	73.2	81.7	45.1	60.0	87.3	42.5	73.9	94.2	43.8	
17:00-18:00	51.5	73.8	45.5	51.4	74.9	44.4	51.5	84.1	44.0	
18:00-19:00	50.6	71.1	45.9	53.1	77.8	44.7	53.0	75.4	44.5	
19:00-20:00	52.9	70.6	47.4	55.2	75.9	47.3	51.6	70.3	47.0	
20:00-21:00	54.5	70.9	48.0	56.4	88.4	47.4	54.1	76.9	52.0	
21:00-22:00	56.7	75.2	50.5	56.3	67.6	53.1	53.6	65.2	51.2	
22:00-23:00	51.7	59.1	50.5	55.4	66.6	53.5	53.5	63.5	52.1	
23:00-24:00	54.1	58.7	47.5	55.3	62.3	53.4	58.7	73.7	47.8	
24:00-01:00	57.5	62.4	54.7	58.3	64.3	56.8	56.6	71.8	44.6	
01:00-02:00	57.5	69.8	55.5	48.0	61.9	44.4	54.0	63.2	45.3	
02:00-03:00	58.6	67.8	55.7	54.2	67.7	50.2	56.4	61.9	54.0	
03:00-04:00	55.0	62.9	48.4	55.8	64.9	54.8	59.8	64.8	56.8	
04:00-05:00	58.5	71.4	52.9	60.1	71.9	55.5	60.5	72.4	56.2	
05:00-06:00	57.4	66.1	53.6	60.5	69.7	56.3	58.9	66.0	55.5	
06:00-07:00	54.1	70.9	48.4	56.1	78.1	47.1	55.2	70.3	50.5	
07:00-08:00	53.5	71.7	48.1	52.0	72.7	45.7	55.8	72.2	50.5	
08:00-09:00	53.1	73.4	44.9	54.4	77.3	45.5	55.4	75.5	47.1	
09:00-10:00	49.1	69.8	42.8	55.4	82.6	45.2	53.4	74.7	48.3	
Leq 24 hrs	60.6	-	-	55.6	-	-	61.3	-	-	70 ^{1/2}
L90	-	-	42.8 - 55.7	-	-	41.0 - 56.8	-	-	42.8 - 56.8	-
Lmax	-	81.7	-	-	88.4	-	-	94.2	-	115 ^{1/2}

Source: ^{1/} Notification of the National Environment Board, No. 15 B.E. 2540 (1997).
^{2/} Notification of Ministry of Industry regarding the Standard of Nuisance Noise and Noise Level from Factory, B.E. 2548

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 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

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ภาคผนวก ข-4

ใบรับรองผลการตรวจวิเคราะห์

ระดับเสียงดังในสถานที่ทำงาน



Report No. : 2022-5003541-3 / 003-1 (Page 1 of 3)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 15, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase I
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results								Standard ^{1/2/}
Stations	No.1		No.2		No.3		No.4		
	De-NOx CTG#1		De-NOx CTG#2		Gas Turbine Generator #1		Gas Turbine Generator #2		
Measurement Date	15/03/2022		15/03/2022		15/03/2022		15/03/2022		
Measurement Time	08:35-16:35		09:00-17:00		08:30-16:30		08:52-16:52		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G080132		G078502		G078509		G080148		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	84.9	96.1	82.4	85.8	79.5	84.2	83.2	90.1	
2 nd hour	84.9	95.5	82.4	84.8	79.2	80.9	82.9	88.5	
3 rd hour	84.9	95.8	82.3	85.1	79.6	80.7	82.8	89.0	
4 th hour	85.2	96.6	82.3	84.2	79.5	80.4	83.1	89.2	
5 th hour	84.6	95.5	82.0	90.6	79.7	80.4	82.8	90.6	
6 th hour	84.4	93.9	82.0	85.1	79.8	80.8	82.8	91.3	
7 th hour	84.4	94.6	82.0	84.7	79.9	80.7	83.0	90.8	
8 th hour	83.9	95.8	82.2	84.3	80.0	82.2	83.1	90.1	
Leq-8 hr	84.7	-	82.2	-	79.7	-	83.0	-	≥85
Lmax	-	96.6	-	90.6	-	84.2	-	91.3	≥140

- Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5003541-3 / 003-1 (Page 2 of 3)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 15, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase I
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results								Standard ^{1/2/}
Stations	No.5		No.6		No.7		No.8		
	Air Compressor		Oil Cooler STG#1		Cooling Tower		Chemical Feed Pump		
Measurement Date	15/03/2022		15/03/2022		15/03/2022		15/03/2022		
Measurement Time	08:55-16:55		08:22-16:22		08:04-16:04		08:25-16:25		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G079772		G068723		G078417		G078771		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	83.0	91.7	81.0	83.7	83.1	84.6	81.0	85.1	
2 nd hour	83.0	90.9	81.0	83.1	82.7	84.4	81.3	83.4	
3 rd hour	82.8	90.6	80.7	82.3	82.4	83.9	80.5	81.5	
4 th hour	82.7	90.6	80.7	82.7	82.1	83.1	82.1	84.8	
5 th hour	82.7	92.9	80.6	82.3	81.8	82.8	82.3	83.2	
6 th hour	82.9	94.0	80.5	83.2	81.9	83.8	82.2	85.3	
7 th hour	82.8	94.6	80.3	83.4	81.7	82.5	82.2	84.0	
8 th hour	82.8	93.8	80.3	83.3	81.7	83.2	82.2	83.0	
Leq-8 hr	82.8	-	80.6	-	82.2	-	81.8	-	≥85
Lmax	-	94.6	-	83.7	-	84.6	-	85.3	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5003541-3 / 003-1 (Page 3 of 3)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 15, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase I
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results						Standard ^{1,2/}
Stations	No.9		No.10		No.11		
	Gas Compressor		Chiller Room		Water Plant		
Measurement Date	15/03/2022		15/03/2022		15/03/2022		
Measurement Time	08:08-16:08		08:47-16:47		08:15-16:15		
Sound Level Meter Model	CR:161B		NL-21		NL-21		
Sound Level Meter Serial No.	G078054		00922234		00965939		
Pre Cal (dB(A))	93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]						
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	83.5	86.7	79.5	80.2	82.8	89.9	
2 nd hour	82.9	85.2	79.4	79.9	82.6	90.0	
3 rd hour	82.7	83.6	79.3	79.7	82.2	88.4	
4 th hour	82.7	84.0	79.3	79.8	82.3	91.8	
5 th hour	82.6	83.5	79.2	79.7	82.2	89.6	
6 th hour	82.5	83.4	79.4	79.8	82.1	94.5	
7 th hour	82.5	83.4	79.5	80.5	82.1	89.9	
8 th hour	82.4	83.4	79.5	79.8	81.8	88.7	
Leq-8 hr	82.7	-	79.4	-	82.3	-	>85
Lmax	-	86.7	-	80.5	-	94.5	>140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

Operational Supports Manager

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Report No. : 2022-5003541-3 / 003-2 (Page 1 of 2)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 16, 2022

MEASUREMENT LOCATION : Rojana Power Plant 1, Phase II
Ayutthaya Province

CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results								Standard ^{1/2/}
Stations	No.1		No.2		No.3		No.4		
	De-NOx CTG#3		Chiller Room		Air Compressor		Chemical Feed Pump		
Measurement Date	16/03/2022		16/03/2022		16/03/2022		16/03/2022		
Measurement Time	08:00-16:00		07:00-15:00		08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G079772		G078509		G078502		G078054		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	83.7	84.7	83.6	87.0	76.0	94.0	78.3	79.7	
2 nd hour	83.7	92.1	82.4	86.5	78.3	95.0	79.4	82.2	
3 rd hour	83.9	85.2	82.5	83.6	78.4	95.2	79.0	80.8	
4 th hour	84.1	85.1	82.7	84.2	78.4	94.5	78.6	80.9	
5 th hour	84.0	85.1	83.0	84.1	78.6	94.4	78.2	80.0	
6 th hour	83.9	85.1	82.4	84.0	78.5	93.4	78.5	79.8	
7 th hour	83.6	84.9	81.4	82.6	78.2	94.6	79.0	80.7	
8 th hour	84.2	85.3	81.7	83.4	78.5	95.4	79.9	81.9	
Leq-8 hr	83.9	-	82.5	-	78.2	-	78.9	-	≥85
Lmax	-	92.1	-	87.0	-	95.4	-	82.2	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).

^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

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Report No. : 2022-5003541-3 / 003-2 (Page 2 of 2)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 16, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase II
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results						Standard ^{1/,2/}
Stations	No.5		No.6		No.7		
	Cooling Tower		Water Plant		Gas Turbine Generator #3		
Measurement Date	16/03/2022		16/03/2022		16/03/2022		
Measurement Time	08:00-16:00		08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G080132		G078417		G080148		
Pre Cal (dB(A))	93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]						
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	78.7	86.3	76.5	81.3	81.2	83.9	
2 nd hour	81.7	86.6	79.8	85.8	81.1	84.8	
3 rd hour	82.5	86.9	78.5	82.1	81.0	83.4	
4 th hour	82.7	87.4	78.4	81.4	80.8	82.7	
5 th hour	82.7	87.5	78.2	81.1	80.8	82.8	
6 th hour	82.7	87.1	78.3	81.5	80.7	82.8	
7 th hour	82.6	86.2	78.4	81.6	80.3	82.6	
8 th hour	82.6	86.6	78.9	84.4	80.2	83.6	
Leq-8 hr	82.2	-	78.5	-	80.8	-	≥85
Lmax	-	87.5	-	85.8	-	84.8	≥140

- Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

Operational Supports Manager

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Report No. : 2022-5003541-3 / 003-3 (Page 1 of 2)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 16-17, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase III
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results								Standard ^{1/2/}
Stations	No.1		No.2		No.3		No.4		
	Cooling Tower		De-NOx Pump CTG #4		Chiller Room		Air Compressor		
Measurement Date	16/03/2022		17/03/2022		17/03/2022		17/03/2022		
Measurement Time	08:00-16:00		08:00-16:00		08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G078771		G078054		G079772		G078771		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	80.1	81.4	82.4	83.7	81.8	82.3	74.9	89.8	
2 nd hour	80.0	81.9	81.3	81.9	83.5	86.0	75.0	90.7	
3 rd hour	80.7	84.3	81.5	82.2	85.3	86.1	75.8	90.8	
4 th hour	81.5	82.3	81.6	82.4	84.9	85.9	75.7	89.9	
5 th hour	81.6	82.6	81.4	82.2	81.9	82.6	76.2	89.3	
6 th hour	81.7	82.6	81.1	82.7	82.0	82.7	76.1	89.8	
7 th hour	81.6	91.1	81.2	81.9	82.0	82.8	76.1	90.7	
8 th hour	81.3	82.6	81.1	81.8	81.9	82.5	75.9	90.6	
Leq-8 hr	81.1	-	81.5	-	83.1	-	75.7	-	>85
Lmax	-	91.1	-	83.7	-	86.1	-	90.8	>140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5003541-3 / 003-3 (Page 2 of 2)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 16-17, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase III
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results								Standard ^{1,2/}
Stations	No.5		No.6		No.7		No.8		
	Chemical Feed Pump		Water Plant		Gas Compressor		Gas Turbine Generator #4		
Measurement Date	16/03/2022		17/03/2022		17/03/2022		17/03/2022		
Measurement Time	08:00-16:00		08:00-16:00		08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G068723		G078509		G080132		G078502		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	81.3	82.1	78.3	80.4	81.9	83.1	77.0	87.4	
2 nd hour	81.2	86.9	78.0	80.8	82.6	83.2	78.2	88.6	
3 rd hour	81.0	83.8	77.6	80.6	82.5	83.0	78.2	88.8	
4 th hour	80.8	81.4	76.3	80.5	82.3	82.8	78.2	88.9	
5 th hour	80.8	81.6	77.2	80.6	81.9	82.5	77.9	87.8	
6 th hour	80.9	81.6	78.0	80.3	81.7	82.1	77.6	87.2	
7 th hour	80.8	83.8	78.1	80.5	81.7	82.1	77.9	88.2	
8 th hour	80.7	81.4	77.9	80.0	81.5	81.9	78.0	88.6	
Leq-8 hr	80.9	-	77.7	-	82.0	-	77.9	-	≥85
Lmax	-	86.9	-	80.8	-	83.2	-	88.9	≥140

- Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

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Report No. : 2022-5003541-3 / 003-4 (Page 1 of 2) Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 17-18, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase IV
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results								Standard ^{1,2)}
Stations	No.1		No.2		No.3		No.4		
	De-NOx Pump CTG #5		Gas Turbine Generator #5		Air Compressor STG 2		Oil Cooler STG#2		
Measurement Date	17/03/2022		18/03/2022		17/03/2022		18/03/2022		
Measurement Time	08:00-16:00		08:00-16:00		08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G300763		G300763		G078417		G300763		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	82.9	83.9	76.9	77.9	83.5	88.3	83.8	86.2	
2 nd hour	82.9	83.7	77.0	80.4	83.4	88.1	83.5	86.4	
3 rd hour	82.9	83.9	77.0	84.7	83.4	88.2	83.7	88.6	
4 th hour	82.6	83.6	76.7	83.6	83.3	88.3	83.6	86.3	
5 th hour	82.2	83.4	77.0	78.0	83.1	87.8	83.3	85.2	
6 th hour	82.0	83.2	77.0	78.7	82.9	87.4	83.5	86.6	
7 th hour	81.9	82.7	76.8	79.8	82.9	88.0	83.9	86.3	
8 th hour	81.9	83.9	76.7	79.9	82.9	87.9	83.6	86.2	
Leq-8 hr	82.4	-	76.9	-	83.2	-	83.6	-	>85
Lmax	-	83.9	-	84.7	-	88.3	-	88.6	>140

Sources : ¹⁾ Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
²⁾ Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

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Report No. : 2022-5003541-3 / 003-4 (Page 2 of 2)

Issued date : March 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : March 17-18, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase IV
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.88373, Cirrus Research plc

Item	Results				Standard ^{1/2/}
Stations	No.5		No.6		
	Chemical Feed Pump		Cooling Tower		
Measurement Date	18/03/2022		17/03/2022		
Measurement Time	08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		
Sound Level Meter Serial No.	G300763		G080148		
Pre Cal (dB(A))	93.7		93.7		
Post Cal (dB(A))	93.7		93.7		
Measurement Period	Sound Level [dB(A)]				
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	79.5	86.1	83.1	84.5	
2 nd hour	79.6	86.7	83.1	84.2	
3 rd hour	79.4	86.4	83.2	84.6	
4 th hour	79.3	85.6	83.1	84.9	
5 th hour	79.3	85.7	82.8	84.6	
6 th hour	79.1	85.7	82.6	84.1	
7 th hour	78.8	86.4	82.6	83.9	
8 th hour	79.1	86.9	82.4	83.9	
Leq-8 hr	79.3	-	82.9	-	≥85
Lmax	-	86.9	-	84.9	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

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Report No. : 2022-5004044-3 / 002-1 (Page 1 of 3)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : June 21, 2022

**MEASUREMENT LOCATION : Rojana Power Plant 1, Phase I
Ayutthaya Province**

CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results								Standard ^{1/,2/}
Stations	No.1		No.2		No.3		No.4		
	De-NOx CTG#1		De-NOx CTG#2		Gas Turbine Generator #1		Gas Turbine Generator #2		
Measurement Date	21/06/2022		21/06/2022		21/06/2022		21/06/2022		
Measurement Time	08:12-16:12		08:20-16:20		08:25-16:25		08:23-16:23		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G080148		G079772		G300759		G080132		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	82.6	83.6	81.3	87.3	83.3	93.8	84.0	93.4	
2 nd hour	82.7	83.9	80.9	83.6	83.2	93.9	83.8	93.5	
3 rd hour	82.0	83.1	82.7	89.8	82.2	92.7	82.9	92.8	
4 th hour	81.6	83.2	83.5	85.9	82.1	92.3	82.8	92.3	
5 th hour	81.6	84.3	83.3	87.2	82.2	92.7	82.9	92.4	
6 th hour	81.5	82.6	83.3	90.1	81.9	92.2	82.6	92.4	
7 th hour	81.6	82.6	83.1	85.3	81.9	91.9	82.5	92.1	
8 th hour	81.7	83.4	83.1	85.3	81.9	92.2	82.5	92.0	
Leq-8 hr	81.9	-	82.7	-	82.4	-	83.0	-	>85
Lmax	-	84.3	-	90.1	-	93.9	-	93.5	>140

- Sources :**
- ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
 - ^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5004044-3 / 002-1 (Page 2 of 3)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : June 21, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase I
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results								Standard ^{1/2/}
Stations	No.5		No.6		No.7		No.8		
	Air Compressor		Oil Cooler STG#1		Cooling Tower		Chemical Feed Pump		
Measurement Date	21/06/2022		21/06/2022		21/06/2022		21/06/2022		
Measurement Time	08:16-16:16		09:02-17:02		09:00-17:00		09:00-17:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G080136		G078421		G078771		G078502		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	84.2	97.1	81.1	84.1	83.8	84.6	80.9	84.3	
2 nd hour	85.3	98.6	81.1	84.1	84.4	85.4	80.4	82.1	
3 rd hour	83.7	97.0	80.8	84.1	84.5	85.6	80.1	82.2	
4 th hour	83.5	96.2	80.8	83.4	84.5	85.2	80.1	88.6	
5 th hour	83.2	97.3	80.8	83.9	84.4	85.2	79.8	81.8	
6 th hour	83.0	97.0	80.8	83.6	84.4	85.2	79.8	81.7	
7 th hour	83.0	95.9	80.8	83.7	84.4	85.0	79.8	81.5	
8 th hour	83.2	97.2	80.7	83.5	84.5	93.6	79.9	84.9	
Leq-8 hr	83.7	-	80.9	-	84.4	-	80.1	-	≥85
Lmax	-	98.6	-	84.1	-	93.6	-	88.6	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

