

## ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์



# ภาคผนวก ค-01

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คุณภาพอากาศในบรรยากาศโดยทั่วไป



## Analysis / Test Report

TESTING  
No.0042

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270792**  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2338399-1

Page 1 of 1

<b>Sample Description</b>	Air Quality				
<b>Location</b>	วัดมณเฑียร (A1) (GPS 47P 0732269, 1436531)				
<b>Date Analysis Commenced</b>	Jun 29, 2022				
<b>Condition of Sample</b>	Drawn into one quartz filter paper (8x10 inch) placed in plastic bag and one glass filter paper (8x10 inch) placed in plastic bag				
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
2270792-1	Jun 17 - Jun 18, 2022	0.064	0.029	756	32
2270792-2	Jun 18 - Jun 19, 2022	0.065	0.025	756	32
2270792-3	Jun 19 - Jun 20, 2022	0.062	0.017	756	32
2270792-4	Jun 20 - Jun 21, 2022	0.059	0.022	756	32
2270792-5	Jun 21 - Jun 22, 2022	0.052	0.021	756	32
2270792-6	Jun 22 - Jun 23, 2022	0.028	0.019	756	32
2270792-7	Jun 23 - Jun 24, 2022	0.022	0.016	756	32
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B  
Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

**Guideline :** Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

**Sampled By :** Anurak Tongkhajonsakda

### Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

*Thanita K.*

Thanita Kulsuriwong  
Scientist (4)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270786**  
**Date Received :** Jun 27, 2022  
**Date Reported :** Jul 01, 2022  
**Report Number:** 2338303-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	วัดหนองปรือ (A1) (GPS 47P 0732269, 1436531)						
<b>Parameter</b>	Nitrogen dioxide (ppm)						
<b>Measurement Date</b>	Jun 17, 2022 - Jun 24, 2022						
<b>Measurement by</b>	Anurak Tongkhajonsakda						
	2270786-1	2270786-2	2270786-3	2270786-4	2270786-5	2270786-6	2270786-7
Time	Jun 17, 2022	Jun 18, 2022	Jun 19, 2022	Jun 20, 2022	Jun 21, 2022	Jun 22, 2022	Jun 23, 2022
09:00 AM - 10:00 AM	0.004	0.002	0.001	0.002	0.007	0.019	0.006
10:00 AM - 11:00 AM	0.005	0.001	0.001	0.001	0.008	0.009	0.005
11:00 AM - 12:00 PM	0.002	0.001	0.004	0.013	0.008	0.008	0.009
12:00 PM - 01:00 PM	0.001	0.001	0.005	0.005	0.002	0.009	0.008
01:00 PM - 02:00 PM	0.002	0.001	0.001	0.004	0.002	0.008	0.013
02:00 PM - 03:00 PM	0.003	0.002	0.002	0.003	0.003	0.005	0.012
03:00 PM - 04:00 PM	0.008	0.003	0.004	0.004	0.005	0.004	0.013
04:00 PM - 05:00 PM	0.004	0.002	0.003	0.006	0.004	0.004	0.012
05:00 PM - 06:00 PM	0.003	0.002	0.003	0.008	0.006	0.005	0.008
06:00 PM - 07:00 PM	0.003	0.002	0.004	0.004	0.006	0.006	0.009
07:00 PM - 08:00 PM	0.003	0.002	0.004	0.006	0.006	0.005	0.010
08:00 PM - 09:00 PM	0.003	0.002	0.004	0.006	0.005	0.006	0.009
09:00 PM - 10:00 PM	0.003	0.002	0.005	0.008	0.005	0.005	0.008
10:00 PM - 11:00 PM	0.003	0.002	0.005	0.007	0.007	0.005	0.008
11:00 PM - 12:00 AM	0.005	0.004	0.005	0.007	0.007	0.006	0.008
12:00 AM - 01:00 AM	0.005	0.006	0.005	0.009	0.006	0.006	0.009
01:00 AM - 02:00 AM	0.006	0.006	0.006	0.008	0.006	0.007	0.011
02:00 AM - 03:00 AM	0.006	0.009	0.006	0.007	0.006	0.008	0.012
03:00 AM - 04:00 AM	0.002	0.005	0.009	0.005	0.003	0.008	0.009
04:00 AM - 05:00 AM	0.001	0.003	0.004	0.006	0.005	0.007	0.004
05:00 AM - 06:00 AM	0.002	0.002	0.002	0.007	0.003	0.008	0.004
06:00 AM - 07:00 AM	0.001	0.002	0.002	0.004	0.002	0.004	0.007
07:00 AM - 08:00 AM	0.001	0.001	0.002	0.002	0.002	0.005	0.006
08:00 AM - 09:00 AM	0.002	0.001	0.002	0.002	0.047	0.006	0.006
Average	0.003	0.003	0.004	0.006	0.007	0.007	0.009
1hr - Maximum	0.008	0.009	0.009	0.013	0.047	0.019	0.013
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

**Standard :** Notification of the National Environment Board No. 33, 2009 (B.E. 2552).  
**Reference Method :** US EPAMethod Part 50 App. F (Chemiluminescence)

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270789**

Date Received : Jun 27, 2022

Date Reported : Jul 01, 2022

Report Number: 2338311-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	วัดมณเฑียร (A1) (GPS 47P 0732269, 1436531)						
<b>Parameter</b>	Sulfur Dioxide (ppm)						
<b>Measurement Date</b>	Jun 17, 2022 - Jun 24, 2022						
<b>Measurement by</b>	Anurak Tongkhajonsakda						
Time	2270789-1 Jun 17, 2022	2270789-2 Jun 18, 2022	2270789-3 Jun 19, 2022	2270789-4 Jun 20, 2022	2270789-5 Jun 21, 2022	2270789-6 Jun 22, 2022	2270789-7 Jun 23, 2022
09:00 AM - 10:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
10:00 AM - 11:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
11:00 AM - 12:00 PM	0.003	0.002	0.002	0.002	0.002	0.002	0.002
12:00 PM - 01:00 PM	0.003	0.002	0.002	0.002	0.002	0.002	0.002
01:00 PM - 02:00 PM	0.003	0.002	0.002	0.002	0.002	0.002	0.002
02:00 PM - 03:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
03:00 PM - 04:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
04:00 PM - 05:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
05:00 PM - 06:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
06:00 PM - 07:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
07:00 PM - 08:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
08:00 PM - 09:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
09:00 PM - 10:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
10:00 PM - 11:00 PM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
11:00 PM - 12:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
12:00 AM - 01:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
01:00 AM - 02:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
02:00 AM - 03:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
03:00 AM - 04:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
04:00 AM - 05:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
05:00 AM - 06:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
06:00 AM - 07:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
07:00 AM - 08:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
08:00 AM - 09:00 AM	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Average	0.002	0.002	0.002	0.002	0.002	0.002	0.002
1hr - Maximum	0.003	0.002	0.002	0.002	0.002	0.002	0.002
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

**Standard :** Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).

**Reference Method :** US EPA Method Part 53 and 58

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## Analysis / Test Report

TESTING  
No.0042

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270792**  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2338399-2

Page 1 of 1

<b>Sample Description</b>	Air Quality				
<b>Location</b>	บ้านวังตาคน (A2) (GPS 47P 0734063, 1432319)				
<b>Date Analysis Commenced</b>	Jun 29, 2022				
<b>Condition of Sample</b>	Drawn into one quartz filter paper (8x10 inch) placed in plastic bag and one glass filter paper (8x10 inch) placed in plastic bag				
Sample Number	Sampled Date	Total Suspended Particulate (mg/m <sup>3</sup> )	Particulate Matter (PM-10) (mg/m <sup>3</sup> )	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
2270792-8	Jun 17 - Jun 18, 2022	0.151	0.077	756	32
2270792-9	Jun 18 - Jun 19, 2022	0.132	0.063	756	32
2270792-10	Jun 19 - Jun 20, 2022	0.089	0.047	756	32
2270792-11	Jun 20 - Jun 21, 2022	0.131	0.055	756	32
2270792-12	Jun 21 - Jun 22, 2022	0.063	0.046	756	32
2270792-13	Jun 22 - Jun 23, 2022	0.094	0.034	756	32
2270792-14	Jun 23 - Jun 24, 2022	0.152	0.061	756	32
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

**Guideline :** Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

**Sampled By :** Anurak Tongkhajonsakda

### Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

*Thanita K.*

Thanita Kulsuriwong  
Scientist (4)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270786**  
Date Received : Jun 27, 2022  
Date Reported : Jul 01, 2022  
Report Number: 2363873-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	บ้านวังตาผืน (A2) (GPS 47P 0734063, 1432319)						
<b>Parameter</b>	Nitrogen dioxide (ppm)						
<b>Measurement Date</b>	Jun 17, 2022 - Jun 24, 2022						
<b>Measurement by</b>	Anurak Tongkhajonsakda						
	2270786-8	2270786-9	2270786-10	2270786-11	2270786-12	2270786-13	2270786-14
Time	Jun 17, 2022	Jun 18, 2022	Jun 19, 2022	Jun 20, 2022	Jun 21, 2022	Jun 22, 2022	Jun 23, 2022
10:00 AM - 11:00 AM	0.015	0.011	0.017	0.009	0.010	0.010	0.004
11:00 AM - 12:00 PM	0.019	0.008	0.020	0.010	0.011	0.009	0.004
12:00 PM - 01:00 PM	0.017	0.007	0.021	0.011	0.008	0.006	0.003
01:00 PM - 02:00 PM	0.014	0.007	0.016	0.012	0.019	0.005	0.004
02:00 PM - 03:00 PM	0.013	0.008	0.021	0.013	0.019	0.005	0.004
03:00 PM - 04:00 PM	0.011	0.008	0.012	0.012	0.016	0.004	0.005
04:00 PM - 05:00 PM	0.011	0.009	0.010	0.012	0.015	0.005	0.007
05:00 PM - 06:00 PM	0.011	0.008	0.010	0.014	0.014	0.005	0.010
06:00 PM - 07:00 PM	0.013	0.011	0.018	0.011	0.013	0.005	0.014
07:00 PM - 08:00 PM	0.014	0.012	0.014	0.013	0.007	0.006	0.012
08:00 PM - 09:00 PM	0.013	0.011	0.009	0.013	0.006	0.006	0.010
09:00 PM - 10:00 PM	0.012	0.013	0.010	0.012	0.005	0.005	0.010
10:00 PM - 11:00 PM	0.013	0.012	0.010	0.010	0.002	0.005	0.010
11:00 PM - 12:00 AM	0.016	0.013	0.010	0.012	0.004	0.007	0.006
12:00 AM - 01:00 AM	0.016	0.013	0.009	0.012	0.004	0.004	0.006
01:00 AM - 02:00 AM	0.015	0.013	0.010	0.010	0.004	0.007	0.004
02:00 AM - 03:00 AM	0.014	0.013	0.009	0.010	0.005	0.012	0.005
03:00 AM - 04:00 AM	0.013	0.016	0.010	0.010	0.006	0.010	0.005
04:00 AM - 05:00 AM	0.014	0.016	0.011	0.013	0.007	0.006	0.005
05:00 AM - 06:00 AM	0.016	0.023	0.013	0.016	0.004	0.006	0.006
06:00 AM - 07:00 AM	0.022	0.027	0.014	0.014	0.005	0.008	0.006
07:00 AM - 08:00 AM	0.022	0.023	0.010	0.010	0.007	0.006	0.005
08:00 AM - 09:00 AM	0.020	0.020	0.010	0.009	0.009	0.005	0.004
09:00 AM - 10:00 AM	0.014	0.016	0.009	0.009	0.009	0.004	0.003
Average	0.015	0.013	0.013	0.011	0.009	0.006	0.006
1hr - Maximum	0.022	0.027	0.021	0.016	0.019	0.012	0.014
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

**Standard :** Notification of the National Environment Board No. 33, 2009 (B.E. 2552).  
**Reference Method :** US EPAMethod Part 50 App. F (Chemiluminescence)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270789**  
**Date Received :** Jun 27, 2022  
**Date Reported :** Jul 01, 2022  
**Report Number:** 2363879-1

Page 1 of 1

Sample Description	Air Quality						
Location	บ้านวังตาคน (A2) (GPS 47P 0734063, 1432319)						
Parameter	Sulfur Dioxide (ppm)						
Measurement Date	Jun 17, 2022 - Jun 24, 2022						
Measurement by	Anurak Tongkhajonsakda						
	2270789-8	2270789-9	2270789-10	2270789-11	2270789-12	2270789-13	2270789-14
Time	Jun 17, 2022	Jun 18, 2022	Jun 19, 2022	Jun 20, 2022	Jun 21, 2022	Jun 22, 2022	Jun 23, 2022
10:00 AM - 11:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
11:00 AM - 12:00 PM	0.004	0.003	0.003	0.003	0.003	0.003	0.003
12:00 PM - 01:00 PM	0.001	0.003	0.003	0.003	0.003	0.003	0.003
01:00 PM - 02:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
02:00 PM - 03:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
03:00 PM - 04:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
04:00 PM - 05:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
05:00 PM - 06:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
06:00 PM - 07:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
07:00 PM - 08:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
08:00 PM - 09:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
09:00 PM - 10:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
10:00 PM - 11:00 PM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
11:00 PM - 12:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
12:00 AM - 01:00 AM	0.002	0.003	0.003	0.003	0.003	0.003	0.003
01:00 AM - 02:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
02:00 AM - 03:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
03:00 AM - 04:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
04:00 AM - 05:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
05:00 AM - 06:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
06:00 AM - 07:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
07:00 AM - 08:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
08:00 AM - 09:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
09:00 AM - 10:00 AM	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Average	0.003	0.003	0.003	0.003	0.003	0.003	0.003
1hr - Maximum	0.004	0.003	0.003	0.003	0.003	0.003	0.003
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

Standard : Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).  
Reference Method : US EPA Method Part 53 and 58

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Approved by

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## Analysis / Test Report

TESTING  
No.0042

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270792**  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2338399-3

Page 1 of 1

<b>Sample Description</b>	Air Quality				
<b>Location</b>	วัดประสิทธิ์ธาราม (A3) (GPS 47P 0731864, 1430315)				
<b>Date Analysis Commenced</b>	Jun 29, 2022				
<b>Condition of Sample</b>	Drawn into one quartz filter paper (8x10 inch) placed in plastic bag and one glass filter paper (8x10 inch) placed in plastic bag				
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
2270792-15	Jun 17 - Jun 18, 2022	0.031	0.023	756	32
2270792-16	Jun 18 - Jun 19, 2022	0.044	0.031	756	32
2270792-17	Jun 19 - Jun 20, 2022	0.043	0.039	756	32
2270792-18	Jun 20 - Jun 21, 2022	0.047	0.023	756	32
2270792-19	Jun 21 - Jun 22, 2022	0.018	0.008	756	32
2270792-20	Jun 22 - Jun 23, 2022	0.022	0.012	756	32
2270792-21	Jun 23 - Jun 24, 2022	0.018	0.009	756	32
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B  
Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

**Guideline :** Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

**Sampled By :** Anurak Tongkhajonsakda

### Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

*Thanita K.*

Thanita Kulsuriwong  
Scientist (4)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270786**  
**Date Received :** Jun 27, 2022  
**Date Reported :** Jul 01, 2022  
**Report Number:** 2363874-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดประสิทธิ์ธาราม (A3) (GPS 47P 0731864, 1430315)  
**Parameter** Nitrogen dioxide (ppm)  
**Measurement Date** Jun 17, 2022 - Jun 24, 2022  
**Measurement by** Anurak Tongkhajonsakda

	2270786-15	2270786-16	2270786-17	2270786-18	2270786-19	2270786-20	2270786-21
Time	Jun 17, 2022	Jun 18, 2022	Jun 19, 2022	Jun 20, 2022	Jun 21, 2022	Jun 22, 2022	Jun 23, 2022
11:00 AM - 12:00 PM	0.002	0.002	0.002	0.001	0.006	<0.001	<0.001
12:00 PM - 01:00 PM	0.002	0.002	0.005	<0.001	0.019	<0.001	0.001
01:00 PM - 02:00 PM	0.002	0.001	0.003	0.001	<0.001	<0.001	0.001
02:00 PM - 03:00 PM	0.001	0.001	0.003	0.002	0.002	0.003	0.001
03:00 PM - 04:00 PM	0.001	0.001	0.002	0.001	0.006	0.013	0.008
04:00 PM - 05:00 PM	0.001	<0.001	0.002	0.002	<0.001	<0.001	0.001
05:00 PM - 06:00 PM	<0.001	<0.001	0.002	0.002	<0.001	<0.001	<0.001
06:00 PM - 07:00 PM	0.004	0.004	0.002	0.001	<0.001	<0.001	<0.001
07:00 PM - 08:00 PM	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001
08:00 PM - 09:00 PM	0.002	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001
10:00 PM - 11:00 PM	<0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001
11:00 PM - 12:00 AM	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 AM - 01:00 AM	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
01:00 AM - 02:00 AM	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
02:00 AM - 03:00 AM	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
03:00 AM - 04:00 AM	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.001
04:00 AM - 05:00 AM	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001
05:00 AM - 06:00 AM	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
06:00 AM - 07:00 AM	<0.001	<0.001	<0.001	0.003	<0.001	0.001	<0.001
07:00 AM - 08:00 AM	<0.001	<0.001	<0.001	0.003	0.001	0.001	0.003
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	0.007	0.002	0.010	0.001
09:00 AM - 10:00 AM	0.003	0.002	<0.001	0.007	0.001	0.036	0.001
10:00 AM - 11:00 AM	0.011	0.010	0.004	0.003	<0.001	0.008	0.001
Average	0.002	0.002	0.002	0.002	0.002	0.004	0.001
1hr - Maximum	0.011	0.010	0.005	0.007	0.019	0.036	0.008
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

**Standard :** Notification of the National Environment Board No. 33, 2009 (B.E. 2552).  
**Reference Method :** US EPA Method Part 50 App. F (Chemiluminescence)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270789**

Date Received : Jun 27, 2022

Date Reported : Jul 01, 2022

Report Number: 2363880-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	วัดประสิทธิ์ธาราม (A3) (GPS 47P 0731864, 1430315)						
<b>Parameter</b>	Sulfur Dioxide (ppm)						
<b>Measurement Date</b>	Jun 17, 2022 - Jun 24, 2022						
<b>Measurement by</b>	Anurak Tongkhajonsakda						
	2270789-15	2270789-16	2270789-17	2270789-18	2270789-19	2270789-20	2270789-21
Time	Jun 17, 2022	Jun 18, 2022	Jun 19, 2022	Jun 20, 2022	Jun 21, 2022	Jun 22, 2022	Jun 23, 2022
11:00 AM - 12:00 PM	0.002	0.002	0.002	0.001	0.001	0.001	0.001
12:00 PM - 01:00 PM	0.002	0.002	0.002	0.001	0.001	0.001	0.001
01:00 PM - 02:00 PM	0.002	0.002	0.002	0.001	0.001	0.001	0.001
02:00 PM - 03:00 PM	0.002	0.002	<0.001	0.001	0.001	0.002	0.002
03:00 PM - 04:00 PM	0.002	0.002	0.002	0.001	0.001	0.002	0.002
04:00 PM - 05:00 PM	0.002	0.002	0.002	0.001	0.001	0.002	0.002
05:00 PM - 06:00 PM	0.002	0.002	0.001	0.001	0.001	0.002	0.002
06:00 PM - 07:00 PM	0.002	0.002	0.002	0.001	0.001	0.002	0.002
07:00 PM - 08:00 PM	0.002	0.002	0.002	0.001	0.001	0.002	0.002
08:00 PM - 09:00 PM	0.002	0.002	0.001	0.002	0.002	0.002	0.002
09:00 PM - 10:00 PM	0.002	0.002	0.001	0.001	0.002	0.002	0.002
10:00 PM - 11:00 PM	0.002	0.002	0.001	0.001	0.002	0.002	0.001
11:00 PM - 12:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
12:00 AM - 01:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
01:00 AM - 02:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
02:00 AM - 03:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
03:00 AM - 04:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
04:00 AM - 05:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
05:00 AM - 06:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
06:00 AM - 07:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
07:00 AM - 08:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.002
08:00 AM - 09:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.002
09:00 AM - 10:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.002
10:00 AM - 11:00 AM	0.002	0.002	0.001	0.001	0.001	0.001	0.001
Average	0.002	0.002	0.001	0.001	0.001	0.001	0.001
1hr - Maximum	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

**Standard :** Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).

**Reference Method :** US EPA Method Part 53 and 58

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## Analysis / Test Report

TESTING  
No.0042

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270792**  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2338399-4

Page 1 of 1

<b>Sample Description</b>	Air Quality				
<b>Location</b>	วัดวังประจักษ์ (A4) (GPS 47P 0736664, 1430555)				
<b>Date Analysis Commenced</b>	Jun 29, 2022				
<b>Condition of Sample</b>	Drawn into one quartz filter paper (8x10 inch) placed in plastic bag and one glass filter paper (8x10 inch) placed in plastic bag				
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
2270792-22	Jun 17 - Jun 18, 2022	0.042	0.018	756	32
2270792-23	Jun 18 - Jun 19, 2022	0.039	0.017	756	32
2270792-24	Jun 19 - Jun 20, 2022	0.034	0.020	756	32
2270792-25	Jun 20 - Jun 21, 2022	0.044	0.016	756	32
2270792-26	Jun 21 - Jun 22, 2022	0.179	0.018	756	32
2270792-27	Jun 22 - Jun 23, 2022	0.034	0.015	756	32
2270792-28	Jun 23 - Jun 24, 2022	0.027	0.015	756	32
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

**Guideline :** Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

**Sampled By :** Anurak Tongkhajonsakda

### Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

*Thanita K.*

Thanita Kulsuriwong  
Scientist (4)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270786**

Date Received : Jun 27, 2022

Date Reported : Jul 01, 2022

Report Number: 2363877-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	วัดวังประจักษ์ (A4) (GPS 47P 0736664, 1430555)						
<b>Parameter</b>	Nitrogen dioxide (ppm)						
<b>Measurement Date</b>	Jun 17, 2022 - Jun 24, 2022						
<b>Measurement by</b>	Anurak Tongkhajonsakda						
Time	2270786-22 Jun 17, 2022	2270786-23 Jun 18, 2022	2270786-24 Jun 19, 2022	2270786-25 Jun 20, 2022	2270786-26 Jun 21, 2022	2270786-27 Jun 22, 2022	2270786-28 Jun 23, 2022
12:00 PM - 01:00 PM	0.007	0.009	0.003	0.008	0.013	0.007	0.017
01:00 PM - 02:00 PM	0.006	0.006	0.003	0.006	0.009	0.007	0.013
02:00 PM - 03:00 PM	0.006	0.004	0.002	0.006	0.010	0.007	0.011
03:00 PM - 04:00 PM	0.006	0.005	0.004	0.006	0.007	0.008	0.010
04:00 PM - 05:00 PM	0.005	0.005	0.008	0.006	0.006	0.008	0.011
05:00 PM - 06:00 PM	0.003	0.003	0.005	0.006	0.007	0.005	0.011
06:00 PM - 07:00 PM	0.002	0.002	0.009	0.006	0.009	0.006	0.012
07:00 PM - 08:00 PM	0.003	0.004	0.011	0.012	0.007	0.007	0.013
08:00 PM - 09:00 PM	0.008	0.005	0.015	0.012	0.011	0.002	0.014
09:00 PM - 10:00 PM	0.006	0.001	0.010	0.009	0.012	0.002	0.013
10:00 PM - 11:00 PM	0.007	0.003	0.013	0.013	0.007	0.004	0.010
11:00 PM - 12:00 AM	0.005	0.002	0.010	0.005	0.034	0.003	0.005
12:00 AM - 01:00 AM	0.004	0.002	0.014	0.003	0.002	0.003	0.004
01:00 AM - 02:00 AM	0.004	0.002	0.012	0.003	0.004	0.005	0.005
02:00 AM - 03:00 AM	0.005	0.004	0.008	0.008	0.004	0.010	0.005
03:00 AM - 04:00 AM	0.010	0.004	0.007	0.007	0.004	0.011	0.005
04:00 AM - 05:00 AM	0.006	0.002	0.007	0.006	0.003	0.008	0.005
05:00 AM - 06:00 AM	0.006	0.002	0.006	0.009	0.004	0.009	0.005
06:00 AM - 07:00 AM	0.006	0.002	0.006	0.016	0.009	0.006	0.003
07:00 AM - 08:00 AM	0.007	0.004	0.012	0.013	0.007	0.005	0.002
08:00 AM - 09:00 AM	0.006	0.004	0.016	0.021	0.008	0.006	0.002
09:00 AM - 10:00 AM	0.006	0.008	0.016	0.023	0.006	0.006	0.002
10:00 AM - 11:00 AM	0.006	0.008	0.014	0.021	0.006	0.017	0.002
11:00 AM - 12:00 PM	0.007	0.004	0.012	0.017	0.008	0.014	0.002
Average	0.006	0.004	0.009	0.010	0.008	0.007	0.007
1hr - Maximum	0.010	0.009	0.016	0.023	0.034	0.017	0.017
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

Standard : Notification of the National Environment Board No. 33, 2009 (B.E. 2552).

Reference Method : US EPA Method Part 50 App. F (Chemiluminescence)

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2270789**

Date Received : Jun 27, 2022

Date Reported : Jul 01, 2022

Report Number: 2363884-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	วัดวังประจักษ์ (A4) (GPS 47P 0736664, 1430555)						
<b>Parameter</b>	Sulfur Dioxide (ppm)						
<b>Measurement Date</b>	Jun 17, 2022 - Jun 24, 2022						
<b>Measurement by</b>	Anurak Tongkhajonsakda						
	2270789-22	2270789-23	2270789-24	2270789-25	2270789-26	2270789-27	2270789-28
Time	Jun 17, 2022	Jun 18, 2022	Jun 19, 2022	Jun 20, 2022	Jun 21, 2022	Jun 22, 2022	Jun 23, 2022
12:00 PM - 01:00 PM	<0.001	0.004	0.003	<0.001	<0.001	<0.001	<0.001
01:00 PM - 02:00 PM	<0.001	0.006	0.002	<0.001	<0.001	<0.001	<0.001
02:00 PM - 03:00 PM	<0.001	0.005	0.001	<0.001	<0.001	<0.001	<0.001
03:00 PM - 04:00 PM	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 PM - 05:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 PM - 06:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 PM - 07:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 PM - 08:00 PM	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 PM - 09:00 PM	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 PM - 11:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 PM - 12:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 AM - 01:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 AM - 02:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 AM - 03:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 AM - 04:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 AM - 05:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 AM - 06:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 AM - 07:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 AM - 08:00 AM	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 AM - 09:00 AM	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	0.002
09:00 AM - 10:00 AM	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 AM - 11:00 AM	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 AM - 12:00 PM	0.004	0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Average	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
1hr - Maximum	0.004	0.006	0.003	<0.001	<0.001	<0.001	0.002
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

Standard : Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).  
Reference Method : US EPA Method Part 53 and 58

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client** : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O** : RJN(2)-019/64  
**Project Name** : Pluak Daeng  
**Project Location** :

**Lot ID** : 2270791  
**Date Received** : Jun 27, 2022  
**Date Reported** : Jul 04, 2022  
**Report Number** : 2338383-1

Page 1 of 2

**Sample Number** : 2270791-1 to 7  
**Parameter** : Wind Speed / Wind Direction  
**Location** : วัดประสิทธิ์ธาราม (GPS 47P 0731864, 1430315)  
**Sampling Date** : Jun 17 - Jun 24, 2022  
**Sampling by** : Anurak Tongkhajonsakda

Time	Jun 17 - Jun 18, 2022			Jun 18 - Jun 19, 2022			Jun 19 - Jun 20, 2022			Jun 20 - Jun 21, 2022			Jun 21 - Jun 22, 2022			Jun 22 - Jun 23, 2022			Jun 23 - Jun 24, 2022		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)	
11:00 AM - 12:00 PM	0.7	77.0	ENE	1.5	205.0	SSW	1.0	126.0	SE	0.9	112.0	ESE	0.7	136.0	SE	0.5	214.0	SW	1.6	259.0	W
12:00 PM - 01:00 PM	0.4	173.0	S	1.1	50.0	NE	0.9	160.0	SSE	0.4	93.0	E	1.1	53.0	NE	1.2	260.0	W	1.6	163.0	SSE
01:00 PM - 02:00 PM	1.1	248.0	WSW	2.1	265.0	W	0.8	138.0	SE	0.3	117.0	ESE	2.0	48.0	NE	0.4	268.0	W	0.5	217.0	SW
02:00 PM - 03:00 PM	0.8	124.0	SE	0.5	113.0	ESE	0.6	101.0	E	1.1	110.0	ESE	2.1	30.0	NNE	0.5	133.0	SE	0.6	148.0	SSE
03:00 PM - 04:00 PM	3.2	134.0	SE	1.7	181.0	S	0.6	130.0	SE	0.4	153.0	SSE	1.1	45.0	NE	0.6	152.0	SSE	0.5	92.0	E
04:00 PM - 05:00 PM	3.2	143.0	SE	2.7	167.0	SSE	1.1	141.0	SE	0.5	41.0	NE	0.6	81.0	E	0.5	143.0	SE	0.5	85.0	E
05:00 PM - 06:00 PM	0.5	230.0	SW	1.1	114.0	ESE	0.3	169.0	S	0.8	114.0	ESE	0.4	46.0	NE	0.7	82.0	E	0.6	141.0	SE
06:00 PM - 07:00 PM	0.6	119.0	ESE	1.4	96.0	E	0.6	143.0	SE	1.0	94.0	E	1.2	21.0	NNE	0.8	172.0	S	0.7	121.0	ESE
07:00 PM - 08:00 PM	0.7	136.0	SE	0.4	129.0	SE	0.6	73.0	ENE	0.4	102.0	ESE	0.6	305.0	NW	0.4	23.0	NNE	0.8	52.0	NE
08:00 PM - 09:00 PM	0.4	161.0	SSE	2.3	258.0	WSW	0.3	113.0	ESE	1.3	62.0	ENE	0.5	94.0	E	1.3	105.0	ESE	0.8	86.0	E
09:00 PM - 10:00 PM	0.6	103.0	ESE	0.5	123.0	ESE	0.7	286.0	WNW	0.3	93.0	E	0.5	75.0	ENE	2.2	14.0	NNE	0.7	266.0	W
10:00 PM - 11:00 PM	1.7	159.0	SSE	1.7	294.0	WNW	0.8	105.0	ESE	0.5	85.0	E	0.7	111.0	ESE	1.2	204.0	SSW	1.2	126.0	SE
11:00 PM - 12:00 AM	1.0	79.0	E	1.0	10.0	N	1.0	336.0	NNW	1.0	123.0	ESE	1.0	136.0	SE	0.7	229.0	SW	1.3	18.0	NNE
12:00 AM - 01:00 AM	0.5	122.0	ESE	0.6	352.0	N	1.2	133.0	SE	0.4	140.0	SE	0.4	88.0	E	1.6	250.0	WSW	2.2	230.0	SW
01:00 AM - 02:00 AM	0.8	137.0	SE	2.1	46.0	NE	0.4	24.0	NNE	0.7	110.0	ESE	0.8	52.0	NE	1.8	264.0	W	0.4	299.0	WNW
02:00 AM - 03:00 AM	0.7	124.0	SE	1.7	121.0	ESE	0.3	148.0	SSE	1.5	126.0	SE	0.7	310.0	NW	0.4	235.0	SW	0.9	340.0	NNW
03:00 AM - 04:00 AM	0.7	136.0	SE	1.0	175.0	S	0.9	126.0	SE	0.5	75.0	ENE	1.5	263.0	W	0.6	53.0	NE	1.2	250.0	WSW
04:00 AM - 05:00 AM	1.7	257.0	WSW	1.9	136.0	SE	0.6	100.0	E	2.3	106.0	ESE	1.1	253.0	WSW	0.4	258.0	WSW	0.8	224.0	SW
05:00 AM - 06:00 AM	1.4	207.0	SSW	1.6	94.0	E	0.3	151.0	SSE	0.9	182.0	S	0.7	267.0	W	1.6	268.0	W	0.7	68.0	ENE
06:00 AM - 07:00 AM	2.0	98.0	E	1.5	61.0	ENE	2.2	140.0	SE	0.3	200.0	SSW	0.8	70.0	ENE	1.6	230.0	SW	3.1	37.0	NE
07:00 AM - 08:00 AM	0.4	169.0	S	1.4	156.0	SSE	3.6	130.0	SE	0.4	125.0	SE	0.5	105.0	ESE	3.3	171.0	S	0.9	110.0	ESE
08:00 AM - 09:00 AM	0.0	-	-	1.8	84.0	E	1.0	68.0	ENE	1.0	128.0	SE	0.5	90.0	E	2.3	111.0	ESE	0.8	135.0	SE
09:00 AM - 10:00 AM	1.5	128.0	SE	0.6	134.0	SE	1.2	80.0	E	1.1	12.0	NNE	0.6	76.0	ENE	0.9	320.0	NW	0.4	221.0	SW
10:00 AM - 11:00 AM	1.7	104.0	ESE	0.7	122.0	ESE	0.4	173.0	S	3.0	117.0	ESE	0.9	100.0	E	2.4	264.0	W	0.4	210.0	SSW

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jittrantont  
Assistant General Manager



## Analysis / Test Report

**Client** : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

**P/O** : RJN(2)-019/64

**Project Name** : Pluak Daeng

**Project Location** :

**Lot ID** : 2270791

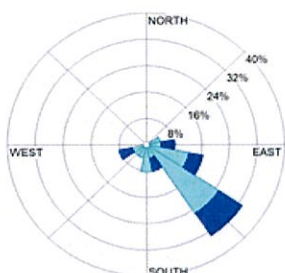
Date Received : Jun 27, 2022

Date Reported : Jul 04, 2022

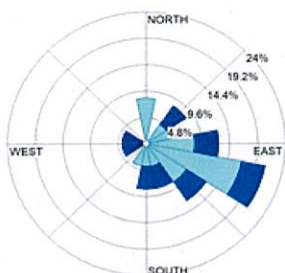
Report Number : 2338383-1

Page 2 of 2

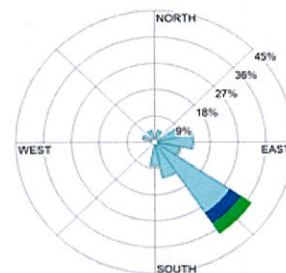
### Wind Rose



Date : Jun 17-18, 2022



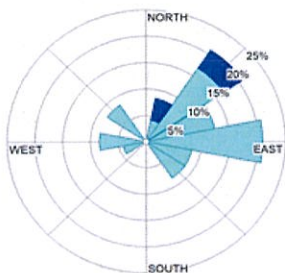
Date : Jun 18-19, 2022



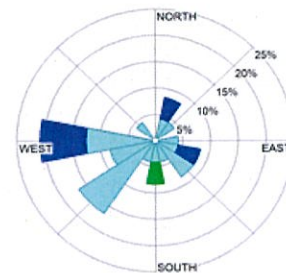
Date : Jun 19-20, 2022



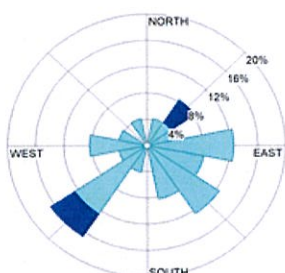
Date : Jun 20-21, 2022



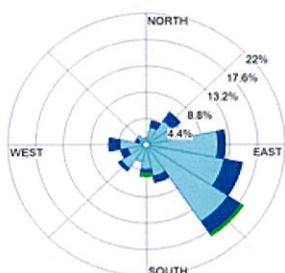
Date : Jun 21-22, 2022



Date : Jun 22-23, 2022



Date : Jun 23-24, 2022



Date : Jun 17-24, 2022

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	1.18
1.7-3.3	15.48
0.3-1.7	82.74
Calms	0.60

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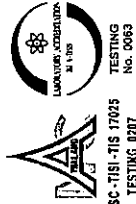
Sarayuth Jitranont  
Assistant General Manager



# ภาคผนวก ค-02

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คุณภาพน้ำทิ้งจากโรงงานอุตสาหกรรม



**LAE** United Analyst and Engineering Consultant Co., Ltd.  
3 Soi Udomsuk 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260  
Tel: 0 2763 2828 Fax: 0 2763 2800 www.laeconsultant.com E-mail: lae@laeconsultant.com

TESTING  
No. 0063

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 209/115 26TH FLOOR ITALY TOWER, NEW PETCHBURI ROAD BANG KAPI HUI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusedee\_kpy@hotmail.com  
**SAMPLING SOURCE** : VEM (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 10, 2022  
**SAMPLING TIME** : 10:46 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. THANADET WANSANOR  
**ANALYZED BY** : MISS PORNPIMOL WAKHONGTHONG

**RECEIVED DATE** : JANUARY 10, 2022  
**ANALYTICAL DATE** : JANUARY 10-18, 2022  
**REPORT NO.** : 2022-0004544  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22A433-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22A433-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.6 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	50.4	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	136	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	211	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	190	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: LAETP.WAS.001 (KJELDAHL METHOD); SM-4500-Norg C	57.0	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.22559.

ND : NON-DETECTABLE

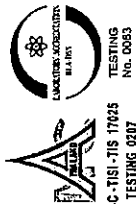
*Piyapol S.*  
(MRS PIYAPAT SUTTAMANTWONG)  
LABORATORY SUPERVISOR

JANUARY 20, 2022

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**LAE** United Analyst and Engineering Consultant Co., Ltd.  
3 Soi Udomsuk 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260  
Tel: 0 2763 2828 Fax: 0 2763 2800 www.laeconsultant.com E-mail: lae@laeconsultant.com

TESTING  
No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 209/115 26TH FLOOR ITALY TOWER, NEW PETCHBURI ROAD BANG KAPI HUI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusedee\_kpy@hotmail.com  
**SAMPLING SOURCE** : SAIL INDUSTRY (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 10, 2022  
**SAMPLING TIME** : 11:32 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. THANADET WANSANOR  
**ANALYZED BY** : MISS PORNPIMOL WAKHONGTHONG

**RECEIVED DATE** : JANUARY 10, 2022  
**ANALYTICAL DATE** : JANUARY 10-18, 2022  
**REPORT NO.** : 2022-0004545  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22A433-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22A433-0002	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.6 (31°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	44.1	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	190	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	80.8	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	130	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: LAETP.WAS.001 (KJELDAHL METHOD); SM-4500-Norg C	40.8	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	11	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID GREY		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.22559.

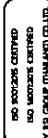
*Piyapol S.*  
(MRS PIYAPAT SUTTAMANTWONG)  
LABORATORY SUPERVISOR

JANUARY 20, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusee\_koy@hotmail.com  
**SAMPLE TYPE** : SILMAX SEALING SOLUTION CO., LTD.  
**SAMPLING DATE** : JANUARY 10, 2022  
**SAMPLING TIME** : 11:48 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : JANUARY 10, 2022  
**ANALYTICAL DATE** : JANUARY 10-18, 2022  
**REPORT NO.** : 2022-0004546  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AA433-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AA433-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	7.7 (37°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-LO G AND 5210 B)	52.5	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	155	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 95 °C (SM 2540 D)	25.1	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	184	≤ 3,000	25
TOTAL KIELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: LAETP-WASJ01 (KIELDAHL METHOD); SM 4500-Norg C	75.6	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

ND : NON-DETECTABLE  
NO.2/2559.

*Papad S.*

(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JANUARY 20, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusee\_koy@hotmail.com  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 10, 2022  
**SAMPLING TIME** : 12:00 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : JANUARY 10, 2022  
**ANALYTICAL DATE** : JANUARY 10-18, 2022  
**REPORT NO.** : 2022-0004550  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AA433-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AA433-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	8.0 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-LO G AND 5210 B)	87.8	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	411	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 95 °C (SM 2540 D)	36.4	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	763	≤ 3,000	25
TOTAL KIELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: LAETP-WASJ01 (KIELDAHL METHOD); SM 4500-Norg C	66.8	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	25	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			GREY/TURBID BLACK		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

*Papad S.*

(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JANUARY 20, 2022

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# ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL: 0 2318 6788 e-mail: dusedee\_ky@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 1)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 10, 2022  
**SAMPLING TIME** : 11:05 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. THANADET WANSANOR  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : JANUARY 10, 2022  
**ANALYTICAL DATE** : JANUARY 10-18, 2022  
**REPORT NO.** : 2022-U004551  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22A433-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22A433-0005	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	8.5 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	ND	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	ND	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	ND	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	356	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAPETWAS 001 (KJELDAHL METHOD); SM-4500-Norg C	< LOQ	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOX-HLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

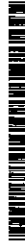
IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)  
NO.2/2559.

ND : NON-DETECTABLE.  
< LOQ : < LEVEL OF QUANTITATION (TOTAL KJELDAHL NITROGEN ≥ 15 AND < 5.0 mg/L).

*Piyapol S.*  
(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JANUARY 20, 2022

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# ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL: 0 2318 6788 e-mail: dusedee\_ky@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 2)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 10, 2022  
**SAMPLING TIME** : 11:15 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. THANADET WANSANOR  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : JANUARY 10, 2022  
**ANALYTICAL DATE** : JANUARY 10-18, 2022  
**REPORT NO.** : 2022-U004552  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22A433-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22A433-0006	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.9 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	4.8	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	266	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	5.9	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	176	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAPETWAS 001 (KJELDAHL METHOD); SM-4500-Norg C	60.7	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOX-HLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)  
NO.2/2559.

ND : NON-DETECTABLE.

*Piyapol S.*  
(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JANUARY 20, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : duseekey@hotmail.com  
**SAMPLING SOURCE** : YEM (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-U011406  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYSIS NO.** : TZ2AC138-0001  
**ANALYZED BY** : MISS PORNPIPOL WENTHONG

**RECEIVED DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-U011406  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYSIS NO.** : TZ2AC138-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT TZ2AC138-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	7.3 (29°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 520 B)	79.8	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 520 D)	154	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	20.7	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	230	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD LAE-TP WAS 001 (KJELDAHL METHOD); SM 4500-Norg C	58.2	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO22559

ND : NON-DETECTABLE

*Paveena Ch.*  
(MISS PAWEENA CHARASCHOTEPINT)  
LABORATORY SUPERVISOR

FEBRUARY 15, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : duseekey@hotmail.com  
**SAMPLING SOURCE** : SAIL INDUSTRY (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-U011407  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYSIS NO.** : TZ2AC138-0002  
**ANALYZED BY** : MISS PORNPIPOL WENTHONG

**RECEIVED DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-U011407  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYSIS NO.** : TZ2AC138-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT TZ2AC138-0002	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	7.1 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 520 B)	476	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 520 D)	68.0	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	14.1	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	158	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD LAE-TP WAS 001 (KJELDAHL METHOD); SM 4500-Norg C	228	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO22559

ND : NON-DETECTABLE

*Paveena Ch.*  
(MISS PAWEENA CHARASCHOTEPINT)  
LABORATORY SUPERVISOR

FEBRUARY 15, 2022

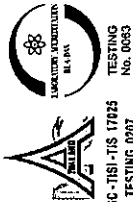
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# United Analyst and Engineering Consultant Co., Ltd.

3 Soi Udonrak 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260

Tel: 0 2763 2828 Fax: 0 2763 2800 www.uaeconsultant.com E-mail: uae@uaeconsultant.com TESTING 0007 No. 0083

## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL: 0 2318 6788 e-mail: dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : SILMAX SEALING SOLUTION CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 7, 2022  
**SAMPLING TIME** : 11:37 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPSIT SUPIM  
**ANALYZED BY** : MISS PORNPIPOL WAERTHONG

**RECEIVED DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-U011408  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AC138-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AC138-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.6 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	135	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	250	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	521	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	334	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETPWAS.001 (KJELDAHL METHOD); SM-4500-Norg C	103	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOX-HLET EXTRACTION METHOD (SM-5520 D)	7	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT					
			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

*Paveena Ch.*  
(MISS PAVEENA CHARASCHOTEPINT)  
LABORATORY SUPERVISOR

FEBRUARY 15, 2022

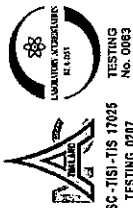
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BY 15 GROUP (THAILAND) QUALITY



# United Analyst and Engineering Consultant Co., Ltd.

3 Soi Udonrak 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260

Tel: 0 2763 2828 Fax: 0 2763 2800 www.uaeconsultant.com E-mail: uae@uaeconsultant.com TESTING 0007 No. 0083

## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL: 0 2318 6788 e-mail: dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : TANGONG PRECISION TOOLS (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 7, 2022  
**SAMPLING TIME** : 11:23 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPSIT SUPIM  
**ANALYZED BY** : MISS PORNPIPOL WAERTHONG

**RECEIVED DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-U011409  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AC138-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AC138-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.2 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	226	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	276	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	8.2	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	126	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETPWAS.001 (KJELDAHL METHOD); SM-4500-Norg C	10.4	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOX-HLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT					
			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

NO.2/2559.

*Paveena Ch.*  
(MISS PAVEENA CHARASCHOTEPINT)  
LABORATORY SUPERVISOR

FEBRUARY 15, 2022

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United Analyst and Engineering Consultant Co., Ltd.

3 Soi Udonrak 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260

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TESTING 02/7

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_ky@hotmial.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 1)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 7, 2022  
**SAMPLING TIME** : 10:18 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NAPSIT SRIPIM  
**ANALYZED BY** : MISS PORNPOL WERTHONG

**RECEIVED DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-0114-10  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AC138-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AC138-0005	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	9.5 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	23	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	412	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 305 °C (SM 2540 D)	6.9	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	284	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD (LAE-TP-WAS-001 (KJELDAHL METHOD); SM 4500-NH <sub>3</sub> C	5.0	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	3	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

NO.2/2559.

*Paveen Ch.*  
(MISS PAWEENA CHARASCHOTEPINIT)  
LABORATORY SUPERVISOR

FEBRUARY 15, 2022

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### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_ky@hotmial.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 2)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 7, 2022  
**SAMPLING TIME** : 10:48 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NAPSIT SRIPIM  
**ANALYZED BY** : MISS PORNPOL WERTHONG

**RECEIVED DATE** : FEBRUARY 7, 2022  
**ANALYTICAL DATE** : FEBRUARY 7-15, 2022  
**REPORT NO.** : 2022-0114-11  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AC138-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AC138-0006	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	6.9 (25°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	ND	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	ND	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 305 °C (SM 2540 D)	ND	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	100	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD (LAE-TP-WAS-001 (KJELDAHL METHOD); SM 4500-NH <sub>3</sub> C	7.4	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

NO.2/2559.

*Paveen Ch.*  
(MISS PAWEENA CHARASCHOTEPINIT)  
LABORATORY SUPERVISOR

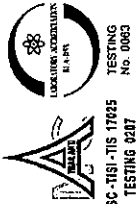
FEBRUARY 15, 2022

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TESTING 9207

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALY TOWER, NEW PETCHBURI ROAD BANG KAPI HUAT KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : disadee\_koy@hotmail.com  
**SAMPLING SOURCE** : VEN (THAILAND) CO.,LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 09:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYZED BY** : MISS PORIPHOL WAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-U019241  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AE289-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AE289-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	7.1 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND *	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	78.4	≤ 500	2.0
CHEMICAL OXYGEN DEMAND *	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 5200 D)	32	≤ 750	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	27.1	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	243	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE TP WAS 001 (KJELDAHL METHOD); SM 4500-Nitro C	71.1	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.22559.  
ND : NON-DETECTABLE

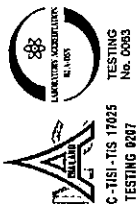
*Piyapol S.*  
(MRS PIYAPAT SUTTANANTWONG)  
LABORATORY SUPERVISOR

MARCH 15, 2022

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TESTING 9207

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALY TOWER, NEW PETCHBURI ROAD BANG KAPI HUAT KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : disadee\_koy@hotmail.com  
**SAMPLING SOURCE** : SAIL INDUSTRY (THAILAND) CO.,LTD  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 10:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYZED BY** : MISS PORIPHOL WAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-U019242  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AE289-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AE289-0002	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	6.8 (31°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND *	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	22.9	≤ 500	2.0
CHEMICAL OXYGEN DEMAND *	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 5200 D)	616	≤ 750	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	12.6	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	144	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE TP WAS 001 (KJELDAHL METHOD); SM 4500-Nitro C	19.6	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.22559.  
ND : NON-DETECTABLE

*Piyapol S.*  
(MRS PIYAPAT SUTTANANTWONG)  
LABORATORY SUPERVISOR

MARCH 15, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : duedee\_kry@hotmail.com  
**SAMPLING SOURCE** : SUKUMVIT SEALING SOLUTION CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 11:10 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SORPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-0019244  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AE289-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AE289-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H B)	6.8 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O G AND 5210 B)	154	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	295	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	43.0	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	226	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETP WAS 5001 (KJELDAHL METHOD); SM: 4500-Norg C	54.8	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	15	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.27559.

*Piyapat S.*

(MRS PIYAPAT SUTTANANTWONG)  
LABORATORY SUPERVISOR

MARCH 15, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : duedee\_kry@hotmail.com  
**SAMPLING SOURCE** : SUKUMVIT SEALING SOLUTION CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 11:10 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SORPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-0019244  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AE289-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AE289-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H B)	6.8 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O G AND 5210 B)	154	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	295	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	43.0	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	226	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETP WAS 5001 (KJELDAHL METHOD); SM: 4500-Norg C	54.8	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	15	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.27559.

*Piyapat S.*

(MRS PIYAPAT SUTTANANTWONG)  
LABORATORY SUPERVISOR

MARCH 15, 2022

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BY IS GROUP (THAILAND) CALLED

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : duedee\_kry@hotmail.com  
**SAMPLING SOURCE** : TIANCONG PRECISION TOOLS (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 11:00 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SORPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-0019245  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AE289-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AE289-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H B)	7.2 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O G AND 5210 B)	116	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	242	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	44.8	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	1234	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETP WAS 5001 (KJELDAHL METHOD); SM: 4500-Norg C	46.5	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	33	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.27559.

*Piyapat S.*

(MRS PIYAPAT SUTTANANTWONG)  
LABORATORY SUPERVISOR

MARCH 15, 2022

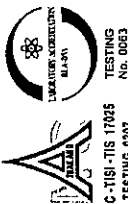
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**LAE**  
LABORATORY ANALYSTS ENGINEERING CONSULTANT CO., LTD.  
350 Udomsak 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260  
Tel. 02-2763 2828 Fax. 02-2763 2800 www.laeconsultant.com E-mail: lae@laeconsultant.com

TESTING  
No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALY TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 1)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 10:20 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL VAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-0019246  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T2A2E289-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T2A2E289-0005	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H B)	8.7 (3 PC)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND *	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O G AND 5210 B)	9.8	≤ 500	20
CHEMICAL OXYGEN DEMAND *	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 5220 D)	30.2	≤ 750	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	5.3	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	254	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: LAE TP WAS 001 (KJELDAHL METHOD); SM-4600-Nitro C	< LOQ	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	4	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

< LOQ : < LEVEL OF QUANTIFICATION (TOTAL KJELDAHL NITROGEN ≥ 1.5 AND < 5.0 mg/L).

*Piyapol S.*  
(MRS PIYAPAT SUTTANUTWONG)  
LABORATORY SUPERVISOR

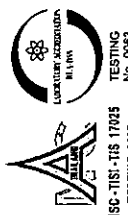
MARCH 15, 2022

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LABORATORY ANALYSTS ENGINEERING CONSULTANT CO., LTD.  
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Tel. 02-2763 2828 Fax. 02-2763 2800 www.laeconsultant.com E-mail: lae@laeconsultant.com

TESTING  
No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALY TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 2)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 7, 2022  
**SAMPLING TIME** : 10:30 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPASIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL VAENTHONG

**RECEIVED DATE** : MARCH 7, 2022  
**ANALYTICAL DATE** : MARCH 7-15, 2022  
**REPORT NO.** : 2022-0019247  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T2A2E289-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T2A2E289-0006	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H B)	8.8 (3 PC)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND *	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O G AND 5210 B)	8.4	≤ 500	20
CHEMICAL OXYGEN DEMAND *	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 5220 D)	ND	≤ 750	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	ND	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	114	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: LAE TP WAS 001 (KJELDAHL METHOD); SM-4600-Nitro C	11.3	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

ND : NON-DETECTABLE  
NO.272559.

*Piyapol S.*  
(MRS PIYAPAT SUTTANUTWONG)  
LABORATORY SUPERVISOR

MARCH 15, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAP1 HUI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : VEM (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 4, 2022  
**SAMPLING TIME** : 10:00 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NARISIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAERTHONG

**RECEIVED DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-026666  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AG424-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AG424-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	6.7 (25°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND *	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	477	≤ 500	2.0
CHEMICAL OXYGEN DEMAND *	mg/L	CLOSED REFLUX COLOURIMETRIC METHOD (SM 5220 D)	120	≤ 750	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	18.0	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	188	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAETP-WAS301 (KJELDAHL METHOD); SM 4500-Norg C	422	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT	-		YELLOW/TURBID BROWN		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO : ND/22593

ND : NON-DETECTABLE

*Piyapal S.*

(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

APRIL 11, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAP1 HUI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : SAIL INDUSTRY (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 4, 2022  
**SAMPLING TIME** : 10:10 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NARISIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAERTHONG

**RECEIVED DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-026667  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AG424-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AG424-0002	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM4500-H <sup>+</sup> B)	6.7 (25°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND *	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	38.2	≤ 500	2.0
CHEMICAL OXYGEN DEMAND *	mg/L	CLOSED REFLUX COLOURIMETRIC METHOD (SM 5220 D)	102	≤ 750	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	13.1	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	142	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAETP-WAS301 (KJELDAHL METHOD); SM 4500-Norg C	26.9	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT	-		YELLOW/TURBID YELLOW		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO : ND/22593

ND : NON-DETECTABLE

*Piyapal S.*

(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

APRIL 11, 2022

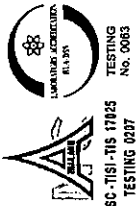
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UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.

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Tel. 02-2763 2828 Fax 02-2763 2800 www.laeconsultant.com E-mail: lae@laeconsultant.com

NSC-TIS-TIS 17125

TESTING 0207

## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : SILMAX SEALING SOLUTION CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-U026688  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NARASIT SRIPIM  
**ANALYSIS NO.** : T22AG424-0003  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-U026688  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NARASIT SRIPIM  
**ANALYSIS NO.** : T22AG424-0003  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AG424-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	6.8 (20°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 520 B)	76.8	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 5220 D)	190	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	411	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	334	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE:TP:WAS:001 (KJELDAHL METHOD: SM 4500-NH <sub>3</sub> C)	106	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT					
			BROWN/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)  
NO.27559.

ND : NON-DETECTABLE.

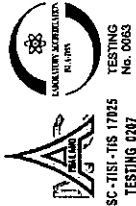
*Pinyapol S.*  
(MISS PIVAPAT SUTTAMANTUWONG)  
LABORATORY SUPERVISOR

APRIL 11, 2022

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NSC-TIS-TIS 17125

TESTING 0207

## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusaee\_kpy@hotmail.com  
**SAMPLING SOURCE** : TIANGONG PRECISION TOOLS (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-U026689  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NARASIT SRIPIM  
**ANALYSIS NO.** : T22AG424-0004  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-U026689  
**WORK NO.** : 2021-008809  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NARASIT SRIPIM  
**ANALYSIS NO.** : T22AG424-0004  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AG424-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	7.4 (20°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 520 B)	138	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM 5220 D)	342	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	450	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	1588	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE:TP:WAS:001 (KJELDAHL METHOD: SM 4500-NH <sub>3</sub> C)	47.4	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	7	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT					
			GREY/TURBID GREY		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)  
NO.27559.

*Pinyapol S.*  
(MISS PIVAPAT SUTTAMANTUWONG)  
LABORATORY SUPERVISOR

APRIL 11, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusedee\_kpy@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 1)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 4, 2022  
**SAMPLING TIME** : 11:30 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NAKSIT SRIPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-026670  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AG424-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AG424-0005	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (ISM4500-H B)	7.9 (20°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: 4500-O G AND 5210 B)	8.6	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM: 5220 D)	38.2	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM: 2540 D)	6.3	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: 2540 C)	224	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETP WAS 001 (KJELDAHL METHOD); SM: 4500-Norg C	6.5	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

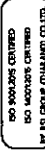
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO : NON-DETECTABLE.

*Piyapol S.*  
(MRS PIYAPAT SUTTAMANUTWONG)  
LABORATORY SUPERVISOR

APRIL 11, 2022

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## ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 26TH FLOOR TALITHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHUANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusedee\_kpy@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 2)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 4, 2022  
**SAMPLING TIME** : 11:40 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NAKSIT SRIPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : APRIL 4, 2022  
**ANALYTICAL DATE** : APRIL 4-11, 2022  
**REPORT NO.** : 2022-026671  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AG424-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AG424-0006	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (ISM4500-H B)	7.2 (20°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: 4500-O G AND 5210 B)	7.7	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM: 5220 D)	30.9	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM: 2540 D)	9.5	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: 2540 C)	210	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETP WAS 001 (KJELDAHL METHOD); SM: 4500-Norg C	10.4	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

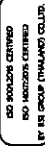
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO : NON-DETECTABLE.

*Piyapol S.*  
(MRS PIYAPAT SUTTAMANUTWONG)  
LABORATORY SUPERVISOR

APRIL 11, 2022

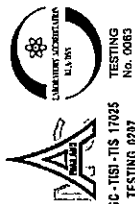
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**LAE** United Analyst and Engineering Consultant Co., Ltd.  
350 Udomsuk 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260  
Tel: 02763 2828 Fax: 02763 2800 www.uaeconsultant.com E-mail: lae@uaeconsultant.com

TESTING  
No. 0083  
TESTING 0207

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 28TH FLOOR ITALTHAI TOWER, NEW PETCHABURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dussadee\_koy@hotmail.com  
**SAMPLE SOURCE** : SAIL INDUSTRY (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 3, 2022  
**SAMPLING TIME** : 10:20 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NARASIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : MAY 3, 2022  
**ANALYTICAL DATE** : MAY 3-11, 2022  
**REPORT NO.** : 2022-U034653  
**WORK NO.** : 2021-00809  
**ANALYSIS NO.** : T22AZ56-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AZ56-0002	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H <sup>+</sup> B)	7.0 (28°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O <sub>2</sub> G AND 5210 B)	18.3	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM-5220 D)	66.5	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	8.9	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	170	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAP-TP-WAS-001 (KJELDAHL METHOD); SM-4500-Norg C	27.2	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SORHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

ND : NON-DETECTABLE.  
NO.22559.

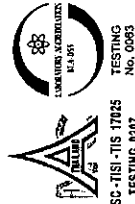
*Papal S.*  
(MRS. PIPAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

MAY 12, 2022

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**LAE** United Analyst and Engineering Consultant Co., Ltd.  
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Tel: 02763 2828 Fax: 02763 2800 www.uaeconsultant.com E-mail: lae@uaeconsultant.com

TESTING  
No. 0083  
TESTING 0207

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 2034/115 28TH FLOOR ITALTHAI TOWER, NEW PETCHABURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dussadee\_koy@hotmail.com  
**SAMPLE SOURCE** : SILMAX SEALING SOLUTION CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 3, 2022  
**SAMPLING TIME** : 11:00 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NARASIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : MAY 3, 2022  
**ANALYTICAL DATE** : MAY 3-11, 2022  
**REPORT NO.** : 2022-U034654  
**WORK NO.** : 2021-00809  
**ANALYSIS NO.** : T22AZ56-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AZ56-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H <sup>+</sup> B)	7.4 (28°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O <sub>2</sub> G AND 5210 B)	63.4	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM-5220 D)	152	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	16.8	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	322	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAP-TP-WAS-001 (KJELDAHL METHOD); SM-4500-Norg C	85.8	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SORHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID GREY		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

ND : NON-DETECTABLE.  
NO.22559.

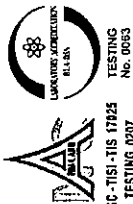
*Papal S.*  
(MRS. PIPAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

MAY 12, 2022

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Tel: 02-2763 2828 Fax: 02-2763 2800 www.uaecconsultant.com E-mail: uaec@uaecconsultant.com

TESTING  
No. 0053

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/41/15 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 E-mail : duaddee\_kpy@hotmail.com  
**SAMPLING SOURCE** : TANGONG PRECISION TOOLS (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 3, 2022  
**SAMPLING TIME** : 11:15 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPAST SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAERTHONG

**RECEIVED DATE** : MAY 3, 2022  
**ANALYTICAL DATE** : MAY 3-11, 2022  
**REPORT NO.** : 2022-1034655  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AZ56-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AZ56-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	7.7 (20°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	36.3	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	114	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	13.2	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	387	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE-TP-WAS-001 (KJELDAHL METHOD); SM 4500-Norg C	23.2	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	4	≤ 10.0	3
<b>SAMPLE CONDITION</b>					
WATER'S COLOUR/TURBID SEDIMENT					
			GARY/TURBID GREY		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)  
NO.2/2558.

*Pongpat S.*  
(MRS PYPAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

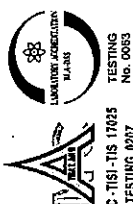
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Tel: 02-2763 2828 Fax: 02-2763 2800 www.uaecconsultant.com E-mail: uaec@uaecconsultant.com

TESTING  
No. 0053

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/41/15 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 E-mail : duaddee\_kpy@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 1)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 3, 2022  
**SAMPLING TIME** : 10:35 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPAST SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAERTHONG

**RECEIVED DATE** : MAY 3, 2022  
**ANALYTICAL DATE** : MAY 3-11, 2022  
**REPORT NO.** : 2022-1034656  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AZ56-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AZ56-0005	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	7.6 (29°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM 4500-O <sub>2</sub> G AND 5210 B)	10.8	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM 5220 D)	54.9	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM 2540 D)	22.3	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM 2540 C)	238	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE-TP-WAS-001 (KJELDAHL METHOD); SM 4500-Norg C	16.5	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM 5520 D)	4	≤ 10.0	3
<b>SAMPLE CONDITION</b>					
WATER'S COLOUR/TURBID SEDIMENT					
			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)  
NO.2/2558.

*Pongpat S.*  
(MRS PYPAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

MAY 12, 2022

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### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusedee\_kpr@hotmail.com  
**SAMPLE SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 2)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 3, 2022  
**SAMPLING TIME** : 10:43 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NIPASIT SRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : MAY 3, 2022  
**ANALYTICAL DATE** : MAY 3-11, 2022  
**REPORT NO.** : 2022-UB34657  
**WORK NO.** : 2022-008809  
**ANALYSIS NO.** : T22AD56-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AD56-0006	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.8 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 520 B)	12.3	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	50.2	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	22.0	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 180 °C (SM-2540 C)	184	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE-TP-WAS-001 (KJELDAHL METHOD); SM-4500-NORG C	29.3	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	5	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.27559.

*Piyapol S.*  
(MRS PIYAPAT SUTTAMANUTWONG)  
LABORATORY SUPERVISOR

MAY 12, 2022

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### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusedee\_kpr@hotmail.com  
**SAMPLE SOURCE** : VEM (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 09:40 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NIPASIT SKRIPIM  
**ANALYZED BY** : MISS PORNPIMOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-U04218  
**WORK NO.** : 2022-008809  
**ANALYSIS NO.** : T22AK630-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK630-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	8.0 (30°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 520 B)	76.2	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	158	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	25.1	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 180 °C (SM-2540 C)	256	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAE-TP-WAS-001 (KJELDAHL METHOD); SM-4500-NORG C	57.3	≤ 100	1.5
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.27559.

NO.27559.

*Piyapol S.*  
(MRS PIYAPAT SUTTAMANUTWONG)  
LABORATORY SUPERVISOR

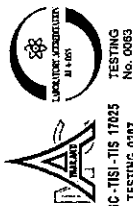
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TESTING  
No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/4/115 26TH FLOOR ITALITAL TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHWANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusee\_kpy@hotmail.com  
**SAMPLING SOURCE** : SAIL INDUSTRY (THAILAND) CO., LTD  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 10:20 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NUPASIT SRUPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-U044221  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AK630-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK630-0002	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.8 (pH)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	17.8	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM-5220 D)	62.4	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	9.8	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	150	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETPWAS001 (KJELDAHL METHOD); SM-4600-Norg C	24.2	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.22559.

ND : NON-DETECTABLE.

*Piyapat S.*  
(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JUNE 14, 2022

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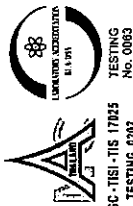
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TESTING  
No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/4/115 26TH FLOOR ITALITAL TOWER, NEW PETCHBURI ROAD BANG KAPI HUAI KHWANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dusee\_kpy@hotmail.com  
**SAMPLING SOURCE** : SAIL MAX SEALING SOLUTION CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 10:35 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. NUPASIT SRUPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-U044224  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AK630-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK630-0003	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H B)	7.7 (pH)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O G AND 5210 B)	105	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM-5220 D)	184	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	17.9	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	332	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UACETPWAS001 (KJELDAHL METHOD); SM-4600-Norg C	83.3	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID GREY		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.22559.

ND : NON-DETECTABLE.

*Piyapat S.*  
(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JUNE 14, 2022

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TESTING  
No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 02318 6788 e-mail : dusaee\_jay@hotmail.com  
**SAMPLING SOURCE** : TANGONG PRECISION TOOLS (THAILAND) CO., LTD.  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 10:55 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPSIT SRIPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-004225  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AK630-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK630-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	7.5 (22°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: 4500-O <sub>2</sub> G AND 5210 B)	96.0	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM: 5220 D)	316	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM: 2540 D)	37.6	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: 2540 C)	612	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAP-TP-WAS-001 (KJELDAHL METHOD); SM: 4600-NH <sub>3</sub> C	88.4	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D)	16	≤ 10.0	3

**SAMPLE CONDITION**  
WATER'S COLOUR/TURBID  
SEDIMENT

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

*Pirapal S.*

(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JUNE 14, 2022

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No. 0083

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 02318 6788 e-mail : dusaee\_jay@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 1)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 10:00 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPSIT SRIPIM  
**ANALYZED BY** : MISS PORNPIPOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-004226  
**WORK NO.** : 2021-008809  
**ANALYSIS NO.** : T22AK630-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK630-0005	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD AT SITE (SM 4500-H <sup>+</sup> B)	8.1 (24°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: 4500-O <sub>2</sub> G AND 5210 B)	2.0	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM: 5220 D)	ND	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM: 2540 D)	ND	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: 2540 C)	154	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAP-TP-WAS-001 (KJELDAHL METHOD); SM: 4600-NH <sub>3</sub> C	7.0	≤ 100	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D)	ND	≤ 10.0	3

**SAMPLE CONDITION**  
WATER'S COLOUR/TURBID  
SEDIMENT

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

NO.2/2559.

ND : NON-DETECTABLE

*Pirapal S.*

(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

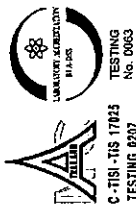
JUNE 14, 2022

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NSC-TISI-TIS 17025  
TESTING 0207  
No. 0063

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dudardee\_ky@hotmail.com  
**SAMPLING SOURCE** : GEELONG (THAILAND) CO., LTD. (POINT 2)  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 10:08 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPSIT SRIPIM  
**ANALYZED BY** : MISS PORNJIMOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-U04227  
**WORK NO.** : 2021-008699  
**ANALYSIS NO.** : T22AK630-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK630-0006	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H <sup>+</sup> B)	7.6 (31°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O <sub>2</sub> G AND 5210 B)	112	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	36.1	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	7.1	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	135	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAPETP-WAS-001 (KJELDAHL METHOD); SM-4500-Norg C	17.5	≤ 300	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

ND : NON-DETECTABLE  
NO.2/2559.

< LOQ : LIMIT OF QUANTITATION (TOTAL KJELDAHL NITROGEN ≥ 15 AND < 5.0 mg/L).

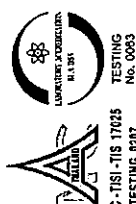
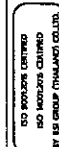
*Papap S.*  
(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JUNE 14, 2022

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• REPORTED ANALYSIS REFERS TO SUBMITTED SAMPLE ONLY.



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350 Udomsuk 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260  
Tel: 02-763 2828 Fax: 02-763 2800 www.laeconsultant.com E-mail: lae@laeconsultant.com

NSC-TISI-TIS 17025  
TESTING 0207  
No. 0063

### ANALYSIS REPORT

**CUSTOMER NAME** : ROJANA INDUSTRIAL MANAGEMENT COMPANY LIMITED  
**ADDRESS** : 203/115 26TH FLOOR ITALTHAI TOWER, NEW PETCHBURI ROAD BANG KAPI HUA KHANG BANGKOK 10310  
**CONTACT INFORMATION** : TEL : 0 2318 6788 e-mail : dudardee\_ky@hotmail.com  
**SAMPLING SOURCE** : GULF PD COMPANY LIMITED  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 2, 2022  
**SAMPLING TIME** : 11:20 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR NAPSIT SRIPIM  
**ANALYZED BY** : MISS PORNJIMOL WAENTHONG

**RECEIVED DATE** : JUNE 2, 2022  
**ANALYTICAL DATE** : JUNE 2-10, 2022  
**REPORT NO.** : 2022-U04299  
**WORK NO.** : 2022-003348  
**ANALYSIS NO.** : T22AK631-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT EFFLUENT T22AK631-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>c</sup>	-	ELECTROMETRIC METHOD AT SITE (SM-4500-H <sup>+</sup> B)	7.8 (32°C)	5.5-9.0	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM-4500-O <sub>2</sub> G AND 5210 B)	ND	≤ 500	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM-5220 D)	ND	≤ 750	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM-2540 D)	ND	≤ 200	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM-2540 C)	13.6	≤ 3,000	25
TOTAL KJELDAHL NITROGEN <sup>b</sup>	mg/L	IN-HOUSE METHOD: UAPETP-WAS-001 (KJELDAHL METHOD); SM-4500-Norg C	< LOQ	≤ 300	15
FAT, OIL AND GREASE <sup>c</sup>	mg/L	SOXHLET EXTRACTION METHOD (SM-5520 D)	ND	≤ 10.0	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : STANDARD OF DISCHARGED WASTEWATER FROM FACTORY IN ROJANA INDUSTRIAL PARK (RAYONG)

ND : NON-DETECTABLE  
NO.2/2559.

< LOQ : LIMIT OF QUANTITATION (TOTAL KJELDAHL NITROGEN ≥ 15 AND < 5.0 mg/L).

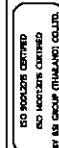
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(MRS PIYAPAT SUTTANANUTWONG)  
LABORATORY SUPERVISOR

JUNE 14, 2022

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# ภาคผนวก ค-03

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คุณภาพน้ำผิวดิน





## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O :  
Project Name : Pluak Daeng  
Project Location :

TESTING  
No.0042  
Lot ID: 2229620  
Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number : 2251252-1

Page 1 of 8

Sample Number	2229620-1
Sampled Date	Mar 15, 2022 11:05 AM
Sample Description	Surface Water
Location	พื้นที่บริเวณอุตสาหกรรม 1 มอ.โรงงานอุตสาหกรรม 500 เมตร (SW1) (GPS 47° 732138, 1433269)
Date Analysis Commenced	Mar 15, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
<sup>Al</sup> Aluminum	mg/L	0.003	0.005	1.17	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>As</sup> Arsenic	mg/L	0.003	0.005	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
<sup>Cd</sup> Cadmium	mg/L	0.003	0.005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
<sup>Cu</sup> Copper	mg/L	0.003	0.005	0.007	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>Cr</sup> Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
<sup>Pb</sup> Lead	mg/L	0.003	0.005	0.005	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
<sup>Hg</sup> Mercury	mg/L	0.001	0.005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
<sup>Ni</sup> Nickel	mg/L	0.003	0.005	0.009	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>Ag</sup> Silver	mg/L	0.003	0.005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>Cr</sup> Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
<sup>Zn</sup> Zinc	mg/L	0.003	0.005	0.03	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
<sup>F</sup> Fecal Coliform	MPN/100mL	-	-	3300.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
<sup>T</sup> Total Coliform	MPN/100mL	-	-	24000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Tanasit Wongachai, Nantawat Sarin  
Remark :  
\* LOD : Limit of Detection  
\* <- : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by  
N. Bangkit  
Narumon Banchoangkit  
Supervisor

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8135-62 PHAL

S. Weerat, M. 25-jul (3.2794)



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O :  
Project Name : Pluak Daeng  
Project Location :

TESTING  
No.0042  
Lot ID: 2229620  
Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number : 2251252-1

Page 2 of 8

Sample Number	2229620-1
Sampled Date	Mar 15, 2022 11:05 AM
Sample Description	Surface Water
Location	พื้นที่บริเวณอุตสาหกรรม 1 มอ.โรงงานอุตสาหกรรม 500 เมตร (SW1) (GPS 47° 732138, 1433269)
Date Analysis Commenced	Mar 15, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	0.23	≤0.5	≤0.5	Based on APHA (2017), 4500-NH2	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	2	2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	7.5	≥4	≥2	Based on APHA (2017), 4500-O(C)	Rayong
Flow rate *	m3/s	-	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	1.83	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	-	7.7	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.5	(c)	(c)	Based on APHA (2017), 2550 D	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(3) Not Change from natural condition  
(4) Non Objectionable  
(5) Change from Natural condition not more than 3 degree C

Sampled By : Tanasit Wongachai, Nantawat Sarin  
Remark :  
\* LOD : Limit of Detection  
\* <- : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by  
N. Bangkit  
Narumon Banchoangkit  
Supervisor

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S. Weerat, M. 25-jul (3.2794)



## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2229620

Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number : 2251252-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O :  
Project Name : Pluak Daeng  
Project Location :

Page 2 of 8

Sample Number	2229620-2
Sample Date	Mar 15, 2022 9:50 AM
Sample Description	Surface Water
Location	วังน้ำใสแคว้นสามัคคี 1 ตำบลหนอง (SW2) (GPS 47P 0732380, 1433085)
Date Analysis Commenced	Mar 15, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOD)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
(M) Aluminum	mg/L	0.003	0.005	1.45	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.0005	0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.0005	0.008	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
(M) Lead	mg/L	0.0003	0.0005	0.006	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.0005	0.010	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.005	0.04	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
(M) Fecal Coliform	MPN/100mL	-	3300.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	33000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

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Approved by  
*N. Banphit*  
Narumon Banchoangkit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2229620

Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number : 2251252-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O :  
Project Name : Pluak Daeng  
Project Location :

Page 4 of 8

Sample Number	2229620-2
Sample Date	Mar 15, 2022 9:50 AM
Sample Description	Surface Water
Location	วังน้ำใสแคว้นสามัคคี 1 ตำบลหนอง (SW2) (GPS 47P 0732380, 1433085)
Date Analysis Commenced	Mar 15, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOD)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	0.27	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	<2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	7.7	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	1.73	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.7	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	APHA (2017), 5510 D / (B)	Rayong
Temperature *	Degree C	-	29.3	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)

(a) Not Change from natural condition  
(b) Not Objected  
(c) Change from Natural condition not more than 3 degree C

Sampled By : Tanasit Wongasachai, Naritawat Sarit

Remark :  
- LOD : Limit of Detection  
- "c" : Lower than LOQ (Limit of Quantization) / LOQ (Limit of Reporting)  
- Analyte(s) marked \* refers not included in scope of Accreditation ISO/IEC 17025.