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Report No. : 2022-5004044-3 / 002-1 (Page 3 of 3)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace **MEASUREMENT DATE :** June 21, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase I
 Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results						Standard ^{1/,2/}
Stations	No.9	No.10		No.11			
	Gas Compressor	Chiller Room		Water Plant			
Measurement Date	21/06/2022	21/06/2022		21/06/2022			
Measurement Time	08:55-16:55	08:25-16:25		08:50-16:50			
Sound Level Meter Model	CR:161B	CR:161B		CR:161B			
Sound Level Meter Serial No.	G080146	G080140		G080140			
Pre Cal (dB(A))	93.7	93.7		93.7			
Post Cal (dB(A))	93.7	93.7		93.7			
Measurement Period	Sound Level [dB(A)]						
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr		Lmax
1 st hour	83.2	91.9	81.6	82.4	81.2	89.6	
2 nd hour	82.5	83.2	81.9	83.0	81.0	89.2	
3 rd hour	82.4	83.2	81.7	82.6	80.9	87.8	
4 th hour	82.5	83.2	80.9	81.8	80.7	89.2	
5 th hour	82.4	83.5	80.7	81.6	80.8	89.2	
6 th hour	82.3	83.0	80.5	81.4	80.8	88.4	
7 th hour	82.2	82.9	79.7	80.7	80.9	89.5	
8 th hour	82.3	82.9	78.6	79.7	81.0	88.1	
Leq-8 hr	82.5	-	80.8	-	80.9	-	≥85
Lmax	-	91.9	-	83.0	-	89.6	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5004044-3 / 002-2 (Page 1 of 2)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : June 22, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase II
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results								Standard ^{1/,2/}
Stations	No.1		No.2		No.3		No.4		
	De-NOx CTG#3		Chiller Room		Air Compressor		Chemical Feed Pump		
Measurement Date	22/06/2022		22/06/2022		22/06/2022		22/06/2022		
Measurement Time	08:29-16:29		08:44-16:44		08:41-16:41		08:30-16:30		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G080146		G079772		G080132		G078771		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	83.4	84.3	82.4	87.6	80.9	97.0	79.3	84.4	
2 nd hour	83.3	84.7	82.0	85.1	81.0	97.0	80.5	86.3	
3 rd hour	82.8	83.8	81.3	87.8	79.7	97.0	79.1	83.3	
4 th hour	82.8	83.8	83.2	85.2	77.3	96.9	78.6	82.9	
5 th hour	82.6	83.4	83.5	85.9	78.2	96.4	78.5	82.5	
6 th hour	82.6	83.5	84.7	85.9	77.0	94.9	78.4	82.4	
7 th hour	82.6	83.3	84.8	87.8	77.0	95.9	78.2	82.9	
8 th hour	82.6	83.6	86.4	87.9	76.9	96.3	77.9	82.4	
Leq-8 hr	82.8	-	83.8	-	78.8	-	78.9	-	≥85
Lmax	-	84.7	-	87.9	-	97.0	-	86.3	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5004044-3 / 002-2 (Page 2 of 2)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : June 22, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase II
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results						Standard ^{1/2/}
Stations	No.5		No.6		No.7		
	Cooling Tower		Water Plant		Gas Turbine Generator #3		
Measurement Date	22/06/2022		22/06/2022		22/06/2022		
Measurement Time	08:35-16:35		08:35-16:35		08:24-16:24		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G078771		G080140		G078502		
Pre Cal (dB(A))	93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]						
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	84.7	91.2	78.4	81.4	82.2	87.7	
2 nd hour	85.1	89.6	80.0	85.7	82.2	85.4	
3 rd hour	84.3	88.9	77.8	80.6	81.9	83.8	
4 th hour	81.7	89.1	75.4	80.0	81.5	83.6	
5 th hour	81.5	88.8	75.4	79.6	81.2	83.8	
6 th hour	81.4	87.9	75.3	79.2	81.0	84.6	
7 th hour	81.3	87.0	75.3	78.9	80.8	83.2	
8 th hour	81.0	87.3	75.3	78.6	81.1	82.6	
Leq-8 hr	83.0	-	77.0	-	81.5	-	≥85
Lmax	-	91.2	-	85.7	-	87.7	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).



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Report No. : 2022-5004044-3 / 002-3 (Page 1 of 2)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace

MEASUREMENT DATE : June 23, 2022

MEASUREMENT LOCATION : Rojana Power Plant 1, Phase III

Ayutthaya Province

CALIBRATION DATA

: Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results								Standard ^{1/,2/}
Stations	No.1		No.2		No.3		No.4		
	Cooling Tower		De-NOx Pump CTG #4		Chiller Room		Air Compressor		
Measurement Date	23/06/2022		23/06/2022		23/06/2022		23/06/2022		
Measurement Time	08:00-16:00		08:00-16:00		08:50-16:50		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G080140		G080140		G300759		G080132		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	83.9	97.0	76.4	85.4	85.1	88.0	85.7	96.1	
2 nd hour	81.6	82.4	74.0	86.1	83.4	84.3	83.2	94.7	
3 rd hour	81.6	82.2	74.6	86.8	81.9	84.1	83.0	94.7	
4 th hour	79.5	82.8	74.1	87.3	80.3	81.1	81.9	93.5	
5 th hour	78.2	79.0	74.0	86.7	80.8	81.5	81.5	93.1	
6 th hour	77.9	78.8	73.7	86.1	80.9	81.6	81.3	93.8	
7 th hour	78.2	78.9	73.9	85.7	80.4	81.4	81.5	94.7	
8 th hour	78.4	79.2	73.9	86.9	77.7	86.9	81.6	93.8	
Leq-8 hr	80.4	-	74.4	-	81.8	-	82.7	-	≥85
Lmax	-	97.0	-	87.3	-	88.0	-	96.1	≥140

- Sources :**
- ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
 - ^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006), and B.E. 2559 dated October 17, B.E. 2559 (2016).



Operational Supports Manager

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Report No. : 2022-5004044-3 / 002-3 (Page 2 of 2)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : June 23, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase III
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results								Standard ^{1,2//}
Stations	No.5		No.6		No.7		No.8		
	Chemical Feed Pump		Water Plant		Gas Compressor		Gas Turbine Generator #4		
	Measurement Date		23/06/2022		23/06/2022		23/06/2022		
	Measurement Time		08:00-16:00		08:00-16:00		08:00-16:00		
	Sound Level Meter Model		CR:161B		CR:161B		CR:161B		
	Sound Level Meter Serial No.		G079772		G078502		G080148		
	Pre Cal (dB(A))		93.7		93.7		93.7		
	Post Cal (dB(A))		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	84.5	97.9	78.5	81.2	85.3	93.7	82.1	84.5	
2 nd hour	81.3	82.1	79.3	82.2	84.0	85.5	82.3	83.6	
3 rd hour	82.1	85.5	79.8	82.3	83.7	84.2	82.8	83.9	
4 th hour	82.3	86.8	79.4	82.0	83.4	84.1	82.9	84.0	
5 th hour	82.3	83.6	79.5	81.7	83.4	83.9	82.8	84.2	
6 th hour	82.1	83.6	79.2	81.3	83.0	83.6	82.8	84.1	
7 th hour	82.0	83.4	79.4	81.6	83.1	83.6	82.7	83.8	
8 th hour	81.8	82.9	79.1	82.1	83.1	83.7	82.8	83.9	
Leq-8 hr	82.4	-	79.3	-	83.7	-	82.7	-	≥85
Lmax	-	97.9	-	82.3	-	93.7	-	84.5	≥140

- Sources :
- ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
 - ^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

Operational Supports Manager

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Report No. : 2022-5004044-3 / 002-4 (Page 1 of 2)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace

MEASUREMENT DATE : June 24, 2022

MEASUREMENT LOCATION : Rojana Power Plant 1, Phase IV

Ayutthaya Province

CALIBRATION DATA

: Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results								Standard ^{1/,2/}
Stations	No.1		No.2		No.3		No.4		
	De-NOx Pump CTG #5		Gas Turbine Generator #5		Air Compressor STG 2		Oil Cooler STG#2		
Measurement Date	24/06/2022		24/06/2022		24/06/2022		24/06/2022		
Measurement Time	08:00-16:00		08:00-16:00		08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		CR:161B		CR:161B		
Sound Level Meter Serial No.	G079727		G080132		G079772		G078502		
Pre Cal (dB(A))	93.7		93.7		93.7		93.7		
Post Cal (dB(A))	93.7		93.7		93.7		93.7		
Measurement Period	Sound Level [dB(A)]								
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	76.2	78.6	81.5	82.4	78.9	91.7	84.4	86.3	
2 nd hour	77.7	81.7	81.1	82.1	79.1	92.9	84.8	87.1	
3 rd hour	77.6	79.5	81.2	82.8	80.1	92.5	84.8	86.7	
4 th hour	77.3	79.8	81.1	82.0	79.9	92.2	84.8	87.2	
5 th hour	77.3	80.3	81.1	82.9	79.9	91.7	85.3	87.7	
6 th hour	77.2	80.8	81.3	82.3	79.8	91.8	84.8	87.5	
7 th hour	77.2	80.8	81.2	82.0	79.6	91.9	84.1	86.4	
8 th hour	77.3	80.7	80.8	82.1	79.6	92.3	83.9	86.9	
Leq-8 hr	77.3	-	81.2	-	79.6	-	84.6	-	≥85
Lmax	-	81.7	-	82.9	-	92.9	-	87.7	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).

^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

Operational Supports Manager

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Report No. : 2022-5004044-3 / 002-4 (Page 2 of 2)

Issued date : June 28, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Level in Workplace MEASUREMENT DATE : June 24, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1, Phase IV
Ayutthaya Province
CALIBRATION DATA : Model CR: 515 Serial No.81745, Cirrus Research plc

Item	Results				Standard ^{1/,2/}
Stations	No.5		No.6		
	Chemical Feed Pump		Cooling Tower		
Measurement Date	24/06/2022		24/06/2022		
Measurement Time	08:00-16:00		08:00-16:00		
Sound Level Meter Model	CR:161B		CR:161B		
Sound Level Meter Serial No.	G080140		G078771		
Pre Cal (dB(A))	93.7		93.7		
Post Cal (dB(A))	93.7		93.7		
Measurement Period	Sound Level [dB(A)]				
	Leq 8 hr	Lmax	Leq 8 hr	Lmax	
1 st hour	77.1	82.7	82.0	84.3	
2 nd hour	77.1	82.7	82.2	84.8	
3 rd hour	77.0	83.1	82.3	85.3	
4 th hour	76.9	83.3	82.4	85.3	
5 th hour	76.9	83.6	82.5	85.6	
6 th hour	76.8	83.2	82.3	85.0	
7 th hour	76.8	81.9	82.2	84.9	
8 th hour	76.8	82.1	82.1	84.5	
Leq-8 hr	76.9	-	82.3	-	≥85
Lmax	-	83.6	-	85.6	≥140

Sources : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Ministerial regulation of the Ministry of Labour, Subject 'The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise', B.E. 2549 dated February 16, B.E. 2549 (2006). and B.E. 2559 dated October 17, B.E. 2559 (2016).

Operational Supports Manager

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ใบรับรองผลการตรวจวิเคราะห์
คุณภาพน้ำทิ้ง



Report No. : 2022-5003541-1 / 001-1 (Page 1 of 2) Issued date: January 31, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : January 17, 2022

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

ANALYTICAL DATE : January 18, 2022

SAMPLING BY :

SAMPLING TIME : 09.20 hrs.

LABORATORY NAME : SGS (Thailand) Limited (2-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	7.2	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	30.4	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	1,035	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.09	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	0.03	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: 2-197-A-8538

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Report No. : 2022-5003541-1 / 001-1 (Page 2 of 2)

Issued date: January 31, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited

SAMPLING DATE : January 17, 2022

ANALYTICAL DATE : January 18, 2022

SAMPLING TIME : 09.20 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,304	-	-
Flow Rate	m ³ /hr	Flow rate Meter	2.46	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Technical Manager

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Report No. : 2022-5003541-1 / 001-2 (Page 1 of 2)

Issued date: January 31, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : January 17, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : January 18, 2022

SAMPLING PERSON :

SAMPLING TIME : 09.00 hrs.

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	7.1	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	27.9	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	314	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.42	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	0.01	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: ๓-197-๙-8538

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Report No. : 2022-5003541-1 / 001-2 (Page 2 of 2)

Issued date: January 31, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : January 17, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : January 18, 2022

SAMPLING PERSON :

SAMPLING TIME : 09.00 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	442	-	-
Flow Rate	m ³ /hr	Flow rate Meter	1.42	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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(Thepsan Yommana)
Technical Manager

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Report No. : 2022-5003541-2 / 001-1 (Page 1 of 2) Issued date: February 17, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

SAMPLING DATE : February 4, 2022

ANALYTICAL DATE : February 7, 2022

SAMPLING TIME : 09.45 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.1	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	31.4	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	921	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.14	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	0.67	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	<0.01	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: ๓-197-๓-8538

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Report No. : 2022-5003541-2 / 001-1 (Page 2 of 2)

Issued date: February 17, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited

SAMPLING DATE : February 4, 2022

ANALYTICAL DATE : February 7, 2022

SAMPLING TIME : 09.45 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,368	-	-
Flow Rate	m ³ /hr	Flow rate Meter	8.86	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5003541-2 / 001-2 (Page 1 of 2)

Issued date: February 17, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

SAMPLING PERSON :

SAMPLING DATE : February 4, 2022

ANALYTICAL DATE : February 7, 2022

SAMPLING TIME : 09.30 hrs.

LABORATORY NAME : SGS (Thailand) Limited (2-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.5	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	29.9	>40	>45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	362	>3,000	>3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	>10	>5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.17	>1	>1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	>5	>5
Copper (Cu)	mg/l	APHA, 3120 B	<0.01	>2	>2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: 2-197-A-8538

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Report No. : 2022-5003541-2 / 001-2 (Page 2 of 2)

Issued date: February 17, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : February 4, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : February 7, 2022

SAMPLING PERSON :

SAMPLING TIME : 09.30 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	694	-	-
Flow Rate	m ³ /hr	Flow rate Meter	3.54	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5003541-3 / 001-1 (Page 1 of 2) Issued date: March 14, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

SAMPLING DATE : March 3, 2022

ANALYTICAL DATE : March 4, 2022

SAMPLING TIME : 09.30 hrs.

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.0	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	32.1	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	1,044	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.02	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	<0.01	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5003541-3 / 001-1 (Page 2 of 2)

Issued date: March 14, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited

SAMPLING DATE : March 3, 2022

ANALYTICAL DATE : March 4, 2022

SAMPLING TIME : 09.30 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,395	-	-
Flow Rate	m ³ /hr	Flow rate Meter	9.12	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5003541-3 / 001-2 (Page 1 of 2)

Issued date : March 14, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

SAMPLING PERSON :

SAMPLING DATE : March 3, 2022

ANALYTICAL DATE : March 4, 2022

SAMPLING TIME : 09.00 hrs.

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.3	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	29.6	>40	>45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	445	>3,000	>3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	>10	>5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.18	>1	>1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	>5	>5
Copper (Cu)	mg/l	APHA, 3120 B	<0.01	>2	>2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5003541-3 / 001-2 (Page 2 of 2)

Issued date: March 14, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : March 3, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : March 4, 2022

SAMPLING PERSON :

SAMPLING TIME : 09.00 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	616	-	-
Flow Rate	m ³ /hr	Flow rate Meter	5.00	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-1 / 001-1 (Page 1 of 2) **Issued date:** April 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

SAMPLING DATE : April 4, 2022

ANALYTICAL DATE : April 5, 2022

SAMPLING TIME : 09.10 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.0	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	30.2	≧40	≧45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	1,229	≧3,000	≧3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≧10	≧5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.09	≧1	≧1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≧5	≧5
Copper (Cu)	mg/l	APHA, 3120 B	<0.01	≧2	≧2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

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Report No. : 2022-5004044-1 / 001-1 (Page 2 of 2)

Issued date: April 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : April 4, 2022

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

ANALYTICAL DATE : April 5, 2022

SAMPLING BY :

SAMPLING TIME : 09.10 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,645	-	-
Flow Rate	m ³ /hr	Flow rate Meter	1.39	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-1 / 001-2 (Page 1 of 2)

Issued date: April 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : April 4, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : April 5, 2022

SAMPLING PERSON :

SAMPLING TIME : 08.50 hrs.

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.2	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	24.1	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	385	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.05	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	<0.01	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: ๓-197-๓-8538

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Report No. : 2022-5004044-1 / 001-2 (Page 2 of 2)

Issued date: April 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : April 4, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : April 5, 2022

SAMPLING PERSON :

SAMPLING TIME : 08.50 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	604	-	-
Flow Rate	m ³ /hr	Flow rate Meter	1.06	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-2 / 001-1 (Page 1 of 2) **Issued date:** May 20, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

SAMPLING DATE : May 9, 2022

ANALYTICAL DATE : May 10, 2022

SAMPLING TIME : 09.35 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	7.8	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	30.7	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	1,107	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.2	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	0.02	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: ๓-197-๗-8538

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Report No. : 2022-5004044-2 / 001-1 (Page 2 of 2)

Issued date: May 20, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited

SAMPLING DATE : May 9, 2022

ANALYTICAL DATE : May 10, 2022

SAMPLING TIME : 09.35 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,465	-	-
Flow Rate	m ³ /hr	Flow rate Meter	16.47	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-2 / 001-2 (Page 1 of 2)

Issued date: May 20, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : May 9, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : May 10, 2022

SAMPLING PERSON :

SAMPLING TIME : 09.20 hrs.