Approved by  
*N. Banphit*  
Narumon Banchoangkit  
Supervisor

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O :  
Project Name : Pluak Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2229620  
Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number: 2251252-1

Page 5 of 8

Sample Number	2229620-3
Sampled Date	Mar 15, 2022 2:14 PM
Sample Description	Surface Water
Location	วังน้ำพองตามหลัก 2 ตามแผน (SW3) (GPS 47P 0733401, 1432586)
Date Analysis Commenced	Mar 15, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
<sup>Al</sup> Aluminum	mg/L	0.003	0.005	1.18	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>As</sup> Arsenic	mg/L	0.003	0.005	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
<sup>Cd</sup> Cadmium	mg/L	0.003	0.005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
<sup>Cu</sup> Copper	mg/L	0.003	0.005	0.006	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>HCr</sup> Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr	Bangkok
<sup>Le</sup> Lead	mg/L	0.003	0.005	0.005	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
<sup>Hg</sup> Mercury	mg/L	0.001	0.005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
<sup>Ni</sup> Nickel	mg/L	0.003	0.005	0.009	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>Ag</sup> Silver	mg/L	0.003	0.005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>Tr</sup> Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
<sup>Zn</sup> Zinc	mg/L	0.003	0.005	0.04	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
<sup>F</sup> Fecal Coliform	MPN/100mL	-	-	7000.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
<sup>T</sup> Total Coliform	MPN/100mL	-	-	22000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Tanasit Wongachai, Nattawat Sarn  
Remark :  
\* LOD : Limit of Detection  
\* "<" : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by  
N. Bangpit  
Narumon Banchoangkit  
Supervisor

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O :  
Project Name : Pluak Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2229620  
Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number: 2251252-1

Page 6 of 8

Sample Number	2229620-3
Sampled Date	Mar 15, 2022 2:14 PM
Sample Description	Surface Water
Location	วังน้ำพองตามหลัก 2 ตามแผน (SW3) (GPS 47P 0733401, 1432586)
Date Analysis Commenced	Mar 15, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	0.24	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	2	<2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	7.8	≥4	≥2	Based on APHA (2017), 4500-O(C)	Rayong
Flow rate *	m3/s	-	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	1.80	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	-	7.7	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.4	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8 B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8 B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(B) Non Objectionable  
(C) Change from Natural condition not more than 3 degree C

Sampled By : Tanasit Wongachai, Nattawat Sarn  
Remark :  
\* LOD : Limit of Detection  
\* "<" : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by  
N. Bangpit  
Narumon Banchoangkit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2229620  
Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number : 2251252-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
P/O : 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
Project Name : Pluak Daeng  
Project Location :  
Page 7 of 8

Page 7 of 8

Sample Number 2229620-4  
Sample Date Mar 15, 2022 2:30 PM  
Sample Description Surface Water  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
Date Analysis Commenced Mar 15, 2022  
Condition of Sample Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
(M) Aluminum	mg/L	0.003	0.005	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.0005	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	0.0005	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.0005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
(M) Lead	mg/L	0.0003	0.0005	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.0005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Trivalent Chromium *	mg/L	-	0.01	≤0.01	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.005	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
(M) Fecal Coliform	MPN/100mL	-	7900.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	13000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

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Narumon Banchoangkit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2229620  
Date Received : Mar 15, 2022  
Date Reported : Mar 24, 2022  
Report Number : 2251252-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
P/O : 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
Project Name : Pluak Daeng  
Project Location :  
Page 8 of 8

Sample Number 2229620-4  
Sample Date Mar 15, 2022 2:30 PM  
Sample Description Surface Water  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
Date Analysis Commenced Mar 15, 2022  
Condition of Sample Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	0.22	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 Rayong F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	3	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	7.7	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	1.91	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.6	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	29.4	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline: (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)

(a) Not Change from natural condition  
(b) Not Objectable  
(c) Change from Natural condition not more than 3 degree C

Sampled By : Tanast Wongsechal, Nantawat Sarin

Remark :  
- LOD : Limit of Detection  
- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by

N. Banphit  
Narumon Banchoangkit  
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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2230675  
Date Received : Apr 27, 2022  
Date Reported : May 05, 2022  
Report Number: 2253744-1

Page 1 of 8

Sample Number	2230675-1
Sample Date	Apr 27, 2022 10:45 AM
Sample Description	Surface Water
Location	วังน้ำเย็นเกษตรนิคมท่าเรือ 1 มาตราส่วน 500 เมตร (SW1)
Date Analysis Commenced	Apr 27, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
(A) Aluminum	mg/L	0.003	0.005	1.41	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(A) Arsenic	mg/L	0.003	0.005	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(A) Cadmium	mg/L	0.003	0.005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
(A) Copper	mg/L	0.003	0.005	0.009	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(A) Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (B)	Bangkok
(A) Lead	mg/L	0.003	0.005	0.007	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(A) Mercury	mg/L	0.001	0.005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(A) Nickel	mg/L	0.003	0.005	0.02	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(A) Silver	mg/L	0.003	0.005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(A) Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
(A) Zinc	mg/L	0.003	0.005	0.05	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
(A) Fecal Coliform	MPN/100mL	-	-	3300.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(A) Total Coliform	MPN/100mL	-	-	11000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Narurat thammassaro  
Remark :  
\* LOD : Limit of Detection  
\* "<" : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

N. Bangpit

Approved by

Narumon Benichongkit  
Supervisor

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2230675  
Date Received : Apr 27, 2022  
Date Reported : May 05, 2022  
Report Number: 2253744-1

Page 2 of 8

Sample Number	2230675-1
Sample Date	Apr 27, 2022 10:45 AM
Sample Description	Surface Water
Location	วังน้ำเย็นเกษตรนิคมท่าเรือ 1 มาตราส่วน 500 เมตร (SW1)
Date Analysis Commenced	Apr 27, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	0.64	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	7.0	≥4	≥2	Based on APHA (2017), 4500-DO (B)	Rayong
Flow rate *	m3/s	-	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	3.04	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	-	7.6	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.2	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline: (1) Notification of the National Environmental Board, No. B, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. B, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(3) Change from natural condition  
(4) Non Obvious  
(5) Change from natural condition not more than 3 degree C

Sampled By : Narurat thammassaro  
Remark :  
\* LOD : Limit of Detection  
\* "<" : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

N. Bangpit

Approved by

Narumon Benichongkit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2230675

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Report Number : 2253744-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Report Number : 2253744-1

Page 3 of 6

Sample Number	2230675-2
Sample Date	Apr 27, 2022 10:35 AM
Sample Description	Surface Water
Location	พื้นที่โรงงานอุตสาหกรรมใกล้ 1 ทางด่วน (SW2)
Date Analysis Commenced	Apr 27, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD (LOE)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
(M) Aluminum	mg/L	0.003	0.005	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.0005	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.0005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Based on APHA (2017), 3100-Cr (6)	Bangkok
(M) Lead	mg/L	0.0003	0.0005	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.0005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.005	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
(M) Fecal Coliform	MPN/100mL	-	49000.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	70000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

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*N. Bangpit*  
Narumon Banchoangjit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2230675

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Report Number : 2253744-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Report Number : 2253744-1

Page 4 of 6

Sample Number	2230675-2
Sample Date	Apr 27, 2022 10:35 AM
Sample Description	Surface Water
Location	พื้นที่โรงงานอุตสาหกรรมใกล้ 1 ทางด่วน (SW2)
Date Analysis Commenced	Apr 27, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD (LOE)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	0.58	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	<2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	6.0	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	3.04	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.6	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	APHA (2017), 5510 D	Rayong
Temperature *	Degree C	-	29.3	(C)	(C)	Based on APHA (2017), 2550 B	Rayong

Guideline: (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535; published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535; published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(3) Not Change from natural condition  
(4) Not Objectivable  
(5) Change from Natural condition not more than 3 degree C

Sampled By : Narumon thaimaisano

Remarks :  
- LOD : Limit of Detection  
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* by/are not included in scope of Accreditation ISO/IEC 17025.

Approved by  
*N. Bangpit*  
Narumon Banchoangjit  
Supervisor

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluek Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2230675  
Date Received : Apr 27, 2022  
Date Reported : May 05, 2022  
Report Number: 2253744-1

Page 5 of 8

Sample Number	2230675-3
Sampled Date	Apr 27, 2022 10:25 AM
Sample Description	Surface Water
Location	วังน้ำพุร้อนน้ำทิพย์ 2 วนาเอนทร (SW3)
Date Analysis Commenced	Apr 27, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
(M) Aluminum	mg/L	0.003	0.005	0.98	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.0005	0.010	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.0005	0.005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
(M) Lead	mg/L	0.0003	0.0005	0.004	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.0005	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.005	0.03	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
(M) Fecal Coliform	MPN/100mL	-	-	3300.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	-	7000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Nararat thumaisaro  
Remark :  
- LOQ : Limit of Detection  
- "<" : Lower than LOQ (Limit of Quantification) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation (ISO/IEC 17025).

Approved by  
N. Bangphit  
Nararat Banchoangkit  
Supervisor

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluek Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2230675  
Date Received : Apr 27, 2022  
Date Reported : May 05, 2022  
Report Number: 2253744-1

Page 6 of 8

Sample Number	2230675-3
Sampled Date	Apr 27, 2022 10:25 AM
Sample Description	Surface Water
Location	วังน้ำพุร้อนน้ำทิพย์ 2 วนาเอนทร (SW3)
Date Analysis Commenced	Apr 27, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	0.37	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	2	<2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	6.2	≥4	≥2	Based on APHA (2017), 4500-O(C)	Rayong
Flow rate *	m3/s	-	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	3.26	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	-	7.6	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5510 D	Rayong
Temperature *	Degree C	-	-	29.2	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3).  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4).  
(3) Not Change in natural condition  
(4) Non Objectionable  
(5) Change from Natural condition not more than 3 degree C

Sampled By : Nararat thumaisaro

Remark :  
- LOQ : Limit of Detection  
- "<" : Lower than LOQ (Limit of Quantification) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation (ISO/IEC 17025).

Approved by  
N. Bangphit  
Nararat Banchoangkit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2230675  
Date Received : Apr 27, 2022  
Date Reported : May 05, 2022  
Report Number : 2253744-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
59/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 7 of 8

Sample Number 2230675-4  
Sample Date Apr 27, 2022 10:15 AM  
Sample Description Surface Water  
Location วัสดุโพลีเอทิลีนชนิดทึบ 2 ขนาดบรรจุสุทธิ 500 มล (SW4)  
Date Analysis Commenced Apr 27, 2022  
Condition of Sample Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOE)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
(M) Aluminium	mg/L	0.003	0.85	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.010	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (B)	Bangkok
(M) Lead	mg/L	0.0003	0.003	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Trivalent Chromium *	mg/L	-	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.03	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
(M) Fecal Coliform	MPN/100mL	-	7900.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	11000.0	≤2000	No Standard	APHA (2017), 9221 B	Bangkok

The above results are valid only for the analyzed (tested) sample(s) as indicated in the report. No other results are to be used for any other purpose. The results are for information only and do not constitute a guarantee of accuracy or a warranty of any kind. The results are not to be used for legal or regulatory purposes. The results are not to be used for any other purpose. The results are not to be used for any other purpose.

Approved by  
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Narumon Banchongkit  
Supervisor

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2230675  
Date Received : Apr 27, 2022  
Date Reported : May 05, 2022  
Report Number : 2253744-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
59/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 8 of 8

Sample Number 2230675-4  
Sample Date Apr 27, 2022 10:15 AM  
Sample Description Surface Water  
Location วัสดุโพลีเอทิลีนชนิดทึบ 2 ขนาดบรรจุสุทธิ 500 มล (SW4)  
Date Analysis Commenced Apr 27, 2022  
Condition of Sample Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOE)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	0.40	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	<2	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	6.1	≥4	≥2	Based on APHA (2017), 4500-O(C)	Rayong
Flow rate *	m3/s	-	-	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	2.39	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.6	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	30.3	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline: (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)

(a) Not Change from natural condition  
(b) Non Objectable  
(c) Change from Natural condition not more than 3 degree C

Sampled By : Narumon thaimasaro

Remark :  
LOD : Limit of Detection  
\*LOE : Lower than LOQ (Limit of Quantitation) / LOE (Limit of Reporting)  
Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by  
N. Bangpit  
Narumon Banchongkit  
Supervisor

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
S4/S Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Page 1 of 8

Sample Number	2245515-1
Sample Date	May 26, 2022 10:30 AM
Sample Description	Surface Water
Location	บริเวณโหมโรงอุตสาหกรรมท่าเรือ 1 ของโรงงาน รุสทราทราทรา 500 ไร่ (SW1)
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
<sup>11</sup> Aluminum	mg/L	0.003	0.005	1.68	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>11</sup> Arsenic	mg/L	0.0003	0.0005	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
<sup>11</sup> Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
<sup>11</sup> Copper	mg/L	0.0003	0.0005	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>11</sup> Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
<sup>11</sup> Lead	mg/L	0.0003	0.0005	0.010	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
<sup>11</sup> Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
<sup>11</sup> Nickel	mg/L	0.0003	0.0005	0.02	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>11</sup> Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
<sup>11</sup> Zinc	mg/L	0.003	0.005	0.05	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
<sup>11</sup> Fecal Coliform	MPN/100mL	-	-	7900.0	≤1000	No Standard	APHA (2017), 9221 E	Bangkok
<sup>11</sup> Total Coliform	MPN/100mL	-	-	13000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Chulnorn Lertnaitakunchat, Nantawat Srin  
Remark :  
- LOD : Limit of Detection  
- "ND" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by  
  
Def Chingchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
S4/S Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Page 2 of 8

Sample Number	2245515-1
Sample Date	May 26, 2022 10:30 AM
Sample Description	Surface Water
Location	บริเวณโหมโรงอุตสาหกรรมท่าเรือ 1 ของโรงงาน รุสทราทราทรา 500 ไร่ (SW1)
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	0.73	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 Rayong F	Rayong
BOD (5 days at 20 Degree C)	mg/L	-	2	4	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	5.6	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	3.74	≤5	≤5	Based on APHA (2017), 4500-NO3(F)	Rayong
pH at 25 degree C	-	-	-	7.5	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5510 D	Rayong
Temperature *	Degree C	-	-	31.6	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline (1) Notification of the National Environmental Board, No. 8, B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
Guideline (2) Notification of the National Environmental Board, No. 8, B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(a) Not Change from natural condition  
(b) Not Objectable  
(c) Change from Natural condition not more than 3 degree C

Sampled By : Chulnorn Lertnaitakunchat, Nantawat Srin

Remark :  
- LOD : Limit of Detection  
- "ND" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by  
  
Def Chingchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Page 2 of 6

Sample Number	2245515-2
Sample Date	May 26, 2022 10:00 AM
Sample Description	Surface Water
Location	บริเวณโรงงานอุตสาหกรรม 1 ทางโรงงาน (SW2)
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
(M) Aluminum	mg/L	0.003	1.45	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.010	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	<0.01	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (B)	Bangkok
(M) Lead	mg/L	0.0003	0.009	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.05	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
(M) Fecal Coliform	MPN/100mL	-	7900.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	24000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

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Approved by

D. Chongchon  
Dol Chongchon  
Senior Manager

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S:\Report\LA\_2024\ (32994)



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Page 1 of 8

Sample Number	2245515-2
Sample Date	May 26, 2022 10:00 AM
Sample Description	Surface Water
Location	บริเวณโรงงานอุตสาหกรรม 1 ทางโรงงาน (SW2)
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	0.81	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	4	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	5.3	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	3.70	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.5	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	30.0	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 9, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)

(a) Not Change from natural condition  
(b) Non Objectable  
(c) Change from Natural condition not more than 3 degree C

Sampled By : Chaiusorn Letthanthakundul, Nantawat Sarin

Remark :  
- LOD : Limit of Detection  
- "c" : Lower than LOQ (Limit of Quantification) / LOQ (Limit of Reporting)  
- Analyte(s) marked \* refers not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

D. Chongchon  
Dol Chongchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Page 5 of 8

Sample Number	2245515-3
Sampled Date	May 26, 2022 9:40 AM
Sample Description	Surface Water
Location	พื้นที่โรงงานอุตสาหกรรม 2 ของโรงงาน (SW3)
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
<sup>(1)</sup> Aluminum	mg/L	0.003	0.005	0.80	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Arsenic	mg/L	0.0003	0.0005	0.010	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Copper	mg/L	0.0003	0.0005	0.004	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
<sup>(1)</sup> Lead	mg/L	0.0003	0.0005	0.003	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
<sup>(1)</sup> Nickel	mg/L	0.0003	0.0005	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
<sup>(1)</sup> Zinc	mg/L	0.003	0.005	0.03	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
<sup>(1)</sup> Fecal Coliform	MPN/100mL	-	-	11000.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
<sup>(1)</sup> Total Coliform	MPN/100mL	-	-	70000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Chalmusorn Lertnathakunchai, Nantawat Sarin

Remarks :  
- LOD : Limit of Detection  
- <LOR : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by  
  
Dej Changtong  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Page 6 of 8

Sample Number	2245515-3
Sampled Date	May 26, 2022 9:40 AM
Sample Description	Surface Water
Location	พื้นที่โรงงานอุตสาหกรรม 2 ของโรงงาน (SW3)
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	0.76	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 Rayong F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	2	3	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	5.5	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	3.40	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	-	7.6	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.0	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(3) Not Change from natural condition  
(4) Not Object to reuse  
(5) Change from natural condition not more than 3 degree C

Sampled By : Chalmusorn Lertnathakunchai, Nantawat Sarin

Remarks :  
- LOD : Limit of Detection  
- <LOR : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by  
  
Dej Changtong  
Senior Manager

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 7 of 8

Sample Number	2245515-4
Sample Date	May 26, 2022 9:25 AM
Sample Description	Surface Water
Location	พื้นที่วัดน้ำประปาหมู่บ้าน 2 ตำบลหนองขี้เหล็ก หมู่ 500 ต.บึงสามพัน
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
Aluminum	mg/L	0.003	0.86	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Arsenic	mg/L	0.0003	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.006	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
Lead	mg/L	0.0003	0.004	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	Not Detected	≤0.002	≤0.002	Based on US EPA Method 1631 Revision E	Bangkok
Nickel	mg/L	0.0003	0.005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
Silver	mg/L	0.0003	<0.005	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.04	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
Fecal Coliform	MPN/100mL	-	33000.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
Total Coliform	MPN/100mL	-	45000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

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Approved by

*D. Chongchon*

Dej Chongchon  
Senior Manager

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S:\Report\2245515-4 (2286256-1)



## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2245515  
Date Received : May 26, 2022  
Date Reported : Jun 03, 2022  
Report Number : 2286256-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 8 of 8

Sample Number	2245515-4
Sample Date	May 26, 2022 9:25 AM
Sample Description	Surface Water
Location	พื้นที่วัดน้ำประปาหมู่บ้าน 2 ตำบลหนองขี้เหล็ก หมู่ 500 ต.บึงสามพัน
Date Analysis Commenced	May 26, 2022
Condition of Sample	Contained in six plastic bottles, one BOD bottle and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	0.80	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	3	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN *	mg/L	0.001	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	5.1	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	0.112	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	3.44	≤5	≤5	Based on APHA (2017), 4500-NO3(C)	Rayong
pH at 25 degree C	-	-	7.5	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (E)	Rayong
Phenol *	mg/L	0.0005	Not Detected	≤0.005	≤0.005	APHA (2017), 5510 D	Rayong
Temperature *	Degree C	-	29.8	(C)	(C)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, dated February 24, B.E. 2537 (Class 4)  
(3) Not Change from natural condition  
(4) Not objectionable  
(5) Change from Natural condition not more than 3 degree C

Sampled By : Chalunom Lertnithakunchai, Nontawat Sarin

Remarks :  
- LOD : Limit of Detection  
- "≤" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

*D. Chongchon*

Dej Chongchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phluk Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Phluk Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2265435-1

Page 1 of 8

Sample Number	2265435-1
Sampled Date	Jun 17, 2022 10:50 AM
Sample Description	Surface Water
Location	บริเวณโรงงานอุตสาหกรรม 500 เมตร (SW1)
Date Analysis Commenced	Jun 17, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
(M) Aluminum	mg/L	0.003	0.005	0.73	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Arsenic	mg/L	0.0003	0.0005	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
(M) Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
(M) Copper	mg/L	0.0003	0.0005	0.005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (B)	Bangkok
(M) Lead	mg/L	0.0003	0.0005	0.004	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
(M) Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
(M) Nickel	mg/L	0.0003	0.0005	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
(M) Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
(M) Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
(M) Zinc	mg/L	0.003	0.005	0.03	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
(M) Fecal Coliform	MPN/100mL	-	-	7900.0	≤1000	No Standard	APHA (2017), 9221 E	Bangkok
(M) Total Coliform	MPN/100mL	-	-	13000.0	≤70000	No Standard	APHA (2017), 9221 B	Bangkok

Sampled By : Narurat thaimasano  
Remark :  
- LOD : Limit of Detection  
- "x" : Lower than LOQ (Limit of Quantitation) / LOR (Unit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
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Approved by

Wilawan Boririk  
Assistant Manager

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S:\Report\AL\_20\_24 (1.135PW)



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phluk Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Phluk Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2265435-1

Page 2 of 8

Sample Number	2265435-1
Sampled Date	Jun 17, 2022 10:50 AM
Sample Description	Surface Water
Location	บริเวณโรงงานอุตสาหกรรม 500 เมตร (SW1)
Date Analysis Commenced	Jun 17, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	1.26	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 Rayong F	Rayong
BOD (5 days at 20 Degree C)	mg/L	-	2	4	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN *	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	6.6	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	4.41	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	-	7.9	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.6	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(3) Not applicable  
(4) Not applicable  
(5) Not applicable  
(6) Change from Natural condition not more than 3 degree C

Sampled By : Narurat thaimasano  
Remark :  
- LOD : Limit of Detection  
- "x" : Lower than LOQ (Limit of Quantitation) / LOR (Unit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Wilawan Boririk  
Assistant Manager

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S:\Report\AL\_20\_24 (1.135PW)





## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2326085-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Page 3 of 6

Page 3 of 6

Sample Number : 2265435-2  
Sampled Date : Jun 17, 2022 10:30 AM  
Sample Description : Surface Water  
Location : หมู่บ้านในเขตเทศบาลตำบล 1 เมืองสวี (SW2)  
Date Analysis Commenced : Jun 17, 2022  
Condition of Sample : Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
<sup>(1)</sup> Aluminum	mg/L	0.003	0.005	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Arsenic	mg/L	0.0003	0.0005	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Copper	mg/L	0.0003	0.0005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
<sup>(1)</sup> Lead	mg/L	0.0003	0.0005	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
<sup>(1)</sup> Nickel	mg/L	0.0003	0.0005	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	Based on APHA (2017), Calculated	Bangkok
<sup>(1)</sup> Zinc	mg/L	0.003	0.005	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
<sup>(1)</sup> Fecal Coliform	MPN/100mL	-	4900.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
<sup>(1)</sup> Total Coliform	MPN/100mL	-	17000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

The above results are valid only for the above-specified sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Wibol  
Assistant Manager

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8235-627 EMAIL [S.Support@ALSGlobal.com](mailto:S.Support@ALSGlobal.com) S.Support@ALSGlobal.com (13394)



## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2326085-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Page 4 of 8

Sample Number : 2265435-2  
Sampled Date : Jun 17, 2022 10:30 AM  
Sample Description : Surface Water  
Location : หมู่บ้านในเขตเทศบาลตำบล 1 เมืองสวี (SW2)  
Date Analysis Commenced : Jun 17, 2022  
Condition of Sample : Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	1.16	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	3	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN *	mg/L	0.001	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C) (E)	Rayong
Dissolved Oxygen *	mg/L	-	5.6	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	2.72	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.9	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	30.2	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline: (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)

Sampled By : Narunat thaimasaro

Remark :  
- LOD : Limit of Detection  
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Wibol  
Assistant Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2326085-1

Page 5 of 8

Sample Number	2265435-3
Sample Date	Jun 17, 2022 9:30 AM
Sample Description	Surface Water
Location	บริเวณโรงงานอุตสาหกรรม 2 มบ.รังสิต (SW3)
Date Analysis Commenced	Jun 17, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
Aluminum	mg/L	0.003	0.005	1.49	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Asenic	mg/L	0.0003	0.0005	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.010	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (b)	Bangkok
Lead	mg/L	0.0003	0.0005	0.008	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
Nickel	mg/L	0.0003	0.0005	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.05	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>								
Fecal Coliform	MPN/100mL	-	-	4900.0	≤1000	No Standard	APHA (2017), 9221 E	Bangkok
Total Coliform	MPN/100mL	-	-	17000.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

**Sampled By :** Narunat Channasaro  
**Remark :**  
• LOD : Limit of Detection  
• "L" : Lower than LOQ (Limit of Quantitation) / LOQ (Limit of Reporting)  
• Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
• The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Witwan Boitak  
Assistant Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
TESTING No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2326085-1

Page 6 of 8

Sample Number	2265435-3
Sample Date	Jun 17, 2022 9:30 AM
Sample Description	Surface Water
Location	บริเวณโรงงานอุตสาหกรรม 2 มบ.รังสิต (SW3)
Date Analysis Commenced	Jun 17, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	0.02	0.05	1.49	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 Rayong F	Rayong
BOD (5 days at 20 Degree C)	mg/L	-	2	3	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN *	mg/L	0.001	0.005	<0.005	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	0.1	5.8	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	0.05	3.01	≤5	≤5	Based on APHA (2017), 4500-NO3(C)	Rayong
pH at 25 degree C	-	-	-	7.9	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol *	mg/L	0.0005	0.001	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.2	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

**Guideline (1)** Notification of the National Environmental Board, No. 8, B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)  
**Guideline (2)** Notification of the National Environmental Board, No. 8, B.E. 2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 4)  
(a) Not Change from natural condition  
(b) Not Objectivable  
(c) Change from Natural condition not more than 3 degree C

**Sampled By :** Narunat Channasaro  
**Remark :**  
• LOD : Limit of Detection  
• "L" : Lower than LOQ (Limit of Quantitation) / LOQ (Limit of Reporting)  
• Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
• The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Witwan Boitak  
Assistant Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2326085-1

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Sample Number	2265435-4
Sampled Date	Jun 17, 2022 10:00 AM
Sample Description	Surface Water
Location	เขตกู้ยวณกิจอุตสาหกรรม 2 ของโรงงานอุตสาหกรรม 500 ไร่ (SW4)
Date Analysis Commenced	Jun 17, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>							
<sup>(1)</sup> Aluminum	mg/L	0.003	2.10	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Arsenic	mg/L	0.0003	0.01	≤0.01	≤0.01	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Cadmium	mg/L	0.0003	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Copper	mg/L	0.0003	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Hexavalent Chromium	mg/L	0.003	Not Detected	≤0.05	≤0.05	Based on APHA (2017), 3500-Cr (6)	Bangkok
<sup>(1)</sup> Lead	mg/L	0.0003	0.009	≤0.05	≤0.05	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Mercury	mg/L	0.0001	Not Detected	≤0.002	≤0.002	Based on US EPA, Method 1631 Revision E	Bangkok
<sup>(1)</sup> Nickel	mg/L	0.0003	0.01	≤0.10	≤0.10	Based on APHA (2017), 3125	Bangkok
<sup>(1)</sup> Silver	mg/L	0.0003	Not Detected	No Standard	No Standard	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	No Standard	No Standard	Based on APHA (2017), Calculated	Bangkok
<sup>(1)</sup> Zinc	mg/L	0.003	0.05	≤1	≤1	Based on APHA (2017), 3125	Bangkok
<b>Microbiological Testing</b>							
<sup>(1)</sup> Fecal Coliform	MPN/100mL	-	4900.0	≤4000	No Standard	APHA (2017), 9221 E	Bangkok
<sup>(1)</sup> Total Coliform	MPN/100mL	-	7900.0	≤20000	No Standard	APHA (2017), 9221 B	Bangkok

The above results are valid only for the analyzed (tested) sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Wilawan Borirak  
Assistant Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
TESTING  
No.0042  
Lot ID: 2265435  
Date Received : Jun 17, 2022  
Date Reported : Jun 25, 2022  
Report Number : 2326085-1

Page 8 of 8

Sample Number	2265435-4
Sampled Date	Jun 17, 2022 10:00 AM
Sample Description	Surface Water
Location	เขตกู้ยวณกิจอุตสาหกรรม 2 ของโรงงานอุตสาหกรรม 500 ไร่ (SW4)
Date Analysis Commenced	Jun 17, 2022
Condition of Sample	Contained in two glass vials, one BOD bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	0.02	1.66	≤0.5	≤0.5	Based on APHA (2017), 4500-NH3 Rayong F	Rayong
BOD (5 days at 20 Degree C) *	mg/L	-	3	≤2	≤4	APHA (2017), 5210 B	Rayong
Cyanide as CN *	mg/L	0.001	Not Detected	≤0.005	≤0.005	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Dissolved Oxygen *	mg/L	-	6.0	≥4	≥2	Based on APHA (2017), 4500-O(C) Rayong	Rayong
Flow rate *	m3/s	-	0.000	No Standard	No Standard	Flow meter	Rayong
Nitrate as N *	mg/L	0.015	3.16	≤5	≤5	Based on APHA (2017), 4500-NO3(E)	Rayong
pH at 25 degree C	-	-	7.9	5.0-9.0	5.0-9.0	Based on APHA (2017), 4500-H (9)	Rayong
Phenol *	mg/L	0.0005	Not Detected	≤0.005	≤0.005	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	30.1	(c)	(c)	Based on APHA (2017), 2550 B	Rayong

Guideline : (1) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, dated February 24, B.E. 2537 (Class 3).  
(2) Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, dated February 24, B.E. 2537 (Class 3).  
(3) Non-Object to Natural Condition  
(4) Change from natural condition  
(5) Change from natural condition not more than 3 degree C

Sampled By : Nantarat thammatairo

Remark :  
• LOD : Limit of Detection  
• "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
• Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
• The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

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Wilawan Borirak  
Assistant Manager

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# ภาคผนวก ค-04

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ชีวภาพทางน้ำ



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ

อ. ศรีราชา จ. ชลบุรี 20110

โทร./โทรสาร. (038) 311379

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

Address : 54/5 Moo 1 Map Yang Phon, Pluak Daeng, Rayong, Thailand, 21140

Project Name : Pluak Daeng

รายงานผลการวิเคราะห์แพลงก์ตอนพืช

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
<b>Division Cyanophyta</b>				
<b>Class Cyanophyceae</b>				
<b>Order Chroococcales</b>				
<b>Family Chroococcaceae</b>				
1. <i>Gloeocapsa</i> sp.	96,000	-	-	-
2. <i>Microcystis aeruginosa</i>	-	42,000	-	9,000
<b>Order Nostocales</b>				
<b>Family Oscillatoriaceae</b>				
3. <i>Lyngbya contorta</i>	44,000	25,000	-	18,000
4. <i>Lyngbya major</i>	9,000	-	-	-
5. <i>Oscillatoria</i> sp.	315,000	235,000	372,000	264,000
6. <i>Oscillatoria tenuis</i>	-	-	85,000	35,000
7. <i>Spirulina platensis</i>	9,000	-	-	-
<b>Family Nostocaceae</b>				
8. <i>Anabaena</i> sp.	-	-	-	26,000

**ตาราง ผลการวิเคราะห์แฟลงก์ตอนพืช (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)**

(ต่อ)

ชนิดแฟลงก์ตอนพืช	ปริมาณแฟลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
9. <i>Anabaenopsis</i> sp.	-	-	-	53,000
<b>Division Chlorophyta</b>				
<b>Class Chlorophyceae</b>				
<b>Order Volvocales</b>				
<b>Family Volvocaceae</b>				
10. <i>Eudorina elegans</i>	35,000	151,000	-	114,000
11. <i>Gonium pectorrale</i>	-	59,000	-	44,000
12. <i>Pandorina morum</i>	35,000	25,000	194,000	202,000
<b>Family Spondylomoraceae</b>				
13. <i>Spondylomorom quarternarium</i>	-	17,000	-	-
<b>Order Chlorococcales</b>				
<b>Family Hydrodictyaceae</b>				
14. <i>Pediastrum duplex</i>	26,000	235,000	85,000	106,000
15. <i>Pediastrum simplex</i>	44,000	25,000	-	-
<b>Family Coelastraceae</b>				
16. <i>Coelastrum microporum</i>	18,000	-	-	-
17. <i>Coelastrum sphaericum</i>	18,000	143,000	-	-
<b>Family Oocystaceae</b>				
18. <i>Ankistrodesmus falcatus</i>	595,000	974,000	2,366,000	968,000
19. <i>Dictyosphaerium pulchellum</i>	140,000	403,000	135,000	229,000
20. <i>Kirchneriella subsolitaria</i>	-	8,000	-	-
21. <i>Oocystis elliptica</i>	-	151,000	34,000	62,000
22. <i>Planktosphaeria gelatinosa</i>	175,000	84,000	25,000	-
23. <i>Selenastrum gracile</i>	63,000	50,000	51,000	-
24. <i>Tetraedron gracile</i>	140,000	202,000	262,000	70,000
25. <i>Tetraedron hastatum</i>	201,000	168,000	-	220,000
26. <i>Tetraedron trigonum</i>	-	25,000	51,000	88,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
<b>Family Scenedesmaceae</b>				
27. <i>Actinastrum gracillimum</i>	-	8,000	93,000	-
28. <i>Actinastrum hantzschii</i>	149,000	168,000	51,000	53,000
29. <i>Crucigenia apiculata</i>	-	118,000	-	-
30. <i>Micractinium pusillum</i>	-	134,000	-	-
31. <i>Micractinium quadrisetum</i>	-	-	42,000	-
32. <i>Scenedesmus acuminatus</i>	61,000	17,000	127,000	106,000
33. <i>Scenedesmus dimorphus</i>	96,000	-	152,000	167,000
34. <i>Scenedesmus opoliensis</i>	35,008,000	45,528,000	39,715,000	52,950,000
<b>Order Zygomatales</b>				
<b>Family Zygnemataceae</b>				
35. <i>Spirogyra</i> sp.	333,000	59,000	25,000	26,000
<b>Family Desmidiaceae</b>				
36. <i>Closterium acerosum</i>	61,000	25,000	34,000	26,000
37. <i>Closterium ehrenbergii</i>	-	25,000	34,000	9,000
38. <i>Closterium ralfsii</i>	9,000	-	-	-
39. <i>Cosmarium nudum</i>	-	-	8,000	18,000
40. <i>Penium cucurbitinum</i>	-	-	-	44,000
41. <i>Staurostrum gracile</i>	228,000	302,000	237,000	211,000
<b>Class Euglenophyceae</b>				
<b>Order Euglenales</b>				
<b>Family Euglenaceae</b>				
42. <i>Euglena acus</i>	158,000	437,000	169,000	35,000
43. <i>Euglena oxyuris</i>	35,000	67,000	76,000	79,000
44. <i>Euglena viridis</i>	61,000	59,000	17,000	132,000
45. <i>Lepocinclis ovum</i>	70,000	924,000	313,000	246,000
46. <i>Phacus angulatus</i>	26,000	34,000	101,000	141,000



ตาราง ผลการวิเคราะห์แฟลงก์ตอนพืช (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

(ต่อ)

ชนิดแฟลงก์ตอนพืช	ปริมาณแฟลงก์ตอนพืช (หน่วยต่อดูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
47. <i>Phacus hamatus</i>	-	17,000	-	70,000
48. <i>Phacus longicauda</i>	18,000	134,000	34,000	176,000
49. <i>Phacus myersi</i>	-	50,000	59,000	26,000
50. <i>Phacus platalea</i>	-	-	68,000	-
51. <i>Phacus ranula</i>	18,000	-	17,000	-
52. <i>Phacus</i> sp.	-	101,000	25,000	70,000
53. <i>Phacus tortus</i>	9,000	8,000	8,000	-
54. <i>Strombomonas australica</i>	26,000	124,000	42,000	62,000
55. <i>Strombomonas fluviatilis</i>	131,000	126,000	59,000	-
56. <i>Strombomonas gibberosa</i>	105,000	17,000	85,000	35,000
57. <i>Strombomonas girardiana</i>	350,000	2,016,000	2,197,000	3,520,000
58. <i>Trachelomonas crebea</i>	385,000	235,000	270,000	880,000
59. <i>Trachelomonas hispida</i>	525,000	2,184,000	1,859,000	2,640,000
<b>Division Chromophyta</b>				
<b>Class Bacillariophyceae</b>				
<b>Order Biddulphiales</b>				
<b>Suborder Coscinodiscineae</b>				
<b>Family Thalassiosiraceae</b>				
60. <i>Cyclotella stelligera</i>	1,488,000	840,000	2,535,000	2,112,000
<b>Family Aulacoseiraceae</b>				
61. <i>Aulacoseira baicalensis</i>	1,050,000	1,092,000	1,352,000	1,760,000
62. <i>Aulacoseira granulata</i>	210,000	160,000	279,000	422,000
<b>Order Bacillariales</b>				
<b>Suborder Fragilariineae</b>				
<b>Family Fragilariaceae</b>				
63. <i>Fragilaria capucina</i>	263,000	420,000	1,183,000	211,000
64. <i>Synedra acus</i>	-	67,000	-	-

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
65. <i>Synedra ulna</i>	166,000	84,000	68,000	493,000
<b>Suborder Bacillariineae</b>				
<b>Family Eunotiaceae</b>				
66. <i>Eunotia lineolata</i>	35,000	-	-	53,000
67. <i>Eunotia pectinalis</i>	245,000	34,000	17,000	9,000
<b>Family Cymbellaceae</b>				
68. <i>Cymbella</i> sp.	18,000	-	-	-
69. <i>Cymbella tumida</i>	-	8,000	-	-
70. <i>Gomphonema parvulum</i>	236,000	76,000	42,000	-
<b>Family Naviculaceae</b>				
71. <i>Craticula cuspidata</i>	-	8,000	-	-
72. <i>Gyrosigma attenuatum</i>	70,000	25,000	34,000	88,000
73. <i>Navicula cuspidata</i>	-	-	76,000	53,000
74. <i>Navicula lanceolata</i>	53,000	118,000	338,000	-
75. <i>Pinnularia gibba</i>	-	8,000	186,000	-
76. <i>Pinnularia grunowii</i>	9,000	-	17,000	-
77. <i>Pinnularia viridis</i>	-	-	-	97,000
<b>Family Bacillariaceae</b>				
78. <i>Bacillaria paxillifer</i>	184,000	672,000	-	-
79. <i>Nitzschia lorenziana</i>	18,000	-	-	-
80. <i>Nitzschia reversa</i>	9,000	-	-	-
<b>Family Rhopalodiaceae</b>				
81. <i>Epithemia argus</i>	-	-	-	9,000
82. <i>Rhopalodia gibba</i>	-	-	-	18,000
<b>Family Surirellaceae</b>				
83. <i>Surirella elegans</i>	63,000	101,000	68,000	44,000
84. <i>Surirella linearis</i>	61,000	92,000	-	106,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

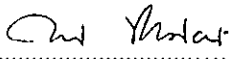
(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
85. <i>Surirella ovata</i>	9,000	34,000	8,000	-
86. <i>Surirella robusta</i>	193,000	92,000	51,000	97,000
87. <i>Surirella tenera</i>	63,000	34,000	68,000	79,000
<b>Class Dinophyceae</b>				
<b>Order Peridiniales</b>				
<b>Family Peridiniaceae</b>				
88. <i>Peridinium</i> sp.	-	134,000	254,000	158,000
ชนิดแพลงก์ตอนพืช	59	65	56	57
ปริมาณแพลงก์ตอนพืช	44,268,000	60,038,000	56,153,000	70,039,000
ดัชนีความหลากหลายแพลงก์ตอนพืช	1.2110	1.3343	1.4509	1.2536
ดัชนีความสม่ำเสมอแพลงก์ตอนพืช	0.2970	0.3196	0.3604	0.3101

**Sample Location :**

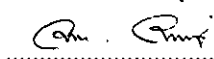
1. สถานี 2245571-1 : ห้วยภูไทก่อนจุดระบายน้ำทิ้งที่ 1 ของโครงการประมาณ 500 เมตร (Bio1)
2. สถานี 2245571-2 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 1 ของโครงการ (Bio2)
3. สถานี 2245571-3 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 2 ของโครงการ (Bio3)
4. สถานี 2245571-4 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 2 ของโครงการระยะห่างประมาณ 500 เมตร (Bio4)

**Condition of Sample :** contained in one plastic bottle, sample containers comply to pretreatment-preservation standards (APHA, USEPA)



(นางสาวกนกวรรณ ขาวด่อน)

ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา  
101/12 หมู่ 9 ต. บางพระ  
อ. ศรีราชา จ. ชลบุรี 20110  
โทร./โทรสาร. (038) 311379

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

Address : 54/5 Moo 1 Map Yang Phon, Pluak Daeng, Rayong, Thailand, 21140

Project Name : Pluak Daeng

รายงานผลการวิเคราะห์แพลงก์ตอนสัตว์

ตาราง ผลการวิเคราะห์แพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
Phylum Protozoa				
Subphylum Plasmodroma				
Class Sarcodina				
Subclass Rhizopoda				
Order Testacida				
Family Arcellidae				
1. <i>Arcella vulgaris</i>	-	25,000	51,000	53,000
Family Diffugiidae				
2. <i>Diffugia acuminata</i>	9,000	8,000	25,000	62,000
Family Euglyphidae				
3. <i>Euglypha acanthophora</i>	-	8,000	51,000	-
4. <i>Euglypha rotunda</i>	-	-	8,000	18,000

ตาราง ผลการวิเคราะห์แฟลกellate (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

(ต่อ)

ชนิดแฟลกellate	ปริมาณแฟลกellate (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
<b>Subphylum Ciliophora</b>				
<b>Class Ciliata</b>				
<b>Subclass Holotricha</b>				
<b>Order Gymnostomatida</b>				
5. <i>Coleps</i> sp.	9,000	25,000	-	-
6. <i>Didinium</i> sp.	9,000	-	8,000	-
<b>Order Hymenostomatida</b>				
7. <i>Paramecium</i> sp.	-	17,000	-	9,000
<b>Subclass Peritricha</b>				
<b>Order Peritrichida</b>				
8. <i>Vorticella</i> sp.	-	8,000	-	18,000
<b>Phylum Rotifera</b>				
<b>Class Monogononta</b>				
<b>Order Ploima</b>				
<b>Family Brachionidae</b>				
9. <i>Anuraeopsis fissa</i>	26,000	76,000	51,000	44,000
10. <i>Brachionus falcatus</i>	9,000	8,000	-	-
11. <i>Colurella obtusa</i>	-	8,000	-	-
12. <i>Keratella cochleanis</i>	9,000	-	-	-
<b>Family Lecanidae</b>				
13. <i>Lecane decipiens</i>	-	-	-	9,000
14. <i>Lecane hamata</i>	-	-	8,000	-
15. <i>Lecane inopinata</i>	-	-	8,000	-
16. <i>Lecane papuana</i>	9,000	17,000	-	-
17. <i>Lecane stichaea</i>	-	8,000	-	-
<b>Family Notommatidae</b>				
18. <i>Cephalodella gibba</i>	-	17,000	-	-

ตาราง ผลการวิเคราะห์แพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

(ต่อ)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)			
	2245571-1	2245571-2	2245571-3	2245571-4
<b>Family Tricercidae</b>				
19. <i>Trichocerca pusilla</i>	9,000	42,000	8,000	-
<b>Family Asplanchnidae</b>				
20. <i>Asplanchna priodonta</i>	44,000	59,000	-	-
<b>Family Synchaetidae</b>				
21. <i>Polyarthra vulgaris</i>	18,000	84,000	25,000	35,000
<b>Phylum Arthropoda</b>				
<b>Class Crustacea</b>				
<b>Subclass Branchiopoda</b>				
<b>Order Diplostraca</b>				
<b>Suborder Cladocera</b>				
<b>Family Bosminidae</b>				
22. <i>Bosmina</i> sp.	-	17,000	-	-
<b>Subclass Copepoda</b>				
23. Copepod nauplius	105,000	76,000	42,000	26,000
<b>Order Cyclopoida</b>				
24. Cyclopod coprpod	-	8,000	8,000	-
ชนิดแพลงก์ตอนสัตว์	11	18	12	9
ปริมาณแพลงก์ตอนสัตว์	256,000	511,000	293,000	274,000
ดัชนีความหลากหลายแพลงก์ตอนสัตว์	1.9111	2.5220	2.2013	2.0162
ดัชนีความสม่ำเสมอแพลงก์ตอนสัตว์	0.7970	0.8726	0.8859	0.9176

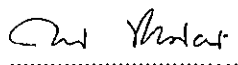
Sample Location : 1. สถานี 2245571-1 : ห้วยภูไทก่อนจุดระบายน้ำทิ้งที่ 1 ของโครงการประมาณ 500 เมตร (Bio1)

2. สถานี 2245571-2 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 1 ของโครงการ (Bio2)

3. สถานี 2245571-3 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 2 ของโครงการ (Bio3)

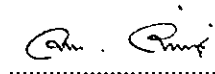
4. สถานี 2245571-4 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 2 ของโครงการระยะห่างประมาณ 500 เมตร (Bio4)

**Condition of Sample :** contained in one plastic bottle, sample containers comply to pretreatment-preservation standards (APHA, USEPA)



(นางสาวกนกวรรณ ขาวด่อน)

ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา





สถานีวิจัยประมงศรีราชา  
101/12 หมู่ 9 ต. บางพระ  
อ. ศรีราชา จ. ชลบุรี 20110  
โทร./โทรสาร. (038) 311379

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

Address : 54/5 Moo 1 Map Yang Phon, Pluak Daeng, Rayong, Thailand, 21140

Project Name : Pluak Daeng

รายงานผลการวิเคราะห์สัตว์หน้าดิน

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565)

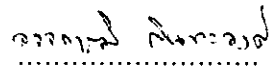
ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)			
	2245593-1	2245593-2	2245593-3	2245593-4
<b>Phylum Arthropoda</b>				
<b>Class Insecta</b>				
<b>Order Diptera</b>				
<b>Family Chironomidae</b>				
<i>Chironomus</i> sp. (หนอนแดง)	30	15	312	-
<b>Family Psychodidae</b>				
<i>Psychoda</i> sp. (ตัวอ่อนแมลงหัวขี้)	-	-	15	-
<b>Order Ephemeroptera</b>				
<b>Family Ephemeridae</b>				
<i>Ephemera</i> sp. (ตัวอ่อนแมลงชีปะขาว)	-	15	-	-
<b>Order Trichoptera</b>				
<b>Family Ecomidae</b>				
<i>Ecnomus</i> sp. (ตัวอ่อนแมลงหนอนปลอกน้ำ)	-	-	15	-
<b>Family Polycentropodidae</b>				
<i>Polycentropus</i> sp. (ตัวอ่อนแมลงหนอนปลอกน้ำ)	-	15	-	-

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 17 มิถุนายน 2565) (ต่อ)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)			
	2245593-1	2245593-2	2245593-3	2245593-4
<b>Phylum Mollusca</b>				
<b>Class Gastropoda</b>				
<b>Order Architenioglossa</b>				
<b>Family Ampullariidae</b>				
<i>Pomacea</i> sp. (หอยเชอรี่)	-	15	-	-
<b>Family Thiaridae</b>				
<i>Melanoides</i> sp. (หอยเจดีย์)	-	-	-	30
<i>Tarebia</i> sp. (หอยเจดีย์)	-	15	149	830
<b>Family Viviparidae</b>				
<i>Filopaludina</i> sp. (หอยขม)	-	30	-	-
<i>Trochotaia</i> sp. (หอยเวียน)	134	104	15	-
<b>Class Bivalvia</b>				
<b>Order Arcoida</b>				
<b>Family Arcidae</b>				
<i>Scaphula</i> sp. (หอยกาบ)	-	15	-	-
<b>Order Venerida</b>				
<b>Family Cyrenidae</b>				
<i>Corbicula</i> sp. (หอยทราย)	-	-	134	-
<b>ชนิดสัตว์หน้าดิน</b>	<b>2</b>	<b>8</b>	<b>6</b>	<b>2</b>
<b>ปริมาณสัตว์หน้าดิน</b>	<b>164</b>	<b>224</b>	<b>640</b>	<b>860</b>
<b>ค่าดัชนีความหลากหลายสัตว์หน้าดิน</b>	<b>0.4758</b>	<b>1.7117</b>	<b>1.2809</b>	<b>0.1513</b>

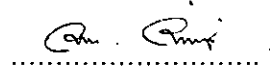
- Sample Location :**
1. สถานี 2245593-1 : ห้วยภูไทก่อนจุดระบายน้ำทิ้งที่ 1 ของโครงการประมาณ 500 เมตร (Bio1)
  2. สถานี 2245593-2 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 1 ของโครงการ (Bio2)
  3. สถานี 2245593-3 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 2 ของโครงการ (Bio3)
  4. สถานี 2245593-4 : ห้วยภูไทบริเวณจุดระบายน้ำทิ้งที่ 2 ของโครงการระยะห่างประมาณ 500 เมตร (Bio4)

Condition of Sample : contained in one plastic zip bag



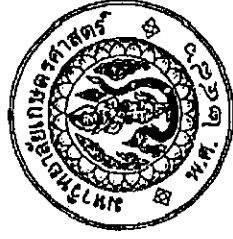
(นายอรรถวุฒิ กันทะวงศ์)

ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ อ. ศรีราชา จ. ชลบุรี 20110

โทร./โทรสาร. (038) 311379

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

Address : 54/5 Moo 1 Map Yang Phon, Pluak Daeng, Rayong, Thailand, 21140

Project Name : Pluak Daeng

รายงานผลการวิเคราะห์สัตว์น้ำ

ตาราง ผลการวิเคราะห์สัตว์น้ำ (Aquatic animal) (เก็บตัวอย่างเมื่อวันที่ 17 มิถุนายน 2565)

ชนิดสัตว์น้ำ	ปริมาณสัตว์น้ำ (ตัวต่อตารางเมตร)				ช่วงขนาด (ซม.)	น้ำหนักรวม (กรัม)
	2245571-1	2245571-2	2245571-3	2245571-4		
Phylum Chordata Class Actinopterygii Order Anabantiformes Family Channidae <i>Channa micropeltes</i> (ปลาชะโด)	2	-	-	-	18.00-19.00	110.00

ตาราง ผลการวิเคราะห์สัตว์น้ำ (Aquatic animal) (เก็บตัวอย่างเมื่อวันที่ 17 มิถุนายน 2565) (ต่อ)

ชนิดสัตว์น้ำ	ปริมาณสัตว์น้ำ (ตัวต่อตารางเมตร)				ช่วงขนาด (ซม.)	น้ำหนักรวม (กรัม)
	2245571-1	2245571-2	2245571-3	2245571-4		
<b>Family Osphronemidae</b>						
<i>Trichopodus trichopterus</i> (ปลากระดี่หม้อ)	-	2	7	-	6.00-8.60	44.00
<b>Order Cichliformes</b>						
<b>Family Cichlidae</b>						
<i>Oreochromis niloticus</i> (ปลานิล)	2	-	6	1	5.40-11.20	90.00
<b>Order Cypriniformes</b>						
<b>Family Cyprinidae</b>						
<i>Barbonymus gonionotus</i> (ปลาตะเพียนขาว)	4	-	-	-	11.90-16.50	115.00
<i>Cyclocheilichthys apogon</i> (ปลาไส้ตันตาแดง)	1	-	1	-	10.00-11.50	38.00
<i>Labiobarbus leptocheilus</i> (ปลาซ่า)	-	-	1	-	9.40	7.00
<i>Mystacoleucus marginatus</i> (ปลาหนามหลัง)	1	-	4	-	7.20-14.80	90.00
<i>Rasbora paviana</i> (ปลาฉิวควายแถบดำ)	3	1	-	1	6.50-7.70	15.00
<b>Order Osteoglossiformes</b>						
<b>Family Notopteridae</b>						
<i>Notopterus notopterus</i> (ปลาสาคร)	1	-	-	-	8.00	4.00

ตาราง ผลการวิเคราะห์สัตว์น้ำ (Aquatic animal) (เก็บตัวอย่างเมื่อวันที่ 17 มิถุนายน 2565) (ต่อ)

ชนิดสัตว์น้ำ	ปริมาณสัตว์น้ำ (ตัวต่อตารางเมตร)				ช่วงขนาด (ซม.)	น้ำหนักรวม (กรัม)
	2245571-1	2245571-2	2245571-3	2245571-4		
Order Perciformes						
Family Ambassidae						
<i>Parambassis siamensis</i> (ปลาเป็นแก้ว)	4	2	2	1	4.00-5.10	8.50
ชนิดสัตว์น้ำ	8	3	6	3	4.00-19.00	521.50
ปริมาณสัตว์น้ำ	18	5	21	3		
ดัชนีความหลากหลายสัตว์น้ำ	1.9371	1.0549	1.5539	1.0986		

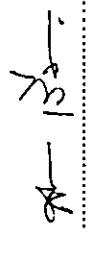
Sample Location : 1. สถานี 2245571-1 : ห้วยภูไทบริเวณจุดระบายน้ำทั้งที่ 1 ของโครงการประมาณ 500 เมตร (Bio1)

2. สถานี 2245571-2 : ห้วยภูไทบริเวณจุดระบายน้ำทั้งที่ 1 ของโครงการ (Bio2)

3. สถานี 2245571-3 : ห้วยภูไทบริเวณจุดระบายน้ำทั้งที่ 2 ของโครงการ (Bio3)

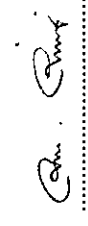
4. สถานี 2245571-4 : ห้วยภูไทบริเวณจุดระบายน้ำทั้งที่ 2 ของโครงการระยะห่างประมาณ 500 เมตร (Bio4)

Condition of Sample : fishing gear


  
 .....

(นายสาโรจน์ เร่มคำริห์)

ผู้วิเคราะห์


  
 .....

(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา

# ภาคผนวก ค-05

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โลหะหนักในตะกอนดิน





## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245633**

Date Received : Jun 17, 2022

Date Reported : Jun 24, 2022

Report Number : 2286372-1

Page 1 of 4

**Sample Number** 2245633-1  
**Sampled Date** Jun 17, 2022 11:00 AM  
**Sample Description** ตะกอนดิน  
**Location** ห้วยภูไทก่อนจุดระบายน้ำทั้งที่ 1 ของโครงการระยะห่างประมาณ 500 เมตร (SD1)  
**Date Analysis Commenced** Jun 20, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	5416	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	5.45	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	4.22	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	11.0	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	28.2	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

**Class 2:** Soil usage for commercial, agricultural and others.

**Sampled By :** Narunat thammassaro

**Remark :**

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245633**

Date Received : Jun 17, 2022  
Date Reported : Jun 24, 2022  
Report Number : 2286372-1

Page 2 of 4

**Sample Number** 2245633-2  
**Sampled Date** Jun 17, 2022 10:40 AM  
**Sample Description** ตะกอนดิน  
**Location** ห้วยภูโพนบริเวณเขตระบายน้ำพื้นที่ 1 ของโครงการ (SD2)  
**Date Analysis Commenced** Jun 20, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	8699	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	9.87	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	8.08	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	12.2	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	53.7	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Sampled By :** Narunat thammasaro

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245633**

Date Received : Jun 17, 2022  
Date Reported : Jun 24, 2022  
Report Number : 2286372-1

Page 3 of 4

**Sample Number** 2245633-3  
**Sampled Date** Jun 17, 2022 9:40 AM  
**Sample Description** ดะกอนดิน  
**Location** ห้วยทิวาบริเวณเขตรักษาพันธุ์สัตว์ป่า 2 ของโครงการ (SD3)  
**Date Analysis Commenced** Jun 20, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	4726	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	5.28	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	4.09	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	6.97	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	22.6	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Sampled By :** Narunat thammassaro

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245633**

Date Received : Jun 17, 2022  
Date Reported : Jun 24, 2022  
Report Number : 2286372-1

Page 4 of 4

**Sample Number** 2245633-4  
**Sampled Date** Jun 17, 2022 10:10 AM  
**Sample Description** ตะกอนดิน  
**Location** ห้วยภูไทรหลังจตุรรมายน้ำทั้งที่ 2 ของโครงการระยะห่างประมาณ 500 เมตร (SD4)  
**Date Analysis Commenced** Jun 20, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	10840	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	7.30	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	6.26	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	11.8	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	38.7	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

**Class 2:** Soil usage for commercial, agricultural and others.

**Sampled By :** Narunat thammasaro

**Remark :**

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

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Sawitree Noisangiam  
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# ภาคผนวก ค-06

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คุณภาพดิน



## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245635**

Date Received : Jun 30, 2022

Date Reported : Jul 08, 2022

Report Number : 2286373-1

Page 1 of 4

**Sample Number** 2245635-1  
**Sampled Date** Jun 30, 2022 9:35 AM  
**Sample Description** Soil ที่ระดับความลึก 30 ซม.  
**Location** พื้นที่สีเขียวคันหินเหนือ (S1)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	2697	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	2.50	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	4.44	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	20.9	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	5.36	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

*Chanatt L.*

Chanattagarn Imchom

Supervisor

ทะเบียนเลขที่ ว-204-จ-4710

Approved by

*Kanok Korn Anek*

Kanokkorn Anek

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Lot ID: 2245635

Date Received : Jun 30, 2022  
Date Reported : Jul 08, 2022  
Report Number : 2286373-1

Page 2 of 4

Sample Number 2245635-2  
Sampled Date Jun 30, 2022 9:55 AM  
Sample Description Soil ที่ระดับความลึก 30 ซม.  
Location พื้นที่เขียนด้านทิศใต้ (S2)  
Date Analysis Commenced Jul 01, 2022  
Condition of Sample Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	9146	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	3.05	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	2.95	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	17.3	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	5.46	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

Guideline : Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

Sampled By : Panupong Manit

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

*Chanatt L.*

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Supervisor  
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Approved by

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Kanokkorn Anek  
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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245635**

Date Received : Jun 30, 2022

Date Reported : Jul 08, 2022

Report Number : 2286373-1

Page 3 of 4

**Sample Number** 2245635-3  
**Sampled Date** Jun 30, 2022 9:15 AM  
**Sample Description** Soil ที่ระดับความลึก 30 ซม.  
**Location** พื้นที่สีเขียวด้านทิศตะวันออก (S3)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	1584	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	<1.00	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	1.19	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	9.17	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	3.83	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

**Class 2:** Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

**Remark :**

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

**Technical Management**

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**Approved by**

*Kanok Korn Anek*

Kanokkorn Anek

Senior Manager

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245635**

Date Received : Jun 30, 2022  
Date Reported : Jul 08, 2022  
Report Number : 2286373-1

Page 4 of 4

**Sample Number** 2245635-4  
**Sampled Date** Jun 30, 2022 9:45 AM  
**Sample Description** Soil ที่ระดับความลึก 30 ซม.  
**Location** พื้นที่สีเขียวด้านทิศตะวันตก (S4)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	1534	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	1.45	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	1.63	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	5.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	3.89	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

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Approved by

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Kanokkorn Anek  
Senior Manager  
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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245634**

Date Received : Jun 30, 2022

Date Reported : Jul 08, 2022

Report Number : 2286377-1

Page 1 of 4

**Sample Number** 2245634-1  
**Sampled Date** Jun 30, 2022 9:30 AM  
**Sample Description** Soil ที่ระดับความลึก 5 ซม.  
**Location** พื้นที่สีเขียวด้านทิศเหนือ (S1)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	2862	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	2.93	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	1.94	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	9.99	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	7.25	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

*Chanatt L.*

Chanattagarn Imchom

Supervisor

ทะเบียนเลขที่ ว-204-จ-4710

Approved by

*Kanok Korn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245634**

**Date Received :** Jun 30, 2022  
**Date Reported :** Jul 08, 2022  
**Report Number :** 2286377-1

Page 2 of 4

**Sample Number** 2245634-2  
**Sampled Date** Jun 30, 2022 9:50 AM  
**Sample Description** Soil ที่ระดับความลึก 5 ซม.  
**Location** พื้นที่เขียนด้านทิศใต้ (S2)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	4336	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	2.35	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	2.47	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	10.9	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	6.25	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

**Class 2:** Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

**Remark :**

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

**Technical Management**

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Chanattagarn Imchom  
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**Approved by**

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Kanokkorn Anek  
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## Analysis / Test Report

**Client :** Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245634**

Date Received : Jun 30, 2022

Date Reported : Jul 08, 2022

Report Number : 2286377-1

Page 3 of 4

**Sample Number** 2245634-3  
**Sampled Date** Jun 30, 2022 9:10 AM  
**Sample Description** Soil ที่ระดับความลึก 5 ซม.  
**Location** พื้นที่สีเขียวด้านทิศตะวันออก (S3)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	3346	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	1.26	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	1.08	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	5.83	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	5.24	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

**Class 2:** Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

**Remark :**

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

**Technical Management**

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Chanattagarn Imchom

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**Approved by**

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## Analysis / Test Report

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**P/O :** RJN(2)-019/64  
**Project Name :** Pluak Daeng  
**Project Location :**

**Lot ID: 2245634**

Date Received : Jun 30, 2022  
Date Reported : Jul 08, 2022  
Report Number : 2286377-1

Page 4 of 4

**Sample Number** 2245634-4  
**Sampled Date** Jun 30, 2022 9:40 AM  
**Sample Description** Soil ที่ระดับความลึก 5 ซม.  
**Location** พื้นที่สีเขียวด้านทิศตะวันตก (S4)  
**Date Analysis Commenced** Jul 01, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Aluminium	mg/kg	-	1.00	2560	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Arsenic	mg/kg	-	0.50	<0.50	≤25	Based on US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	Based on US EPA, Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	1.38	≤35040	Based on US EPA, Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	≤212	Based on US EPA, Method 3060A and 7196A	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
Nickel	mg/kg	-	1.00	1.10	≤5205	Based on US EPA, Method 3050B and 6010D	Bangkok
Silver	mg/kg	-	1.00	<1.00	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Trivalent Chromium	mg/kg	-	1.00	4.42	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	10.8	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

**Class 2:** Soil usage for commercial, agricultural and others.

**Sampled By :** Panupong Manit

**Remark :**

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

**Technical Management**

*Chanatt L.*

Chanattagarn Imchom  
Supervisor  
ทะเบียนเลขที่ ว-204-จ-4710

**Approved by**

*Kanokkorn Anek*

Kanokkorn Anek  
Senior Manager  
ทะเบียนเลขที่ ว-204-ค-6111

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# ภาคผนวก ค-07

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ระดับเสียงโดยทั่วไป



TESTING  
No.0042

Lot ID: 2270901

Date Received : Jun 27, 2022  
Date Reported : Jun 02, 2022  
Report Number: 2360370-1

## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUK(2)-019/64

Project Name : Pluak Daeng

Project Location :

Page 1 of 1

Sample Number	2270901-1
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณหน้าบ้าน (N1) (GPS 47P 734053, 1432206)
Measurement Date	Jun 17 - Jun 18, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 295518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.0	78.0	47.7
02:00 PM - 03:00 PM	58.8	78.5	49.8
03:00 PM - 04:00 PM	56.9	81.5	49.5
04:00 PM - 05:00 PM	56.7	78.7	49.9
05:00 PM - 06:00 PM	55.9	77.7	49.1
06:00 PM - 07:00 PM	56.6	76.2	50.8
07:00 PM - 08:00 PM	58.6	73.3	56.9
08:00 PM - 09:00 PM	52.9	74.0	49.4
09:00 PM - 10:00 PM	52.2	74.5	47.7
10:00 PM - 11:00 PM	49.0	64.1	45.7
11:00 PM - 12:00 AM	50.0	69.7	45.7
12:00 AM - 01:00 AM	49.1	60.2	44.8
01:00 AM - 02:00 AM	47.7	70.2	46.2
02:00 AM - 03:00 AM	47.9	64.4	45.6
03:00 AM - 04:00 AM	48.9	67.3	45.3
04:00 AM - 05:00 AM	52.3	74.6	48.2
05:00 AM - 06:00 AM	54.1	79.5	46.3
06:00 AM - 07:00 AM	58.5	77.4	51.2
07:00 AM - 08:00 AM	56.7	76.2	49.2
08:00 AM - 09:00 AM	57.4	77.2	47.3
09:00 AM - 10:00 AM	56.5	82.4	47.2
10:00 AM - 11:00 AM	55.2	81.0	46.1
11:00 AM - 12:00 PM	53.8	73.0	45.2
12:00 PM - 01:00 PM	51.6	81.9	46.2
Leq Average 24 hrs. (dB(A))	55.2		
Lmax (dB(A))	82.4		
L90 (dB(A))			47.3
Ldn (dB(A))			
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2  
Standard : 1. ใช้มาตรฐานการวัดระดับความดังเสียงตามข้อกำหนด 15 (พ.ร.บ. 2540) ที่กำหนดให้หน่วยงานที่รับผิดชอบในการตรวจวัดเสียงต้องปฏิบัติตามข้อกำหนด  
2. ใช้มาตรฐานการวัดระดับความดังเสียงตามข้อกำหนด 15 (พ.ร.บ. 2540) ที่กำหนดให้หน่วยงานที่รับผิดชอบในการตรวจวัดเสียงต้องปฏิบัติตามข้อกำหนด

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Tharitat.

Tharita Kulsirirong

Scientist (4)

Approved by

Supt S.

Supat Sattahit

Section Head

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8335-62/ EMAIL

S: Reports, Mr. Nobsen (8:56AM)



## Analysis / Test Report

TESTING  
No.0042

Lot ID: 2270901

Date Received : Jun 27, 2022  
Date Reported : Jun 02, 2022  
Report Number: 2360371-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUK(2)-019/64

Project Name : Pluak Daeng

Project Location :

Page 1 of 1

Sample Number	2270901-2
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณหน้าบ้าน (N1) (GPS 47P 734053, 1432206)
Measurement Date	Jun 18 - Jun 19, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 295518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	53.9	80.5	45.7
02:00 PM - 03:00 PM	53.7	74.9	46.3
03:00 PM - 04:00 PM	55.7	80.6	48.3
04:00 PM - 05:00 PM	56.0	79.4	49.4
05:00 PM - 06:00 PM	54.5	75.9	49.0
06:00 PM - 07:00 PM	53.4	70.8	49.8
07:00 PM - 08:00 PM	58.0	71.9	56.4
08:00 PM - 09:00 PM	56.0	76.0	54.1
09:00 PM - 10:00 PM	52.2	74.3	48.7
10:00 PM - 11:00 PM	48.7	68.8	45.8
11:00 PM - 12:00 AM	48.4	70.1	44.3
12:00 AM - 01:00 AM	48.5	69.3	45.3
01:00 AM - 02:00 AM	46.4	64.8	44.6
02:00 AM - 03:00 AM	47.4	67.5	44.8
03:00 AM - 04:00 AM	46.7	68.3	43.9
04:00 AM - 05:00 AM	50.3	73.4	44.9
05:00 AM - 06:00 AM	53.1	76.0	45.4
06:00 AM - 07:00 AM	56.2	76.8	47.8
07:00 AM - 08:00 AM	55.2	76.8	47.7
08:00 AM - 09:00 AM	57.2	79.3	49.6
09:00 AM - 10:00 AM	57.9	78.4	49.1
10:00 AM - 11:00 AM	57.0	80.0	49.3
11:00 AM - 12:00 PM	56.2	82.1	46.8
12:00 PM - 01:00 PM	58.0	79.5	47.6
Leq Average 24 hrs. (dB(A))	54.5		
Lmax (dB(A))	82.1		
L90 (dB(A))			47.6
Ldn (dB(A))			
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2  
Standard : 1. ใช้มาตรฐานการวัดระดับความดังเสียงตามข้อกำหนด 15 (พ.ร.บ. 2540) ที่กำหนดให้หน่วยงานที่รับผิดชอบในการตรวจวัดเสียงต้องปฏิบัติตามข้อกำหนด  
2. ใช้มาตรฐานการวัดระดับความดังเสียงตามข้อกำหนด 15 (พ.ร.บ. 2540) ที่กำหนดให้หน่วยงานที่รับผิดชอบในการตรวจวัดเสียงต้องปฏิบัติตามข้อกำหนด

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Tharitat.

Tharita Kulsirirong

Scientist (4)

Approved by

Supt S.

Supat Sattahit

Section Head

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8335-62/ EMAIL

S: Reports, Mr. Nobsen (8:56AM)



TESTING  
No.0042

## Analysis / Test Report

Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360372-1

Client: Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number	2270901-3
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณโรงงาน (N1) (GPS 477 734053, 1432206)
Measurement Date	Jun 19 - Jun 20, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.8	78.3	47.0
02:00 PM - 03:00 PM	55.9	80.1	46.4
03:00 PM - 04:00 PM	57.6	89.9	50.2
04:00 PM - 05:00 PM	55.0	73.3	50.2
05:00 PM - 06:00 PM	52.1	74.7	45.5
06:00 PM - 07:00 PM	53.7	66.5	50.7
07:00 PM - 08:00 PM	62.6	73.0	61.6
08:00 PM - 09:00 PM	53.7	77.4	49.8
09:00 PM - 10:00 PM	50.0	70.9	46.2
10:00 PM - 11:00 PM	52.2	63.4	50.2
11:00 PM - 12:00 AM	48.8	64.3	46.9
12:00 AM - 01:00 AM	46.2	62.8	44.6
01:00 AM - 02:00 AM	47.4	64.9	45.3
02:00 AM - 03:00 AM	46.0	64.1	43.7
03:00 AM - 04:00 AM	49.1	67.2	44.5
04:00 AM - 05:00 AM	50.5	71.5	45.6
05:00 AM - 06:00 AM	52.8	78.6	46.8
06:00 AM - 07:00 AM	55.6	75.4	50.7
07:00 AM - 08:00 AM	54.9	78.9	48.4
08:00 AM - 09:00 AM	54.3	74.5	45.8
09:00 AM - 10:00 AM	54.3	73.4	46.1
10:00 AM - 11:00 AM	52.5	75.8	45.7
11:00 AM - 12:00 PM	52.3	71.6	46.0
12:00 PM - 01:00 PM	53.9	73.0	46.0

Leq Average 24 hrs. (dB(A))	54.5
Lmax (dB(A))	89.9
L90 (dB(A))	46.2
Ldn (dB(A))	

Standard (dB(A))	115
Reference Method : ISO 996-1 and 1996-2	
Standard : 1. ใช้เกณฑ์การประเมินค่าระดับความดังเสียงตามข้อกำหนด 15 (พ.ร. 2540) ของกรมควบคุมมลพิษและสิ่งแวดล้อม 2. ใช้เกณฑ์การประเมินค่าระดับความดังเสียงตามข้อกำหนด 15 (พ.ร. 2540) ของกรมควบคุมมลพิษและสิ่งแวดล้อม	

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management : *Thanitak* Scientist (4) Approved by : *Supt S* Support Salmeh Section Head

Thahtila Kulnirwong

Support Salmeh Section Head

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## Analysis / Test Report

Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360373-1

Client: Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number	2270901-4
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณโรงงาน (N1) (GPS 477 734053, 1432206)
Measurement Date	Jun 20 - Jun 21, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.1	77.8	48.2
02:00 PM - 03:00 PM	55.1	80.9	46.2
03:00 PM - 04:00 PM	53.8	74.2	46.3
04:00 PM - 05:00 PM	56.0	75.2	49.7
05:00 PM - 06:00 PM	53.5	72.6	47.6
06:00 PM - 07:00 PM	53.5	72.6	48.7
07:00 PM - 08:00 PM	57.8	70.4	55.0
08:00 PM - 09:00 PM	55.3	74.8	52.6
09:00 PM - 10:00 PM	51.8	71.8	49.6
10:00 PM - 11:00 PM	48.9	72.7	45.6
11:00 PM - 12:00 AM	46.1	61.3	43.8
12:00 AM - 01:00 AM	58.5	83.4	52.5
01:00 AM - 02:00 AM	53.4	80.0	45.4
02:00 AM - 03:00 AM	47.4	64.0	45.5
03:00 AM - 04:00 AM	49.1	66.3	47.2
04:00 AM - 05:00 AM	52.5	68.6	49.5
05:00 AM - 06:00 AM	53.8	70.7	47.4
06:00 AM - 07:00 AM	58.2	78.3	51.9
07:00 AM - 08:00 AM	56.7	75.7	49.6
08:00 AM - 09:00 AM	54.3	76.4	47.7
09:00 AM - 10:00 AM	53.6	79.3	45.3
10:00 AM - 11:00 AM	54.2	79.6	45.4
11:00 AM - 12:00 PM	55.6	83.1	44.2
12:00 PM - 01:00 PM	51.7	71.6	43.8

Leq Average 24 hrs. (dB(A))	54.4
Lmax (dB(A))	83.4
L90 (dB(A))	47.4
Ldn (dB(A))	

Standard (dB(A))	115
Reference Method : ISO 996-1 and 1996-2	
Standard : 1. ใช้เกณฑ์การประเมินค่าระดับความดังเสียงตามข้อกำหนด 15 (พ.ร. 2540) ของกรมควบคุมมลพิษและสิ่งแวดล้อม 2. ใช้เกณฑ์การประเมินค่าระดับความดังเสียงตามข้อกำหนด 15 (พ.ร. 2540) ของกรมควบคุมมลพิษและสิ่งแวดล้อม	

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management : *Thanitak* Scientist (4) Approved by : *Supt S* Support Salmeh Section Head

Thahtila Kulnirwong

Support Salmeh Section Head

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TESTING  
No.0042

## Analysis / Test Report

**Lot ID: 2270901**  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360374-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUK(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number	2270901-5
Parameter	Noise (Leq 24 hrs.)
Location	พื้นที่โรงงาน (N1) (GPS 47P 734053, 1432206)
Measurement Date	Jun 21 - Jun 22, 2022
Measurement by	Anurak Tongbhojansakda
Sound Level meter	Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	54.7	76.5	46.4
02:00 PM - 03:00 PM	55.3	74.0	47.7
03:00 PM - 04:00 PM	55.7	87.1	48.0
04:00 PM - 05:00 PM	55.8	76.5	49.6
05:00 PM - 06:00 PM	52.9	72.9	47.1
06:00 PM - 07:00 PM	53.2	69.2	49.2
07:00 PM - 08:00 PM	59.6	73.3	58.1
08:00 PM - 09:00 PM	54.0	68.9	51.0
09:00 PM - 10:00 PM	49.5	66.6	45.6
10:00 PM - 11:00 PM	50.7	67.5	45.8
11:00 PM - 12:00 AM	49.9	78.7	44.7
12:00 AM - 01:00 AM	46.3	62.6	44.0
01:00 AM - 02:00 AM	47.3	69.9	44.9
02:00 AM - 03:00 AM	45.4	60.7	43.7
03:00 AM - 04:00 AM	46.0	67.1	43.0
04:00 AM - 05:00 AM	51.8	73.4	47.4
05:00 AM - 06:00 AM	53.3	71.5	46.5
06:00 AM - 07:00 AM	56.0	70.7	50.7
07:00 AM - 08:00 AM	53.7	71.1	47.4
08:00 AM - 09:00 AM	55.2	77.0	47.4
09:00 AM - 10:00 AM	53.2	76.3	45.5
10:00 AM - 11:00 AM	57.1	81.8	46.0
11:00 AM - 12:00 PM	56.1	84.5	53.7
12:00 PM - 01:00 PM	59.2	78.0	54.7

Leq Average 24 hrs. (dB(A))	54.7
Lmax (dB(A))	87.1
L90 (dB(A))	46.8
Ltn (dB(A))	

Standard (dB(A)) 115  
Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. ปริมาณการปล่อยเสียงจากโรงงานอุตสาหกรรม 2. ปริมาณการปล่อยเสียงจากยานพาหนะ

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

*Supt S.*

Approved by

Tharitat Kulsirirong

Scientist (4)

Suppt. Salmah

Section Head

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## Analysis / Test Report

**Lot ID: 2270901**  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360375-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUK(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number	2270901-6
Parameter	Noise (Leq 24 hrs.)
Location	พื้นที่โรงงาน (N1) (GPS 47P 734053, 1432206)
Measurement Date	Jun 22 - Jun 23, 2022
Measurement by	Anurak Tongbhojansakda
Sound Level meter	Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	58.1	84.2	50.4
02:00 PM - 03:00 PM	57.7	76.6	49.6
03:00 PM - 04:00 PM	56.3	73.4	48.9
04:00 PM - 05:00 PM	56.3	76.3	51.1
05:00 PM - 06:00 PM	55.1	76.1	49.6
06:00 PM - 07:00 PM	58.5	87.8	49.7
07:00 PM - 08:00 PM	55.8	70.8	53.8
08:00 PM - 09:00 PM	53.6	76.7	48.5
09:00 PM - 10:00 PM	50.7	74.4	46.0
10:00 PM - 11:00 PM	48.4	66.0	45.2
11:00 PM - 12:00 AM	47.6	63.0	44.9
12:00 AM - 01:00 AM	45.4	69.6	42.8
01:00 AM - 02:00 AM	46.1	64.5	42.9
02:00 AM - 03:00 AM	46.9	63.6	44.0
03:00 AM - 04:00 AM	47.4	66.7	43.7
04:00 AM - 05:00 AM	50.3	66.8	46.6
05:00 AM - 06:00 AM	53.6	71.4	46.6
06:00 AM - 07:00 AM	56.9	72.4	51.5
07:00 AM - 08:00 AM	56.5	75.0	50.1
08:00 AM - 09:00 AM	55.1	75.0	48.7
09:00 AM - 10:00 AM	57.1	83.2	47.1
10:00 AM - 11:00 AM	53.9	74.2	46.2
11:00 AM - 12:00 PM	56.0	78.9	46.1
12:00 PM - 01:00 PM	54.1	74.7	45.1

Leq Average 24 hrs. (dB(A))	54.7
Lmax (dB(A))	87.8
L90 (dB(A))	46.6
Ltn (dB(A))	

Standard (dB(A)) 115  
Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. ปริมาณการปล่อยเสียงจากโรงงานอุตสาหกรรม 2. ปริมาณการปล่อยเสียงจากยานพาหนะ

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

*Tharitat.*

Approved by

Tharitat Kulsirirong

Scientist (4)

Suppt. Salmah

Section Head

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LIFE SCIENCES

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8335-62/EMAIL

S:\Reports\_Lab Noise\pt (8.564M)



TESTING  
No.0042

## Analysis / Test Report



Client: Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360376-1

Page 1 of 1

Sample Number: 2270901-7  
Parameter: Noise (Leq 24 hrs.)  
Location: บ้านพักอาศัย หมู่ 2 ซอยนาเกลือ (N3) (GPS 47P 734053, 1432206)  
Measurement Date: Jun 23 - Jun 24, 2022  
Measurement by: Anurak Tongkijjaisakda  
Sound Level meter: Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	57.2	80.9	46.5
02:00 PM - 03:00 PM	53.1	77.3	43.9
03:00 PM - 04:00 PM	51.9	70.8	44.5
04:00 PM - 05:00 PM	57.5	85.4	50.5
05:00 PM - 06:00 PM	55.8	76.4	49.5
06:00 PM - 07:00 PM	54.3	72.4	50.3
07:00 PM - 08:00 PM	59.7	77.8	52.7
08:00 PM - 09:00 PM	57.8	76.7	55.5
09:00 PM - 10:00 PM	51.1	69.4	47.7
10:00 PM - 11:00 PM	50.5	61.9	48.1
11:00 PM - 12:00 AM	50.4	67.8	46.8
12:00 AM - 01:00 AM	47.9	64.2	44.0
01:00 AM - 02:00 AM	47.5	68.8	43.2
02:00 AM - 03:00 AM	45.3	65.3	45.0
03:00 AM - 04:00 AM	47.2	77.6	44.6
04:00 AM - 05:00 AM	51.7	74.0	46.8
05:00 AM - 06:00 AM	57.1	84.8	51.5
06:00 AM - 07:00 AM	62.3	88.1	59.5
07:00 AM - 08:00 AM	57.3	77.4	52.3
08:00 AM - 09:00 AM	56.4	75.8	50.3
09:00 AM - 10:00 AM	56.2	71.3	47.9
10:00 AM - 11:00 AM	56.4	71.4	47.0
11:00 AM - 12:00 PM	57.1	78.0	48.7
12:00 PM - 01:00 PM	59.2	78.0	55.8

Leq Average 24 hrs. (dB(A))	56.1
Lmax (dB(A))	88.1
L90 (dB(A))	47.9
L01 (dB(A))	61.6
L05 (dB(A))	70
Standard (dB(A))	115

Reference Method : ISO1996-1 and 1996-2  
Standard : 1. ใช้มาตรฐานการวัดระดับความเข้มเสียงตามข้อกำหนดของกรมส่งเสริมการค้าระหว่างประเทศ (กรมส่งเสริมการค้าระหว่างประเทศ) 2. ใช้มาตรฐานการวัดระดับความเข้มเสียงตามข้อกำหนดของกรมส่งเสริมการค้าระหว่างประเทศ (กรมส่งเสริมการค้าระหว่างประเทศ) 2548

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Supt S.

Approved by

Thanitak.

Technical Management

Thaniha Kulsirirong  
Scientist (4)

Supt Salimeth  
Section Head

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Life Sciences

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S.Vopont\_Lab\_Note.pdf (8.574M)



## Analysis / Test Report



Client: Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360377-1

Page 1 of 1

Sample Number: 2270901-8  
Parameter: Noise (Leq 24 hrs.)  
Location: บ้านพักอาศัย หมู่ 2 ซอยนาเกลือ (N2) (GPS 47P 733675, 1434009)  
Measurement Date: Jun 17 - Jun 18, 2022  
Measurement by: Anurak Tongkijjaisakda  
Sound Level meter: Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	65.8	92.8	49.1
01:00 PM - 02:00 PM	62.4	88.3	45.1
02:00 PM - 03:00 PM	64.2	91.3	45.9
03:00 PM - 04:00 PM	66.2	91.9	46.7
04:00 PM - 05:00 PM	66.3	90.6	49.3
05:00 PM - 06:00 PM	65.0	86.2	49.9
06:00 PM - 07:00 PM	65.0	88.9	52.5
07:00 PM - 08:00 PM	64.6	85.5	52.2
08:00 PM - 09:00 PM	63.0	87.9	52.7
09:00 PM - 10:00 PM	56.5	78.5	47.8
10:00 PM - 11:00 PM	56.6	80.6	46.2
11:00 PM - 12:00 AM	55.3	81.7	45.4
12:00 AM - 01:00 AM	53.2	81.0	45.2
01:00 AM - 02:00 AM	56.7	87.7	46.6
02:00 AM - 03:00 AM	56.0	83.4	45.5
03:00 AM - 04:00 AM	54.8	78.2	45.7
04:00 AM - 05:00 AM	61.2	94.3	51.7
05:00 AM - 06:00 AM	65.8	86.9	56.3
06:00 AM - 07:00 AM	67.1	88.4	57.1
07:00 AM - 08:00 AM	65.5	88.7	57.1
08:00 AM - 09:00 AM	63.1	91.6	49.3
09:00 AM - 10:00 AM	63.0	90.0	47.8
10:00 AM - 11:00 AM	63.9	87.6	39.8
11:00 AM - 12:00 PM	62.1	86.5	44.0

Leq Average 24 hrs. (dB(A))	63.4
Lmax (dB(A))	94.3
L90 (dB(A))	46.7
L01 (dB(A))	68.4
L05 (dB(A))	70
Standard (dB(A))	115

Reference Method : ISO1996-1 and 1996-2  
Standard : 1. ใช้มาตรฐานการวัดระดับความเข้มเสียงตามข้อกำหนดของกรมส่งเสริมการค้าระหว่างประเทศ (กรมส่งเสริมการค้าระหว่างประเทศ) 2. ใช้มาตรฐานการวัดระดับความเข้มเสียงตามข้อกำหนดของกรมส่งเสริมการค้าระหว่างประเทศ (กรมส่งเสริมการค้าระหว่างประเทศ) 2548

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Thanitak.

Technical Management

Thaniha Kulsirirong  
Scientist (4)

Approved by

Supt S.

Supt Salimeth  
Section Head

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TESTING  
No.0042

## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIH(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360378-1

Page 1 of 1

Sample Number	2270901-9
Parameter	Noise (Leq 24 hrs.)
Location	พื้นที่ภายใน โรง 2 ส.งานสาย 15 (R2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 18 - Jun 19, 2022
Measurement by	Anurak Tongbhojsakda
Sound Level meter	Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	62.3	86.9	43.3
01:00 PM - 02:00 PM	62.9	86.7	41.0
02:00 PM - 03:00 PM	63.7	86.6	43.0
03:00 PM - 04:00 PM	66.0	89.9	46.9
04:00 PM - 05:00 PM	66.3	91.3	49.2
05:00 PM - 06:00 PM	65.5	86.9	51.5
06:00 PM - 07:00 PM	65.5	86.1	55.2
07:00 PM - 08:00 PM	64.1	86.8	51.9
08:00 PM - 09:00 PM	62.8	86.2	52.8
09:00 PM - 10:00 PM	60.5	85.6	53.0
10:00 PM - 11:00 PM	59.7	86.0	47.7
11:00 PM - 12:00 AM	57.4	85.1	46.6
12:00 AM - 01:00 AM	55.8	80.6	46.8
01:00 AM - 02:00 AM	59.4	90.2	43.3
02:00 AM - 03:00 AM	54.3	82.0	43.0
03:00 AM - 04:00 AM	55.2	81.6	43.5
04:00 AM - 05:00 AM	58.8	83.6	49.9
05:00 AM - 06:00 AM	64.7	94.0	51.6
06:00 AM - 07:00 AM	63.4	85.0	48.4
07:00 AM - 08:00 AM	65.3	89.5	44.1
08:00 AM - 09:00 AM	63.0	86.6	44.2
09:00 AM - 10:00 AM	61.8	87.0	43.4
10:00 AM - 11:00 AM	65.5	89.4	55.5
11:00 AM - 12:00 PM	62.8	85.5	45.4
Leq Average 24 hrs. (dB(A))	63.1		
Lmax (dB(A))	94.0		46.8
L90 (dB(A))			
Ldn (dB(A))	67.4		
Standard (dB(A))	70	115	

Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. ใช้มาตรฐานการวัดค่าเสียงตามวิธีมาตรฐาน 15 (พ.ร.บ. 2540) สำหรับอาคารโรงงานอุตสาหกรรม  
2. ใช้มาตรฐานการวัดค่าเสียงตามวิธีมาตรฐาน 15 (พ.ร.บ. 2540) สำหรับอาคารโรงงานอุตสาหกรรม

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management  
Tharitat.

Approved by

Suppt. Salimleh  
Section Head

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIH(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360379-1

Page 1 of 1

Sample Number	2270901-10
Parameter	Noise (Leq 24 hrs.)
Location	พื้นที่ภายใน โรง 2 ส.งานสาย 15 (R2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 19 - Jun 20, 2022
Measurement by	Anurak Tongbhojsakda
Sound Level meter	Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	62.4	85.7	44.7
01:00 PM - 02:00 PM	63.3	91.6	43.9
02:00 PM - 03:00 PM	63.2	88.3	43.1
03:00 PM - 04:00 PM	64.7	85.2	50.3
04:00 PM - 05:00 PM	66.4	92.4	52.0
05:00 PM - 06:00 PM	64.2	87.1	51.3
06:00 PM - 07:00 PM	64.0	89.5	54.0
07:00 PM - 08:00 PM	64.6	88.4	55.8
08:00 PM - 09:00 PM	63.1	85.8	54.3
09:00 PM - 10:00 PM	58.2	82.4	50.7
10:00 PM - 11:00 PM	55.3	84.5	48.2
11:00 PM - 12:00 AM	53.9	77.2	48.4
12:00 AM - 01:00 AM	52.5	79.3	47.3
01:00 AM - 02:00 AM	49.2	77.4	45.9
02:00 AM - 03:00 AM	52.0	82.3	44.1
03:00 AM - 04:00 AM	53.2	76.1	43.0
04:00 AM - 05:00 AM	61.0	85.5	48.4
05:00 AM - 06:00 AM	66.7	87.2	53.4
06:00 AM - 07:00 AM	66.5	87.2	50.2
07:00 AM - 08:00 AM	64.2	90.2	43.7
08:00 AM - 09:00 AM	64.3	88.9	42.8
09:00 AM - 10:00 AM	58.0	77.3	44.3
10:00 AM - 11:00 AM	56.7	77.5	44.3
11:00 AM - 12:00 PM	57.0	81.7	46.3
Leq Average 24 hrs. (dB(A))	62.5	92.4	
Lmax (dB(A))			47.3
L90 (dB(A))	67.9		
Ldn (dB(A))	70	115	
Standard (dB(A))			

Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. ใช้มาตรฐานการวัดค่าเสียงตามวิธีมาตรฐาน 15 (พ.ร.บ. 2540) สำหรับอาคารโรงงานอุตสาหกรรม  
2. ใช้มาตรฐานการวัดค่าเสียงตามวิธีมาตรฐาน 15 (พ.ร.บ. 2540) สำหรับอาคารโรงงานอุตสาหกรรม

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management  
Tharitat.

Approved by

Suppt. Salimleh  
Section Head

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Life Sciences

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TESTING  
No.0042

## Analysis / Test Report

Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360380-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number : 2270901-11  
Parameter : Noise (Leq 24 hrs.)  
Location : บ้านพักอาศัย หมู่ 2 ตำบลบึงนาราง 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 20 - Jun 21, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level meter : Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	55.5	78.0	43.8
01:00 PM - 02:00 PM	58.3	79.9	43.6
02:00 PM - 03:00 PM	59.4	81.9	45.1
03:00 PM - 04:00 PM	58.8	78.7	45.4
04:00 PM - 05:00 PM	57.3	79.1	46.7
05:00 PM - 06:00 PM	55.9	75.7	47.8
06:00 PM - 07:00 PM	57.4	80.5	48.0
07:00 PM - 08:00 PM	57.7	75.2	55.3
08:00 PM - 09:00 PM	57.4	76.1	55.1
09:00 PM - 10:00 PM	57.2	82.5	54.1
10:00 PM - 11:00 PM	52.1	71.3	46.4
11:00 PM - 12:00 AM	58.5	88.9	46.0
12:00 AM - 01:00 AM	66.4	74.2	58.1
01:00 AM - 02:00 AM	64.0	74.4	60.1
02:00 AM - 03:00 AM	66.5	74.4	57.0
03:00 AM - 04:00 AM	64.4	81.4	56.6
04:00 AM - 05:00 AM	63.2	82.8	51.6
05:00 AM - 06:00 AM	61.7	81.7	51.3
06:00 AM - 07:00 AM	62.1	82.3	50.4
07:00 AM - 08:00 AM	58.6	83.4	46.0
08:00 AM - 09:00 AM	57.3	82.6	44.5
09:00 AM - 10:00 AM	57.6	76.0	44.1
10:00 AM - 11:00 AM	57.4	78.0	45.7
11:00 AM - 12:00 PM	57.7	77.4	43.4

Leq Average 24 hrs. (dB(A))	61.1
Lmax (dB(A))	91.9
L90 (dB(A))	47.8
Ltn (dB(A))	69.9
Standard (dB(A))	70

Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. กรุงเทพมหานครและปริมณฑล พ.ศ. 2560 (กรุงเทพมหานครและปริมณฑล พ.ศ. 2560) สำหรับพื้นที่อยู่อาศัย  
2. กรุงเทพมหานครและปริมณฑล พ.ศ. 2560 (กรุงเทพมหานครและปริมณฑล พ.ศ. 2560) สำหรับพื้นที่อยู่อาศัย

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management : *Thanitak.* Approved by : *Supt S.*  
Tharitak Kulsriwong Scientist (4) Supt Salameh Section Head

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TESTING  
No.0042

## Analysis / Test Report

Lot ID: 2270901  
Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360381-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number : 2270901-12  
Parameter : Noise (Leq 24 hrs.)  
Location : บ้านพักอาศัย หมู่ 2 ตำบลบึงนาราง 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 21 - Jun 22, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level meter : Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	56.9	85.5	43.6
01:00 PM - 02:00 PM	55.1	77.2	43.8
02:00 PM - 03:00 PM	56.2	77.1	46.5
03:00 PM - 04:00 PM	58.1	77.8	45.8
04:00 PM - 05:00 PM	59.4	80.5	48.2
05:00 PM - 06:00 PM	56.2	79.0	48.2
06:00 PM - 07:00 PM	58.0	76.5	53.9
07:00 PM - 08:00 PM	62.1	74.2	59.3
08:00 PM - 09:00 PM	63.3	84.1	62.6
09:00 PM - 10:00 PM	61.0	67.7	60.4
10:00 PM - 11:00 PM	54.8	76.5	51.8
11:00 PM - 12:00 AM	56.7	75.7	53.4
12:00 AM - 01:00 AM	53.6	76.8	48.6
01:00 AM - 02:00 AM	51.6	78.4	44.8
02:00 AM - 03:00 AM	50.4	79.9	44.2
03:00 AM - 04:00 AM	58.0	78.8	44.8
04:00 AM - 05:00 AM	64.1	85.5	48.3
05:00 AM - 06:00 AM	62.3	84.8	50.5
06:00 AM - 07:00 AM	62.4	79.7	49.4
07:00 AM - 08:00 AM	59.3	86.4	44.5
08:00 AM - 09:00 AM	57.0	78.9	44.8
09:00 AM - 10:00 AM	59.2	82.3	45.7
10:00 AM - 11:00 AM	58.4	83.3	44.8
11:00 AM - 12:00 PM	62.1	92.1	51.1

Leq Average 24 hrs. (dB(A))	59.5
Lmax (dB(A))	92.1
L90 (dB(A))	48.2
Ltn (dB(A))	65.8
Standard (dB(A))	70

Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. กรุงเทพมหานครและปริมณฑล พ.ศ. 2560 (กรุงเทพมหานครและปริมณฑล พ.ศ. 2560) สำหรับพื้นที่อยู่อาศัย  
2. กรุงเทพมหานครและปริมณฑล พ.ศ. 2560 (กรุงเทพมหานครและปริมณฑล พ.ศ. 2560) สำหรับพื้นที่อยู่อาศัย

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management : *Thanitak.* Approved by : *Supt S.*  
Tharitak Kulsriwong Scientist (4) Supt Salameh Section Head

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ALS LABORATORY GROUP (THAILAND) CO., LTD. AN ALS UNITED COMPANY



TESTING  
No.0042

Lot ID: 2270901

Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360382-1

## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJK(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number	2270901-13
Parameter	Noise (Leq 24 hrs.)
Location	พื้นที่ด้านข้าง 2 ชั้นบนถนน 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 22 - Jun 23, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	59.2	71.4	53.5
01:00 PM - 02:00 PM	58.0	70.7	48.7
02:00 PM - 03:00 PM	60.8	86.4	49.4
03:00 PM - 04:00 PM	59.9	85.9	48.7
04:00 PM - 05:00 PM	59.4	86.4	48.3
05:00 PM - 06:00 PM	55.7	75.6	48.0
06:00 PM - 07:00 PM	57.3	75.7	52.7
07:00 PM - 08:00 PM	59.4	81.3	54.8
08:00 PM - 09:00 PM	57.8	82.9	54.2
09:00 PM - 10:00 PM	55.3	74.2	53.6
10:00 PM - 11:00 PM	50.4	65.3	48.0
11:00 PM - 12:00 AM	55.9	89.1	45.9
12:00 AM - 01:00 AM	50.2	73.0	44.3
01:00 AM - 02:00 AM	55.2	80.3	47.5
02:00 AM - 03:00 AM	53.4	74.0	49.8
03:00 AM - 04:00 AM	58.9	80.6	44.5
04:00 AM - 05:00 AM	82.1	82.1	51.9
05:00 AM - 06:00 AM	63.8	83.0	52.6
06:00 AM - 07:00 AM	61.5	78.6	49.5
07:00 AM - 08:00 AM	63.0	90.2	51.6
08:00 AM - 09:00 AM	60.6	78.9	46.5
09:00 AM - 10:00 AM	60.1	81.7	45.6
10:00 AM - 11:00 AM	59.9	84.8	45.9
11:00 AM - 12:00 PM	60.1	84.8	44.5

Leq Average 24 hrs. (dB(A)) 59.5

Lmax (dB(A)) 90.2  
L90 (dB(A)) 48.7  
Ldn (dB(A)) 115

Standard (dB(A))  
Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. ปริมาณการปล่อยเสียงจากอาคาร 15 (พ.ร.บ. 2540) ค่ามาตรฐานสำหรับพื้นที่อยู่อาศัย  
2. ปริมาณการปล่อยเสียงจากอาคาร 15 (พ.ร.บ. 2540) ค่ามาตรฐานสำหรับพื้นที่อยู่อาศัย

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management  
Thairitak.

Approved by

Supat Salometh  
Section Head

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## Analysis / Test Report

Lot ID: 2270901

Date Received : Jun 27, 2022  
Date Reported : Jul 02, 2022  
Report Number: 2360383-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJK(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Page 1 of 1

Sample Number	2270901-14
Parameter	Noise (Leq 24 hrs.)
Location	พื้นที่ด้านข้าง 2 ชั้นบนถนน 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 23 - Jun 24, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 597168

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	57.2	71.4	44.6
01:00 PM - 02:00 PM	57.6	81.1	45.0
02:00 PM - 03:00 PM	56.9	86.6	44.0
03:00 PM - 04:00 PM	58.1	78.7	46.0
04:00 PM - 05:00 PM	57.9	80.5	47.9
05:00 PM - 06:00 PM	55.8	78.4	48.8
06:00 PM - 07:00 PM	58.8	78.9	55.8
07:00 PM - 08:00 PM	60.8	87.3	58.2
08:00 PM - 09:00 PM	59.1	80.5	57.1
09:00 PM - 10:00 PM	59.6	83.2	57.0
10:00 PM - 11:00 PM	57.7	70.1	55.3
11:00 PM - 12:00 AM	55.6	68.9	54.5
12:00 AM - 01:00 AM	53.9	80.3	44.4
01:00 AM - 02:00 AM	53.4	66.9	42.8
02:00 AM - 03:00 AM	55.8	80.0	43.7
03:00 AM - 04:00 AM	58.7	80.4	44.7
04:00 AM - 05:00 AM	64.1	85.9	48.4
05:00 AM - 06:00 AM	65.1	93.3	48.9
06:00 AM - 07:00 AM	65.7	79.4	58.8
07:00 AM - 08:00 AM	64.1	83.8	53.7
08:00 AM - 09:00 AM	60.8	85.2	47.8
09:00 AM - 10:00 AM	63.4	84.1	52.8
10:00 AM - 11:00 AM	62.7	90.5	50.6
11:00 AM - 12:00 PM	64.9	88.0	54.7

Leq Average 24 hrs. (dB(A)) 61.0

Lmax (dB(A)) 93.3  
L90 (dB(A)) 48.8  
Ldn (dB(A)) 115

Standard (dB(A))  
Reference Method : ISO 1996-1 and 1996-2  
Standard : 1. ปริมาณการปล่อยเสียงจากอาคาร 15 (พ.ร.บ. 2540) ค่ามาตรฐานสำหรับพื้นที่อยู่อาศัย  
2. ปริมาณการปล่อยเสียงจากอาคาร 15 (พ.ร.บ. 2540) ค่ามาตรฐานสำหรับพื้นที่อยู่อาศัย

Remark :  
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management  
Thairitak.

Approved by

Supat Salometh  
Section Head

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360355-1

Page 1 of 3

Sample Number 2270910-1  
Parameter Noise Level (Leq 5 min)  
Location 317/17/17/17 (N1) (GPS 47P 734053, 1432206)  
Measurement Date Jun 17 - Jun 18, 2022  
Measurement by Anurak Tongthaisakda  
Sound Level meter Serial No. 00296518

Jun 17, 2022	Leq dB(A)	L90 dB(A)	Jun 17, 2022	Leq dB(A)	L90 dB(A)
01:00 PM - 01:05 PM	56.6	46.5	03:40 PM - 03:45 PM	55.2	46.6
01:05 PM - 01:10 PM	55.5	47.4	03:45 PM - 03:50 PM	55.2	49.8
01:10 PM - 01:15 PM	53.7	47.8	03:50 PM - 03:55 PM	57.0	49.3
01:15 PM - 01:20 PM	53.4	49.0	03:55 PM - 04:00 PM	56.7	49.6
01:20 PM - 01:25 PM	56.7	49.6	04:00 PM - 04:05 PM	55.9	49.6
01:25 PM - 01:30 PM	55.4	49.1	04:05 PM - 04:10 PM	57.2	50.7
01:30 PM - 01:35 PM	54.8	47.6	04:10 PM - 04:15 PM	52.3	48.6
01:35 PM - 01:40 PM	56.0	46.1	04:15 PM - 04:20 PM	54.9	49.9
01:40 PM - 01:45 PM	55.6	46.6	04:20 PM - 04:25 PM	55.3	49.7
01:45 PM - 01:50 PM	53.4	46.5	04:25 PM - 04:30 PM	60.1	51.6
01:50 PM - 01:55 PM	53.9	46.0	04:30 PM - 04:35 PM	55.3	49.6
01:55 PM - 02:00 PM	52.3	47.7	04:35 PM - 04:40 PM	55.6	49.4
02:00 PM - 02:05 PM	55.7	48.2	04:40 PM - 04:45 PM	54.7	49.8
02:05 PM - 02:10 PM	57.5	49.4	04:45 PM - 04:50 PM	53.6	48.5
02:10 PM - 02:15 PM	59.9	50.4	04:50 PM - 04:55 PM	61.1	51.1
02:15 PM - 02:20 PM	55.0	47.5	04:55 PM - 05:00 PM	54.3	49.5
02:20 PM - 02:25 PM	54.8	47.7	05:00 PM - 05:05 PM	56.2	47.8
02:25 PM - 02:30 PM	56.4	49.9	05:05 PM - 05:10 PM	57.7	51.9
02:30 PM - 02:35 PM	58.4	50.7	05:10 PM - 05:15 PM	56.5	50.1
02:35 PM - 02:40 PM	64.8	53.0	05:15 PM - 05:20 PM	58.3	51.2
02:40 PM - 02:45 PM	61.0	46.6	05:20 PM - 05:25 PM	54.1	49.4
02:45 PM - 02:50 PM	53.0	48.3	05:25 PM - 05:30 PM	55.9	48.7
02:50 PM - 02:55 PM	57.6	50.3	05:30 PM - 05:35 PM	53.0	48.7
02:55 PM - 03:00 PM	55.0	50.8	05:35 PM - 05:40 PM	55.7	47.6
03:00 PM - 03:05 PM	55.4	51.5	05:40 PM - 05:45 PM	58.0	47.9
03:05 PM - 03:10 PM	53.9	49.9	05:45 PM - 05:50 PM	54.3	53.0
03:10 PM - 03:15 PM	53.2	49.9	05:50 PM - 05:55 PM	55.4	48.1
03:15 PM - 03:20 PM	62.9	50.6	05:55 PM - 06:00 PM	51.6	46.7
03:20 PM - 03:25 PM	55.7	47.4	06:00 PM - 06:05 PM	58.5	48.8
03:25 PM - 03:30 PM	58.6	50.6	06:05 PM - 06:10 PM	60.8	53.2
03:30 PM - 03:35 PM	52.7	45.7	06:10 PM - 06:15 PM	57.3	56.4
03:35 PM - 03:40 PM	53.6	48.0	06:15 PM - 06:20 PM	59.1	48.4

Approved by

Saranyut Ultranoat  
Assistant General Manager

The above results are valid only for the specific conditions and equipment used in this test. The results are not valid for other conditions or equipment. The results are not valid for other conditions or equipment. The results are not valid for other conditions or equipment.



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360355-1

Page 2 of 3

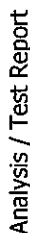
Sample Number 2270910-1  
Parameter Noise Level (Leq 5 min)  
Location 317/17/17/17 (N1) (GPS 47P 734053, 1432206)  
Measurement Date Jun 17 - Jun 18, 2022  
Measurement by Anurak Tongthaisakda  
Sound Level meter Serial No. 00296518

Jun 17, 2022	Leq dB(A)	L90 dB(A)	Jun 17 - Jun 18, 2022	Leq dB(A)	L90 dB(A)
09:00 PM - 09:05 PM	51.7	48.2	11:40 PM - 11:45 PM	51.6	46.3
09:05 PM - 09:10 PM	51.9	50.7	11:45 PM - 11:50 PM	51.8	46.4
09:10 PM - 09:15 PM	56.2	51.4	11:50 PM - 11:55 PM	51.3	45.6
09:15 PM - 09:20 PM	53.5	47.4	11:55 PM - 12:00 AM	52.3	43.8
09:20 PM - 09:25 PM	49.7	45.8	12:00 AM - 12:05 AM	49.0	44.7
09:25 PM - 09:30 PM	48.9	46.2	12:05 AM - 12:10 AM	52.3	45.4
09:30 PM - 09:35 PM	50.3	46.0	12:10 AM - 12:15 AM	51.8	46.4
09:35 PM - 09:40 PM	51.6	46.2	12:15 AM - 12:20 AM	47.9	44.9
09:40 PM - 09:45 PM	52.6	46.1	12:20 AM - 12:25 AM	51.6	44.6
09:45 PM - 09:50 PM	50.7	46.2	12:25 AM - 12:30 AM	49.9	44.3
09:50 PM - 09:55 PM	49.4	46.2	12:30 AM - 12:35 AM	45.6	43.9
09:55 PM - 10:00 PM	53.9	46.1	12:35 AM - 12:40 AM	44.5	43.4
10:00 PM - 10:05 PM	49.0	45.4	12:40 AM - 12:45 AM	46.0	43.8
10:05 PM - 10:10 PM	47.6	45.2	12:45 AM - 12:50 AM	47.6	44.8
10:10 PM - 10:15 PM	49.2	46.1	12:50 AM - 12:55 AM	47.9	45.2
10:15 PM - 10:20 PM	50.1	46.1	12:55 AM - 01:00 AM	46.6	45.0
10:20 PM - 10:25 PM	48.6	45.8	01:00 AM - 01:05 AM	47.5	46.4
10:25 PM - 10:30 PM	51.4	46.0	01:05 AM - 01:10 AM	47.0	46.3
10:30 PM - 10:35 PM	48.7	46.0	01:10 AM - 01:15 AM	48.2	46.3
10:35 PM - 10:40 PM	51.6	46.0	01:15 AM - 01:20 AM	47.9	46.6
10:40 PM - 10:45 PM	48.0	45.8	01:20 AM - 01:25 AM	47.6	46.3
10:45 PM - 10:50 PM	46.3	44.4	01:25 AM - 01:30 AM	47.4	46.2
10:50 PM - 10:55 PM	46.9	44.5	01:30 AM - 01:35 AM	46.5	45.9
10:55 PM - 11:00 PM	47.6	45.9	01:35 AM - 01:40 AM	46.9	46.0
11:00 PM - 11:05 PM	49.7	46.9	01:40 AM - 01:45 AM	47.9	46.3
11:05 PM - 11:10 PM	48.1	44.9	01:45 AM - 01:50 AM	50.2	45.7
11:10 PM - 11:15 PM	48.2	46.0	01:50 AM - 01:55 AM	47.8	46.0
11:15 PM - 11:20 PM	49.2	46.2	01:55 AM - 02:00 AM	46.4	45.8
11:20 PM - 11:25 PM	47.4	44.6	02:00 AM - 02:05 AM	47.2	45.8
11:25 PM - 11:30 PM	50.4	45.6	02:05 AM - 02:10 AM	48.1	45.6
11:30 PM - 11:35 PM	48.1	46.4	02:10 AM - 02:15 AM	47.6	45.7
11:35 PM - 11:40 PM	48.4	45.6	02:15 AM - 02:20 AM	46.5	46.4

Approved by

Saranyut Ultranoat  
Assistant General Manager

The above results are valid only for the specific conditions and equipment used in this test. The results are not valid for other conditions or equipment. The results are not valid for other conditions or equipment. The results are not valid for other conditions or equipment.



Page 1 of 3

Approved by

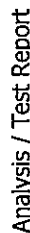
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**Sarayuth Jittrantont**  
**Assistant General Manager**

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

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## WOMEN OF COLOR



Page 3 of 3

Approved for

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Sarayuth Jitbranon  
Assistant General Manager

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

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**RIGHT SOLUTIONS RIGHT PARTNER**



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
P/O : RUN(2)-019/64  
Date Reported : Jul 04, 2022  
Project Name : Phuk Daeng  
Report Number : 2360356-1

Project Location :

Page 2 of 3

Sample Number : 2270910-2  
Parameter : Noise Level (Leq 5 min)  
Location : JhuSarnai (N1) (GPS 477 734053, 1432206)  
Measurement Date : Jun 18 - Jun 19, 2022  
Measurement by : Anurak Tongphajonsakdi  
Sound Level meter : Serial No. 00296518

Jun 18, 2022	Jun 18 - Jun 19, 2022	Jun 19, 2022	Time	Leq	L90	Leq	L90
09:00 PM - 09:05 PM	11:40 PM - 12:45 PM	02:20 AM - 02:25 AM	54.9	53.1	47.5	44.5	44.6
09:05 PM - 09:10 PM	11:45 PM - 11:50 PM	02:25 AM - 02:30 AM	51.8	47.5	48.8	43.4	45.5
09:10 PM - 09:15 PM	11:50 PM - 11:55 PM	02:30 AM - 02:35 AM	53.1	51.1	45.3	43.5	45.6
09:15 PM - 09:20 PM	11:55 PM - 12:00 AM	02:35 AM - 02:40 AM	51.4	50.2	46.8	44.6	45.5
09:20 PM - 09:25 PM	12:00 AM - 12:05 AM	02:40 AM - 02:45 AM	48.7	48.2	47.8	44.7	46.6
09:25 PM - 09:30 PM	12:05 AM - 12:10 AM	02:45 AM - 02:50 AM	55.1	48.2	44.9	44.9	43.8
09:30 PM - 09:35 PM	12:10 AM - 12:15 AM	02:50 AM - 02:55 AM	50.6	47.4	52.5	46.1	44.0
09:35 PM - 09:40 PM	12:15 AM - 12:20 AM	02:55 AM - 03:00 AM	55.6	45.8	51.2	46.4	43.8
09:40 PM - 09:45 PM	12:20 AM - 12:25 AM	03:00 AM - 03:05 AM	48.8	45.7	46.6	45.7	45.0
09:45 PM - 09:50 PM	12:25 AM - 12:30 AM	03:05 AM - 03:10 AM	49.5	47.2	46.6	45.7	45.0
09:50 PM - 09:55 PM	12:30 AM - 12:35 AM	03:10 AM - 03:15 AM	48.8	47.0	47.4	45.6	44.6
09:55 PM - 10:00 PM	12:35 AM - 12:40 AM	03:15 AM - 03:20 AM	49.5	47.9	47.6	45.0	44.8
10:00 PM - 10:05 PM	12:40 AM - 12:45 AM	03:20 AM - 03:25 AM	50.7	45.1	46.7	45.1	44.3
10:05 PM - 10:10 PM	12:45 AM - 12:50 AM	03:25 AM - 03:30 AM	49.9	46.4	47.5	45.0	44.2
10:10 PM - 10:15 PM	12:50 AM - 12:55 AM	03:30 AM - 03:35 AM	49.0	45.5	46.3	44.6	43.4
10:15 PM - 10:20 PM	12:55 AM - 01:00 AM	03:35 AM - 03:40 AM	50.2	45.5	46.7	44.8	42.8
10:20 PM - 10:25 PM	01:00 AM - 01:05 AM	03:40 AM - 03:45 AM	48.2	45.9	44.8	44.0	42.8
10:25 PM - 10:30 PM	01:05 AM - 01:10 AM	03:45 AM - 03:50 AM	47.9	45.3	47.0	44.6	43.4
10:30 PM - 10:35 PM	01:10 AM - 01:15 AM	03:50 AM - 03:55 AM	46.8	45.2	46.0	44.3	42.9
10:35 PM - 10:40 PM	01:15 AM - 01:20 AM	03:55 AM - 04:00 AM	47.7	45.6	48.4	44.9	42.8
10:40 PM - 10:45 PM	01:20 AM - 01:25 AM	04:00 AM - 04:05 AM	48.2	44.8	46.2	44.6	42.6
10:45 PM - 10:50 PM	01:25 AM - 01:30 AM	04:05 AM - 04:10 AM	47.5	44.9	45.9	44.4	43.4
10:50 PM - 10:55 PM	01:30 AM - 01:35 AM	04:10 AM - 04:15 AM	48.5	45.2	48.5	45.5	42.6
10:55 PM - 11:00 PM	01:35 AM - 01:40 AM	04:15 AM - 04:20 AM	47.6	45.9	45.3	44.5	42.2
11:00 PM - 11:05 PM	01:40 AM - 01:45 AM	04:20 AM - 04:25 AM	49.2	46.0	46.1	44.7	42.9
11:05 PM - 11:10 PM	01:45 AM - 01:50 AM	04:25 AM - 04:30 AM	49.1	45.6	45.4	44.3	43.8
11:10 PM - 11:15 PM	01:50 AM - 01:55 AM	04:30 AM - 04:35 AM	51.8	44.8	45.9	44.2	43.3
11:15 PM - 11:20 PM	01:55 AM - 02:00 AM	04:35 AM - 04:40 AM	48.8	44.5	45.7	44.9	43.3
11:20 PM - 11:25 PM	02:00 AM - 02:05 AM	04:40 AM - 04:45 AM	50.1	42.6	49.7	45.7	50.0
11:25 PM - 11:30 PM	02:05 AM - 02:10 AM	04:45 AM - 04:50 AM	45.8	42.6	46.5	44.8	47.8
11:30 PM - 11:35 PM	02:10 AM - 02:15 AM	04:50 AM - 04:55 AM	44.8	43.2	46.0	44.2	43.2
11:35 PM - 11:40 PM	02:15 AM - 02:20 AM	04:55 AM - 05:00 AM	46.8	44.0	46.2	44.8	44.6

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Approved by

Saranyuth Jittrantorn  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
P/O : RUN(2)-019/64  
Date Reported : Jul 04, 2022  
Project Name : Phuk Daeng  
Report Number : 2360356-1

Project Location :

Page 3 of 3

Sample Number : 2270910-2  
Parameter : Noise Level (Leq 5 min)  
Location : JhuSarnai (N1) (GPS 477 734053, 1432206)  
Measurement Date : Jun 18 - Jun 19, 2022  
Measurement by : Anurak Tongphajonsakdi  
Sound Level meter : Serial No. 00296518

Jun 19, 2022	Jun 19, 2022	Jun 19, 2022	Time	Leq	L90	Leq	L90
05:00 AM - 05:05 AM	07:40 AM - 07:45 AM	10:20 AM - 10:25 AM	54.1	46.5	55.3	48.9	49.5
05:05 AM - 05:10 AM	07:45 AM - 07:50 AM	10:25 AM - 10:30 AM	50.9	45.2	58.9	50.3	47.8
05:10 AM - 05:15 AM	07:50 AM - 07:55 AM	10:30 AM - 10:35 AM	54.6	45.4	54.1	49.7	49.0
05:15 AM - 05:20 AM	07:55 AM - 08:00 AM	10:35 AM - 10:40 AM	49.0	44.4	52.7	47.4	48.6
05:20 AM - 05:25 AM	08:00 AM - 08:05 AM	10:40 AM - 10:45 AM	47.9	43.5	54.4	47.7	47.2
05:25 AM - 05:30 AM	08:05 AM - 08:10 AM	10:45 AM - 10:50 AM	50.6	44.2	56.5	49.0	47.5
05:30 AM - 05:35 AM	08:10 AM - 08:15 AM	10:50 AM - 10:55 AM	57.5	44.9	56.2	49.1	48.0
05:35 AM - 05:40 AM	08:15 AM - 08:20 AM	10:55 AM - 11:00 AM	53.2	44.5	56.1	48.5	45.7
05:40 AM - 05:45 AM	08:20 AM - 08:25 AM	11:00 AM - 11:05 AM	50.5	44.7	54.6	50.7	48.5
05:45 AM - 05:50 AM	08:25 AM - 08:30 AM	11:05 AM - 11:10 AM	52.7	45.3	54.9	50.4	47.0
05:50 AM - 05:55 AM	08:30 AM - 08:35 AM	11:10 AM - 11:15 AM	52.2	46.6	56.1	50.2	47.8
05:55 AM - 06:00 AM	08:35 AM - 08:40 AM	11:15 AM - 11:20 AM	54.5	47.9	56.9	49.5	48.5
06:00 AM - 06:05 AM	08:40 AM - 08:45 AM	11:20 AM - 11:25 AM	54.4	47.4	55.6	47.2	47.4
06:05 AM - 06:10 AM	08:45 AM - 08:50 AM	11:25 AM - 11:30 AM	53.6	49.0	55.7	49.5	47.6
06:10 AM - 06:15 AM	08:50 AM - 08:55 AM	11:30 AM - 11:35 AM	52.9	48.1	57.4	50.3	47.0
06:15 AM - 06:20 AM	08:55 AM - 09:00 AM	11:35 AM - 11:40 AM	52.7	47.9	63.0	51.6	44.1
06:20 AM - 06:25 AM	09:00 AM - 09:05 AM	11:40 AM - 11:45 AM	55.1	48.2	57.5	48.0	44.9
06:25 AM - 06:30 AM	09:05 AM - 09:10 AM	11:45 AM - 11:50 AM	58.3	50.7	60.6	51.3	46.1
06:30 AM - 06:35 AM	09:10 AM - 09:15 AM	11:50 AM - 11:55 AM	58.9	50.6	56.9	50.4	46.4
06:35 AM - 06:40 AM	09:15 AM - 09:20 AM	11:55 AM - 12:00 PM	57.7	51.9	58.1	47.4	44.9
06:40 AM - 06:45 AM	09:20 AM - 09:25 AM	12:00 PM - 12:05 PM	55.2	46.6	57.6	48.4	46.3
06:45 AM - 06:50 AM	09:25 AM - 09:30 AM	12:05 PM - 12:10 PM	54.1	47.6	57.4	48.1	46.9
06:50 AM - 06:55 AM	09:30 AM - 09:35 AM	12:10 PM - 12:15 PM	53.9	46.9	54.4	48.2	45.9
06:55 AM - 07:00 AM	09:35 AM - 09:40 AM	12:15 PM - 12:20 PM	59.6	43.5	58.2	49.5	49.4
07:00 AM - 07:05 AM	09:40 AM - 09:45 AM	12:20 PM - 12:25 PM	51.0	46.1	57.4	50.9	46.6
07:05 AM - 07:10 AM	09:45 AM - 09:50 AM	12:25 PM - 12:30 PM	52.0	44.5	60.2	48.5	49.2
07:10 AM - 07:15 AM	09:50 AM - 09:55 AM	12:30 PM - 12:35 PM	50.8	44.6	55.0	48.5	46.1
07:15 AM - 07:20 AM	09:55 AM - 10:00 AM	12:35 PM - 12:40 PM	53.4	43.7	57.2	48.0	48.4
07:20 AM - 07:25 AM	10:00 AM - 10:05 AM	12:40 PM - 12:45 PM	59.0	49.5	62.1	54.7	46.9
07:25 AM - 07:30 AM	10:05 AM - 10:10 AM	12:45 PM - 12:50 PM	54.1	48.0	54.8	48.5	48.2
07:30 AM - 07:35 AM	10:10 AM - 10:15 AM	12:50 PM - 12:55 PM	53.5	47.1	56.3	49.0	46.3
07:35 AM - 07:40 AM	10:15 AM - 10:20 AM	12:55 PM - 01:00 PM	57.0	47.9	53.6	48.4	46.8

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Approved by

Saranyuth Jittrantorn  
Assistant General Manager





## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360357-1

Page 1 of 3

Sample Number	2270910-3
Parameter	Noise Level (Leq 5 min)
Location	Uthairatthanasakdi (N1) (GPS 477 734053, 1432206)
Measurement Date	Jun 19 - Jun 20, 2022
Measurement by	Anurak Tongthongsakdi
Sound Level meter	Serial No. 00296518

Jun 19, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 19, 2022	Leq dB(A)	L90 dB(A)
01:00 PM - 01:05 PM	58.2	47.1	03:40 PM - 03:45 PM	54.7	47.1	47.2
01:05 PM - 01:10 PM	53.9	45.4	03:45 PM - 03:50 PM	57.3	52.0	45.6
01:10 PM - 01:15 PM	57.1	47.2	03:50 PM - 03:55 PM	54.4	52.2	47.2
01:15 PM - 01:20 PM	52.5	45.8	03:55 PM - 04:00 PM	57.0	53.0	48.4
01:20 PM - 01:25 PM	55.0	45.5	04:00 PM - 04:05 PM	59.6	52.7	48.9
01:25 PM - 01:30 PM	55.7	48.2	04:05 PM - 04:10 PM	56.9	53.0	48.6
01:30 PM - 01:35 PM	56.3	48.3	04:10 PM - 04:15 PM	54.1	52.3	48.5
01:35 PM - 01:40 PM	57.1	45.7	04:15 PM - 04:20 PM	56.9	52.5	58.4
01:40 PM - 01:45 PM	55.3	46.2	04:20 PM - 04:25 PM	56.0	50.0	59.8
01:45 PM - 01:50 PM	56.0	46.7	04:25 PM - 04:30 PM	57.2	48.6	61.0
01:50 PM - 01:55 PM	54.4	47.3	04:30 PM - 04:35 PM	55.0	49.8	64.9
01:55 PM - 02:00 PM	55.1	46.7	04:35 PM - 04:40 PM	52.2	47.6	68.0
02:00 PM - 02:05 PM	56.5	46.1	04:40 PM - 04:45 PM	52.6	46.7	60.4
02:05 PM - 02:10 PM	54.1	45.2	04:45 PM - 04:50 PM	51.9	47.7	59.9
02:10 PM - 02:15 PM	60.0	47.7	04:50 PM - 04:55 PM	51.2	46.9	58.2
02:15 PM - 02:20 PM	55.0	44.8	04:55 PM - 05:00 PM	51.0	45.9	57.3
02:20 PM - 02:25 PM	57.3	46.4	05:00 PM - 05:05 PM	51.1	46.3	55.4
02:25 PM - 02:30 PM	56.2	45.5	05:05 PM - 05:10 PM	50.4	45.6	55.5
02:30 PM - 02:35 PM	49.7	46.9	05:10 PM - 05:15 PM	54.0	46.9	57.2
02:35 PM - 02:40 PM	53.5	45.9	05:15 PM - 05:20 PM	53.5	45.9	56.6
02:40 PM - 02:45 PM	58.3	45.7	05:20 PM - 05:25 PM	52.8	45.2	56.7
02:45 PM - 02:50 PM	55.2	47.7	05:25 PM - 05:30 PM	51.2	43.3	54.9
02:50 PM - 02:55 PM	50.8	45.9	05:30 PM - 05:35 PM	52.9	42.9	51.1
02:55 PM - 03:00 PM	53.7	45.8	05:35 PM - 05:40 PM	53.5	45.3	46.3
03:00 PM - 03:05 PM	54.1	49.1	05:40 PM - 05:45 PM	49.6	44.5	45.8
03:05 PM - 03:10 PM	60.4	48.3	05:45 PM - 05:50 PM	53.5	46.5	51.8
03:10 PM - 03:15 PM	59.8	52.7	05:50 PM - 05:55 PM	50.2	45.1	47.4
03:15 PM - 03:20 PM	61.9	49.9	05:55 PM - 06:00 PM	51.1	45.7	47.3
03:20 PM - 03:25 PM	59.0	46.9	06:00 PM - 06:05 PM	50.4	45.3	48.9
03:25 PM - 03:30 PM	55.9	49.3	06:05 PM - 06:10 PM	51.8	45.7	49.0
03:30 PM - 03:35 PM	51.1	45.3	06:10 PM - 06:15 PM	54.2	48.3	46.2
03:35 PM - 03:40 PM	49.7	45.8	06:15 PM - 06:20 PM	53.1	51.5	46.5

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Approved by

Saranyuth Jitramont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360357-1

Page 2 of 3

Sample Number	2270910-3
Parameter	Noise Level (Leq 5 min)
Location	Uthairatthanasakdi (N1) (GPS 477 734053, 1432206)
Measurement Date	Jun 19 - Jun 20, 2022
Measurement by	Anurak Tongthongsakdi
Sound Level meter	Serial No. 00296518

Jun 19, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 19 - Jun 20, 2022	Leq dB(A)	L90 dB(A)
09:00 PM - 09:05 PM	49.3	47.4	11:40 PM - 11:45 PM	47.1	44.4	44.4
09:05 PM - 09:10 PM	48.4	46.4	11:45 PM - 11:50 PM	48.1	45.5	43.6
09:10 PM - 09:15 PM	50.6	46.7	11:50 PM - 11:55 PM	48.2	46.0	44.7
09:15 PM - 09:20 PM	51.4	45.7	11:55 PM - 12:00 AM	47.0	45.6	44.1
09:20 PM - 09:25 PM	51.3	46.2	12:00 AM - 12:05 AM	46.9	45.6	44.0
09:25 PM - 09:30 PM	49.2	46.0	12:05 AM - 12:10 AM	46.3	45.0	43.9
09:30 PM - 09:35 PM	51.0	45.9	12:10 AM - 12:15 AM	46.5	45.0	42.8
09:35 PM - 09:40 PM	51.0	45.7	12:15 AM - 12:20 AM	47.7	45.6	42.8
09:40 PM - 09:45 PM	47.7	45.4	12:20 AM - 12:25 AM	47.0	45.3	44.1
09:45 PM - 09:50 PM	51.8	46.8	12:25 AM - 12:30 AM	46.6	43.9	43.8
09:50 PM - 09:55 PM	47.8	46.3	12:30 AM - 12:35 AM	45.9	44.7	45.4
09:55 PM - 10:00 PM	48.0	46.1	12:35 AM - 12:40 AM	46.1	44.7	51.4
10:00 PM - 10:05 PM	47.6	45.9	12:40 AM - 12:45 AM	44.9	44.0	44.7
10:05 PM - 10:10 PM	48.0	46.2	12:45 AM - 12:50 AM	45.6	43.6	44.6
10:10 PM - 10:15 PM	52.2	46.4	12:50 AM - 12:55 AM	44.4	43.4	46.9
10:15 PM - 10:20 PM	53.4	52.3	12:55 AM - 01:00 AM	45.4	43.2	48.6
10:20 PM - 10:25 PM	53.0	52.1	01:00 AM - 01:05 AM	44.5	43.3	51.4
10:25 PM - 10:30 PM	54.5	52.0	01:05 AM - 01:10 AM	44.5	43.2	47.2
10:30 PM - 10:35 PM	52.8	51.8	01:10 AM - 01:15 AM	45.1	43.6	45.2
10:35 PM - 10:40 PM	53.5	51.9	01:15 AM - 01:20 AM	44.8	43.3	46.1
10:40 PM - 10:45 PM	53.2	51.6	01:20 AM - 01:25 AM	47.2	44.5	47.0
10:45 PM - 10:50 PM	52.7	51.4	01:25 AM - 01:30 AM	48.7	46.5	47.7
10:50 PM - 10:55 PM	50.7	45.0	01:30 AM - 01:35 AM	47.7	46.5	50.5
10:55 PM - 11:00 PM	49.9	44.9	01:35 AM - 01:40 AM	46.9	46.1	49.2
11:00 PM - 11:05 PM	49.8	46.0	01:40 AM - 01:45 AM	47.6	46.6	45.6
11:05 PM - 11:10 PM	54.1	53.3	01:45 AM - 01:50 AM	48.3	46.6	44.8
11:10 PM - 11:15 PM	51.0	45.5	01:50 AM - 01:55 AM	47.2	46.4	48.7
11:15 PM - 11:20 PM	45.2	44.7	01:55 AM - 02:00 AM	51.1	43.9	42.5
11:20 PM - 11:25 PM	46.0	44.8	02:00 AM - 02:05 AM	44.4	43.7	48.9
11:25 PM - 11:30 PM	47.5	45.6	02:05 AM - 02:10 AM	47.3	43.8	50.5
11:30 PM - 11:35 PM	46.1	44.9	02:10 AM - 02:15 AM	44.9	43.5	51.0
11:35 PM - 11:40 PM	45.7	44.3	02:15 AM - 02:20 AM	45.3	43.5	50.8

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Approved by

Saranyuth Jitramont  
Assistant General Manager



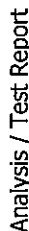
Page 1 of 3

	Jun 20, 2022	Leq dB(A)	L90 dB(A)		Jun 20, 2022	Leq dB(A)	L90 dB(A)		Jun 20, 2022	Leq dB(A)	L90 dB(A)
	Time				Time				Time		
	01:00 PM - 01:05 PM	53.2	47.1		03:40 PM - 03:45 PM	52.1	44.7		06:20 PM - 06:25 PM	53.4	49.9
	01:05 PM - 01:10 PM	51.7	46.9		03:45 PM - 03:50 PM	52.9	48.2		06:25 PM - 06:30 PM	52.0	48.2
	01:10 PM - 01:15 PM	57.2	46.8		03:50 PM - 03:55 PM	52.0	46.7		06:30 PM - 06:35 PM	49.9	45.2
	01:15 PM - 01:20 PM	58.4	47.2		03:55 PM - 04:00 PM	54.7	44.5		06:35 PM - 06:40 PM	52.5	47.1
	01:20 PM - 01:25 PM	54.8	46.6		04:00 PM - 04:05 PM	55.4	44.1		06:40 PM - 06:45 PM	52.8	47.2
	01:25 PM - 01:30 PM	51.5	46.6		04:05 PM - 04:10 PM	55.6	48.0		06:45 PM - 06:50 PM	55.4	47.6
	01:30 PM - 01:35 PM	50.6	45.5		04:10 PM - 04:15 PM	54.8	49.7		06:50 PM - 06:55 PM	51.2	47.6
	01:35 PM - 01:40 PM	54.9	47.8		04:15 PM - 04:20 PM	56.3	50.4		06:55 PM - 07:00 PM	52.4	48.7
	01:40 PM - 01:45 PM	54.2	50.5		04:20 PM - 04:25 PM	57.3	52.0		07:00 PM - 07:05 PM	59.0	54.6
	01:45 PM - 01:50 PM	55.9	51.4		04:25 PM - 04:30 PM	55.5	50.3		07:05 PM - 07:10 PM	60.3	58.4
	01:50 PM - 01:55 PM	56.6	48.4		04:30 PM - 04:35 PM	54.7	48.6		07:10 PM - 07:15 PM	56.4	53.1
	01:55 PM - 02:00 PM	53.2	49.3		04:35 PM - 04:40 PM	56.5	51.5		07:15 PM - 07:20 PM	55.8	53.1
	02:00 PM - 02:05 PM	54.0	48.8		04:40 PM - 04:45 PM	56.2	49.0		07:20 PM - 07:25 PM	54.8	50.1
	02:05 PM - 02:10 PM	56.8	47.6		04:45 PM - 04:50 PM	58.7	50.1		07:25 PM - 07:30 PM	56.1	50.6
	02:10 PM - 02:15 PM	54.5	45.3		04:50 PM - 04:55 PM	54.1	49.2		07:30 PM - 07:35 PM	58.0	56.2
	02:15 PM - 02:20 PM	50.0	44.2		04:55 PM - 05:00 PM	53.6	49.3		07:35 PM - 07:40 PM	59.1	56.5
	02:20 PM - 02:25 PM	56.2	43.5		05:00 PM - 05:05 PM	53.1	48.3		07:40 PM - 07:45 PM	59.3	54.0
	02:25 PM - 02:30 PM	56.6	45.8		05:05 PM - 05:10 PM	54.5	49.0		07:45 PM - 07:50 PM	58.0	54.6
	02:30 PM - 02:35 PM	52.3	43.3		05:10 PM - 05:15 PM	53.1	48.6		07:50 PM - 07:55 PM	57.3	56.5
	02:35 PM - 02:40 PM	50.0	43.1		05:15 PM - 05:20 PM	55.1	48.1		07:55 PM - 08:00 PM	57.0	55.5
	02:40 PM - 02:45 PM	57.4	45.6		05:20 PM - 05:25 PM	54.0	48.3		08:00 PM - 08:05 PM	56.9	54.2
	02:45 PM - 02:50 PM	54.5	44.6		05:25 PM - 05:30 PM	56.0	47.8		08:05 PM - 08:10 PM	59.4	54.3
	02:50 PM - 02:55 PM	53.4	44.9		05:30 PM - 05:35 PM	53.5	46.8		08:10 PM - 08:15 PM	54.4	52.9
	02:55 PM - 03:00 PM	57.5	50.5		05:35 PM - 05:40 PM	51.0	46.9		08:15 PM - 08:20 PM	56.6	55.4
	03:00 PM - 03:05 PM	56.7	48.1		05:40 PM - 05:45 PM	52.2	46.2		08:20 PM - 08:25 PM	55.4	54.8
	03:05 PM - 03:10 PM	55.5	45.8		05:45 PM - 05:50 PM	53.2	46.8		08:25 PM - 08:30 PM	55.4	54.1
	03:10 PM - 03:15 PM	52.2	47.2		05:50 PM - 05:55 PM	52.5	47.4		08:30 PM - 08:35 PM	54.1	52.2
	03:15 PM - 03:20 PM	53.1	47.6		05:55 PM - 06:00 PM	51.2	46.1		08:35 PM - 08:40 PM	55.7	54.0
	03:20 PM - 03:25 PM	54.7	44.4		06:00 PM - 06:05 PM	56.0	46.2		08:40 PM - 08:45 PM	54.0	50.7
	03:25 PM - 03:30 PM	53.7	45.6		06:05 PM - 06:10 PM	54.5	47.4		08:45 PM - 08:50 PM	51.1	49.4
	03:30 PM - 03:35 PM	54.3	46.4		06:10 PM - 06:15 PM	52.8	47.3		08:50 PM - 08:55 PM	49.4	45.7
	03:35 PM - 03:40 PM	50.3	43.4		06:15 PM - 06:20 PM	55.3	53.8		08:55 PM - 09:00 PM	53.4	45.0

**Sarayuth Jiltranont**  
**Assistant General Manager**

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ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Sun Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. AN ALS Limited Company



Page 3 of 3

Jun 20, 2022	Leq dB(A)	L90 dB(A)	Jun 20, 2022	Leq dB(A)	L90 dB(A)	Time	Leq dB(A)	L90 dB(A)
05:00 AM - 05:05 AM	52.3	44.2	07:40 AM - 07:45 AM	52.1	47.1	10:20 AM - 10:25 AM	50.0	43.8
05:05 AM - 05:10 AM	51.5	45.3	07:45 AM - 07:50 AM	56.6	48.0	10:25 AM - 10:30 AM	50.9	44.2
05:10 AM - 05:15 AM	52.6	46.0	07:50 AM - 07:55 AM	55.7	47.7	10:30 AM - 10:35 AM	51.9	45.2
05:15 AM - 05:20 AM	50.0	45.0	07:55 AM - 08:00 AM	51.6	44.4	10:35 AM - 10:40 AM	54.0	46.9
05:20 AM - 05:25 AM	52.0	45.9	08:00 AM - 08:05 AM	50.9	44.6	10:40 AM - 10:45 AM	49.5	44.6
05:25 AM - 05:30 AM	50.8	44.9	08:05 AM - 08:10 AM	55.7	48.3	10:45 AM - 10:50 AM	52.2	46.7
05:30 AM - 05:35 AM	53.8	47.0	08:10 AM - 08:15 AM	52.7	45.5	10:50 AM - 10:55 AM	50.4	44.4
05:35 AM - 05:40 AM	52.9	47.5	08:15 AM - 08:20 AM	53.1	44.1	10:55 AM - 11:00 AM	54.0	47.6
05:40 AM - 05:45 AM	54.4	47.1	08:20 AM - 08:25 AM	52.5	45.4	11:00 AM - 11:05 AM	53.4	46.3
05:45 AM - 05:50 AM	53.3	48.7	08:25 AM - 08:30 AM	57.1	45.8	11:05 AM - 11:10 AM	51.4	46.3
05:50 AM - 05:55 AM	53.6	49.1	08:30 AM - 08:35 AM	51.2	45.4	11:10 AM - 11:15 AM	55.0	47.4
05:55 AM - 06:00 AM	54.4	47.3	08:35 AM - 08:40 AM	54.3	45.2	11:15 AM - 11:20 AM	51.2	47.7
06:00 AM - 06:05 AM	54.5	51.2	08:40 AM - 08:45 AM	54.1	46.5	11:20 AM - 11:25 AM	54.9	46.0
06:05 AM - 06:10 AM	53.6	49.9	08:45 AM - 08:50 AM	53.3	45.8	11:25 AM - 11:30 AM	53.8	46.0
06:10 AM - 06:15 AM	53.2	49.7	08:50 AM - 08:55 AM	56.9	45.1	11:30 AM - 11:35 AM	50.4	45.5
06:15 AM - 06:20 AM	55.7	49.3	08:55 AM - 09:00 AM	54.4	46.7	11:35 AM - 11:40 AM	50.5	45.5
06:20 AM - 06:25 AM	56.4	51.1	09:00 AM - 09:05 AM	55.3	45.8	11:40 AM - 11:45 AM	51.3	45.9
06:25 AM - 06:30 AM	57.7	52.0	09:05 AM - 09:10 AM	53.1	44.2	11:45 AM - 11:50 AM	50.8	45.8
06:30 AM - 06:35 AM	55.9	50.7	09:10 AM - 09:15 AM	54.6	45.7	11:50 AM - 11:55 AM	50.7	46.2
06:35 AM - 06:40 AM	55.2	50.8	09:15 AM - 09:20 AM	53.5	45.3	11:55 AM - 12:00 PM	49.8	45.6
06:40 AM - 06:45 AM	57.0	50.7	09:20 AM - 09:25 AM	53.4	46.9	12:00 PM - 12:05 PM	53.8	46.4
06:45 AM - 06:50 AM	54.5	51.1	09:25 AM - 09:30 AM	52.6	46.1	12:05 PM - 12:10 PM	57.0	46.0
06:50 AM - 06:55 AM	54.7	49.8	09:30 AM - 09:35 AM	59.0	47.0	12:10 PM - 12:15 PM	50.4	44.3
06:55 AM - 07:00 AM	56.6	51.1	09:35 AM - 09:40 AM	53.4	46.7	12:15 PM - 12:20 PM	48.2	43.9
07:00 AM - 07:05 AM	54.8	50.1	09:40 AM - 09:45 AM	53.0	45.6	12:20 PM - 12:25 PM	53.2	45.2
07:05 AM - 07:10 AM	53.8	49.3	09:45 AM - 09:50 AM	52.9	44.9	12:25 PM - 12:30 PM	50.8	45.8
07:10 AM - 07:15 AM	57.1	48.2	09:50 AM - 09:55 AM	49.5	44.3	12:30 PM - 12:35 PM	52.2	47.2
07:15 AM - 07:20 AM	55.1	48.0	09:55 AM - 10:00 AM	54.3	48.3	12:35 PM - 12:40 PM	50.3	45.4
07:20 AM - 07:25 AM	54.1	46.6	10:00 AM - 10:05 AM	51.9	46.2	12:40 PM - 12:45 PM	54.1	47.3
07:25 AM - 07:30 AM	55.6	48.8	10:05 AM - 10:10 AM	55.6	46.1	12:45 PM - 12:50 PM	58.8	48.9
07:30 AM - 07:35 AM	55.5	50.6	10:10 AM - 10:15 AM	51.3	45.9	12:50 PM - 12:55 PM	50.8	45.8
07:35 AM - 07:40 AM	53.9	48.8	10:15 AM - 10:20 AM	51.0	44.7	12:55 PM - 01:00 PM	54.4	46.6

**Sarayuth Jitranont**  
Assistant General Manager

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360358-1

Page 2 of 3

Sample Number : 2270910-4  
Parameter : Noise Level (Leq 5 min)  
Location : Jirun Saranai (N1) (GPS 477 734053, 1432206)  
Measurement Date : Jun 20 - Jun 21, 2022  
Measurement by : Anurak Tongphajonsakda  
Sound Level meter : Serial No. 00295618

Jun 20, 2022	Jun 20 - Jun 21, 2022	Time	Leq dB(A)	L90 dB(A)
09:00 PM - 09:05 PM	11:40 PM - 11:45 PM	02:20 AM - 02:25 AM	45.2	43.2
09:05 PM - 09:10 PM	11:45 PM - 11:50 PM	02:25 AM - 02:30 AM	46.8	43.5
09:10 PM - 09:15 PM	11:50 PM - 11:55 PM	02:30 AM - 02:35 AM	50.1	45.1
09:15 PM - 09:20 PM	11:55 PM - 12:00 AM	02:35 AM - 02:40 AM	47.3	43.5
09:20 PM - 09:25 PM	12:00 AM - 12:05 AM	02:40 AM - 02:45 AM	46.7	43.1
09:25 PM - 09:30 PM	12:05 AM - 12:10 AM	02:45 AM - 02:50 AM	46.1	44.2
09:30 PM - 09:35 PM	12:10 AM - 12:15 AM	02:50 AM - 02:55 AM	47.6	45.2
09:35 PM - 09:40 PM	12:15 AM - 12:20 AM	02:55 AM - 03:00 AM	53.1	46.8
09:40 PM - 09:45 PM	12:20 AM - 12:25 AM	03:00 AM - 03:05 AM	57.5	53.6
09:45 PM - 09:50 PM	12:25 AM - 12:30 AM	03:05 AM - 03:10 AM	57.6	55.6
09:50 PM - 09:55 PM	12:30 AM - 12:35 AM	03:10 AM - 03:15 AM	58.0	52.5
09:55 PM - 10:00 PM	12:35 AM - 12:40 AM	03:15 AM - 03:20 AM	58.0	55.5
10:00 PM - 10:05 PM	12:40 AM - 12:45 AM	03:20 AM - 03:25 AM	59.1	55.1
10:05 PM - 10:10 PM	12:45 AM - 12:50 AM	03:25 AM - 03:30 AM	60.4	54.5
10:10 PM - 10:15 PM	12:50 AM - 12:55 AM	03:30 AM - 03:35 AM	56.2	52.3
10:15 PM - 10:20 PM	12:55 AM - 01:00 AM	03:35 AM - 03:40 AM	50.5	50.1
10:20 PM - 10:25 PM	01:00 AM - 01:05 AM	03:40 AM - 03:45 AM	55.3	48.4
10:25 PM - 10:30 PM	01:05 AM - 01:10 AM	03:45 AM - 03:50 AM	54.7	46.4
10:30 PM - 10:35 PM	01:10 AM - 01:15 AM	03:50 AM - 03:55 AM	58.0	45.6
10:35 PM - 10:40 PM	01:15 AM - 01:20 AM	03:55 AM - 04:00 AM	58.7	44.5
10:40 PM - 10:45 PM	01:20 AM - 01:25 AM	04:00 AM - 04:05 AM	53.2	45.8
10:45 PM - 10:50 PM	01:25 AM - 01:30 AM	04:05 AM - 04:10 AM	51.7	44.6
10:50 PM - 10:55 PM	01:30 AM - 01:35 AM	04:10 AM - 04:15 AM	53.0	44.1
10:55 PM - 11:00 PM	01:35 AM - 01:40 AM	04:15 AM - 04:20 AM	46.2	43.9
11:00 PM - 11:05 PM	01:40 AM - 01:45 AM	04:20 AM - 04:25 AM	49.3	44.2
11:05 PM - 11:10 PM	01:45 AM - 01:50 AM	04:25 AM - 04:30 AM	46.6	45.0
11:10 PM - 11:15 PM	01:50 AM - 01:55 AM	04:30 AM - 04:35 AM	46.4	45.0
11:15 PM - 11:20 PM	01:55 AM - 02:00 AM	04:35 AM - 04:40 AM	47.3	45.3
11:20 PM - 11:25 PM	02:00 AM - 02:05 AM	04:40 AM - 04:45 AM	46.4	45.0
11:25 PM - 11:30 PM	02:05 AM - 02:10 AM	04:45 AM - 04:50 AM	49.2	44.9
11:30 PM - 11:35 PM	02:10 AM - 02:15 AM	04:50 AM - 04:55 AM	46.6	45.1
11:35 PM - 11:40 PM	02:15 AM - 02:20 AM	04:55 AM - 05:00 AM	45.9	44.3

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Approved by  
Sanyuthi Jitramont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360358-1

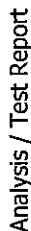
Page 3 of 3

Sample Number : 2270910-4  
Parameter : Noise Level (Leq 5 min)  
Location : Jirun Saranai (N1) (GPS 477 734053, 1432206)  
Measurement Date : Jun 20 - Jun 21, 2022  
Measurement by : Anurak Tongphajonsakda  
Sound Level meter : Serial No. 00295618

Jun 21, 2022	Jun 21, 2022	Time	Leq dB(A)	L90 dB(A)
05:00 AM - 05:05 AM	07:40 AM - 07:45 AM	10:20 AM - 10:25 AM	51.2	45.1
05:05 AM - 05:10 AM	07:45 AM - 07:50 AM	10:25 AM - 10:30 AM	52.5	47.7
05:10 AM - 05:15 AM	07:50 AM - 07:55 AM	10:30 AM - 10:35 AM	51.8	44.9
05:15 AM - 05:20 AM	07:55 AM - 08:00 AM	10:35 AM - 10:40 AM	52.0	45.5
05:20 AM - 05:25 AM	08:00 AM - 08:05 AM	10:40 AM - 10:45 AM	55.0	46.2
05:25 AM - 05:30 AM	08:05 AM - 08:10 AM	10:45 AM - 10:50 AM	53.1	47.0
05:30 AM - 05:35 AM	08:10 AM - 08:15 AM	10:50 AM - 10:55 AM	53.8	46.2
05:35 AM - 05:40 AM	08:15 AM - 08:20 AM	10:55 AM - 11:00 AM	52.9	47.4
05:40 AM - 05:45 AM	08:20 AM - 08:25 AM	11:00 AM - 11:05 AM	54.7	47.7
05:45 AM - 05:50 AM	08:25 AM - 08:30 AM	11:05 AM - 11:10 AM	53.1	46.4
05:50 AM - 05:55 AM	08:30 AM - 08:35 AM	11:10 AM - 11:15 AM	56.4	49.9
05:55 AM - 06:00 AM	08:35 AM - 08:40 AM	11:15 AM - 11:20 AM	55.5	50.5
06:00 AM - 06:05 AM	08:40 AM - 08:45 AM	11:20 AM - 11:25 AM	55.0	50.2
06:05 AM - 06:10 AM	08:45 AM - 08:50 AM	11:25 AM - 11:30 AM	55.8	51.6
06:10 AM - 06:15 AM	08:50 AM - 08:55 AM	11:30 AM - 11:35 AM	58.7	53.4
06:15 AM - 06:20 AM	08:55 AM - 09:00 AM	11:35 AM - 11:40 AM	58.3	52.5
06:20 AM - 06:25 AM	09:00 AM - 09:05 AM	11:40 AM - 11:45 AM	57.6	52.5
06:25 AM - 06:30 AM	09:05 AM - 09:10 AM	11:45 AM - 11:50 AM	57.4	52.0
06:30 AM - 06:35 AM	09:10 AM - 09:15 AM	11:50 AM - 11:55 AM	58.8	52.0
06:35 AM - 06:40 AM	09:15 AM - 09:20 AM	11:55 AM - 12:00 PM	58.4	53.0
06:40 AM - 06:45 AM	09:20 AM - 09:25 AM	12:00 PM - 12:05 PM	58.0	52.1
06:45 AM - 06:50 AM	09:25 AM - 09:30 AM	12:05 PM - 12:10 PM	60.1	52.3
06:50 AM - 06:55 AM	09:30 AM - 09:35 AM	12:10 PM - 12:15 PM	59.9	51.8
06:55 AM - 07:00 AM	09:35 AM - 09:40 AM	12:15 PM - 12:20 PM	57.8	49.9
07:00 AM - 07:05 AM	09:40 AM - 09:45 AM	12:20 PM - 12:25 PM	56.3	49.8
07:05 AM - 07:10 AM	09:45 AM - 09:50 AM	12:25 PM - 12:30 PM	57.5	49.6
07:10 AM - 07:15 AM	09:50 AM - 09:55 AM	12:30 PM - 12:35 PM	55.9	50.3
07:15 AM - 07:20 AM	09:55 AM - 10:00 AM	12:35 PM - 12:40 PM	55.7	49.4
07:20 AM - 07:25 AM	10:00 AM - 10:05 AM	12:40 PM - 12:45 PM	57.1	49.1
07:25 AM - 07:30 AM	10:05 AM - 10:10 AM	12:45 PM - 12:50 PM	57.4	49.3
07:30 AM - 07:35 AM	10:10 AM - 10:15 AM	12:50 PM - 12:55 PM	59.6	52.1
07:35 AM - 07:40 AM	10:15 AM - 10:20 AM	12:55 PM - 01:00 PM	55.2	49.4

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Sanyuthi Jitramont  
Assistant General Manager



Page 1 of 3

Project Location :

## Analysis / Test Report

Page 2 of 3

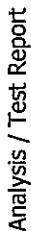
Approved by \_\_\_\_\_

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Assistant General Manager

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Project Location :

Page 2 of 3

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Assistant General Manager

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## Analysis / Test Report

Client : Rajana Industrial Park Rayong 2 Co., Ltd.  
S/N5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jun 04, 2022  
Report Number : 2360359-1

Page 2 of 2

Sample Number Parameter	2270910-5 Noise Level (Leq 5 min)		Jun 22, 2022		Time	Jun 22, 2022		Time	Jun 22, 2022		Time
	Location	Measurement Date	Measurement by	Sound Level meter		Leq dB(A)	L90 dB(A)		Leq dB(A)	L90 dB(A)	
	05:00 AM - 05:05 AM	53.8	46.9	07:40 AM - 07:45 AM	53.7	48.2	10:20 AM - 10:25 AM	56.9	44.7		
	05:05 AM - 05:10 AM	51.7	45.0	07:45 AM - 07:50 AM	52.6	47.9	10:25 AM - 10:30 AM	54.3	45.5		
	05:10 AM - 05:15 AM	50.0	44.3	07:50 AM - 07:55 AM	52.6	46.9	10:30 AM - 10:35 AM	56.2	48.4		
	05:15 AM - 05:20 AM	51.3	43.6	07:55 AM - 08:00 AM	51.3	45.5	10:35 AM - 10:40 AM	56.3	46.8		
	05:20 AM - 05:25 AM	49.5	42.9	08:00 AM - 08:05 AM	54.2	46.0	10:40 AM - 10:45 AM	59.8	46.7		
	05:25 AM - 05:30 AM	53.0	45.8	08:05 AM - 08:10 AM	53.5	48.0	10:45 AM - 10:50 AM	56.2	46.2		
	05:30 AM - 05:35 AM	52.5	45.8	08:10 AM - 08:15 AM	53.3	47.7	10:50 AM - 10:55 AM	58.9	45.0		
	05:35 AM - 05:40 AM	52.1	46.7	08:15 AM - 08:20 AM	60.3	46.4	10:55 AM - 11:00 AM	57.2	46.6		
	05:40 AM - 05:45 AM	57.1	47.0	08:20 AM - 08:25 AM	55.1	43.5	11:00 AM - 11:05 AM	54.5	47.0		
	05:45 AM - 05:50 AM	55.6	45.6	08:25 AM - 08:30 AM	54.6	48.9	11:05 AM - 11:10 AM	54.1	44.5		
	05:50 AM - 05:55 AM	53.6	48.7	08:30 AM - 08:35 AM	52.7	45.6	11:10 AM - 11:15 AM	52.4	46.4		
	05:55 AM - 06:00 AM	53.1	50.1	08:35 AM - 08:40 AM	51.3	46.1	11:15 AM - 11:20 AM	52.8	46.1		
	06:00 AM - 06:05 AM	54.5	49.7	08:40 AM - 08:45 AM	55.7	50.0	11:20 AM - 11:25 AM	57.7	46.2		
	06:05 AM - 06:10 AM	57.9	50.3	08:45 AM - 08:50 AM	53.2	46.4	11:25 AM - 11:30 AM	53.1	46.5		
	06:10 AM - 06:15 AM	54.2	50.1	08:50 AM - 08:55 AM	54.6	45.0	11:30 AM - 11:35 AM	54.4	43.4		
	06:15 AM - 06:20 AM	54.8	50.3	08:55 AM - 09:00 AM	55.9	43.5	11:35 AM - 11:40 AM	52.3	45.1		
	06:20 AM - 06:25 AM	57.5	51.6	09:00 AM - 09:05 AM	49.8	43.7	11:40 AM - 11:45 AM	56.7	55.2		
	06:25 AM - 06:30 AM	57.3	51.3	09:05 AM - 09:10 AM	56.7	45.5	11:45 AM - 11:50 AM	62.7	57.8		
	06:30 AM - 06:35 AM	56.9	51.9	09:10 AM - 09:15 AM	54.3	44.6	11:50 AM - 11:55 AM	61.6	61.2		
	06:35 AM - 06:40 AM	58.9	52.6	09:15 AM - 09:20 AM	52.3	45.8	11:55 AM - 12:00 PM	61.7	54.3		
	06:40 AM - 06:45 AM	52.8	49.2	09:20 AM - 09:25 AM	55.1	48.0	12:00 PM - 12:05 PM	56.5	50.2		
	06:45 AM - 06:50 AM	54.3	50.1	09:25 AM - 09:30 AM	53.4	46.9	12:05 PM - 12:10 PM	56.7	48.5		
	06:50 AM - 06:55 AM	53.3	49.9	09:30 AM - 09:35 AM	51.4	45.5	12:10 PM - 12:15 PM	53.6	47.4		
	06:55 AM - 07:00 AM	54.2	49.4	09:35 AM - 09:40 AM	49.2	43.2	12:15 PM - 12:20 PM	55.1	50.5		
	07:00 AM - 07:05 AM	55.0	49.4	09:40 AM - 09:45 AM	47.4	40.9	12:20 PM - 12:25 PM	56.3	53.4		
	07:05 AM - 07:10 AM	54.3	47.7	09:45 AM - 09:50 AM	53.2	44.6	12:25 PM - 12:30 PM	60.5	50.9		
	07:10 AM - 07:15 AM	53.4	46.2	09:50 AM - 09:55 AM	54.5	45.8	12:30 PM - 12:35 PM	66.2	63.7		
	07:15 AM - 07:20 AM	53.1	48.1	09:55 AM - 10:00 AM	52.6	46.8	12:35 PM - 12:40 PM	57.5	47.0		
	07:20 AM - 07:25 AM	52.6	46.1	10:00 AM - 10:05 AM	55.4	44.1	12:40 PM - 12:45 PM	55.5	50.3		
	07:25 AM - 07:30 AM	53.2	46.1	10:05 AM - 10:10 AM	52.9	43.7	12:45 PM - 12:50 PM	61.1	50.1		
	07:30 AM - 07:35 AM	56.1	48.3	10:10 AM - 10:15 AM	54.9	44.1	12:50 PM - 12:55 PM	55.4	47.1		
	07:35 AM - 07:40 AM	54.7	46.9	10:15 AM - 10:20 AM	60.0	47.1	12:55 PM - 01:00 PM	54.6	52.5		

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Saranyuth Jitnont  
Assistant General Manager

Approved by



## Analysis / Test Report

Client : Rajana Industrial Park Rayong 2 Co., Ltd.  
S/N5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jun 04, 2022  
Report Number : 2360360-1

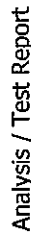
Page 1 of 3

2270910-6 Noise Level (Leq 5 min) ShuSanaulau (N1) (GPS 47P 734053, 1432206) Jun 22 - Jun 23, 2022 Measurement by Anurak Tongthajonakda Serial No. 00296518	Sample Number							
	Parameter							
	Location							
	Measurement Date							
	Measurement by							
	Sound Level meter							
	Jun 22, 2022	Time	Leq dB(A)	L90 dB(A)	Jun 22, 2022	Time	Leq dB(A)	L90 dB(A)
	01:00 PM - 01:05 PM		60.0	53.2	03:40 PM - 03:45 PM		54.5	51.5
	01:05 PM - 01:10 PM		58.0	53.1	03:45 PM - 03:50 PM		57.3	48.7
	01:10 PM - 01:15 PM		61.0	53.0	03:50 PM - 03:55 PM		54.0	48.9
	01:15 PM - 01:20 PM		56.1	51.8	03:55 PM - 04:00 PM		54.4	47.7
	01:20 PM - 01:25 PM		60.1	49.9	04:00 PM - 04:05 PM		56.7	49.1
	01:25 PM - 01:30 PM		55.2	50.1	04:05 PM - 04:10 PM		55.9	50.9
	01:30 PM - 01:35 PM		57.5	49.1	04:10 PM - 04:15 PM		55.6	51.6
	01:35 PM - 01:40 PM		59.8	47.6	04:15 PM - 04:20 PM		59.5	52.2
	01:40 PM - 01:45 PM		53.0	44.4	04:20 PM - 04:25 PM		55.7	50.8
	01:45 PM - 01:50 PM		57.1	46.4	04:25 PM - 04:30 PM		55.6	51.2
	01:50 PM - 01:55 PM		54.6	48.6	04:30 PM - 04:35 PM		55.1	50.8
	01:55 PM - 02:00 PM		57.6	48.5	04:35 PM - 04:40 PM		54.7	51.4
	02:00 PM - 02:05 PM		53.2	45.4	04:40 PM - 04:45 PM		54.9	51.0
	02:05 PM - 02:10 PM		54.5	48.8	04:45 PM - 04:50 PM		55.2	51.1
	02:10 PM - 02:15 PM		59.6	49.5	04:50 PM - 04:55 PM		58.2	51.7
	02:15 PM - 02:20 PM		53.9	47.7	04:55 PM - 05:00 PM		55.7	50.9
	02:20 PM - 02:25 PM		55.1	49.0	05:00 PM - 05:05 PM		55.4	51.3
	02:25 PM - 02:30 PM		55.2	49.4	05:05 PM - 05:10 PM		55.7	50.4
	02:30 PM - 02:35 PM		58.9	50.7	05:10 PM - 05:15 PM		55.3	49.8
	02:35 PM - 02:40 PM		54.5	48.8	05:15 PM - 05:20 PM		54.2	50.9
	02:40 PM - 02:45 PM		55.6	49.3	05:20 PM - 05:25 PM		53.9	48.9
	02:45 PM - 02:50 PM		55.4	48.4	05:25 PM - 05:30 PM		56.4	47.7
	02:50 PM - 02:55 PM		57.6	52.1	05:30 PM - 05:35 PM		57.0	48.9
	02:55 PM - 03:00 PM		63.8	52.1	05:35 PM - 05:40 PM		54.9	48.0
	03:00 PM - 03:05 PM		53.3	45.8	05:40 PM - 05:45 PM		53.9	48.8
03:05 PM - 03:10 PM		53.4	45.7	05:45 PM - 05:50 PM		53.3	50.0	
03:10 PM - 03:15 PM		55.3	47.5	05:50 PM - 05:55 PM		56.7	51.0	
03:15 PM - 03:20 PM		59.4	47.8	05:55 PM - 06:00 PM		52.6	47.8	
03:20 PM - 03:25 PM		58.1	48.7	06:00 PM - 06:05 PM		55.4	48.3	
03:25 PM - 03:30 PM		57.6	46.9	06:05 PM - 06:10 PM		53.7	48.0	
03:30 PM - 03:35 PM		57.9	51.0	06:10 PM - 06:15 PM		55.2	52.8	
03:35 PM - 03:40 PM		55.1	51.2	06:15 PM - 06:20 PM		57.2	53.4	

The above results are valid only for the measurement sample(s) as indicated in this report. No part of the report or certificate can be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) Ltd. is not responsible for the results of the measurement if the measurement is not conducted in full.