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.3	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	31.1	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	415	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.13	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	0.02	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: ๓-197-๓-8538

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Report No. : 2022-5004044-2 / 001-2 (Page 2 of 2)

Issued date: May 20, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : May 9, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : May 10, 2022

SAMPLING PERSON :

SAMPLING TIME : 09.20 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	568	-	-
Flow Rate	m ³ /hr	Flow rate Meter	7.08	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-3 / 001-1 (Page 1 of 2) **Issued date:** June 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

SAMPLING DATE : June 8, 2022

ANALYTICAL DATE : June 9, 2022

SAMPLING TIME : 09.05 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.0	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	31.1	≧40	≧45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	800	≧3,000	≧3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≧10	≧5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.03	≧1	≧1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≧5	≧5
Copper (Cu)	mg/l	APHA, 3120 B	0.01	≧2	≧2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

Technical Manager

License ID: ๓-197-๙-8538

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Report No. : 2022-5004044-3 / 001-1 (Page 2 of 2)

Issued date: June 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING LOCATION : Discharge Point Phase 1, Rojana Power Plant 1

SAMPLING BY :

LABORATORY NAME : SGS (Thailand) Limited

SAMPLING DATE : June 8, 2022

ANALYTICAL DATE : June 9, 2022

SAMPLING TIME : 09.05 hrs.

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,190	-	-
Flow Rate	m ³ /hr	Flow rate Meter	17.33	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-3 / 001-2 (Page 1 of 2)

Issued date: June 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : June 8, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : June 9, 2022

SAMPLING PERSON :

SAMPLING TIME : 08.50 hrs.

LABORATORY NAME : SGS (Thailand) Limited (๓-197)

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
pH	-	Electrometric Method	8.0	5.5-9.0	6.0-9.0
Temperature	°C	Electrometric Method	28.9	≥40	≥45
Total Dissolved Solids (TDS)	mg/l	APHA, 2540 C	514	≥3,000	≥3,000
Fat Oil & Grease (FOG)	mg/l	APHA, 5520 B	<1	≥10	≥5
Free Chlorine (Cl ₂)	mg/l	APHA, 4500-Cl G	0.02	≥1	≥1
Zinc (Zn)	mg/l	APHA, 3120 B	<0.02	≥5	≥5
Copper (Cu)	mg/l	APHA, 3120 B	0.01	≥2	≥2

Remark : - Analytical Methods followed to Standard Methods for the Examination of Water and Wastewater, recommended by APHA, AWWA&WEF 23rd ed., 2017.

Sources: ^{1/} The control values were specified by the Rojana Industrial Park

^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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Report No. : 2022-5004044-3 / 001-2 (Page 2 of 2)

Issued date: June 18, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Wastewater Analysis

SAMPLING DATE : June 8, 2022

SAMPLING LOCATION : Discharge Point Phase 2, Rojana Power Plant 1

ANALYTICAL DATE : June 9, 2022

SAMPLING PERSON :

SAMPLING TIME : 08.50 hrs.

LABORATORY NAME : SGS (Thailand) Limited

Parameter	Unit	Method	Results	Standard ^{1/}	Standard ^{2/}
Conductivity	µs/cm	Electrometric Method	1,088	-	-
Flow Rate	m ³ /hr	Flow rate Meter	1.49	-	-

Sources: ^{1/} The control values were specified by the Rojana Industrial Park
^{2/} EIA of Rojana Power Co., Ltd. as approval letter No. Tor Sor 1009.7/8360 dated November 18, B.E. 2553 (2010)

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ภาคผนวก ข-6

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ด้านอาชีวอนามัย และความปลอดภัย



Report No. : 2022-5004044-1 / 002-1 (Page 1 of 3)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase I) MEASUREMENT DATE : April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), MEASURED BY :
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540,
Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ¹	Standard Condition ¹
1. Chiller Room	Measuring instrument, gauge valve etc.	200	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
2. Gas Compressor	Measuring instrument, gauge valve etc.	461	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
3. GSU 1	Measuring instrument, gauge valve etc.	220	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
4. GSU 2	Measuring instrument, gauge valve etc.	1,228	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
5. De-NOx GTG 1	Measuring instrument, gauge valve etc.	262	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
6. De-NOx GTG 2	Measuring instrument, gauge valve etc.	260	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
7. Water Plant	Measuring instrument, gauge valve etc.	220	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
8. HRSG 1 (Water Sampling)	Measuring instrument, gauge valve etc.	224	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
9. HRSG 2 (Water Sampling)	Measuring instrument, gauge valve etc.	205	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
10. Control Room (Area measurement)	Control Switch			Process area or working area; Control Room
10.1 Average value		685	200	
10.2 Minimum value		653	100	

Sources : ¹ Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

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Report No. : 2022-5004044-1 / 002-1 (Page 2 of 3)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase I) **MEASUREMENT DATE :** April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), **MEASURED BY :**
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540, Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ¹⁾	Standard Condition ¹⁾
11. Switch Gear Room (Area measurement)	Control Switch board			Process area or working area; Switch Gear Room
11.1 Average value		990	200	
11.2 Minimum value		734	100	
12. Office (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
12.1 Average value		62	50	
12.2 Minimum value		50	25	
13. Walk way between HRSG 1 and HRSG 2 (Area measurement)	Walk-ways			General area, Sidewalk-outside
13.1 Average value		56	50	
13.2 Minimum value		47	25	
14. Water Plant (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
14.1 Average value		63	50	
14.2 Minimum value		50	25	
15. In front of Sub Station (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
15.1 Average value		51	50	
15.2 Minimum value		35	25	
16. GTG 1 (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
16.1 Average value		84	50	
16.2 Minimum value		56	25	
17. Walk way between Phase 1 and Phase 2 (Area measurement)	Walk-ways			General area, Sidewalk-outside
17.1 Average value		59	50	
17.2 Minimum value		54	25	

Sources : ¹⁾ Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

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Report No. : 2022-5004044-1 / 002-1 (Page 3 of 3)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase I) MEASUREMENT DATE : April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), MEASURED BY :
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540,
Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ¹	Standard Condition ¹
18. Boiler Feed Pump	Measuring instrument, gauge valve etc.	213	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
19. GTG 2 (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
19.1 Average value		55	50	
19.2 Minimum value		54	25	
20. ROJ Office (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
20.1 Average value		50	50	
20.2 Minimum value		36	25	
21. New Office (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
21.2 Average value		62	50	
21.2 Minimum value		48	25	

Sources : ¹ Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

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Report No. : 2022-5004044-1 / 002-2 (Page 1 of 1)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase II) MEASUREMENT DATE : April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), MEASURED BY :
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540,
Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ^u	Standard Condition ^u
1. Chiller Room	Measuring instrument, gauge valve etc.	201	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
2. HRSG 3 (Water Sampling)	Measuring instrument, gauge valve etc.	212	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
3. Water Plant	Measuring instrument, gauge valve etc.	242	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
4. De-NOx GTG 3	Measuring instrument, gauge valve etc.	232	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
5. Boiler Feed Pump	Measuring instrument, gauge valve etc.	218	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
6. GSU 3	Measuring instrument, gauge valve etc.	200	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
7. LCR (Area measurement)	Control Switch			Process area or working area; Control Room
7.1 Average value		594	200	
7.2 Minimum value		472	100	
8. Switch Gear Room (Area measurement)	Control Switch board			Process area or working area; Switch Gear Room
8.1 Average value		232	200	
8.2 Minimum value		238	100	
9. Walk way between LCR and GTG (Area measurement)	Walk-ways			General area, Sidewalk-outside
9.1 Average value		68	50	
9.2 Minimum value		40	25	

Sources : ^u Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

Operational Supports Manager
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Report No. : 2022-5004044-1 / 002-3 (Page 1 of 2)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase III) **MEASUREMENT DATE :** April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), **MEASURED BY :**
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540, Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ¹	Standard Condition ¹
1. Chiller Room	Measuring instrument, gauge valve etc.	210	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
2. Gas Compressor	Measuring instrument, gauge valve etc.	212	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
3. GSU 4	Measuring instrument, gauge valve etc.	201	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
4. De-NOx GTG 4	Measuring instrument, gauge valve etc.	224	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
5. Boiler Feed Pump	Measuring instrument, gauge valve etc.	283	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
6. Water Plant	Measuring instrument, gauge valve etc.	443	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
7. HRSG 4 (Water Sampling)	Measuring instrument, gauge valve etc.	297	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
8. LCR (Area measurement)	Control Switch			Process area or working area; Control Room
8.1 Average value		440	200	
8.2 Minimum value		368	100	
9. Switch Gear Room (Area measurement)	Control Switch board			Process area or working area; Switch Gear Room
9.1 Average value		438	200	
9.2 Minimum value		252	100	
10. Walk-way Left side (Area measurement)	Walk-ways			General area, Sidewalk-outside
10.1 Average value		56	50	
10.2 Minimum value		47	25	

Sources : ¹ Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

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License ID: 0402-03-2565-0029



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Report No. : 2022-5004044-1 / 002-3 (Page 2 of 2)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase III) MEASUREMENT DATE : April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), MEASURED BY :
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540,
Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ¹¹	Standard Condition ¹¹
11. Walk way between Water plant and Gas compress (Area measurement)	Walk-ways	54	50	General area, Sidewalk-outside
11.1 Average value		35	25	
11.2 Minimum value				
12. In front of Sub Station (Walk-way) (Area measurement)	Walk-ways	50	50	General area, Sidewalk-outside
12.1 Average value		35	25	
12.2 Minimum value				
13. Cooling Tower (Walk-way) (Area measurement)	Walk-ways	52	50	General area, Sidewalk-outside
13.1 Average value		47	25	
13.2 Minimum value				
14. Walk way Right side (Area measurement)	Walk-ways	50	50	General area, Sidewalk-outside
14.1 Average value		50	25	
14.2 Minimum value				

Sources : ¹¹ Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

Operational Supports Manager
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Report No. : 2022-5004044-1 / 002-4 (Page 1 of 2)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase IV) MEASUREMENT DATE : April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), MEASURED BY :
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540,
Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ¹⁾	Standard Condition ¹⁾
1. Gas Compressor	Measuring instrument, gauge valve etc.	322	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
2. GSU 5	Measuring instrument, gauge valve etc.	216	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
3. De-NOx GTG 5	Measuring instrument, gauge valve etc.	252	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
4. HRSG 5 (Water Sampling)	Measuring instrument, gauge valve etc.	655	200-300	Coarse working; Coarse checking by eyes, assembly, counting or checking large package
5. Switch Gear Room (Area measurement)	Control Switch board			Process area or working area; Switch Gear Room
5.1 Average value		478	200	
5.2 Minimum value		295	100	
6. Walk-way Left side (Area measurement)	Walk-ways			General area, Sidewalk-outside
6.1 Average value		58	50	
6.2 Minimum value		33	25	
7. In front of Sub Station (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
7.1 Average value		53	50	
7.2 Minimum value		35	25	

Sources : ¹⁾ Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

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Report No. : 2022-5004044-1 / 002-4 (Page 2 of 2)

Issued date: May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Phase IV) **MEASUREMENT DATE :** April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night), **MEASURED BY :**
DIGITAL LIGHT METER : EXTECH, Model LT40, Serial No. 171100792, and Testo, Model Testo 540, Serial No. 39105471/0902, Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Location	Activities/ Type of Work	Light Intensity (LUX)	Standard Value ^{1/}	Standard Condition ^{1/}
8. Cooling Tower (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
8.1 Average value		50	50	
8.2 Minimum value		42	25	
9. STG#2 (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
9.1 Average value		62	50	
9.2 Minimum value		30	25	
10. Water plant (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
10.1 Average value		55	50	
10.2 Minimum value		34	25	
11. GTG#5 (Walk-way) (Area measurement)	Walk-ways			General area, Sidewalk-outside
11.1 Average value		53	50	
11.2 Minimum value		51	25	

Sources : ^{1/} Notification of the Department of Labor Protection and Welfare, Subject "Light Intensity Standard" dated February 21, B.E. 2561 (2018).

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Report No. : 2022-5004044-1 / 003 (Page 1 of 2)

Issued date : May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Dose **MEASUREMENT DATE :** April 25, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Day) **MEASURED BY :**
CALIBRATION DATA : Calibrator Model CEL-120/2, CASELLA Serial No. 1012767
 Pre Cal. : 114 dB(A), Post Cal. : 114 dB(A)
NOISE DOSE METER NO. : Model dBadge2 Plus/IS Serial No. 2311744, Serial No. 1167393, Serial No. 1167381, Serial No. 2311712

Monitoring Station	Measurement Date	Shift	Name	Dose%	TWA ₍₈₎	TWA ₍₈₎ [PPE] ¹⁾
Rojana Power Plant 1 (Local Operator)	April 25, 2022	07:00-19:00 hrs.	K. Anucha Prangprasit	18.4	77.6	67.4
	April 25, 2022	07:00-19:00 hrs.	K. Nakarin Harnkongkaew	50.5	82.0	71.8
	April 25, 2022	07:00-19:00 hrs.	K. Pairat Kijmol	3.2	65.1	54.9
	April 25, 2022	07:00-19:00 hrs.	K. Wiwat Ratchawong	57.9	82.6	72.4
Standards ^{2), 3)}					>85	

Remarks :

- Working hours per day = 12 hours
- Setting values for noise dosimeter are as the followings:
 - Range = 70-140 dB
 - Criterion level = 85 dB
 - Exchange rate = 3 decibels
 - Threshold level = 80 dB
 - Response time = Slow
 - Frequency weighting = A

Sources :

- ¹⁾ TWA₍₈₎ [PPE] : The sound level calculation when wearing personal protective equipment (PPE) ; NRR of Ear Muffs =23
- ²⁾ Notification of the Department of Labour Protection and Welfare, Subject 'The sound level calculation when wearing personal protective equipment' dated February 14, B.E. 2561 (2018).
- ³⁾ Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
- ³⁾ Notification of the Department of Labour Protection and Welfare, Subject 'The criteria, measurement methods and analysis of working condition related to heat, light or noise including a period of time and a category of business to be carried out, dated March 12, B.E. 2561 (2018).

Operational Supports Manager
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Report No. : 2022-5004044-1 / 003 (Page 2 of 2)

Issued date : May 5, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)
CONTACT :
ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Noise Dose MEASUREMENT DATE : April 25-26, 2022
MEASUREMENT LOCATION : Rojana Power Plant 1 (Night) MEASURED BY :
CALIBRATION DATA : Calibrator Model CEL-120/2, CASELLA Serial No. 1012767
Pre Cal. : 114 dB(A), Post Cal. : 114 dB(A)
NOISE DOSE METER NO. : Model dBadge2 Plus/IS Serial No. 1167381, Serial No. 2311744, Serial No. 1167393,
Serial No. 2311712

Monitoring Station	Measurement Date	Shift	Name	Dose%	TWA ⁽⁸⁾	TWA ⁽⁸⁾ [PPE] ^{1/}
Rojana Power Plant 1 (Local Operator)	April 25-26, 2022	19:00-07:00 hrs.	K. Apinan Krajangyao	2.3	62.9	52.7
	April 25-26, 2022	19:00-07:00 hrs.	K. Weerapol Pichonnak	18.3	77.6	67.4
	April 25-26, 2022	19:00-07:00 hrs.	K. Samapon Somprom	31.9	80.0	69.8
	April 25-26, 2022	19:00-07:00 hrs.	K. Pongwarit Muangdach	20.6	78.1	67.9
Standards ^{2/, 3/}					≥85	

Remarks : - Working hours per day = 12 hours
- Setting values for noise dosimeter are as the followings:
• Range = 70-140 dB
• Criterion level = 85 dB
• Exchange rate = 3 decibels
• Threshold level = 80 dB
• Response time = Slow
• Frequency weighting = A

- TWA⁽⁸⁾ : Time Weighted Average for 8 working hours per day.
- TWA⁽⁸⁾ [PPE] : The sound level calculation when wearing personal protective equipment (PPE) ; NRR of Ear Muffs =23
Sources : 1/ Notification of the Department of Labour Protection and Welfare, Subject 'The sound level calculation when wearing personal protective equipment' dated February 14, B.E. 2561 (2018).
2/ Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
3/ Notification of the Department of Labour Protection and Welfare, Subject 'The criteria, measurement methods and analysis of working condition related to heat, light or noise including a period of time and a category of business to be carried out, dated March 12, B.E. 2561 (2018).

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Report No. : 2022-5003541-3 / 009-1 (Page 1 of 1)

Issued date: March 21, 2022

CLIENT : ROJANA POWER COMPANY LIMITED (ROJANA POWER PLANT 1)

CONTACT :

ADDRESS :

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress

MEASUREMENT DATE : March 9, 2022

MEASUREMENT LOCATION : Rojana Power Plant 1, Ayutthaya Province

HEAT STRESS MONITOR NO.: Steam Turbine Generator 1 : Model QT34, 3M thailand Co.,Ltd. Serial No. TEM030023

Steam Turbine Generator 2 : Model QT34, 3M thailand Co.,Ltd. Serial No. TEM030028

Station	Type	Measurement Date	Period (hrs.)	Work Load	Heat Stress (WBGT, °C)
Steam Turbine Generator 1	Indoor	March 9, 2022	10:30-12:30	Light Work	30.9
Steam Turbine Generator 2	Indoor	March 9, 2022	10:30-12:30	Light Work	30.0
Standard ^{1/}	Light Work				✶34
	Moderate Work				✶32
	Heavy Work				✶30

Remarks : - Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)

* Work load category is determined by averaging metabolic rates for tasks as follows;

1) Light work : ≤200 kcal/hour

2) Moderate work : >200-350 kcal/hour

3) Heavy work : >350-500 kcal/hour

Source : ^{1/} Ministerial Regulation on the Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Heat, Light and Noise, B.E. 2559, published in the Royal Government Gazette, Vol.133 Part 91A, dated October 17, B.E. 2559 (2016).