Saranyuth Jitnont  
Assistant General Manager

Approved by



Project Location :

**Page 4 of 8**

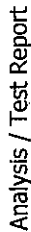
	Jun 22, 2022			Jun 22 - Jun 23, 2022			Jun 23, 2022		
	Time	Leq dB(A)	L90 dB(A)	Time	Leq dB(A)	L90 dB(A)	Time	Leq dB(A)	L90 dB(A)
09:00 PM - 09:05 PM	51.0	46.4	44.9	11:40 PM - 11:45 PM	47.2	44.9	02:20 AM - 02:25 AM	46.5	42.8
09:05 PM - 09:10 PM	50.9	45.8	44.9	11:45 PM - 11:50 PM	45.8	43.7	02:25 AM - 02:30 AM	45.4	42.8
09:10 PM - 09:15 PM	48.4	45.5	44.1	11:50 PM - 11:55 PM	46.7	44.1	02:30 AM - 02:35 AM	47.1	43.6
09:15 PM - 09:20 PM	47.9	45.8	43.3	11:55 PM - 12:00 AM	47.5	42.8	02:35 AM - 02:40 AM	45.6	43.1
09:20 PM - 09:25 PM	52.7	45.8	47.5	12:00 AM - 12:05 AM	47.5	42.8	02:40 AM - 02:45 AM	47.8	45.5
09:25 PM - 09:30 PM	50.6	46.2	44.8	12:05 AM - 12:10 AM	47.5	42.8	02:45 AM - 02:50 AM	49.4	45.1
09:30 PM - 09:35 PM	54.5	46.2	41.0	12:10 AM - 12:15 AM	45.1	41.0	02:50 AM - 02:55 AM	46.8	43.9
09:35 PM - 09:40 PM	48.1	46.0	42.9	12:15 AM - 12:20 AM	45.8	42.9	02:55 AM - 03:00 AM	45.6	43.4
09:40 PM - 09:45 PM	48.2	46.1	42.9	12:20 AM - 12:25 AM	44.4	42.9	03:00 AM - 03:05 AM	47.6	42.9
09:45 PM - 09:50 PM	53.2	46.4	42.9	12:25 AM - 12:30 AM	44.4	42.9	03:05 AM - 03:10 AM	46.9	43.4
09:50 PM - 09:55 PM	47.8	45.6	43.1	12:30 AM - 12:35 AM	43.4	43.1	03:10 AM - 03:15 AM	46.8	43.1
09:55 PM - 10:00 PM	47.5	45.6	43.7	12:35 AM - 12:40 AM	43.7	42.4	03:15 AM - 03:20 AM	46.5	43.1
10:00 PM - 10:05 PM	49.3	45.5	43.2	12:40 AM - 12:45 AM	45.2	43.2	03:20 AM - 03:25 AM	48.0	43.5
10:05 PM - 10:10 PM	48.3	45.3	43.0	12:45 AM - 12:50 AM	45.0	43.0	03:25 AM - 03:30 AM	45.6	43.4
10:10 PM - 10:15 PM	47.7	44.9	42.9	12:50 AM - 12:55 AM	46.3	42.9	03:30 AM - 03:35 AM	46.2	43.7
10:15 PM - 10:20 PM	47.8	44.4	41.9	12:55 AM - 01:00 AM	45.9	43.8	03:35 AM - 03:40 AM	49.0	43.6
10:20 PM - 10:25 PM	47.0	45.1	42.4	01:00 AM - 01:05 AM	44.6	42.4	03:40 AM - 03:45 AM	47.9	44.6
10:25 PM - 10:30 PM	47.0	43.7	41.7	01:05 AM - 01:10 AM	44.6	41.7	03:45 AM - 03:50 AM	46.1	44.6
10:30 PM - 10:35 PM	47.9	45.2	42.5	01:10 AM - 01:15 AM	46.9	42.5	03:50 AM - 03:55 AM	50.3	44.3
10:35 PM - 10:40 PM	48.0	45.0	43.7	01:15 AM - 01:20 AM	45.1	43.7	03:55 AM - 04:00 AM	45.5	42.9
10:40 PM - 10:45 PM	51.0	46.3	43.9	01:20 AM - 01:25 AM	45.1	43.9	04:00 AM - 04:05 AM	46.9	43.3
10:45 PM - 10:50 PM	49.2	45.7	42.5	01:25 AM - 01:30 AM	43.6	42.5	04:05 AM - 04:10 AM	49.7	44.3
10:50 PM - 10:55 PM	47.3	45.5	42.6	01:30 AM - 01:35 AM	47.3	42.6	04:10 AM - 04:15 AM	47.7	44.6
10:55 PM - 11:00 PM	48.3	45.1	42.5	01:35 AM - 01:40 AM	46.1	42.5	04:15 AM - 04:20 AM	48.3	44.2
11:00 PM - 11:05 PM	48.2	44.0	42.6	01:40 AM - 01:45 AM	48.1	42.6	04:20 AM - 04:25 AM	47.2	44.2
11:05 PM - 11:10 PM	48.2	43.7	43.4	01:45 AM - 01:50 AM	47.6	43.4	04:25 AM - 04:30 AM	49.1	44.4
11:10 PM - 11:15 PM	47.6	45.1	43.9	01:50 AM - 01:55 AM	46.3	43.9	04:30 AM - 04:35 AM	48.7	45.2
11:15 PM - 11:20 PM	48.1	46.1	43.1	01:55 AM - 02:00 AM	46.1	43.1	04:35 AM - 04:40 AM	47.8	44.5
11:20 PM - 11:25 PM	48.9	46.3	44.6	02:00 AM - 02:05 AM	47.5	44.6	04:40 AM - 04:45 AM	48.4	44.4
11:25 PM - 11:30 PM	48.2	45.9	42.6	02:05 AM - 02:10 AM	47.6	45.6	04:45 AM - 04:50 AM	54.5	51.4
11:30 PM - 11:35 PM	47.3	44.5	43.7	02:10 AM - 02:15 AM	46.3	43.7	04:50 AM - 04:55 AM	53.9	51.6
11:3									

Assistant General Manager

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**Project Location :**

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Jun 23, 2022		Jun 23, 2022	
Time	Time	Leq dB(A)	L90 dB(A)
05:00 AM - 05:05 AM	07:40 AM - 07:45 AM	53.4	45.6
05:05 AM - 05:10 AM	07:45 AM - 07:50 AM	50.3	43.5
05:10 AM - 05:15 AM	07:50 AM - 07:55 AM	54.0	47.4
05:15 AM - 05:20 AM	07:55 AM - 08:00 AM	55.2	45.1
05:20 AM - 05:25 AM	08:00 AM - 08:05 AM	51.5	45.2
05:25 AM - 05:30 AM	08:05 AM - 08:10 AM	53.3	44.6
05:30 AM - 05:35 AM	08:10 AM - 08:15 AM	53.6	45.5
05:35 AM - 05:40 AM	08:15 AM - 08:20 AM	54.1	46.7
05:40 AM - 05:45 AM	08:20 AM - 08:25 AM	51.6	47.1
05:45 AM - 05:50 AM	08:25 AM - 08:30 AM	56.0	47.5
05:50 AM - 05:55 AM	08:30 AM - 08:35 AM	53.8	49.0
05:55 AM - 06:00 AM	08:35 AM - 08:40 AM	53.4	48.7
06:00 AM - 06:05 AM	08:40 AM - 08:45 AM	55.8	51.7
06:05 AM - 06:10 AM	08:45 AM - 08:50 AM	54.6	49.9
06:10 AM - 06:15 AM	08:50 AM - 08:55 AM	59.8	52.4
06:15 AM - 06:20 AM	08:55 AM - 09:00 AM	56.8	52.5
06:20 AM - 06:25 AM	09:00 AM - 09:05 AM	55.9	51.9
06:25 AM - 06:30 AM	09:05 AM - 09:10 AM	58.3	52.8
06:30 AM - 06:35 AM	09:10 AM - 09:15 AM	59.8	52.8
06:35 AM - 06:40 AM	09:15 AM - 09:20 AM	57.2	51.7
06:40 AM - 06:45 AM	09:20 AM - 09:25 AM	54.3	51.2
06:45 AM - 06:50 AM	09:25 AM - 09:30 AM	55.4	50.4
06:50 AM - 06:55 AM	09:30 AM - 09:35 AM	53.8	48.7
06:55 AM - 07:00 AM	09:35 AM - 09:40 AM	55.1	49.8
07:00 AM - 07:05 AM	09:40 AM - 09:45 AM	54.6	49.2
07:05 AM - 07:10 AM	09:45 AM - 09:50 AM	56.8	49.8
07:10 AM - 07:15 AM	09:50 AM - 09:55 AM	52.4	46.8
07:15 AM - 07:20 AM	09:55 AM - 10:00 AM	55.9	47.3
07:20 AM - 07:25 AM	10:00 AM - 10:05 AM	53.0	45.8
07:25 AM - 07:30 AM	10:05 AM - 10:10 AM	55.7	47.3
07:30 AM - 07:35 AM	10:10 AM - 10:15 AM	58.1	50.2
07:35 AM - 07:40 AM	10:15 AM - 10:20 AM	56.9	49.4

Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360361-1

Page 1 of 3

Sample Number	2270910-7
Parameter	Noise Level (Leq 5 min)
Location	Thuanvannai (N1) (GPS 477 734053, 1432206)
Measurement Date	Jun 23 - Jun 24, 2022
Measurement By	Anurak Tongthaisakda
Sound Level meter	Serial No. 00296518

Jun 23, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 23, 2022	Leq dB(A)	L90 dB(A)
01:00 PM - 01:05 PM	55.6	46.4	03:40 PM - 03:45 PM	50.6	44.0	48.8
01:05 PM - 01:10 PM	63.2	46.4	03:45 PM - 03:50 PM	51.0	45.2	45.3
01:10 PM - 01:15 PM	54.0	46.6	03:50 PM - 03:55 PM	53.9	46.1	47.5
01:15 PM - 01:20 PM	53.6	43.6	03:55 PM - 04:00 PM	52.3	46.1	52.2
01:20 PM - 01:25 PM	53.3	44.8	04:00 PM - 04:05 PM	58.1	46.9	53.1
01:25 PM - 01:30 PM	54.5	43.9	04:05 PM - 04:10 PM	53.7	47.4	56.5
01:30 PM - 01:35 PM	55.9	49.1	04:10 PM - 04:15 PM	56.9	45.9	50.7
01:35 PM - 01:40 PM	59.2	46.5	04:15 PM - 04:20 PM	50.5	44.9	50.0
01:40 PM - 01:45 PM	59.5	50.5	04:20 PM - 04:25 PM	51.7	46.5	50.8
01:45 PM - 01:50 PM	57.0	45.8	04:25 PM - 04:30 PM	60.3	51.5	58.0
01:50 PM - 01:55 PM	51.5	42.1	04:30 PM - 04:35 PM	60.0	52.0	57.3
01:55 PM - 02:00 PM	51.9	44.9	04:35 PM - 04:40 PM	58.6	52.2	58.0
02:00 PM - 02:05 PM	54.4	46.2	04:40 PM - 04:45 PM	60.2	51.9	57.4
02:05 PM - 02:10 PM	52.1	43.2	04:45 PM - 04:50 PM	54.9	51.4	59.2
02:10 PM - 02:15 PM	51.9	42.7	04:50 PM - 04:55 PM	58.0	53.3	55.1
02:15 PM - 02:20 PM	51.0	44.3	04:55 PM - 05:00 PM	55.0	52.1	54.0
02:20 PM - 02:25 PM	57.2	45.3	05:00 PM - 05:05 PM	60.0	53.0	54.2
02:25 PM - 02:30 PM	54.6	44.4	05:05 PM - 05:10 PM	57.3	51.2	60.0
02:30 PM - 02:35 PM	51.6	43.2	05:10 PM - 05:15 PM	53.0	50.4	61.0
02:35 PM - 02:40 PM	50.1	40.4	05:15 PM - 05:20 PM	58.4	50.6	58.4
02:40 PM - 02:45 PM	50.0	42.1	05:20 PM - 05:25 PM	53.0	49.4	50.6
02:45 PM - 02:50 PM	53.1	42.8	05:25 PM - 05:30 PM	52.8	49.7	58.1
02:50 PM - 02:55 PM	52.0	44.4	05:30 PM - 05:35 PM	55.0	48.1	58.3
02:55 PM - 03:00 PM	53.4	45.2	05:35 PM - 05:40 PM	53.9	46.9	54.9
03:00 PM - 03:05 PM	56.1	46.7	05:40 PM - 05:45 PM	51.9	46.5	48.9
03:05 PM - 03:10 PM	49.3	41.6	05:45 PM - 05:50 PM	55.6	47.4	49.2
03:10 PM - 03:15 PM	50.5	42.7	05:50 PM - 05:55 PM	57.0	48.4	57.7
03:15 PM - 03:20 PM	51.9	43.3	05:55 PM - 06:00 PM	53.0	47.4	55.2
03:20 PM - 03:25 PM	50.1	43.7	06:00 PM - 06:05 PM	53.5	49.3	54.7
03:25 PM - 03:30 PM	50.6	44.3	06:05 PM - 06:10 PM	53.8	47.1	51.6
03:30 PM - 03:35 PM	50.2	43.7	06:10 PM - 06:15 PM	53.3	50.4	54.4
03:35 PM - 03:40 PM	51.0	44.3	06:15 PM - 06:20 PM	55.8	52.1	49.3

Approved by  
Sanyuth Jitranont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360361-1

Page 2 of 3

Sample Number	2270910-7
Parameter	Noise Level (Leq 5 min)
Location	Thuanvannai (N1) (GPS 477 734053, 1432206)
Measurement Date	Jun 23 - Jun 24, 2022
Measurement By	Anurak Tongthaisakda
Sound Level meter	Serial No. 00296518

Jun 23, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 23 - Jun 24, 2022	Leq dB(A)	L90 dB(A)
09:00 PM - 09:05 PM	49.6	47.6	11:40 PM - 11:45 PM	48.9	44.8	47.5
09:05 PM - 09:10 PM	50.2	47.4	11:45 PM - 11:50 PM	49.5	47.4	50.2
09:10 PM - 09:15 PM	49.4	47.1	11:50 PM - 11:55 PM	52.9	47.3	44.5
09:15 PM - 09:20 PM	51.6	47.2	11:55 PM - 12:00 AM	51.1	46.9	44.5
09:20 PM - 09:25 PM	51.2	46.9	12:00 AM - 12:05 AM	48.4	44.9	47.0
09:25 PM - 09:30 PM	50.0	47.4	12:05 AM - 12:10 AM	47.5	45.8	45.3
09:30 PM - 09:35 PM	50.2	48.0	12:10 AM - 12:15 AM	47.3	44.9	44.9
09:35 PM - 09:40 PM	49.9	48.6	12:15 AM - 12:20 AM	51.0	43.0	44.9
09:40 PM - 09:45 PM	51.6	48.6	12:20 AM - 12:25 AM	44.0	42.4	45.0
09:45 PM - 09:50 PM	54.8	48.4	12:25 AM - 12:30 AM	47.6	43.0	45.2
09:50 PM - 09:55 PM	50.3	47.1	12:30 AM - 12:35 AM	47.0	43.6	46.7
09:55 PM - 10:00 PM	51.3	47.9	12:35 AM - 12:40 AM	46.1	43.8	45.2
10:00 PM - 10:05 PM	50.6	49.0	12:40 AM - 12:45 AM	45.0	42.4	44.9
10:05 PM - 10:10 PM	51.1	46.8	12:45 AM - 12:50 AM	47.7	44.7	44.5
10:10 PM - 10:15 PM	51.4	46.7	12:50 AM - 12:55 AM	46.4	44.1	44.8
10:15 PM - 10:20 PM	53.8	52.7	12:55 AM - 01:00 AM	51.2	44.3	44.2
10:20 PM - 10:25 PM	51.6	47.2	01:00 AM - 01:05 AM	45.8	43.9	46.1
10:25 PM - 10:30 PM	49.8	47.1	01:05 AM - 01:10 AM	44.6	42.5	43.7
10:30 PM - 10:35 PM	49.3	47.7	01:10 AM - 01:15 AM	45.2	42.9	43.5
10:35 PM - 10:40 PM	49.7	47.7	01:15 AM - 01:20 AM	45.6	43.0	44.1
10:40 PM - 10:45 PM	49.9	47.5	01:20 AM - 01:25 AM	47.0	42.1	44.6
10:45 PM - 10:50 PM	48.5	46.9	01:25 AM - 01:30 AM	51.3	42.8	46.0
10:50 PM - 10:55 PM	48.5	46.2	01:30 AM - 01:35 AM	49.5	42.8	44.1
10:55 PM - 11:00 PM	48.5	47.1	01:35 AM - 01:40 AM	47.4	43.9	44.1
11:00 PM - 11:05 PM	48.9	47.2	01:40 AM - 01:45 AM	44.5	43.5	44.1
11:05 PM - 11:10 PM	48.3	47.0	01:45 AM - 01:50 AM	48.8	43.6	44.7
11:10 PM - 11:15 PM	50.3	47.8	01:50 AM - 01:55 AM	48.4	43.6	44.6
11:15 PM - 11:20 PM	53.0	47.5	01:55 AM - 02:00 AM	46.3	43.8	43.5
11:20 PM - 11:25 PM	50.4	46.8	02:00 AM - 02:05 AM	47.2	45.2	44.4
11:25 PM - 11:30 PM	49.4	47.8	02:05 AM - 02:10 AM	49.7	44.5	54.2
11:30 PM - 11:35 PM	47.8	44.6	02:10 AM - 02:15 AM	51.1	45.1	49.1
11:35 PM - 11:40 PM	51.0	44.6	02:15 AM - 02:20 AM	45.7	45.1	48.7

Approved by  
Sanyuth Jitranont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360361-1

Page 3 of 3

Sample Number	2270910-7
Parameter	Noise Level (Leq 5 min)
Location	Shunghaeng 15 (N2) (GPS 47P 734053, 1432206)
Measurement Date	Jun 23 - Jun 24, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 00296518

Jun 24, 2022	Leq	L90	Time	Leq	L90
05:00 AM - 05:05 AM	50.6	45.2	07:40 AM - 07:45 AM	54.6	47.0
05:05 AM - 05:10 AM	55.2	46.9	07:45 AM - 07:50 AM	50.6	45.0
05:10 AM - 05:15 AM	55.7	47.1	07:50 AM - 07:55 AM	55.8	45.9
05:15 AM - 05:20 AM	58.3	51.0	07:55 AM - 08:00 AM	57.2	46.1
05:20 AM - 05:25 AM	55.1	51.8	08:00 AM - 08:05 AM	57.6	46.5
05:25 AM - 05:30 AM	52.3	49.1	08:05 AM - 08:10 AM	57.0	47.5
05:30 AM - 05:35 AM	55.1	46.9	08:10 AM - 08:15 AM	57.1	47.6
05:35 AM - 05:40 AM	54.8	51.0	08:15 AM - 08:20 AM	57.4	48.5
05:40 AM - 05:45 AM	61.1	51.6	08:20 AM - 08:25 AM	58.9	49.7
05:45 AM - 05:50 AM	61.0	56.1	08:25 AM - 08:30 AM	56.3	47.8
05:50 AM - 05:55 AM	55.5	52.3	08:30 AM - 08:35 AM	56.6	49.2
05:55 AM - 06:00 AM	58.0	53.5	08:35 AM - 08:40 AM	56.0	48.2
06:00 AM - 06:05 AM	57.8	53.6	08:40 AM - 08:45 AM	56.0	50.3
06:05 AM - 06:10 AM	56.6	53.2	08:45 AM - 08:50 AM	56.3	49.0
06:10 AM - 06:15 AM	58.0	52.4	08:50 AM - 08:55 AM	56.4	48.0
06:15 AM - 06:20 AM	58.7	52.6	08:55 AM - 09:00 AM	57.6	48.1
06:20 AM - 06:25 AM	66.4	65.3	09:00 AM - 09:05 AM	60.3	48.1
06:25 AM - 06:30 AM	66.1	64.1	09:05 AM - 09:10 AM	57.3	48.4
06:30 AM - 06:35 AM	63.2	62.4	09:10 AM - 09:15 AM	55.5	47.3
06:35 AM - 06:40 AM	60.8	59.3	09:15 AM - 09:20 AM	55.3	47.4
06:40 AM - 06:45 AM	63.3	59.6	09:20 AM - 09:25 AM	55.8	47.8
06:45 AM - 06:50 AM	58.0	54.3	09:25 AM - 09:30 AM	55.5	49.2
06:50 AM - 06:55 AM	58.8	54.9	09:30 AM - 09:35 AM	53.1	47.4
06:55 AM - 07:00 AM	64.2	53.9	09:35 AM - 09:40 AM	55.0	47.3
07:00 AM - 07:05 AM	55.4	52.2	09:40 AM - 09:45 AM	57.5	48.0
07:05 AM - 07:10 AM	57.7	53.2	09:45 AM - 09:50 AM	54.5	46.7
07:10 AM - 07:15 AM	57.4	53.2	09:50 AM - 09:55 AM	57.7	48.1
07:15 AM - 07:20 AM	57.6	52.0	09:55 AM - 10:00 AM	60.3	48.1
07:20 AM - 07:25 AM	56.4	53.0	10:00 AM - 10:05 AM	58.0	53.8
07:25 AM - 07:30 AM	58.6	52.5	10:05 AM - 10:10 AM	58.1	54.0
07:30 AM - 07:35 AM	57.9	53.8	10:10 AM - 10:15 AM	57.2	48.4
07:35 AM - 07:40 AM	59.0	50.8	10:15 AM - 10:20 AM	66.6	65.5

Approved by  
Samyuth Jitramont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360362-1

Page 1 of 3

Sample Number	2270910-8
Parameter	Noise Level (Leq 5 min)
Location	Shunghaeng 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 17 - Jun 18, 2022
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 597168

Jun 17, 2022	Leq	L90	Time	Leq	L90
12:00 PM - 12:05 PM	68.1	51.1	02:40 PM - 02:45 PM	59.0	43.9
12:05 PM - 12:10 PM	64.7	54.5	02:45 PM - 02:50 PM	66.6	47.5
12:10 PM - 12:15 PM	65.9	53.2	02:50 PM - 02:55 PM	66.6	48.5
12:15 PM - 12:20 PM	66.9	48.5	02:55 PM - 03:00 PM	69.5	46.2
12:20 PM - 12:25 PM	68.2	48.9	03:00 PM - 03:05 PM	67.4	45.6
12:25 PM - 12:30 PM	69.6	45.0	03:05 PM - 03:10 PM	67.7	46.3
12:30 PM - 12:35 PM	63.1	45.0	03:10 PM - 03:15 PM	60.7	45.3
12:35 PM - 12:40 PM	65.1	43.2	03:15 PM - 03:20 PM	63.0	46.5
12:40 PM - 12:45 PM	62.4	47.4	03:20 PM - 03:25 PM	63.2	46.2
12:45 PM - 12:50 PM	60.3	43.9	03:25 PM - 03:30 PM	68.5	46.5
12:50 PM - 12:55 PM	62.3	44.0	03:30 PM - 03:35 PM	64.9	48.4
12:55 PM - 01:00 PM	61.6	44.4	03:35 PM - 03:40 PM	66.7	48.6
01:00 PM - 01:05 PM	63.2	46.9	03:40 PM - 03:45 PM	65.7	48.5
01:05 PM - 01:10 PM	61.0	44.6	03:45 PM - 03:50 PM	63.6	45.0
01:10 PM - 01:15 PM	59.1	44.0	03:50 PM - 03:55 PM	63.4	44.2
01:15 PM - 01:20 PM	58.8	43.2	03:55 PM - 04:00 PM	67.6	46.4
01:20 PM - 01:25 PM	60.6	45.1	04:00 PM - 04:05 PM	65.4	50.0
01:25 PM - 01:30 PM	62.8	47.7	04:05 PM - 04:10 PM	63.9	48.2
01:30 PM - 01:35 PM	60.1	44.8	04:10 PM - 04:15 PM	64.2	46.1
01:35 PM - 01:40 PM	59.1	44.5	04:15 PM - 04:20 PM	63.9	48.2
01:40 PM - 01:45 PM	62.4	44.8	04:20 PM - 04:25 PM	64.2	48.5
01:45 PM - 01:50 PM	69.0	45.6	04:25 PM - 04:30 PM	68.0	52.3
01:50 PM - 01:55 PM	58.2	44.0	04:30 PM - 04:35 PM	68.4	49.1
01:55 PM - 02:00 PM	58.4	43.6	04:35 PM - 04:40 PM	68.3	48.9
02:00 PM - 02:05 PM	64.7	46.5	04:40 PM - 04:45 PM	68.1	51.8
02:05 PM - 02:10 PM	63.5	45.4	04:45 PM - 04:50 PM	63.7	47.1
02:10 PM - 02:15 PM	64.0	50.8	04:50 PM - 04:55 PM	64.2	49.3
02:15 PM - 02:20 PM	61.9	45.3	04:55 PM - 05:00 PM	66.7	48.6
02:20 PM - 02:25 PM	59.4	45.2	05:00 PM - 05:05 PM	66.1	48.8
02:25 PM - 02:30 PM	65.3	44.6	05:05 PM - 05:10 PM	62.7	49.4
02:30 PM - 02:35 PM	62.7	44.3	05:10 PM - 05:15 PM	63.3	48.4
02:35 PM - 02:40 PM	60.6	43.7	05:15 PM - 05:20 PM	66.9	47.6

Approved by  
Samyuth Jitramont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360362-1

Page 2 of 3

Sample Number : 2270910-8  
Parameter : Noise Level (Leq 5 min)  
Location : หมู่บ้านวัง 2 ต.สวนหลวง 15 (N2) (GPS: 47P 733675, 1434008)  
Measurement Date : Jun 17 - Jun 18, 2022  
Measurement by : Anurak Tongthongsakda  
Sound Level meter : Serial No. 597168

Jun 17, 2022	Jun 18, 2022	Leq	L90	Time	Leq	L90
Time	Time	dB(A)	dB(A)		dB(A)	dB(A)
08:00 PM - 08:05 PM	10:40 PM - 10:45 PM	52.1	45.9	01:20 AM - 01:25 AM	49.0	45.4
08:05 PM - 08:10 PM	10:45 PM - 10:50 PM	50.8	46.3	01:25 AM - 01:30 AM	56.5	46.8
08:10 PM - 08:15 PM	10:50 PM - 10:55 PM	50.2	45.1	01:30 AM - 01:35 AM	60.7	44.4
08:15 PM - 08:20 PM	10:55 PM - 11:00 PM	55.9	45.6	01:35 AM - 01:40 AM	45.1	43.6
08:20 PM - 08:25 PM	11:00 PM - 11:05 PM	50.0	45.3	01:40 AM - 01:45 AM	48.0	44.0
08:25 PM - 08:30 PM	11:05 PM - 11:10 PM	55.0	45.4	01:45 AM - 01:50 AM	58.1	44.8
08:30 PM - 08:35 PM	11:10 PM - 11:15 PM	59.3	44.7	01:50 AM - 01:55 AM	49.6	44.8
08:35 PM - 08:40 PM	11:15 PM - 11:20 PM	62.6	46.0	01:55 AM - 02:00 AM	48.4	44.9
08:40 PM - 08:45 PM	11:20 PM - 11:25 PM	60.2	45.9	02:00 AM - 02:05 AM	55.8	45.7
08:45 PM - 08:50 PM	11:25 PM - 11:30 PM	53.0	45.0	02:05 AM - 02:10 AM	48.0	45.5
08:50 PM - 08:55 PM	11:30 PM - 11:35 PM	46.1	45.0	02:10 AM - 02:15 AM	54.6	45.5
08:55 PM - 09:00 PM	11:35 PM - 11:40 PM	49.8	46.2	02:15 AM - 02:20 AM	59.4	46.3
09:00 PM - 09:05 PM	11:40 PM - 11:45 PM	55.6	46.4	02:20 AM - 02:25 AM	55.5	45.3
09:05 PM - 09:10 PM	11:45 PM - 11:50 PM	48.2	45.4	02:25 AM - 02:30 AM	60.7	45.5
09:10 PM - 09:15 PM	11:50 PM - 11:55 PM	51.6	44.6	02:30 AM - 02:35 AM	52.2	45.6
09:15 PM - 09:20 PM	11:55 PM - 12:00 AM	46.0	44.6	02:35 AM - 02:40 AM	57.8	45.9
09:20 PM - 09:25 PM	12:00 AM - 12:05 AM	50.1	45.2	02:40 AM - 02:45 AM	51.5	45.8
09:25 PM - 09:30 PM	12:05 AM - 12:10 AM	49.6	43.9	02:45 AM - 02:50 AM	56.9	45.3
09:30 PM - 09:35 PM	12:10 AM - 12:15 AM	45.0	43.7	02:50 AM - 02:55 AM	46.7	44.8
09:35 PM - 09:40 PM	12:15 AM - 12:20 AM	51.9	43.8	02:55 AM - 03:00 AM	52.9	44.3
09:40 PM - 09:45 PM	12:20 AM - 12:25 AM	51.9	44.0	03:00 AM - 03:05 AM	54.1	44.4
09:45 PM - 09:50 PM	12:25 AM - 12:30 AM	45.8	43.7	03:05 AM - 03:10 AM	50.0	44.6
09:50 PM - 09:55 PM	12:30 AM - 12:35 AM	55.1	43.9	03:10 AM - 03:15 AM	50.1	45.8
09:55 PM - 10:00 PM	12:35 AM - 12:40 AM	48.2	43.8	03:15 AM - 03:20 AM	48.1	46.0
10:00 PM - 10:05 PM	12:40 AM - 12:45 AM	52.1	43.5	03:20 AM - 03:25 AM	49.6	45.9
10:05 PM - 10:10 PM	12:45 AM - 12:50 AM	54.5	43.8	03:25 AM - 03:30 AM	48.3	45.5
10:10 PM - 10:15 PM	12:50 AM - 12:55 AM	58.8	49.0	03:30 AM - 03:35 AM	55.5	45.5
10:15 PM - 10:20 PM	12:55 AM - 01:00 AM	55.2	48.6	03:35 AM - 03:40 AM	60.6	46.0
10:20 PM - 10:25 PM	01:00 AM - 01:05 AM	63.7	49.1	03:40 AM - 03:45 AM	55.3	45.0
10:25 PM - 10:30 PM	01:05 AM - 01:10 AM	50.1	48.8	03:45 AM - 03:50 AM	53.0	46.1
10:30 PM - 10:35 PM	01:10 AM - 01:15 AM	54.7	48.1	03:50 AM - 03:55 AM	56.1	46.2
10:35 PM - 10:40 PM	01:15 AM - 01:20 AM	54.2	48.7	03:55 AM - 04:00 AM	57.1	46.5

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Approved by

Saranyuth Jittrantont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360362-1

Page 3 of 3

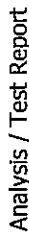
Sample Number : 2270910-8  
Parameter : Noise Level (Leq 5 min)  
Location : หมู่บ้านวัง 2 ต.สวนหลวง 15 (N2) (GPS: 47P 733675, 1434008)  
Measurement Date : Jun 17 - Jun 18, 2022  
Measurement by : Anurak Tongthongsakda  
Sound Level meter : Serial No. 597168

Jun 18, 2022	Jun 18, 2022	Leq	L90	Time	Leq	L90
Time	Time	dB(A)	dB(A)		dB(A)	dB(A)
04:00 AM - 04:05 AM	06:40 AM - 06:45 AM	55.1	47.8	06:40 AM - 06:45 AM	67.0	56.8
04:05 AM - 04:10 AM	06:45 AM - 06:50 AM	57.2	48.8	06:45 AM - 06:50 AM	64.9	56.5
04:10 AM - 04:15 AM	06:50 AM - 06:55 AM	55.8	50.1	06:50 AM - 06:55 AM	65.2	54.4
04:15 AM - 04:20 AM	06:55 AM - 07:00 AM	57.6	50.2	06:55 AM - 07:00 AM	66.1	54.6
04:20 AM - 04:25 AM	07:00 AM - 07:05 AM	60.4	53.9	07:00 AM - 07:05 AM	64.5	53.2
04:25 AM - 04:30 AM	07:05 AM - 07:10 AM	58.5	53.0	07:05 AM - 07:10 AM	64.1	51.3
04:30 AM - 04:35 AM	07:10 AM - 07:15 AM	57.8	51.5	07:10 AM - 07:15 AM	65.5	51.4
04:35 AM - 04:40 AM	07:15 AM - 07:20 AM	59.2	51.8	07:15 AM - 07:20 AM	64.7	50.7
04:40 AM - 04:45 AM	07:20 AM - 07:25 AM	62.4	52.4	07:20 AM - 07:25 AM	61.1	49.5
04:45 AM - 04:50 AM	07:25 AM - 07:30 AM	68.1	51.7	07:25 AM - 07:30 AM	63.5	49.9
04:50 AM - 04:55 AM	07:30 AM - 07:35 AM	61.2	49.6	07:30 AM - 07:35 AM	67.6	49.9
04:55 AM - 05:00 AM	07:35 AM - 07:40 AM	61.6	54.2	07:35 AM - 07:40 AM	67.7	47.1
05:00 AM - 05:05 AM	07:40 AM - 07:45 AM	61.9	54.4	07:40 AM - 07:45 AM	68.0	45.1
05:05 AM - 05:10 AM	07:45 AM - 07:50 AM	64.0	54.3	07:45 AM - 07:50 AM	64.7	41.4
05:10 AM - 05:15 AM	07:50 AM - 07:55 AM	63.7	54.7	07:50 AM - 07:55 AM	65.3	42.6
05:15 AM - 05:20 AM	07:55 AM - 08:00 AM	64.9	55.1	07:55 AM - 08:00 AM	65.1	40.6
05:20 AM - 05:25 AM	08:00 AM - 08:05 AM	64.0	54.9	08:00 AM - 08:05 AM	59.5	39.8
05:25 AM - 05:30 AM	08:05 AM - 08:10 AM	64.7	56.1	08:05 AM - 08:10 AM	61.2	41.4
05:30 AM - 05:35 AM	08:10 AM - 08:15 AM	65.4	59.6	08:10 AM - 08:15 AM	61.5	42.1
05:35 AM - 05:40 AM	08:15 AM - 08:20 AM	67.2	57.0	08:15 AM - 08:20 AM	62.0	40.3
05:40 AM - 05:45 AM	08:20 AM - 08:25 AM	69.2	56.2	08:20 AM - 08:25 AM	63.3	39.5
05:45 AM - 05:50 AM	08:25 AM - 08:30 AM	64.2	58.4	08:25 AM - 08:30 AM	58.4	39.5
05:50 AM - 05:55 AM	08:30 AM - 08:35 AM	67.2	56.0	08:30 AM - 08:35 AM	65.0	40.6
05:55 AM - 06:00 AM	08:35 AM - 08:40 AM	67.3	57.8	08:35 AM - 08:40 AM	63.2	47.4
06:00 AM - 06:05 AM	08:40 AM - 08:45 AM	67.6	58.1	08:40 AM - 08:45 AM	65.1	56.7
06:05 AM - 06:10 AM	08:45 AM - 08:50 AM	67.2	58.6	08:45 AM - 08:50 AM	66.5	49.8
06:10 AM - 06:15 AM	08:50 AM - 08:55 AM	67.5	58.9	08:50 AM - 08:55 AM	62.9	42.5
06:15 AM - 06:20 AM	08:55 AM - 09:00 AM	68.1	58.3	08:55 AM - 09:00 AM	58.9	39.3
06:20 AM - 06:25 AM	09:00 AM - 09:05 AM	68.1	58.1	09:00 AM - 09:05 AM	61.4	42.5
06:25 AM - 06:30 AM	09:05 AM - 09:10 AM	68.2	58.5	09:05 AM - 09:10 AM	58.3	41.4
06:30 AM - 06:35 AM	09:10 AM - 09:15 AM	68.4	55.7	09:10 AM - 09:15 AM	64.6	40.9
06:35 AM - 06:40 AM	09:15 AM - 09:20 AM	64.6	55.3	09:15 AM - 09:20 AM	69.1	39.3

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Approved by

Saranyuth Jittrantont  
Assistant General Manager



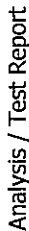
**Project Location :**

**Ejemplo 1**

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ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

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**Project Location :**

Page 2 of 3

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**Sarayuth Jittranont**  
**Assistant General Manager**

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

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**RIGHT SOLUTIONS RIGHT PARTNER**



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluak Daeng, Rayong Thailand 21140  
P/O : R/N(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360364-1

Page 1 of 2

Sample Number : 2270910-10  
Parameter : Noise Level (Leq 5 min)  
Location : ถนนวิภาวดี 2 ข้ามถนน 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 19 - Jun 20, 2022  
Measurement by : Anurak Tongthaisakda  
Sound Level meter : Serial No. 597168

Jun 19, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 19, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 19, 2022	Leq dB(A)	L90 dB(A)	Time
06:00 AM - 06:05 AM	52.2	44.8	06:00 AM - 06:05 AM	61.7	45.1	44.2	06:00 AM - 06:05 AM	60.9	45.5	45.5	06:00 AM - 06:05 AM
06:05 AM - 06:10 AM	53.8	44.7	06:05 AM - 06:10 AM	62.1	45.6	43.2	06:05 AM - 06:10 AM	61.4	44.6	39.9	06:05 AM - 06:10 AM
06:10 AM - 06:15 AM	54.5	44.8	06:10 AM - 06:15 AM	61.6	44.1	41.4	06:10 AM - 06:15 AM	62.7	43.8	39.9	06:10 AM - 06:15 AM
06:15 AM - 06:20 AM	57.0	46.6	06:15 AM - 06:20 AM	61.6	42.9	42.2	06:15 AM - 06:20 AM	65.5	43.1	42.8	06:15 AM - 06:20 AM
06:20 AM - 06:25 AM	62.7	50.4	06:20 AM - 06:25 AM	67.4	46.8	42.4	06:20 AM - 06:25 AM	62.9	45.4	45.7	06:20 AM - 06:25 AM
06:25 AM - 06:30 AM	58.3	50.7	06:25 AM - 06:30 AM	69.2	43.0	44.3	06:25 AM - 06:30 AM	59.5	43.9	42.6	06:25 AM - 06:30 AM
06:30 AM - 06:35 AM	55.0	51.4	06:30 AM - 06:35 AM	62.0	42.2	42.8	06:30 AM - 06:35 AM	61.5	45.2	44.2	06:30 AM - 06:35 AM
06:35 AM - 06:40 AM	54.7	51.2	06:35 AM - 06:40 AM	62.5	44.6	46.7	06:35 AM - 06:40 AM	62.9	44.8	44.1	06:35 AM - 06:40 AM
06:40 AM - 06:45 AM	62.1	51.2	06:40 AM - 06:45 AM	62.2	43.4	47.6	06:40 AM - 06:45 AM	61.8	44.5	46.4	06:40 AM - 06:45 AM
06:45 AM - 06:50 AM	58.7	51.1	06:45 AM - 06:50 AM	65.2	41.9	50.6	06:45 AM - 06:50 AM	64.0	45.3	51.9	06:45 AM - 06:50 AM
06:50 AM - 06:55 AM	57.0	51.1	06:50 AM - 06:55 AM	62.9	41.0	47.1	06:50 AM - 06:55 AM	60.6	45.2	50.7	06:50 AM - 06:55 AM
06:55 AM - 07:00 AM	62.9	51.8	06:55 AM - 07:00 AM	65.7	46.0	46.0	06:55 AM - 07:00 AM	61.0	43.9	50.7	06:55 AM - 07:00 AM
07:00 AM - 07:05 AM	61.2	51.5	07:00 AM - 07:05 AM	60.9	43.8	42.9	07:00 AM - 07:05 AM	55.7	43.7	53.2	07:00 AM - 07:05 AM
07:05 AM - 07:10 AM	61.7	51.6	07:05 AM - 07:10 AM	65.3	42.9	44.9	07:05 AM - 07:10 AM	69.3	45.5	54.3	07:05 AM - 07:10 AM
07:10 AM - 07:15 AM	66.5	51.6	07:10 AM - 07:15 AM	64.5	43.9	59.0	07:10 AM - 07:15 AM	59.4	43.3	50.9	07:10 AM - 07:15 AM
07:15 AM - 07:20 AM	60.7	51.5	07:15 AM - 07:20 AM	67.0	45.7	48.3	07:15 AM - 07:20 AM	67.1	44.1	54.1	07:15 AM - 07:20 AM
07:20 AM - 07:25 AM	58.9	51.2	07:20 AM - 07:25 AM	63.2	40.3	60.4	07:20 AM - 07:25 AM	60.7	44.4	54.5	07:20 AM - 07:25 AM
07:25 AM - 07:30 AM	63.3	51.4	07:25 AM - 07:30 AM	63.1	43.1	59.5	07:25 AM - 07:30 AM	59.1	43.2	54.5	07:25 AM - 07:30 AM
07:30 AM - 07:35 AM	65.3	52.1	07:30 AM - 07:35 AM	60.2	40.7	65.1	07:30 AM - 07:35 AM	61.8	47.4	52.3	07:30 AM - 07:35 AM
07:35 AM - 07:40 AM	66.4	51.9	07:35 AM - 07:40 AM	59.6	39.4	59.6	07:35 AM - 07:40 AM	60.2	44.4	51.7	07:35 AM - 07:40 AM
07:40 AM - 07:45 AM	64.7	51.6	07:40 AM - 07:45 AM	61.9	43.9	47.0	07:40 AM - 07:45 AM	61.0	42.9	55.8	07:40 AM - 07:45 AM
07:45 AM - 07:50 AM	65.3	51.4	07:45 AM - 07:50 AM	66.1	44.5	44.6	07:45 AM - 07:50 AM	62.6	41.6	52.3	07:45 AM - 07:50 AM
07:50 AM - 07:55 AM	69.1	51.8	07:50 AM - 07:55 AM	63.0	46.2	44.8	07:50 AM - 07:55 AM	63.0	40.7	50.9	07:50 AM - 07:55 AM
07:55 AM - 08:00 AM	65.1	51.2	07:55 AM - 08:00 AM	65.4	46.5	46.5	07:55 AM - 08:00 AM	59.9	41.8	50.5	07:55 AM - 08:00 AM
08:00 AM - 08:05 AM	64.3	50.7	08:00 AM - 08:05 AM	60.7	45.8	44.8	08:00 AM - 08:05 AM	58.5	41.5	51.0	08:00 AM - 08:05 AM
08:05 AM - 08:10 AM	63.6	49.6	08:05 AM - 08:10 AM	64.9	45.9	45.1	08:05 AM - 08:10 AM	58.5	40.6	51.0	08:05 AM - 08:10 AM
08:10 AM - 08:15 AM	64.4	49.7	08:10 AM - 08:15 AM	62.1	45.7	43.2	08:10 AM - 08:15 AM	63.5	44.2	49.8	08:10 AM - 08:15 AM
08:15 AM - 08:20 AM	62.2	49.7	08:15 AM - 08:20 AM	58.7	41.1	43.9	08:15 AM - 08:20 AM	67.7	45.0	49.1	08:15 AM - 08:20 AM
08:20 AM - 08:25 AM	63.8	50.8	08:20 AM - 08:25 AM	60.1	41.5	45.6	08:20 AM - 08:25 AM	57.1	40.6	51.4	08:20 AM - 08:25 AM
08:25 AM - 08:30 AM	65.5	50.9	08:25 AM - 08:30 AM	61.4	43.2	45.6	08:25 AM - 08:30 AM	62.3	40.6	51.3	08:25 AM - 08:30 AM
08:30 AM - 08:35 AM	65.6	47.5	08:30 AM - 08:35 AM	61.0	43.5	45.1	08:30 AM - 08:35 AM	60.0	41.0	45.7	08:30 AM - 08:35 AM
08:35 AM - 08:40 AM	60.7	44.8	08:35 AM - 08:40 AM	61.8	42.4	47.6	08:35 AM - 08:40 AM	59.4	40.6	46.8	08:35 AM - 08:40 AM

Approved by

Saranyit Jitramont  
Assistant General Manager

The above results are valid only for the specified measurement point(s) and are not intended to be used for any other purpose. The results are for information only and are not intended to be used for any other purpose. The results are for information only and are not intended to be used for any other purpose.

Approved by

Saranyit Jitramont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360364-1

Page 2 of 3

Sample Number	2270910-10	Leq	L90	Time	Jun 19 - Jun 20, 2022	Leq	L90
Parameter	Noise Level (Leq 5 min)	dB(A)	dB(A)				
Location	บริเวณใกล้ วิ. 2 หอประชุม 15 (N2) (GPS 47P 733675, 1434009)						
Measurement Date	Jun 19 - Jun 20, 2022						
Measurement by	Anurak Tongphakonsakda						
Sound Level meter	Serial No. 597168						
Jun 19, 2022	Time	Leq	L90	Time	Jun 19 - Jun 20, 2022	Leq	L90
08:00 PM - 08:05 PM	08:00 PM - 08:05 PM	62.8	55.8	10:40 PM - 10:45 PM	53.7	47.4	45.8
08:05 PM - 08:10 PM	08:05 PM - 08:10 PM	62.7	54.1	10:45 PM - 10:50 PM	51.4	45.7	47.1
08:10 PM - 08:15 PM	08:10 PM - 08:15 PM	64.3	56.4	10:50 PM - 10:55 PM	55.8	45.6	46.8
08:15 PM - 08:20 PM	08:15 PM - 08:20 PM	64.9	57.5	10:55 PM - 11:00 PM	52.2	46.5	45.4
08:20 PM - 08:25 PM	08:20 PM - 08:25 PM	62.9	54.5	11:00 PM - 11:05 PM	50.3	47.9	47.6
08:25 PM - 08:30 PM	08:25 PM - 08:30 PM	64.7	54.4	11:05 PM - 11:10 PM	56.2	50.0	47.1
08:30 PM - 08:35 PM	08:30 PM - 08:35 PM	65.7	51.1	11:10 PM - 11:15 PM	55.6	49.3	45.9
08:35 PM - 08:40 PM	08:35 PM - 08:40 PM	60.4	51.1	11:15 PM - 11:20 PM	49.8	48.6	45.0
08:40 PM - 08:45 PM	08:40 PM - 08:45 PM	61.9	52.9	11:20 PM - 11:25 PM	52.4	48.4	44.6
08:45 PM - 08:50 PM	08:45 PM - 08:50 PM	61.0	52.9	11:25 PM - 11:30 PM	50.6	48.2	50.1
08:50 PM - 08:55 PM	08:50 PM - 08:55 PM	62.2	54.4	11:30 PM - 11:35 PM	51.5	49.4	45.0
08:55 PM - 09:00 PM	08:55 PM - 09:00 PM	58.0	53.5	11:35 PM - 11:40 PM	53.7	47.1	43.9
09:00 PM - 09:05 PM	09:00 PM - 09:05 PM	63.9	55.0	11:40 PM - 11:45 PM	50.7	46.9	45.7
09:05 PM - 09:10 PM	09:05 PM - 09:10 PM	54.2	50.6	11:45 PM - 11:50 PM	58.8	47.3	45.1
09:10 PM - 09:15 PM	09:10 PM - 09:15 PM	57.7	51.2	11:50 PM - 11:55 PM	48.8	47.4	43.7
09:15 PM - 09:20 PM	09:15 PM - 12:00 AM	54.6	50.8	11:55 PM - 12:00 AM	55.6	48.8	44.1
09:20 PM - 09:25 PM	12:00 AM - 12:05 AM	54.9	50.4	12:00 AM - 12:05 AM	55.5	49.0	42.8
09:25 PM - 09:30 PM	12:05 AM - 12:10 AM	61.4	50.4	12:05 AM - 12:10 AM	52.1	49.3	43.0
09:30 PM - 09:35 PM	12:10 AM - 12:15 AM	55.7	50.6	12:10 AM - 12:15 AM	53.8	49.2	42.9
09:35 PM - 09:40 PM	12:15 AM - 12:20 AM	54.2	49.5	12:15 AM - 12:20 AM	48.3	46.1	42.9
09:40 PM - 09:45 PM	12:20 AM - 12:25 AM	57.0	50.3	12:20 AM - 12:25 AM	53.4	47.4	42.9
09:45 PM - 09:50 PM	12:25 AM - 12:30 AM	55.6	47.8	12:25 AM - 12:30 AM	49.9	48.1	49.0
09:50 PM - 09:55 PM	12:30 AM - 12:35 AM	58.0	47.3	12:30 AM - 12:35 AM	50.8	46.0	42.3
09:55 PM - 10:00 PM	12:35 AM - 12:40 AM	56.6	49.4	12:35 AM - 12:40 AM	56.9	45.6	42.7
10:00 PM - 10:05 PM	12:40 AM - 12:45 AM	55.9	49.1	12:40 AM - 12:45 AM	51.4	44.0	42.7
10:05 PM - 10:10 PM	12:45 AM - 12:50 AM	53.5	49.6	12:45 AM - 12:50 AM	47.2	46.0	43.4
10:10 PM - 10:15 PM	12:50 AM - 12:55 AM	51.9	49.9	12:50 AM - 12:55 AM	50.5	46.4	43.3
10:15 PM - 10:20 PM	12:55 AM - 01:00 AM	49.9	48.4	12:55 AM - 01:00 AM	48.4	46.7	43.2
10:20 PM - 10:25 PM	01:00 AM - 01:05 AM	49.6	48.7	01:00 AM - 01:05 AM	49.0	47.0	43.2
10:25 PM - 10:30 PM	01:05 AM - 01:10 AM	62.2	49.0	01:05 AM - 01:10 AM	50.0	46.5	43.0
10:30 PM - 10:35 PM	01:10 AM - 01:15 AM	54.6	49.2	01:10 AM - 01:15 AM	47.1	46.0	43.4
10:35 PM - 10:40 PM	01:15 AM - 01:20 AM	54.1	47.0	01:15 AM - 01:20 AM	55.2	44.4	43.6

Approved by

Saranyut Jitranont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360364-1

Page 3 of 3

Sample Number	2270910-10	Leq	L90	Time	Jun 20, 2022	Leq	L90
Parameter	Noise Level (Leq 5 min)	dB(A)	dB(A)				
Location	บริเวณใกล้ วิ. 2 หอประชุม 15 (N2) (GPS 47P 733675, 1434009)						
Measurement Date	Jun 19 - Jun 20, 2022						
Measurement by	Anurak Tongphakonsakda						
Sound Level meter	Serial No. 597168						
Jun 20, 2022	Time	Leq	L90	Time	Jun 20, 2022	Leq	L90
04:00 AM - 04:05 AM	04:00 AM - 04:05 AM	54.0	44.0	06:40 AM - 06:45 AM	67.6	47.7	40.2
04:05 AM - 04:10 AM	04:05 AM - 04:10 AM	56.9	45.3	06:45 AM - 06:50 AM	62.6	42.5	54.8
04:10 AM - 04:15 AM	04:10 AM - 04:15 AM	55.9	44.5	06:50 AM - 06:55 AM	62.0	43.5	43.2
04:15 AM - 04:20 AM	04:15 AM - 04:20 AM	63.4	45.5	06:55 AM - 07:00 AM	63.7	50.1	51.5
04:20 AM - 04:25 AM	04:20 AM - 04:25 AM	55.1	48.9	07:00 AM - 07:05 AM	61.5	40.8	43.7
04:25 AM - 04:30 AM	04:25 AM - 04:30 AM	60.6	47.3	07:05 AM - 07:10 AM	66.5	44.2	43.6
04:30 AM - 04:35 AM	04:30 AM - 04:35 AM	61.3	49.0	07:10 AM - 07:15 AM	65.9	45.8	42.6
04:35 AM - 04:40 AM	04:35 AM - 04:40 AM	57.0	49.6	07:15 AM - 07:20 AM	62.5	42.7	43.5
04:40 AM - 04:45 AM	04:40 AM - 04:45 AM	64.2	50.2	07:20 AM - 07:25 AM	61.3	41.8	45.2
04:45 AM - 04:50 AM	04:45 AM - 04:50 AM	61.1	49.8	07:25 AM - 07:30 AM	64.2	41.2	43.8
04:50 AM - 04:55 AM	04:50 AM - 04:55 AM	63.2	50.0	07:30 AM - 07:35 AM	65.0	40.1	50.5
04:55 AM - 05:00 AM	04:55 AM - 05:00 AM	63.9	50.6	07:35 AM - 07:40 AM	59.1	40.3	44.1
05:00 AM - 05:05 AM	05:00 AM - 05:05 AM	63.6	50.2	07:40 AM - 07:45 AM	63.1	38.7	52.7
05:05 AM - 05:10 AM	05:05 AM - 05:10 AM	63.7	50.9	07:45 AM - 07:50 AM	61.6	40.7	42.4
05:10 AM - 05:15 AM	05:10 AM - 05:15 AM	66.5	52.0	07:50 AM - 07:55 AM	67.8	50.1	43.1
05:15 AM - 05:20 AM	05:15 AM - 05:20 AM	65.6	50.9	07:55 AM - 08:00 AM	64.0	41.3	44.1
05:20 AM - 05:25 AM	05:20 AM - 05:25 AM	64.1	52.6	08:00 AM - 08:05 AM	65.8	43.4	42.5
05:25 AM - 05:30 AM	05:25 AM - 05:30 AM	69.4	52.3	08:05 AM - 08:10 AM	59.0	40.4	58.9
05:30 AM - 05:35 AM	05:30 AM - 05:35 AM	64.1	51.3	08:10 AM - 08:15 AM	63.3	41.0	44.6
05:35 AM - 05:40 AM	05:35 AM - 05:40 AM	68.7	54.2	08:15 AM - 08:20 AM	60.1	40.9	57.1
05:40 AM - 05:45 AM	05:40 AM - 05:45 AM	67.1	54.1	08:20 AM - 08:25 AM	60.1	40.6	46.1
05:45 AM - 05:50 AM	05:45 AM - 05:50 AM	66.5	53.0	08:25 AM - 08:30 AM	67.9	47.3	55.9
05:50 AM - 05:55 AM	05:50 AM - 05:55 AM	67.8	57.1	08:30 AM - 08:35 AM	68.2	45.3	48.1
05:55 AM - 06:00 AM	05:55 AM - 06:00 AM	68.4	55.8	08:35 AM - 08:40 AM	65.2	42.4	47.6
06:00 AM - 06:05 AM	06:00 AM - 06:05 AM	66.6	55.3	08:40 AM - 08:45 AM	59.9	41.0	51.8
06:05 AM - 06:10 AM	06:05 AM - 06:10 AM	68.1	50.7	08:45 AM - 08:50 AM	60.1	41.2	47.4
06:10 AM - 06:15 AM	06:10 AM - 06:15 AM	68.4	53.9	08:50 AM - 08:55 AM	59.6	43.3	55.1
06:15 AM - 06:20 AM	06:15 AM - 06:20 AM	65.5	49.4	08:55 AM - 09:00 AM	53.8	38.7	45.0
06:20 AM - 06:25 AM	06:20 AM - 06:25 AM	65.9	51.4	09:00 AM - 09:05 AM	61.3	42.6	54.2
06:25 AM - 06:30 AM	06:25 AM - 06:30 AM	67.3	44.3	09:05 AM - 09:10 AM	59.5	46.1	43.9
06:30 AM - 06:35 AM	06:30 AM - 06:35 AM	66.4	49.7	09:10 AM - 09:15 AM	58.4	43.7	58.0
06:35 AM - 06:40 AM	06:35 AM - 06:40 AM	66.4	42.9	09:15 AM - 09:20 AM	49.3	39.8	42.0

Approved by

Saranyut Jitranont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360365-1

Page 1 of 3

Sample Number	2270910-11
Parameter	Noise Level (Leq 5 min)
Location	ชั้น 2 อาคาร 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 20 - Jun 21, 2022
Measurement by	Anurak Tongthongsakda
Sound Level meter	Serial No. 597168

Jun 20, 2022	Leq	L90	Time	Leq	L90
12:00 PM - 12:05 PM	58.3	45.9	02:40 PM - 02:45 PM	52.6	43.8
12:05 PM - 12:10 PM	58.8	43.2	02:45 PM - 02:50 PM	56.3	45.0
12:10 PM - 12:15 PM	58.0	43.3	02:50 PM - 02:55 PM	57.8	49.1
12:15 PM - 12:20 PM	51.8	44.1	02:55 PM - 03:00 PM	61.2	45.1
12:20 PM - 12:25 PM	51.6	44.8	03:00 PM - 03:05 PM	54.3	45.5
12:25 PM - 12:30 PM	48.6	43.1	03:05 PM - 03:10 PM	57.1	44.8
12:30 PM - 12:35 PM	56.9	45.3	03:10 PM - 03:15 PM	60.7	44.2
12:35 PM - 12:40 PM	53.9	42.6	03:15 PM - 03:20 PM	61.2	44.2
12:40 PM - 12:45 PM	57.1	43.8	03:20 PM - 03:25 PM	56.4	44.7
12:45 PM - 12:50 PM	51.7	42.3	03:25 PM - 03:30 PM	58.2	45.6
12:50 PM - 12:55 PM	54.4	42.4	03:30 PM - 03:35 PM	58.3	47.2
12:55 PM - 01:00 PM	50.7	43.3	03:35 PM - 03:40 PM	60.3	45.7
01:00 PM - 01:05 PM	52.7	40.2	03:40 PM - 03:45 PM	57.7	44.8
01:05 PM - 01:10 PM	53.0	42.4	03:45 PM - 03:50 PM	58.5	45.4
01:10 PM - 01:15 PM	56.4	41.6	03:50 PM - 03:55 PM	60.6	45.8
01:15 PM - 01:20 PM	61.9	43.5	03:55 PM - 04:00 PM	56.8	45.8
01:20 PM - 01:25 PM	60.0	41.9	04:00 PM - 04:05 PM	55.4	45.2
01:25 PM - 01:30 PM	61.9	43.3	04:05 PM - 04:10 PM	57.4	47.6
01:30 PM - 01:35 PM	60.8	45.9	04:10 PM - 04:15 PM	59.6	48.6
01:35 PM - 01:40 PM	57.8	44.7	04:15 PM - 04:20 PM	55.9	45.8
01:40 PM - 01:45 PM	54.3	43.4	04:20 PM - 04:25 PM	59.0	48.9
01:45 PM - 01:50 PM	52.7	43.3	04:25 PM - 04:30 PM	57.8	46.3
01:50 PM - 01:55 PM	53.4	44.3	04:30 PM - 04:35 PM	55.2	45.5
01:55 PM - 02:00 PM	59.0	45.4	04:35 PM - 04:40 PM	61.3	47.2
02:00 PM - 02:05 PM	58.1	46.4	04:40 PM - 04:45 PM	55.7	46.2
02:05 PM - 02:10 PM	58.8	46.4	04:45 PM - 04:50 PM	54.0	46.3
02:10 PM - 02:15 PM	53.5	42.9	04:50 PM - 04:55 PM	53.1	44.9
02:15 PM - 02:20 PM	67.2	44.7	04:55 PM - 05:00 PM	55.3	46.0
02:20 PM - 02:25 PM	57.8	43.9	05:00 PM - 05:05 PM	56.3	45.4
02:25 PM - 02:30 PM	54.3	44.8	05:05 PM - 05:10 PM	54.2	45.6
02:30 PM - 02:35 PM	51.0	45.1	05:10 PM - 05:15 PM	56.5	45.2
02:35 PM - 02:40 PM	51.5	45.9	05:15 PM - 05:20 PM	53.7	46.2

Approved by  
Surayuth Jitramont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360365-1

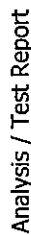
Page 2 of 3

Sample Number	2270910-11
Parameter	Noise Level (Leq 5 min)
Location	ชั้น 2 อาคาร 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 20 - Jun 21, 2022
Measurement by	Anurak Tongthongsakda
Sound Level meter	Serial No. 597168

Jun 20, 2022	Leq	L90	Time	Leq	L90
08:00 PM - 08:05 PM	58.4	56.4	10:40 PM - 10:45 PM	48.5	46.0
08:05 PM - 08:10 PM	57.2	56.5	10:45 PM - 10:50 PM	52.2	45.7
08:10 PM - 08:15 PM	57.0	56.4	10:50 PM - 10:55 PM	47.0	45.0
08:15 PM - 08:20 PM	56.4	54.6	10:55 PM - 11:00 PM	49.3	44.7
08:20 PM - 08:25 PM	57.8	56.5	11:00 PM - 11:05 PM	47.0	45.1
08:25 PM - 08:30 PM	57.1	56.2	11:05 PM - 11:10 PM	47.9	46.1
08:30 PM - 08:35 PM	57.4	56.1	11:10 PM - 11:15 PM	49.1	46.2
08:35 PM - 08:40 PM	57.4	56.3	11:15 PM - 11:20 PM	50.3	47.6
08:40 PM - 08:45 PM	57.2	56.2	11:20 PM - 11:25 PM	49.5	45.8
08:45 PM - 08:50 PM	56.8	54.0	11:25 PM - 11:30 PM	50.9	48.0
08:50 PM - 08:55 PM	58.3	56.5	11:30 PM - 11:35 PM	47.6	44.8
08:55 PM - 09:00 PM	57.3	56.2	11:35 PM - 11:40 PM	47.7	44.7
09:00 PM - 09:05 PM	59.8	56.2	11:40 PM - 11:45 PM	48.1	45.5
09:05 PM - 09:10 PM	56.3	55.9	11:45 PM - 11:50 PM	50.5	46.2
09:10 PM - 09:15 PM	61.6	55.8	11:50 PM - 11:55 PM	66.3	47.5
09:15 PM - 09:20 PM	56.2	53.4	11:55 PM - 12:00 AM	64.9	41.6
09:20 PM - 09:25 PM	55.0	53.0	12:00 AM - 12:05 AM	67.9	47.3
09:25 PM - 09:30 PM	54.6	53.5	12:05 AM - 12:10 AM	63.5	47.7
09:30 PM - 09:35 PM	57.9	54.1	12:10 AM - 12:15 AM	66.7	50.0
09:35 PM - 09:40 PM	58.9	54.0	12:15 AM - 12:20 AM	61.6	47.7
09:40 PM - 09:45 PM	54.6	53.9	12:20 AM - 12:25 AM	67.5	64.9
09:45 PM - 09:50 PM	54.4	53.8	12:25 AM - 12:30 AM	64.2	59.0
09:50 PM - 09:55 PM	55.8	53.7	12:30 AM - 12:35 AM	65.3	57.6
09:55 PM - 10:00 PM	50.5	45.7	12:35 AM - 12:40 AM	62.7	51.7
10:00 PM - 10:05 PM	49.5	46.4	12:40 AM - 12:45 AM	65.3	51.7
10:05 PM - 10:10 PM	51.8	47.9	12:45 AM - 12:50 AM	66.2	58.1
10:10 PM - 10:15 PM	54.5	49.7	12:50 AM - 12:55 AM	64.6	51.8
10:15 PM - 10:20 PM	52.5	51.1	12:55 AM - 01:00 AM	68.3	62.9
10:20 PM - 10:25 PM	52.2	51.2	01:00 AM - 01:05 AM	68.1	63.0
10:25 PM - 10:30 PM	51.9	50.9	01:05 AM - 01:10 AM	67.8	61.8
10:30 PM - 10:35 PM	51.6	47.8	01:10 AM - 01:15 AM	67.2	56.6
10:35 PM - 10:40 PM	56.3	46.4	01:15 AM - 01:20 AM	67.4	61.4

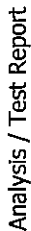
Approved by  
Surayuth Jitramont  
Assistant General Manager

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**Sarayuth Jittrantont**  
Assistant General Manager

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

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**Sarayuth Jitranont**  
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 AIE LABORATORY EQUIPMENT RESALE AND/OR FITTING AND LIMITED COMPANY



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
S4/S Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360366-1

Page 2 of 3

Sample Number		2270910-12	
Parameter	Noise Level (Leq 5 min)		
Location	พื้นที่บริเวณ วัด 2 ต.ม.น.น.น. 15 (N2) (GPS 47P 733675, 1434009)		
Measurement Date	Jun 21 - Jun 22, 2022		
Measurement by	Anurak Tongkhajonsakda		
Sound Level meter	Serial No. 597168		
Jun 21, 2022	Jun 21 - Jun 22, 2022	Jun 22, 2022	L90
Time	Time	Time	dB(A)
08:00 PM - 08:05 PM	10:40 PM - 10:45 PM	01:20 AM - 01:25 AM	46.1
08:05 PM - 08:10 PM	10:45 PM - 10:50 PM	01:25 AM - 01:30 AM	44.4
08:10 PM - 08:15 PM	10:50 PM - 10:55 PM	01:30 AM - 01:35 AM	47.6
08:15 PM - 08:20 PM	10:55 PM - 11:00 PM	01:35 AM - 01:40 AM	45.4
08:20 PM - 08:25 PM	11:00 PM - 11:05 PM	01:40 AM - 01:45 AM	47.3
08:25 PM - 08:30 PM	11:05 PM - 11:10 PM	01:45 AM - 01:50 AM	45.1
08:30 PM - 08:35 PM	11:10 PM - 11:15 PM	01:50 AM - 01:55 AM	47.5
08:35 PM - 08:40 PM	11:15 PM - 11:20 PM	01:55 AM - 02:00 AM	46.2
08:40 PM - 08:45 PM	11:20 PM - 11:25 PM	02:00 AM - 02:05 AM	44.7
08:45 PM - 08:50 PM	11:25 PM - 11:30 PM	02:05 AM - 02:10 AM	47.5
08:50 PM - 08:55 PM	11:30 PM - 11:35 PM	02:10 AM - 02:15 AM	44.6
08:55 PM - 09:00 PM	11:35 PM - 11:40 PM	02:15 AM - 02:20 AM	45.3
09:00 PM - 09:05 PM	11:40 PM - 11:45 PM	02:20 AM - 02:25 AM	44.4
09:05 PM - 09:10 PM	11:45 PM - 11:50 PM	02:25 AM - 02:30 AM	45.0
09:10 PM - 09:15 PM	11:50 PM - 11:55 PM	02:30 AM - 02:35 AM	42.8
09:15 PM - 09:20 PM	11:55 PM - 12:00 AM	02:35 AM - 02:40 AM	42.6
09:20 PM - 09:25 PM	12:00 AM - 12:05 AM	02:40 AM - 02:45 AM	43.7
09:25 PM - 09:30 PM	12:05 AM - 12:10 AM	02:45 AM - 02:50 AM	47.9
09:30 PM - 09:35 PM	12:10 AM - 12:15 AM	02:50 AM - 02:55 AM	58.0
09:35 PM - 09:40 PM	12:15 AM - 12:20 AM	02:55 AM - 03:00 AM	44.5
09:40 PM - 09:45 PM	12:20 AM - 12:25 AM	03:00 AM - 03:05 AM	46.8
09:45 PM - 09:50 PM	12:25 AM - 12:30 AM	03:05 AM - 03:10 AM	44.3
09:50 PM - 09:55 PM	12:30 AM - 12:35 AM	03:10 AM - 03:15 AM	46.3
09:55 PM - 10:00 PM	12:35 AM - 12:40 AM	03:15 AM - 03:20 AM	48.1
10:00 PM - 10:05 PM	12:40 AM - 12:45 AM	03:20 AM - 03:25 AM	53.6
10:05 PM - 10:10 PM	12:45 AM - 12:50 AM	03:25 AM - 03:30 AM	45.3
10:10 PM - 10:15 PM	12:50 AM - 12:55 AM	03:30 AM - 03:35 AM	45.1
10:15 PM - 10:20 PM	12:55 AM - 01:00 AM	03:35 AM - 03:40 AM	51.3
10:20 PM - 10:25 PM	01:00 AM - 01:05 AM	03:40 AM - 03:45 AM	47.3
10:25 PM - 10:30 PM	01:05 AM - 01:10 AM	03:45 AM - 03:50 AM	44.8
10:30 PM - 10:35 PM	01:10 AM - 01:15 AM	03:50 AM - 03:55 AM	57.2
10:35 PM - 10:40 PM	01:15 AM - 01:20 AM	03:55 AM - 04:00 AM	44.6
		04:00 AM - 04:05 AM	62.5
		04:05 AM - 04:10 AM	45.0
		04:10 AM - 04:15 AM	54.7
		04:15 AM - 04:20 AM	45.2
		04:20 AM - 04:25 AM	58.8
		04:25 AM - 04:30 AM	44.8