Operational Supports Manager

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This report is not within the scope of the Ministerial Regulation on Registration and Permission of Services to Promote Safety, Occupational Health, and Working Environment in B.E. 2561 (2018).

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ภาคผนวก ค

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- สำเนาหนังสือรับรองห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอสจีเอส (ประเทศไทย) จำกัด
 - สำเนาใบรับรองมาตรฐาน ISO 9001:2015
บริษัท เอสจีเอส (ประเทศไทย) จำกัด
 - สำเนาใบรับรองมาตรฐาน ISO 17020:2012
บริษัท เอสจีเอส (ประเทศไทย) จำกัด
-



ที่ อก ๐๓๑๐(๑)/ ๔๗๘ ๖

๒ ๑ เมษายน ๒๕๖๕

เรื่อง ต่อยานยนต์ขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
เรียน กรรมการผู้จัดการ บริษัท เอสจีเอส (ประเทศไทย) จำกัด
อ้างถึง คำขอขึ้นทะเบียน/ตอยานยนต์/เอกสาร และชนิดสารเคมีของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๔ มกราคม ๒๕๖๕

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับตอยานยนต์ขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอสจีเอส (ประเทศไทย) จำกัด จำนวน ๑ แผ่น

ตามหนังสืออ้างอิงถึง บริษัท เอสจีเอส (ประเทศไทย) จำกัด ขอตอยานยนต์ขึ้นทะเบียน
ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๐๑๐ สถานที่ตั้งเลขที่ ๔๑/๑๖-๒๐ และ ๔๑/๒๓ ตรอกนอกเขต
ถนนพระราม ๓ แขวงช่องนนทรี เขตยานนาวา กรุงเทพมหานคร ต่อมารองานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอสจีเอส (ประเทศไทย) จำกัด ตอยานยนต์ขึ้น
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์
- ๑) นางสาวณิชา เชื้อสุวรรณ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๑
 - ๒) นางสาวพัชรี ทรัพย์เจริญ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๒
 - ๓) นางสาวนภาพร ทองแท่ง ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๓
 - ๔) นางสาวทัศนวรรณ ไพธอนันตถาวร ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๔
 - ๕) นางสาวกรกฎ จันทรมบูรณ์ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๕
 - ๖) นางสาวฐานันท์ จิตเพชร ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๖
 - ๗) นายพร ภูเพ็ชร ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๗
 - ๘) นางสาวพัฒนภรณ์ เมืองแก้ว ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๘
 - ๙) นางศิริพร อัมวิไลวรรณ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๙
- ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
- ๑) นางสาววิชิตี จิลิก ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๑
 - ๒) นางสาวสุจินา จารุงศรีสุข ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๒
 - ๓) นางสาวสุกัญญา สุภานาม ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๓
 - ๔) นางสาวบุญญาภา ชนิลภักดิ์ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๔
 - ๕) นางสาวสิริวรรณ เสนีย์นัมย์ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๕
 - ๖) นางสาวณฤศร์ มีคำ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๖

๗) นายพันธุชัย...



"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"



-๒-

- ๗) นายพันธุชัย ไตรเลิศสมุทร ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๗
- ๘) นายพุทธิพงษ์ ภาตสุทธิ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๘
- ๙) นางสาวเด่นภา อรุณจิตต์ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๐๙
- ๑๐) นายวิหวัธ สุยะ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๐
- ๑๑) นายจิตรเทพ มีเงิน ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๑
- ๑๒) นายวีรพงษ์ เพ็งตระกูล ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๒
- ๑๓) นางสาวณิชา บุญเจริญ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๓
- ๑๔) นางสาวสุพรรณษา แก้วพันธ์ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๔
- ๑๕) นางสาวมลิลา เอียรประภากุล ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๕
- ๑๖) นายรัชพล มีงษ์วิญ ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๖
- ๑๗) นางสาวอรนุช ทองอุ่น ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๗
- ๑๘) นางสาวปริยาภรณ์ เสือเดช ทะเบียนเลขที่ ๖-๐๑๐-๖-๐๐๑๘

ค. ขอขยาสารเคมีที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย ตามสิ่งที่ส่งมาด้วย
หนังสือฉบับนี้แนบมาอยู่ในวันที่ ๓๐ มกราคม ๒๕๖๕ หากประสงค์จะตอยานยนต์ขึ้น
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อ
กรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นสุดของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้
ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code หายหนึ่งสัปดาห์

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ



ผู้อำนวยการกองวิจัยและสนับสนุนพลังงาน
ผู้พิพากษาแทนอธิบดีกรมโรงงานอุตสาหกรรม



ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์

กองวิจัยและตอยานยนต์พลังงาน
กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบผลิตภัณฑ์และทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๕๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๕๓๐ ๖๓๑๒ ต่อ ๒๑๙๙
ไปรษณีย์อิเล็กทรอนิกส์ sarabana@diw.mail.go.th



"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"





ที่ อภ ๐๓๐๑(๑)/ ๔ ๖ ๐ ๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ เขตราชเทวี
กรุงเทพมหานคร ๑๐๔๐๐

๒๕ มีนาคม ๒๕๖๓

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
เรียน กรรมการผู้จัดการ บริษัท เอสจีเอส (ประเทศไทย) จำกัด
อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุหนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๑๑ กันยายน ๒๕๖๒

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอสจีเอส (ประเทศไทย) จำกัด จำนวน ๑๗ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอสจีเอส (ประเทศไทย) จำกัด ขอต่ออายุหนังสือรับ
ขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๑๔๙๗ สถานที่ตั้งเลขที่ ๑/๒๐๙ และ ๑/๒๑๑
หมู่ที่ ๑ ตำบลบ้านดง อำเภอบ้านดง จังหวัดระยอง ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอสจีเอส (ประเทศไทย) จำกัด ต่ออายุ
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์

- ๑) นางสาวสายใจ เรืองศรีรัตน์ ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๕
- ๒) นางสาวพรธิดา สมจิตต์ ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๕
- ๓) นายณัฐวัฒน์ ศิริโชติ ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๖๖
- ๔) นายภาสกร สุนทรวิภาต ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๖๗
- ๕) นายเทพสัน ยมนา ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๓๘

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์

- ๑) นางสาวปวีณา หิมาคร ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๖
- ๒) นางสาวนิภาพร ปิดโชติชัย ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๗
- ๓) นายรวิน เสี่ยมงาม ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๘
- ๔) นายเศกสรรค์ กลั่นเกษร ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๗๐
- ๕) นายวัชรรัฐ ถิ่นสี ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๗๑
- ๖) นายสุฤกษ์ คล่องฉุยกิจ ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๗๓
- ๗) นางสาวพนิดา วรรณบุตร ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๗๔
- ๘) นายสุรศักดิ์ อุดมูเล ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๓๘
- ๙) นายสมบอง เกตุขุนทด ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๔๐
- ๑๐) นายณวัฒน์ ชัยเลิศ ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๑
- ๑๑) นายวิจิตร ขวัญดี ทะเบียนเลขที่ ๖-๑๔๙๗-๖-๕๖๕๒

๑๒) นายอนันต์กร...

เอกสารแนบท้ายหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอสจีเอส (ประเทศไทย) จำกัด
ที่ อภ ๐๓๐๑(๑)/ ๔ ๗ ๘ ๖
ลงวันที่ ๒๑ เมษายน ๒๕๖๓

ขอขยายสามสัปดาห์ที่ได้รับการขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๐ รายการ

น้ำเสีย จำนวน 20 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic Method
2	α-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method
3	β-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method
4	δ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method
5	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method
6	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic Method
7	p,p'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method
8	p,p'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method
9	o,p'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method
10	p,p'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method
11	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic Method
12	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic Method
13	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic Method
14	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic Method
15	Endrin	Liquid-Liquid Extraction, Gas Chromatographic Method
16	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method
17	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic Method
18	Heptachlor Epoxide	Liquid-Liquid Extraction, Gas Chromatographic Method
19	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method
20	Temperature	Laboratory and Field Methods

เอกสารอ้างอิง

APHA, AMWA, WEF. Standard Methods for the Examination of Water and Wastewater.

23rd ed. Washington, DC: APHA, 2017

- ๑๒) นายอนันต์กร นันทแสง
๑๓) นายณัฐพล ตาปราบ
๑๔) นายเฉลิมวุฒิ ภูภิคม
๑๕) นายกรวิชัย มาลากุล ณ อยุธยา
๑๖) นายวีระเดช คงแสง
๑๗) นายวิบูลย์ หอเลาด
๑๘) นายฟ้าเต็ม ศรีธนาบุญ
๑๙) นายปริดา เกษบุรม
๒๐) นางสาวอนิษฐา ไชยเจ
๒๑) นายสถาพร ทองวงค์ญาติ
๒๒) นายศุภชัย ทัศาลประจักษ์
๒๓) นายปฏิวัฒน์ กิพย์ชิต
๒๔) นายพัชราล รื่นเหลย
๒๕) นายอัษฎชัย กิตติโชติคงสกุล
๒๖) นายวิริศ พงษ์วิชัย
๒๗) นางสาวนันทกานต์ ขุนทกิจ
๒๘) นางสาวอภิญญา วงศ์คง
๒๙) นางสาวสุภาณา เกิดส่องแสง
ค. ขอขยาสารมลพิษที่ได้รับทะเบียนในวิเคราะห์น้ำเสีย จำนวน ๒๑ รายการ
รายการ รวมทั้งสิ้นจำนวน ๖๖๙ รายการ ตามสิ่งที่ส่งมาด้วย

หนังสือฉบับนี้จะหมดอายุในวันที่ ๑๒ ตุลาคม ๒๕๖๕ หากประสงค์จะต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อ
กรมโรงงานอุตสาหกรรมภายใน ๙๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

✓ (นายศิระ จันทรเิก)
 วัชรวิภาสศักดิ์ชำนาญการพิเศษ ราชวรวิหาร
 ผู้อำนวยการวิจัยและเตือนภัยมลพิษโรงงาน
 ผู้บริหารแผนงานป้องกันมลพิษโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน
ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก
โทร. ๐ ๓๘๐๕ ๗๒๖๑-๓
โทรสาร ๐ ๓๘๐๕ ๗๒๖๓

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอสแอลเอส (ประเทศไทย) จำกัด
เลขทะเบียน ๖-๑๙๙
ลงวันที่ ๒๕ มิถุนายน ๒๕๖๕

ขอขยาสารมลพิษที่ได้รับทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๖๙ รายการ
น้ำเสีย จำนวน 21 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
1	Arsenic	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
2	Barium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
3	Biochemical Oxygen Demand	5-Day BOD Test, Membrane Electrode Method ⁽¹⁾
4	Cadmium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
5	Chemical Oxygen Demand	Closed Reflux, Titrimetric Method ⁽¹⁾
6	Color	ADMI Weighted – Ordinate Spectrophotometric Method ⁽¹⁾
7	Copper	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
8	Hexavalent Chromium	Filtration, Colorimetric Method ⁽¹⁾
9	Lead	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
10	Manganese	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
11	Nickle	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
12	Oil and Grease	Liquid-Liquid, Partition-Gravimetric Method ⁽¹⁾
13	pH	Electrometric Method ⁽¹⁾
14	Phenols	Distillation, Direct Photometric Method ⁽¹⁾
15	Selenium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
16	Total Chromium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
17	Total Dissolved Solids	Dried at 180 °C ⁽¹⁾
18	Total Kjeldahl Nitrogen	Digestion, Distillation, Titrimetric Method ⁽¹⁾
19	Total Suspended Solids	Dried at 103-105 °C ⁽¹⁾
20	Trivalent Chromium	Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method, Calculation ⁽¹⁾
21	Zinc	Digestion, Inductively Coupled Plasma Method ⁽¹⁾

อากาศเสีย (ปล่องระบาย) จำนวน 13 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽²⁾
2	Arsenic	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽²⁾
3	Chlorine	Isokinetic Sampling, Ion Chromatographic Method ⁽³⁾

(นางสาววิชุดา สันเทพิณกุล)
นักวิทยาศาสตร์ชำนาญการ หัวหน้าที่แทน
ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก
4 Copper...

อวกาศเสีย (ปล่องระบาย) จำนวน 13 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
4	Copper	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[2]
5	Dioxin/Furans	Isokinetic Sampling, Analysis by Accredited Laboratory ^[2]
6	Hydrogen Chloride	Isokinetic Sampling, Ion Chromatographic Method ^[3]
7	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[2]
8	Lead	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[2]
9	Mercury	Isokinetic Sampling, Digestion, Cold Vapour Atomic Absorption Spectroscopy ^[2]
10	Oxides of Nitrogen	Chemical Absorption, Colorimetric Method ^[2]
11	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method ^[2]
12	Sulfur Dioxide	Chemical Absorption, Barium - Thorin Titrimetric Method ^[2]
13	Sulfuric Acid	Isokinetic Sampling, Barium - Thorin Titrimetric Method ^[3]

น้ำใต้ดิน จำนวน 118 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
2	Acetone	Purge and Trap Gas Chromatographic / Mass Spectrometric Method ^[1]
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
5	Antimony	Digestion, Inductively Coupled Plasma Method ^[1]
6	Arsenic	Digestion, Inductively Coupled Plasma Method ^[1]
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]

(นางสาววิชุดา สัมฤทธิ์เดช)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน
ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

8 Barium...

น้ำใต้ดิน จำนวน 118 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
8	Barium	Digestion, Inductively Coupled Plasma Method ^[1]
9	Benzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^[1]
10	Benzo(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
13	Benzoic acid	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
15	Benzo(g,h,i)perylene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
16	Beryllium	Digestion, Inductively Coupled Plasma Method ^[1]
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
18	Bis(2-Ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^[1]
20	Bromoform	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^[1]
21	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
22	Cadmium	Digestion, Inductively Coupled Plasma Method ^[1]
23	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ^[1]
24	Carbon disulfide	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^[1]
25	Carbon tetrachloride	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^[1]

(นางสาววิชุดา สัมฤทธิ์เดช)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน
ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

26 Chlordane...

แนบได้ฉบับ 118 รายการ

ลำดับที่	ชนิดสารเคมีพิษ	วิธีวิเคราะห์
26	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
27	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
28	Chlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
29	Chlorodibromomethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
30	Chloroform	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
31	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
32	Chromium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
33	Chromium Hexavalent	Filtration, Colorimetric Method ⁽¹⁾
34	Chromium Trivalent	Digestion, Inductively Coupled Plasma Method ; Filtration, Colorimetric Method; Calculation ⁽¹⁾
35	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
36	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
37	DDD	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
38	DDE	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
39	DDT	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
40	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
41	Di-n-Butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
42	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

43 1,3-Dichlorobenzene ...

แนบได้ฉบับ 118 รายการ

ลำดับที่	ชนิดสารเคมีพิษ	วิธีวิเคราะห์
43	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
44	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
45	3,3-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
46	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
47	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
48	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
49	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
50	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
51	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
52	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
53	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
54	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
55	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
56	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
57	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
58	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

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59 2,4-Dinitrotoluene...

น้ำใต้ดิน จำนวน 118 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
59	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
60	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
61	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
62	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
63	Endrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
64	Ethylbenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
65	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
66	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
67	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
68	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
69	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
70	Hexachloro-1,3-butadiene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
71	α -HCH	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
72	β -HCH	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
73	γ -HCH	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
74	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾

(นางสาววิชุดา สัมฤทธิ์ผล)

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75 Hexachloroethane...

น้ำใต้ดิน จำนวน 118 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
75	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
76	n-Hexane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method
77	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
78	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
79	Lead	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
80	Manganese	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
81	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
82	Methyl Bromide	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
83	Methylene Chloride	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
84	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
85	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
86	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
87	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
88	Nickel	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
89	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
90	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
91	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
92	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

น้ำใต้ดิน จำนวน 118 รายการ

ลำดับที่	ชนิดสารเคมี	วิธีการตรวจ
93	pH	Electrometric Method ⁽¹⁾
94	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
95	Phenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
96	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
97	Selenium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
98	Silver	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
99	Styrene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
100	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
101	Tetrachloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
102	Toluene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
103	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
104	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
105	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
106	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
107	Trichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
108	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
109	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ เจ้าหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเฝ้าระวังมลพิษโรงงานภาคตะวันออก

110 1,3,5-Trimethylbenzene...

น้ำใต้ดิน จำนวน 118 รายการ

ลำดับที่	ชนิดสารเคมี	วิธีการตรวจ
110	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
111	Vanadium	Digestion, Inductively Coupled Plasma Method ⁽¹⁾
112	Vinyl acetate	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
113	Vinyl chloride	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
114	m-Xylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
115	o-Xylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
116	p-Xylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
117	Xylene (Total)	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ⁽¹⁾
118	Zinc	Digestion, Inductively Coupled Plasma Method ⁽¹⁾

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารเคมี	วิธีการตรวจ
1	Acenaphthene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
2	Acetone	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
3	Aldrin	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
4	Anthracene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
5	Antimony	Digestion, Inductively Coupled Plasma Method ^(4,7)
6	Arsenic	Digestion, Inductively Coupled Plasma Method ^(4,7)
7	Atrazine	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ เจ้าหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเฝ้าระวังมลพิษโรงงานภาคตะวันออก

8 Barium...

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
8	Barium	Digestion, Inductively Coupled Plasma Method ^(4,7)
9	Benzo(a)anthracene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
10	Benzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
11	Benzo(b)fluoranthene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
12	Benzo(k)fluoranthene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
13	Benzoic acid	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
14	Benzo(a)pyrene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
15	Benzo(g,h,i)perylene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
16	Beryllium	Digestion, Inductively Coupled Plasma Method ^(4,7)
17	Bis(2-Chloroethyl)ether	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
18	Bis(2-Ethylhexyl)phthalate	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
20	Bromoform	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
21	Butyl benzyl phthalate	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
22	Cadmium	Digestion, Inductively Coupled Plasma Method ^(4,7)
23	Carbazole	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
24	Carbon disulfide	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
25	Carbon tetrachloride	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

26 Chlordane...

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
26	Chlordane	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
27	p-Chloroaniline	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
28	Chlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
29	Chlorodibromomethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
30	Chloroform	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
31	2-Chlorophenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
32	Chromium	Digestion, Inductively Coupled Plasma Method ^(4,7)
33	Chromium (III)	Digestion, Inductively Coupled Plasma Method ; Filtration, Colorimetric Method; Calculation ^(4,5,7)
34	Chromium (VI)	Alkaline Digestion, Colorimetric Method ⁽⁵⁾
35	Chrysene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
36	2,4-D	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
37	DDD	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
38	DDE	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
39	DDT	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
40	Dibenz(a,h)anthracene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
41	Di-n-Butyl phthalate	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
42	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
43	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

44 1,4-Dichlorobenzene...