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Approved by

Saranyuth Jitranont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
S4/S Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUC(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360366-1

Page 3 of 3

Sample Number		2270910-12									
Parameter		Noise Level (Leq 5 min)									
Location		พื้นที่บริเวณวัด 2 แขวงหนองแขม 15 (N2) (GPS 47P 733675, 1434009)									
Measurement Date		Jun 21 - Jun 22, 2022									
Measurement by		Anurak Tongkhajonsakda									
Sound Level meter		Serial No. 597168									
Time	Leq dB(A)	L90 dB(A)	Jun 22, 2022		Leq dB(A)	L90 dB(A)	Jun 22, 2022		Leq dB(A)	L90 dB(A)	
			Time	Time			Time	Time			
04:00 AM - 04:05 AM	58.1	45.5	06:40 AM - 06:45 AM	60.4	46.8	09:20 AM - 09:25 AM	57.3	42.7			
04:05 AM - 04:10 AM	56.7	45.4	06:45 AM - 06:50 AM	63.7	45.7	09:25 AM - 09:30 AM	57.4	46.2			
04:10 AM - 04:15 AM	64.2	46.3	06:50 AM - 06:55 AM	58.5	45.4	09:30 AM - 09:35 AM	59.1	46.4			
04:15 AM - 04:20 AM	63.2	47.5	06:55 AM - 07:00 AM	56.2	47.1	09:35 AM - 09:40 AM	61.3	45.8			
04:20 AM - 04:25 AM	63.6	47.5	07:00 AM - 07:05 AM	64.5	47.9	09:40 AM - 09:45 AM	56.3	45.6			
04:25 AM - 04:30 AM	64.9	52.9	07:05 AM - 07:10 AM	58.3	44.6	09:45 AM - 09:50 AM	62.2	45.2			
04:30 AM - 04:35 AM	64.1	47.5	07:10 AM - 07:15 AM	58.2	43.9	09:50 AM - 09:55 AM	61.9	45.2			
04:35 AM - 04:40 AM	66.5	47.6	07:15 AM - 07:20 AM	55.3	45.0	09:55 AM - 10:00 AM	59.3	47.8			
04:40 AM - 04:45 AM	63.7	47.8	07:20 AM - 07:25 AM	57.9	44.7	10:00 AM - 10:05 AM	56.4	47.2			
04:45 AM - 04:50 AM	67.0	48.0	07:25 AM - 07:30 AM	54.2	43.1	10:05 AM - 10:10 AM	61.6	46.7			
04:50 AM - 04:55 AM	64.3	48.7	07:30 AM - 07:35 AM	63.5	43.7	10:10 AM - 10:15 AM	57.0	43.8			
04:55 AM - 05:00 AM	64.3	49.4	07:35 AM - 07:40 AM	58.9	43.1	10:15 AM - 10:20 AM	60.1	42.2			
05:00 AM - 05:05 AM	65.0	48.9	07:40 AM - 07:45 AM	54.2	41.5	10:20 AM - 10:25 AM	58.0	45.3			
05:05 AM - 05:10 AM	62.0	49.1	07:45 AM - 07:50 AM	60.0	42.7	10:25 AM - 10:30 AM	58.4	45.3			
05:10 AM - 05:15 AM	62.1	48.9	07:50 AM - 07:55 AM	51.8	44.5	10:30 AM - 10:35 AM	55.1	44.3			
05:15 AM - 05:20 AM	63.1	49.6	07:55 AM - 08:00 AM	56.7	45.7	10:35 AM - 10:40 AM	57.3	42.7			
05:20 AM - 05:25 AM	60.3	49.8	08:00 AM - 08:05 AM	58.7	44.9	10:40 AM - 10:45 AM	60.5	45.0			
05:25 AM - 05:30 AM	62.9	49.1	08:05 AM - 08:10 AM	53.9	43.2	10:45 AM - 10:50 AM	59.4	44.6			
05:30 AM - 05:35 AM	63.5	49.6	08:10 AM - 08:15 AM	55.9	44.0	10:50 AM - 10:55 AM	54.3	45.8			
05:35 AM - 05:40 AM	61.4	52.2	08:15 AM - 08:20 AM	60.5	44.8	10:55 AM - 11:00 AM	55.6	44.0			
05:40 AM - 05:45 AM	59.5	52.5	08:20 AM - 08:25 AM	59.3	42.8	11:00 AM - 11:05 AM	55.2	41.9			
05:45 AM - 05:50 AM	60.5	51.4	08:25 AM - 08:30 AM	58.1	43.8	11:05 AM - 11:10 AM	63.0	42.8			
05:50 AM - 05:55 AM	63.6	51.6	08:30 AM - 08:35 AM	58.2	44.2	11:10 AM - 11:15 AM	57.6	45.6			
05:55 AM - 06:00 AM	60.4	50.4	08:35 AM - 08:40 AM	53.1	44.4	11:15 AM - 11:20 AM	61.8	46.6			
06:00 AM - 06:05 AM	64.2	50.7	08:40 AM - 08:45 AM	54.7	43.0	11:20 AM - 11:25 AM	63.7	54.7			
06:05 AM - 06:10 AM	61.9	53.0	08:45 AM - 08:50 AM	54.9	44.0	11:25 AM - 11:30 AM	66.5	56.0			
06:10 AM - 06:15 AM	64.0	50.3	08:50 AM - 08:55 AM	54.9	48.0	11:30 AM - 11:35 AM	65.9	55.3			
06:15 AM - 06:20 AM	62.5	51.1	08:55 AM - 09:00 AM	52.4	46.9	11:35 AM - 11:40 AM	58.3	52.2			
06:20 AM - 06:25 AM	61.9	50.4	09:00 AM - 09:05 AM	52.4	44.9	11:40 AM - 11:45 AM	61.9	49.1			
06:25 AM - 06:30 AM	62.7	50.7	09:05 AM - 09:10 AM	58.9	46.8	11:45 AM - 11:50 AM	58.8	46.3			
06:30 AM - 06:35 AM	63.1	48.4	09:10 AM - 09:15 AM	57.8	46.3	11:50 AM - 11:55 AM	56.0	44.0			
06:35 AM - 06:40 AM	63.4	44.8	09:15 AM - 09:20 AM	57.8	44.7	11:55 AM - 12:00 PM	60.5	49.6			

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Approved by

Saranyuth Jitranont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : R/NQ-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360367-1

Page 1 of 3

Sample Number	2270910-13
Parameter	Noise Level (Leq 5 min)
Location	บริเวณหน้าวัด 2 ข้างถนน 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 22 - Jun 23, 2022
Measurement by	Anurak Tongthaisakda
Sound Level meter	Serial No. 597168

Jun 22, 2022	Leq dB(A)	L90 dB(A)	Jun 22, 2022	Leq dB(A)	L90 dB(A)
12:00 PM - 12:05 PM	55.0	48.6	02:40 PM - 02:45 PM	53.2	47.6
12:05 PM - 12:10 PM	58.1	47.3	02:45 PM - 02:50 PM	54.0	47.8
12:10 PM - 12:15 PM	61.5	44.5	02:50 PM - 02:55 PM	61.3	46.4
12:15 PM - 12:20 PM	59.2	44.7	02:55 PM - 03:00 PM	57.8	45.9
12:20 PM - 12:25 PM	57.9	47.4	03:00 PM - 03:05 PM	55.2	47.8
12:25 PM - 12:30 PM	60.2	51.4	03:05 PM - 03:10 PM	55.9	47.4
12:30 PM - 12:35 PM	61.1	54.9	03:10 PM - 03:15 PM	60.6	46.9
12:35 PM - 12:40 PM	60.2	57.9	03:15 PM - 03:20 PM	61.9	47.8
12:40 PM - 12:45 PM	59.2	57.4	03:20 PM - 03:25 PM	59.5	49.4
12:45 PM - 12:50 PM	59.0	56.8	03:25 PM - 03:30 PM	59.8	47.1
12:50 PM - 12:55 PM	56.8	53.6	03:30 PM - 03:35 PM	57.7	49.3
12:55 PM - 01:00 PM	58.9	50.2	03:35 PM - 03:40 PM	64.8	50.0
01:00 PM - 01:05 PM	55.1	46.6	03:40 PM - 03:45 PM	58.6	50.2
01:05 PM - 01:10 PM	60.8	47.3	03:45 PM - 03:50 PM	59.2	48.4
01:10 PM - 01:15 PM	63.2	46.9	03:50 PM - 03:55 PM	58.6	50.3
01:15 PM - 01:20 PM	60.3	48.3	03:55 PM - 04:00 PM	57.4	48.0
01:20 PM - 01:25 PM	57.4	49.0	04:00 PM - 04:05 PM	56.1	47.2
01:25 PM - 01:30 PM	53.4	47.6	04:05 PM - 04:10 PM	57.7	49.1
01:30 PM - 01:35 PM	52.4	47.2	04:10 PM - 04:15 PM	56.9	46.3
01:35 PM - 01:40 PM	56.1	46.9	04:15 PM - 04:20 PM	63.3	48.9
01:40 PM - 01:45 PM	54.0	47.2	04:20 PM - 04:25 PM	62.0	50.3
01:45 PM - 01:50 PM	55.5	50.5	04:25 PM - 04:30 PM	63.7	47.9
01:50 PM - 01:55 PM	53.4	50.9	04:30 PM - 04:35 PM	58.4	48.8
01:55 PM - 02:00 PM	58.0	51.4	04:35 PM - 04:40 PM	56.0	47.8
02:00 PM - 02:05 PM	56.8	52.1	04:40 PM - 04:45 PM	56.2	48.2
02:05 PM - 02:10 PM	61.8	53.4	04:45 PM - 04:50 PM	56.9	48.4
02:10 PM - 02:15 PM	55.5	51.0	04:50 PM - 04:55 PM	57.8	47.8
02:15 PM - 02:20 PM	57.7	48.7	04:55 PM - 05:00 PM	55.3	48.0
02:20 PM - 02:25 PM	60.5	48.6	05:00 PM - 05:05 PM	57.3	47.2
02:25 PM - 02:30 PM	67.2	49.2	05:05 PM - 05:10 PM	56.5	48.3
02:30 PM - 02:35 PM	62.1	48.0	05:10 PM - 05:15 PM	57.1	48.5
02:35 PM - 02:40 PM	59.8	48.0	05:15 PM - 05:20 PM	56.1	48.1

Approved by

Saranyuth Jitranont  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phuk Daeng, Rayong Thailand 21140  
P/O : R/NQ-019/64  
Project Name : Phuk Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360367-1

Page 2 of 3

Sample Number	2270910-13
Parameter	Noise Level (Leq 5 min)
Location	บริเวณหน้าวัด 2 ข้างถนน 15 (N2) (GPS 47P 733675, 1434009)
Measurement Date	Jun 22 - Jun 23, 2022
Measurement by	Anurak Tongthaisakda
Sound Level meter	Serial No. 597168

Jun 22, 2022	Leq dB(A)	L90 dB(A)	Jun 22 - Jun 23, 2022	Leq dB(A)	L90 dB(A)
08:00 PM - 08:05 PM	57.6	51.0	10:40 PM - 10:45 PM	50.8	47.4
08:05 PM - 08:10 PM	57.9	56.9	10:45 PM - 10:50 PM	49.8	47.5
08:10 PM - 08:15 PM	63.2	57.0	10:50 PM - 10:55 PM	49.9	47.3
08:15 PM - 08:20 PM	60.0	56.7	10:55 PM - 11:00 PM	50.3	47.2
08:20 PM - 08:25 PM	58.1	56.5	11:00 PM - 11:05 PM	48.1	46.9
08:25 PM - 08:30 PM	57.6	56.9	11:05 PM - 11:10 PM	47.6	46.7
08:30 PM - 08:35 PM	54.1	47.8	11:10 PM - 11:15 PM	49.6	46.3
08:35 PM - 08:40 PM	55.2	48.7	11:15 PM - 11:20 PM	66.1	46.8
08:40 PM - 08:45 PM	55.1	53.9	11:20 PM - 11:25 PM	48.6	46.1
08:45 PM - 08:50 PM	54.4	52.6	11:25 PM - 11:30 PM	47.8	46.3
08:50 PM - 08:55 PM	51.1	47.2	11:30 PM - 11:35 PM	48.4	46.7
08:55 PM - 09:00 PM	56.3	47.3	11:35 PM - 11:40 PM	47.3	45.7
09:00 PM - 09:05 PM	51.3	48.2	11:40 PM - 11:45 PM	47.2	43.4
09:05 PM - 09:10 PM	49.7	47.9	11:45 PM - 11:50 PM	46.5	44.7
09:10 PM - 09:15 PM	55.7	48.2	11:50 PM - 11:55 PM	46.1	44.9
09:15 PM - 09:20 PM	56.8	56.4	11:55 PM - 12:00 AM	46.1	44.9
09:20 PM - 09:25 PM	57.1	56.6	12:00 AM - 12:05 AM	47.3	44.5
09:25 PM - 09:30 PM	57.5	56.9	12:05 AM - 12:10 AM	49.2	44.9
09:30 PM - 09:35 PM	57.1	56.6	12:10 AM - 12:15 AM	48.8	44.8
09:35 PM - 09:40 PM	56.7	56.1	12:15 AM - 12:20 AM	55.0	45.4
09:40 PM - 09:45 PM	57.8	50.5	12:20 AM - 12:25 AM	53.4	44.6
09:45 PM - 09:50 PM	51.1	48.4	12:25 AM - 12:30 AM	48.6	44.1
09:50 PM - 09:55 PM	50.0	48.3	12:30 AM - 12:35 AM	46.9	44.2
09:55 PM - 10:00 PM	49.2	48.1	12:35 AM - 12:40 AM	48.4	43.9
10:00 PM - 10:05 PM	51.0	48.1	12:40 AM - 12:45 AM	45.0	43.3
10:05 PM - 10:10 PM	51.1	48.3	12:45 AM - 12:50 AM	46.3	44.1
10:10 PM - 10:15 PM	50.2	48.8	12:50 AM - 12:55 AM	52.0	43.6
10:15 PM - 10:20 PM	50.2	48.9	12:55 AM - 01:00 AM	49.1	43.8
10:20 PM - 10:25 PM	50.6	48.1	01:00 AM - 01:05 AM	49.0	44.1
10:25 PM - 10:30 PM	49.5	47.2	01:05 AM - 01:10 AM	55.2	43.3
10:30 PM - 10:35 PM	49.6	47.9	01:10 AM - 01:15 AM	52.4	44.7
10:35 PM - 10:40 PM	51.3	48.6	01:15 AM - 01:20 AM	50.5	46.7

Approved by

Saranyuth Jitranont  
Assistant General Manager

The above results are valid only for the analyzed/checked sample(s) as indicated in this report. No part of this report or test data may be reproduced in any form without written consent from the Laboratory. All Laboratory data (Test data) should be retained for a minimum of 1 year. The Laboratory does not warrant the accuracy of the results and is not responsible for any errors or omissions.





## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360367-1

Page 2 of 3

Sample Number Parameter Location Measurement Date Measurement by Sound Level meter	2270910-13 Noise Level (Leq 5 min) พื้นที่บริเวณข้าง 2 สี่มุมทาง 15 (N2) (GPS 47P 733675, 1434009) Jun 22 - Jun 23, 2022 Anurak Tongthajonakda Serial No. 597168		Jun 23, 2022 Time		Jun 23, 2022 Time		Jun 23, 2022 Time	
	Leq dB(A)	L90 dB(A)	Leq dB(A)	L90 dB(A)	Leq dB(A)	L90 dB(A)	Leq dB(A)	L90 dB(A)
04:00 AM - 04:05 AM	52.2	47.4	06:40 AM - 06:45 AM	58.9	46.9	09:20 AM - 09:25 AM	61.9	45.3
04:05 AM - 04:10 AM	64.1	50.5	06:45 AM - 06:50 AM	56.5	46.6	09:25 AM - 09:30 AM	65.1	44.4
04:10 AM - 04:15 AM	63.5	50.9	06:50 AM - 06:55 AM	60.4	48.0	09:30 AM - 09:35 AM	63.5	45.8
04:15 AM - 04:20 AM	59.4	50.2	06:55 AM - 07:00 AM	58.1	45.5	09:35 AM - 09:40 AM	58.4	45.7
04:20 AM - 04:25 AM	64.2	48.7	07:00 AM - 07:05 AM	57.9	46.6	09:40 AM - 09:45 AM	56.2	44.9
04:25 AM - 04:30 AM	66.4	52.8	07:05 AM - 07:10 AM	61.1	46.7	09:45 AM - 09:50 AM	59.8	47.8
04:30 AM - 04:35 AM	64.3	53.7	07:10 AM - 07:15 AM	57.6	46.4	09:50 AM - 09:55 AM	51.6	47.0
04:35 AM - 04:40 AM	63.3	52.6	07:15 AM - 07:20 AM	63.8	57.3	09:55 AM - 10:00 AM	60.6	46.5
04:40 AM - 04:45 AM	65.8	51.5	07:20 AM - 07:25 AM	64.8	41.1	10:00 AM - 10:05 AM	61.3	46.8
04:45 AM - 04:50 AM	63.9	52.9	07:25 AM - 07:30 AM	69.3	39.5	10:05 AM - 10:10 AM	55.1	46.3
04:50 AM - 04:55 AM	64.7	52.2	07:30 AM - 07:35 AM	59.8	40.3	10:10 AM - 10:15 AM	59.4	46.3
04:55 AM - 05:00 AM	64.3	52.6	07:35 AM - 07:40 AM	62.0	39.5	10:15 AM - 10:20 AM	60.0	45.0
05:00 AM - 05:05 AM	64.5	52.8	07:40 AM - 07:45 AM	63.1	39.4	10:20 AM - 10:25 AM	57.8	44.5
05:05 AM - 05:10 AM	65.8	52.5	07:45 AM - 07:50 AM	62.9	59.0	10:25 AM - 10:30 AM	60.3	45.7
05:10 AM - 05:15 AM	66.1	52.9	07:50 AM - 07:55 AM	56.5	50.9	10:30 AM - 10:35 AM	59.6	45.1
05:15 AM - 05:20 AM	65.7	53.1	07:55 AM - 08:00 AM	58.5	49.9	10:35 AM - 10:40 AM	62.3	45.5
05:20 AM - 05:25 AM	63.1	51.6	08:00 AM - 08:05 AM	62.2	48.5	10:40 AM - 10:45 AM	62.2	44.6
05:25 AM - 05:30 AM	62.3	54.1	08:05 AM - 08:10 AM	55.9	47.2	10:45 AM - 10:50 AM	61.1	47.4
05:30 AM - 05:35 AM	62.4	54.5	08:10 AM - 08:15 AM	61.6	46.2	10:50 AM - 10:55 AM	54.6	44.4
05:35 AM - 05:40 AM	59.5	53.2	08:15 AM - 08:20 AM	62.9	47.0	10:55 AM - 11:00 AM	57.9	47.8
05:40 AM - 05:45 AM	61.8	51.2	08:20 AM - 08:25 AM	65.1	47.2	11:00 AM - 11:05 AM	60.6	47.6
05:45 AM - 05:50 AM	64.8	53.0	08:25 AM - 08:30 AM	61.7	46.0	11:05 AM - 11:10 AM	61.8	46.7
05:50 AM - 05:55 AM	62.8	49.2	08:30 AM - 08:35 AM	55.1	45.2	11:10 AM - 11:15 AM	60.9	46.3
05:55 AM - 06:00 AM	61.5	51.2	08:35 AM - 08:40 AM	61.0	45.9	11:15 AM - 11:20 AM	56.3	43.4
06:00 AM - 06:05 AM	63.2	52.5	08:40 AM - 08:45 AM	61.5	45.8	11:20 AM - 11:25 AM	60.7	44.2
06:05 AM - 06:10 AM	60.4	52.5	08:45 AM - 08:50 AM	54.2	47.7	11:25 AM - 11:30 AM	58.9	42.7
06:10 AM - 06:15 AM	61.6	50.3	08:50 AM - 08:55 AM	54.0	44.9	11:30 AM - 11:35 AM	59.9	43.7
06:15 AM - 06:20 AM	63.0	49.1	08:55 AM - 09:00 AM	54.0	44.4	11:35 AM - 11:40 AM	54.2	42.5
06:20 AM - 06:25 AM	63.9	47.2	09:00 AM - 09:05 AM	56.0	43.6	11:40 AM - 11:45 AM	56.9	42.5
06:25 AM - 06:30 AM	61.7	50.2	09:05 AM - 09:10 AM	57.1	44.4	11:45 AM - 11:50 AM	57.1	40.9
06:30 AM - 06:35 AM	61.6	50.2	09:10 AM - 09:15 AM	58.1	44.0	11:50 AM - 11:55 AM	57.9	42.9
06:35 AM - 06:40 AM	63.1	48.0	09:15 AM - 09:20 AM	54.5	45.6	11:55 AM - 12:00 PM	64.6	45.6

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Approved by

Saranyut Jitramont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Phrak Daeng, Rayong Thailand 21140  
P/O : RIN(2)-019/64  
Project Name : Phrak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360368-1

Page 1 of 3

Sample Number Parameter Location Measurement Date Measurement by Sound Level meter	2270910-14		Noise Level (Leq 5 min)		พื้นที่บริเวณข้าง 2 สี่มุมทาง 15 (N2) (GPS 47P 733675, 1434009)		Jun 23 - Jun 24, 2022		Anurak Tongthajonakda		Serial No. 597168	
	Jun 23, 2022	Time	Leq dB(A)	L90 dB(A)	Jun 23, 2022	Time	Leq dB(A)	L90 dB(A)	Jun 23, 2022	Time	Leq dB(A)	L90 dB(A)
	12:00 PM - 12:05 PM	61.0	41.8	02:40 PM - 02:45 PM	58.9	43.6	05:20 PM - 05:25 PM	54.0	45.7			
	12:05 PM - 12:10 PM	61.0	46.5	02:45 PM - 02:50 PM	54.3	45.9	05:25 PM - 05:30 PM	54.3	46.4			
	12:10 PM - 12:15 PM	57.0	43.7	02:50 PM - 02:55 PM	53.0	46.9	05:30 PM - 05:35 PM	53.2	48.0			
	12:15 PM - 12:20 PM	50.9	43.5	02:55 PM - 03:00 PM	58.6	43.9	05:35 PM - 05:40 PM	55.6	49.8			
	12:20 PM - 12:25 PM	52.6	43.5	03:00 PM - 03:05 PM	53.4	43.9	05:40 PM - 05:45 PM	58.3	49.3			
	12:25 PM - 12:30 PM	55.5	44.7	03:05 PM - 03:10 PM	55.0	43.2	05:45 PM - 05:50 PM	57.5	51.4			
	12:30 PM - 12:35 PM	53.9	44.5	03:10 PM - 03:15 PM	53.6	45.1	05:50 PM - 05:55 PM	55.4	51.2			
	12:35 PM - 12:40 PM	57.2	45.2	03:15 PM - 03:20 PM	58.5	45.9	05:55 PM - 06:00 PM	55.1	51.1			
	12:40 PM - 12:45 PM	56.8	46.3	03:20 PM - 03:25 PM	60.8	45.4	06:00 PM - 06:05 PM	54.3	51.9			
	12:45 PM - 12:50 PM	52.2	43.7	03:25 PM - 03:30 PM	62.9	45.5	06:05 PM - 06:10 PM	57.3	51.9			
	12:50 PM - 12:55 PM	50.8	44.6	03:30 PM - 03:35 PM	57.4	46.6	06:10 PM - 06:15 PM	57.4	54.6			
	12:55 PM - 01:00 PM	60.2	44.9	03:35 PM - 03:40 PM	58.9	47.5	06:15 PM - 06:20 PM	58.4	55.2			
	01:00 PM - 01:05 PM	63.1	43.7	03:40 PM - 03:45 PM	55.9	47.7	06:20 PM - 06:25 PM	59.4	55.4			
	01:05 PM - 01:10 PM	52.9	45.6	03:45 PM - 03:50 PM	59.5	46.6	06:25 PM - 06:30 PM	58.8	54.6			
	01:10 PM - 01:15 PM	55.6	46.2	03:50 PM - 03:55 PM	54.3	45.6	06:30 PM - 06:35 PM	59.6	56.2			
	01:15 PM - 01:20 PM	55.2	46.8	03:55 PM - 04:00 PM	55.0	46.1	06:35 PM - 06:40 PM	59.7	56.2			
	01:20 PM - 01:25 PM	60.8	45.0	04:00 PM - 04:05 PM	56.7	47.4	06:40 PM - 06:45 PM	59.1	56.5			
	01:25 PM - 01:30 PM	57.0	45.6	04:05 PM - 04:10 PM	55.7	46.9	06:45 PM - 06:50 PM	59.5	56.3			
	01:30 PM - 01:35 PM	51.2	44.4	04:10 PM - 04:15 PM	56.9	47.2	06:50 PM - 06:55 PM	59.9	57.9			
	01:35 PM - 01:40 PM	58.0	43.6	04:15 PM - 04:20 PM	58.6	46.6	06:55 PM - 07:00 PM	59.7	58.0			
	01:40 PM - 01:45 PM	60.0	45.5	04:20 PM - 04:25 PM	54.8	46.8	07:00 PM - 07:05 PM	58.6	56.7			
	01:45 PM - 01:50 PM	51.3	45.3	04:25 PM - 04:30 PM	56.2	45.8	07:05 PM - 07:10 PM	60.5	56.5			
	01:50 PM - 01:55 PM	50.4	43.3	04:30 PM - 04:35 PM	59.5	48.1	07:10 PM - 07:15 PM	64.6	54.9			
	01:55 PM - 02:00 PM	55.2	43.4	04:35 PM - 04:40 PM	57.0	48.5	07:15 PM - 07:20 PM	59.6	58.4			
	02:00 PM - 02:05 PM	48.8	43.6	04:40 PM - 04:45 PM	56.1	50.0	07:20 PM - 07:25 PM	59.5	58.2			
	02:05 PM - 02:10 PM	55.0	45.8	04:45 PM - 04:50 PM	60.0	50.4	07:25 PM - 07:30 PM	60.3	57.0			
	02:10 PM - 02:15 PM	52.6	44.4	04:50 PM - 04:55 PM	57.9	48.0	07:30 PM - 07:35 PM	60.4	59.0			
	02:15 PM - 02:20 PM	49.7	43.1	04:55 PM - 05:00 PM	60.6	46.7	07:35 PM - 07:40 PM	60.3	58.9			
	02:20 PM - 02:25 PM	53.8	42.7	05:00 PM - 05:05 PM	55.8	45.3	07:40 PM - 07:45 PM	60.9	59.2			
	02:25 PM - 02:30 PM	51.4	41.6	05:05 PM - 05:10 PM	55.9	46.8	07:45 PM - 07:50 PM	60.5	59.2			
	02:30 PM - 02:35 PM	62.3	41.7	05:10 PM - 05:15 PM	56.0	47.0	07:50 PM - 07:55 PM	61.6	59.2			
	02:35 PM - 02:40 PM	60.9	40.5	05:15 PM - 05:20 PM	55.1	47.5	07:55 PM - 08:00 PM	59.9	58.6			

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Approved by

Saranyut Jitramont  
Assistant General Manager



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360368-1

Page 2 of 3

Sample Number : 2270910-14  
Parameter : Noise Level (Leq 5 min)  
Location : หมู่บ้านวัง 2 ต.นาบูนาว 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 23 - Jun 24, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level meter : Serial No. 597168

Jun 23, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 24, 2022	Leq dB(A)	L90 dB(A)
08:00 PM - 08:05 PM	60.8	59.1	10:40 PM - 10:45 PM	56.0	55.4	42.7
08:05 PM - 08:10 PM	59.6	59.1	10:45 PM - 10:50 PM	55.9	55.3	42.7
08:10 PM - 08:15 PM	57.6	53.6	10:50 PM - 10:55 PM	52.3	49.1	43.0
08:15 PM - 08:20 PM	59.0	56.3	10:55 PM - 11:00 PM	60.5	56.8	41.0
08:20 PM - 08:25 PM	57.6	56.5	11:00 PM - 11:05 PM	56.6	54.7	53.1
08:25 PM - 08:30 PM	57.7	56.8	11:05 PM - 11:10 PM	56.3	55.5	43.1
08:30 PM - 08:35 PM	58.4	57.6	11:10 PM - 11:15 PM	56.3	55.7	42.9
08:35 PM - 08:40 PM	60.0	57.2	11:15 PM - 11:20 PM	56.9	56.0	42.9
08:40 PM - 08:45 PM	58.6	57.4	11:20 PM - 11:25 PM	57.5	55.9	42.3
08:45 PM - 08:50 PM	58.8	58.0	11:25 PM - 11:30 PM	57.4	55.9	42.8
08:50 PM - 08:55 PM	57.6	55.0	11:30 PM - 11:35 PM	56.3	55.7	43.9
08:55 PM - 09:00 PM	61.0	55.1	11:35 PM - 11:40 PM	56.5	55.7	42.7
09:00 PM - 09:05 PM	59.0	57.5	11:40 PM - 11:45 PM	55.5	55.3	42.9
09:05 PM - 09:10 PM	58.7	57.1	11:45 PM - 11:50 PM	48.1	44.2	44.2
09:10 PM - 09:15 PM	58.9	56.9	11:50 PM - 11:55 PM	54.9	54.9	44.1
09:15 PM - 09:20 PM	57.6	56.6	11:55 PM - 12:00 AM	51.5	45.6	43.1
09:20 PM - 09:25 PM	57.3	56.7	12:00 AM - 12:05 AM	52.3	44.5	45.5
09:25 PM - 09:30 PM	58.5	56.1	12:05 AM - 12:10 AM	61.2	45.5	44.1
09:30 PM - 09:35 PM	59.7	56.6	12:10 AM - 12:15 AM	57.4	45.2	43.8
09:35 PM - 09:40 PM	61.6	56.2	12:15 AM - 12:20 AM	49.5	44.5	43.6
09:40 PM - 09:45 PM	58.5	57.7	12:20 AM - 12:25 AM	49.4	45.1	44.2
09:45 PM - 09:50 PM	58.0	57.2	12:25 AM - 12:30 AM	50.9	44.9	43.9
09:50 PM - 09:55 PM	63.1	57.6	12:30 AM - 12:35 AM	53.7	44.4	43.5
09:55 PM - 10:00 PM	60.0	57.5	12:35 AM - 12:40 AM	47.9	43.7	46.2
10:00 PM - 10:05 PM	57.9	55.5	12:40 AM - 12:45 AM	47.1	43.6	44.0
10:05 PM - 10:10 PM	57.1	55.9	12:45 AM - 12:50 AM	51.6	44.0	43.5
10:10 PM - 10:15 PM	56.3	55.3	12:50 AM - 12:55 AM	46.1	43.3	45.3
10:15 PM - 10:20 PM	61.8	55.8	12:55 AM - 01:00 AM	48.0	42.6	47.6
10:20 PM - 10:25 PM	56.0	55.3	01:00 AM - 01:05 AM	53.7	41.9	43.5
10:25 PM - 10:30 PM	56.2	55.5	01:05 AM - 01:10 AM	45.1	42.1	43.4
10:30 PM - 10:35 PM	56.2	55.5	01:10 AM - 01:15 AM	47.1	42.1	43.7
10:35 PM - 10:40 PM	58.1	55.2	01:15 AM - 01:20 AM	52.0	42.2	44.6

Approved by

Saranyuth Jittrant  
Assistant General Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Lot ID: 2270910  
Date Received : Jun 27, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2360368-1

Page 3 of 3

Sample Number : 2270910-14  
Parameter : Noise Level (Leq 5 min)  
Location : หมู่บ้านวัง 2 ต.นาบูนาว 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 23 - Jun 24, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level meter : Serial No. 597168

Jun 24, 2022	Leq dB(A)	L90 dB(A)	Time	Jun 24, 2022	Leq dB(A)	L90 dB(A)
04:00 AM - 04:05 AM	58.5	44.9	06:40 AM - 06:45 AM	67.1	57.8	59.9
04:05 AM - 04:10 AM	56.3	45.2	06:45 AM - 06:50 AM	66.4	54.6	55.3
04:10 AM - 04:15 AM	64.4	45.7	06:50 AM - 06:55 AM	64.6	51.9	51.2
04:15 AM - 04:20 AM	63.3	46.1	06:55 AM - 07:00 AM	64.9	53.5	47.8
04:20 AM - 04:25 AM	65.1	47.1	07:00 AM - 07:05 AM	63.5	55.6	50.9
04:25 AM - 04:30 AM	63.9	47.1	07:05 AM - 07:10 AM	63.9	55.1	49.1
04:30 AM - 04:35 AM	65.2	48.6	07:10 AM - 07:15 AM	64.0	54.2	60.1
04:35 AM - 04:40 AM	64.8	49.5	07:15 AM - 07:20 AM	62.8	53.4	48.4
04:40 AM - 04:45 AM	63.7	50.1	07:20 AM - 07:25 AM	62.1	51.4	44.9
04:45 AM - 04:50 AM	64.8	49.1	07:25 AM - 07:30 AM	61.6	51.9	57.2
04:50 AM - 04:55 AM	64.4	49.5	07:30 AM - 07:35 AM	62.4	52.7	50.1
04:55 AM - 05:00 AM	62.5	50.5	07:35 AM - 07:40 AM	62.9	55.1	44.5
05:00 AM - 05:05 AM	61.7	48.6	07:40 AM - 07:45 AM	62.5	56.6	55.4
05:05 AM - 05:10 AM	63.3	48.5	07:45 AM - 07:50 AM	61.0	50.8	51.7
05:10 AM - 05:15 AM	63.3	48.3	07:50 AM - 07:55 AM	66.4	50.6	45.5
05:15 AM - 05:20 AM	60.7	49.8	07:55 AM - 08:00 AM	68.9	51.7	42.5
05:20 AM - 05:25 AM	57.1	48.6	08:00 AM - 08:05 AM	65.9	48.3	53.5
05:25 AM - 05:30 AM	69.6	54.5	08:05 AM - 08:10 AM	63.1	50.8	50.3
05:30 AM - 05:35 AM	68.3	48.8	08:10 AM - 08:15 AM	62.6	48.6	51.9
05:35 AM - 05:40 AM	66.4	49.1	08:15 AM - 08:20 AM	62.7	48.9	43.8
05:40 AM - 05:45 AM	62.4	43.8	08:20 AM - 08:25 AM	60.0	48.0	51.2
05:45 AM - 05:50 AM	65.9	46.1	08:25 AM - 08:30 AM	59.2	47.4	51.6
05:50 AM - 05:55 AM	66.4	43.0	08:30 AM - 08:35 AM	56.2	48.2	48.7
05:55 AM - 06:00 AM	58.5	43.1	08:35 AM - 08:40 AM	58.8	47.1	62.3
06:00 AM - 06:05 AM	57.5	44.6	08:40 AM - 08:45 AM	54.0	44.7	50.4
06:05 AM - 06:10 AM	59.2	44.3	08:45 AM - 08:50 AM	54.0	46.0	47.3
06:10 AM - 06:15 AM	60.6	43.4	08:50 AM - 08:55 AM	51.9	45.6	55.5
06:15 AM - 06:20 AM	67.9	64.5	08:55 AM - 09:00 AM	59.4	46.2	51.6
06:20 AM - 06:25 AM	68.3	62.7	09:00 AM - 09:05 AM	62.4	49.7	48.6
06:25 AM - 06:30 AM	66.8	60.8	09:05 AM - 09:10 AM	62.7	50.0	51.1
06:30 AM - 06:35 AM	66.4	59.9	09:10 AM - 09:15 AM	62.8	50.1	51.4
06:35 AM - 06:40 AM	66.6	59.8	09:15 AM - 09:20 AM	62.7	50.0	57.0

Approved by

Saranyuth Jittrant  
Assistant General Manager

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# ภาคผนวก ค-08

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ระดับเสียงรบกวน



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluek Daeng

Project Location :

TESTING  
No.0042

Lot ID: 2270911

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report Number : 2359640-1

Page 1 of 3

Sample No. 2270911-1

Parameter

Location: Ban Thumruai (N1) (GPS: 47P 734053, 1432206)

Measurement Date

Measurement by: Anurak Tongkijjongsakda

Sound Level Meter

00296518

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการงาน	ระดับเสียง (dB(A))			เสียงพื้นฐาน	ค่าระดับการรบกวน
			ค่าเฉลี่ย	ค่าสูงสุด	ค่าต่ำสุด		
01:00 PM - 02:00 PM	55.0	54.6	0.4	7.0	48.0	46.3	1.7
02:00 PM - 03:00 PM	56.8	57.0	1.9	4.5	54.3	47.8	6.5
03:00 PM - 04:00 PM	56.9	54.2	2.7	3.0	53.9	46.6	7.3
04:00 PM - 05:00 PM	56.7	54.7	2.0	4.5	52.2	47.2	4.4
05:00 PM - 06:00 PM	55.9	54.1	1.8	4.5	51.4	47.2	3.9
06:00 PM - 07:00 PM	55.6	55.5	1.1	7.0	49.6	50.4	-0.8
07:00 PM - 08:00 PM	56.6	60.0	-1.4	7.0	51.6	51.4	-0.2
08:00 PM - 09:00 PM	57.9	55.9	-3.0	7.0	49.9	50.9	-1.1
09:00 PM - 10:00 PM	57.2	52.9	4.7	7.0	45.2	48.3	-3.1
10:00 PM - 10:05 PM	49.0	54.3	-5.3	7.0	-	49.9	-0.9
10:05 PM - 10:10 PM	47.6	51.9	-4.3	7.0	-	48.6	-0.4
10:10 PM - 10:15 PM	49.2	53.3	-4.1	7.0	-	50.6	-1.4
10:15 PM - 10:20 PM	50.1	52.4	-2.4	7.0	-	50.0	0.1
10:20 PM - 10:25 PM	48.6	51.4	-2.8	7.0	-	46.3	2.3
10:25 PM - 10:30 PM	51.4	50.4	1.0	7.0	-	47.4	4.0
10:30 PM - 10:35 PM	48.7	52.5	-3.8	7.0	-	44.7	4.0
10:35 PM - 10:40 PM	51.6	52.6	-1.0	7.0	-	47.6	-1.6
10:40 PM - 10:45 PM	48.0	53.1	-5.1	7.0	-	44.0	4.0
10:45 PM - 10:50 PM	46.3	49.6	-3.3	7.0	-	42.3	4.0
10:50 PM - 10:55 PM	46.9	48.0	-1.1	7.0	-	42.9	4.0
10:55 PM - 11:00 PM	47.6	48.0	-0.4	7.0	-	43.6	4.0
11:00 PM - 11:05 PM	48.1	49.0	-0.7	7.0	-	45.7	-1.2
11:05 PM - 11:10 PM	48.2	48.8	-0.6	7.0	-	44.1	4.0
11:10 PM - 11:15 PM	49.2	47.7	1.5	7.0	-	45.5	-3.7
11:15 PM - 11:20 PM	47.4	47.9	-0.5	7.0	-	44.1	3.3
11:20 PM - 11:25 PM	49.4	53.2	-3.8	7.0	-	43.4	6.0
11:25 PM - 11:30 PM	50.4	51.8	-1.4	7.0	-	46.4	-6.0
11:30 PM - 11:35 PM	48.1	52.1	-4.0	7.0	-	44.1	4.0
11:35 PM - 11:40 PM	48.4	53.7	-5.3	7.0	-	44.4	4.0
11:40 PM - 11:45 PM	51.6	56.0	-4.4	7.0	-	47.6	-6.0
11:45 PM - 11:50 PM	51.8	53.9	-2.1	7.0	-	47.8	-6.0
11:50 PM - 11:55 PM	51.3	49.6	1.7	4.5	-	49.8	-8.5
11:55 PM - 12:00 AM	52.3	50.4	1.9	4.5	-	45.4	6.9
12:00 AM - 12:05 AM	49.0	49.6	-0.6	7.0	-	50.8	-11.8
12:05 AM - 12:10 AM	52.3	55.0	-2.7	7.0	-	48.3	4.0
12:10 AM - 12:15 AM	51.8	52.1	-0.3	7.0	-	47.8	4.0
12:15 AM - 12:20 AM	47.9	51.4	-3.5	7.0	-	43.9	4.0
12:20 AM - 12:25 AM	51.6	53.4	-1.8	7.0	-	47.6	-6.0
12:25 AM - 12:30 AM	49.9	54.8	-4.9	7.0	-	45.9	4.0
12:30 AM - 12:35 AM	45.6	55.8	-10.2	7.0	-	41.6	14.2

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluek Daeng

Project Location :

TESTING  
No.0042

Lot ID: 2270911

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report Number : 2359640-1

Page 2 of 3

Sample No. 2270911-1

Parameter

Location: Ban Thumruai (N1) (GPS: 47P 734053, 1432206)

Measurement Date

Measurement by: Anurak Tongkijjongsakda

Sound Level Meter

00296518

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการงาน	ระดับเสียง (dB(A))			เสียงพื้นฐาน	ค่าระดับการรบกวน
			ค่าเฉลี่ย	ค่าสูงสุด	ค่าต่ำสุด		
12:35 AM - 12:40 AM	44.5	54.9	-10.4	7.0	40.5	45.5	-5.0
12:40 AM - 12:45 AM	45.0	54.3	-9.3	7.0	42.0	45.3	-1.9
12:45 AM - 12:50 AM	47.6	48.0	-0.4	7.0	43.6	45.3	-1.7
12:50 AM - 12:55 AM	47.9	48.4	-0.5	7.0	43.9	45.4	-1.5
12:55 AM - 01:00 AM	46.6	51.6	-5.0	7.0	42.6	45.2	-2.6
01:00 AM - 01:05 AM	47.5	50.7	-3.2	7.0	43.5	45.1	-1.6
01:05 AM - 01:10 AM	47.9	48.6	-0.7	7.0	43.0	45.3	-2.3
01:10 AM - 01:15 AM	48.2	49.7	-1.5	7.0	44.2	45.3	-1.1
01:15 AM - 01:20 AM	47.8	49.0	-1.2	7.0	43.9	44.9	-1.0
01:20 AM - 01:25 AM	47.6	45.8	1.8	4.5	46.1	44.4	1.7
01:25 AM - 01:30 AM	47.5	45.2	2.3	4.5	45.9	43.6	2.3
01:30 AM - 01:35 AM	46.5	44.2	2.3	4.5	45.0	43.0	2.0
01:35 AM - 01:40 AM	46.9	44.7	2.2	4.5	45.4	44.3	1.1
01:40 AM - 01:45 AM	45.9	45.3	-0.4	4.5	46.4	44.3	2.1
01:45 AM - 01:50 AM	50.2	46.4	3.8	7.0	51.2	44.1	7.0
01:50 AM - 01:55 AM	46.4	47.1	-0.7	7.0	47.4	45.2	-2.2
01:55 AM - 02:00 AM	47.2	47.1	0.1	7.0	43.2	45.6	-2.4
02:00 AM - 02:05 AM	46.1	47.4	-1.3	7.0	44.1	45.7	-1.6
02:05 AM - 02:10 AM	47.6	47.0	0.6	7.0	43.6	45.3	-1.7
02:10 AM - 02:15 AM	48.5	47.3	1.2	7.0	44.5	45.6	-1.1
02:15 AM - 02:20 AM	47.2	50.3	-3.1	7.0	43.2	45.2	-2.0
02:20 AM - 02:25 AM	46.7	49.1	-2.4	7.0	42.7	45.1	-2.4
02:25 AM - 02:30 AM	47.3	52.6	-5.3	7.0	43.3	45.4	-2.1
02:30 AM - 02:35 AM	47.3	48.3	-1.0	7.0	43.5	43.9	0.6
02:35 AM - 02:40 AM	47.5	48.0	-0.5	7.0	43.5	44.3	-0.8
02:40 AM - 02:45 AM	49.8	46.8	3.0	7.0	43.9	44.0	0.1
02:45 AM - 02:50 AM	47.9	47.9	0.0	7.0	43.9	44.6	-0.7
02:50 AM - 02:55 AM	48.5	47.4	1.1	7.0	44.5	44.2	0.3
02:55 AM - 03:00 AM	50.4	50.2	0.2	7.0	46.4	45.3	1.1
03:00 AM - 03:05 AM	47.4	47.6	-0.2	7.0	43.4	45.7	-2.3
03:05 AM - 03:10 AM	46.7	48.3	-1.6	7.0	42.7	46.7	-4.0
03:10 AM - 03:15 AM	48.0	46.3	1.7	4.5	46.5	45.3	1.2
03:15 AM - 03:20 AM	48.1	47.1	1.0	7.0	44.1	46.1	-2.0
03:20 AM - 03:25 AM	53.4	51.8	1.6	4.5	51.9	47.0	4.9
03:25 AM - 03:30 AM	49.2	46.8	2.4	4.5	47.7	45.8	1.9
03:30 AM - 03:35 AM	45.8	46.2	-0.4	7.0	41.8	44.6	-2.8
03:35 AM - 03:40 AM	47.3	47.8	-0.5	7.0	43.3	46.6	-3.3
03:40 AM - 03:45 AM	49.2	47.8	1.4	7.0	45.2	46.7	-1.5
03:45 AM - 03:50 AM	47.3	47.6	-0.3	7.0	43.3	46.7	-3.4

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluck Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64  
Project Name : Pluck Daeng  
Project Location :

Sample No. 2270911-1  
Parameter เลือกลม  
Location บ้านคลองใหม่ (N1) (GPS 47P 734053, 1432206)  
Measurement Date Jun 17 - 18, 2022  
Measurement by Anurak Tongthonsakda  
Sound Level Meter 00296518



TESTING  
No.0042

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359640-1

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติงาน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การกระจาย
			ค่าจริง	ค่าเฉลี่ย	ค่าสูงสุด		
03:55 AM - 04:00 AM	48.4	47.6	-	0.8	7.0	46.0	-1.6
04:00 AM - 04:05 AM	48.3	48.1	-	0.2	7.0	46.4	-2.1
04:05 AM - 04:10 AM	47.1	49.0	-	-1.9	7.0	46.4	-3.3
04:10 AM - 04:15 AM	47.6	50.3	-	-2.7	7.0	47.0	-3.1
04:15 AM - 04:20 AM	47.2	49.2	-	-2.0	7.0	46.3	-3.1
04:20 AM - 04:25 AM	47.4	50.2	-	-2.8	7.0	47.6	-4.5
04:25 AM - 04:30 AM	47.7	50.5	-	-2.8	7.0	48.2	-4.5
04:30 AM - 04:35 AM	54.0	51.3	-	2.7	3.0	48.9	5.1
04:35 AM - 04:40 AM	50.9	55.1	-	-4.2	7.0	49.7	-2.8
04:40 AM - 04:45 AM	52.7	52.9	-	-0.2	7.0	49.5	-0.8
04:45 AM - 04:50 AM	56.0	56.4	-	-0.4	7.0	54.4	-2.4
04:50 AM - 04:55 AM	55.7	55.8	-	-0.1	7.0	54.6	-2.9
04:55 AM - 05:00 AM	55.4	59.8	-	-4.4	7.0	51.4	-0.1
05:00 AM - 05:05 AM	55.1	57.6	-	-1.5	7.0	51.4	0.7
05:05 AM - 05:10 AM	53.1	52.9	-	0.2	7.0	48.1	1.0
05:10 AM - 05:15 AM	51.7	53.2	-	-1.5	7.0	47.7	3.4
05:15 AM - 05:20 AM	54.3	46.9	-	7.4	7.0	46.9	0.4
05:20 AM - 05:25 AM	53.5	51.3	-	2.2	4.5	45.2	6.8
05:25 AM - 05:30 AM	51.8	51.6	-	0.2	7.0	45.9	1.9
05:30 AM - 05:35 AM	50.9	52.2	-	-1.3	7.0	45.8	1.1
05:35 AM - 05:40 AM	52.2	52.9	-	-0.7	7.0	48.2	2.5
05:40 AM - 05:45 AM	55.6	52.3	-	3.3	3.0	48.6	7.8
05:45 AM - 05:50 AM	54.7	54.2	-	0.5	7.0	47.4	3.3
05:50 AM - 05:55 AM	56.6	54.3	-	2.3	4.5	48.2	6.9
05:55 AM - 06:00 AM	54.5	53.0	-	1.5	4.5	50.0	1.5
06:00 AM - 07:00 AM	56.7	55.9	-	0.8	7.0	48.2	1.5
07:00 AM - 08:00 AM	57.4	55.7	-	1.7	4.5	47.3	5.6
08:00 AM - 09:00 AM	56.5	55.2	-	1.3	7.0	46.7	2.8
09:00 AM - 10:00 AM	55.2	53.2	-	2.0	4.5	43.9	6.8
10:00 AM - 11:00 AM	53.8	52.2	-	1.6	4.5	43.5	5.8
11:00 AM - 12:00 PM	54.6	52.7	-	1.9	4.5	46.8	3.3
12:00 PM - 01:00 PM	54.6	52.7	-	1.9	4.5	46.8	3.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2

- หมายเหตุ
1. ข้อมูลที่ได้มาจากการวัดระดับเสียงเป็นข้อมูลเบื้องต้นเท่านั้น ไม่สามารถนำมาใช้เพื่อการตัดสินใจทางกฎหมายได้
  2. ข้อมูลที่ได้มาจากการวัดระดับเสียงเป็นข้อมูลเบื้องต้นเท่านั้น ไม่สามารถนำมาใช้เพื่อการตัดสินใจทางกฎหมายได้
  3. ข้อมูลที่ได้มาจากการวัดระดับเสียงเป็นข้อมูลเบื้องต้นเท่านั้น ไม่สามารถนำมาใช้เพื่อการตัดสินใจทางกฎหมายได้
  4. ข้อมูลที่ได้มาจากการวัดระดับเสียงเป็นข้อมูลเบื้องต้นเท่านั้น ไม่สามารถนำมาใช้เพื่อการตัดสินใจทางกฎหมายได้

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluck Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64  
Project Name : Pluck Daeng  
Project Location :

Sample No. 2270911-2  
Parameter เลือกลม  
Location บ้านคลองใหม่ (N1) (GPS 47P 734053, 1432206)  
Measurement Date Jun 18 - 19, 2022  
Measurement by Anurak Tongthonsakda  
Sound Level Meter 00296518



TESTING  
No.0042

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359641-1

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติงาน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การกระจาย
			ค่าจริง	ค่าเฉลี่ย	ค่าสูงสุด		
01:00 PM - 02:00 PM	53.9	52.1	-	1.8	4.5	45.3	4.1
02:00 PM - 03:00 PM	52.7	52.6	-	1.1	7.0	46.7	1.8
03:00 PM - 04:00 PM	55.7	53.5	-	2.2	4.5	51.2	-
04:00 PM - 05:00 PM	56.0	53.7	-	2.3	4.5	51.5	-
05:00 PM - 06:00 PM	54.5	52.8	-	1.7	4.5	50.0	3.5
06:00 PM - 07:00 PM	53.4	53.4	-	0.0	7.0	46.4	2.9
07:00 PM - 08:00 PM	58.0	61.0	-	-3.0	7.0	51.0	-7.8
08:00 PM - 09:00 PM	56.0	61.0	-	-5.0	7.0	49.0	-8.1
09:00 PM - 10:00 PM	52.7	58.0	-	-5.8	7.0	45.2	-9.3
10:00 PM - 11:00 PM	50.7	57.6	-	-6.9	7.0	46.7	-5.1
11:00 PM - 12:00 PM	49.9	53.6	-	-3.7	7.0	45.9	-2.7
12:00 PM - 01:00 PM	48.0	55.0	-	-7.0	7.0	45.0	-6.8
01:00 PM - 02:00 PM	50.2	54.7	-	-4.5	7.0	46.3	-2.3
02:00 PM - 03:00 PM	48.2	55.9	-	-7.7	7.0	52.4	-8.2
03:00 PM - 04:00 PM	45.8	53.8	-	-8.0	7.0	43.9	-4.9
04:00 PM - 05:00 PM	46.8	54.0	-	-7.2	7.0	43.9	-4.9
05:00 PM - 06:00 PM	47.9	54.7	-	-6.8	7.0	43.9	-4.9
06:00 PM - 07:00 PM	48.2	54.6	-	-6.4	7.0	44.2	-2.2
07:00 PM - 08:00 PM	47.5	54.8	-	-7.3	7.0	43.5	-8.3
08:00 PM - 09:00 PM	46.5	52.9	-	-6.4	7.0	44.5	-5.4
09:00 PM - 10:00 PM	47.6	52.1	-	-4.5	7.0	43.6	-6.3
10:00 PM - 11:00 PM	49.2	52.3	-	-3.1	7.0	45.2	-5.1
11:00 PM - 12:00 PM	49.1	51.9	-	-2.8	7.0	45.1	-3.3
12:00 PM - 01:00 PM	48.8	53.6	-	-4.8	7.0	47.8	-0.4
01:00 PM - 02:00 PM	50.1	51.5	-	-1.4	7.0	46.1	-1.0
02:00 PM - 03:00 PM	44.8	49.6	-	-5.8	7.0	41.8	-4.6
03:00 PM - 04:00 PM	44.8	51.1	-	-6.3	7.0	40.8	-7.8
04:00 PM - 05:00 PM	46.8	51.0	-	-4.2	7.0	42.8	-6.7
05:00 PM - 06:00 PM	47.5	50.1	-	-2.6	7.0	43.5	-3.8
06:00 PM - 07:00 PM	46.8	50.2	-	-3.4	7.0	44.8	-2.2
07:00 PM - 08:00 PM	45.3	49.7	-	-4.4	7.0	41.3	-6.1
08:00 PM - 09:00 PM	46.8	51.1	-	-4.3	7.0	42.8	-4.2
09:00 PM - 10:00 PM	48.7	50.1	-	-1.3	7.0	43.9	-1.8
10:00 PM - 11:00 PM	52.5	51.6	-	0.9	7.0	46.7	-1.9
11:00 PM - 12:00 PM	51.2	49.1	-	2.1	4.5	46.3	3.5
12:00 PM - 01:00 PM	46.6	47.1	-	-0.5	7.0	42.6	-3.0
01:00 PM - 02:00 PM	47.4	49.9	-	-2.5	7.0	43.4	-2.7

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluek Daeng

Project Location :

Sample No. 2270911-2

Parameter (มิลลิกรัม)

Location (มิลลิกรัม) (GPS 47P 734053, 1432206)

Measurement Date Jun 18 - 19, 2022

Measurement by Anurak Tongkhajonsakda

Sound Level Meter 00296518

TESTING  
No.0042

Lot ID: 2270911

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report Number: 2359641-1

Page 2 of 3



เวลา	เสียงจากแหล่งกำเนิด	เสียงจากตัวรับ	ระดับเสียง (dB(A))		เสียงที่รับ	ค่าระดับการรบกวน
			ค่าเสียง	ค่าเสียง		
12:35 AM - 12:40 AM	47.6	51.4	-3.8	7.0	47.3	-3.7
12:40 AM - 12:45 AM	46.7	50.3	-3.6	7.0	46.7	-4.0
12:45 AM - 12:50 AM	47.5	48.0	-0.5	7.0	46.3	-2.8
12:50 AM - 12:55 AM	46.3	46.7	-0.4	7.0	45.2	-2.9
12:55 AM - 01:00 AM	46.7	47.3	-0.6	7.0	45.2	-2.5
01:00 AM - 01:05 AM	44.8	47.9	-3.1	7.0	45.4	-4.6
01:05 AM - 01:10 AM	47.0	47.9	-0.9	7.0	45.3	-2.3
01:10 AM - 01:15 AM	46.0	47.9	-1.9	7.0	45.2	-3.2
01:15 AM - 01:20 AM	46.2	48.1	-1.9	7.0	45.5	-3.9
01:20 AM - 01:25 AM	45.9	48.1	-2.2	7.0	46.2	-4.3
01:25 AM - 01:30 AM	48.5	50.6	-2.1	7.0	46.9	-2.4
01:30 AM - 01:35 AM	45.3	51.6	-6.3	7.0	47.2	-5.9
01:35 AM - 01:40 AM	46.1	52.1	-6.0	7.0	47.6	-5.5
01:40 AM - 01:45 AM	45.4	51.9	-6.5	7.0	47.8	-6.4
01:45 AM - 01:50 AM	45.9	49.0	-3.1	7.0	47.3	-5.4
01:50 AM - 01:55 AM	45.7	48.8	-3.1	7.0	47.2	-5.5
01:55 AM - 02:00 AM	49.7	50.8	-1.1	7.0	47.3	-1.6
02:00 AM - 02:05 AM	46.5	48.6	-2.1	7.0	47.1	-4.6
02:05 AM - 02:10 AM	46.0	49.0	-3.0	7.0	47.3	-5.3
02:10 AM - 02:15 AM	46.2	51.0	-4.8	7.0	47.6	-5.4
02:15 AM - 02:20 AM	50.2	52.0	-1.8	7.0	47.1	-0.9
02:20 AM - 02:25 AM	48.0	48.0	0.0	7.0	46.1	-1.1
02:25 AM - 02:30 AM	47.6	50.0	-2.4	7.0	46.3	-2.5
02:30 AM - 02:35 AM	47.0	50.2	-3.2	7.0	46.1	-3.1
02:35 AM - 02:40 AM	46.6	51.7	-5.1	7.0	45.8	-3.2
02:40 AM - 02:45 AM	46.6	50.3	-3.7	7.0	46.4	-6.6
02:45 AM - 02:50 AM	43.8	48.1	-4.3	7.0	46.4	-4.3
02:50 AM - 03:00 AM	46.1	47.2	-1.1	7.0	46.4	-3.1
03:00 AM - 03:05 AM	46.1	49.4	-3.3	7.0	46.6	-2.5
03:05 AM - 03:10 AM	46.4	47.9	-1.5	7.0	46.3	-3.9
03:10 AM - 03:15 AM	45.3	46.6	-1.3	7.0	45.5	-4.2
03:15 AM - 03:20 AM	45.4	46.4	-1.0	7.0	45.7	-4.3
03:20 AM - 03:25 AM	45.6	47.2	-1.6	7.0	45.8	-4.2
03:25 AM - 03:30 AM	45.1	48.3	-3.2	7.0	46.1	-5.0
03:30 AM - 03:35 AM	44.9	50.2	-5.3	7.0	47.7	-6.8
03:35 AM - 03:40 AM	45.1	50.1	-5.0	7.0	47.4	-7.3
03:40 AM - 03:45 AM	44.4	50.8	-6.4	7.0	47.7	-6.3
03:45 AM - 03:50 AM	46.5	50.7	-4.2	7.0	47.6	-5.1
03:50 AM - 03:55 AM	49.7	51.3	-1.6	7.0	48.0	-2.3

The above results are valid only for the audited and certified samples as indicated in this report. No part of this report for certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) Co., Ltd. is not responsible for the results of the test if the samples are not representative of the lot.

Approved by

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Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluek Daeng

Project Location :

Sample No. 2270911-2

Parameter (มิลลิกรัม)

Location (มิลลิกรัม) (GPS 47P 734053, 1432206)

Measurement Date Jun 18 - 19, 2022

Measurement by Anurak Tongkhajonsakda

Sound Level Meter 00296518

TESTING  
No.0042

Lot ID: 2270911

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report Number: 2359641-1

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เวลา	เสียงจากแหล่งกำเนิด	เสียงจากตัวรับ	ระดับเสียง (dB(A))		เสียงที่รับ	ค่าระดับการรบกวน
			ค่าเสียง	ค่าเสียง		
03:55 AM - 04:00 AM	49.4	52.2	-2.8	7.0	45.4	-4.4
04:00 AM - 04:05 AM	50.0	50.1	-0.1	7.0	46.0	-0.4
04:05 AM - 04:10 AM	46.6	50.8	-4.2	7.0	42.6	-46.3
04:10 AM - 04:15 AM	45.4	49.6	-4.2	7.0	41.4	-47.0
04:15 AM - 04:20 AM	47.2	49.7	-2.5	7.0	43.2	-47.5
04:20 AM - 04:25 AM	45.3	50.3	-5.0	7.0	41.3	-48.4
04:25 AM - 04:30 AM	49.8	50.0	-0.2	7.0	45.8	-47.4
04:30 AM - 04:35 AM	48.2	53.4	-4.2	7.0	45.2	-50.2
04:35 AM - 04:40 AM	50.8	52.5	-1.7	7.0	46.8	-49.0
04:40 AM - 04:45 AM	54.7	55.8	-1.1	7.0	50.7	-52.8
04:45 AM - 04:50 AM	54.3	56.5	-2.2	7.0	50.3	-54.4
04:50 AM - 04:55 AM	48.8	54.5	-6.2	7.0	44.3	-50.2
04:55 AM - 05:00 AM	50.3	50.3	-0.5	7.0	45.8	-47.1
05:00 AM - 05:05 AM	54.1	50.0	-4.1	2.0	55.1	-46.7
05:05 AM - 05:10 AM	54.6	53.2	-1.4	7.0	50.6	-46.9
05:10 AM - 05:15 AM	49.0	51.4	-2.4	7.0	45.0	-46.6
05:15 AM - 05:20 AM	47.9	49.4	-1.5	7.0	43.9	-45.6
05:20 AM - 05:25 AM	50.6	49.7	0.9	7.0	46.6	-45.6
05:25 AM - 05:30 AM	57.5	55.0	2.5	3.0	57.5	-46.1
05:30 AM - 05:35 AM	53.2	52.9	0.3	7.0	49.2	-45.7
05:35 AM - 05:40 AM	50.5	50.7	-0.2	7.0	46.5	-45.1
05:40 AM - 05:45 AM	52.7	51.1	1.6	4.5	51.2	-44.9
05:45 AM - 05:50 AM	52.2	52.7	-0.5	7.0	48.2	-46.8
05:50 AM - 05:55 AM	54.5	54.0	0.5	7.0	50.5	-46.8
05:55 AM - 06:00 AM	56.2	55.3	0.9	7.0	49.2	-47.8
06:00 AM - 06:05 AM	55.2	54.1	1.1	7.0	48.2	-46.4
06:05 AM - 06:10 AM	57.2	55.2	2.0	4.5	52.7	-48.0
06:10 AM - 06:15 AM	57.9	57.0	0.9	7.0	50.9	-48.2
06:15 AM - 06:20 AM	57.0	55.5	1.5	4.5	52.5	-47.7
06:20 AM - 06:25 AM	56.2	54.7	1.5	4.5	51.7	-45.5
06:25 AM - 06:30 AM	56.0	54.2	1.8	4.5	51.5	-47.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

หมายเหตุ : 1. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

2. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

3. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

4. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

5. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

6. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

7. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

8. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

9. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

10. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

11. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

12. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

13. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

14. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

15. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

16. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

17. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

18. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

19. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

20. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

21. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

22. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

23. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

24. ข้อมูลการตรวจวัดเสียงที่ได้มาจากการวัดเสียงด้วยเครื่องวัดเสียงแบบพกพา (Sound Level Meter) ที่ติดตั้งที่สถานีวัดเสียง

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location : Pluak Daeng

Sample No. 2270911-3

Parameter เสียงรบกวน

Location จังหวัดระยอง (N1) (GPS 477 734053, 1432206)

Measurement Date Jun 19 - 20, 2022

Measurement by Anurak Tongthaisakda

Sound Level Meter 00296518

TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359642-1

Page 1 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การประเมิน
			(a) เสียงจากแหล่งกำเนิด	(b) เสียงรบกวน	(c) ระดับเสียงรวม		
01:00 PM - 02:00 PM	55.8	55.1	0.7	7.0	48.8	45.9	2.9
02:00 PM - 03:00 PM	55.9	54.1	1.8	4.5	51.4	44.5	6.9
03:00 PM - 04:00 PM	57.6	56.1	1.5	4.5	53.1	46.8	6.3
04:00 PM - 05:00 PM	57.0	53.0	4.0	4.5	50.5	46.8	3.6
05:00 PM - 06:00 PM	52.1	53.6	-1.5	4.5	47.6	50.3	-3.6
06:00 PM - 07:00 PM	51.7	53.8	-2.1	7.0	46.7	50.3	-3.6
07:00 PM - 08:00 PM	43.6	59.8	16.2	3.0	59.6	56.5	3.1
08:00 PM - 09:00 PM	53.7	56.8	-3.1	7.0	46.7	50.9	-4.2
09:00 PM - 10:00 PM	50.0	52.0	-2.0	7.0	43.0	47.2	-4.2
10:00 PM - 10:05 PM	47.6	48.7	-1.1	7.0	43.0	47.2	-4.2
10:05 PM - 10:10 PM	48.0	49.0	-1.0	7.0	44.0	47.9	-3.9
10:10 PM - 10:15 PM	53.2	49.2	4.0	3.0	52.2	48.0	4.2
10:15 PM - 10:20 PM	53.4	49.1	4.3	3.0	54.4	47.3	7.1
10:20 PM - 10:25 PM	54.5	49.7	4.8	3.0	53.0	46.7	6.3
10:25 PM - 10:30 PM	54.5	52.0	2.5	3.0	54.5	46.9	7.6
10:30 PM - 10:35 PM	52.8	48.4	4.4	2.0	54.3	47.2	7.1
10:35 PM - 10:40 PM	53.5	48.1	5.4	1.5	55.0	46.9	8.1
10:40 PM - 10:45 PM	52.7	48.5	4.2	2.0	54.7	48.2	6.5
10:45 PM - 10:50 PM	52.7	48.7	4.0	2.0	53.7	48.9	6.8
10:50 PM - 10:55 PM	50.7	46.9	3.8	4.5	49.2	47.0	2.2
10:55 PM - 11:00 PM	49.9	48.4	1.5	4.5	48.4	46.0	2.4
11:00 PM - 11:05 PM	49.8	50.6	-0.8	7.0	49.8	46.2	3.6
11:05 PM - 11:10 PM	54.1	49.6	4.5	1.5	53.6	47.3	6.3
11:10 PM - 11:15 PM	51.0	48.7	2.3	4.5	49.2	46.6	2.6
11:15 PM - 11:20 PM	45.2	49.5	-4.3	7.0	41.2	48.0	-6.8
11:20 PM - 11:25 PM	46.0	49.5	-3.5	7.0	42.0	46.9	-4.9
11:25 PM - 11:30 PM	47.5	49.1	-1.6	7.0	43.5	46.5	-3.0
11:30 PM - 11:35 PM	46.1	48.7	-2.6	7.0	42.1	47.1	-5.0
11:35 PM - 11:40 PM	45.7	48.2	-2.5	7.0	41.7	46.0	-4.3
11:40 PM - 11:45 PM	47.1	48.0	-0.9	7.0	43.1	44.9	-1.8
11:45 PM - 11:50 PM	48.1	47.6	0.5	7.0	44.1	45.1	-1.0
11:50 PM - 11:55 PM	48.2	47.4	0.8	7.0	44.2	45.6	-1.4
11:55 PM - 12:00 PM	46.9	47.8	-0.9	7.0	43.0	45.6	-2.6
12:00 PM - 12:05 PM	46.9	48.5	-1.6	7.0	42.9	45.7	-2.7
12:05 PM - 12:10 PM	46.3	48.0	-1.7	7.0	42.3	45.7	-3.4
12:10 PM - 12:15 PM	46.5	46.6	-0.1	7.0	42.5	44.8	-2.3
12:15 PM - 12:20 PM	47.7	48.0	-0.3	7.0	43.7	46.0	-2.3
12:20 PM - 12:25 PM	47.0	47.4	-0.4	7.0	43.0	45.4	-2.4
12:25 PM - 12:30 PM	46.6	46.9	-0.3	7.0	42.6	44.0	-1.4
12:30 PM - 12:35 PM	45.9	46.0	-0.1	7.0	41.9	43.9	-2.0

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Approved by

*D. Chongchon*

Dei Chongchon  
Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location : Pluak Daeng

Sample No. 2270911-3

Parameter เสียงรบกวน

Location จังหวัดระยอง (N1) (GPS 477 734053, 1432206)

Measurement Date Jun 19 - 20, 2022

Measurement by Anurak Tongthaisakda

Sound Level Meter 00296518

TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359642-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การประเมิน
			(a) เสียงจากแหล่งกำเนิด	(b) เสียงรบกวน	(c) ระดับเสียงรวม		
12:35 AM - 12:40 AM	46.1	47.4	-1.3	7.0	42.1	45.3	-3.2
12:40 AM - 12:45 AM	44.9	46.4	-1.5	7.0	40.9	44.8	-3.9
12:45 AM - 12:50 AM	45.6	45.8	-0.2	7.0	41.6	44.4	-2.8
12:50 AM - 12:55 AM	44.4	44.8	-0.4	7.0	40.4	43.7	-3.3
12:55 AM - 01:00 AM	45.4	46.7	-1.3	7.0	41.3	43.5	-2.1
01:00 AM - 01:05 AM	44.5	45.3	-0.8	7.0	40.5	43.4	-2.9
01:05 AM - 01:10 AM	44.5	48.2	-3.7	7.0	40.5	43.7	-3.2
01:10 AM - 01:15 AM	45.1	45.0	0.1	7.0	41.1	42.8	-1.7
01:15 AM - 01:20 AM	44.8	44.4	0.4	7.0	40.8	43.0	-2.2
01:20 AM - 01:25 AM	47.2	44.2	3.0	3.0	47.2	43.0	4.2
01:25 AM - 01:30 AM	48.7	46.7	2.0	4.5	47.2	43.2	4.0
01:30 AM - 01:35 AM	47.7	44.2	3.5	2.0	48.7	42.3	6.4
01:35 AM - 01:40 AM	46.9	45.0	1.9	4.5	45.4	43.0	2.4
01:40 AM - 01:45 AM	47.6	44.7	2.9	3.0	47.6	43.0	4.6
01:45 AM - 01:50 AM	48.3	45.7	2.6	3.0	48.3	42.5	5.8
01:50 AM - 01:55 AM	47.2	43.6	3.6	2.0	47.2	41.9	5.3
01:55 AM - 02:00 AM	51.1	50.1	1.0	7.0	42.1	44.1	-2.0
02:00 AM - 02:05 AM	44.4	44.4	0.0	7.0	40.4	43.0	-2.6
02:05 AM - 02:10 AM	47.3	44.9	2.4	4.5	45.8	43.4	2.4
02:10 AM - 02:15 AM	45.3	44.9	-0.4	7.0	40.8	44.3	-3.5
02:15 AM - 02:20 AM	45.3	45.7	-0.4	7.0	41.3	44.1	-2.8
02:20 AM - 02:25 AM	45.0	46.2	-1.2	7.0	41.0	44.4	-3.4
02:25 AM - 02:30 AM	44.9	45.5	-0.6	7.0	40.8	43.6	-2.7
02:30 AM - 02:35 AM	44.8	44.6	0.2	7.0	40.8	43.7	-0.8
02:35 AM - 02:40 AM	44.3	44.6	0.3	7.0	40.8	43.4	-1.6
02:40 AM - 02:45 AM	45.9	45.2	0.7	7.0	40.3	42.3	-2.0
02:45 AM - 02:50 AM	45.4	47.2	-1.8	7.0	41.4	41.9	0.5
02:50 AM - 02:55 AM	44.8	43.6	1.2	7.0	40.8	41.1	-0.3
02:55 AM - 03:00 AM	44.1	42.6	1.5	4.5	42.6	41.3	1.3
03:00 AM - 03:05 AM	44.8	44.4	0.4	7.0	40.8	42.4	-1.6
03:05 AM - 03:10 AM	45.4	45.1	0.3	7.0	41.4	43.6	-2.4
03:10 AM - 03:15 AM	51.4	50.8	0.6	7.0	47.4	44.8	2.6
03:15 AM - 03:20 AM	51.3	51.3	0.0	7.0	46.3	43.5	2.8
03:20 AM - 03:25 AM	46.3	43.5	2.8	3.0	46.3	42.7	3.6
03:25 AM - 03:30 AM	46.9	45.2	1.7	4.5	46.9	42.7	4.2
03:30 AM - 03:35 AM	46.6	45.0	1.6	7.0	42.6	43.6	-1.0
03:35 AM - 03:40 AM	51.4	51.4	0.0	7.0	47.4	43.9	3.5
03:40 AM - 03:45 AM	47.2	46.4	0.8	7.0	43.2	43.7	-0.5
03:45 AM - 03:50 AM	51.4	54.2	-2.8	7.0	49.4	46.2	3.2

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Approved by

*D. Chongchon*

Dei Chongchon  
Senior Manager

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## Analysis / Test Report

Client : Rajana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2355642-1

P/O : RUN(2)-019/64

P/O : RIN(2)-019/64  
Report Number : 2359642-1

Sample No	2270911-3
	

Parameter for  $\beta$  Parameter

Location	Altitude (m)	Latitude (N)	Longitude (E)	Time (UTC)	Observer	Remarks
บ้านวังศาลหลวง (N1)	734053	1432206				

Measurement Date  
Measurement by  
Jun 19 - 20, 2022  
Anurak Tsankhalonsakda

เวลา	ระบบเสียง (dB(A))					ระดับเสียง การรบกวน
	เสียงจาก แหล่งกำเนิด	เสียงขณะ ปฏิบัติงาน	ผลต่าง ระดับเสียง	ตัวแปลค่า	พื้นที่เสียงจากแหล่งกำเนิด การวัด (m <sup>2</sup> )	
03:55 AM - 04:00 AM	46.1	51.0	-4.9	7.0	42.1	47.9
04:00 AM - 04:05 AM	47.0	50.8	-3.8	7.0	-	46.0
04:05 AM - 04:10 AM	47.7	51.1	-3.4	7.0	43.7	48.7
04:10 AM - 04:15 AM	50.5	51.4	-0.9	7.0	46.5	48.8
04:15 AM - 04:20 AM	49.2	51.0	-1.8	7.0	45.0	46.0
04:20 AM - 04:25 AM	46.6	48.8	-2.2	7.0	42.6	46.7
04:25 AM - 04:30 AM	48.5	48.3	-0.8	7.0	44.5	46.2
04:30 AM - 04:35 AM	49.7	48.9	-0.2	7.0	45.7	45.9
04:35 AM - 04:40 AM	49.9	50.4	-0.5	7.0	45.9	45.4
04:40 AM - 04:45 AM	50.5	53.1	-2.6	7.0	46.5	48.0
04:45 AM - 04:50 AM	55.9	57.9	-2.0	7.0	51.9	53.9
04:50 AM - 04:55 AM	51.0	52.7	-1.7	7.0	47.0	48.8
04:55 AM - 05:00 AM	50.8	52.1	-1.3	7.0	46.8	46.2
05:00 AM - 05:05 AM	52.3	51.6	0.7	7.0	48.3	45.2
05:05 AM - 05:10 AM	51.9	51.9	-0.4	7.0	47.5	45.8
05:10 AM - 05:15 AM	52.6	52.0	0.6	7.0	48.6	46.1
05:15 AM - 05:20 AM	50.0	51.2	-1.2	7.0	46.0	45.4
05:20 AM - 05:25 AM	52.0	51.2	0.8	7.0	-	45.8
05:25 AM - 05:30 AM	50.0	50.5	0.3	7.0	46.8	44.6
05:30 AM - 05:35 AM	53.8	53.8	0.0	4.5	52.3	45.6
05:35 AM - 05:40 AM	53.6	52.5	1.1	4.5	48.9	47.0
05:40 AM - 05:45 AM	54.4	52.7	1.7	4.5	52.9	46.3
05:45 AM - 05:50 AM	53.2	53.5	-0.3	7.0	49.3	45.8
05:50 AM - 05:55 AM	54.6	52.2	2.4	7.0	49.6	48.1
05:55 AM - 06:00 AM	54.4	52.6	1.8	4.5	52.9	46.9
06:00 AM - 06:05 AM	53.6	53.5	0.1	4.5	51.1	49.1
06:05 AM - 06:10 AM	54.3	53.5	0.8	7.0	47.9	46.7
06:10 AM - 06:15 AM	54.3	52.5	1.8	4.5	49.8	44.5
06:15 AM - 06:20 AM	54.3	52.5	1.8	4.5	49.8	44.7
06:20 AM - 06:25 AM	54.3	51.5	2.8	4.5	49.8	44.9
06:25 AM - 06:30 AM	54.6	51.4	3.2	7.0	45.3	45.6
11:00 PM - 11:05 PM	53.3	51.4	0.9	7.0	45.3	43.9
12:00 PM - 01:00 PM	53.5	51.9	2.0	4.5	49.4	53.5

**ภาคฐาน**

**การดำเนินงาน**

1. ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
2. ประกาศกระทรวงมหาดไทย เรื่อง กำหนดระดับเสียงการรบกวนจากยานพาหนะ พ.ศ. 2550

3. ปรัชญาศีลคณากรรมการควบคุมผลิตภัณฑ์ สิ่ง ซึ่งการตรวจวัดระดับเสียงพื้นฐาน ระดับเสียงขณะไม่มีการรบกวน การตรวจวัดและคำนวณระดับเสียงขณะมีการรบกวน การคำนวณ

คำระดับการยกย่อง และแบบฉบับเพื่อการพิจารณาว่าได้เสียยกย่อง พ.ศ. 2550 และประเภทของงานวิจัย ยกย่อง วิชาการวิจัยได้ระดับยกย่อง ระดับเสียยกย่อง 24 ชั่วโมง

และระดับเสียงสูงที่สุดที่ได้จากการปฏิบัติการประกอบกิจกรรม พ.ศ. 2553

4. กิจกรรมการประกวดร้องเพลงในโรงเรียน : นักเรียนได้แสดงความสามารถในการร้องเพลงในโรงเรียน ซึ่งนักเรียนได้แสดงความสามารถในการร้องเพลงในโรงเรียน พ.ศ. 2553

ได้รับเสียงจากแม่ส่งกำเนิด ฟากาตอรวรจัด วันที่ 19-20 มิถุนายน 2565

รหัสหนังสือพื้นฐานและระดับเสียงขอประเมิน (Sample No. 2270912-3 วันที่ตรวจวัด 19-20 มิถุนายน 2565)

~~Final~~ -

The above results are valid only for the indicated material sample(s) as indicated in

Dei Charnichon

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-4  
Parameter (เลขหมาย)  
Location บึงน้ำจันทวน (บึง) (GPS 477 734053, 1432206)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Aurak Tongdiangskida  
Sound Level Meter 00296518

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการ	ระดับเสียง (dB(A))			เสียงที่ฐาน	ค่ารวมการกระจาย
			ความสูง	ทิศทาง	ทิศทาง		
12:35 AM - 12:40 AM	58.0	55.6	2.4	4.5	4.5	52.1	4.4
12:40 AM - 12:45 AM	59.1	60.9	-1.8	7.0	7.0	56.9	-1.8
12:45 AM - 12:50 AM	60.4	59.1	3.3	3.0	3.0	54.1	6.3
12:50 AM - 12:55 AM	56.2	59.8	-3.6	7.0	7.0	53.9	-1.7
12:55 AM - 01:00 AM	55.0	55.2	-0.2	7.0	7.0	50.4	0.6
01:00 AM - 01:05 AM	55.3	53.7	1.6	4.5	4.5	48.7	5.1
01:05 AM - 01:10 AM	54.7	54.7	0.0	7.0	7.0	46.4	4.3
01:10 AM - 01:15 AM	56.0	54.6	1.1	7.0	7.0	45.7	6.3
01:15 AM - 01:20 AM	56.7	54.6	1.1	2.0	2.0	44.3	15.4
01:20 AM - 01:25 AM	53.2	54.1	-4.0	7.0	7.0	45.4	3.8
01:25 AM - 01:30 AM	51.7	54.5	-2.8	7.0	7.0	44.9	2.8
01:30 AM - 01:35 AM	53.0	53.7	-0.7	7.0	7.0	43.7	5.3
01:35 AM - 01:40 AM	48.2	51.0	-2.8	7.0	7.0	42.3	-2.3
01:40 AM - 01:45 AM	49.5	49.7	-0.2	7.0	7.0	44.5	-0.7
01:45 AM - 01:50 AM	46.6	49.7	-3.1	7.0	7.0	42.0	-3.8
01:50 AM - 01:55 AM	46.4	46.2	-0.2	7.0	7.0	41.1	-5.0
01:55 AM - 02:00 AM	47.3	47.5	-0.2	7.0	7.0	43.3	-3.6
02:00 AM - 02:05 AM	46.4	48.6	-2.2	7.0	7.0	42.4	-4.4
02:05 AM - 02:10 AM	49.2	49.3	-0.1	7.0	7.0	42.2	-1.7
02:10 AM - 02:15 AM	46.6	47.7	-1.1	7.0	7.0	42.6	-3.4
02:15 AM - 02:20 AM	45.9	46.2	-0.3	7.0	7.0	41.9	-3.9
02:20 AM - 02:25 AM	47.0	48.2	-1.2	7.0	7.0	43.5	-0.6
02:25 AM - 02:30 AM	47.5	47.5	0.0	7.0	7.0	44.1	-0.6
02:30 AM - 02:35 AM	47.7	45.4	2.3	4.5	4.5	46.2	2.3
02:35 AM - 02:40 AM	49.1	47.7	1.4	7.0	7.0	45.1	-0.8
02:40 AM - 02:45 AM	48.6	48.6	0.0	7.0	7.0	44.6	-0.4
02:45 AM - 02:50 AM	47.0	48.0	-1.0	7.0	7.0	43.0	-3.0
02:50 AM - 02:55 AM	45.1	49.1	-4.0	7.0	7.0	41.1	-2.7
02:55 AM - 03:00 AM	46.9	47.9	-1.0	7.0	7.0	42.9	-0.5
03:00 AM - 03:05 AM	49.4	49.1	0.3	7.0	7.0	45.4	0.3
03:05 AM - 03:10 AM	48.9	48.9	0.0	7.0	7.0	44.9	-0.5
03:10 AM - 03:15 AM	48.5	48.7	-0.2	7.0	7.0	44.5	-1.4
03:15 AM - 03:20 AM	48.6	47.6	1.0	7.0	7.0	44.6	-1.1
03:20 AM - 03:25 AM	48.7	46.9	1.8	4.5	4.5	47.2	1.9
03:25 AM - 03:30 AM	48.9	49.0	-0.1	7.0	7.0	44.9	-1.8
03:30 AM - 03:35 AM	49.4	48.5	0.9	7.0	7.0	45.4	-1.8
03:35 AM - 03:40 AM	50.5	48.1	2.4	4.5	4.5	49.0	2.6
03:40 AM - 03:45 AM	49.7	50.0	-0.3	7.0	7.0	45.7	-1.3
03:45 AM - 03:50 AM	48.4	49.0	-0.6	7.0	7.0	44.4	-2.5
03:50 AM - 03:55 AM	49.4	49.6	-0.2	7.0	7.0	45.4	-2.1

Approved by

D. Chongchon

Dei Chongchon  
Senior Manager

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TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2359643-1

Page 2 of 3



Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-4  
Parameter (เลขหมาย)  
Location บึงน้ำจันทวน (บึง) (GPS 477 734053, 1432206)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Aurak Tongdiangskida  
Sound Level Meter 00296518

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการ	ระดับเสียง (dB(A))			เสียงที่ฐาน	ค่ารวมการกระจาย
			ความสูง	ทิศทาง	ทิศทาง		
03:55 AM - 04:00 AM	48.8	50.8	-2.0	7.0	7.0	48.6	-3.8
04:00 AM - 04:05 AM	50.0	52.5	-2.5	7.0	7.0	49.1	-3.1
04:05 AM - 04:10 AM	49.0	52.2	-3.2	7.0	7.0	48.0	-4.1
04:10 AM - 04:15 AM	49.8	51.8	-2.0	7.0	7.0	48.1	-3.3
04:15 AM - 04:20 AM	49.3	53.6	-3.7	7.0	7.0	45.9	-3.2
04:20 AM - 04:25 AM	51.8	52.9	-1.1	7.0	7.0	47.8	-0.9
04:25 AM - 04:30 AM	50.1	52.4	-2.3	7.0	7.0	46.1	-3.4
04:30 AM - 04:35 AM	50.6	52.0	-1.4	7.0	7.0	46.6	-3.1
04:35 AM - 04:40 AM	51.8	51.9	-0.1	7.0	7.0	47.8	-0.8
04:40 AM - 04:45 AM	56.1	54.3	1.8	4.5	4.5	54.6	7.0
04:45 AM - 04:50 AM	56.9	56.3	0.6	7.0	7.0	52.9	-2.0
04:50 AM - 04:55 AM	53.5	54.9	-1.4	7.0	7.0	49.5	-1.6
04:55 AM - 05:00 AM	49.9	51.7	-1.8	7.0	7.0	47.2	-1.7
05:00 AM - 05:05 AM	51.2	52.3	-1.1	7.0	7.0	48.5	0.6
05:05 AM - 05:10 AM	52.5	52.2	0.3	7.0	7.0	47.8	0.8
05:10 AM - 05:15 AM	51.8	53.1	-1.3	7.0	7.0	48.8	1.0
05:15 AM - 05:20 AM	52.0	51.2	0.8	7.0	7.0	48.0	2.0
05:20 AM - 05:25 AM	52.3	52.7	-0.4	7.0	7.0	55.0	4.3
05:25 AM - 05:30 AM	53.1	59.5	-6.4	7.0	7.0	49.1	1.5
05:30 AM - 05:35 AM	53.8	52.8	1.0	7.0	7.0	48.8	4.4
05:35 AM - 05:40 AM	52.9	52.0	0.9	7.0	7.0	48.9	1.9
05:40 AM - 05:45 AM	54.7	53.3	1.4	7.0	7.0	50.7	3.7
05:45 AM - 05:50 AM	53.1	51.4	1.7	4.5	4.5	51.6	6.0
05:50 AM - 05:55 AM	56.4	53.3	3.1	3.0	3.0	56.4	8.9
05:55 AM - 06:00 AM	55.5	55.4	0.1	7.0	7.0	51.5	2.8
06:00 AM - 07:00 AM	58.2	57.0	1.2	7.0	7.0	51.2	0.6
07:00 AM - 08:00 AM	56.7	56.0	0.7	7.0	7.0	48.8	0.9
08:00 AM - 09:00 AM	54.3	53.9	0.4	7.0	7.0	47.3	0.6
09:00 AM - 10:00 AM	53.6	52.0	1.6	4.5	4.5	49.1	4.0
10:00 AM - 11:00 AM	54.2	52.1	2.1	4.5	4.5	49.7	5.9
11:00 AM - 12:00 PM	55.6	53.6	2.0	4.5	4.5	51.1	7.7
12:00 PM - 01:00 PM	51.7	49.8	1.9	4.5	4.5	47.2	5.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

- หมายเหตุ
1. การตรวจวัดเสียงที่ฐานเสียงที่วัดได้เป็นค่าเฉลี่ยของเสียงที่วัดได้ทั้งหมดในช่วงเวลาที่กำหนด
  2. การตรวจวัดเสียงที่ฐานเสียงที่วัดได้เป็นค่าเฉลี่ยของเสียงที่วัดได้ทั้งหมดในช่วงเวลาที่กำหนด
  3. การตรวจวัดเสียงที่ฐานเสียงที่วัดได้เป็นค่าเฉลี่ยของเสียงที่วัดได้ทั้งหมดในช่วงเวลาที่กำหนด
  4. การตรวจวัดเสียงที่ฐานเสียงที่วัดได้เป็นค่าเฉลี่ยของเสียงที่วัดได้ทั้งหมดในช่วงเวลาที่กำหนด

Approved by

D. Chongchon

Dei Chongchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-5  
Parameter (เอกสาร)  
Location (สถานที่)  
Measurement Date (วันที่)  
Measurement by (ผู้ตรวจ)  
Sound Level Meter (เครื่องวัดเสียง)

TESTING  
No.0042

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359644-1

Page 1 of 3



เวลา	เสียงจากแหล่งกำเนิด	เสียงรวม	ระดับเสียง (dB(A))		พื้นที่เสียงจากแหล่งกำเนิด	เสียงพื้นหลัง	ค่าระดับการรบกวน
			ความดัง	ทิศทาง	ความดัง	ทิศทาง	
01:00 PM - 02:00 PM	54.7	52.8	1.9	4.5	50.2	-	6.1
02:00 PM - 03:00 PM	55.3	53.9	1.4	7.0	48.3	-	7.0
03:00 PM - 04:00 PM	55.7	53.0	2.7	3.0	52.7	-	2.8
04:00 PM - 05:00 PM	56.8	55.5	1.3	7.0	49.6	-	6.6
05:00 PM - 06:00 PM	52.9	52.0	0.9	7.0	48.6	-	4.3
06:00 PM - 07:00 PM	53.2	52.7	0.5	7.0	46.2	-	6.0
07:00 PM - 08:00 PM	53.6	52.6	-1.8	7.0	52.6	-	5.0
08:00 PM - 09:00 PM	54.0	54.1	-4.1	7.0	47.0	-	5.6
09:00 PM - 10:00 PM	49.5	56.7	-7.2	7.0	42.5	-	5.9
10:00 PM - 10:05 PM	53.0	52.0	1.0	7.0	46.3	-	5.4
10:05 PM - 10:15 PM	50.5	51.3	-0.8	7.0	46.5	-	2.7
10:15 PM - 10:20 PM	49.7	48.3	1.4	7.0	45.7	-	0.5
10:20 PM - 10:25 PM	51.1	46.9	2.6	3.0	49.5	-	5.8
10:25 PM - 10:30 PM	52.0	47.5	3.3	3.0	43.7	-	8.4
10:30 PM - 10:35 PM	49.2	51.6	-2.4	7.0	52.1	-	4.3
10:35 PM - 10:40 PM	50.9	47.7	3.2	3.0	50.9	-	4.8
10:40 PM - 10:45 PM	50.7	48.1	2.6	3.0	50.7	-	7.3
10:45 PM - 10:50 PM	50.3	51.0	-0.7	7.0	46.3	-	4.5
10:50 PM - 10:55 PM	50.8	51.1	-0.3	7.0	46.8	-	6.2
11:00 PM - 11:05 PM	53.9	50.8	-2.7	7.0	44.1	-	3.6
11:05 PM - 11:10 PM	48.1	47.4	6.5	1.0	55.9	-	11.1
11:10 PM - 11:15 PM	49.6	51.3	-1.7	7.0	48.6	-	5.7
11:15 PM - 11:20 PM	46.9	46.0	0.9	7.0	44.7	-	2.3
11:20 PM - 11:25 PM	48.2	46.9	4.2	7.0	44.2	-	0.4
11:25 PM - 11:30 PM	48.3	47.4	0.9	7.0	44.3	-	-0.4
11:30 PM - 11:35 PM	47.1	48.5	-1.4	7.0	43.1	-	-3.4
11:35 PM - 11:40 PM	51.9	48.3	3.6	2.0	52.9	-	6.9
11:40 PM - 11:45 PM	50.0	50.5	-0.5	7.0	46.0	-	-0.1
11:45 PM - 11:50 PM	47.4	49.6	-2.2	7.0	43.4	-	-2.9
11:50 PM - 11:55 PM	46.5	48.3	-1.8	7.0	42.5	-	-3.6
12:00 AM - 12:05 AM	48.1	51.1	-3.0	7.0	44.1	-	-2.9
12:05 AM - 12:10 AM	47.8	57.7	-9.9	7.0	43.6	-	-8.6
12:10 AM - 12:15 AM	46.3	58.1	-11.8	7.0	42.3	-	-7.1
12:15 AM - 12:20 AM	46.3	56.5	-10.2	7.0	42.3	-	-5.2
12:20 AM - 12:25 AM	44.9	53.2	-8.3	7.0	40.9	-	-5.3
12:25 AM - 12:30 AM	49.8	52.9	-3.1	7.0	45.8	-	-2.3
12:30 AM - 12:35 AM	43.6	53.8	-10.0	7.0	39.8	-	-9.2

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-5  
Parameter (เอกสาร)  
Location (สถานที่)  
Measurement Date (วันที่)  
Measurement by (ผู้ตรวจ)  
Sound Level Meter (เครื่องวัดเสียง)

TESTING  
No.0042

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359644-1

Page 2 of 3



เวลา	เสียงจากแหล่งกำเนิด	เสียงรวม	ระดับเสียง (dB(A))		พื้นที่เสียงจากแหล่งกำเนิด	เสียงพื้นหลัง	ค่าระดับการรบกวน
			ความดัง	ทิศทาง	ความดัง	ทิศทาง	
12:35 AM - 12:40 AM	43.9	52.3	-8.4	7.0	38.9	-	-6.1
12:40 AM - 12:45 AM	44.9	50.7	-5.9	7.0	40.8	-	-3.6
12:45 AM - 12:50 AM	44.7	51.2	-6.5	7.0	40.7	-	-5.4
12:50 AM - 12:55 AM	43.7	51.3	-7.6	7.0	41.7	-	-6.2
12:55 AM - 01:00 AM	44.2	51.4	-7.2	7.0	40.2	-	-5.1
01:00 AM - 01:05 AM	46.5	51.9	-5.4	7.0	42.5	-	-5.4
01:05 AM - 01:10 AM	48.2	52.6	-4.4	7.0	44.2	-	-2.9
01:10 AM - 01:15 AM	46.9	53.8	-6.9	7.0	42.9	-	-4.9
01:15 AM - 01:20 AM	50.3	49.7	2.0	4.5	43.5	-	4.1
01:20 AM - 01:25 AM	45.2	48.4	-3.2	7.0	41.2	-	-3.6
01:25 AM - 01:30 AM	45.8	48.6	-2.8	7.0	41.8	-	-4.4
01:30 AM - 01:35 AM	46.3	48.4	-2.1	7.0	42.3	-	-3.3
01:35 AM - 01:40 AM	46.8	46.7	0.1	7.0	42.8	-	-2.5
01:40 AM - 01:45 AM	48.5	47.6	0.9	7.0	44.5	-	-0.8
01:45 AM - 01:50 AM	46.6	48.1	-1.5	7.0	42.6	-	-2.2
01:50 AM - 01:55 AM	45.7	50.6	-4.9	7.0	41.7	-	-3.3
01:55 AM - 02:00 AM	44.9	51.5	-6.6	7.0	40.9	-	-5.9
02:00 AM - 02:05 AM	47.1	50.7	-3.4	7.0	43.1	-	-5.1
02:05 AM - 02:10 AM	45.3	47.8	-2.5	7.0	40.5	-	-3.8
02:10 AM - 02:15 AM	44.5	49.2	-4.7	7.0	41.1	-	-5.2
02:15 AM - 02:20 AM	45.1	49.2	-4.1	7.0	41.1	-	-3.5
02:20 AM - 02:25 AM	44.9	47.8	-2.9	7.0	40.9	-	-4.4
02:25 AM - 02:30 AM	45.1	46.4	-1.3	7.0	41.1	-	-3.4
02:30 AM - 02:35 AM	45.1	46.5	-1.4	7.0	41.1	-	-3.6
02:35 AM - 02:40 AM	44.9	46.5	-1.6	7.0	40.9	-	-4.4
02:40 AM - 02:45 AM	47.2	47.0	0.2	7.0	43.2	-	-6.2
02:45 AM - 02:50 AM	45.7	49.5	-3.8	7.0	41.7	-	-4.6
02:50 AM - 02:55 AM	44.0	48.8	-4.8	7.0	40.0	-	-5.6
02:55 AM - 03:00 AM	44.5	49.1	-4.6	7.0	40.5	-	-4.3
03:00 AM - 03:05 AM	47.2	50.4	-3.2	7.0	43.2	-	-7.6
03:05 AM - 03:10 AM	44.8	51.4	-6.6	7.0	40.8	-	-4.9
03:10 AM - 03:15 AM	45.8	50.0	-4.2	7.0	41.8	-	-4.6
03:15 AM - 03:20 AM	45.8	48.8	-3.0	7.0	43.9	-	-5.6
03:20 AM - 03:25 AM	47.9	49.1	-1.2	7.0	43.9	-	-7.1
03:25 AM - 03:30 AM	45.5	50.4	-4.9	7.0	41.5	-	-5.6
03:30 AM - 03:35 AM	43.8	49.9	-6.1	7.0	39.8	-	-1.7
03:35 AM - 03:40 AM	48.0	48.7	-0.7	7.0	44.0	-	-4.7
03:40 AM - 03:45 AM	44.8	50.6	-5.8	7.0	40.8	-	-5.6
03:45 AM - 03:50 AM	45.2	49.5	-4.3	7.0	41.2	-	-4.6

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TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2359644-1



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluek Daeng  
Project Location :

Page 3 of 3

Sample No. 2270911-5  
Parameter เลื่อนสูง  
Location บ้านโคกนาเกลือ (N1) (GPS 47P 734053, 1432206)  
Measurement Date Jun 21 - 22, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00296518

เวลา	เสียงจากแหล่งกำเนิด	ระดับเสียง (dB(A))			เสียงรบกวน	ค่ารวม
		เสียงจาก	เสียงจาก	เสียงจาก		
		แหล่งกำเนิด	ตัวรับ	ตัวรับ		
03:55 AM - 04:00 AM	46.2	48.8	-2.6	7.0	45.7	-3.5
04:00 AM - 04:05 AM	47.6	50.5	-2.9	7.0	47.4	-3.8
04:05 AM - 04:10 AM	46.6	50.9	-4.3	7.0	48.1	-5.5
04:10 AM - 04:15 AM	45.2	50.8	-5.6	7.0	48.0	-6.8
04:15 AM - 04:20 AM	43.9	51.2	-7.3	7.0	48.8	-8.9
04:20 AM - 04:25 AM	45.0	51.9	-6.9	7.0	48.8	-7.8
04:25 AM - 04:30 AM	48.0	52.2	-4.2	7.0	49.0	-5.0
04:30 AM - 04:35 AM	55.1	53.2	1.9	4.5	50.5	3.1
04:35 AM - 04:40 AM	52.0	55.6	-3.6	7.0	50.4	-2.4
04:40 AM - 04:45 AM	51.1	54.1	-2.7	7.0	49.3	-2.2
04:45 AM - 04:50 AM	56.7	54.1	2.6	3.0	49.5	7.2
04:50 AM - 04:55 AM	54.4	57.3	-2.9	7.0	55.7	-5.3
04:55 AM - 05:00 AM	53.0	54.9	-1.9	7.0	49.0	-3.7
05:00 AM - 05:05 AM	53.8	52.6	1.2	7.0	49.8	2.3
05:05 AM - 05:10 AM	51.7	52.3	-0.6	7.0	47.7	-0.3
05:10 AM - 05:15 AM	50.0	51.1	-1.1	7.0	46.0	-0.1
05:15 AM - 05:20 AM	51.1	49.4	1.7	4.5	44.8	4.8
05:20 AM - 05:25 AM	53.0	49.6	-3.4	7.0	43.5	10.5
05:25 AM - 05:30 AM	52.5	51.4	-1.1	7.0	48.5	2.6
05:30 AM - 05:35 AM	52.5	51.4	-1.1	7.0	48.5	2.6
05:35 AM - 05:40 AM	52.1	50.6	1.5	4.5	50.6	4.7
05:40 AM - 05:45 AM	57.1	51.2	5.9	1.5	58.6	12.9
05:45 AM - 05:50 AM	55.6	54.8	-0.8	7.0	51.6	5.6
05:50 AM - 05:55 AM	53.6	55.6	-2.0	7.0	49.6	4.2
05:55 AM - 06:00 AM	53.1	52.0	1.1	7.0	49.1	1.6
06:00 AM - 06:05 AM	56.0	54.3	1.7	4.5	51.5	2.6
06:05 AM - 06:10 AM	53.7	52.8	-0.9	7.0	46.7	-0.1
06:10 AM - 06:15 AM	55.2	53.2	2.0	4.5	50.7	4.6
06:15 AM - 06:20 AM	57.1	52.3	5.4	7.0	46.2	1.6
06:20 AM - 06:25 AM	57.1	52.3	5.4	7.0	46.2	1.6
06:25 AM - 06:30 AM	56.1	56.8	-0.7	7.0	50.1	-4.0
06:30 AM - 06:35 AM	56.1	56.8	-0.7	7.0	50.1	-4.0
06:35 AM - 06:40 AM	59.2	57.4	1.8	4.5	54.7	4.6
ค่าเฉลี่ย					50.1	5.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

1. ข้อมูลการตรวจวัดที่ได้มาจากการวัดระดับเสียงตามมาตรฐานวิธีวัดเสียงตามข้อกำหนดมาตรฐาน ม. 2548
2. ข้อมูลการตรวจวัดที่ได้มาจากการวัดระดับเสียงตามวิธีวัดเสียงตามข้อกำหนดมาตรฐาน ม. 2550
3. ข้อมูลการตรวจวัดที่ได้มาจากการวัดระดับเสียงตามวิธีวัดเสียงตามข้อกำหนดมาตรฐาน ม. 2550
4. ข้อมูลการตรวจวัดที่ได้มาจากการวัดระดับเสียงตามวิธีวัดเสียงตามข้อกำหนดมาตรฐาน ม. 2550

Approved by  
Dei Changchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluek Daeng  
Project Location :

Page 1 of 3

Sample No. 2270911-5  
Parameter เลื่อนสูง  
Location บ้านโคกนาเกลือ (N1) (GPS 47P 734053, 1432206)  
Measurement Date Jun 22 - 23, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00296518

เวลา	เสียงจากแหล่งกำเนิด	ระดับเสียง (dB(A))			เสียงรบกวน	ค่ารวม
		เสียงจาก	เสียงจาก	เสียงจาก		
		แหล่งกำเนิด	ตัวรับ	ตัวรับ		
01:00 PM - 02:00 PM	58.1	56.5	1.6	4.5	53.6	-49.7
02:00 PM - 03:00 PM	57.7	55.4	2.3	4.5	53.2	-48.6
03:00 PM - 04:00 PM	56.3	56.7	-0.4	7.0	49.3	-47.3
04:00 PM - 05:00 PM	55.1	55.0	0.1	7.0	48.1	-46.3
05:00 PM - 06:00 PM	55.1	55.1	0.0	7.0	48.1	-46.3
06:00 PM - 07:00 PM	58.5	61.6	-3.1	7.0	51.5	-52.5
07:00 PM - 08:00 PM	55.8	63.2	-7.4	7.0	48.8	-45.3
08:00 PM - 09:00 PM	53.6	57.4	-3.8	7.0	46.6	-43.0
09:00 PM - 10:00 PM	50.7	59.2	-8.5	7.0	43.7	-40.0
10:00 PM - 10:05 PM	48.3	59.2	-10.9	7.0	45.3	-43.0
10:05 PM - 10:10 PM	48.3	60.8	-12.5	7.0	44.3	-43.8
10:10 PM - 10:15 PM	47.7	62.6	-14.9	7.0	43.7	-43.7
10:15 PM - 10:20 PM	47.8	53.0	-5.2	7.0	43.8	-40.8
10:20 PM - 10:25 PM	47.0	57.2	-10.2	7.0	43.0	-41.0
10:25 PM - 10:30 PM	47.0	57.3	-10.3	7.0	43.0	-41.0
10:30 PM - 10:35 PM	47.9	53.8	-6.9	7.0	43.9	-42.1
10:35 PM - 10:40 PM	48.0	60.9	-12.9	7.0	44.0	-44.5
10:40 PM - 10:45 PM	51.0	58.6	-7.6	7.0	45.0	-40.3
10:45 PM - 10:50 PM	49.2	61.5	-12.3	7.0	45.2	-50.3
10:50 PM - 10:55 PM	47.3	59.0	-11.7	7.0	44.3	-48.6
10:55 PM - 11:00 PM	46.2	59.6	-13.4	7.0	44.2	-48.8
11:00 PM - 11:05 PM	46.2	59.3	-13.1	7.0	44.2	-48.8
11:05 PM - 11:10 PM	47.6	58.8	-11.2	7.0	44.6	-46.4
11:10 PM - 11:15 PM	46.1	60.5	-14.4	7.0	44.1	-45.0
11:15 PM - 11:20 PM	48.9	66.5	-17.6	7.0	44.9	-52.9
11:20 PM - 11:25 PM	47.3	66.5	-19.2	7.0	43.2	-52.2
11:25 PM - 11:30 PM	46.0	66.0	-20.0	7.0	43.0	-52.0
11:30 PM - 11:35 PM	45.8	68.0	-22.2	7.0	43.2	-52.0
11:35 PM - 11:40 PM	47.5	63.5	-16.0	7.0	43.5	-50.8
11:40 PM - 11:45 PM	46.7	67.4	-20.7	7.0	42.7	-53.1
11:45 PM - 11:50 PM	46.7	63.8	-17.1	7.0	43.5	-50.8
11:50 PM - 11:55 PM	44.8	59.1	-14.3	7.0	40.8	-48.3
11:55 PM - 12:00 AM	45.1	62.8	-17.7	7.0	41.1	-51.4
12:00 AM - 12:05 AM	45.3	61.3	-16.0	7.0	41.3	-51.2
12:05 AM - 12:10 AM	45.3	61.3	-16.0	7.0	41.3	-51.2
12:10 AM - 12:15 AM	44.8	49.8	-5.0	7.0	40.8	-48.3
12:15 AM - 12:20 AM	44.4	59.6	-15.2	7.0	40.4	-45.3
12:20 AM - 12:30 AM	45.4	59.0	-13.6	7.0	41.4	-44.4

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Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RJK(2)-019/64

Project Name : Pluak Daeng

Project Location :

TESTING  
No.0042

Lot ID: 2270911

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report Number: 2359645-1

Page 2 of 3

Sample No. 2270911-6

Parameter (มิลลิเมตร)

Location (มิลลิเมตร)

Measurement Date (มิลลิเมตร)

Measurement by Anurak Tongkajonsakda

Sound Level Meter 00296518

เวลา	เสียงรวม หน่วย: dB(A)	เสียงรวม หน่วย: dB(A)	ระดับเสียง (dB(A))		ค่าเฉลี่ย	ค่ารวม
			เสียงรวม	เสียงรวม		
12:35 AM - 12:40 AM	43.7	43.7	39.7	48.6	41.2	3.0
12:40 AM - 12:45 AM	45.2	45.2	41.2	44.2	43.0	-2.0
12:45 AM - 12:50 AM	45.0	45.0	42.5	42.6	42.6	0.0
12:50 AM - 12:55 AM	46.3	46.3	40.9	41.8	41.4	0.1
12:55 AM - 01:00 AM	45.9	45.9	40.6	42.0	41.3	0.1
01:00 AM - 01:05 AM	44.6	44.6	40.6	42.7	41.7	-0.1
01:05 AM - 01:10 AM	44.6	44.6	40.6	42.7	41.7	-0.1
01:10 AM - 01:15 AM	44.6	44.6	40.6	42.7	41.7	-0.1
01:15 AM - 01:20 AM	45.1	45.1	41.1	44.0	42.6	-0.5
01:20 AM - 01:25 AM	45.1	45.1	41.1	43.5	42.3	-2.8
01:25 AM - 01:30 AM	43.6	43.6	39.6	42.9	41.3	-3.3
01:30 AM - 01:35 AM	47.3	47.3	43.3	41.8	42.5	1.5
01:35 AM - 01:40 AM	46.1	46.1	42.1	43.6	42.9	-1.5
01:40 AM - 01:45 AM	48.1	48.1	44.1	44.2	44.2	0.0
01:45 AM - 01:50 AM	47.6	47.6	43.6	44.3	44.0	-0.7
01:50 AM - 01:55 AM	46.3	46.3	42.3	49.6	46.0	-7.3
01:55 AM - 02:00 AM	46.1	46.1	42.1	48.6	45.4	-6.5
02:00 AM - 02:05 AM	47.5	47.5	43.5	44.7	44.7	-1.2
02:05 AM - 02:10 AM	46.8	46.8	42.8	53.9	53.9	-10.3
02:10 AM - 02:15 AM	46.3	46.3	42.3	45.0	43.7	-2.7
02:15 AM - 02:20 AM	44.5	44.5	40.5	44.1	42.3	-3.6
02:20 AM - 02:25 AM	46.5	46.5	42.5	46.9	44.7	-4.4
02:25 AM - 02:30 AM	45.4	45.4	41.4	50.4	49.0	-9.0
02:30 AM - 02:35 AM	47.1	47.1	43.1	46.2	44.6	-3.1
02:35 AM - 02:40 AM	45.6	45.6	41.6	45.5	43.5	-4.5
02:40 AM - 02:45 AM	47.8	47.8	43.8	45.7	45.7	-1.7
02:45 AM - 02:50 AM	49.4	49.4	45.4	65.4	65.4	-20.0
02:50 AM - 02:55 AM	46.8	46.8	42.8	47.5	47.5	-4.7
02:55 AM - 03:00 AM	45.6	45.6	41.6	45.5	43.5	-1.9
03:00 AM - 03:05 AM	46.9	46.9	42.9	46.0	45.0	-3.1
03:05 AM - 03:10 AM	46.8	46.8	42.8	45.7	44.7	-2.9
03:10 AM - 03:15 AM	46.5	46.5	42.5	50.2	50.2	-7.7
03:15 AM - 03:20 AM	48.0	48.0	44.0	50.0	48.0	-6.0
03:20 AM - 03:25 AM	45.6	45.6	41.6	47.2	45.6	-5.6
03:25 AM - 03:30 AM	46.2	46.2	42.2	50.1	47.9	-7.9
03:30 AM - 03:35 AM	46.2	46.2	42.2	45.4	43.4	-4.4
03:35 AM - 03:40 AM	49.0	49.0	45.0	45.4	45.4	-0.4
03:40 AM - 03:45 AM	47.9	47.9	43.9	45.4	43.4	-1.5
03:45 AM - 03:50 AM	46.1	46.1	42.1	50.6	50.6	-8.5
03:50 AM - 03:55 AM	50.3	50.3	46.3	48.8	48.8	-2.5

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RJK(2)-019/64

Project Name : Pluak Daeng

Project Location :

TESTING  
No.0042

Lot ID: 2270911

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report Number: 2359645-1

Page 3 of 3

Sample No. 2270911-6

Parameter (มิลลิเมตร)

Location (มิลลิเมตร)

Measurement Date (มิลลิเมตร)

Measurement by Anurak Tongkajonsakda

Sound Level Meter 00296518

เวลา	เสียงรวม หน่วย: dB(A)	เสียงรวม หน่วย: dB(A)	ระดับเสียง (dB(A))		ค่าเฉลี่ย	ค่ารวม
			เสียงรวม	เสียงรวม		
03:55 AM - 04:00 AM	45.5	45.5	52.9	41.5	46.7	-5.2
04:00 AM - 04:05 AM	46.9	46.9	53.4	42.9	49.1	-4.2
04:05 AM - 04:10 AM	49.7	49.7	60.9	45.7	49.1	-3.4
04:10 AM - 04:15 AM	47.7	47.7	54.5	43.7	49.4	-5.7
04:15 AM - 04:20 AM	48.3	48.3	54.2	44.3	49.4	-5.1
04:20 AM - 04:25 AM	47.2	47.2	57.8	43.2	51.9	-8.7
04:25 AM - 04:30 AM	49.1	49.1	58.7	45.1	49.7	-4.6
04:30 AM - 04:35 AM	48.7	48.7	56.0	44.7	48.8	-4.1
04:35 AM - 04:40 AM	47.8	47.8	56.8	43.8	52.3	-8.5
04:40 AM - 04:45 AM	48.4	48.4	56.4	44.4	51.6	-7.2
04:45 AM - 04:50 AM	54.5	54.5	54.4	50.5	49.2	1.3
04:50 AM - 04:55 AM	53.9	53.9	58.0	49.9	55.6	-5.7
04:55 AM - 05:00 AM	52.1	52.1	57.5	48.1	55.5	-7.4
05:00 AM - 05:05 AM	53.4	53.4	52.5	49.4	44.3	5.1
05:05 AM - 05:10 AM	50.3	50.3	52.4	46.3	45.7	0.6
05:10 AM - 05:15 AM	54.0	54.0	49.2	55.5	43.5	12.0
05:15 AM - 05:20 AM	55.2	55.2	52.5	55.2	46.7	8.5
05:20 AM - 05:25 AM	51.5	51.5	54.9	47.5	45.5	2.0
05:25 AM - 05:30 AM	53.3	53.3	50.7	53.3	45.8	7.5
05:30 AM - 05:35 AM	53.6	53.6	53.1	49.6	45.3	4.3
05:35 AM - 05:40 AM	51.6	51.6	52.7	47.6	46.3	1.3
05:40 AM - 05:45 AM	54.1	54.1	52.7	50.1	46.6	3.5
05:45 AM - 05:50 AM	56.0	56.0	53.2	56.0	47.1	8.9
05:50 AM - 05:55 AM	53.8	53.8	54.7	49.8	47.0	2.8
05:55 AM - 06:00 AM	53.4	53.4	52.7	49.4	47.8	1.6
06:00 AM - 06:05 AM	56.9	56.9	55.7	49.3	50.1	-0.2
06:05 AM - 06:10 AM	56.5	56.5	55.7	48.5	48.8	0.7
06:10 AM - 06:15 AM	57.1	57.1	57.1	48.1	48.2	-0.1
06:15 AM - 06:20 AM	53.9	53.9	51.6	49.4	46.2	3.9
06:20 AM - 06:25 AM	56.0	56.0	54.7	49.0	46.0	3.0
06:25 AM - 06:30 AM	54.1	54.1	53.0	47.1	44.0	3.1

Reference Method : Based on ISO 1996-1 and ISO 1996-2

หมายเหตุ

1. หักออกจากค่าเฉลี่ยรวม ที่รวมค่าเฉลี่ยรวมและระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2548

2. หักออกจากค่าเฉลี่ยรวมและระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

3. หักออกจากค่าเฉลี่ยรวมและระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

4. หักออกจากค่าเฉลี่ยรวม และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

ระดับเสียงและระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

ระดับเสียงและระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

ระดับเสียงและระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550 และระดับเสียงที่ได้จากการวัดการไหลของอากาศใน ม. 2550

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-7  
Parameter (เดียนตอม)  
Location (ถนนสายหลัก) (GPS 47P 734053, 1432206)  
Measurement Date Jun 23 - 24, 2022  
Measurement by Anurak Tongtongkijakda  
Sound Level Meter 00256518



TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2359646-1

Page 1 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการตาม	ระดับเสียง (dB(A))			เสียงที่ฐาน	ค่าระดับการรบกวน
			ความสูง	ทิศทาง	ทิศทาง		
01:00 PM - 02:00 PM	57.2	55.9	1.3	7.0	50.2	44.8	5.4
02:00 PM - 03:00 PM	55.1	51.0	2.1	4.5	48.6	42.6	6.0
03:00 PM - 04:00 PM	51.9	50.0	1.9	4.5	47.4	42.6	4.8
04:00 PM - 05:00 PM	54.8	54.8	1.7	3.0	54.5	47.3	7.0
05:00 PM - 06:00 PM	57.5	53.5	2.3	4.5	51.3	47.3	2.9
06:00 PM - 07:00 PM	54.3	57.0	-2.7	7.0	47.3	49.7	-2.4
07:00 PM - 08:00 PM	59.7	60.0	-0.3	7.0	52.7	52.6	0.1
08:00 PM - 09:00 PM	57.8	60.1	-2.3	7.0	52.4	52.4	-0.8
09:00 PM - 10:00 PM	51.1	58.7	-7.6	7.0	40.1	49.7	-9.6
10:00 PM - 10:05 PM	50.6	52.6	-2.0	7.0	46.7	46.7	0.0
10:05 PM - 10:10 PM	51.1	51.6	-0.5	7.0	47.1	46.6	0.5
10:10 PM - 10:15 PM	51.4	51.9	-0.5	7.0	47.4	46.2	1.2
10:15 PM - 10:20 PM	51.3	53.8	0.0	7.0	49.8	46.2	3.6
10:20 PM - 10:25 PM	51.6	51.3	0.3	7.0	47.6	45.9	1.7
10:25 PM - 10:30 PM	49.8	55.1	-5.3	7.0	45.8	50.5	-4.7
10:30 PM - 10:35 PM	49.3	54.2	-4.9	7.0	45.3	50.8	-5.5
10:35 PM - 10:40 PM	49.7	54.5	-4.8	7.0	45.7	51.4	-5.7
10:40 PM - 10:45 PM	49.9	55.1	-5.2	7.0	45.9	51.0	-6.5
10:45 PM - 10:50 PM	48.5	54.9	-6.4	7.0	44.5	51.0	-6.5
10:50 PM - 10:55 PM	48.5	51.8	-3.3	7.0	44.5	47.7	-3.2
10:55 PM - 11:00 PM	48.5	52.0	-3.5	7.0	44.5	47.9	-3.4
11:00 PM - 11:05 PM	48.9	51.4	-2.5	7.0	44.9	46.2	1.3
11:05 PM - 11:10 PM	48.3	46.6	0.3	7.0	44.3	46.6	-2.3
11:10 PM - 11:15 PM	50.3	50.7	-0.4	7.0	47.6	47.7	-0.1
11:15 PM - 11:20 PM	53.0	51.1	1.9	4.5	51.5	47.6	3.9
11:20 PM - 11:25 PM	50.4	54.3	-3.9	7.0	46.4	47.7	-1.3
11:25 PM - 11:30 PM	49.4	53.8	-4.4	7.0	45.4	47.6	-2.2
11:30 PM - 11:35 PM	47.8	51.3	-3.5	7.0	43.8	46.6	-2.8
11:35 PM - 11:40 PM	51.0	51.5	-0.5	7.0	47.0	46.6	0.2
11:40 PM - 11:45 PM	48.9	52.8	-3.9	7.0	44.9	47.0	-2.1
11:45 PM - 11:50 PM	49.5	50.8	-1.3	7.0	45.5	47.1	-1.6
11:50 PM - 11:55 PM	52.9	52.8	0.1	7.0	48.9	48.3	0.6
11:55 PM - 12:00 AM	51.1	53.0	-1.9	7.0	47.1	46.8	0.3
12:00 AM - 12:05 AM	48.4	53.6	-5.2	7.0	44.4	47.1	-2.7
12:05 AM - 12:10 AM	47.5	51.5	-4.0	7.0	43.5	45.0	-1.5
12:10 AM - 12:15 AM	47.3	53.4	-6.1	7.0	43.3	45.0	-1.7
12:15 AM - 12:20 AM	51.0	50.9	0.1	7.0	47.0	45.1	1.9
12:20 AM - 12:25 AM	44.0	54.0	-10.0	7.0	40.0	47.6	-7.6
12:25 AM - 12:30 AM	47.6	52.6	-5.0	7.0	43.6	46.8	-3.2
12:30 AM - 12:35 AM	47.0	53.2	-6.2	7.0	43.0	48.2	-5.2

Approved by

D. Chongchit

Dig Chongchit  
Senior Manager

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-7  
Parameter (เดียนตอม)  
Location (ถนนสายหลัก) (GPS 47P 734053, 1432206)  
Measurement Date Jun 23 - 24, 2022  
Measurement by Anurak Tongtongkijakda  
Sound Level Meter 00256518



TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2359646-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการตาม	ระดับเสียง (dB(A))			เสียงที่ฐาน	ค่าระดับการรบกวน
			ความสูง	ทิศทาง	ทิศทาง		
13:35 AM - 13:40 AM	45.1	50.6	-4.5	7.0	42.1	45.9	-4.8
13:40 AM - 13:45 AM	45.1	51.4	-6.3	7.0	41.0	46.7	-5.7
13:45 AM - 13:50 AM	47.9	51.4	-3.5	7.0	43.7	48.3	-4.6
13:50 AM - 13:55 AM	46.4	51.4	-5.0	7.0	42.4	50.3	-8.5
13:55 AM - 14:00 AM	51.2	54.0	-2.8	7.0	47.2	49.9	-2.7
14:00 AM - 14:05 AM	45.8	55.0	-9.8	7.0	41.8	51.8	-10.0
14:05 AM - 14:10 AM	44.8	54.6	-10.3	7.0	40.6	51.4	-10.8
14:10 AM - 14:15 AM	45.2	54.8	-9.6	7.0	41.2	50.1	-8.9
14:15 AM - 14:20 AM	45.6	50.3	-4.7	7.0	43.0	44.8	-3.2
14:20 AM - 14:25 AM	51.3	51.9	-0.6	7.0	47.2	46.3	1.0
14:25 AM - 14:30 AM	49.3	53.9	-4.6	7.0	45.3	49.2	-3.7
14:30 AM - 14:35 AM	47.4	53.7	-6.3	7.0	43.7	48.2	-4.5
14:35 AM - 14:40 AM	44.5	52.4	-7.9	7.0	40.5	47.5	-3.0
14:40 AM - 14:45 AM	48.8	52.4	-3.7	7.0	44.8	47.5	-2.5
14:45 AM - 14:50 AM	46.4	53.6	-7.2	7.0	44.4	48.0	-4.6
14:50 AM - 14:55 AM	45.4	54.1	-8.7	7.0	42.3	50.3	-8.0
14:55 AM - 15:00 AM	47.2	53.7	-6.5	7.0	45.7	46.8	-1.1
15:00 AM - 15:05 AM	49.7	52.3	-2.6	7.0	45.7	46.8	-1.1
15:05 AM - 15:10 AM	51.1	47.8	3.3	3.0	51.1	44.7	6.4
15:10 AM - 15:15 AM	45.7	50.6	-4.9	7.0	41.7	43.9	-2.2
15:15 AM - 15:20 AM	47.5	44.6	2.9	3.0	47.5	43.6	3.9
15:20 AM - 15:25 AM	50.2	46.0	4.2	2.0	51.2	43.4	7.8
15:25 AM - 15:30 AM	48.6	46.6	-2.4	7.0	42.2	43.9	-1.7
15:30 AM - 15:35 AM	49.2	45.2	4.0	2.0	50.2	43.2	7.0
15:35 AM - 15:40 AM	49.2	49.2	-2.2	7.0	43.0	44.4	-1.4
15:40 AM - 15:45 AM	45.8	46.5	-0.7	7.0	41.8	43.7	-1.9
15:45 AM - 15:50 AM	45.8	46.1	2.4	4.5	47.0	43.6	3.4
15:50 AM - 15:55 AM	46.8	48.4	-1.6	7.0	42.8	44.3	-1.5
15:55 AM - 16:00 AM	46.1	47.4	-1.3	7.0	42.1	44.9	-2.8
16:00 AM - 16:05 AM	46.0	47.9	-1.9	7.0	42.0	44.8	-2.8
16:05 AM - 16:10 AM	46.7	49.2	-2.5	7.0	42.7	45.9	-3.2
16:10 AM - 16:15 AM	46.1	49.7	-3.6	7.0	42.1	46.0	-3.9
16:15 AM - 16:20 AM	46.0	52.0	-6.0	7.0	42.0	47.8	-5.8
16:20 AM - 16:25 AM	45.6	53.5	-7.9	7.0	41.6	49.3	-7.7
16:25 AM - 16:30 AM	44.8	51.7	-6.9	7.0	40.8	48.5	-7.7
16:30 AM - 16:35 AM	45.1	52.0	-6.9	7.0	42.1	48.9	-6.8
16:35 AM - 16:40 AM	46.1	52.6	-6.5	7.0	42.1	49.6	-7.5
16:40 AM - 16:45 AM	46.4	51.4	-5.0	7.0	42.4	48.0	-5.6
16:45 AM - 16:50 AM	51.9	51.4	0.5	7.0	47.9	47.1	0.8

Approved by

D. Chongchit

Dig Chongchit  
Senior Manager

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluek Daeng  
Project Location :  
Sample No. 2270911-7  
Parameter (เสียงรบกวน)  
Location (พื้นที่วัดเสียง)  
Measurement Date (วันที่ทำการวัดเสียง)  
Measurement by (ผู้ทำการวัดเสียง)  
Sound Level Meter (เครื่องวัดเสียง)

Page 3 of 3

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359646-1  
TESTING  
No.0042

เวลา	เสียงจากแหล่งกำเนิด	เสียงสะท้อนพื้นผิวใกล้เคียง	ระดับเสียง (dB(A))		เสียงรบกวนรวม	ค่าเฉลี่ย
			ทิศทาง	ค่าเฉลี่ย		
03:55 AM - 04:00 AM	48.9	53.1	-4.2	7.0	46.3	-1.4
04:00 AM - 04:05 AM	52.9	52.0	0.9	7.0	47.8	1.1
04:05 AM - 04:10 AM	46.0	53.6	-7.6	7.0	48.4	-6.4
04:10 AM - 04:15 AM	48.7	50.6	-1.9	7.0	44.7	-2.4
04:15 AM - 04:20 AM	45.8	50.8	-5.0	7.0	41.8	-4.7
04:20 AM - 04:25 AM	46.3	50.9	-4.6	7.0	42.3	-5.8
04:25 AM - 04:30 AM	47.8	51.4	-3.6	7.0	48.5	-4.7
04:30 AM - 04:35 AM	49.1	51.8	-2.7	7.0	48.1	-3.0
04:35 AM - 04:40 AM	56.6	51.7	4.9	1.5	48.3	9.8
04:40 AM - 04:45 AM	51.6	56.6	-5.0	7.0	46.5	1.1
04:45 AM - 04:50 AM	54.2	53.4	0.8	7.0	50.2	1.8
04:50 AM - 04:55 AM	52.1	55.3	-3.2	7.0	53.6	-5.5
04:55 AM - 05:00 AM	53.1	52.6	0.5	7.0	49.1	-0.1
05:00 AM - 05:05 AM	50.6	50.3	0.3	7.0	46.6	0.7
05:05 AM - 05:10 AM	55.2	50.1	5.1	1.5	56.7	11.1
05:10 AM - 05:15 AM	55.7	54.5	1.2	7.0	47.1	4.6
05:15 AM - 05:20 AM	58.5	55.0	3.5	2.0	59.5	12.2
05:20 AM - 05:25 AM	55.1	57.1	-2.0	7.0	51.1	0.4
05:25 AM - 05:30 AM	52.3	53.6	-1.3	7.0	48.3	7.7
05:30 AM - 05:35 AM	55.1	51.2	3.9	2.0	56.1	-4.8
05:35 AM - 05:40 AM	54.8	53.5	1.3	7.0	50.8	4.7
05:40 AM - 05:45 AM	61.1	54.1	7.0	1.0	63.1	12.7
05:45 AM - 05:50 AM	55.5	61.3	-5.7	7.0	51.5	1.9
05:50 AM - 05:55 AM	58.0	61.4	-3.4	7.0	56.2	-4.7
05:55 AM - 06:00 AM	62.3	65.0	-2.7	7.0	54.0	-2.4
06:00 AM - 06:05 AM	57.3	57.3	0.0	7.0	55.3	-7.8
06:05 AM - 06:10 AM	56.4	55.5	0.9	7.0	49.4	-0.4
06:10 AM - 06:15 AM	56.2	55.7	0.5	7.0	49.2	0.2
06:15 AM - 06:20 AM	56.4	55.6	0.8	7.0	47.7	1.7
06:20 AM - 06:25 AM	57.1	56.0	1.1	7.0	49.2	0.9
06:25 AM - 06:30 AM	59.2	55.9	3.3	3.0	50.0	6.2
ค่าเฉลี่ยรวม					50.0	5.10

Reference Method : Based on ISO 1996-1 and ISO 1996-2  
1. วัตถุประสงค์ของการทดสอบ (Purpose of the test) : เพื่อตรวจสอบระดับเสียงรบกวนจากโรงงานอุตสาหกรรมในช่วงเวลา 24 ชั่วโมง  
2. มาตรฐานที่ใช้ (Standard) : มาตรฐานเสียงรบกวนจากโรงงานอุตสาหกรรม (GB 12348-2008)  
3. วิธีการทดสอบ (Test method) : ใช้เครื่องวัดเสียงแบบพกพา (Sound level meter) วัดระดับเสียงรบกวนจากโรงงานอุตสาหกรรม  
4. ผลการทดสอบ (Test result) : ระดับเสียงรบกวนจากโรงงานอุตสาหกรรมในช่วงเวลา 24 ชั่วโมง มีค่าเฉลี่ยอยู่ที่ 50.0 dB(A) ซึ่งอยู่ในเกณฑ์มาตรฐานที่กำหนดไว้

Approved by :   
Deji Changchon  
Senior Manager

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluek Daeng  
Project Location :  
Sample No. 2270911-8  
Parameter (เสียงรบกวน)  
Location (พื้นที่วัดเสียง)  
Measurement Date (วันที่ทำการวัดเสียง)  
Measurement by (ผู้ทำการวัดเสียง)  
Sound Level Meter (เครื่องวัดเสียง)

Page 1 of 3

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359647-1  
TESTING  
No.0042

เวลา	เสียงจากแหล่งกำเนิด	เสียงสะท้อนพื้นผิวใกล้เคียง	ระดับเสียง (dB(A))		เสียงรบกวนรวม	ค่าเฉลี่ย
			ทิศทาง	ค่าเฉลี่ย		
12:00 PM - 01:00 PM	65.8	60.4	5.4	1.5	48.1	16.2
01:00 PM - 01:05 PM	62.4	56.6	5.8	1.5	46.5	14.4
01:05 PM - 01:10 PM	64.2	58.7	5.5	1.5	47.1	15.6
01:10 PM - 01:15 PM	66.2	57.2	9.0	0.5	48.6	12.1
01:15 PM - 01:20 PM	66.3	58.1	8.2	0.5	49.8	16.0
01:20 PM - 01:25 PM	65.0	58.5	6.5	1.0	50.6	13.4
01:25 PM - 01:30 PM	65.0	60.0	5.0	1.5	50.1	6.4
01:30 PM - 01:35 PM	64.6	57.5	-2.9	7.0	66.7	-9.1
01:35 PM - 01:40 PM	63.0	58.4	-4.6	7.0	67.2	-12.2
01:40 PM - 01:45 PM	56.1	58.9	-2.8	7.0	50.8	-1.3
01:45 PM - 01:50 PM	56.1	57.4	-1.3	7.0	52.1	2.1
01:50 PM - 01:55 PM	59.6	56.8	2.8	3.0	59.6	8.6
01:55 PM - 02:00 PM	61.0	54.2	6.8	1.0	63.0	12.6
02:00 PM - 02:05 PM	49.9	54.6	-4.7	7.0	45.0	-4.9
02:05 PM - 02:10 PM	54.8	54.7	0.1	7.0	50.8	0.1
02:10 PM - 02:15 PM	55.8	54.7	1.1	7.0	52.7	-1.7
02:15 PM - 02:20 PM	55.8	54.7	1.1	7.0	51.8	1.6
02:20 PM - 02:25 PM	52.1	55.1	-3.0	7.0	48.1	-2.5
02:25 PM - 02:30 PM	56.8	57.8	-1.0	4.5	50.6	7.7
02:30 PM - 02:35 PM	56.2	57.8	-1.6	7.0	58.3	-1.6
02:35 PM - 02:40 PM	55.9	57.4	-1.5	7.0	51.6	3.3
02:40 PM - 02:45 PM	50.0	55.9	-5.9	7.0	46.0	-2.4
02:45 PM - 02:50 PM	55.0	53.2	1.8	4.5	53.5	5.9
02:50 PM - 02:55 PM	59.3	53.8	5.5	1.5	60.8	13.1
02:55 PM - 03:00 PM	62.6	57.0	5.6	1.5	64.1	15.9
03:00 PM - 03:05 PM	60.2	54.0	6.2	1.5	47.0	13.7
03:05 PM - 03:10 PM	53.0	50.5	2.5	3.0	53.0	2.4
03:10 PM - 03:15 PM	46.1	50.6	-4.5	7.0	42.1	-5.0
03:15 PM - 03:20 PM	49.8	50.3	-0.5	7.0	45.8	-2.2
03:20 PM - 03:25 PM	55.6	51.0	4.6	1.5	57.1	10.2
03:25 PM - 03:30 PM	48.7	50.1	-1.4	7.0	44.2	-3.2
03:30 PM - 03:35 PM	51.6	49.5	2.1	4.5	50.1	4.7
03:35 PM - 03:40 PM	50.1	49.4	-0.7	7.0	47.1	-3.0
03:40 PM - 03:45 PM	49.6	49.2	0.4	7.0	46.1	-0.4
03:45 PM - 03:50 PM	49.1	49.1	0.0	7.0	45.6	-0.1
03:50 PM - 03:55 PM	51.9	48.1	3.8	2.0	52.9	6.8
03:55 PM - 04:00 PM	51.9	48.0	3.9	2.0	52.9	6.8
ค่าเฉลี่ยรวม	45.8	47.1	-1.3	7.0	46.1	-4.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2  
1. วัตถุประสงค์ของการทดสอบ (Purpose of the test) : เพื่อตรวจสอบระดับเสียงรบกวนจากโรงงานอุตสาหกรรมในช่วงเวลา 24 ชั่วโมง  
2. มาตรฐานที่ใช้ (Standard) : มาตรฐานเสียงรบกวนจากโรงงานอุตสาหกรรม (GB 12348-2008)  
3. วิธีการทดสอบ (Test method) : ใช้เครื่องวัดเสียงแบบพกพา (Sound level meter) วัดระดับเสียงรบกวนจากโรงงานอุตสาหกรรม  
4. ผลการทดสอบ (Test result) : ระดับเสียงรบกวนจากโรงงานอุตสาหกรรมในช่วงเวลา 24 ชั่วโมง มีค่าเฉลี่ยอยู่ที่ 46.1 dB(A) ซึ่งอยู่ในเกณฑ์มาตรฐานที่กำหนดไว้

Approved by :   
Deji Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64  
Project Name  
Project Location

Sample No.	2270911-8
Parameter	ค่าออกซิเจน
Location	บริเวณคลองขุด 2 ต.สวนหลวง 15 (N2) (GPS 477 733075, 1434009)
Measurement Date	Jun 17 - 18, 2022
Measurement by	Anurak Tongthatsolsida
Sound Level Meter	00597168

TESTING  
No.0042

**Lot ID: 2270911**  
**Date Received :Jun 27, 2022**  
**Date Reported :Jun 29, 2022**  
**Report Number : Z359647-1**

Page 3 of 3

[illegible]

Reference Method : Based on ISO 1996-1 and ISO 1996-2

1. ประมวลกฎหมายแพ่งและพาณิชย์ว่าด้วยหนี้ มาตรา 364 วรรคแรกและวรรคสอง ได้บัญญัติว่าหนี้ที่เกิดจากอาชญากรรมหรือละเมิดตามกฎหมาย มาตรา 2548
2. ประมวลกฎหมายแพ่งและพาณิชย์ว่าด้วยหนี้ มาตรา 364 วรรคแรกและวรรคสอง ได้บัญญัติว่าหนี้ที่เกิดจากอาชญากรรมหรือละเมิดตามกฎหมาย มาตรา 2548
3. ประมวลกฎหมายแพ่งและพาณิชย์ว่าด้วยหนี้ มาตรา 364 วรรคแรกและวรรคสอง ได้บัญญัติว่าหนี้ที่เกิดจากอาชญากรรมหรือละเมิดตามกฎหมาย มาตรา 2548
4. ประมวลกฎหมายแพ่งและพาณิชย์ว่าด้วยหนี้ มาตรา 364 วรรคแรกและวรรคสอง ได้บัญญัติว่าหนี้ที่เกิดจากอาชญากรรมหรือละเมิดตามกฎหมาย มาตรา 2548

The above results are valid only for the (and predicted) samples as indicated in this report. No part of this report or Certificate may be reproduced in any form without written consent from the Laboratory, M.S. Laboratory Group (Thailand).

Accepted for publication 12 November 2007

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluek Daeng

Project Location

Sample No. 2270911-9

Parameter

Location : บ้านใหม่พัฒนา หมู่ 2 ตำบลนาหวาย 15 (N2) (GPS 47P 733675, 1434009)

Measurement Date

Jun 18 - 19, 2022

Measurement by

Anurak Tongkajonsakda

Sound Level Meter



TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359648-1

Page 1 of 3

## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluek Daeng

Project Location

Sample No. 2270911-9

Parameter

Location : บ้านใหม่พัฒนา หมู่ 2 ตำบลนาหวาย 15 (N2) (GPS 47P 733675, 1434009)

Measurement Date

Jun 18 - 19, 2022

Measurement by

Anurak Tongkajonsakda

Sound Level Meter



TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359648-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			เสียงรบกวน	ค่าเฉลี่ย
			เสียงจากแหล่งกำเนิด	เสียงรบกวน	ค่าเฉลี่ย		
12:00 PM - 12:00 PM	62.3	57.9	4.4	2.0	60.3	44.2	16.1
01:00 PM - 01:00 PM	62.9	56.9	6.0	1.5	61.4	44.5	16.9
02:00 PM - 02:00 PM	63.7	56.5	7.2	1.0	62.7	45.3	17.4
03:00 PM - 03:00 PM	66.0	60.4	5.6	1.5	64.5	47.3	17.2
04:00 PM - 04:00 PM	66.3	60.7	5.6	1.5	64.8	49.0	15.8
05:00 PM - 05:00 PM	65.5	58.2	7.3	1.0	64.5	50.5	14.0
06:00 PM - 06:00 PM	65.5	59.0	6.5	1.0	64.5	55.6	8.9
07:00 PM - 07:00 PM	64.1	63.5	0.6	7.0	57.1	60.0	2.9
08:00 PM - 08:00 PM	62.8	69.0	-6.2	7.0	55.8	68.3	-12.5
09:00 PM - 09:00 PM	60.5	69.0	-8.5	7.0	53.5	68.2	-14.7
10:00 PM - 10:00 PM	57.5	52.9	4.6	1.5	59.0	49.6	9.4
11:00 PM - 11:00 PM	61.4	55.1	6.3	1.5	62.9	50.6	12.3
12:00 PM - 12:00 PM	59.3	55.3	4.0	2.0	60.3	52.8	7.5
01:00 PM - 01:00 PM	62.7	55.1	7.6	0.5	62.2	52.4	12.8
02:00 PM - 02:00 PM	58.3	53.5	4.8	1.5	58.8	50.7	9.1
03:00 PM - 03:00 PM	54.4	53.0	1.4	7.0	54.4	51.5	-1.1
04:00 PM - 04:00 PM	54.5	52.4	2.1	4.5	53.0	50.5	2.5
05:00 PM - 05:00 PM	50.2	52.9	-2.7	7.0	50.2	51.9	-5.7
06:00 PM - 06:00 PM	59.4	54.6	4.8	1.5	60.9	49.0	11.9
07:00 PM - 07:00 PM	55.6	54.3	1.3	7.0	55.6	50.0	1.6
08:00 PM - 08:00 PM	64.0	55.3	8.7	0.5	65.5	54.3	18.0
09:00 PM - 09:00 PM	61.4	50.4	11.0	0.5	63.9	48.2	15.7
10:00 PM - 10:00 PM	55.3	49.8	4.5	1.5	58.8	48.2	8.6
11:00 PM - 11:00 PM	51.4	49.8	1.6	4.5	49.9	48.5	1.4
12:00 PM - 12:00 PM	55.2	50.8	4.4	2.0	56.2	48.2	8.0
01:00 PM - 01:00 PM	58.8	53.5	5.3	1.5	60.3	49.1	11.2
02:00 PM - 02:00 PM	60.4	56.6	3.8	2.0	61.4	49.6	11.8
03:00 PM - 03:00 PM	61.9	53.8	8.1	0.5	64.4	48.8	15.6
04:00 PM - 04:00 PM	51.6	50.8	0.8	7.0	47.6	48.9	-1.3
05:00 PM - 05:00 PM	54.4	54.1	0.3	7.0	50.4	50.5	-0.1
06:00 PM - 06:00 PM	59.6	49.5	10.1	0.5	62.1	48.5	13.6
07:00 PM - 07:00 PM	51.9	50.9	1.0	7.0	47.9	49.2	-1.3
08:00 PM - 08:00 PM	53.2	49.6	3.6	4.5	51.7	49.6	2.1
09:00 PM - 09:00 PM	58.7	52.3	6.4	1.5	60.2	49.7	10.5
10:00 PM - 10:00 PM	53.8	50.6	3.2	3.0	53.8	48.7	5.1
11:00 PM - 11:00 PM	50.9	50.1	0.8	7.0	46.9	48.3	-1.4
12:00 PM - 12:00 PM	53.4	50.8	2.6	3.0	53.4	48.3	5.1
01:00 PM - 01:00 PM	57.8	51.2	6.6	1.0	59.8	48.8	11.0
02:00 PM - 02:00 PM	53.3	51.3	2.0	4.5	51.8	47.3	4.5
03:00 PM - 03:00 PM	54.7	50.1	4.6	1.5	56.2	47.7	8.5

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TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359648-1

Page 3 of 3





Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-9  
Parameter เลื่อนรูป  
Location จังหวัดชลบุรี 2 ซามารถ 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 18 - 19, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00597168

Page 3 of 3



TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2359648-1

เวลา	เสียงจากแหล่งกำเนิด	เสียงระยะใกล้จากถนน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การกระจาย
			ผลต่าง	ส่วนเกิน	ส่วนเกิน		
03:50 AM - 03:55 AM	56.3	59.3	-3.0	7.0	52.3	46.9	5.4
03:55 AM - 04:00 AM	57.7	59.8	-2.1	7.0	48.7	47.0	1.7
04:00 AM - 04:05 AM	57.2	62.1	-5.9	7.0	48.2	46.0	0.2
04:05 AM - 04:10 AM	57.8	55.9	-7.1	7.0	49.8	47.1	2.7
04:10 AM - 04:15 AM	54.5	61.9	-7.4	7.0	50.5	48.1	2.4
04:15 AM - 04:20 AM	57.0	65.2	-8.2	7.0	53.0	49.8	3.2
04:20 AM - 04:25 AM	62.7	62.3	0.4	7.0	58.7	49.8	8.9
04:25 AM - 04:30 AM	58.3	63.9	-5.6	7.0	54.3	49.7	4.6
04:30 AM - 04:35 AM	55.0	63.3	-8.3	7.0	51.0	49.8	1.2
04:35 AM - 04:40 AM	54.7	64.0	-9.3	7.0	50.7	49.3	1.4
04:40 AM - 04:45 AM	62.1	60.9	1.2	7.0	58.1	49.9	8.2
04:45 AM - 04:50 AM	58.7	62.1	-3.4	7.0	54.7	49.7	5.0
04:50 AM - 04:55 AM	57.0	63.3	-6.3	7.0	53.0	50.3	2.7
04:55 AM - 05:00 AM	62.9	62.9	0.0	7.0	58.9	49.8	9.1
05:00 AM - 05:05 AM	61.2	64.5	-3.3	7.0	57.2	49.8	7.4
05:05 AM - 05:10 AM	61.7	65.2	-3.5	7.0	57.7	49.1	8.6
05:10 AM - 05:15 AM	66.5	59.8	6.7	7.0	69.0	49.6	19.4
05:15 AM - 05:20 AM	60.7	59.2	1.5	4.5	59.2	48.7	10.5
05:20 AM - 05:25 AM	56.9	57.2	-0.3	7.0	54.9	48.5	6.4
05:25 AM - 05:30 AM	63.3	57.0	6.3	1.5	64.8	49.0	15.8
05:30 AM - 05:35 AM	63.5	60.4	3.1	3.0	63.5	50.2	13.3
05:35 AM - 05:40 AM	66.4	62.3	4.1	2.0	67.4	49.3	18.1
05:40 AM - 05:45 AM	64.7	62.8	1.9	4.5	63.2	49.5	13.7
05:45 AM - 05:50 AM	65.3	59.8	5.5	1.5	66.8	48.9	17.9
05:50 AM - 05:55 AM	69.1	61.1	8.0	0.5	71.6	52.2	19.4
05:55 AM - 06:00 AM	65.1	68.1	-3.0	3.0	65.1	48.2	16.9
06:00 AM - 06:05 AM	63.4	57.9	5.5	1.5	61.9	46.6	15.3
06:05 AM - 06:10 AM	65.3	57.9	7.4	1.0	64.3	42.8	21.5
06:10 AM - 06:15 AM	63.0	57.2	5.8	1.5	61.5	42.3	19.2
06:15 AM - 06:20 AM	61.8	55.4	6.4	1.5	60.3	45.0	15.3
06:20 AM - 06:25 AM	65.5	60.7	4.8	1.5	64.0	50.5	13.5
06:25 AM - 06:30 AM	62.8	58.3	4.5	1.5	61.3	44.7	16.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

- หมายเหตุ
1. งานทดสอบดำเนินการตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2548
  2. งานทดสอบดำเนินการตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2550
  3. งานทดสอบดำเนินการตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2550 และผลการประเมินผลตาม ม. 2550
  4. งานทดสอบดำเนินการตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2550
- ผลการประเมินผลตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2548
- ผลการประเมินผลตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2550
- ผลการประเมินผลตามวิธีมาตรฐานที่ผ่านการรับรองและขึ้นอยู่กับการประเมินผลตาม ม. 2550

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-10  
Parameter เลื่อนรูป  
Location จังหวัดชลบุรี 2 ซามารถ 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 19 - 20, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00597168

Page 1 of 3



TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : 2359648-1

เวลา	เสียงจากแหล่งกำเนิด	เสียงระยะใกล้จากถนน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การกระจาย
			ผลต่าง	ส่วนเกิน	ส่วนเกิน		
12:00 PM - 01:00 PM	62.4	53.1	9.3	0.5	61.9	43.4	18.5
01:00 PM - 02:00 PM	63.3	57.7	5.6	1.5	61.8	42.7	19.1
02:00 PM - 03:00 PM	63.3	57.2	6.1	1.5	61.8	43.8	18.0
03:00 PM - 04:00 PM	64.7	57.2	7.0	1.0	63.7	47.2	16.5
04:00 PM - 05:00 PM	66.4	59.5	6.9	1.0	65.4	46.9	18.5
05:00 PM - 06:00 PM	64.2	56.9	7.3	1.0	63.2	49.2	14.0
06:00 PM - 07:00 PM	64.0	59.2	4.8	1.5	62.5	57.0	5.5
07:00 PM - 08:00 PM	64.6	61.6	3.0	3.0	61.6	59.8	1.8
08:00 PM - 09:00 PM	63.1	57.1	6.0	1.5	61.6	54.1	7.5
09:00 PM - 10:00 PM	58.2	61.8	-3.6	7.0	51.2	60.5	-9.3
10:00 PM - 10:05 PM	55.9	62.1	-6.2	7.0	51.9	60.6	-8.7
10:05 PM - 10:10 PM	53.5	62.1	-8.6	7.0	49.5	60.5	-11.0
10:10 PM - 10:15 PM	51.9	62.0	-10.1	7.0	47.9	60.5	-12.6
10:15 PM - 10:20 PM	49.9	62.0	-12.1	7.0	45.9	60.5	-14.6
10:20 PM - 10:25 PM	49.6	62.1	-12.5	7.0	45.6	60.5	-14.9
10:25 PM - 10:30 PM	62.2	61.1	1.1	7.0	58.2	63.1	-4.9
10:30 PM - 10:35 PM	54.6	60.3	-5.7	7.0	50.1	53.0	-2.9
10:35 PM - 10:40 PM	54.1	62.2	-8.1	7.0	50.1	52.6	-2.5
10:40 PM - 10:45 PM	53.7	62.7	-9.0	7.0	50.6	50.5	-0.8
10:45 PM - 10:50 PM	51.4	62.6	-11.2	7.0	47.4	48.8	-1.4
10:50 PM - 10:55 PM	55.8	62.3	-6.5	7.0	51.3	48.3	3.7
10:55 PM - 11:00 PM	53.2	61.3	-8.1	7.0	48.3	48.7	-0.5
11:00 PM - 11:05 PM	50.3	55.8	-5.5	7.0	46.3	48.2	-1.9
11:05 PM - 11:10 PM	55.2	52.6	2.6	2.0	52.2	50.8	6.4
11:10 PM - 11:15 PM	55.6	50.0	5.6	1.5	52.2	47.9	2.1
11:15 PM - 11:20 PM	48.8	49.8	-1.0	7.0	45.3	47.9	-2.1
11:20 PM - 11:25 PM	52.4	49.8	2.6	3.0	45.6	47.2	-1.7
11:25 PM - 11:30 PM	50.6	51.4	-0.8	7.0	49.8	48.1	1.5
11:30 PM - 11:35 PM	51.9	52.5	-0.6	7.0	47.3	58.1	-10.8
11:35 PM - 11:40 PM	50.7	50.2	0.5	2.0	46.7	46.0	0.7
11:40 PM - 11:45 PM	50.7	49.7	1.0	7.0	46.7	45.8	0.9
11:45 PM - 11:50 PM	50.8	49.3	1.5	0.5	46.1	45.8	15.5
11:50 PM - 11:55 PM	46.8	49.1	-2.3	7.0	44.8	46.8	-7.4
11:55 PM - 12:00 AM	55.6	51.7	3.9	2.0	50.8	48.6	7.6
12:00 AM - 12:05 AM	55.5	50.8	4.7	1.5	50.8	48.4	7.8
12:05 AM - 12:10 AM	52.1	50.5	1.6	4.5	49.7	49.9	-0.2
12:10 AM - 12:15 AM	53.8	49.7	4.1	2.0	49.7	47.1	2.7
12:15 AM - 12:20 AM	49.3	49.4	-0.1	7.0	44.1	47.1	-3.0
12:20 AM - 12:25 AM	55.4	48.9	6.5	1.5	54.9	47.3	7.6
12:25 AM - 12:30 AM	49.9	48.3	1.6	4.5	48.4	47.2	1.2

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : R0N(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-10  
Parameter เลื่อนตาม  
Location บ้านหินตา หมู่ 2 ตำบลบางพระ 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 19 - 20, 2022  
Measurement by Anurak Tongkhajonsakda  
Sound Level Meter 00597168