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารเคมีพิษ	วิธีวิเคราะห์
44	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
45	3,3-Dichlorobenzidine	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
46	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
47	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
48	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
49	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
50	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
51	2,4-Dichlorophenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
52	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
53	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
54	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
55	Dieldrin	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
56	Diethyl phthalate	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
57	2,4-Dimethylphenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
58	2,4-Dinitrophenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
59	2,4-Dinitrotoluene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

60 2,6-Dinitrotoluene...

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารเคมีพิษ	วิธีวิเคราะห์
60	2,6-Dinitrotoluene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
61	Di-n-octyl phthalate	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
62	Endosulfan	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
63	Endrin	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
64	Ethylbenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6,8)
65	Fluoranthene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
66	Fluorene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
67	Heptachlor	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
68	Heptachlor epoxide	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
69	Hexachlorobenzene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
70	Hexachloro-1,3-butadiene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
71	α-HCH	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
72	β-HCH	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
73	γ-HCH	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
74	Hexachlorocyclopentadiene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)
75	Hexachloroethane	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9,10)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

76 n-Hexane...

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารเคมี	วิธีวิเคราะห์
76	n-Hexane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
77	Indeno(1,2,3-cd)pyrene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
78	Isophorone	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
79	Lead	Digestion, Inductively Coupled Plasma Method ^(4.7)
80	Manganese	Digestion, Inductively Coupled Plasma Method ^(4.7)
81	Methoxychlor	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
82	Methyl Bromide	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
83	Methylene Chloride	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
84	2-Methylnaphthalene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
85	2-Methylphenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
86	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
87	Naphthalene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
88	Nickel	Digestion, Inductively Coupled Plasma Method ^(4.7)
89	Nitrobenzene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
90	N-Nitrosodiphenylamine	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
91	N-Nitrosodi-n-propylamine	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
92	Pentachlorophenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

93 Phenanthrene...

ดิน จำนวน 117 รายการ

ลำดับที่	ชนิดสารเคมี	วิธีวิเคราะห์
93	Phenanthrene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
94	Phenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
95	Pyrene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
96	Selenium	Digestion, Inductively Coupled Plasma Method ^(4.7)
97	Silver	Digestion, Inductively Coupled Plasma Method ^(4.7)
98	Styrene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
99	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
100	Tetrachloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
101	Toluene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
102	Toxaphene	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
103	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
104	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
105	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
106	Trichloroethylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)
107	2,4,5-Trichlorophenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
108	2,4,6-Trichlorophenol	Microwave Extraction, Gas Chromatographic / Mass Spectrometric Method ^(9.10)
109	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(6.8)

(นางสาววิชุดา สัมฤทธิ์ผล)

นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก 110 Vanadium...

ดินจำนวน 117 รายการ

ลำดับที่	ชนิดสารมลพิษ	วิธีวิเคราะห์
110	Vanadium	Digestion, Inductively Coupled Plasma Method ^(๕,7)
111	Vinyl Acetate	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(๕,๘)
112	Vinyl Chloride	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(๕,๘)
113	m-Xylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(๕,๘)
114	o-Xylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(๕,๘)
115	p-Xylene	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(๕,๘)
116	Xylene (Total)	Purge and Trap, Gas Chromatographic / Mass Spectrometric Method ^(๕,๘)
117	Zinc	Digestion, Inductively Coupled Plasma Method ^(๕,7)

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นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

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นักวิทยาศาสตร์ชำนาญการ ทำหน้าที่แทน

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก



ที่ อก ๐๓๑๐(๓)/ ๑ ๑๒๔ ๑

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๑ ๘ พฤศจิกายน ๒๕๖๔

เรื่อง เปลี่ยนแปลงบุคลากรและสารมลพิษที่วิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอสซีเอส (ประเทศไทย) จำกัด

อ้างถึง คำขอเปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๙ สิงหาคม ๒๕๖๔

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือเปลี่ยนแปลงบุคลากรและสารมลพิษที่วิเคราะห์

บริษัท เอสซีเอส (ประเทศไทย) จำกัด จำนวน ๗ แผ่น

ตามที่อ้างถึง บริษัท เอสซีเอส (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน
ว-๑๙๗ สถานที่ตั้งเลขที่ ๑/๒๐๙ และ ๑/๒๑๑ หมู่ที่ ๑ ตำบลบ้านฉาง อำเภอบ้านฉาง จังหวัดระยอง
ขอเปลี่ยนแปลงบุคลากรและสารมลพิษที่วิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้เพิ่มเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๘ ราย

- ๑) นายโยธพร บุญพันธ์ ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๒
- ๒) นายอัมมพันธ์ ศรีใจดี ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๓
- ๓) นายภักดีคุณ ทาสีเพชร ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๔
- ๔) นายเขาวลิต ศรีแมน ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๕
- ๕) นายพรรัตน์ จำปาแถม ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๖
- ๖) นายสุวิยะ ศรีโพธิ์ ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๗
- ๗) นางสาวสิริรัตน์ แซ่ลิ้ม ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๘
- ๘) นางสาวหทัยรัตน์ ลีนจี ทะเบียนเลขที่ ว-๑๙๗-จ-๙๖๕๙

๒. ให้เพิ่มข้อย้ายสารมลพิษที่วิเคราะห์ในน้ำเสีย จำนวน ๓ รายการ นำได้คืน จำนวน
๒ รายการ อากาศเสีย (ปล่องระบาย) จำนวน ๑๖ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน ๓๕ รายการ
และดิน จำนวน ๕ รายการ รวมทั้งสิ้นจำนวน ๖๑ รายการ ตามสิ่งที่ส่งมาด้วย

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์
เอกสาร ที่ อก ๐๓๑๐(๓)/๔๖๖๐ ลงวันที่ ๒๔ มีนาคม ๒๕๖๓ คือในวันที่ ๑๒ ตุลาคม ๒๕๖๕

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นางจินดา เศษศรีพันธุ์)

ผู้อำนวยการโรงงานและสิ่งแวดล้อมแห่งโรงงาน
บุรีศรีพลาทานเกษตรนิคมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

โทร. ๐ ๓๕๐๕ ๗๒๖๑-๓

ไปรษณีย์อิเล็กทรอนิกส์ eirw@dlw.mail.go.th

เอกสารแนบท้ายหนังสือเปลี่ยนแปลงบุคลากรและชนิดสารมลพิษที่วิเคราะห์
บริษัท เอสซีเอส (ประเทศไทย) จำกัด เลขทะเบียน ว-๑๙๗
ที่ อก ๐๓๑๐(๓)/๑๑๒๔๖ ลงวันที่ ๑๘ พฤศจิกายน ๒๕๖๔

ขอข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๖๑ รายการ
นี้เสีย จำนวน ๓ รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Cyanide	Distillation, Colorimetric Method ⁽³⁾
2	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽³⁾
3	Temperature	Field Method ⁽³⁾

น้ำได้คืน จำนวน 2 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Cyanide	Distillation, Colorimetric Method ⁽³⁾
2	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽³⁾

อากาศเสีย (ปล่องระบาย) จำนวน 16 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Beryllium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
2	Cadmium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
3	Carbon Monoxide	Instrumental Analyzer Method ⁽⁴⁾
4	Chromium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
5	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
6	Hydrogen Fluoride	Isokinetic Sampling, Ion Chromatographic Method ⁽⁵⁾
7	Manganese	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾

(นายทวี อำพาพันธ์)

ผู้อำนวยการ

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

8 Nickel...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
8	Nickel	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
9	Opacity	Ringelmann's Method ⁽¹⁾
10	Oxide of Nitrogen	Instrumental Analyzer Method ⁽⁴⁾
11	Selenium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
12	Sulfur Dioxide	Instrumental Analyzer Method ⁽⁴⁾
13	Tellurium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
14	Tin	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
15	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
16	Xylene	Adsorption Sampling, Gas Chromatographic Method ⁽⁵⁾

สิ่งปลูกสร้างวัสดุที่ไม่ใช่ตัว จำนวน 35 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)

(นายทวี อำพาพันธ์)

ผู้อำนวยการ

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

5 Beryllium...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
7	Chlordane	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
8	Chromium (VI)	1) Waste Extraction, Digestion, Colorimetric Method ^(2,13) 2) Alkaline Digestion, Colorimetric Method ^(7,13)
9	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
10	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
11	Dieldrin	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
12	DDD	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
13	DDE	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
14	DDT	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
15	2,4-D (2,4-Dichlorophenoxyacetic acid)	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,19)

(นายทวี อำพาพันธ์)

ผู้อำนวยการ

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

16 Endrin...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
16	Endrin	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
17	Heptachlor	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
18	Kepone	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,19)
19	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
20	Lindane	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
21	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^(2,14) 2) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽¹⁴⁾
22	Methoxychlor	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
23	Mirex	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,16)
24	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
25	Polychlorinated Biphenyls (PCBs)	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,17)
26	Pentachlorophenol	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,19)

(นายพรี อำพันธน์)
ผู้อำนวยการ

ศูนย์วิจัยและทดสอบภัยพิบัติโรงงานภาคตะวันออก

27 Nickel...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
27	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
28	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
29	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
30	Silvex; 2,4,5-Trichlorophenoxypropionic acid	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,19)
31	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
32	Toxaphene	1) Waste Extraction, Gas Chromatographic Method ^(2,8) 2) Ultrasonic Extraction, Gas Chromatographic Method ^(9,19)
33	Trichloroethylene	Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(2,18) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(10,18)
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)
35	Zinc	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,11) 2) Digestion, Inductively Coupled Plasma Method ^(6,11)

(นายพรี อำพันธน์)
ผู้อำนวยการ

ศูนย์วิจัยและทดสอบภัยพิบัติโรงงานภาคตะวันออก

ดิน...

ดิน จำนวน 5 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Mercury	Digestion, Cold vapor Atomic Absorption Spectrometric Method ⁽¹⁴⁾
2	Polychlorinated Biphenyls (PCBs)	Ultrasonic Extraction, Gas Chromatographic Method ^(9,16,17)
3	TPH (C ₅ -C ₆)	Purge and Trap, Gas Chromatographic Mass Spectrometric Method ^(10,18)
4	TPH (C ₅ -C ₁₀)	Ultrasonic Extraction, Gas Chromatographic Mass Spectrometric Method ^(9,10,18)
5	TPH (C ₅ -C ₃₅)	Ultrasonic Extraction, Gas Chromatographic Mass Spectrometric Method ^(10,18)

เอกสารอ้างอิง

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10 United...

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ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

Laboratory Name : SGS (Thailand) Limited, Laboratory Services

Address : 41/23 Soi Rama III (59), Rama III Road,

Chongnonsee, Yannawa, Bangkok 10120

Accreditation Number : Testing - 0017

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1	Water	<ul style="list-style-type: none"> - Cadmium 0.002 mg/L to 0.1 mg/L - Copper 0.01 mg/L to 1.0 mg/L - Lead 0.01 mg/L to 1.0 mg/L - Manganese 0.1 mg/L to 4.0 mg/L - Nickel 0.01 mg/L to 1.0 mg/L - Zinc 0.01 mg/L to 1.0 mg/L 	<p>In - house method : LBEN-05119 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3120 B</p> <p>In - house method : LBEN-05119 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3114 C</p>

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Ref No. : 0303/6168

CERTIFICATE OF TESTING LABORATORY ACCREDITATION

This is to certify that

SGS (Thailand) Limited, Laboratory Services
41/23 Soi Rama III (59), Rama III Road,
Chongnonsee, Yannawa, Bangkok 10120

has successfully undergone assessment according to ISO/IEC 17025 : 2017 and under the Bureau of Laboratory Accreditation, Department of Science Service for the requirements, regulations and criteria for the competence of testing laboratories

LABORATORY ACCREDITATION
Accreditation Number TESTING - 0017

BLA-DSS

The scope of accreditation is as annexed hereto

Issue date : 21st April 2020

Expired date : 20th April 2023

Signature

(Mrs. Pochaman Tagheen)

Director of Bureau of Laboratory Accreditation

Bureau of Laboratory Accreditation, Department of Science Service,
Ministry of Higher Education, Science, Research and Innovation

Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
 Address : 41/23 Soi Rama III (59), Rama III Road,
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 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1	Water	- Antimony 0.63 µg/L to 6.25 µg/L - Arsenic 0.63 µg/L to 6.25 µg/L - Cadmium 0.63 µg/L to 6.25 µg/L - Chromium 0.63 µg/L to 12.5 µg/L - Cobalt 1.25 µg/L to 62.50 µg/L - Copper 0.63 µg/L to 6.25 µg/L - Lead 0.63 µg/L to 6.25 µg/L - Manganese 0.63 µg/L to 6.25 µg/L	In - house method : LBEN-14004 based on United States Environmental Protection Agency, 2014, EPA Method 60208, Revision 2

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Nickel 0.63 µg/L to 6.25 µg/L - Silver 2.5 µg/L to 62.5 µg/L - Zinc 2.5 µg/L to 62.5 µg/L - Mercury 0.5 mg/L to 8.0 mg/L - Hexavalent chromium 1.0 µg/L to 6.25 µg/L	In - house method : LBEN-14004 based on United States Environmental Protection Agency, 2014, EPA Method 60208, Revision 2 In - house method : LBEN-08145 based on United States Environmental Protection Agency, 1994, EPA Method 245.1, Revision 3.0 ISO 18412 : 2005

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- pH 6.0 to 10.0	In - house method : LBEN-09152 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - H ⁺ B
		- Ammonia - Nitrogen 0.10 mg/L to 10.0 mg/L	In-house method : LBEN-19003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 NH ₃ -F
		- Total phosphorus 0.10 mg/L to 10.0 mg/L	In - house method : LBEN-19002 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500-P J

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 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Oil and Grease 0.50 mg/L to 100.0 mg/L	In - house method : LBEN-18005 based on United States Environmental Protection Agency, 2010, EPA, Method 1664, Revision B
		- Color 5 M ⁻¹ to 30 M ⁻¹	ISO 7887 : 2011, method B
		- Phenol 0.001 mg/L to 0.10 mg/L	In - house method : LBEN-15007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5530 B, C
		- Cyanide 0.01 mg/L to 0.50 mg/L	In - house method : LBEN-97018 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500-CN C, E

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 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Navy Blue 1.0 mg/L to 7.5 mg/L Azo colorants - Aniline - m-Methylaniline - p-Toluidine - o-Toluidine - m-Toluidine - n-ethylamine - 2-chloroaniline - 2,4-Xyldine - 2,6-Xyldine 0.10 µg/L to 3.00 µg/L	In - house method : LBLC-19004 based on United States Environmental Protection Agency, 2007, EPA Method 8321 B In - house method : SOP LBGC-18004 based on ISO 14362-1 : 2017

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Azo colorants - o-Anisidine - 4-Chloroaniline - n,n-diethylaniline - p-Cresidine - 2,4,5 - Trimethylaniline - 4-Chloro-o-toluidine - 2,4-Toluenediamine - 2,4 - Diaminoanisole - 2-Naphthylamine - 5-Nitro-o-toluidine - 5-Nitro-o-anisidine - 4-Aminobiphenyl - 4-Aminoazobenzene - 4,4'-Oxydianiline 0.10 µg/L to 3.00 µg/L	In - house method : SOP LBGC-18004 based on ISO 14362-1 : 2017

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Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Azo colorants - Benzidine - 4,4'-Thiodianiline - o-Aminoazobenzene - 3,3'-Dimethyl-4,4'-diaminodiphenylmethane - 3,3'-Dimethylbenzidine - 4,4'-Thiodianiline - 3,3'-Dichlorobenzidine - 4,4'-Methylene-bis-(2-chloro aniline) - 3,3'-Dimethoxybenzidine 0.10 µg/L to 3.00 µg/L	In - house method : SOP LBGC-18004 based on ISO 14362-1 : 2017

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Organotin Compounds - Trimethyltin(TMT) - Dimethyltin(DMT) - Dipropyltin-dichloride(DPrOT) - Monobutyltin(MBT) - Tripropyltin(TPrT) - Dibutyltin(DBT) - Tributyltin(TBT) - Monooctyltin(MOT) - Tetraoctyltin(TeBT) - Diphenyltin(DPhT) - Dioctyltin(DOT) - Triphenyltin(TPhT) - Tri-cyclohexyltin(TCyT) - Tri-n-octyltin(TOT) 0.05 µg/L to 2.0 µg/L	In - house method : SOP LBGC-18006 based on ISO 17353 : 2004

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Polycyclic Aromatic Hydrocarbons (PAHs) - Naphthalene - 2-Methylphthalene - 1-Methylphthalene - Acenaphthylene - Acenaphthene - Fluorene - Phenanthrene - Anthracene - Fluoranthene - Pyrene - Cyclopenta (c,d) pyrene - Benzo(a) Anthracene - Chrysene 0.01 µg/L to 2.0 µg/L	In - house method : SOP LBGC-18008 based on DIN 38407-39 : 2011