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะวัดการรบกวน	ระดับเสียง (dB(A))			ทิศทางเสียงรบกวน	ค่ารวมการรบกวน
			แหล่งกำเนิด	ตัวรับ	ทิศทาง		
12:30 AM - 12:35 AM	50.8	49.1	1.7	4.5	46.8	2.5	2.5
12:35 AM - 12:40 AM	56.9	49.8	7.1	1.0	58.9	12.6	12.6
12:40 AM - 12:45 AM	51.4	48.3	3.1	3.0	51.4	4.5	5.5
12:45 AM - 12:50 AM	47.2	48.0	-0.8	7.0	43.2	-2.3	-2.3
12:50 AM - 12:55 AM	50.5	58.9	-8.4	7.0	46.5	-1.6	-1.6
12:55 AM - 01:00 AM	48.4	47.3	1.1	4.4	46.0	1.3	1.3
01:00 AM - 01:05 AM	49.0	47.5	1.5	4.5	46.2	1.4	1.4
01:05 AM - 01:10 AM	50.0	47.4	2.6	3.0	50.0	4.4	4.4
01:10 AM - 01:15 AM	47.1	47.3	-0.2	7.0	43.1	-3.1	-3.1
01:15 AM - 01:20 AM	55.2	51.2	4.0	2.0	46.2	9.3	9.3
01:20 AM - 01:25 AM	47.1	47.0	0.1	7.0	43.1	-2.9	-2.9
01:25 AM - 01:30 AM	47.1	47.0	-0.1	7.0	43.1	-2.6	-2.6
01:30 AM - 01:35 AM	46.8	47.0	-0.2	7.0	42.8	-2.9	-2.9
01:35 AM - 01:40 AM	47.0	47.0	0.0	7.0	43.0	-2.9	-2.9
01:40 AM - 01:45 AM	47.6	47.7	-0.1	7.0	43.6	-2.8	-2.8
01:45 AM - 01:50 AM	47.1	47.1	0.0	7.0	43.1	-3.1	-3.1
01:50 AM - 01:55 AM	49.3	47.8	1.5	4.5	46.2	1.2	1.2
01:55 AM - 02:00 AM	46.9	47.2	-0.3	7.0	42.9	-3.5	-3.5
02:00 AM - 02:05 AM	46.4	47.4	-1.0	7.0	42.4	-3.8	-3.8
02:05 AM - 02:10 AM	50.1	46.8	3.3	3.0	50.1	4.1	4.1
02:10 AM - 02:15 AM	46.4	47.6	-1.2	7.0	42.4	-3.1	-3.1
02:15 AM - 02:20 AM	54.0	59.6	-5.6	7.0	45.5	4.4	4.4
02:20 AM - 02:25 AM	50.9	55.0	-4.0	7.0	50.9	1.6	1.6
02:25 AM - 02:30 AM	54.5	48.6	5.9	1.5	46.9	4.9	11.1
02:30 AM - 02:35 AM	57.4	46.6	10.8	0.5	59.9	14.8	15.1
02:35 AM - 02:40 AM	45.2	46.1	-0.9	7.0	41.2	-3.4	-3.4
02:40 AM - 02:45 AM	49.7	48.2	1.5	4.5	44.7	3.5	3.5
02:45 AM - 02:50 AM	49.3	52.2	-2.9	7.0	45.3	-0.1	-0.1
02:50 AM - 02:55 AM	53.9	46.9	7.0	1.0	55.9	12.2	12.2
02:55 AM - 03:00 AM	45.2	47.2	-2.0	7.0	41.2	-2.8	-2.8
03:00 AM - 03:05 AM	50.8	58.0	-7.2	7.0	46.8	3.0	3.0
03:05 AM - 03:10 AM	49.0	55.4	-6.4	7.0	45.0	3.5	5.5
03:10 AM - 03:15 AM	50.6	60.5	-9.9	7.0	43.3	3.3	3.3
03:15 AM - 03:20 AM	43.9	59.5	-15.6	7.0	39.9	-6.6	-6.6
03:20 AM - 03:25 AM	55.8	58.1	-2.3	7.0	51.8	4.9	6.9
03:25 AM - 03:30 AM	56.8	49.7	7.1	1.0	58.8	40.7	18.1
03:30 AM - 03:35 AM	45.5	53.7	-8.2	7.0	42.5	-2.0	-2.0
03:35 AM - 03:40 AM	51.0	54.8	-3.8	7.0	49.0	5.2	5.2
03:40 AM - 03:45 AM	51.1	51.9	-0.8	7.0	47.1	3.5	3.5
03:45 AM - 03:50 AM	56.9	51.0	5.9	1.5	58.4	44.2	14.2

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Approved by

D. J. J.

Dei Changchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : R0N(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-10  
Parameter เลื่อนตาม  
Location บ้านหินตา หมู่ 2 ตำบลบางพระ 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 19 - 20, 2022  
Measurement by Anurak Tongkhajonsakda  
Sound Level Meter 00597168

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะวัดการรบกวน	ระดับเสียง (dB(A))			ทิศทางเสียงรบกวน	ค่ารวมการรบกวน
			แหล่งกำเนิด	ตัวรับ	ทิศทาง		
03:50 AM - 03:55 AM	51.2	56.4	-5.2	7.0	47.2	44.7	2.5
03:55 AM - 04:00 AM	55.3	61.2	-5.9	7.0	51.3	44.1	7.2
04:00 AM - 04:05 AM	54.0	61.1	-7.1	7.0	50.0	44.1	9.7
04:05 AM - 04:10 AM	56.9	57.0	-0.1	7.0	52.9	43.2	5.9
04:10 AM - 04:15 AM	55.9	55.6	0.3	7.0	51.9	45.6	6.3
04:15 AM - 04:20 AM	63.4	57.0	6.4	1.5	64.9	44.2	20.7
04:20 AM - 04:25 AM	55.1	50.7	4.4	2.0	56.1	44.8	11.3
04:25 AM - 04:30 AM	60.6	57.8	2.8	3.0	60.6	46.3	16.3
04:30 AM - 04:35 AM	61.3	52.4	8.9	0.5	63.8	42.6	21.2
04:35 AM - 04:40 AM	57.0	53.8	3.2	3.0	57.0	42.4	13.6
04:40 AM - 04:45 AM	64.2	53.7	10.5	0.5	66.7	44.3	22.4
04:45 AM - 04:50 AM	63.2	54.7	8.5	1.5	62.6	42.9	19.7
04:50 AM - 04:55 AM	63.9	59.0	4.9	2.0	64.2	45.0	19.2
04:55 AM - 05:00 AM	63.6	59.3	4.3	1.5	65.4	45.6	19.8
05:00 AM - 05:05 AM	63.6	58.0	5.6	1.5	65.1	45.1	20.0
05:05 AM - 05:10 AM	63.7	58.7	5.0	1.5	65.2	46.5	18.7
05:10 AM - 05:15 AM	66.5	58.6	7.9	0.5	69.0	46.9	22.1
05:15 AM - 05:20 AM	65.6	56.2	9.4	0.5	68.1	47.9	20.2
05:20 AM - 05:25 AM	64.1	53.2	10.9	0.5	66.6	48.5	18.1
05:25 AM - 05:30 AM	69.4	54.9	14.5	0.0	72.4	48.0	24.4
05:30 AM - 05:35 AM	64.1	51.7	12.4	0.5	66.6	47.8	18.8
05:35 AM - 05:40 AM	68.7	57.9	10.8	0.5	69.6	48.6	22.6
05:40 AM - 05:45 AM	67.1	54.7	12.4	0.5	69.5	46.3	23.3
05:45 AM - 05:50 AM	66.5	53.4	13.1	0.0	69.5	45.6	23.9
05:50 AM - 05:55 AM	67.8	54.5	13.3	0.0	70.8	44.9	25.9
05:55 AM - 06:00 AM	68.4	60.6	7.8	0.5	70.9	44.3	26.6
06:00 AM - 06:05 AM	66.5	56.8	9.7	0.5	66.0	44.2	21.8
06:05 AM - 06:10 AM	64.2	57.8	6.4	1.5	62.7	43.7	19.0
06:10 AM - 06:15 AM	64.3	58.1	6.2	1.5	62.8	46.2	16.6
06:15 AM - 06:20 AM	58.0	58.4	-0.4	7.0	51.0	46.7	4.3
06:20 AM - 11:00 AM	56.7	58.1	-1.4	7.0	49.7	48.0	1.7
11:00 AM - 12:00 PM	57.0	55.9	1.1	7.0	50.0	47.6	2.4
ค่ารวม							51.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

หมายเหตุ : 1. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

2. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

3. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

4. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

5. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

6. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

7. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

8. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

9. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

10. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

11. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

12. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

13. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

14. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

15. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

16. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

17. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

18. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

19. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

20. การตรวจวัดเสียงรบกวนนี้ เป็นการตรวจวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

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Analysis / Test Report



TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : Z359650-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-11  
Parameter เลือกรูป  
Location บ้านจันทน์ หมู่ 2 ตำบลนาหวาย 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Anurak Tongthajaksakda  
Sound Level Meter 00597168

Page 1 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงสะท้อน	ระดับเสียง (dB(A))		ทิศทางเสียง	ค่าเฉลี่ย
			ทิศทางเสียง	ทิศทางเสียง		
12:00 PM - 01:00 PM	55.5	57.4	-1.9	7.0	53.4	-4.9
01:00 PM - 02:00 PM	58.3	59.2	-0.9	7.0	56.9	-5.6
02:00 PM - 03:00 PM	58.4	60.1	-0.7	7.0	57.4	-7.0
03:00 PM - 04:00 PM	58.8	59.2	-0.4	7.0	59.1	-5.3
04:00 PM - 05:00 PM	57.3	53.5	3.8	2.0	50.6	4.7
05:00 PM - 06:00 PM	55.9	50.7	5.2	1.5	54.4	6.0
06:00 PM - 07:00 PM	57.4	67.1	-9.7	7.0	60.2	-9.8
07:00 PM - 08:00 PM	57.7	67.6	-9.9	7.0	61.5	-10.8
08:00 PM - 09:00 PM	57.4	64.8	-7.4	7.0	59.3	-7.9
09:00 PM - 10:00 PM	57.2	67.9	-10.7	7.0	59.3	-9.1
10:00 PM - 10:05 PM	49.5	63.9	-13.4	7.0	56.2	-10.7
10:05 PM - 10:10 PM	51.8	66.8	-15.0	7.0	57.1	-9.3
10:10 PM - 10:15 PM	54.5	60.7	-6.3	7.0	50.5	-5.5
10:15 PM - 10:20 PM	52.5	64.4	-11.9	7.0	57.2	-8.7
10:20 PM - 10:25 PM	52.2	65.3	-10.6	7.0	58.2	-7.1
10:25 PM - 10:30 PM	51.9	65.9	-14.0	7.0	57.2	-9.3
10:30 PM - 10:35 PM	51.6	67.1	-15.5	7.0	56.5	-8.9
10:35 PM - 10:40 PM	56.3	66.7	-10.3	7.0	56.3	-4.0
10:40 PM - 10:45 PM	48.5	63.4	-14.9	7.0	54.9	-10.4
10:45 PM - 10:50 PM	52.2	62.8	-10.6	7.0	54.7	-6.5
10:50 PM - 10:55 PM	46.0	64.6	-17.6	7.0	54.6	-11.6
10:55 PM - 11:00 PM	49.3	64.6	-15.3	7.0	54.6	-9.3
11:00 PM - 11:05 PM	47.0	64.3	-17.3	7.0	54.1	-11.4
11:05 PM - 11:10 PM	49.1	62.0	-12.9	7.0	53.0	-10.9
11:10 PM - 11:15 PM	48.1	61.4	-13.3	7.0	53.1	-7.5
11:15 PM - 11:20 PM	50.3	61.4	-11.1	7.0	54.0	-8.6
11:20 PM - 11:25 PM	49.5	63.4	-13.9	7.0	54.4	-10.5
11:25 PM - 11:30 PM	50.9	65.3	-14.4	7.0	54.4	-9.8
11:30 PM - 11:35 PM	47.7	63.2	-15.5	7.0	53.6	-9.8
11:35 PM - 11:40 PM	48.1	63.3	-15.2	7.0	52.7	-6.2
11:40 PM - 11:45 PM	50.5	61.4	-10.9	7.0	54.8	-11.4
11:45 PM - 11:50 PM	66.3	64.0	2.3	4.5	60.9	6.5
11:50 PM - 11:55 PM	64.9	64.2	0.7	7.0	64.1	7.8
12:00 AM - 12:05 AM	67.9	62.2	5.7	1.5	65.0	12.8
12:05 AM - 12:10 AM	63.5	63.8	-0.3	7.0	62.4	1.8
12:10 AM - 12:15 AM	66.7	61.6	5.1	1.5	64.2	12.5
12:15 AM - 12:20 AM	61.6	62.0	-0.4	7.0	57.6	5.4
12:20 AM - 12:25 AM	67.5	61.1	6.4	1.5	64.3	13.8
12:25 AM - 12:30 AM	64.2	63.2	1.0	7.0	60.2	7.7

The above results are valid only for the analyzed period (sample) as indicated in the report. The results are not valid for other periods or locations. The results are not valid for other periods or locations. The results are not valid for other periods or locations.

Approved by

*D. Chongchua*

Del Chongchua  
Senior Manager

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Analysis / Test Report



TESTING  
No.0042

Lot ID: 2270911  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report Number : Z359650-1

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-11  
Parameter เลือกรูป  
Location บ้านจันทน์ หมู่ 2 ตำบลนาหวาย 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Anurak Tongthajaksakda  
Sound Level Meter 00597168

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงสะท้อน	ระดับเสียง (dB(A))		ทิศทางเสียง	ค่าเฉลี่ย
			ทิศทางเสียง	ทิศทางเสียง		
12:30 AM - 12:35 AM	65.3	64.0	1.3	7.0	50.1	11.2
12:35 AM - 12:40 AM	62.7	62.5	0.2	7.0	58.7	8.9
12:40 AM - 12:45 AM	65.3	62.3	3.0	3.0	65.3	17.8
12:45 AM - 12:50 AM	66.2	63.7	2.5	3.0	66.2	48.7
12:50 AM - 12:55 AM	64.6	55.0	9.6	0.5	67.1	19.8
12:55 AM - 01:00 AM	68.3	61.3	7.0	1.0	70.3	45.8
01:00 AM - 01:05 AM	68.1	54.4	13.7	0.0	71.1	24.6
01:05 AM - 01:10 AM	67.8	55.3	12.5	0.0	70.8	24.1
01:10 AM - 01:15 AM	67.2	55.0	12.2	4.5	65.7	47.4
01:15 AM - 01:20 AM	67.4	55.2	12.2	0.5	69.9	47.6
01:20 AM - 01:25 AM	66.0	58.6	9.4	0.5	70.5	22.0
01:25 AM - 01:30 AM	67.8	55.1	12.7	0.0	70.8	47.3
01:30 AM - 01:35 AM	67.3	56.1	11.2	0.5	69.8	23.3
01:35 AM - 01:40 AM	63.0	53.3	9.7	0.5	65.5	45.3
01:40 AM - 01:45 AM	63.1	57.9	5.2	1.5	64.6	18.3
01:45 AM - 01:50 AM	64.1	60.7	3.4	3.0	64.1	17.4
01:50 AM - 01:55 AM	64.0	55.4	8.6	0.5	66.5	48.4
01:55 AM - 02:00 AM	64.3	57.1	7.2	1.0	66.3	41.0
02:00 AM - 02:05 AM	64.0	54.1	9.9	0.5	66.5	25.2
02:05 AM - 02:10 AM	62.7	55.7	7.0	1.0	64.7	22.3
02:10 AM - 02:15 AM	63.4	54.2	9.2	0.5	65.9	43.7
02:15 AM - 02:20 AM	62.5	47.4	15.1	0.0	65.5	41.2
02:20 AM - 02:25 AM	62.1	54.5	7.6	0.5	64.6	46.4
02:25 AM - 02:30 AM	63.3	59.9	3.4	3.0	63.3	18.3
02:30 AM - 02:35 AM	64.3	62.2	2.1	4.5	62.8	20.2
02:35 AM - 02:40 AM	64.2	55.5	8.7	0.5	66.7	42.3
02:40 AM - 02:45 AM	62.9	54.8	8.1	0.5	65.4	45.5
02:45 AM - 02:50 AM	62.4	54.0	8.4	0.5	64.9	44.2
02:50 AM - 02:55 AM	66.6	49.3	17.3	0.0	69.6	44.3
02:55 AM - 03:00 AM	66.7	48.0	18.7	0.0	69.7	42.6
03:00 AM - 03:05 AM	67.8	50.9	16.9	0.5	70.3	45.4
03:05 AM - 03:10 AM	64.5	48.2	16.3	0.0	68.5	25.1
03:10 AM - 03:15 AM	67.3	53.3	14.0	0.0	70.3	44.0
03:15 AM - 03:20 AM	67.3	54.3	13.0	0.0	70.3	43.8
03:20 AM - 03:25 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:25 AM - 03:30 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:30 AM - 03:35 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:35 AM - 03:40 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:40 AM - 03:45 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:45 AM - 03:50 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:50 AM - 03:55 AM	67.3	54.3	13.0	0.0	70.3	45.0
03:55 AM - 04:00 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:00 AM - 04:05 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:05 AM - 04:10 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:10 AM - 04:15 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:15 AM - 04:20 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:20 AM - 04:25 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:25 AM - 04:30 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:30 AM - 04:35 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:35 AM - 04:40 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:40 AM - 04:45 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:45 AM - 04:50 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:50 AM - 04:55 AM	67.3	54.3	13.0	0.0	70.3	45.0
04:55 AM - 05:00 AM	67.3	54.3	13.0	0.0	70.3	45.0

The above results are valid only for the analyzed period (sample) as indicated in the report. The results are not valid for other periods or locations. The results are not valid for other periods or locations. The results are not valid for other periods or locations.

Approved by

*D. Chongchua*

Del Chongchua  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-12

Parameter : เสียงรบกวน  
Location : บริเวณทางเข้าหมู่บ้าน 2 ซ.แยกทาง 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 21 - 22, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level Meter : 00597168

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการ	ระดับเสียง (dB(A))			เสียงพื้นถิ่น	ค่าเฉลี่ย	ค่าเฉลี่ย	ค่าเฉลี่ย
			เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการ	เสียงพื้นถิ่น				
12:00 PM - 01:00 PM	58.9	58.9	-2.1	7.0	54.8	54.8	-4.9	54.8	-4.9
01:00 PM - 02:00 PM	58.1	58.1	-3.0	7.0	55.7	55.7	-7.6	55.7	-7.6
02:00 PM - 03:00 PM	58.1	58.1	-2.3	7.0	59.1	59.1	-9.9	59.1	-9.9
03:00 PM - 04:00 PM	58.1	58.1	58.2	7.0	57.6	57.6	-6.5	57.6	-6.5
04:00 PM - 05:00 PM	58.4	58.4	57.7	7.0	51.6	51.6	-6.3	51.6	-6.3
05:00 PM - 06:00 PM	58.2	58.2	57.9	7.0	51.9	51.9	-2.5	51.9	-2.5
06:00 PM - 07:00 PM	58.0	58.0	57.1	7.0	47.3	47.3	-9.7	47.3	-9.7
07:00 PM - 08:00 PM	62.1	62.1	51.5	0.0	43.2	43.2	-18.9	43.2	-18.9
08:00 PM - 09:00 PM	63.3	63.3	51.5	11.8	62.8	62.8	-20.7	62.8	-20.7
09:00 PM - 10:00 PM	61.0	61.0	55.5	5.9	59.5	59.5	-17.1	59.5	-17.1
10:00 PM - 11:00 PM	58.5	58.5	10.0	7.0	52.5	52.5	-9.8	52.5	-9.8
10:05 PM - 10:10 PM	50.7	50.7	60.9	7.0	46.7	46.7	-3.8	46.7	-3.8
10:10 PM - 10:15 PM	51.2	51.2	55.7	4.5	47.2	47.2	-3.8	47.2	-3.8
10:15 PM - 10:20 PM	51.2	51.2	53.3	2.1	47.2	47.2	-2.8	47.2	-2.8
10:20 PM - 10:25 PM	50.6	50.6	62.7	-10.7	46.5	46.5	-3.8	46.5	-3.8
10:25 PM - 10:30 PM	51.3	51.3	62.7	-11.4	47.3	47.3	-3.0	47.3	-3.0
10:30 PM - 10:35 PM	51.0	51.0	63.8	-12.8	47.0	47.0	-1.9	47.0	-1.9
10:35 PM - 10:40 PM	50.8	50.8	64.4	-11.6	46.8	46.8	-1.7	46.8	-1.7
10:40 PM - 10:45 PM	50.8	50.8	65.2	-7.2	46.4	46.4	-3.2	46.4	-3.2
10:45 PM - 10:50 PM	59.6	59.6	64.5	-2.9	55.6	55.6	-9.9	55.6	-9.9
10:50 PM - 10:55 PM	58.2	58.2	64.4	-6.7	53.7	53.7	-7.9	53.7	-7.9
10:55 PM - 11:00 PM	58.2	58.2	63.6	-5.4	54.2	54.2	-7.2	54.2	-7.2
11:00 PM - 11:05 PM	58.2	58.2	64.3	-10.0	50.3	50.3	-4.9	50.3	-4.9
11:05 PM - 11:10 PM	56.1	56.1	63.2	-7.1	52.1	52.1	-4.7	52.1	-4.7
11:10 PM - 11:15 PM	59.9	59.9	61.5	-1.6	55.9	55.9	-8.2	55.9	-8.2
11:15 PM - 11:20 PM	55.9	55.9	61.7	-5.8	50.0	50.0	-4.3	50.0	-4.3
11:20 PM - 11:25 PM	54.0	54.0	61.7	-8.8	48.7	48.7	-1.3	48.7	-1.3
11:25 PM - 11:30 PM	49.0	49.0	59.3	-30.3	45.0	45.0	-4.5	45.0	-4.5
11:30 PM - 11:35 PM	50.5	50.5	61.9	-11.4	46.5	46.5	-3.2	46.5	-3.2
11:35 PM - 11:40 PM	58.1	58.1	63.9	-1.2	54.1	54.1	-7.3	54.1	-7.3
11:40 PM - 11:45 PM	60.8	60.8	59.6	1.2	56.8	56.8	-2.2	56.8	-2.2
11:45 PM - 11:50 PM	56.2	56.2	57.9	-1.7	52.2	52.2	-4.4	52.2	-4.4
11:50 PM - 11:55 PM	52.4	52.4	58.7	-6.3	48.4	48.4	-1.4	48.4	-1.4
11:55 PM - 12:00 AM	56.1	56.1	63.1	-7.0	52.1	52.1	-0.6	52.1	-0.6
12:00 AM - 12:05 AM	50.6	50.6	60.3	-30.3	46.6	46.6	-5.1	46.6	-5.1
12:05 AM - 12:10 AM	50.3	50.3	64.7	-14.4	46.3	46.3	-5.2	46.3	-5.2
12:10 AM - 12:15 AM	50.8	50.8	59.9	-9.1	46.8	46.8	-5.2	46.8	-5.2
12:15 AM - 12:20 AM	50.8	50.8	63.4	-12.6	46.8	46.8	-5.4	46.8	-5.4
12:20 AM - 12:25 AM	50.8	50.8	62.1	-11.9	46.2	46.2	-5.0	46.2	-5.0
12:25 AM - 12:30 AM	50.2	50.2	62.1	-11.9	46.2	46.2	-5.0	46.2	-5.0

Approved by

Del Changchong  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270911-11

Parameter : เสียงรบกวน  
Location : บริเวณทางเข้าหมู่บ้าน 2 ซ.แยกทาง 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date : Jun 20 - 21, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level Meter : 00597168

เวลา	เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการ	ระดับเสียง (dB(A))			เสียงพื้นถิ่น	ค่าเฉลี่ย	ค่าเฉลี่ย	ค่าเฉลี่ย
			เสียงจากแหล่งกำเนิด	เสียงขณะปฏิบัติการ	เสียงพื้นถิ่น				
03:50 AM - 03:55 AM	66.6	62.2	-1.6	7.0	43.6	43.6	13.0	43.6	13.0
03:55 AM - 04:00 AM	66.4	59.9	15.5	0.0	45.6	45.6	23.8	45.6	23.8
04:00 AM - 04:05 AM	59.0	58.1	0.9	7.0	45.1	45.1	9.9	45.1	9.9
04:05 AM - 04:10 AM	62.9	62.9	0.0	7.0	58.9	58.9	13.6	58.9	13.6
04:10 AM - 04:15 AM	61.4	58.5	2.9	3.0	61.4	61.4	15.9	61.4	15.9
04:15 AM - 04:20 AM	66.2	51.1	15.1	0.0	62.2	62.2	23.7	62.2	23.7
04:20 AM - 04:25 AM	67.8	56.9	10.9	0.5	70.3	70.3	25.4	70.3	25.4
04:25 AM - 04:30 AM	67.0	58.5	8.5	0.5	69.5	69.5	24.6	69.5	24.6
04:30 AM - 04:35 AM	63.4	63.4	10.4	0.5	65.9	65.9	24.6	65.9	24.6
04:35 AM - 04:40 AM	63.2	56.9	6.3	1.5	64.7	64.7	17.0	64.7	17.0
04:40 AM - 04:45 AM	61.6	60.6	5.8	1.5	57.6	57.6	8.0	57.6	8.0
04:45 AM - 04:50 AM	64.9	61.9	3.0	3.0	64.9	64.9	16.1	64.9	16.1
04:50 AM - 04:55 AM	64.2	56.8	7.4	1.0	66.2	66.2	17.3	66.2	17.3
04:55 AM - 05:00 AM	61.9	51.6	10.3	0.5	64.4	64.4	20.7	64.4	20.7
05:00 AM - 05:05 AM	60.6	52.0	8.6	0.5	63.1	63.1	20.4	63.1	20.4
05:05 AM - 05:10 AM	59.0	51.6	4.0	2.0	60.0	60.0	24.5	60.0	24.5
05:10 AM - 05:15 AM	62.3	51.6	10.7	0.5	64.8	64.8	27.6	64.8	27.6
05:15 AM - 05:20 AM	65.3	49.6	15.7	0.0	68.3	68.3	23.3	68.3	23.3
05:20 AM - 05:25 AM	63.4	60.4	3.0	3.0	63.4	63.4	23.1	63.4	23.1
05:25 AM - 05:30 AM	63.4	58.3	5.1	1.5	64.9	64.9	16.0	64.9	16.0
05:30 AM - 05:35 AM	62.0	61.6	0.4	7.0	58.0	58.0	21.6	58.0	21.6
05:35 AM - 05:40 AM	64.1	57.3	6.8	1.0	66.1	66.1	23.1	66.1	23.1
05:40 AM - 05:45 AM	64.5	51.8	12.7	0.5	67.5	67.5	22.9	67.5	22.9
05:45 AM - 05:50 AM	64.0	55.3	8.7	0.5	66.5	66.5	21.4	66.5	21.4
05:50 AM - 05:55 AM	61.5	52.6	8.9	0.5	64.0	64.0	18.1	64.0	18.1
05:55 AM - 06:00 AM	62.1	55.1	7.0	1.0	61.1	61.1	15.2	61.1	15.2
06:00 AM - 06:05 AM	58.6	51.8	6.8	1.0	57.6	57.6	15.2	57.6	15.2
06:05 AM - 06:10 AM	57.3	55.5	1.8	4.5	50.6	50.6	-0.1	50.6	-0.1
06:10 AM - 06:15 AM	57.6	58.9	-1.3	7.0	50.6	50.6	-1.9	50.6	-1.9
06:15 AM - 06:20 AM	57.4	59.3	-1.9	7.0	50.4	50.4	-2.8	50.4	-2.8
06:20 AM - 06:25 AM	57.7	58.0	-0.3	7.0	50.7	50.7	-5.10	50.7	-5.10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

1. ข้อมูลการตรวจวัดเสียงรบกวนที่ได้จากการวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2
2. ข้อมูลการตรวจวัดเสียงรบกวนที่ได้จากการวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2
3. ข้อมูลการตรวจวัดเสียงรบกวนที่ได้จากการวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2
4. ข้อมูลการตรวจวัดเสียงรบกวนที่ได้จากการวัดเสียงรบกวนตามมาตรฐาน ISO 1996-1 และ ISO 1996-2

Approved by

Del Changchong  
Senior Manager

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluak Daeng

Project Location : Pluak Daeng

Sample No. 2270911-12

Parameter : เสียงรบกวน

Location : บริเวณพื้นที่ 2 ข้างถนนพหลโยธิน 15 (N2) (GPS 47P 733675, 1434009)

Measurement Date : Jun 21 - 22, 2022

Measurement by : Anurak Tongtongjongsakda

Sound Level Meter : 00597168

TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359651-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การกระจาย
			ค่าสูงสุด	ค่าเฉลี่ย	ค่าต่ำสุด		
12:30 AM - 12:35 AM	50.3	61.9	-11.6	7.0	46.3	52.3	-6.0
12:35 AM - 12:40 AM	60.6	62.1	-1.5	7.0	56.6	52.7	3.9
12:40 AM - 12:45 AM	49.3	60.7	-11.4	7.0	45.3	49.7	-4.4
12:45 AM - 12:50 AM	53.3	62.2	-8.9	7.0	49.3	47.3	2.0
12:50 AM - 12:55 AM	49.7	59.6	-9.9	7.0	45.7	45.0	0.7
12:55 AM - 01:00 AM	50.0	64.0	-14.0	7.0	46.0	46.8	-0.8
01:00 AM - 01:05 AM	47.5	57.2	-9.7	7.0	43.5	46.6	-3.1
01:05 AM - 01:10 AM	49.1	55.4	-6.3	7.0	45.1	46.2	-1.1
01:10 AM - 01:15 AM	46.1	64.9	-18.8	7.0	42.1	48.7	-6.6
01:15 AM - 01:20 AM	46.5	56.7	-11.2	7.0	41.5	43.7	-2.2
01:20 AM - 01:25 AM	46.1	54.2	-8.1	7.0	42.1	43.0	-0.9
01:25 AM - 01:30 AM	47.6	55.8	-8.2	7.0	43.6	43.7	-0.1
01:30 AM - 01:35 AM	46.4	56.4	-10.0	7.0	41.4	43.5	-2.1
01:35 AM - 01:40 AM	47.2	52.6	-5.3	7.0	43.3	42.5	0.8
01:40 AM - 01:45 AM	47.2	64.5	-17.3	7.0	43.5	44.8	-1.3
01:45 AM - 01:50 AM	46.2	60.2	-14.0	7.0	42.2	46.3	-4.1
01:50 AM - 01:55 AM	47.5	56.3	-8.8	7.0	43.2	46.6	-3.4
01:55 AM - 02:00 AM	60.7	59.3	1.4	7.0	56.7	44.9	11.0
02:00 AM - 02:05 AM	47.7	54.8	-7.1	7.0	43.7	44.6	-1.1
02:05 AM - 02:10 AM	48.6	57.1	-6.5	7.0	46.6	47.3	-0.5
02:10 AM - 02:15 AM	44.4	53.0	-9.6	7.0	40.4	43.8	-3.2
02:15 AM - 02:20 AM	44.0	54.0	-10.0	7.0	40.0	43.5	-3.5
02:20 AM - 02:25 AM	44.8	60.7	-15.9	7.0	40.8	44.2	-3.4
02:25 AM - 02:30 AM	49.7	59.3	-9.6	7.0	45.7	45.5	0.2
02:30 AM - 02:35 AM	47.9	59.6	-11.7	7.0	43.9	45.4	-1.5
02:35 AM - 02:40 AM	50.0	57.9	-7.9	7.0	44.0	44.5	-0.5
02:40 AM - 02:45 AM	46.8	51.7	-4.9	7.0	42.8	43.4	-0.6
02:45 AM - 02:50 AM	46.3	51.7	-5.4	7.0	42.3	41.6	0.7
02:50 AM - 02:55 AM	51.0	46.4	4.6	7.0	52.5	41.8	10.7
02:55 AM - 03:00 AM	46.7	54.1	-7.4	7.0	42.7	45.9	-3.9
03:00 AM - 03:05 AM	53.1	56.8	-3.7	7.0	49.1	45.2	3.9
03:05 AM - 03:10 AM	53.6	53.6	0.0	7.0	53.6	43.5	10.1
03:10 AM - 03:15 AM	62.3	43.5	18.8	7.0	63.3	43.8	19.5
03:15 AM - 03:20 AM	58.2	41.1	17.1	7.0	59.6	44.2	15.4
03:20 AM - 03:25 AM	53.6	56.2	-2.6	7.0	49.6	42.7	6.9
03:25 AM - 03:30 AM	51.3	57.9	-6.6	7.0	47.3	42.7	4.6
03:30 AM - 03:35 AM	47.3	57.5	-10.2	7.0	43.3	40.8	2.5
03:35 AM - 03:40 AM	57.2	57.8	-0.6	7.0	53.2	43.4	9.8
03:40 AM - 03:45 AM	62.5	56.5	6.0	7.0	64.0	43.7	20.3
03:45 AM - 03:50 AM	54.7	60.3	-5.6	7.0	50.7	44.3	6.4

The above results are valid only for the analytical method specified in this report. This report is for information only and should not be used for any other purpose. This report is not to be used for any other purpose.

Approved by

D. Chongchon

Senior Manager

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Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64

Project Name : Pluak Daeng

Project Location : Pluak Daeng

Sample No. 2270911-12

Parameter : เสียงรบกวน

Location : บริเวณพื้นที่ 2 ข้างถนนพหลโยธิน 15 (N2) (GPS 47P 733675, 1434009)

Measurement Date : Jun 21 - 22, 2022

Measurement by : Anurak Tongtongjongsakda

Sound Level Meter : 00597168

TESTING  
No.0042

Lot ID: 2270911

Date Received : Jun 27, 2022

Date Reported : Jun 29, 2022

Report Number : 2359651-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			ค่าเฉลี่ย	การกระจาย
			ค่าสูงสุด	ค่าเฉลี่ย	ค่าต่ำสุด		
03:50 AM - 03:55 AM	58.8	54.6	4.2	2.0	53.8	42.5	11.3
03:55 AM - 04:00 AM	62.2	62.8	-0.6	7.0	62.2	43.1	19.1
04:00 AM - 04:05 AM	58.1	61.4	-3.3	7.0	59.7	43.0	16.7
04:05 AM - 04:10 AM	56.7	56.4	-1.7	7.0	56.7	46.3	10.4
04:10 AM - 04:15 AM	64.2	54.6	9.6	0.5	64.2	44.9	19.3
04:15 AM - 04:20 AM	63.2	60.7	2.5	3.0	63.2	44.0	19.2
04:20 AM - 04:25 AM	63.6	57.1	6.5	1.0	63.6	40.0	23.6
04:25 AM - 04:30 AM	64.9	60.0	4.9	1.5	64.9	40.5	24.4
04:30 AM - 04:35 AM	64.1	58.2	5.9	1.5	64.1	41.4	22.7
04:35 AM - 04:40 AM	66.5	57.5	8.0	0.5	66.5	44.7	21.8
04:40 AM - 04:45 AM	63.7	53.9	9.8	0.5	63.7	44.8	18.9
04:45 AM - 04:50 AM	67.0	58.8	8.2	0.5	67.0	41.9	25.1
04:50 AM - 04:55 AM	64.3	56.6	7.7	1.5	64.3	43.7	20.6
04:55 AM - 05:00 AM	64.3	53.1	11.2	1.5	64.3	45.1	19.2
05:00 AM - 05:05 AM	65.0	53.1	11.9	0.5	65.0	48.0	17.0
05:05 AM - 05:10 AM	62.0	52.8	9.2	0.5	62.0	42.3	19.7
05:10 AM - 05:15 AM	62.1	53.6	8.5	0.5	62.1	41.0	21.1
05:15 AM - 05:20 AM	60.3	57.5	2.8	3.0	60.3	41.6	18.7
05:20 AM - 05:25 AM	62.9	57.1	5.8	1.5	62.9	42.4	20.5
05:25 AM - 05:30 AM	63.5	63.4	0.1	7.0	63.5	53.2	10.3
05:30 AM - 05:35 AM	61.4	65.6	-4.2	7.0	61.4	53.7	7.7
05:35 AM - 05:40 AM	59.5	65.6	-6.1	7.0	59.5	55.5	4.0
05:40 AM - 05:45 AM	60.5	56.3	4.2	2.0	60.5	51.6	8.9
05:45 AM - 05:50 AM	63.6	59.7	3.9	2.0	63.6	47.1	16.5
05:50 AM - 05:55 AM	60.4	58.6	1.8	4.5	60.4	58.9	1.5
05:55 AM - 06:00 AM	62.4	58.1	4.3	2.0	62.4	44.0	18.4
06:00 AM - 06:05 AM	59.3	57.0	2.3	4.5	59.3	50.9	8.4
06:05 AM - 06:10 AM	57.0	59.0	-2.0	7.0	57.0	48.5	8.5
06:10 AM - 06:15 AM	59.2	62.3	-3.1	7.0	59.2	57.2	2.0
06:15 AM - 06:20 AM	58.4	60.4	-2.0	7.0	58.4	55.2	3.2
06:20 AM - 06:25 AM	62.1	55.4	6.7	1.0	62.1	51.0	11.1
ค่าเฉลี่ยรวม						51.0	5.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

1. การตรวจวัดเสียงรบกวน ที่พื้นที่วัดเสียงรบกวนและพื้นที่การกระจายเสียงรบกวน
2. การตรวจวัดเสียงรบกวน ที่พื้นที่วัดเสียงรบกวนและพื้นที่การกระจายเสียงรบกวน
3. การตรวจวัดเสียงรบกวน ที่พื้นที่วัดเสียงรบกวนและพื้นที่การกระจายเสียงรบกวน
4. การตรวจวัดเสียงรบกวน ที่พื้นที่วัดเสียงรบกวนและพื้นที่การกระจายเสียงรบกวน

Approved by

D. Chongchon

Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Plak Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64  
Project Name : Plak Daeng  
Project Location :

Sample No. 2270911-13  
Parameter : เสียงรบกวน  
Location : ถนนพหลโยธิน กม. 2 ข้ามถนนพหลโยธิน 15 (N2) (GPS 47P 73367S, 143400E)  
Measurement Date : Jun 22 - 23, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level Meter : 00597168



TESTING  
No.0042

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359652-1

Page 1 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			เสียงที่ตรวจ	ค่าเฉลี่ย
			เสียงรบกวน	เสียงรบกวน	เสียงรบกวน		
12:00 PM - 01:00 PM	59.2	64.1	-4.9	7.0	52.2	60.3	-8.1
01:00 PM - 02:00 PM	58.0	64.8	-6.8	7.0	51.0	58.9	-7.9
02:00 PM - 03:00 PM	60.8	58.1	2.7	3.0	57.8	50.4	7.4
03:00 PM - 04:00 PM	59.9	52.7	7.2	1.0	58.9	50.3	8.6
04:00 PM - 05:00 PM	59.4	49.9	9.5	0.5	58.9	46.6	12.3
05:00 PM - 06:00 PM	55.7	52.4	3.3	3.0	52.7	42.9	9.8
06:00 PM - 07:00 PM	57.3	47.0	10.3	0.5	56.8	41.8	15.0
07:00 PM - 08:00 PM	59.4	51.3	8.1	0.5	58.9	41.9	17.0
08:00 PM - 09:00 PM	57.8	50.6	7.2	1.0	56.8	45.6	11.2
09:00 PM - 10:00 PM	55.3	56.3	-1.0	7.0	48.3	41.7	6.6
10:00 PM - 10:05 PM	51.0	51.3	-0.3	7.0	47.0	42.9	4.1
10:05 PM - 10:10 PM	51.1	47.3	3.8	2.0	52.1	41.0	11.1
10:10 PM - 10:15 PM	50.2	47.5	2.7	3.0	50.2	43.9	6.3
10:15 PM - 10:20 PM	50.2	61.5	-11.3	7.0	46.2	45.0	1.3
10:20 PM - 10:25 PM	50.6	62.0	-11.4	7.0	46.6	45.0	1.6
10:25 PM - 10:30 PM	49.5	56.6	-7.1	7.0	45.5	44.7	0.8
10:30 PM - 10:35 PM	49.6	62.7	-13.1	7.0	45.5	44.5	1.1
10:35 PM - 10:40 PM	51.3	65.0	-13.7	7.0	47.3	47.0	0.3
10:40 PM - 10:45 PM	50.8	64.0	-13.2	7.0	46.8	48.4	-1.6
10:45 PM - 10:50 PM	49.8	63.1	-13.3	7.0	47.1	48.7	-1.3
10:50 PM - 10:55 PM	49.9	65.3	-15.4	7.0	45.9	48.7	-2.8
10:55 PM - 11:00 PM	50.3	63.2	-12.9	7.0	48.8	48.7	0.1
11:00 PM - 11:05 PM	48.1	64.1	-16.0	7.0	44.1	48.3	-4.2
11:05 PM - 11:10 PM	47.6	62.7	-15.1	7.0	43.6	49.0	-5.4
11:10 PM - 11:15 PM	49.6	63.7	-14.1	7.0	45.6	50.6	-5.0
11:15 PM - 11:20 PM	66.1	64.8	-1.3	7.0	62.1	49.4	12.7
11:20 PM - 11:25 PM	48.6	63.5	-14.9	7.0	44.6	50.1	-5.5
11:25 PM - 11:30 PM	47.8	60.6	-16.5	7.0	43.8	44.4	-0.6
11:30 PM - 11:35 PM	48.4	62.8	-14.4	7.0	44.4	47.9	-3.5
11:35 PM - 11:40 PM	47.3	61.2	-13.9	7.0	43.2	49.7	-6.4
11:40 PM - 11:45 PM	46.5	57.1	-10.6	7.0	42.5	50.3	-7.1
11:45 PM - 11:50 PM	46.1	59.3	-13.2	7.0	42.1	49.3	-7.2
11:50 PM - 12:00 AM	46.1	63.5	-17.4	7.0	42.1	50.4	-8.3
12:00 AM - 12:05 AM	47.3	62.6	-15.3	7.0	43.3	50.9	-7.6
12:05 AM - 12:10 AM	49.2	59.5	-10.3	7.0	45.2	50.5	-5.3
12:10 AM - 12:15 AM	48.8	61.2	-12.4	7.0	44.8	51.4	-6.6
12:15 AM - 12:20 AM	55.0	58.0	-3.0	7.0	51.0	51.3	-0.3
12:20 AM - 12:25 AM	53.4	59.6	-6.2	7.0	49.4	49.3	0.1
12:25 AM - 12:30 AM	48.6	60.3	-11.7	7.0	44.6	47.0	-2.4

Approved by

*D. Chongchon*

Dej Chongchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Plak Daeng, Rayong Thailand 21140

P/O : RJN(2)-019/64  
Project Name : Plak Daeng  
Project Location :

Sample No. 2270911-13  
Parameter : เสียงรบกวน  
Location : ถนนพหลโยธิน กม. 2 ข้ามถนนพหลโยธิน 15 (N2) (GPS 47P 73367S, 143400E)  
Measurement Date : Jun 22 - 23, 2022  
Measurement by : Anurak Tongkhajonsakda  
Sound Level Meter : 00597168



TESTING  
No.0042

Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359652-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงรบกวน	ระดับเสียง (dB(A))			เสียงที่ตรวจ	ค่าเฉลี่ย
			เสียงรบกวน	เสียงรบกวน	เสียงรบกวน		
12:30 AM - 12:35 AM	46.9	64.0	-17.1	7.0	42.9	45.0	-3.1
12:35 AM - 12:40 AM	48.4	61.0	-12.6	7.0	44.4	47.8	-3.4
12:40 AM - 12:45 AM	45.0	59.1	-14.1	7.0	41.0	47.8	-6.8
12:45 AM - 12:50 AM	46.3	62.4	-16.1	7.0	42.3	45.3	-3.2
12:50 AM - 12:55 AM	52.0	59.0	-7.0	7.0	48.0	45.6	2.4
12:55 AM - 01:00 AM	49.1	54.9	-5.8	7.0	45.1	45.1	0.0
01:00 AM - 01:05 AM	49.0	59.9	-10.9	7.0	45.0	46.0	-1.0
01:05 AM - 01:10 AM	55.2	52.4	2.8	7.0	51.2	45.8	5.4
01:10 AM - 01:15 AM	48.4	56.9	-8.5	7.0	48.4	45.6	2.8
01:15 AM - 01:20 AM	50.5	58.2	-7.7	7.0	46.5	45.7	0.8
01:20 AM - 01:25 AM	51.4	54.8	-3.4	7.0	47.4	45.3	2.1
01:25 AM - 01:30 AM	51.5	53.8	-11.3	7.0	47.5	53.9	-6.4
01:30 AM - 01:35 AM	52.5	53.8	-1.3	7.0	48.5	42.6	5.9
01:35 AM - 01:40 AM	62.2	53.8	8.4	0.5	64.7	43.5	21.2
01:40 AM - 01:45 AM	56.1	55.5	0.6	7.0	56.1	45.3	10.8
01:45 AM - 01:50 AM	50.5	56.8	-6.3	7.0	46.5	45.4	1.1
01:50 AM - 01:55 AM	54.5	66.2	-11.7	7.0	50.5	61.5	-13.0
01:55 AM - 02:00 AM	56.0	61.7	-5.7	7.0	52.0	58.1	-6.1
02:00 AM - 02:05 AM	55.2	55.2	0.0	7.0	52.2	49.8	2.4
02:05 AM - 02:10 AM	52.7	55.9	-3.2	7.0	48.7	48.7	0.0
02:10 AM - 02:15 AM	52.0	54.3	-2.3	7.0	48.0	47.2	0.8
02:15 AM - 02:20 AM	54.5	60.2	-5.8	7.0	50.2	45.5	5.2
02:20 AM - 02:25 AM	54.2	61.7	-7.0	7.0	50.7	46.0	4.7
02:25 AM - 02:30 AM	54.8	65.2	-10.4	7.0	50.8	47.9	2.9
02:30 AM - 02:35 AM	54.3	61.1	-7.0	7.0	50.3	46.5	3.8
02:35 AM - 02:40 AM	49.9	54.1	-4.2	7.0	45.9	45.6	0.3
02:40 AM - 02:45 AM	49.1	60.1	-11.0	7.0	45.1	44.4	0.7
02:45 AM - 02:50 AM	45.6	61.2	-15.6	7.0	41.6	44.5	-2.9
02:50 AM - 02:55 AM	53.2	51.5	1.7	4.5	51.7	43.7	8.0
02:55 AM - 03:00 AM	45.6	53.6	-8.0	7.0	41.6	42.4	-0.8
03:00 AM - 03:05 AM	59.7	53.4	6.3	1.5	61.2	43.1	18.1
03:05 AM - 03:10 AM	63.7	55.0	8.7	0.5	66.2	44.8	21.4
03:10 AM - 03:15 AM	56.8	56.5	0.3	7.0	52.8	45.1	7.7
03:15 AM - 03:20 AM	50.5	58.0	-7.5	7.0	46.5	45.0	1.5
03:20 AM - 03:25 AM	55.3	54.2	1.1	7.0	51.3	47.2	4.1
03:25 AM - 03:30 AM	52.6	62.1	-9.5	7.0	48.6	46.3	2.3
03:30 AM - 03:35 AM	50.3	64.2	-13.9	7.0	46.3	46.9	-0.6
03:35 AM - 03:40 AM	64.5	63.8	0.7	7.0	60.5	45.8	14.7
03:40 AM - 03:45 AM	61.4	57.7	3.7	2.0	62.4	45.6	16.8

Approved by

*D. Chongchon*

Dej Chongchon  
Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJK(2)-019/64  
Project Name : Pluek Daeng  
Project Location :

Sample No. 2270911-14  
Parameter เลื่อนขบวน  
Location ถนนพหลโยธิน กม 2 แขวงบางนา 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 23 - 24, 2022  
Measurement by Anurak Tongthajonsakla  
Sound Level Meter 00597168



TESTING  
No.0042  
Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359653-1

Page 2 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงจากตัวรับ	ระดับเสียง (dB(A))		ทิศทางเสียง	ทิศทางเสียง	ทิศทางเสียง
			ค่าจริง	ค่าปรับ		ค่าจริง	
12:30 AM - 12:35 AM	53.7	67.5	-13.8	7.0	-	61.0	-11.3
12:35 AM - 12:40 AM	47.9	67.1	-19.2	7.0	-	59.1	-15.2
12:40 AM - 12:45 AM	47.1	66.8	-19.7	7.0	-	58.2	-15.1
12:45 AM - 12:50 AM	46.1	66.7	-20.6	7.0	-	56.1	-17.1
12:50 AM - 12:55 AM	46.1	66.3	-20.2	7.0	-	56.2	-16.1
12:55 AM - 01:00 AM	48.0	66.2	-18.2	7.0	-	53.6	-9.6
01:00 AM - 01:05 AM	53.7	63.8	-10.1	7.0	-	50.4	-0.7
01:05 AM - 01:10 AM	45.1	64.6	-19.5	7.0	-	53.0	-11.9
01:10 AM - 01:15 AM	47.1	63.0	-15.9	7.0	-	53.4	-10.3
01:15 AM - 01:20 AM	52.0	64.0	-12.0	7.0	-	53.7	-5.7
01:20 AM - 01:25 AM	45.0	64.6	-19.6	7.0	-	52.3	-11.3
01:25 AM - 01:30 AM	50.1	62.7	-12.6	7.0	-	52.0	-5.9
01:30 AM - 01:35 AM	48.4	62.2	-14.8	7.0	-	50.5	-6.1
01:35 AM - 01:40 AM	61.5	62.4	-10.9	7.0	-	51.2	6.3
01:40 AM - 01:45 AM	53.1	62.8	-9.7	7.0	-	51.3	-2.2
01:45 AM - 01:50 AM	50.5	63.3	-12.8	7.0	-	53.9	-7.4
01:50 AM - 01:55 AM	48.4	62.9	-14.5	7.0	-	55.6	-11.2
01:55 AM - 02:00 AM	52.5	61.5	-9.0	7.0	-	50.0	-1.5
02:00 AM - 02:05 AM	47.2	64.2	-17.0	7.0	-	49.6	-6.4
02:05 AM - 02:10 AM	49.9	67.9	-18.0	7.0	-	52.0	-6.1
02:10 AM - 02:15 AM	53.5	64.6	-11.1	7.0	-	49.5	-0.7
02:15 AM - 02:20 AM	50.2	62.8	-12.6	7.0	-	51.8	-5.6
02:20 AM - 02:25 AM	62.0	62.4	-0.4	7.0	-	50.2	7.8
02:25 AM - 02:30 AM	58.7	61.4	-3.4	7.0	-	51.8	2.9
02:30 AM - 02:35 AM	54.9	58.3	-4.4	7.0	-	48.9	2.0
02:35 AM - 02:40 AM	52.6	58.0	-6.4	7.0	-	50.9	2.0
02:40 AM - 02:45 AM	55.5	54.9	0.6	7.0	-	48.6	0.3
02:45 AM - 02:50 AM	51.7	58.2	-6.5	7.0	-	47.7	2.9
02:50 AM - 02:55 AM	50.1	53.6	-3.5	7.0	-	47.7	0.0
02:55 AM - 03:00 AM	57.9	53.2	4.7	1.5	-	48.8	10.6
03:00 AM - 03:05 AM	56.2	55.3	0.9	7.0	-	52.2	6.7
03:05 AM - 03:10 AM	53.9	61.7	-7.8	7.0	-	53.6	-3.7
03:10 AM - 03:15 AM	52.7	62.1	-9.4	7.0	-	48.7	-6.0
03:15 AM - 03:20 AM	54.2	55.7	-1.5	7.0	-	51.9	-1.7
03:20 AM - 03:25 AM	63.1	64.8	-1.7	7.0	-	52.5	6.6
03:25 AM - 03:30 AM	60.2	63.0	-2.8	7.0	-	56.2	3.9
03:30 AM - 03:35 AM	54.9	62.4	-7.5	7.0	-	50.9	0.2
03:35 AM - 03:40 AM	53.0	63.2	-10.2	7.0	-	49.0	-2.7
03:40 AM - 03:45 AM	52.5	63.8	-11.3	7.0	-	54.4	-5.9
03:45 AM - 03:50 AM	56.5	63.5	-7.0	7.0	-	52.5	-3.7

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Approved by

*D. Chongchon*

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Senior Manager

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluek Daeng, Rayong Thailand 21140

P/O : RJK(2)-019/64  
Project Name : Pluek Daeng  
Project Location :

Sample No. 2270911-14  
Parameter เลื่อนขบวน  
Location ถนนพหลโยธิน กม 2 แขวงบางนา 15 (N2) (GPS 47P 733675, 1434009)  
Measurement Date Jun 23 - 24, 2022  
Measurement by Anurak Tongthajonsakla  
Sound Level Meter 00597168



TESTING  
No.0042  
Lot ID: 2270911  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report Number: 2359653-1

Page 3 of 3

เวลา	เสียงจากแหล่งกำเนิด	เสียงจากตัวรับ	ระดับเสียง (dB(A))		ทิศทางเสียง	ทิศทางเสียง	ทิศทางเสียง
			ค่าจริง	ค่าปรับ		ค่าจริง	
03:50 AM - 03:55 AM	61.5	64.4	-2.9	7.0	-	57.5	49.8
03:55 AM - 04:00 AM	63.3	68.2	-4.9	7.0	-	59.3	52.3
04:00 AM - 04:05 AM	58.5	68.1	-9.6	7.0	-	54.5	52.2
04:05 AM - 04:10 AM	56.3	65.1	-8.8	7.0	-	52.3	50.7
04:10 AM - 04:15 AM	64.4	63.2	1.2	7.0	-	60.4	52.2
04:15 AM - 04:20 AM	65.3	62.7	2.6	3.0	-	65.3	50.5
04:20 AM - 04:25 AM	65.1	61.8	3.3	3.0	-	65.1	52.2
04:25 AM - 04:30 AM	63.9	58.5	5.4	1.5	-	65.4	49.1
04:30 AM - 04:35 AM	65.2	58.3	6.9	1.0	-	67.2	48.6
04:35 AM - 04:40 AM	64.8	53.5	11.3	0.5	-	67.3	49.1
04:40 AM - 04:45 AM	63.7	55.6	8.1	0.5	-	66.2	51.8
04:45 AM - 04:50 AM	64.8	61.9	2.9	3.0	-	64.8	53.8
04:50 AM - 04:55 AM	62.5	62.0	0.5	2.0	-	67.4	52.4
04:55 AM - 05:00 AM	65.5	59.0	6.5	2.0	-	63.5	49.6
05:00 AM - 05:05 AM	61.7	58.7	3.0	3.0	-	61.7	49.0
05:05 AM - 05:10 AM	63.3	55.7	7.6	0.5	-	65.8	49.4
05:10 AM - 05:15 AM	63.3	58.9	4.4	2.0	-	64.3	48.4
05:15 AM - 05:20 AM	60.7	54.2	6.5	1.0	-	62.7	48.3
05:20 AM - 05:25 AM	57.1	53.7	3.4	3.0	-	57.1	49.3
05:25 AM - 05:30 AM	69.6	65.2	4.4	1.5	-	71.1	50.2
05:30 AM - 05:35 AM	68.3	65.2	3.1	3.0	-	68.3	52.9
05:35 AM - 05:40 AM	66.4	62.9	3.5	2.0	-	67.4	52.2
05:40 AM - 05:45 AM	62.4	62.6	-0.2	7.0	-	58.4	50.9
05:45 AM - 05:50 AM	65.9	65.2	0.7	7.0	-	61.9	53.6
05:50 AM - 05:55 AM	66.4	64.8	1.6	4.5	-	64.9	48.3
05:55 AM - 06:00 AM	58.5	68.1	-9.6	7.0	-	54.5	41.6
06:00 AM - 06:05 AM	65.7	64.9	0.8	7.0	-	58.7	50.4
06:05 AM - 06:10 AM	64.1	64.0	0.1	7.0	-	57.1	53.8
06:10 AM - 06:15 AM	60.8	63.3	-2.5	7.0	-	53.8	53.7
06:15 AM - 06:20 AM	63.4	64.8	-1.4	7.0	-	56.4	57.4
06:20 AM - 06:25 AM	62.7	64.6	-1.9	7.0	-	55.7	54.1
06:25 AM - 06:30 AM	64.9	62.4	2.5	3.0	-	61.9	52.8
06:30 AM - 06:35 AM	64.9	62.4	2.5	3.0	-	61.9	52.8

Reference Method : Based on ISO 1996-1 and ISO 1996-2

หมายเหตุ : 1. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

2. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

3. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

4. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

5. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

6. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

7. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

8. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

9. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

10. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

11. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

12. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

13. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

14. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

15. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

16. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

17. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

18. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

19. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

20. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

21. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

22. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

23. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

24. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

25. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

26. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

27. ข้อมูลที่ได้มาจากการวัดเสียงนี้ใช้สำหรับการประเมินผลกระทบจากเสียงเท่านั้น ไม่สามารถใช้ในการฟ้องร้องคดีได้

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-1  
Parameter Noise  
Location thursonwain (N) GPS 47P 734048, 1432177 (Shut down)  
Measurement Date Jun 17 - 18, 2022  
Measurement by Anurak Tongkhajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	54.6	64.7	46.3
02:00 PM - 03:00 PM	57.0	76.8	47.8
03:00 PM - 04:00 PM	54.2	81.2	46.6
04:00 PM - 05:00 PM	54.7	76.0	47.5
05:00 PM - 06:00 PM	54.1	74.4	47.5
06:00 PM - 07:00 PM	55.5	75.3	50.4
07:00 PM - 08:00 PM	60.0	72.0	54.6
08:00 PM - 09:00 PM	55.9	74.0	50.0
09:00 PM - 10:00 PM	52.9	72.2	48.3
10:00 PM - 10:05 PM	54.3	67.4	49.0
10:05 PM - 10:10 PM	51.9	59.7	46.8
10:10 PM - 10:15 PM	53.2	63.2	50.6
10:15 PM - 10:20 PM	52.5	62.8	50.0
10:20 PM - 10:25 PM	51.4	58.4	46.5
10:25 PM - 10:30 PM	50.4	57.7	46.3
10:30 PM - 10:35 PM	52.5	59.9	49.2
10:35 PM - 10:40 PM	52.6	56.8	51.0
10:40 PM - 10:45 PM	53.1	62.8	47.7
10:45 PM - 10:50 PM	49.6	62.3	46.3
10:50 PM - 10:55 PM	48.0	55.8	45.1
10:55 PM - 11:00 PM	47.6	57.6	45.2
11:00 PM - 11:05 PM	49.0	59.1	46.9
11:05 PM - 11:10 PM	48.8	55.1	45.5
11:10 PM - 11:15 PM	47.7	54.6	44.5
11:15 PM - 11:20 PM	47.9	57.0	44.1
11:20 PM - 11:25 PM	53.2	58.0	47.8
11:25 PM - 11:30 PM	51.8	62.2	47.5
11:30 PM - 11:35 PM	52.1	60.8	48.9
11:35 PM - 11:40 PM	53.7	60.9	50.2
11:40 PM - 11:45 PM	56.0	64.1	51.4
11:45 PM - 11:50 PM	53.9	68.0	48.5
11:50 PM - 11:55 PM	49.6	59.2	45.4
11:55 PM - 12:00 AM	50.4	63.3	45.4
12:00 AM - 12:05 AM	49.6	62.0	45.3
12:05 AM - 12:10 AM	55.0	65.8	45.9
12:10 AM - 12:15 AM	52.1	63.1	47.5
12:15 AM - 12:20 AM	51.4	63.2	46.4
12:20 AM - 12:25 AM	53.4	63.7	47.4
12:25 AM - 12:30 AM	54.8	64.2	47.0
12:30 AM - 12:35 AM	55.8	64.6	45.1

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-1  
Parameter Noise  
Location thursonwain (N) GPS 47P 734048, 1432177 (Shut down)  
Measurement Date Jun 17 - 18, 2022  
Measurement by Anurak Tongkhajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	51.9	64.4	45.5
12:40 AM - 12:45 AM	54.3	64.6	45.3
12:45 AM - 12:50 AM	48.0	56.4	45.4
12:50 AM - 12:55 AM	48.4	60.0	45.4
12:55 AM - 01:00 AM	51.6	61.9	45.2
01:00 AM - 01:05 AM	50.7	62.2	45.1
01:05 AM - 01:10 AM	49.6	61.5	45.3
01:10 AM - 01:15 AM	48.7	61.9	45.6
01:15 AM - 01:20 AM	49.0	61.5	44.9
01:20 AM - 01:25 AM	45.8	61.1	44.4
01:25 AM - 01:30 AM	45.3	53.1	43.6
01:30 AM - 01:35 AM	44.2	49.9	43.1
01:35 AM - 01:40 AM	44.7	48.7	43.9
01:40 AM - 01:45 AM	45.5	55.0	44.3
01:45 AM - 01:50 AM	46.4	56.5	44.1
01:50 AM - 01:55 AM	46.5	60.9	44.5
01:55 AM - 02:00 AM	47.1	57.4	45.2
02:00 AM - 02:05 AM	47.1	54.4	45.6
02:05 AM - 02:10 AM	47.4	56.5	45.7
02:10 AM - 02:15 AM	47.0	58.0	45.5
02:15 AM - 02:20 AM	47.3	57.1	45.6
02:20 AM - 02:25 AM	50.3	61.1	43.2
02:25 AM - 02:30 AM	49.1	61.4	45.1
02:30 AM - 02:35 AM	52.6	62.4	45.4
02:35 AM - 02:40 AM	48.3	61.7	43.9
02:40 AM - 02:45 AM	48.0	60.9	44.3
02:45 AM - 02:50 AM	46.8	61.0	44.0
02:50 AM - 02:55 AM	47.9	44.6	47.9
02:55 AM - 03:00 AM	50.2	57.2	44.2
03:00 AM - 03:05 AM	50.2	66.3	45.3
03:05 AM - 03:10 AM	47.6	61.2	45.3
03:10 AM - 03:15 AM	48.3	60.1	45.7
03:15 AM - 03:20 AM	46.3	52.9	45.3
03:20 AM - 03:25 AM	47.1	50.8	46.1
03:25 AM - 03:30 AM	51.8	66.5	47.0
03:30 AM - 03:35 AM	46.8	54.4	45.8
03:35 AM - 03:40 AM	46.2	57.0	44.6
03:40 AM - 03:45 AM	47.8	57.2	46.6
03:45 AM - 03:50 AM	47.8	53.7	46.7
03:50 AM - 03:55 AM	47.6	54.5	46.7

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TESTING  
No.0042

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359654-1

Page 2 of 3



## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. : 2270912-1

Parameter : Noise

Location : จันทนาวิสาหกิจ (N1) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date : Jun 17 - 18, 2022

Measurement by : Anurak Tongkhajonsakda

Sound Level Meter : 00597167

Page 3 of 2



TESTING  
No.0042

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359654-1

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	47.6	58.2	46.0
04:00 AM - 04:05 AM	48.1	56.7	46.4
04:05 AM - 04:10 AM	49.0	55.9	46.4
04:10 AM - 04:15 AM	50.3	57.5	47.0
04:15 AM - 04:20 AM	49.2	60.4	46.3
04:20 AM - 04:25 AM	50.2	57.0	47.6
04:25 AM - 04:30 AM	50.5	57.2	48.2
04:30 AM - 04:35 AM	51.3	60.5	48.9
04:35 AM - 04:40 AM	55.1	71.4	49.7
04:40 AM - 04:45 AM	52.9	61.8	49.5
04:45 AM - 04:50 AM	56.4	59.3	54.4
04:50 AM - 04:55 AM	55.8	59.8	54.6
04:55 AM - 05:00 AM	59.8	80.8	51.5
05:00 AM - 05:05 AM	57.6	71.3	51.4
05:05 AM - 05:10 AM	65.2	65.2	48.1
05:10 AM - 05:15 AM	53.2	64.3	47.3
05:15 AM - 05:20 AM	54.6	68.0	46.9
05:20 AM - 05:25 AM	51.3	64.1	45.2
05:25 AM - 05:30 AM	51.6	63.6	45.9
05:30 AM - 05:35 AM	52.2	63.6	45.8
05:35 AM - 05:40 AM	51.9	64.5	45.7
05:40 AM - 05:45 AM	52.3	64.1	47.8
05:45 AM - 05:50 AM	52.3	68.8	47.4
05:50 AM - 05:55 AM	54.3	67.3	48.2
05:55 AM - 06:00 AM	53.0	64.8	46.7
06:00 AM - 07:00 AM	52.6	75.2	50.0
07:00 AM - 08:00 AM	52.9	72.6	48.2
08:00 AM - 09:00 AM	53.7	72.5	49.3
09:00 AM - 10:00 AM	53.2	83.4	46.7
10:00 AM - 11:00 AM	53.2	74.9	43.9
11:00 AM - 12:00 PM	52.2	71.1	42.5
12:00 PM - 01:00 PM	52.7	80.2	46.8

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. : 2270912-2

Parameter : Noise

Location : จันทนาวิสาหกิจ (N1) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date : Jun 18 - 19, 2022

Measurement by : Anurak Tongkhajonsakda

Sound Level Meter : 00597167

Page 1 of 3



TESTING  
No.0042

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359655-1

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	52.1	77.4	45.3
02:00 PM - 03:00 PM	52.6	80.2	44.9
03:00 PM - 04:00 PM	53.5	74.2	46.3
04:00 PM - 05:00 PM	53.7	71.5	48.0
05:00 PM - 06:00 PM	52.8	74.1	47.1
06:00 PM - 07:00 PM	53.4	70.1	50.1
07:00 PM - 08:00 PM	61.0	69.3	58.8
08:00 PM - 09:00 PM	61.0	73.5	57.1
09:00 PM - 10:00 PM	58.0	73.3	54.5
10:00 PM - 10:05 PM	57.6	62.8	51.2
10:05 PM - 10:10 PM	53.6	61.8	48.6
10:10 PM - 10:15 PM	55.0	59.9	51.8
10:15 PM - 10:20 PM	54.7	61.8	48.5
10:20 PM - 10:25 PM	55.9	68.9	52.4
10:25 PM - 10:30 PM	53.8	61.1	48.8
10:30 PM - 10:35 PM	54.0	58.8	50.4
10:35 PM - 10:40 PM	54.7	59.3	50.7
10:40 PM - 10:45 PM	54.6	59.2	51.4
10:45 PM - 10:50 PM	54.8	59.2	51.8
10:50 PM - 10:55 PM	52.9	61.0	49.9
10:55 PM - 11:00 PM	52.1	61.9	50.1
11:00 PM - 11:05 PM	52.3	61.1	50.3
11:05 PM - 11:10 PM	51.9	63.5	48.4
11:10 PM - 11:15 PM	53.6	73.6	48.2
11:15 PM - 11:20 PM	52.3	78.2	47.2
11:20 PM - 11:25 PM	51.5	65.2	47.1
11:25 PM - 11:30 PM	49.6	57.2	46.4
11:30 PM - 11:35 PM	51.1	57.0	48.6
11:35 PM - 11:40 PM	51.0	61.4	49.5
11:40 PM - 11:45 PM	50.1	57.4	47.3
11:45 PM - 11:50 PM	50.2	63.3	47.0
11:50 PM - 11:55 PM	49.7	55.9	47.4
11:55 PM - 12:00 AM	51.1	58.4	47.0
12:00 AM - 12:05 AM	50.1	66.4	45.6
12:05 AM - 12:10 AM	50.3	57.1	46.6
12:10 AM - 12:15 AM	51.6	66.6	46.3
12:15 AM - 12:20 AM	49.1	63.0	46.2
12:20 AM - 12:25 AM	47.1	55.0	45.6
12:25 AM - 12:30 AM	47.2	53.7	45.9
12:30 AM - 12:35 AM	49.9	60.0	46.1

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359655-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-2

Parameter Noise  
Location 111/111/111 (N1) (GPS 47P 734048, 14321177) (Shut down)  
Measurement Date Jun 18 - 19, 2022  
Measurement by Anurak Tongkhajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	51.4	60.7	47.3
12:40 AM - 12:45 AM	50.3	60.7	46.7
12:45 AM - 12:50 AM	48.0	57.8	46.3
12:50 AM - 12:55 AM	46.7	52.0	45.2
12:55 AM - 01:00 AM	47.3	56.0	45.2
01:00 AM - 01:05 AM	47.9	53.7	45.4
01:05 AM - 01:10 AM	47.9	60.9	45.3
01:10 AM - 01:15 AM	46.9	54.6	45.2
01:15 AM - 01:20 AM	48.2	63.9	45.5
01:20 AM - 01:25 AM	48.1	57.9	46.1
01:25 AM - 01:30 AM	57.4	57.4	46.2
01:30 AM - 01:35 AM	50.6	59.3	46.9
01:35 AM - 01:40 AM	51.6	60.7	47.2
01:40 AM - 01:45 AM	52.1	61.1	47.6
01:45 AM - 01:50 AM	51.9	60.4	47.8
01:50 AM - 01:55 AM	49.0	60.0	47.3
01:55 AM - 02:00 AM	48.8	57.3	47.2
02:00 AM - 02:05 AM	50.8	59.6	47.3
02:05 AM - 02:10 AM	48.6	59.1	47.1
02:10 AM - 02:15 AM	49.0	56.5	47.3
02:15 AM - 02:20 AM	51.0	59.7	47.6
02:20 AM - 02:25 AM	52.0	61.5	47.1
02:25 AM - 02:30 AM	48.0	57.8	45.1
02:30 AM - 02:35 AM	50.0	60.5	46.1
02:35 AM - 02:40 AM	50.2	58.3	46.1
02:40 AM - 02:45 AM	51.7	58.5	45.8
02:45 AM - 02:50 AM	50.3	57.9	46.4
02:50 AM - 02:55 AM	48.3	57.8	46.4
02:55 AM - 03:00 AM	47.2	53.9	46.4
03:00 AM - 03:05 AM	47.8	67.7	46.6
03:05 AM - 03:10 AM	46.6	57.4	46.3
03:10 AM - 03:15 AM	46.2	53.1	46.3
03:15 AM - 03:20 AM	46.5	51.5	45.7
03:20 AM - 03:25 AM	47.2	53.3	45.8
03:25 AM - 03:30 AM	48.3	54.9	46.1
03:30 AM - 03:35 AM	50.2	55.8	47.2
03:35 AM - 03:40 AM	50.1	54.9	47.4
03:40 AM - 03:45 AM	50.6	57.0	47.4
03:45 AM - 03:50 AM	50.7	56.3	47.6
03:50 AM - 03:55 AM	51.3	57.1	48.0

The above results are valid only for the unweighted sound level (L<sub>eq</sub>) as indicated in the report. No use of frequency weighting (A, B, C) or time averaging (Fast, Slow, Impulse) is recommended. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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Life Sciences

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phoo, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359655-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-2

Parameter Noise  
Location 111/111/111 (N1) (GPS 47P 734048, 14321177) (Shut down)  
Measurement Date Jun 18 - 19, 2022  
Measurement by Anurak Tongkhajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	52.2	64.4	47.8
04:00 AM - 04:05 AM	50.1	55.5	46.4
04:05 AM - 04:10 AM	50.8	66.6	46.3
04:10 AM - 04:15 AM	49.6	55.0	47.0
04:15 AM - 04:20 AM	49.7	57.8	47.5
04:20 AM - 04:25 AM	50.3	62.5	48.4
04:25 AM - 04:30 AM	50.0	65.5	47.4
04:30 AM - 04:35 AM	53.4	61.3	50.2
04:35 AM - 04:40 AM	52.5	61.8	49.0
04:40 AM - 04:45 AM	55.8	63.9	52.8
04:45 AM - 04:50 AM	56.5	64.4	54.4
04:50 AM - 04:55 AM	54.5	71.1	50.2
04:55 AM - 05:00 AM	50.3	63.0	47.1
05:00 AM - 05:05 AM	50.0	61.6	46.7
05:05 AM - 05:10 AM	55.0	71.6	47.9
05:10 AM - 05:15 AM	53.2	67.1	46.9
05:15 AM - 05:20 AM	51.4	63.8	46.6
05:20 AM - 05:25 AM	49.4	58.4	45.6
05:25 AM - 05:30 AM	49.7	63.0	45.6
05:30 AM - 05:35 AM	55.0	71.2	46.1
05:35 AM - 05:40 AM	52.9	68.8	45.7
05:40 AM - 05:45 AM	50.7	64.6	45.1
05:45 AM - 05:50 AM	51.1	64.8	44.9
05:50 AM - 05:55 AM	52.7	64.4	46.8
05:55 AM - 06:00 AM	54.0	73.2	46.8
06:00 AM - 07:00 AM	55.3	77.9	47.8
07:00 AM - 08:00 AM	54.1	74.6	46.4
08:00 AM - 09:00 AM	55.2	75.5	48.0
09:00 AM - 10:00 AM	57.0	78.0	48.2
10:00 AM - 11:00 AM	55.5	75.6	47.7
11:00 AM - 12:00 PM	54.7	83.1	45.5
12:00 PM - 01:00 PM	54.2	77.1	47.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

The above results are valid only for the unweighted sound level (L<sub>eq</sub>) as indicated in the report. No use of frequency weighting (A, B, C) or time averaging (Fast, Slow, Impulse) is recommended. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359656-1

P/O : RJN(2)-019/64

Project Name : Pluak Daeng  
Project Location :

Sample No. : 2270912-3

Parameter : Noise  
Location : บ้านสวนพริก (N1) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date : Jun 19 - 20, 2022  
Measurement by : Anurak Tongthaisakda  
Sound Level Meter : 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.1	89.8	45.9
02:00 PM - 03:00 PM	54.1	74.8	44.5
03:00 PM - 04:00 PM	56.1	91.3	46.8
04:00 PM - 05:00 PM	53.0	71.8	46.9
05:00 PM - 06:00 PM	50.6	74.3	43.6
06:00 PM - 07:00 PM	53.8	85.2	50.3
07:00 PM - 08:00 PM	59.8	89.2	56.5
08:00 PM - 09:00 PM	56.8	75.3	50.9
09:00 PM - 10:00 PM	52.0	70.7	47.2
10:00 PM - 10:05 PM	48.7	58.6	47.2
10:05 PM - 10:10 PM	49.0	56.4	47.9
10:10 PM - 10:15 PM	49.2	56.5	48.0
10:15 PM - 10:20 PM	49.1	61.8	47.3
10:20 PM - 10:25 PM	49.7	59.9	46.7
10:25 PM - 10:30 PM	52.0	62.4	46.9
10:30 PM - 10:35 PM	48.4	55.4	47.2
10:35 PM - 10:40 PM	48.1	56.3	46.9
10:40 PM - 10:45 PM	48.5	57.4	46.2
10:45 PM - 10:50 PM	48.9	56.8	46.9
10:50 PM - 10:55 PM	48.7	57.1	47.7
10:55 PM - 11:00 PM	48.4	55.6	46.0
11:00 PM - 11:05 PM	50.6	60.3	46.2
11:05 PM - 11:10 PM	49.6	56.7	47.5
11:10 PM - 11:15 PM	48.7	56.0	46.6
11:15 PM - 11:20 PM	49.5	55.3	48.0
11:20 PM - 11:25 PM	49.5	56.7	46.9
11:25 PM - 11:30 PM	49.1	55.2	46.5
11:30 PM - 11:35 PM	48.7	55.4	47.1
11:35 PM - 11:40 PM	48.2	55.0	46.0
11:40 PM - 11:45 PM	44.9	55.9	44.9
11:45 PM - 11:50 PM	47.6	60.5	45.1
11:50 PM - 11:55 PM	47.4	58.5	45.6
11:55 PM - 12:00 AM	47.8	58.8	45.6
12:00 AM - 12:05 AM	48.5	56.0	45.6
12:05 AM - 12:10 AM	45.7	55.3	45.7
12:10 AM - 12:15 AM	46.6	54.6	44.8
12:15 AM - 12:20 AM	48.0	55.3	46.0
12:20 AM - 12:25 AM	47.4	56.6	45.4
12:25 AM - 12:30 AM	46.9	59.7	44.0
12:30 AM - 12:35 AM	46.0	52.4	43.9