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Polycyclic Aromatic Hydrocarbons (PAHs) - Benzo (b) Fluoranthene - Benzo (j) Fluoranthene - Benzo (k) Fluoranthene - Benzo (e) pyrene - Benzo (a) pyrene - Indenol (1,2,3-cd) pyrene - Dibenzo (ah) anthracene - Benzo (ghi) perylene 0.01 µg/L to 2.0 µg/L	In - house method : SOP LBGC-18008 based on DIN 38407-39 : 2011

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Chlorophenol - 4-Chloro-3-methylphenol - 2-Chlorophenol - 3-Chlorophenol - 4-Chlorophenol - 2,4-Dichlorophenol - 2,5-Dichlorophenol - 2,6-Dichlorophenol - 3,5-Dichlorophenol - 2,3-Dichlorophenol - 3,4-Dichlorophenol - Pentachlorophenol - 2,3,4,6-Tetrachlorophenol 0.5 µg/L to 20.0 µg/L	In - house method : SOP LBG-C-18003 based on ISO 17070 : 2015

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Accreditation Number : Testing - 0017

Laboratory Status : ☒ Permanent ☐ Temporary ☐ Site ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Chlorophenol - 2,4,5-Trichlorophenol - 2,4,6-Trichlorophenol - 2,3,4-Trichlorophenol - 2,3,5-Trichlorophenol - 3,4,5-Trichlorophenol - 2,3,4,5-Tetrachlorophenol - 2,3,5,6-Tetrachlorophenol - 2,3,6-trichlorophenol 0.5 µg/L to 20.0 µg/L	In - house method : SOP LBGC-18003 based on ISO 17070 : 2015
		Phthalates - Dimethyl phthalate - Diethyl phthalate - Di-iso-buthyl phthalate - Benzyl buthyl phthalate 5 µg/L to 30 µg/L	In - house method : SOP LBGC-18007 based on ISO 18856 : 2004

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Phthalates - Di-butyl phthalate - Di-2-ethyl hexyl phthalate - Di-isononyl phthalate - Bis-methylglycol ester phthalate - Di-isoheptyl phthalate - Bis cyclohexyl phthalate - Di -n - octyl phthalate - Bis-(2-propylheptyl) phthalate - Bis-nonyl phthalate - Bis -propyl phthalate - Bis -iso-pentyl phthalate - n-pentyl-iso-pentyl phthalate - Bis-n-pentyl phthalate - Di - n - hexyl phthalate - Bis -iso -octyl phthalate - Di-isodecyl phthalate 5 µg/L to 30 µg/L	In - house method : SOP LBGC-18007 based on ISO 18856 : 2004

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Volatile Organic Compound - Methylene Chloride - Benzene - 1,2-Dichloroethane - Trichloroethylene - Tetrachloroethylene - Total Xylene 5 µg/L to 20 µg/L - p- Cresol - o- Cresol - m- Cresol 5 µg/L to 25 µg/L	In - house method : SOP LBGC-18009 based on United States Environmental Protection Agency, 1996, EPA, Method 8260B, Revision 2.0 In - house method : SOP LBGC-18010 based on United States Environmental Protection Agency, 1996, EPA, Method 8260 B, Revision 2.0

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:Testing - 0017

: ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	<p>Flame retardants</p> <ul style="list-style-type: none"> - Polybrominated biphenyls ethers - Polybrominated diphenyl ethers <p>0.25 µg/L to 1.5 µg/L</p> <p>Disperse dyes</p> <ul style="list-style-type: none"> - Basic violet 1 - Basic violet 3 - Disperse Blue 1 - Disperse Blue 7 - Disperse Brown 1 - Disperse Orange 1 - Disperse Orange 3 - Disperse Orange 11 - Disperse Orange 37/76 - Disperse Red 1 <p>10.0 µg/L to 50.0 µg/L</p>	<p>In - house method : LBGC-18005 based on United States Environmental Protection Agency, 2005, EPA, Method 527, Revision 1.0</p> <p>In - house method : LBLG-18002 based on Journal of Chromatographic Science 2015, 53 : page 1257-1264</p>

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Disperse dyes - Disperse Violet 1 - Disperse Yellow 1 - Disperse Yellow 9 - Disperse Yellow 39 - Disperse Yellow 54 - Solvent Yellow 1 - Solvent Yellow 2 - Solvent Yellow 3 - Solvent Yellow 14 10.0 µg/L to 50.0 µg/L	In - house method : LBLC-18002 based on Journal of Chromatographic Science 2015, 53 : page 1257-1264

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Flame retardant - Tris (2,3-dibromopropyl) phosphate - Bis (2,3-dibromopropyl) phosphate 1.00 µg/L to 4.00 µg/L - Glycol 20 µg/L to 100 µg/L	In - house method : LBLC-18001 based on ISO 18857-2 : 2009 In - house method : LBGC-18012 based on United States Environmental Protection Agency, 2014, EPA, Method 600/R-14/008

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Conductivity 145 µS/cm to 12 880 µS/cm	In - house method : LBEN-02110 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2510 B
		- Total Solids at 103 °C to 105 °C 50 mg/L to 20 000 mg/L	In - house method : LBEN-09150 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part:2540 B
		- Total Suspended Solids at 103 °C to 105 °C 5 mg/L to 10 000 mg/L	In - house method : LBEN-97042 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 D

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Total Dissolved Solids at 180 °C 50 mg/L to 20 000 mg/L	In - house method : LBEN-00106 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 C
		- Total hardness (calculates as CaCO ₃) 1 mg/L to 300 mg/L	In - house method : LBEN-00098 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2340 C
		- BOD 2 mg/L to 2 100 mg/L	In - house method : LBEN-97006 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5210 B

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Laboratory Name : SGS (Thailand) Limited, Laboratory Services
 Address : 41/23 Soi Rama III (59), Rama III Road,
 Chongnonsee, Yannawa, Bangkok 10120
 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- COD 10 mg/L to 300 mg/L	In - house method : LBEN-97010 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5220 C
		- COD 10 mg/L to 400 mg/L	In - house method : LBEN-12161 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5220 D
		- Nitrate 0.02 mg/L to 6.0 mg/L	In - house method : LBEN-97029 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - NO ₃ E

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Nitrite 0.02 mg/L to 1.0 mg/L	In - house method : LBEN-97049 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - NO ₂ B
		- Sulfate 2.0 mg/L to 100.0 mg/L	In - house method : LBEN-14003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - SO ₄ E
		- Total organic carbon 0.5 mg/L to 10.0 mg/L	In - house method : LBEN-09149 based on United States Environmental Protection Agency, 2004, EPA Method 9060 A, Revision 1.0

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Perfluorocarbons (PFCs) : - PFPeA - PFBS - PFHxS - PFHpS - PF-3,7-DMOA - PFDA - PFOS - PFUnA - PFDoA - PFDS - PFTtA - PFTeA - PFOSA 0.05 µg/L to 0.3 µg/L	In – house method : LBLC-17014 based on DIN 38407-42 : 2011-03 and analysis with HPLC-MS

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	Alkyl phenol ethoxylate : - OPEO - NPEO 1 µg/L to 10 µg/L	In – house method : LBLC-17013 based on ISO 18857-2 : 2009 and analysis with HPLC-MS

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2	Wastewater	- Mercury 0.5 µg/L to 8.0 µg/L	In - house method : LBEN-08145 based on United States Environmental Protection Agency, 1994, EPA Method 245.1, Revision 3.0
		- pH 4.0 to 10.0	In - house method : LBEN-09152 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - H ⁺ B
		- Total Solids at 103 °C to 105 °C 50 mg/L to 20 000 mg/L	In - house method : LBEN-09150 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 B

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Total Suspended Solids at 103 °C to 105 °C 5 mg/L to 10 000 mg/L	In - house method : LBEN-97042 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 D
		- Total Dissolved Solids at 180 °C 50 mg/L to 20 000 mg/L	In - house method : LBEN-00106 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 C
		- Conductivity 145 µS/cm to 12 880 µS/cm	In - house method : LBEN-02110 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2510 B

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Total hardness (calculates as CaCO ₃) 2 mg/L to 500 mg/L	In - house method : LBEN-00098 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2340 C
		- BOD 2 mg/L to 2 100 mg/L	In - house method : LBEN-97006 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5210 B
		- COD 10 mg/L to 3 000 mg/L	In - house method : LBEN-97010 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5220 C

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- COD 10 mg/L to 500 mg/L	In - house method : LBEN-12161 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5220 D
		- Nitrate 0.02 mg/L to 15.0 mg/L	In - house method : LBEN-97029 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - NO ₃ E
		- Nitrite 0.02 mg/L to 1.0 mg/L	In - house method : LBEN-97049 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - NO ₂ B

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Sulfate 2.0 mg/L to 100.0 mg/L	In - house method : LBEN-14003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - SO ₄ ²⁻ E
		- Total organic carbon 0.5 mg/L to 10.0 mg/L	In - house method : LBEN-09149 based on United States Environmental Protection Agency, 2004, EPA Method 9060 A, Revision 1.0
		- Ammonia-Nitrogen 0.02 mg/L to 20 mg/L	In - house method : LBEN-11158 based on ASTM D1426-08

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Total phosphorus 0.01 mg/L to 40 mg/L	In - house method : LBEN-97037 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - P B4, E
		- Dissolved phosphorus 0.005 mg/L to 20 mg/L	In - house method : LBEN-97037 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - P B1, E
		- Glycol 20 µg/L to 200 µg/L	In - house method : LBGC-18012 based on United States Environmental Protection Agency, 2014, EPA, Method 600/R-14/008

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Ammonia-Nitrogen 0.10 mg/L to 10.0 mg/L	In - house method : LBEN-19003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 NH ₃ -F
		- Total phosphorus 0.10 mg/L to 10.0 mg/L	In - house method : LBEN -19002 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500-P J
	- Chloride 1 mg/L to 20 000 mg/L		In - house method : LBEN-11157 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500-Cl D

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Navy Blue 1.0 mg/L to 7.5 mg/L	In - house method : LBLC-19004 based on United States Environmental Protection Agency, 2007, EPA, Method 8321B
		Perfluorocarbons (PFCs) : - PFPeA - PFBS - PFHxS - PFHpS - PF-3,7-DMOA - PFDA - PFOS - PFUnA - PFDaA 0.05 µg/L to 0.3 µg/L	In - house method : LBLC-17014 based on DIN 38407-42 : 2011-03 and analysis with HPLC-MS

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Perfluorocarbons (PFCs) : - PFDS - PFTFA - PFTeA - PFOSA 0.05 µg/L to 0.3 µg/L Alkyl phenol ethoxylate : - OPEO - NPEO 1 µg/L to 10 µg/L - Phenol 0.001 mg/L to 0.1 mg/L	In – house method : LBLC-17014 based on DIN 38407-42 : 2011-03 and analysis with HPLC-MS In – house method : LBLC-17013 based on ISO 18857-2 : 2009 and analysis with HPLC-MS In – house method : LBEN-15007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5530 B, C

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Cyanide 0.05 mg/L to 0.2 mg/L - Oil and Grease 1 mg/L to 100 mg/L - Oil and Grease 0.5 mg/L to 100 mg/L	In – house method : LBEN-97018 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 CN C, E In – house method : LBEN-97031 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5520 B In – house method : LBEN-18005 based on United States Environmental Protection Agency, 2010, EPA, Method 1664, Revision B

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Sulfide 0.01 mg/L to 1.0 mg/L	In - house method : LBEN-97045 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500-S ² -D
		- Sulfite 0.75 mg/L to 3.0 mg/L	In - house method : LBEN-18006 based on United States Environmental Protection Agency, 1978, EPA, Method 377.1
		- Total nitrogen 2 mg/L to 200 mg/L	In - house method : LBAG-18002 based on ISO 5663 : 1984
		- True color 5 M ⁻¹ to 30 M ⁻¹	ISO 7887 : 2011, Method B

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Arsenic 0.63 µg/L to 6.25 µg/L - Lead 0.63 µg/L to 6.25 µg/L - Cadmium 0.63 µg/L to 6.25 µg/L - Copper 0.63 µg/L to 6.25 µg/L - Manganese 0.63 µg/L to 6.25 µg/L - Nickel 0.63 µg/L to 6.25 µg/L - Zinc 2.5 µg/L to 62.5 µg/L - Silver 2.5 µg/L to 62.5 µg/L	In - house method : LBEN-14004 based on United States Environmental Protection Agency, 2014, EPA, Method 60208, Revision 2

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	- Chromium 0.63 µg/L to 12.5 µg/L - Antimony 0.63 µg/L to 12.5 µg/L - Cobalt 1.25 µg/L to 62.5 µg/L - Hexavalent chromium 1.0 µg/L to 5.0 µg/L Flame retardant - Tris (2,3-dibromopropyl) phosphate - Bis (2,3-dibromopropyl) phosphate 1.00 µg/L to 4.00 µg/L	In - house method : LBEN-14004 based on United States Environmental Protection Agency, 2014, EPA, Method 6020B, Revision 2 ISO 18412 : 2005 In - house method : LBLC-18001 based on ISO 18857-2 : 2009

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Disperse dyes - Disperse Blue 1 - Disperse Blue 7 - Disperse Brown 1 - Disperse Orange 1 - Disperse Orange 3 - Disperse Orange 11 - Disperse Orange 37/76 - Disperse Red 1 - Disperse Yellow 1 - Disperse Yellow 9 - Disperse Yellow 39 - Basic Violet 3 - Solvent Yellow 1 - Solvent Yellow 2 - Solvent Yellow 3 10.0 µg/L to 50.0 µg/L	In - house method : LBLC-18002 based on Journal of Chromatographic Science 2015,53 : page 1257-1264

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Disperse dyes - Basic violet 1 - Solvent Yellow 14 - Disperse Yellow 54 - Disperse Violet 1 10.0 µg/L to 50.0 µg/L	In - house method : LBLC-18002 based on Journal of Chromatographic Science 2015,53 : page 1257-1264
		Azo colorants - Aniline - m-Methylaniline - p-Toluidine - o-Toluidine - m-Toluidine - n-ethylamine - 2-chloroaniline - 2,4-Xyldine 2,6-Xyldine 0.5 µg/L to 3.0 µg/L	In - house method : SOP LBGC-18004 based on ISO 14362-1 : 2017

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Azo colorants - o-Anisidine - 4-Chloroaniline - n,n-diethylaniline - p-Cresidine - 2,4,5 - Trimethylaniline - 4-Chloro-o-toluidine - 2,4-Toluenediamine - 2,4 - Diaminoanisole - 2-Naphthylamine - 5-Nitro-o-toluidine - 5-Nitro-o-anisidine - 4-Aminobiphenyl - 4-Aminoazobenzene - 4,4'-Oxydianiline - Benzidine 0.5 µg/L to 3.0 µg/L	In - house method : SOP LBGC-18004 based on ISO 14362-1 : 2017

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Azo colorants - 4,4'-Thiodianiline - o-Aminoazotoluene - 3,3'-Dimethyl-4,4'-diaminodiphenylmethane - 3,3'-Dimethylbenzidine - 4,4'-Thiodianiline - 3,3'-Dichlorobenzidine - 4,4'-Methylenbis (2-chloroaniline) - 3,3'-Dimethoxybenzidine 0.5 µg/L to 3.0 µg/L	In - house method : SOP LBGC-18004 based on ISO 14362-1 : 2017

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Flame retardants - 2,2-bis(bromomethyl)-1,3-propane-diol - Tris (2-chloroethyl) phosphate - Tris (1,3-dichloro-isopropyl) phosphate - Hexabromocyclododecane 5 µg/L to 25 µg/L - Polybrominated biphenyls ether - polybrominated diphenyl ethers 0.25 µg/L to 1.5 µg/L	In - house method : LBGC-18005 based on United States Environmental Protection Agency, 2005, EPA, Method 527, Revision 1.0

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Organotin compounds - Trimethyltin(TMT) - Dimethyltin(DMT) - Dipropyltin-dichloride(DPrOT) - Monobutyltin(MBT) - Tripropyltin(TPrT) - Dibutyltin(DBT) - Tributyltin(TBT) - Monooctyltin(MOT) - Tetraethyltin(TeBT) - Diphenyltin(DPhT) - Dioctyltin(DOT) - Triphenyltin(TPhT) - Tri-cyclohexyltin(TCyT) - Tri-n-octyltin(TOT) 0.05 µg/L to 2.0 µg/L	In - house method : SOP LBGC-18006 based on ISO 17353 : 2004

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Polycyclic Aromatic Hydrocarbons (PAH) - Naphthalene - 2-Methylphthalene - 1-Methylphthalene - Acenaphthylene - Acenaphthene - Fluorene - Phenanthrene - Anthracene - Fluoranthene - Pyrene - Cyclopenta (c,d) pyrene - Benzo(a) Anthracene - Chrysene 1.0 µg/L to 20.0 µg/L	In - house method : LBGC-18008 based on DIN 38407-39 : 2011

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Polycyclic Aromatic Hydrocarbons (PAH) - Benzo(b) Fluoranthene - Benzo(j) Fluoranthene - Benzo(k) Fluoranthene - Benzo(e) Pyrene - Benzo(a) Pyrene - Indenol(1,2,3-cd) Pyrene - Dibenzo (ah) Anthracene - Benzo (ghi) perylene 1.0 µg/L to 20.0 µg/L	In - house method : LBG-18008 based on DIN 38407-39 : 2011

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Chlorophenol - 4-Chloro-3-methylphenol - 2-Chlorophenol - 3-Chlorophenol - 4-Chlorophenol - 2,4-Dichlorophenol - 2,5-Dichlorophenol - 2,6-Dichlorophenol - 3,5-Dichlorophenol - 2,3-Dichlorophenol - 3,4-Dichlorophenol - Pentachlorophenol - 2,3,4,6-Tetrachlorophenol - 2,4,5-Trichlorophenol - 2,4,6-Trichlorophenol - 2,3,4-Trichlorophenol 0.5 µg/L to 20.0 µg/L	In - house method : SOP LBG-18003 based on ISO 17070 : 2015

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Scope of Laboratory Accreditation

Laboratory Name	: SGS (Thailand) Limited, Laboratory Services
Address	: 41/23 Soi Rama III (59), Rama III Road, Chongnonsee, Yannawa, Bangkok 10120

Accreditation Number : Testing - 0017

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	<p>Chlorophenol</p> <ul style="list-style-type: none"> - 2,3,4,5-Tetrachlorophenol - 2,3,5-Trichlorophenol - 2,3,5,6-Tetrachlorophenol - 2,3,6-Trichlorophenol - 3,4,5-Trichlorophenol <p>0.5 µg/L to 20.0 µg/L</p> <p>Phthalates</p> <ul style="list-style-type: none"> - Dimethyl phthalate - Diethyl phthalate - Bis-iso-butyl ester phthalate - Benzyl buthyl phthalate - Di-n-octyl phthalate - Di-2-ethyl hexyl phthalate - Di-isononyl phthalate - Bis methylglycol ester phthalate <p>5 µg/L to 30 µg/L</p>	<p>In - house method : SOP LBGC-18003 based on ISO 17070 : 2015</p> <p>In - house method : LBGC- 18007 based on ISO 18856 : 2004</p>

Initial Issue Date 22nd June 2007Initial Issue Date 22nd June 2007

Issue Number 10

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Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation
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Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
 Address : 41/23 Soi Rama III (59), Rama III Road,
 Chongnonsee, Yannawa, Bangkok 10120

Accreditation Number : Testing - 0017

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Volatile organic compounds - Methylene Chloride - Benzene - 1,2-Dichloroethane - Trichloroethylene - Tetrachloroethylene - Total Xylene 5 µg/L to 20 µg/L - p- Cresol - o- Cresol - m- Cresol 5 µg/L to 25 µg/L	In - house method : SOP LBGC-18009 based on United States Environmental Protection Agency, 1996, EPA, Method 8260B, Revision 2.0 In - house method : LBGC-18010 based on United States Environmental Protection Agency, 1996, EPA, Method 8260B, Revision 2.0

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Issue Number 10

Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
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 Chongnonsee, Yannawa, Bangkok 10120

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
2 (cont.)	Wastewater	Perfluorocarbons (PFCs) : - 6:2 FTOH - 8:2 FTOH - 10:2 FTOH - 6:2 FTA - 8:2 FTA - 10:2 FTA 5 µg/L to 25 µg/L - Coliforms MPN/100 ml Detected or not detected - Coliforms cfu/100 ml	In - house method : LBGC-18011 based on DIN 38407-42 : 2011 Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed, 2017, part 9221 B ISO 9308 -1: 2014 / Amd.1: 2016

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Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
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 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
3	Surface water	- Ammonia-Nitrogen 0.02 mg/L to 20 mg/L	In - house method : LBEN-11158 based on ASTM D1426-08
		- Chloride 1 mg/L to 20 000 mg/L	In - house method : LBEN-11157 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - C(D
		- Total phosphorus 0.01 mg/L to 40 mg/L	In - house method : LBEN-97037 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - P B4, E

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Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
 Address : 41/23 Soi Rama III (59), Rama III Road,
 Chongnonsee, Yannawa, Bangkok 10120
 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
3 (cont.)	Surface water	- Dissolved phosphorus 0.005 mg/L to 20 mg/L	In - house method : LBEN-97037 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - P B1, E
		- Total petroleum hydrocarbon 0.03 µg/L to 2.5 µg/L	In - house method : LBAG-08251 based on Methods of Seawater Analysis; 3 rd Completely Revised and Extended Edition, 1999, chapter 21
4	Sea water		
5	Sludge	- Mercury 0.1 mg/kg to 4.0 mg/kg	In - house method : LBEN-18008 based on United States Environmental Protection Agency, 2007, EPA, Method 7473, Revision 0

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Scope of Laboratory Accreditation

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 Accreditation Number : Testing - 0017
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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
5 (cont.)	Sludge	- Hexavalent chromium 1.0 mg/kg to 40.0 mg/kg	In - house method : LBEN 18003 based on United States Environmental Protection Agency, 1992, EPA, Method 7196A, Revision 1
		- Arsenic 0.50 mg/kg to 5.00 mg/kg	In - house method : LBEN 18007 based on United States Environmental Protection Agency, 2014, EPA, Method 6020B, Revision 2
		- Cadmium 0.50 mg/kg to 5.00 mg/kg	
		- Lead 0.50 mg/kg to 5.00 mg/kg	

Initial Issue Date 22nd June 2007

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Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
 Address : 41/23 Soi Rama III (59), Rama III Road,
 Chongnonsee, Yannawa, Bangkok 10120
 Accreditation Number : Testing - 0017
 Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
5 (cont.)	Sludge	- Cadmium 10 mg/kg to 1 000 mg/kg	In - house method : LBEN 18007 based on United States Environmental Protection Agency, 2007, EPA Method 6010C, Revision 3
		- Lead 10 mg/kg to 1 000 mg/kg	
		- Cyanide 0.5 mg/kg to 10.0 mg/kg	In - house method : SOP LBEN-19001 based on ISO 11262 : 2011
		- Water soluble potassium (Calculated as K ₂ O) 1.0 g/100 g to 60.4 g/100 g	In - house method : SOP LBCH-99246 based on Notification of Ministry of Agriculture and Cooperatives Re: Prescribing the methods of analysis of chemical fertilizers, B.E. 2559, method 1.12.02
6	Chemical fertilizer	- Total Nitrogen 1.0 g/100 g to 46.5 g/100 g	In - house method : SOP LBAG-12276 based on Notification of Ministry of Agriculture and Cooperatives Re: Prescribing the methods of analysis of chemical fertilizers, B.E. 2559, method 1.05.01

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Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
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Chongnonsee, Yannawa, Bangkok 10120

Accreditation Number : Testing - 0017

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
6 (cont.)	Chemical fertilizer	- Total phosphorus (Calculated P_2O_5) 2.00 g/100 g to 61.68 g/100 g	In - house method : SOP LBAG-00106 based on Notification of Ministry of Agriculture and Cooperatives Re: Prescribing the methods of analysis of chemical fertilizers, B.E. 2559, method 1.09.01
		- Calcium oxide (Calculated from total calcium) 0.02 g/100 g to 51.8 g/100 g	In - house method : SOP LBCH-16010 based on Notification of Ministry of Agriculture and Cooperatives Re: Prescribing the methods of analysis of chemical fertilizers, B.E. 2559, method 1.13.01
		- Magnesium oxide (Calculated from total magnesium) 0.02 g/100 g to 81.04 g/100 g	In - house method : SOP LBCH-16010 based on Notification of Ministry of Agriculture and Cooperatives Re: Prescribing the methods of analysis of chemical fertilizers, B.E. 2559, method 1.14.01

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Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Laboratory Accreditation

Laboratory Name : SGS (Thailand) Limited, Laboratory Services
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Chongnonsee, Yannawa, Bangkok 10120

Accreditation Number : Testing - 0017

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Item Number	Test Material / Product	Test item / Range of Testing	Test Method / Technique Used
6 (cont.)	Chemical fertilizer	- Total sulfur 0.02 g/100 g to 32.76 g/100 g	In - house method : SOP LBCH-16010 based on Notification of Ministry of Agriculture and Cooperatives Re: Prescribing the methods of analysis of chemical fertilizers, B.E. 2559, method 1.15.01

Issue Date : 21st April 2020

Signature : 

(Mrs. Pochaman Tagheen)

Director of Bureau of Laboratory Accreditation

Initial Issue Date 22nd June 2007

Issue Number 10

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation



แบบ กษท/สมบ.๒

ใบรับรองเลขที่ 19T184/0960

ใบรับรองห้องปฏิบัติการ

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

ออกใบรับรองฉบับนี้ให้

บริษัท เอสซีเอส (ประเทศไทย) จำกัด

ห้องปฏิบัติการทดสอบสิ่งแวดล้อม (สาขาขยะของ)

มีห้องปฏิบัติการตั้งอยู่เลขที่

๑/๒๐๙, ๑/๒๑๑ หมู่ที่ ๑ ซอยสุขุมวิท ๒ ถนนสุขุมวิท

ตำบลบ้านฉาง อำเภอบ้านฉาง จังหวัดระยอง

ได้รับการรับรองความสามารถห้องปฏิบัติการทดสอบ

ตามมาตรฐานเลขที่ มอก. 17025-2561 (ISO/IEC 17025 : 2017)

ข้อกำหนดทั่วไปว่าด้วยความสามารถห้องปฏิบัติการทดสอบและสอบเทียบ

หมายเลขการรับรองที่ ทดสอบ ๐๔๗๐

โดยมีสภาพการรับรองตามรายละเอียดแนบท้ายใบรับรอง

ตั้งแต่วันที่ ๑๑ พฤศจิกายน พ.ศ. ๒๕๖๒

ถึง วันที่ ๑๐ พฤศจิกายน พ.ศ. ๒๕๖๕

ออกให้ ณ วันที่ ๒๙ พฤศจิกายน พ.ศ. ๒๕๖๒

ลงชื่อ

(นายวีระกิตติ์ รันทกิจธนวัชร)

รองเลขาธิการ ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

รายละเอียดแนบท้ายใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 19T184/0960

ห้องปฏิบัติการทดสอบสิ่งแวดล้อม (สาขาขยะของ)

บริษัท เอสซีเอส (ประเทศไทย) จำกัด

เลขที่ 1/209, 1/211 หมู่ที่ 1 ซอยสุขุมวิท 2 ถนนสุขุมวิท ตำบลบ้านฉาง

อำเภอบ้านฉาง จังหวัดระยอง

หมายเลขการรับรองที่ ทดสอบ 0470

สถานภาพห้องปฏิบัติการ

☒ ถาวร

☐ นอกสถานที่

☐ชั่วคราว

☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
สารสิ่งแวดล้อม น้ำและน้ำเสีย (water and wastewater)	- Arsenic 0.01 mg/l to 0.50 mg/l - Barium 0.01 mg/l to 10 mg/l - Cadmium 0.002 mg/l to 10 mg/l - Chromium 0.01 mg/l to 10 mg/l - Copper 0.01 mg/l to 10 mg/l - Iron 0.02 mg/l to 10 mg/l - Lead 0.01 mg/l to 10 mg/l - Manganese 0.01 mg/l to 5 mg/l - Nickel 0.004 mg/l to 10 mg/l - Selenium 0.01 mg/l to 0.50 mg/l - Silver 0.01 mg/l to 10 mg/l - Zinc 0.02 mg/l to 10 mg/l	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 3120 B, part 3030 F and part 3030 K

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รายละเอียดแบบทำใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 19T184/0960

หมายเลขรับรองที่

ทดสอบ 0470

สถานภาพห้องปฏิบัติการ

☒ถาวร

☐นอกสถานที่

☐ชั่วคราว

☐เคลื่อนที่

รายละเอียดแบบทำใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 19T184/0960

หมายเลขรับรองที่

ทดสอบ 0470

สถานภาพห้องปฏิบัติการ

☒ถาวร

☐นอกสถานที่

☐ชั่วคราว

☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
สาขาสิ่งแวดล้อม น้ำและน้ำเสีย (water and wastewater) (ต่อ)	<ul style="list-style-type: none"> - Biochemical oxygen demand (BOD) 2 mg/l to 5 000 mg/l - Chemical oxygen demand (COD) 40 mg/l to 10 000 mg/l - Chloride 1 mg/l to 10 000 mg/l - Chromium hexavalent 0.01 mg/l to 2.00 mg/l - Oil and grease 2 mg/l to 100 mg/l - pH 2.0 to 11.0 	<ul style="list-style-type: none"> - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 5210 B and part 4500-O G - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 5220 C - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 4500-Cl D - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 3500-Cr B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 5520 B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 4500-H⁺ B

ฉบับที่ 1 ตั้งแต่วันที่ 11 พฤศจิกายน พ.ศ. 2562 หน้า 2/4
กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
สาขาสิ่งแวดล้อม น้ำและน้ำเสีย (water and wastewater) (ต่อ)	<ul style="list-style-type: none"> - Phenol 0.01 mg/l to 1.00 mg/l - Sulfate 1 mg/l to 40 mg/l - Total hardness 1 mg/l to 1 000 mg/l (expressed as CaCO₃) - Total solids (TS) 2.5 mg/l to 10 000 mg/l - Total dissolved solids (TDS) 2.5 mg/l to 20 000 mg/l 	<ul style="list-style-type: none"> - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 5530 D - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 4500-SO₄²⁻ E - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 2340 C - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 2540 B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, part 2540 C (dried at 180 °C and at 103 – 105 °C)

ฉบับที่ 1 ตั้งแต่วันที่ 11 พฤศจิกายน พ.ศ. 2562 หน้า 3/4
กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

รายละเอียดแบบท้ายใบรับรองห้องปฏิบัติการทดสอบ
ใบรับรองเลขที่ 19T184/0960

หมายเลขการรับรองที่

ทดสอบ 0470

สถานภาพห้องปฏิบัติการ

☒ ถาวร

☐ นอกสถานที่

☐ชั่วคราว

☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
สาขาส่งแวดล้อม น้ำและน้ำเสีย (water and wastewater) (ต่อ)	- Total suspended solids (TSS) 2.5 mg/l to 10 000 mg/l	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 2540 D

ออกให้ ณ วันที่ ๒๕ พฤศจิกายน พ.ศ. ๒๕๖๒

ลงชื่อ

(นายวิระกิตต์ รันทกิจธนวงศ์)

รองเลขาธิการ ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

ฉบับที่ 1 ตั้งแต่วันที่ 11 ตุลาคม พ.ศ. ๒๕๖๒ หน้า 4/4

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



แบบ กษ./กส.๒
Form ISCT/ISI 2

ใบรับรองเลขที่ 22-IB0007
(Certificate No.)

ใบรับรองระบบงาน

(Certificate of Accreditation)

อาศัยอำนาจความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้
(Issues this certificate to)

บริษัท เอสจีเอส (ประเทศไทย) จำกัด
SGS (Thailand) Limited

ตั้งอยู่เลขที่
(Address)

๑๐๐ ถนนนางลิ้นจี่ แขวงช่องนนทรี เขตยานนาวา กรุงเทพมหานคร
(100 Nangliachee Road, Chongnonsee, Yananawa, Bangkok)

ได้รับการรับรองความสามารถ
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๗๐๒๐ - ๒๕๕๖
(Standard No. ISO/IEC 17020 : 2012)

การตรวจสอบและรับรอง-ข้อกำหนดสำหรับหน่วยตรวจ
(Conformity assessment - Requirements for the operation of various types of bodies performing inspection)

หมายเลขการรับรองที่ หน่วยตรวจ ๐๐๓๔
(Accreditation No. INSPCTION 0034)

โดยมีรายละเอียดสาขาและขอบข่ายที่ได้รับรอง แสดงไว้ใน QR CODE และ www.tisi.go.th
(Details of the scheme and scope of the certificate are shown in QR CODE and www.tisi.go.th)

ออกให้ ณ วันที่ ๓๑ มกราคม พ.ศ. ๒๕๖๕
(Issue date : 31 January B.E. 2565 (2022))

(นายเอกนิติ รมยานนท์)
รองเลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
ปฏิบัติราชการแทน
เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
Ministry of Industry Thailand, Thai Industrial Standards Institute



รายละเอียดแบบท้ายใบรับรองระบบงานหน่วยตรวจ
ใบรับรองเลขที่ 22-B0007

ชื่อหน่วยตรวจ : บริษัท เอสซีเอส (ประเทศไทย) จำกัด

๕๕
ที่ตั้งสถานประกอบการของหน่วยตรวจและข้อมูลติดต่อ

๗๕๕
ที่ตั้งสำนักงานใหญ่

เลขที่ 100 ถนนนางลิ้นจี่ แขวงช่องนนทรี เขตยานนาวา

กรุงเทพมหานคร

[illegible]

หมายเลขการรับรอง : ๙๕๙/๐๙ A
 หมายเลขหนังสือ : ๙๕๙/๐๙ A

พระครูบ.อินทนิล : พระครูอินทนิล

หมวดหมู่ / สาขาการตรวจ	ขั้นตอนและช่วงการตรวจ	ข้อกำหนดที่ใช้
1. เครื่องแต่งกาย : เสื้อผ้าสำเร็จรูป (เฉพาะสำนักงานไทย)	การตรวจสายการผลิตและการตรวจก่อนการส่งมอบ ในรายการต่อไปนี้ - ลักษณะทั่วไป - รูปแบบและขนาด - ปริมาณและการบรรจุ (เฉพาะการตรวจก่อนการส่งมอบ)	- วิธีปฏิบัติงานของบริษัทหมายเลข P-INSP-WI-SL-001 - ข้อกำหนดของลูกค้า
2. ผลิตภัณฑ์อาหาร : การตรวจผลิตภัณฑ์อาหาร (เฉพาะสำนักงานใหญ่และสาขาหาดใหญ่)	การตรวจระหว่างการผลิตและการตรวจก่อนการส่งมอบ สำหรับกลุ่มผลิตภัณฑ์อาหารแช่แข็งและกลุ่มผลิตภัณฑ์อาหารกระป๋อง	- ขั้นตอนการดำเนินงานของบริษัทหมายเลข P-CORP-I-09 - ข้อกำหนดของลูกค้า
3. ยานยนต์ : รถยนต์ (เฉพาะสำนักงานไทย)	การตรวจสอบสภาพทั่วไปก่อนการส่งมอบ ในรายการต่อไปนี้ - จำนวน - สภาพความสมบูรณ์ภายนอกรถของรถยนต์ เช่น สภาพของกระจก สภาพตัวปัดน้ำฝน สภาพยางและล้อ ความสะอาด และอื่น ๆ ที่อยู่ภายนอก	- ขั้นตอนการดำเนินงานของบริษัทหมายเลข PR-TH-NR-OGC-IN-001 และ PR-TH-NR-OGC-IN-002 - เอกสาร New Vehicle Receiving and Inspection Procedures Issued May 1, 1989 ของ Federal Chamber of Automotive Industries

ออกให้ครั้งแรกเมื่อวันที่ 11 กันยายน พ.ศ. 2561

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

หน้าที 1/5

ออกให้ครั้งแรกเมื่อวันที่ 11 กันยายน พ.ศ. 2561

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

หน้า 2/5



รายละเอียดแนบท้ายใบรับรองระบบงานหน่วยตรวจ
ใบรับรองเลขที่ 22-B0007

ชื่อหน่วยตรวจ :: บริษัท เอสซีเอส (ประเทศไทย) จำกัด

หมายเลขการรับรอง : หน่วยตรวจ 0034

ประเภทของหน่วยตรวจ : ประเภท A

หมวดหมู่ / สาขาการตรวจ	ขั้นตอนและช่วงการตรวจ	ข้อกำหนดที่ใช้
4. เครื่องจักรกล : ถังกักขังโคจเรียนเหลว (เฉพาะสำนักงานใหญ่)	การตรวจกระบวนการผลิตและการควบคุมคุณภาพ ในรายการต่อไปนี้ <ul style="list-style-type: none"> - การตรวจชิ้นส่วนประกอบการผลิตถัง - การตรวจระหว่างการผลิตประกอบ - การทำการบ่งบุนการทางควมร้อน - การทดสอบทั้งทางกล การรั่ว การขยายตัวและการระเบิด และการตรวจสอบปริมาตร - การตรวจสอบก่อนการส่งมอบ 	<ul style="list-style-type: none"> - ขั้นตอนการดำเนินงานของบริษัท หมายเลข PR-TH-I&E-IN-071 - ข้อกำหนดของลูกค้า
5. สีนํ้าเกษตร : ข้าวหอมมะลิไทย (เฉพาะสำนักงานใหญ่และสำนักงานนครราชสีมา)	การตรวจในขั้นตรวจสอบย่อย ในรายการต่อไปนี้ <ul style="list-style-type: none"> - ปริมาณ - คุณภาพทางกายภาพและลักษณะทั่วไป ดังต่อไปนี้ <ul style="list-style-type: none"> • ประเภท ชนิด • ความบริสุทธิ์ • ความชื้น • ขนาดของเมล็ดข้าว • ส่วนผสม (ข้าวเต็มเมล็ด ข้าวหัก ต้นข้าว) • ข้าวและสิ่งที่ย่างมีโปรตีน (เมล็ดเสีย เมล็ดเหลือง เมล็ดท้องไข เมล็ดแดง ฯลฯ) • ไม่มีแมลงที่ยังมีชีวิต • ระดับการขัดสี 	<ul style="list-style-type: none"> - ประกาศกระทรวงพาณิชย์ เรื่อง หลักเกณฑ์และวิธีการการจัดให้มีการตรวจสอบมาตรฐานสินค้าข้าวหอมมะลิไทย - ขั้นตอนการดำเนินงานของบริษัท หมายเลข PR-TH-NR-AGR-IN-004 และ PR-TH-NR-AGR-IN-005 - ข้อกำหนดของลูกค้า <p style="text-align: right;">12-9</p>



รายละเอียดแบบท้ายใบรับรองระบบงานหน่วยตรวจ
ใบรับรองเลขที่ 22-IB0007

ชื่อหน่วยตรวจ : บริษัท เอสอีเอส (ประเทศไทย) จำกัด
หมายเลขการรับรอง : หน่วยตรวจ 0034
ประเภทของหน่วยตรวจ : ประเภท A

หมวดหมู่ / สาขาการตรวจ	ขั้นตอนและช่วงการตรวจ	ข้อกำหนดที่ใช้
10. สินค้าเกษตร : ข้าวสาลีและกากถั่วเหลือง* (เฉพาะสำนักงานใหญ่และ สำนักงานศรีราชา)	การตรวจสอบสภาพทั่วไป การสุ่มตัวอย่าง และการสังเกตการณ์การชั่งน้ำหนัก	- GAFTA Weighing Rules No. 123 - GAFTA Sampling Rules No.124 - วิธีปฏิบัติงานของโรงงานหมายเลข PR-TH-NR-AGR-IN-006 - ข้อกำหนดของลูกค้า

หมายเหตุ : * สถานและขอเข้ายี่ที่ได้รับการรับรองระบบงานเพิ่มเติม วันที่ 8 ธันวาคม 2564

ตั้งแต่ วันที่ 8 ธันวาคม พ.ศ. 2564
ถึง วันที่ 10 กันยายน พ.ศ. 2569
ออกให้ ณ วันที่ 31 มกราคม พ.ศ. 2565

ออกให้ครั้งแรกเมื่อวันที่ 11 กันยายน พ.ศ. 2561
กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Addresses and contact details
Head office or primary location
100 Nanglinchee Road, Chongnonssee, Yannawa, Bangkok
Additional Locations (if different from Head Office)
1) Sriracha Office
144, 146 Sriracha Nakhon 1 Road, Sriracha, Sriracha, Chonburi
2) Nakhon Ratchasima Office
1340/46 Suranarai Road, Nai-Muang, Muang,
Nakhonratchasima
3) Hat Yai Branch
57, 59 and 61 Soi 10, Phetkasem Road, Hat Yai, Hat Yai,
Songkhla

Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
1. Apparel : Readymade Garment (Head office)	In-line process and Pre-shipment inspection of readymade garment with the items as follows : <ul style="list-style-type: none">General appearanceStyle, Size and Weight of unitQuantity and Packing (Pre-shipment inspection)	<ul style="list-style-type: none">Work instruction of SGS (Thailand) Limited : P-INSP-WI-SL-001Customer's requirements
2. Food Products : Food Inspection (Head Office and Hat Yai Branch)	During process inspection and Pre-shipment inspection of food products covering frozen food products and canned food products	<ul style="list-style-type: none">Operating procedure of SGS (Thailand) Limited : P-CORP-I-09Customer's requirements
3. Motor Vehicle : Automotive (Head Office)	Pre-shipment inspection of general condition of vehicle with the items as follows : <ul style="list-style-type: none">QuantityVisual inspection of external condition e.g. glass, body, tires, wheels, cleanliness etc.	<ul style="list-style-type: none">Operating procedure of SGS (Thailand) Limited : PR-TH-NR- OGC-IN-001 and PR-TH-NR-OGC- IN-002New Vehicle Receiving and Inspection Procedures Issued May 1, 1989 of Federal Chamber of Automotive Industries

Date of initial issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
4. Machinery : LPG Cylinder (Head Office)	Production process and quality control inspection with the items as follows : - Component parts - During assembly - Heat treatment - Mechanical, Hydraulic pressure leak, Volumetric expansion, Burst test and Capacity check - Pre-delivery inspection	<ul style="list-style-type: none"> - Operating procedure of SGS (Thailand) Limited : PR-TH-I&E-IN-071 - Customer's requirements
5. Agricultural Products : Thai Hom Mali Rice (Head Office and Nakhon Ratchasima Office)	Pre-shipment inspection with the items as follows : - Quantity - Physical quality and general feature as follows : • Type, Grade • Purity • Moisture • Kernel size • Composition (whole kernel, broken, head rice) • Rice and matters that may be present (damaged kernel, yellow kernel, chalky kernel, red kernel, etc.) • No live insects • Milling degree Not covering the purity check by laboratory analysis for determination of Amylose content and Alkali spreading value	<ul style="list-style-type: none"> - Notification of Ministry of Commerce on Criteria and procedures of organizing the inspection of commodity standards and the inspection of the standards of Thai Hom Mali Rice - Operating procedure of SGS (Thailand) Limited : PR-TH-NR-AGR-IN-004 and PR-TH-NR-AGR-IN-005 - Customer's requirements

Date of Initial Issue: 11 September B.E. 2561 (2018)

Ministry of Industry Thailand, Thai Industrial Standards Institute

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
6. Agricultural Products : White sugar and raw sugar (Head Office and Nakhon Ratchasima Office)	General appearance and quantity inspection Excluding analysis by laboratory testing	<ul style="list-style-type: none"> - Operating procedure of SGS (Thailand) Limited : PR-TH-NR-AGR-IN-002 and PR-TH-NR-AGR-IN-003 - Customer's requirements
7. Bulk Solids : Coal, cement, gypsum, clinker, limestone and sedimentary rock (Head Office, Sriracha Office and Hat Yai Branch)	General appearance inspection and sampling	<ul style="list-style-type: none"> - Operating procedure of SGS (Thailand) Limited : PR-TH-NR-MIN-IN-001 and PR-TH-NR-MIN-IN-002
8. Manufacturing inspection for product certification (Head Office)	Production process and quality control system inspection including the evaluation of the following group of products : - Construction materials, concretes, sanitary wares, ceramics, and furniture - Electrical lighting and similar equipment - Electrical power devices - Electrical appliances - Electronic apparatus, parts, and components - Consumer goods and toys - Rubbers, chemicals, textiles, petroleum, and food products - Automotive products, parts, and mechanical products	<ul style="list-style-type: none"> - Criteria for product certification of Thai Industrial Standards Institute - Criteria for the relevant particular requirements and Thai Industrial Standards for product certification - Operating procedure of SGS (Thailand) Limited : THLPP.01

Date of Initial Issue: 11 September B.E. 2561 (2018)

Ministry of Industry Thailand, Thai Industrial Standards Institute

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
9. Environmental (Head Office)	Indoor Environment Inspection with the items as follows : – Sound level – Heat stress – CO, CO ₂ , PM-10, Ozone, Total VOCs – Temperature – Relative humidity – Air velocity – Light intensity	– Operating procedure of SGS (Thailand) Limited : PR-TH-I&E-IN-035, PR-TH-I&E-IN-036, PR-TH-I&E-IN-038, PR-TH-I&E-IN-050, PR-TH-I&E-IN-051, PR-TH-I&E-IN-052, PR-TH-I&E-IN-054, and PR-TH-I&E-IN-055 – Customer's requirement – Related laws and regulations
	Outdoor Environment Inspection, the items as follows : – Continuous Emission Monitoring System : CEMS (CO, SO ₂ , NO ₂ , O ₃ , CO ₂ , NO, and NO _x)	– Operating procedure of SGS (Thailand) Limited : PR-TH-I&E-IN-015 and PR-TH-I&E-IN-032 – Customer's requirement – Related laws and regulations
	Water Inspection, the items as follows : – Water sampling – Physical appearance (Color, Suspended Solids) – pH – Temperature – Dissolved Oxygen : DO – Conductivity – Salinity – Turbidity Excludes laboratory analysis result	– Operating procedure of SGS (Thailand) Limited : PR-TH-I&E-IN-043 – Customer's requirement – Related laws and regulations

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
10. Agricultural Products : Wheat and soybean meal* (Head Office and Sriracha Office)	General appearance inspection, Sampling, and weighing observation	– GAFTA Weighing Rules No. 123 – GAFTA Sampling Rules No.124 – Operating procedure of SGS (Thailand) Limited : PR-TH-NR-AGR-IN-006 – Customer's requirement

Note: * Extent scope: 8 December B.E. 2564 (2021)

Valid from : 8 December B.E. 2564 (2021)
Until : 10 September B.E. 2569 (2026)
Issue Date : 31 January B.E. 2565 (2022)

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

ABS Quality Evaluations

Certificate Of Conformance

This is to certify that the Quality Management System of:

SGS (Thailand) Ltd.

**100 Nanglinchee Road, Chongnonsee, Yannawa,
Bangkok 10120
Thailand**

(WITH ADDITIONAL FACILITIES LISTED ON ATTACHED ANNEX)

has been assessed by ABS Quality Evaluations, Inc. and found to be in conformance with the requirements set forth by:

ISO 9001:2015

The Quality Management System is applicable to:

PROVISION OF PHYSICAL INSPECTION, FUNIGATION/PEST CONTROL AND LABORATORY TESTING AND CALIBRATION

This certificate may be found on the ABS-QE Website (www.abs-qe.com). For certificates issued in the People's Republic of China information may also be verified on the CNCA website (www.cnca.gov.cn).

Certificate No: 52229
Certification Date: 30 July 2015
Effective Date: 23 July 2020
Expiration Date: 24 July 2023
Revision Date: 23 July 2020



Dominic Townsend, President



Validity of this certificate is based on the successful completion of the periodic surveillance audits of the management system defined by the above scope and is contingent upon prompt written notification to ABS Quality Evaluations, Inc. of significant changes to the management system or components thereof.

ABS Quality Evaluations, Inc. 1701 City Plaza Drive, Spring, TX 77389, U.S.A.
Validity of this certificate may be confirmed at www.abs-qe.com/cert_validation.

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ABS Quality Evaluations

ISO 9001:2015

Certificate Of Conformance

ANNEX

Certificate No: 52229

SGS (Thailand) Ltd.

At Below Facilities:

Facility:	Facility 1 - Rayong Branch 1/209 and 1/211 Moo 1 T. Ban Chang, A. Ban Chang, Rayong 21130 Thailand	Facility:	Facility 2 - Sriracha Office 144, 146 Sriracha Nakhon 1 Road, T. Sriracha, A. Sriracha, Chonburi 20110 Thailand
Activity:	Inspection & Testing.	Activity:	Inspection, Funigation & Pest Control.
Facility:	Facility 3 - Nakorn Phanom Branch 1320/1 Sukhumvit Road, 1320/1 Sukhumvit Road, Nakhon Phanom 46000 Thailand	Facility:	Facility 4 - Bangkok Branch 57, 59/100 Moo 18 (Rachabongse Road), T. Hae, Bangkok 10110 Thailand
Activity:	Inspection & Funigation	Activity:	Inspection, Funigation, Pest Control & Testing
Facility:	Facility 5 - Rama III Branch, Laboratory Services 41/16 - 20, 41/23 Rama III Road Soi 59, Chongnonsee, Yannawa, Bangkok 10120 Thailand	Facility:	Facility 6 - SGS (Cambodia) Limited No.1078 A.D.Street 371,Phum Trea II Sangkat Steung Meanchey, Khan Meanchey, Phnom Penh, Cambodia
Activity:	Testing	Activity:	Inspection



Validity of this certificate may be confirmed at www.abs-qe.com/cert_validation.

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ABS Quality Evaluations

Certificate Of Conformance

This is to certify that the Health and Safety Management System of:

SGS (Thailand) Ltd.
100 Nanglinchee Road, Chongnonsee, Yannawa,
Bangkok 10120
Thailand

(WITH ADDITIONAL FACILITIES LISTED ON ATTACHED ANNEX)

has been assessed by ABS Quality Evaluations, Inc. and found to be in conformance with the requirements set forth by:

ISO 45001:2018

The Health and Safety Management System is applicable to:

PROVISION OF PHYSICAL INSPECTION, FUNGICIDE PEST CONTROL AND LABORATORY TESTING AND CALIBRATION

may be found on the ABS-QE Website (www.abs-qe.com). For certificates issued in the People's Republic of China information may also be verified on the CNCA website (www.CNCA.gov.cn).

Certificate No: 61139
 Effective Date: 07 September 2020
 Expiration Date: 06 September 2023
 Revision Date: 07 September 2020

Dominic Townsend, President



Validity of this certificate is based on the successful completion of the periodic surveillance audits of the management system defined by the above scope and is contingent upon prompt written notification to ABS Quality Evaluations, Inc. of significant changes to the management system or components thereof.
 ABS Quality Evaluations, Inc. 100 Nanglinchee Road, Chongnonsee, Yannawa, Bangkok 10120, Thailand
 Validity of this certificate may be confirmed at www.abs-qe.com/cert_validation.

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ABS Quality Evaluations

ISO 45001:2018

Certificate Of Conformance

ANNEX

Certificate No: 61139

SGS (Thailand) Ltd.

At Below Facilities:

Facility:
 Facility 1 - Rayong Branch
 11209 and 11211 Moo 11 T. Ban Chang,
 A. Ban Chang,
 Rayong 21130
 Thailand

Activity:
 Inspection & Testing.

Facility:
 Facility 2 - Sriracha Office
 144, 146 Sriracha Nekom 1 Road,
 T. Sriracha, A. Sriracha,
 Chonburi 20110
 Thailand

Activity:
 Inspection, Fungicide & Pest Control.

Facility:
 Facility 3 - Rayong Branch
 11209 and 11211 Moo 11 T. Ban Chang,
 A. Ban Chang,
 Rayong 21130
 Thailand

Activity:
 Inspection & Fungicide.

Facility:
 Facility 4 - Rayong Branch
 57, 59 and 60 N. Highway,
 T. Hai Yai, A. Hai Yai,
 Songkhla 90110
 Thailand

Activity:
 Inspection, Fungicide, Pest Control & Testing.

Facility:
 Facility 5 - Rama III Branch, Laboratory Services
 41/16 - 20, 41/23 Rama III Road Soi 99,
 Chongnonsee, Yannawa,
 Bangkok 10120
 Thailand

Activity:
 Testing.

Facility:
 Facility 7 - Eastern Seaboard Office, Automotive Laboratory Service
 Eastern Seaboard Industrial Estate 300109 Moo 1,
 Ts. Sri, Phukdaeng,
 Rayong 21140
 Thailand

Activity:
 Testing.



Validity of this certificate may be confirmed at www.abs-qe.com/cert_validation.

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