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359656-1

P/O : RJN(2)-019/64

Project Name : Pluak Daeng  
Project Location :

Sample No. : 2270912-3

Parameter : Noise  
Location : บ้านสวนพริก (N1) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date : Jun 19 - 20, 2022  
Measurement by : Anurak Tongthaisakda  
Sound Level Meter : 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	47.4	51.3	45.3
12:40 AM - 12:45 AM	46.4	56.8	44.8
12:45 AM - 12:50 AM	45.8	54.6	44.4
12:50 AM - 12:55 AM	44.8	51.0	43.7
12:55 AM - 01:00 AM	46.7	60.0	43.5
01:00 AM - 01:05 AM	45.3	57.6	43.4
01:05 AM - 01:10 AM	48.2	58.3	43.7
01:10 AM - 01:15 AM	45.0	53.3	42.8
01:15 AM - 01:20 AM	44.4	52.2	43.0
01:20 AM - 01:25 AM	44.2	51.5	43.0
01:25 AM - 01:30 AM	46.7	55.7	43.7
01:30 AM - 01:35 AM	44.2	54.9	42.3
01:35 AM - 01:40 AM	45.0	54.3	43.0
01:40 AM - 01:45 AM	44.7	53.4	43.0
01:45 AM - 01:50 AM	45.7	57.2	42.5
01:50 AM - 01:55 AM	43.6	51.7	41.9
01:55 AM - 02:00 AM	50.1	63.9	49.1
02:00 AM - 02:05 AM	44.4	51.4	43.0
02:05 AM - 02:10 AM	44.9	58.4	43.4
02:10 AM - 02:15 AM	46.5	58.8	46.3
02:15 AM - 02:20 AM	45.7	58.3	44.1
02:20 AM - 02:25 AM	46.2	52.9	44.4
02:25 AM - 02:30 AM	45.5	52.5	41.6
02:30 AM - 02:35 AM	47.1	58.0	43.7
02:35 AM - 02:40 AM	44.6	53.3	42.4
02:40 AM - 02:45 AM	44.3	53.5	42.3
02:45 AM - 02:50 AM	45.2	61.7	42.1
02:50 AM - 02:55 AM	47.2	62.7	41.9
02:55 AM - 03:00 AM	43.6	55.8	41.1
03:00 AM - 03:05 AM	42.6	51.3	41.3
03:05 AM - 03:10 AM	44.4	52.1	42.8
03:10 AM - 03:15 AM	45.1	50.4	43.8
03:15 AM - 03:20 AM	50.8	63.0	44.5
03:20 AM - 03:25 AM	51.3	63.8	43.5
03:25 AM - 03:30 AM	43.5	47.9	42.7
03:30 AM - 03:35 AM	45.2	54.9	42.7
03:35 AM - 03:40 AM	46.0	60.1	43.6
03:40 AM - 03:45 AM	51.4	64.4	43.9
03:45 AM - 03:50 AM	46.4	55.2	43.7
03:50 AM - 03:55 AM	54.2	66.5	46.2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359656-1

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-3

Parameter Noise  
Location บ้านสวนอัมพวัน (N1) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date Jun 19 - 20, 2022  
Measurement by Anurak Tongkhaipaisakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	51.0	60.4	47.9
04:00 AM - 04:05 AM	50.8	57.2	48.0
04:05 AM - 04:10 AM	51.1	57.2	48.7
04:10 AM - 04:15 AM	51.4	61.4	48.8
04:15 AM - 04:20 AM	51.0	64.5	48.0
04:20 AM - 04:25 AM	48.8	54.8	46.7
04:25 AM - 04:30 AM	49.3	60.0	46.2
04:30 AM - 04:35 AM	49.9	69.5	45.9
04:35 AM - 04:40 AM	50.4	62.2	45.4
04:40 AM - 04:45 AM	53.1	58.9	48.0
04:45 AM - 04:50 AM	57.9	65.4	51.9
04:50 AM - 04:55 AM	52.7	64.9	48.8
04:55 AM - 05:00 AM	52.1	64.3	46.1
05:00 AM - 05:05 AM	51.6	64.7	46.2
05:05 AM - 05:10 AM	51.9	64.0	45.8
05:10 AM - 05:15 AM	52.0	64.8	46.1
05:15 AM - 05:20 AM	51.2	62.4	45.4
05:20 AM - 05:25 AM	51.2	64.5	45.8
05:25 AM - 05:30 AM	50.5	64.8	44.6
05:30 AM - 05:35 AM	51.8	65.3	45.6
05:35 AM - 05:40 AM	52.5	62.7	47.0
05:40 AM - 05:45 AM	52.0	75.4	46.3
05:45 AM - 05:50 AM	52.0	66.4	46.8
05:50 AM - 05:55 AM	52.2	61.2	48.1
05:55 AM - 06:00 AM	51.6	66.3	46.9
06:00 AM - 06:05 AM	54.1	78.2	49.1
06:05 AM - 06:10 AM	52.5	73.2	46.5
06:10 AM - 06:15 AM	52.5	69.1	44.7
06:15 AM - 06:20 AM	51.0	71.1	44.9
06:20 AM - 06:25 AM	51.4	75.7	45.6
06:25 AM - 06:30 AM	51.9	72.6	42.9

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359657-1

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-4

Parameter Noise  
Location บ้านสวนอัมพวัน (N1) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Anurak Tongkhaipaisakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	52.9	72.1	46.6
02:00 PM - 03:00 PM	53.3	75.3	45.1
03:00 PM - 04:00 PM	52.3	73.5	45.4
04:00 PM - 05:00 PM	53.9	74.5	47.9
05:00 PM - 06:00 PM	52.6	69.1	46.3
06:00 PM - 07:00 PM	52.2	72.2	47.6
07:00 PM - 08:00 PM	55.5	69.6	53.5
08:00 PM - 09:00 PM	52.9	74.2	50.0
09:00 PM - 10:00 PM	51.0	70.3	48.7
10:00 PM - 10:05 PM	50.2	56.9	48.0
10:05 PM - 10:10 PM	49.7	70.9	45.6
10:10 PM - 10:15 PM	49.9	57.9	47.6
10:15 PM - 10:20 PM	48.8	56.5	47.2
10:20 PM - 10:25 PM	49.9	66.8	45.8
10:25 PM - 10:30 PM	50.2	60.2	47.0
10:30 PM - 10:35 PM	48.8	58.6	45.9
10:35 PM - 10:40 PM	48.7	60.2	45.0
10:40 PM - 10:45 PM	51.4	58.6	44.6
10:45 PM - 10:50 PM	50.3	57.8	45.7
10:50 PM - 10:55 PM	51.8	58.9	46.1
10:55 PM - 11:00 PM	51.3	59.1	44.9
11:00 PM - 11:05 PM	46.3	56.8	44.3
11:05 PM - 11:10 PM	45.1	51.7	43.7
11:10 PM - 11:15 PM	45.5	53.2	43.7
11:15 PM - 11:20 PM	45.7	57.6	43.4
11:20 PM - 11:25 PM	50.8	58.4	44.8
11:25 PM - 11:30 PM	51.3	59.9	46.9
11:30 PM - 11:35 PM	49.0	57.7	44.9
11:35 PM - 11:40 PM	46.0	56.0	44.0
11:40 PM - 11:45 PM	47.3	56.5	44.0
11:45 PM - 11:50 PM	47.2	55.2	42.9
11:50 PM - 11:55 PM	45.7	56.7	43.5
11:55 PM - 12:00 AM	47.9	56.2	44.2
12:00 AM - 12:05 AM	45.4	53.1	43.9
12:05 AM - 12:10 AM	47.1	55.4	44.8
12:10 AM - 12:15 AM	51.8	65.4	47.0
12:15 AM - 12:20 AM	55.1	63.7	48.8
12:20 AM - 12:25 AM	56.5	62.9	54.8
12:25 AM - 12:30 AM	58.8	80.9	52.8

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report No.: 2359657-1

P/O : RJN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. : 2270912-4

Parameter : Noise

Location : หมู่บ้านนิเวศ (N1) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date : Jun 20 - 21, 2022

Measurement by : Anurak Tongthajonsakda

Sound Level Meter : 00597167

Page 2 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	55.6	69.7	52.1
12:40 AM - 12:45 AM	60.9	83.3	56.9
12:45 AM - 12:50 AM	57.1	69.3	54.1
12:50 AM - 12:55 AM	59.8	80.9	53.9
12:55 AM - 01:00 AM	55.2	71.6	50.4
01:00 AM - 01:05 AM	53.4	65.2	48.7
01:05 AM - 01:10 AM	54.7	68.8	48.4
01:10 AM - 01:15 AM	54.9	71.9	45.7
01:15 AM - 01:20 AM	54.6	70.5	44.3
01:20 AM - 01:25 AM	58.1	79.6	45.4
01:25 AM - 01:30 AM	54.5	66.7	44.9
01:30 AM - 01:35 AM	54.7	72.8	43.7
01:35 AM - 01:40 AM	51.0	63.7	44.5
01:40 AM - 01:45 AM	49.5	61.2	42.0
01:45 AM - 01:50 AM	49.7	62.2	42.4
01:50 AM - 01:55 AM	46.2	56.3	42.1
01:55 AM - 02:00 AM	47.5	55.9	42.9
02:00 AM - 02:05 AM	46.6	57.1	42.8
02:05 AM - 02:10 AM	49.3	63.4	46.3
02:10 AM - 02:15 AM	47.7	56.7	45.0
02:15 AM - 02:20 AM	48.2	53.4	47.3
02:20 AM - 02:25 AM	48.2	56.6	46.3
02:25 AM - 02:30 AM	47.5	57.6	45.1
02:30 AM - 02:35 AM	45.4	56.0	43.9
02:35 AM - 02:40 AM	47.7	54.4	45.9
02:40 AM - 02:45 AM	48.6	58.6	47.0
02:45 AM - 02:50 AM	49.0	62.1	46.0
02:50 AM - 02:55 AM	49.1	64.2	43.8
02:55 AM - 03:00 AM	47.9	60.4	43.4
03:00 AM - 03:05 AM	49.1	66.0	45.1
03:05 AM - 03:10 AM	48.9	59.8	45.4
03:10 AM - 03:15 AM	48.7	59.2	45.9
03:15 AM - 03:20 AM	47.6	56.3	45.7
03:20 AM - 03:25 AM	46.9	53.5	45.3
03:25 AM - 03:30 AM	49.0	59.1	46.8
03:30 AM - 03:35 AM	48.5	58.1	47.2
03:35 AM - 03:40 AM	48.1	59.4	46.4
03:40 AM - 03:45 AM	50.0	64.7	46.8
03:45 AM - 03:50 AM	49.0	61.5	46.9
03:50 AM - 03:55 AM	49.6	58.4	47.5

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Approved by

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report No.: 2359657-1

P/O : RJN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. : 2270912-4

Parameter : Noise

Location : หมู่บ้านนิเวศ (N1) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date : Jun 20 - 21, 2022

Measurement by : Anurak Tongthajonsakda

Sound Level Meter : 00597167

Page 3 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	50.8	57.5	48.6
04:00 AM - 04:05 AM	52.5	59.9	49.1
04:05 AM - 04:10 AM	52.2	57.4	49.1
04:10 AM - 04:15 AM	51.8	58.4	48.1
04:15 AM - 04:20 AM	53.6	60.2	49.1
04:20 AM - 04:25 AM	52.9	67.0	48.7
04:25 AM - 04:30 AM	52.4	63.8	49.5
04:30 AM - 04:35 AM	52.0	60.4	49.7
04:35 AM - 04:40 AM	51.9	64.2	48.6
04:40 AM - 04:45 AM	54.3	68.5	47.6
04:45 AM - 04:50 AM	56.3	66.3	54.9
04:50 AM - 04:55 AM	54.9	59.1	51.1
04:55 AM - 05:00 AM	51.7	63.4	47.6
05:00 AM - 05:05 AM	52.3	66.8	46.6
05:05 AM - 05:10 AM	52.2	64.8	47.7
05:10 AM - 05:15 AM	53.1	66.1	46.8
05:15 AM - 05:20 AM	51.2	62.1	46.0
05:20 AM - 05:25 AM	52.3	64.9	48.3
05:25 AM - 05:30 AM	59.5	82.3	47.6
05:30 AM - 05:35 AM	52.0	65.1	45.4
05:35 AM - 05:40 AM	52.8	65.1	47.0
05:40 AM - 05:45 AM	53.3	62.3	47.0
05:45 AM - 05:50 AM	51.4	64.2	43.6
05:50 AM - 05:55 AM	53.3	64.2	47.5
05:55 AM - 06:00 AM	55.4	71.1	48.7
06:00 AM - 06:05 AM	52.0	68.3	50.6
06:05 AM - 06:10 AM	56.0	76.2	48.9
06:10 AM - 06:15 AM	53.9	74.0	46.9
06:15 AM - 06:20 AM	52.0	72.4	45.1
06:20 AM - 06:25 AM	52.1	72.7	43.8
06:25 AM - 06:30 AM	55.6	88.0	43.4
06:30 AM - 06:35 AM	49.8	66.9	42.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359658-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-5  
Parameter Noise  
Location บ้านท่าเรือ (N1) (GPS 47P 734048, 14321177) (Shut down)  
Measurement Date Jun 21 - 22, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	52.8	77.0	44.1
02:00 PM - 03:00 PM	53.9	75.9	45.5
03:00 PM - 04:00 PM	53.0	74.4	46.1
04:00 PM - 05:00 PM	55.5	78.9	47.6
05:00 PM - 06:00 PM	52.0	73.1	45.8
06:00 PM - 07:00 PM	52.7	68.6	49.2
07:00 PM - 08:00 PM	61.4	72.7	56.2
08:00 PM - 09:00 PM	58.1	68.4	52.9
09:00 PM - 10:00 PM	56.7	66.0	47.9
10:00 PM - 10:05 PM	52.0	63.3	46.3
10:05 PM - 10:10 PM	51.3	63.4	46.4
10:10 PM - 10:15 PM	48.3	56.3	45.2
10:15 PM - 10:20 PM	46.9	57.5	43.7
10:20 PM - 10:25 PM	47.5	56.6	43.7
10:25 PM - 10:30 PM	48.7	61.9	43.8
10:30 PM - 10:35 PM	51.6	61.6	45.4
10:35 PM - 10:40 PM	47.7	56.4	43.6
10:40 PM - 10:45 PM	48.1	57.6	44.5
10:45 PM - 10:50 PM	51.0	63.1	44.4
10:50 PM - 10:55 PM	51.1	60.1	43.2
10:55 PM - 11:00 PM	50.8	59.7	44.7
11:00 PM - 11:05 PM	47.4	58.5	42.8
11:05 PM - 11:10 PM	54.6	42.9	42.9
11:10 PM - 11:15 PM	51.3	43.6	43.6
11:15 PM - 11:20 PM	42.4	65.9	42.4
11:20 PM - 11:25 PM	46.0	56.9	42.5
11:25 PM - 11:30 PM	44.2	56.8	44.2
11:30 PM - 11:35 PM	47.4	64.6	44.7
11:35 PM - 11:40 PM	48.5	60.4	46.5
11:40 PM - 11:45 PM	48.3	59.3	46.0
11:45 PM - 11:50 PM	50.5	68.7	46.1
11:50 PM - 11:55 PM	49.6	61.3	46.3
11:55 PM - 12:00 AM	48.3	56.3	46.1
12:00 AM - 12:05 AM	51.1	60.3	47.0
12:05 AM - 12:10 AM	57.7	65.4	52.4
12:10 AM - 12:15 AM	58.1	65.5	49.4
12:15 AM - 12:20 AM	56.5	65.0	47.5
12:20 AM - 12:25 AM	53.2	61.6	46.2
12:25 AM - 12:30 AM	52.9	57.6	48.1
12:30 AM - 12:35 AM	53.8	62.5	49.0

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359658-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-5  
Parameter Noise  
Location บ้านท่าเรือ (N1) (GPS 47P 734048, 14321177) (Shut down)  
Measurement Date Jun 21 - 22, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	52.3	61.5	46.0
12:40 AM - 12:45 AM	50.7	59.9	44.4
12:45 AM - 12:50 AM	51.2	56.3	46.1
12:50 AM - 12:55 AM	52.3	56.6	47.9
12:55 AM - 01:00 AM	51.4	57.2	45.3
01:00 AM - 01:05 AM	51.9	61.1	46.9
01:05 AM - 01:10 AM	52.6	61.8	47.1
01:10 AM - 01:15 AM	53.8	62.1	49.4
01:15 AM - 01:20 AM	48.3	56.5	44.7
01:20 AM - 01:25 AM	49.7	68.9	45.1
01:25 AM - 01:30 AM	48.4	63.1	44.8
01:30 AM - 01:35 AM	48.6	60.1	46.2
01:35 AM - 01:40 AM	48.4	55.5	45.6
01:40 AM - 01:45 AM	46.7	54.2	45.3
01:45 AM - 01:50 AM	47.6	55.5	45.3
01:50 AM - 01:55 AM	48.1	57.4	44.8
01:55 AM - 02:00 AM	49.4	57.7	45.0
02:00 AM - 02:05 AM	50.6	56.1	46.8
02:05 AM - 02:10 AM	51.5	56.3	48.2
02:10 AM - 02:15 AM	50.7	61.6	46.5
02:15 AM - 02:20 AM	47.8	57.6	44.3
02:20 AM - 02:25 AM	49.2	54.1	46.3
02:25 AM - 02:30 AM	47.8	55.9	47.8
02:30 AM - 02:35 AM	48.4	51.4	44.4
02:35 AM - 02:40 AM	46.5	54.6	44.5
02:40 AM - 02:45 AM	46.5	54.9	44.5
02:45 AM - 02:50 AM	53.3	53.3	44.6
02:50 AM - 02:55 AM	49.5	60.3	46.3
02:55 AM - 03:00 AM	48.8	57.3	46.2
03:00 AM - 03:05 AM	49.1	58.8	46.1
03:05 AM - 03:10 AM	50.4	55.0	47.5
03:10 AM - 03:15 AM	51.4	57.8	48.4
03:15 AM - 03:20 AM	50.0	63.9	46.7
03:20 AM - 03:25 AM	48.8	54.6	45.4
03:25 AM - 03:30 AM	49.1	54.0	46.5
03:30 AM - 03:35 AM	50.4	64.8	47.1
03:35 AM - 03:40 AM	49.9	57.3	47.3
03:40 AM - 03:45 AM	48.2	56.0	45.7
03:45 AM - 03:50 AM	50.6	63.9	47.2
03:50 AM - 03:55 AM	49.5	54.4	46.8

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359658-1

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-5

Parameter Noise  
Location 11/15/15/15/15 (N1) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date Jun 21 - 22, 2022  
Measurement by Anurak Tongkajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	48.8	55.2	45.7
04:00 AM - 04:05 AM	50.5	57.9	47.4
04:05 AM - 04:10 AM	50.9	56.4	48.1
04:10 AM - 04:15 AM	50.8	56.3	48.0
04:15 AM - 04:20 AM	51.2	55.4	48.8
04:20 AM - 04:25 AM	51.0	56.8	48.8
04:25 AM - 04:30 AM	52.2	56.8	49.0
04:30 AM - 04:35 AM	53.3	60.5	50.5
04:35 AM - 04:40 AM	55.6	60.4	50.4
04:40 AM - 04:45 AM	55.8	66.4	49.3
04:45 AM - 04:50 AM	54.1	61.3	49.5
04:50 AM - 04:55 AM	57.3	66.4	52.7
04:55 AM - 05:00 AM	54.9	59.6	52.7
05:00 AM - 05:05 AM	52.6	54.3	47.5
05:05 AM - 05:10 AM	53.3	64.3	48.0
05:10 AM - 05:15 AM	51.1	60.6	45.9
05:15 AM - 05:20 AM	49.4	61.3	43.8
05:20 AM - 05:25 AM	48.6	60.8	43.8
05:25 AM - 05:30 AM	49.1	60.5	43.5
05:30 AM - 05:35 AM	51.4	62.9	45.9
05:35 AM - 05:40 AM	50.6	63.2	44.7
05:40 AM - 05:45 AM	51.2	61.9	45.7
05:45 AM - 05:50 AM	54.8	67.4	46.0
05:50 AM - 05:55 AM	55.6	73.7	45.4
05:55 AM - 06:00 AM	52.0	62.0	47.5
06:00 AM - 06:05 AM	54.3	74.5	46.9
06:05 AM - 06:10 AM	52.8	72.0	46.8
06:10 AM - 06:15 AM	53.2	76.2	45.8
06:15 AM - 06:20 AM	52.3	70.3	44.6
06:20 AM - 06:25 AM	57.4	89.0	44.8
06:25 AM - 06:30 AM	56.8	85.9	52.6
06:30 AM - 06:35 AM	57.4	82.3	50.1

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359659-1

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-6

Parameter Noise  
Location 11/15/15/15/15 (N1) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date Jun 22 - 23, 2022  
Measurement by Anurak Tongkajonsakda  
Sound Level Meter 00597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	56.5	79.7	49.7
02:00 PM - 03:00 PM	55.4	73.9	48.6
03:00 PM - 04:00 PM	56.7	79.0	47.3
04:00 PM - 05:00 PM	55.0	72.7	48.7
05:00 PM - 06:00 PM	55.1	79.5	48.3
06:00 PM - 07:00 PM	61.6	72.9	52.5
07:00 PM - 08:00 PM	63.2	86.6	53.3
08:00 PM - 09:00 PM	57.4	76.5	49.6
09:00 PM - 10:00 PM	59.7	73.6	50.0
10:00 PM - 10:05 PM	50.2	60.7	43.0
10:05 PM - 10:10 PM	60.8	71.5	48.1
10:10 PM - 10:15 PM	62.6	72.4	50.0
10:15 PM - 10:20 PM	53.0	62.9	44.6
10:20 PM - 10:25 PM	57.2	71.7	44.0
10:25 PM - 10:30 PM	57.3	69.7	47.7
10:30 PM - 10:35 PM	53.8	62.2	46.0
10:35 PM - 10:40 PM	60.9	71.4	44.5
10:40 PM - 10:45 PM	55.6	62.9	47.3
10:45 PM - 10:50 PM	61.5	71.0	50.3
10:50 PM - 10:55 PM	59.0	65.6	51.9
10:55 PM - 11:00 PM	59.6	65.6	52.9
11:00 PM - 11:05 PM	59.5	70.5	48.8
11:05 PM - 11:10 PM	55.8	64.3	46.8
11:10 PM - 11:15 PM	65.0	74.9	53.0
11:15 PM - 11:20 PM	66.8	74.4	58.9
11:20 PM - 11:25 PM	67.3	74.3	57.0
11:25 PM - 11:30 PM	66.5	74.0	55.2
11:30 PM - 11:35 PM	65.3	72.8	53.6
11:35 PM - 11:40 PM	66.0	72.6	56.0
11:40 PM - 11:45 PM	68.0	73.2	59.5
11:45 PM - 11:50 PM	68.0	73.6	61.8
11:50 PM - 11:55 PM	65.5	73.6	53.1
11:55 PM - 12:00 AM	67.4	74.4	58.0
12:00 AM - 12:05 AM	63.8	73.6	52.0
12:05 AM - 12:10 AM	59.1	73.6	52.2
12:10 AM - 12:15 AM	62.8	73.9	51.3
12:15 AM - 12:20 AM	61.3	72.1	47.5
12:20 AM - 12:25 AM	49.8	64.1	44.6
12:25 AM - 12:30 AM	59.6	70.8	45.3
12:30 AM - 12:35 AM	59.0	72.9	44.4

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359659-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-6

Parameter Noise  
Location 111/111/111/111 (N) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date Jun 22 - 23, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00597167

Page 2 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	62.8	74.5	48.6
12:40 AM - 12:45 AM	56.9	70.2	44.2
12:45 AM - 12:50 AM	62.6	73.5	43.0
12:50 AM - 12:55 AM	60.9	73.6	42.6
12:55 AM - 01:00 AM	60.4	76.1	41.8
01:00 AM - 01:05 AM	58.7	73.6	42.0
01:05 AM - 01:10 AM	64.3	74.6	42.7
01:10 AM - 01:15 AM	48.2	61.9	43.4
01:15 AM - 01:20 AM	65.1	73.5	44.0
01:20 AM - 01:25 AM	59.2	72.6	42.9
01:25 AM - 01:30 AM	61.5	74.3	42.9
01:30 AM - 01:35 AM	50.7	72.2	41.8
01:35 AM - 01:40 AM	62.3	73.8	43.6
01:40 AM - 01:45 AM	68.1	76.4	44.2
01:45 AM - 01:50 AM	70.0	76.9	44.3
01:50 AM - 01:55 AM	68.9	75.2	46.6
01:55 AM - 02:00 AM	64.3	74.3	44.7
02:00 AM - 02:05 AM	69.6	75.4	45.9
02:05 AM - 02:10 AM	64.6	75.2	45.0
02:10 AM - 02:15 AM	65.6	74.3	45.0
02:15 AM - 02:20 AM	63.4	73.6	45.3
02:20 AM - 02:25 AM	68.1	73.9	45.7
02:25 AM - 02:30 AM	65.2	74.9	46.2
02:30 AM - 02:35 AM	69.3	75.0	45.1
02:35 AM - 02:40 AM	68.4	75.2	45.1
02:40 AM - 02:45 AM	69.6	73.5	45.4
02:45 AM - 02:50 AM	67.8	73.5	47.5
02:50 AM - 02:55 AM	67.5	73.7	48.0
02:55 AM - 03:00 AM	60.3	73.6	43.5
03:00 AM - 03:05 AM	65.3	74.3	46.0
03:05 AM - 03:10 AM	66.3	74.3	45.7
03:10 AM - 03:15 AM	68.2	74.5	50.2
03:15 AM - 03:20 AM	67.0	74.2	50.0
03:20 AM - 03:25 AM	56.8	71.7	47.2
03:25 AM - 03:30 AM	57.6	72.0	50.1
03:30 AM - 03:35 AM	61.9	73.3	45.4
03:35 AM - 03:40 AM	62.6	74.9	45.4
03:40 AM - 03:45 AM	61.3	73.8	50.6
03:45 AM - 03:50 AM	61.1	74.5	48.8

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359659-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-6

Parameter Noise  
Location 111/111/111/111 (N) (GPS 47P 734048, 1432177) (Shut down)  
Measurement Date Jun 22 - 23, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00597167

Page 3 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	52.9	63.6	46.7
04:00 AM - 04:05 AM	53.4	60.0	49.1
04:05 AM - 04:10 AM	60.9	74.2	49.1
04:10 AM - 04:15 AM	54.2	71.4	49.4
04:15 AM - 04:20 AM	54.2	59.2	49.4
04:20 AM - 04:25 AM	57.8	73.2	51.9
04:25 AM - 04:30 AM	58.7	71.9	49.7
04:30 AM - 04:35 AM	56.0	64.2	48.8
04:35 AM - 04:40 AM	56.4	63.0	51.6
04:40 AM - 04:45 AM	54.4	63.8	49.2
04:45 AM - 04:50 AM	58.0	61.2	55.6
04:50 AM - 04:55 AM	57.8	62.1	55.5
04:55 AM - 05:00 AM	52.5	69.0	44.3
05:00 AM - 05:05 AM	52.4	66.0	45.7
05:05 AM - 05:10 AM	49.2	58.7	43.5
05:10 AM - 05:15 AM	52.5	65.8	46.7
05:15 AM - 05:20 AM	54.9	68.9	45.5
05:20 AM - 05:25 AM	50.7	62.3	45.8
05:25 AM - 05:30 AM	53.1	67.5	45.3
05:30 AM - 05:35 AM	52.7	67.6	46.3
05:35 AM - 05:40 AM	52.7	69.4	46.6
05:40 AM - 05:45 AM	53.2	70.3	47.1
05:45 AM - 05:50 AM	54.7	67.2	47.0
05:50 AM - 05:55 AM	52.7	62.0	47.8
05:55 AM - 06:00 AM	55.7	73.4	50.1
06:00 AM - 06:05 AM	55.7	79.3	48.8
06:05 AM - 06:10 AM	54.4	72.4	48.2
06:10 AM - 06:15 AM	57.1	84.2	46.2
06:15 AM - 06:20 AM	51.6	71.6	45.0
06:20 AM - 06:25 AM	54.7	75.7	46.0
06:25 AM - 06:30 AM	53.0	75.3	44.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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TESTING  
No.0042

## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
Lot ID: 2270912  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report No.: 2359660-1

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. 2270912-7

Parameter Noise

Location จันทวนไผ่ขาว (N1) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date Jun 23 - 24, 2022

Measurement by Anurak Tongkhajonsakda

Sound Level Meter 00597167

Page 1 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.9	80.5	44.8
02:00 PM - 03:00 PM	51.0	72.8	42.6
03:00 PM - 04:00 PM	50.0	68.3	42.6
04:00 PM - 05:00 PM	54.8	77.2	47.5
05:00 PM - 06:00 PM	53.5	71.4	47.4
06:00 PM - 07:00 PM	57.0	71.7	49.7
07:00 PM - 08:00 PM	60.0	71.2	52.6
08:00 PM - 09:00 PM	60.1	74.9	52.4
09:00 PM - 10:00 PM	58.7	69.6	49.7
10:00 PM - 11:00 PM	52.6	65.1	46.7
11:00 PM - 12:00 AM	51.6	64.6	46.8
12:00 AM - 01:00 AM	51.9	65.9	46.2
01:00 AM - 02:00 AM	53.8	67.2	48.2
02:00 AM - 03:00 AM	51.3	63.5	45.9
03:00 AM - 04:00 AM	55.1	66.0	50.5
04:00 AM - 05:00 AM	54.2	60.8	50.8
05:00 AM - 06:00 AM	54.5	62.1	51.4
06:00 AM - 07:00 AM	55.1	66.1	51.0
07:00 AM - 08:00 AM	54.9	66.1	51.0
08:00 AM - 09:00 AM	51.8	58.3	47.7
09:00 AM - 10:00 AM	52.0	64.6	47.9
10:00 AM - 11:00 AM	51.4	63.1	46.2
11:00 AM - 12:00 PM	50.7	59.0	45.6
12:00 PM - 01:00 PM	51.1	61.3	47.6
01:00 PM - 02:00 PM	54.3	67.1	47.7
02:00 PM - 03:00 PM	53.8	64.0	47.6
03:00 PM - 04:00 PM	51.3	61.3	46.6
04:00 PM - 05:00 PM	51.5	61.8	46.8
05:00 PM - 06:00 PM	52.8	67.5	47.0
06:00 PM - 07:00 PM	50.8	61.0	47.1
07:00 PM - 08:00 PM	52.8	61.1	48.3
08:00 PM - 09:00 PM	53.0	63.2	46.8
09:00 PM - 10:00 PM	53.6	62.8	47.1
10:00 PM - 11:00 PM	51.5	59.8	46.0
11:00 PM - 12:00 AM	53.4	65.9	45.0
12:00 AM - 01:00 AM	50.9	63.0	47.1
01:00 AM - 02:00 AM	54.0	63.6	46.6
02:00 AM - 03:00 AM	52.6	60.4	46.8
03:00 AM - 04:00 AM	53.2	59.4	48.2

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
Lot ID: 2270912  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report No.: 2359660-1

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. 2270912-7

Parameter Noise

Location จันทวนไผ่ขาว (N1) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date Jun 23 - 24, 2022

Measurement by Anurak Tongkhajonsakda

Sound Level Meter 00597167

Page 2 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	50.6	62.7	46.9
12:40 AM - 12:45 AM	51.4	63.5	46.7
12:45 AM - 12:50 AM	53.4	61.7	48.3
12:50 AM - 12:55 AM	54.4	62.1	50.9
12:55 AM - 01:00 AM	54.0	60.3	49.9
01:00 AM - 01:05 AM	55.6	63.7	51.8
01:05 AM - 01:10 AM	54.9	60.3	50.4
01:10 AM - 01:15 AM	54.8	61.2	50.1
01:15 AM - 01:20 AM	50.5	60.9	44.8
01:20 AM - 01:25 AM	48.3	57.7	45.3
01:25 AM - 01:30 AM	51.9	63.7	46.3
01:30 AM - 01:35 AM	53.9	66.3	49.2
01:35 AM - 01:40 AM	53.7	63.7	49.3
01:40 AM - 01:45 AM	52.4	57.7	47.5
01:45 AM - 01:50 AM	52.5	58.3	47.3
01:50 AM - 01:55 AM	53.6	65.1	49.0
01:55 AM - 02:00 AM	54.1	61.5	50.3
02:00 AM - 02:05 AM	53.7	58.4	50.0
02:05 AM - 02:10 AM	52.3	57.9	46.8
02:10 AM - 02:15 AM	47.8	60.9	44.7
02:15 AM - 02:20 AM	50.6	63.5	43.9
02:20 AM - 02:25 AM	44.6	55.9	43.6
02:25 AM - 02:30 AM	46.1	60.1	43.4
02:30 AM - 02:35 AM	48.6	61.7	43.9
02:35 AM - 02:40 AM	45.2	54.9	43.2
02:40 AM - 02:45 AM	49.2	59.7	44.4
02:45 AM - 02:50 AM	46.5	54.8	43.7
02:50 AM - 02:55 AM	46.1	56.2	43.6
02:55 AM - 03:00 AM	48.4	57.0	44.3
03:00 AM - 03:05 AM	47.4	57.0	44.9
03:05 AM - 03:10 AM	47.9	55.3	44.8
03:10 AM - 03:15 AM	49.2	57.1	45.9
03:15 AM - 03:20 AM	49.7	56.5	46.0
03:20 AM - 03:25 AM	52.0	59.2	47.8
03:25 AM - 03:30 AM	51.0	59.4	49.3
03:30 AM - 03:35 AM	51.7	56.9	48.2
03:35 AM - 03:40 AM	52.0	56.8	48.9
03:40 AM - 03:45 AM	52.6	58.3	48.0
03:45 AM - 03:50 AM	51.4	59.3	48.0
03:50 AM - 03:55 AM	51.4	58.9	47.1

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359660-1

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. 2270912-7

Parameter Noise

Location บ้านใหม่ห้วย 2 ต.ประจักษ์ศิลปาคม 15 (N2) (GPS 47P 734048, 1432177) (Shut down)

Measurement Date Jun 23 - 24, 2022

Measurement by Anurak Tonghaisalsida

Sound Level Meter 00597167

Page 3 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	53.1	76.5	46.3
04:00 AM - 04:05 AM	52.0	61.4	47.8
04:05 AM - 04:10 AM	53.6	68.6	48.4
04:10 AM - 04:15 AM	50.6	56.3	47.1
04:15 AM - 04:20 AM	50.8	63.5	46.5
04:20 AM - 04:25 AM	50.9	55.5	46.1
04:25 AM - 04:30 AM	51.4	57.1	46.5
04:30 AM - 04:35 AM	51.6	57.1	48.1
04:35 AM - 04:40 AM	51.7	60.2	48.3
04:40 AM - 04:45 AM	56.6	72.6	46.5
04:45 AM - 04:50 AM	53.4	61.3	48.4
04:50 AM - 04:55 AM	55.3	63.5	51.6
04:55 AM - 05:00 AM	52.6	60.2	48.2
05:00 AM - 05:05 AM	50.3	61.0	45.9
05:05 AM - 05:10 AM	50.1	45.6	45.6
05:10 AM - 05:15 AM	54.5	62.7	47.1
05:15 AM - 05:20 AM	55.0	71.3	47.3
05:20 AM - 05:25 AM	57.1	50.7	50.7
05:25 AM - 05:30 AM	51.6	64.4	50.3
05:30 AM - 05:35 AM	51.2	61.8	48.4
05:35 AM - 05:40 AM	51.5	71.5	46.1
05:40 AM - 05:45 AM	54.1	63.6	50.4
05:45 AM - 05:50 AM	61.3	72.3	55.1
05:50 AM - 05:55 AM	61.2	85.6	56.2
05:55 AM - 06:00 AM	61.4	92.0	58.4
06:00 AM - 06:05 AM	65.0	97.3	63.1
06:05 AM - 06:10 AM	57.3	56.8	57.3
06:10 AM - 06:15 AM	55.5	72.2	48.8
06:15 AM - 06:20 AM	55.7	74.2	49.9
06:20 AM - 06:25 AM	55.6	73.3	47.7
06:25 AM - 06:30 AM	56.0	74.7	49.2
06:30 AM - 06:35 AM	55.9	75.3	50.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359661-1

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. 2270912-8

Parameter Noise

Location บ้านใหม่ห้วย 2 ต.ประจักษ์ศิลปาคม 15 (N2) (GPS 47P 733854, 1434034) (Shut down)

Measurement Date Jun 17 - 18, 2022

Measurement by Anurak Tonghaisalsida

Sound Level Meter 00295517

Page 1 of 2

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 12:05 PM	60.4	85.1	48.1
12:05 PM - 12:10 PM	58.7	79.3	46.5
12:10 PM - 12:15 PM	58.7	83.4	47.1
12:15 PM - 12:20 PM	57.2	81.3	48.6
12:20 PM - 12:25 PM	58.1	78.2	49.8
12:25 PM - 12:30 PM	58.5	81.5	50.6
12:30 PM - 12:35 PM	60.0	78.1	57.1
12:35 PM - 12:40 PM	67.5	76.7	66.7
12:40 PM - 12:45 PM	67.4	72.4	67.2
12:45 PM - 12:50 PM	58.9	71.7	50.8
12:50 PM - 12:55 PM	57.4	70.5	50.0
12:55 PM - 1:00 PM	56.8	70.1	51.0
1:00 PM - 1:05 PM	54.2	61.2	50.4
1:05 PM - 1:10 PM	54.6	59.4	50.8
1:10 PM - 1:15 PM	59.5	63.6	50.7
1:15 PM - 1:20 PM	54.7	70.3	52.7
1:20 PM - 1:25 PM	55.1	61.5	50.2
1:25 PM - 1:30 PM	55.1	60.6	50.6
1:30 PM - 1:35 PM	55.1	61.1	50.6
1:35 PM - 1:40 PM	55.1	69.8	50.6
1:40 PM - 1:45 PM	52.8	60.4	47.8
1:45 PM - 1:50 PM	57.4	68.2	48.6
1:50 PM - 1:55 PM	55.9	68.5	48.4
1:55 PM - 2:00 PM	53.2	63.4	47.6
2:00 PM - 2:05 PM	53.8	64.5	47.7
2:05 PM - 2:10 PM	57.0	70.2	48.2
2:10 PM - 2:15 PM	54.0	69.9	48.0
2:15 PM - 2:20 PM	50.5	59.2	47.6
2:20 PM - 2:25 PM	50.6	58.5	48.1
2:25 PM - 2:30 PM	50.3	58.0	48.0
2:30 PM - 2:35 PM	51.0	65.0	46.9
2:35 PM - 2:40 PM	50.1	57.9	47.4
2:40 PM - 2:45 PM	49.4	59.6	47.1
2:45 PM - 2:50 PM	49.4	55.3	47.3
2:50 PM - 2:55 PM	49.2	57.2	46.5
2:55 PM - 3:00 PM	57.2	70.9	46.6
3:00 PM - 3:05 PM	49.1	69.4	46.5
3:05 PM - 3:10 PM	48.1	55.6	46.1
3:10 PM - 3:15 PM	48.0	60.9	46.1
3:15 PM - 3:20 PM	47.1	51.2	46.1

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359661-1

P/O : RUN(2)-019/64

Project Name : Pluak Daeng

Project Location : Pluak Daeng

Page 2 of 3

Sample No. 2270912-8

Parameter Noise

Location ชุมชนใกล้ วัย 2 ขวบ ถนน 15 (N2) (GPS 47P 733654, 1434034) (Shut down)

Measurement Date Jun 17 - 18, 2022

Measurement by Anurak Tongthajonsakda

Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	49.4	63.0	46.5
12:35 AM - 12:40 AM	49.0	60.1	47.3
12:40 AM - 12:45 AM	50.4	64.3	47.9
12:45 AM - 12:50 AM	51.9	68.8	47.6
12:50 AM - 12:55 AM	48.8	56.8	47.1
12:55 AM - 01:00 AM	52.9	76.0	46.9
01:00 AM - 01:05 AM	53.5	73.3	46.3
01:05 AM - 01:10 AM	57.4	69.6	45.8
01:10 AM - 01:15 AM	51.0	60.5	47.3
01:15 AM - 01:20 AM	48.2	58.9	46.0
01:20 AM - 01:25 AM	60.1	72.7	45.7
01:25 AM - 01:30 AM	52.0	69.6	45.6
01:30 AM - 01:35 AM	47.9	60.8	45.3
01:35 AM - 01:40 AM	47.3	55.3	45.1
01:40 AM - 01:45 AM	57.2	71.2	43.7
01:45 AM - 01:50 AM	49.7	64.7	45.5
01:50 AM - 01:55 AM	48.0	52.0	46.1
01:55 AM - 02:00 AM	60.2	74.2	46.3
02:00 AM - 02:05 AM	55.7	69.4	46.7
02:05 AM - 02:10 AM	49.8	61.2	46.4
02:10 AM - 02:15 AM	56.9	77.5	46.6
02:15 AM - 02:20 AM	49.4	60.9	46.2
02:20 AM - 02:25 AM	50.2	65.6	45.2
02:25 AM - 02:30 AM	58.4	71.0	46.0
02:30 AM - 02:35 AM	51.3	66.7	46.1
02:35 AM - 02:40 AM	51.7	69.5	46.1
02:40 AM - 02:45 AM	49.3	60.5	45.4
02:45 AM - 02:50 AM	50.2	63.8	45.7
02:50 AM - 02:55 AM	55.5	71.3	45.1
02:55 AM - 03:00 AM	64.8	76.1	46.2
03:00 AM - 03:05 AM	51.4	62.9	46.2
03:05 AM - 03:10 AM	64.5	75.5	47.1
03:10 AM - 03:15 AM	51.0	70.9	45.5
03:15 AM - 03:20 AM	53.0	68.8	46.2
03:20 AM - 03:25 AM	52.1	71.2	47.4
03:25 AM - 03:30 AM	52.9	69.5	47.1
03:30 AM - 03:35 AM	61.6	73.6	47.5
03:35 AM - 03:40 AM	60.0	74.7	48.1
03:40 AM - 03:45 AM	64.5	78.9	47.6
03:45 AM - 03:50 AM	60.9	72.1	48.2

The above result is valid only for the unaltered tested sample(s) as indicated in the report. Any alteration of the sample(s) without the consent of the Laboratory, ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359661-1

P/O : RUN(2)-019/64

Project Name : Pluak Daeng

Project Location : Pluak Daeng

Page 3 of 3

Sample No. 2270912-8

Parameter Noise

Location ชุมชนใกล้ วัย 2 ขวบ ถนน 15 (N2) (GPS 47P 733654, 1434034) (Shut down)

Measurement Date Jun 17 - 18, 2022

Measurement by Anurak Tongthajonsakda

Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	58.2	71.7	48.4
03:55 AM - 04:00 AM	55.7	71.6	48.7
04:00 AM - 04:05 AM	58.6	74.7	49.6
04:05 AM - 04:10 AM	63.6	76.1	50.5
04:10 AM - 04:15 AM	66.0	75.7	50.6
04:15 AM - 04:20 AM	69.8	78.3	51.9
04:20 AM - 04:25 AM	52.7	60.2	50.9
04:25 AM - 04:30 AM	67.8	77.9	51.9
04:30 AM - 04:35 AM	62.2	76.2	51.6
04:35 AM - 04:40 AM	63.8	77.4	51.4
04:40 AM - 04:45 AM	60.6	76.6	51.2
04:45 AM - 04:50 AM	59.6	73.8	50.9
04:50 AM - 04:55 AM	61.9	75.8	50.9
04:55 AM - 05:00 AM	62.9	78.9	50.3
05:00 AM - 05:05 AM	60.6	76.9	50.5
05:05 AM - 05:10 AM	62.9	76.4	50.1
05:10 AM - 05:15 AM	61.2	76.8	51.1
05:15 AM - 05:20 AM	58.9	76.2	51.0
05:20 AM - 05:25 AM	57.5	75.1	50.7
05:25 AM - 05:30 AM	58.2	79.5	51.3
05:30 AM - 05:35 AM	58.4	73.3	50.8
05:35 AM - 05:40 AM	57.9	74.0	50.5
05:40 AM - 05:45 AM	59.2	73.9	50.0
05:45 AM - 05:50 AM	61.7	75.6	49.3
05:50 AM - 05:55 AM	62.4	75.9	52.4
05:55 AM - 06:00 AM	64.8	77.0	52.4
06:00 AM - 07:00 AM	60.2	79.5	49.0
07:00 AM - 08:00 AM	60.2	78.7	45.8
08:00 AM - 09:00 AM	59.1	93.4	44.3
09:00 AM - 10:00 AM	59.5	81.1	40.1
10:00 AM - 11:00 AM	57.9	77.0	41.9
11:00 AM - 12:00 PM	54.6	76.3	42.9

Reference Method : Based on ISO 1996-1 and ISO 1996-2

The above result is valid only for the unaltered tested sample(s) as indicated in the report. Any alteration of the sample(s) without the consent of the Laboratory, ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-9

Parameter Noise  
Location ฐานผลิตน้ำ 2 ขยายพื้นที่ 15 (N2) (GPS 47P 733554, 1434034) (Shut down)  
Measurement Date Jun 18 - 19, 2022  
Measurement by Anurak Tongkajonsakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	57.9	76.8	44.2
01:00 PM - 02:00 PM	56.9	82.7	44.3
02:00 PM - 03:00 PM	56.5	84.3	45.3
03:00 PM - 04:00 PM	60.4	83.3	47.3
04:00 PM - 05:00 PM	62.7	83.5	49.0
05:00 PM - 06:00 PM	58.2	76.8	50.5
06:00 PM - 07:00 PM	59.0	73.9	55.6
07:00 PM - 08:00 PM	63.5	88.9	60.0
08:00 PM - 09:00 PM	69.0	76.6	65.3
09:00 PM - 10:00 PM	69.0	82.6	68.2
10:00 PM - 10:05 PM	52.9	64.7	49.6
10:05 PM - 10:10 PM	55.1	69.8	50.6
10:10 PM - 10:15 PM	55.3	69.2	52.8
10:15 PM - 10:20 PM	55.1	69.4	52.4
10:20 PM - 10:25 PM	53.5	65.4	50.7
10:25 PM - 10:30 PM	53.0	60.7	51.5
10:30 PM - 10:35 PM	52.4	63.0	50.5
10:35 PM - 10:40 PM	52.9	58.1	51.9
10:40 PM - 10:45 PM	54.6	68.4	49.0
10:45 PM - 10:50 PM	54.3	71.9	50.0
10:50 PM - 10:55 PM	55.3	68.9	48.5
10:55 PM - 11:00 PM	50.4	60.1	48.2
11:00 PM - 11:05 PM	50.8	62.5	48.2
11:05 PM - 11:10 PM	49.8	56.1	48.5
11:10 PM - 11:15 PM	50.8	66.2	48.2
11:15 PM - 11:20 PM	53.5	70.1	49.1
11:20 PM - 11:25 PM	56.6	79.0	49.6
11:25 PM - 11:30 PM	53.8	72.3	48.8
11:30 PM - 11:35 PM	50.8	54.8	48.9
11:35 PM - 11:40 PM	54.1	66.6	50.5
11:40 PM - 11:45 PM	50.9	57.3	48.5
11:45 PM - 11:50 PM	51.3	61.9	49.2
11:50 PM - 11:55 PM	50.9	61.9	49.6
11:55 PM - 12:00 AM	52.3	67.9	49.7
12:00 AM - 12:05 AM	50.6	59.1	48.7
12:05 AM - 12:10 AM	50.8	57.2	48.3
12:10 AM - 12:15 AM	50.1	61.8	48.3
12:15 AM - 12:20 AM	51.2	61.5	48.8
12:20 AM - 12:25 AM	51.3	63.3	47.3
12:25 AM - 12:30 AM	50.1	62.3	47.7

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-9

Parameter Noise  
Location ฐานผลิตน้ำ 2 ขยายพื้นที่ 15 (N2) (GPS 47P 733554, 1434034) (Shut down)  
Measurement Date Jun 18 - 19, 2022  
Measurement by Anurak Tongkajonsakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	51.8	65.8	47.5
12:35 AM - 12:40 AM	50.7	64.2	47.0
12:40 AM - 12:45 AM	52.5	68.1	47.5
12:45 AM - 12:50 AM	48.7	59.9	47.4
12:50 AM - 12:55 AM	51.2	70.7	47.0
12:55 AM - 01:00 AM	50.3	62.0	47.0
01:00 AM - 01:05 AM	49.1	58.4	46.7
01:05 AM - 01:10 AM	60.1	75.0	45.3
01:10 AM - 01:15 AM	53.2	75.9	45.1
01:15 AM - 01:20 AM	46.2	59.0	44.5
01:20 AM - 01:25 AM	49.0	73.8	43.9
01:25 AM - 01:30 AM	45.7	49.5	44.8
01:30 AM - 01:35 AM	45.7	49.8	44.8
01:35 AM - 01:40 AM	47.2	60.2	45.0
01:40 AM - 01:45 AM	60.5	81.6	45.0
01:45 AM - 01:50 AM	47.0	54.6	44.6
01:50 AM - 01:55 AM	46.0	51.9	44.9
01:55 AM - 02:00 AM	47.1	57.9	45.4
02:00 AM - 02:05 AM	47.4	47.4	44.4
02:05 AM - 02:10 AM	45.5	48.9	44.3
02:10 AM - 02:15 AM	45.6	48.1	44.5
02:15 AM - 02:20 AM	45.3	50.1	43.9
02:20 AM - 02:25 AM	45.8	53.4	44.4
02:25 AM - 02:30 AM	46.2	57.7	44.7
02:30 AM - 02:35 AM	52.6	73.7	44.9
02:35 AM - 02:40 AM	60.3	74.9	44.2
02:40 AM - 02:45 AM	48.4	66.0	44.1
02:45 AM - 02:50 AM	47.1	61.6	44.0
02:50 AM - 02:55 AM	46.9	61.2	44.0
02:55 AM - 03:00 AM	54.2	72.4	44.4
03:00 AM - 03:05 AM	57.4	72.8	44.7
03:05 AM - 03:10 AM	47.1	60.7	45.6
03:10 AM - 03:15 AM	47.8	54.3	45.7
03:15 AM - 03:20 AM	47.7	63.6	45.3
03:20 AM - 03:25 AM	66.2	49.9	45.5
03:25 AM - 03:30 AM	60.2	75.8	46.3
03:30 AM - 03:35 AM	62.8	76.4	45.1
03:35 AM - 03:40 AM	52.5	69.8	46.4
03:40 AM - 03:45 AM	49.3	61.7	46.8
03:45 AM - 03:50 AM	58.9	74.8	47.0

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report No.: 2359662-1

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. 2270912-9

Parameter Noise

Location ฐานเครื่องจักร 2 ข้างถนน 15 (N2) (GPS 47P 733654, 1440434) (Shut down)

Measurement Date Jun 18 - 19, 2022

Measurement by Anurak Tongthajonsakda

Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	59.3	75.5	46.9
03:55 AM - 04:00 AM	59.8	75.0	47.0
04:00 AM - 04:05 AM	62.1	76.0	48.0
04:05 AM - 04:10 AM	55.9	74.5	47.1
04:10 AM - 04:15 AM	61.9	76.8	48.1
04:15 AM - 04:20 AM	65.2	78.0	49.8
04:20 AM - 04:25 AM	62.3	74.7	49.8
04:25 AM - 04:30 AM	63.9	76.7	49.7
04:30 AM - 04:35 AM	63.3	77.4	49.8
04:35 AM - 04:40 AM	64.0	77.9	50.3
04:40 AM - 04:45 AM	60.9	76.5	49.9
04:45 AM - 04:50 AM	62.1	77.9	49.7
04:50 AM - 04:55 AM	61.3	77.1	50.3
04:55 AM - 05:00 AM	62.0	77.5	49.8
05:00 AM - 05:05 AM	64.5	78.6	49.8
05:05 AM - 05:10 AM	65.2	80.2	49.1
05:10 AM - 05:15 AM	58.6	80.1	49.6
05:15 AM - 05:20 AM	59.2	76.5	48.7
05:20 AM - 05:25 AM	57.7	76.6	48.5
05:25 AM - 05:30 AM	57.0	74.2	49.0
05:30 AM - 05:35 AM	60.4	75.2	50.2
05:35 AM - 05:40 AM	62.3	76.2	49.3
05:40 AM - 05:45 AM	62.8	76.8	49.5
05:45 AM - 05:50 AM	59.8	77.1	48.9
05:50 AM - 05:55 AM	61.1	77.0	52.2
05:55 AM - 06:00 AM	61.9	77.1	48.2
06:00 AM - 06:05 AM	57.9	75.8	46.6
06:05 AM - 06:10 AM	57.9	76.0	47.8
06:10 AM - 06:15 AM	57.2	76.2	47.3
06:15 AM - 06:20 AM	55.4	85.5	46.0
06:20 AM - 06:25 AM	60.7	88.0	50.5
06:25 AM - 06:30 AM	58.3	84.0	44.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.

54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912

Date Received: Jun 27, 2022

Date Reported: Jun 29, 2022

Report No.: 2359663-1

P/O : RIN(2)-019/64

Project Name : Pluak Daeng

Project Location :

Sample No. 2270912-10

Parameter Noise

Location ฐานเครื่องจักร 2 ข้างถนน 15 (N2) (GPS 47P 733654, 1434034) (Shut down)

Measurement Date Jun 19 - 20, 2022

Measurement by Anurak Tongthajonsakda

Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 12:05 PM	53.1	71.2	43.4
12:05 PM - 12:10 PM	57.7	80.6	42.7
12:10 PM - 12:15 PM	57.8	79.0	43.8
12:15 PM - 12:20 PM	57.7	81.2	47.2
12:20 PM - 12:25 PM	59.5	81.2	46.9
12:25 PM - 12:30 PM	56.9	76.5	49.2
12:30 PM - 12:35 PM	59.2	76.5	57.0
12:35 PM - 12:40 PM	61.6	76.5	59.8
12:40 PM - 12:45 PM	57.1	76.6	54.1
12:45 PM - 12:50 PM	61.8	70.2	60.3
12:50 PM - 12:55 PM	62.1	66.1	60.6
12:55 PM - 13:00 PM	62.0	64.9	60.5
13:00 PM - 13:05 PM	62.0	64.2	60.5
13:05 PM - 13:10 PM	62.1	64.8	60.5
13:10 PM - 13:15 PM	61.1	72.7	53.1
13:15 PM - 13:20 PM	60.3	66.0	53.0
13:20 PM - 13:25 PM	62.2	66.2	52.6
13:25 PM - 13:30 PM	62.7	65.9	50.5
13:30 PM - 13:35 PM	62.6	65.9	48.8
13:35 PM - 13:40 PM	62.3	67.6	48.1
13:40 PM - 13:45 PM	62.3	65.4	48.7
13:45 PM - 13:50 PM	55.8	66.7	50.8
13:50 PM - 13:55 PM	50.0	57.4	47.9
13:55 PM - 14:00 PM	49.8	61.8	47.7
14:00 PM - 14:05 PM	51.4	59.7	48.1
14:05 PM - 14:10 PM	50.2	61.2	50.1
14:10 PM - 14:15 PM	50.2	59.2	45.9
14:15 PM - 14:20 PM	49.3	64.4	46.0
14:20 PM - 14:25 PM	49.3	63.8	45.8
14:25 PM - 14:30 PM	50.1	53.5	49.2
14:30 PM - 14:35 PM	51.7	63.5	48.8
14:35 PM - 14:40 PM	50.8	57.5	49.4
14:40 PM - 14:45 PM	50.5	56.1	49.9
14:45 PM - 14:50 PM	49.7	61.5	47.1
14:50 PM - 14:55 PM	49.4	60.7	47.1
14:55 PM - 15:00 PM	48.9	54.1	47.3
15:00 PM - 15:05 PM	48.3	63.5	47.2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359663-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-10

Parameter Noise  
Location ห้างสรรพสินค้า wj 2 อาคาร 15 (N2) (GPS 47P 733654, 1434034) (Shut down)  
Measurement Date Jun 19 - 20, 2022  
Measurement by Anurak Tongthajaprasakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	49.1	61.7	46.8
12:35 AM - 12:40 AM	48.8	65.0	46.3
12:40 AM - 12:45 AM	48.3	58.0	45.9
12:45 AM - 12:50 AM	48.0	58.7	45.5
12:50 AM - 12:55 AM	48.9	74.8	45.5
12:55 AM - 01:00 AM	47.5	55.8	46.0
01:00 AM - 01:05 AM	47.3	52.1	46.2
01:05 AM - 01:10 AM	47.4	56.3	45.6
01:10 AM - 01:15 AM	47.3	50.9	46.2
01:15 AM - 01:20 AM	51.2	64.5	46.9
01:20 AM - 01:25 AM	47.0	52.2	46.0
01:25 AM - 01:30 AM	47.0	50.1	45.7
01:30 AM - 01:35 AM	47.0	49.9	45.8
01:35 AM - 01:40 AM	47.0	50.7	45.9
01:40 AM - 01:45 AM	47.7	50.9	46.4
01:45 AM - 01:50 AM	47.1	50.3	46.2
01:50 AM - 01:55 AM	47.8	57.2	46.6
01:55 AM - 02:00 AM	47.2	52.1	46.4
02:00 AM - 02:05 AM	46.8	46.2	46.2
02:05 AM - 02:10 AM	46.8	50.4	46.0
02:10 AM - 02:15 AM	47.8	61.9	45.5
02:15 AM - 02:20 AM	50.6	75.2	45.6
02:20 AM - 02:25 AM	53.0	72.0	45.3
02:25 AM - 02:30 AM	48.6	68.8	44.9
02:30 AM - 02:35 AM	46.6	59.7	44.8
02:35 AM - 02:40 AM	46.1	56.5	44.6
02:40 AM - 02:45 AM	48.2	66.2	44.7
02:45 AM - 02:50 AM	52.2	69.3	45.4
02:50 AM - 02:55 AM	46.9	61.1	43.7
02:55 AM - 03:00 AM	47.2	61.4	44.0
03:00 AM - 03:05 AM	56.0	76.2	43.8
03:05 AM - 03:10 AM	55.4	76.9	43.5
03:10 AM - 03:15 AM	60.5	78.2	43.3
03:15 AM - 03:20 AM	59.5	73.2	46.5
03:20 AM - 03:25 AM	58.1	73.1	46.9
03:25 AM - 03:30 AM	49.7	64.1	40.7
03:30 AM - 03:35 AM	55.7	73.5	40.3
03:35 AM - 03:40 AM	54.8	71.4	43.8
03:40 AM - 03:45 AM	51.9	63.0	43.6
03:45 AM - 03:50 AM	51.0	61.7	44.2

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ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company



## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359663-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-10

Parameter Noise  
Location ห้างสรรพสินค้า wj 2 อาคาร 15 (N2) (GPS 47P 733654, 1434034) (Shut down)  
Measurement Date Jun 19 - 20, 2022  
Measurement by Anurak Tongthajaprasakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	56.4	70.6	44.7
03:55 AM - 04:00 AM	61.2	75.1	44.1
04:00 AM - 04:05 AM	61.1	77.4	44.1
04:05 AM - 04:10 AM	57.0	71.5	43.2
04:10 AM - 04:15 AM	55.6	71.5	45.6
04:15 AM - 04:20 AM	57.0	73.0	44.2
04:20 AM - 04:25 AM	50.7	63.6	44.8
04:25 AM - 04:30 AM	57.8	74.7	44.3
04:30 AM - 04:35 AM	52.4	71.2	42.6
04:35 AM - 04:40 AM	53.8	68.2	43.4
04:40 AM - 04:45 AM	53.7	71.4	44.3
04:45 AM - 04:50 AM	54.7	75.2	42.9
04:50 AM - 04:55 AM	59.0	72.7	45.0
04:55 AM - 05:00 AM	73.1	73.1	45.6
05:00 AM - 05:05 AM	58.0	76.5	45.1
05:05 AM - 05:10 AM	58.7	73.1	46.5
05:10 AM - 05:15 AM	58.6	75.0	46.9
05:15 AM - 05:20 AM	56.2	72.9	47.9
05:20 AM - 05:25 AM	53.2	66.1	48.5
05:25 AM - 05:30 AM	54.9	69.5	48.0
05:30 AM - 05:35 AM	51.7	63.0	47.8
05:35 AM - 05:40 AM	57.9	76.2	48.6
05:40 AM - 05:45 AM	57.9	72.6	46.3
05:45 AM - 05:50 AM	53.4	75.5	45.6
05:50 AM - 05:55 AM	54.5	76.1	44.9
05:55 AM - 06:00 AM	60.6	75.8	44.3
06:00 AM - 06:05 AM	56.8	82.7	44.2
06:05 AM - 06:10 AM	57.8	79.9	43.7
06:10 AM - 06:15 AM	58.1	88.3	45.2
06:15 AM - 06:20 AM	58.4	76.8	46.7
06:20 AM - 06:25 AM	58.1	80.3	48.0
06:25 AM - 06:30 AM	55.9	73.9	47.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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TESTING  
No.0042

## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64

Project Name : Pluak Daeng  
Project Location :

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359664-1

Page 1 of 3

Sample No. 2270912-11

Parameter Noise  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140 (Shut down)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Anurak Tongphaisakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	57.4	76.2	53.4
01:00 PM - 02:00 PM	59.2	80.8	56.9
02:00 PM - 03:00 PM	60.1	75.7	59.4
03:00 PM - 04:00 PM	59.2	82.8	57.1
04:00 PM - 05:00 PM	53.5	73.0	50.6
05:00 PM - 06:00 PM	50.7	69.1	48.4
06:00 PM - 07:00 PM	67.1	77.6	60.2
07:00 PM - 08:00 PM	61.5	78.3	61.5
08:00 PM - 09:00 PM	64.8	74.6	58.3
09:00 PM - 10:00 PM	67.9	78.5	59.3
10:00 PM - 10:15 PM	62.9	71.5	56.2
10:15 PM - 10:30 PM	66.8	78.6	57.1
10:30 PM - 10:45 PM	60.7	71.4	56.0
10:45 PM - 11:00 PM	64.4	73.6	57.2
11:00 PM - 11:15 PM	65.9	72.5	55.3
11:15 PM - 11:30 PM	65.9	72.5	55.3
11:30 PM - 11:45 PM	67.1	79.5	56.5
11:45 PM - 12:00 AM	63.4	77.7	54.9
12:00 AM - 12:15 AM	63.2	76.6	54.7
12:15 AM - 12:30 AM	62.8	77.7	54.6
12:30 AM - 12:45 AM	62.0	78.4	54.6
12:45 AM - 01:00 AM	64.6	79.5	54.4
01:00 AM - 11:00 PM	64.3	78.0	54.8
11:00 PM - 11:15 PM	62.0	75.4	54.1
11:15 PM - 11:30 PM	61.4	74.5	53.8
11:30 PM - 11:45 PM	63.4	80.1	54.1
11:45 PM - 12:00 AM	62.5	80.6	54.4
12:00 AM - 12:15 AM	63.3	81.8	54.1
12:15 AM - 12:30 AM	63.2	78.0	53.5
12:30 PM - 11:45 PM	63.3	75.7	53.6
11:45 PM - 11:55 PM	61.4	75.1	52.7
11:55 PM - 12:05 PM	64.0	78.5	54.4
12:05 PM - 12:15 AM	64.2	76.5	54.4
12:15 AM - 12:30 AM	62.2	76.7	51.8
12:30 AM - 12:45 AM	61.6	73.7	52.6
12:45 AM - 12:15 AM	63.8	75.7	52.4
12:15 AM - 12:25 AM	61.1	75.4	54.1
12:25 AM - 12:30 AM	61.1	77.9	53.4
12:30 AM - 12:30 AM	63.2	80.3	52.5

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

P/O : RIN(2)-019/64

Project Name : Pluak Daeng  
Project Location :

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359664-1

Page 2 of 3

Sample No. 2270912-11

Parameter Noise  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140 (Shut down)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Anurak Tongphaisakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	64.0	86.5	50.1
12:35 AM - 12:40 AM	62.5	78.0	49.8
12:40 AM - 12:45 AM	62.3	77.3	47.5
12:45 AM - 12:50 AM	63.7	76.6	48.7
12:50 AM - 12:55 AM	55.0	65.8	47.3
12:55 AM - 01:00 AM	61.3	82.4	45.8
01:00 AM - 01:05 AM	54.4	69.2	46.5
01:05 AM - 01:10 AM	55.3	70.4	46.7
01:10 AM - 01:15 AM	55.0	84.0	47.4
01:15 AM - 01:20 AM	55.2	70.3	47.6
01:20 AM - 01:25 AM	54.6	74.3	48.5
01:25 AM - 01:30 AM	55.1	72.8	47.3
01:30 AM - 01:35 AM	53.3	74.7	46.5
01:35 AM - 01:40 AM	57.0	71.7	45.3
01:40 AM - 01:45 AM	60.7	74.4	46.3
01:45 AM - 01:50 AM	55.4	72.2	46.7
01:50 AM - 01:55 AM	57.1	71.0	46.4
01:55 AM - 02:00 AM	57.1	74.8	41.0
02:00 AM - 02:05 AM	54.1	73.3	41.3
02:05 AM - 02:10 AM	55.7	74.7	42.4
02:10 AM - 02:15 AM	54.2	75.0	43.7
02:15 AM - 02:20 AM	54.3	63.7	41.2
02:20 AM - 02:25 AM	59.9	76.4	45.0
02:25 AM - 02:30 AM	62.2	76.5	43.6
02:30 AM - 02:35 AM	55.5	76.2	43.3
02:35 AM - 02:40 AM	54.8	72.9	42.5
02:40 AM - 02:45 AM	54.0	73.6	42.5
02:45 AM - 02:50 AM	49.3	71.4	44.3
02:50 AM - 02:55 AM	48.0	65.7	42.6
02:55 AM - 03:00 AM	59.9	82.1	45.1
03:00 AM - 03:05 AM	49.2	62.9	44.4
03:05 AM - 03:10 AM	53.3	70.2	44.0
03:10 AM - 03:15 AM	51.3	67.8	43.5
03:15 AM - 03:20 AM	54.5	71.4	43.0
03:20 AM - 03:25 AM	50.7	66.6	43.4
03:25 AM - 03:30 AM	52.8	68.0	43.6
03:30 AM - 03:35 AM	52.0	71.7	43.3
03:35 AM - 03:40 AM	56.9	71.3	43.6
03:40 AM - 03:45 AM	54.4	73.5	42.8

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phin, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359664-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-11

Parameter Noise  
Location บ้านพักอาศัย หมู่ 2 ตำบลหนองขาม 15 (N2) (GPS 47P 733654, 1434034) (Shut down)  
Measurement Date Jun 20 - 21, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	62.2	75.7	43.6
03:55 AM - 04:00 AM	50.9	71.0	45.6
04:00 AM - 04:05 AM	58.1	75.6	45.1
04:05 AM - 04:10 AM	62.9	75.4	45.3
04:10 AM - 04:15 AM	58.5	75.9	45.5
04:15 AM - 04:20 AM	51.1	70.4	45.5
04:20 AM - 04:25 AM	56.9	77.9	44.9
04:25 AM - 04:30 AM	58.5	76.2	42.7
04:30 AM - 04:35 AM	53.0	76.7	41.3
04:35 AM - 04:40 AM	56.9	74.3	47.7
04:40 AM - 04:45 AM	57.4	73.8	48.4
04:45 AM - 04:50 AM	60.6	76.2	49.6
04:50 AM - 04:55 AM	61.9	76.0	48.8
04:55 AM - 05:00 AM	56.8	76.8	48.9
05:00 AM - 05:05 AM	51.6	64.7	43.7
05:05 AM - 05:10 AM	52.0	67.7	42.4
05:10 AM - 05:15 AM	59.0	76.3	43.6
05:15 AM - 05:20 AM	51.6	69.6	40.3
05:20 AM - 05:25 AM	49.6	67.2	40.7
05:25 AM - 05:30 AM	60.4	78.5	40.1
05:30 AM - 05:35 AM	58.3	75.6	41.8
05:35 AM - 05:40 AM	61.6	76.0	42.0
05:40 AM - 05:45 AM	57.3	75.5	44.5
05:45 AM - 05:50 AM	51.8	73.1	44.4
05:50 AM - 05:55 AM	55.3	80.3	43.6
05:55 AM - 06:00 AM	52.6	69.2	42.6
06:00 AM - 06:05 AM	43.0	78.4	43.0
06:05 AM - 06:10 AM	51.8	73.8	42.4
06:10 AM - 06:15 AM	55.5	78.1	47.5
06:15 AM - 06:20 AM	58.9	77.8	50.7
06:20 AM - 06:25 AM	59.3	81.2	52.3
06:25 AM - 06:30 AM	58.0	77.8	53.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phin, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359665-1

P/O : RIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-12

Parameter Noise  
Location บ้านพักอาศัย หมู่ 2 ตำบลหนองขาม 15 (N2) (GPS 47P 733654, 1434034) (Shut down)  
Measurement Date Jun 21 - 22, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 12:05 PM	59.0	77.5	54.8
12:05 PM - 12:10 PM	58.9	75.0	55.7
12:10 PM - 12:15 PM	60.1	83.7	59.1
12:15 PM - 12:20 PM	58.2	68.1	57.6
12:20 PM - 12:25 PM	53.7	72.8	51.6
12:25 PM - 12:30 PM	54.9	75.2	51.7
12:30 PM - 12:35 PM	52.9	76.5	47.3
12:35 PM - 12:40 PM	46.2	71.9	43.2
12:40 PM - 12:45 PM	51.5	80.3	42.1
12:45 PM - 12:50 PM	55.1	77.2	42.4
12:50 PM - 12:55 PM	58.5	68.6	42.9
12:55 PM - 1:00 PM	60.9	77.7	43.2
1:00 PM - 1:05 PM	58.7	70.6	43.4
1:05 PM - 1:10 PM	53.3	70.1	42.0
1:10 PM - 1:15 PM	62.1	77.9	42.2
1:15 PM - 1:20 PM	62.7	77.3	44.0
1:20 PM - 1:25 PM	67.7	79.5	44.3
1:25 PM - 1:30 PM	63.8	78.0	51.9
1:30 PM - 1:35 PM	64.4	81.0	46.1
1:35 PM - 1:40 PM	65.2	79.0	44.8
1:40 PM - 1:45 PM	62.5	77.9	45.7
1:45 PM - 1:50 PM	64.4	78.6	45.8
1:50 PM - 1:55 PM	63.6	80.6	47.0
1:55 PM - 2:00 PM	64.3	79.0	47.7
2:00 PM - 2:05 PM	63.2	78.5	47.2
2:05 PM - 2:10 PM	61.5	78.0	47.7
2:10 PM - 2:15 PM	61.7	76.1	47.6
2:15 PM - 2:20 PM	62.8	79.9	48.7
2:20 PM - 2:25 PM	59.3	75.7	49.5
2:25 PM - 2:30 PM	61.9	77.2	49.7
2:30 PM - 2:35 PM	63.9	79.6	50.0
2:35 PM - 2:40 PM	59.6	80.7	49.5
2:40 PM - 2:45 PM	57.9	74.3	50.0
2:45 PM - 2:50 PM	63.1	75.6	49.8
2:50 PM - 2:55 PM	60.9	77.7	52.6
2:55 PM - 3:00 PM	64.7	80.6	51.4
3:00 PM - 3:05 PM	59.9	74.4	52.0
3:05 PM - 3:10 PM	63.4	78.3	52.2
3:10 PM - 3:15 PM	62.1	78.0	51.0

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Sample No. : 2270912-12  
Parameter : Noise  
Location : บ้านพักอาศัย หมู่ 2 ต.นาเกลือ อ.15 (N2) (GPS 47P 733654, 1434034) (Shut down)  
Measurement Date : Jun 21 - 22, 2022  
Measurement by : Anurak Tongthajonsakda  
Sound Level Meter : 00296517

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359665-1

TESTING  
No.0042

Page 2 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	61.9	78.4	52.3
12:35 AM - 12:40 AM	62.1	80.6	52.7
12:40 AM - 12:45 AM	60.7	75.1	49.7
12:45 AM - 12:50 AM	62.3	76.4	47.3
12:50 AM - 12:55 AM	59.6	76.7	45.0
12:55 AM - 01:00 AM	64.0	78.0	46.8
01:00 AM - 01:05 AM	57.2	74.5	45.6
01:05 AM - 01:10 AM	55.4	72.4	45.2
01:10 AM - 01:15 AM	64.9	85.6	48.7
01:15 AM - 01:20 AM	56.7	74.5	43.7
01:20 AM - 01:25 AM	54.2	71.1	43.0
01:25 AM - 01:30 AM	55.8	72.3	43.7
01:30 AM - 01:35 AM	56.1	74.8	43.5
01:35 AM - 01:40 AM	52.6	64.3	43.5
01:40 AM - 01:45 AM	64.1	80.1	46.3
01:45 AM - 01:50 AM	60.2	75.3	46.2
01:50 AM - 01:55 AM	56.3	70.0	46.6
01:55 AM - 02:00 AM	59.3	76.3	44.7
02:00 AM - 02:05 AM	54.8	67.4	45.8
02:05 AM - 02:10 AM	57.1	70.4	47.3
02:10 AM - 02:15 AM	58.8	74.2	45.8
02:15 AM - 02:20 AM	53.0	68.7	44.5
02:20 AM - 02:25 AM	54.0	74.1	43.5
02:25 AM - 02:30 AM	60.7	76.3	44.2
02:30 AM - 02:35 AM	59.3	77.7	45.5
02:35 AM - 02:40 AM	58.6	74.7	45.4
02:40 AM - 02:45 AM	57.9	74.4	44.5
02:45 AM - 02:50 AM	51.7	68.6	43.4
02:50 AM - 02:55 AM	51.7	75.3	41.6
02:55 AM - 03:00 AM	46.4	56.7	41.8
03:00 AM - 03:05 AM	54.1	74.1	45.9
03:05 AM - 03:10 AM	56.8	70.0	45.2
03:10 AM - 03:15 AM	50.6	62.7	43.5
03:15 AM - 03:20 AM	58.2	74.9	43.8
03:20 AM - 03:25 AM	56.2	73.4	44.2
03:25 AM - 03:30 AM	57.9	75.2	44.8
03:30 AM - 03:35 AM	57.5	75.4	40.8
03:35 AM - 03:40 AM	57.8	75.2	43.7
03:40 AM - 03:45 AM	56.5	69.4	43.4
03:45 AM - 03:50 AM	60.3	71.1	44.3

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Sample No. : 2270912-12  
Parameter : Noise  
Location : บ้านพักอาศัย หมู่ 2 ต.นาเกลือ อ.15 (N2) (GPS 47P 733654, 1434034) (Shut down)  
Measurement Date : Jun 21 - 22, 2022  
Measurement by : Anurak Tongthajonsakda  
Sound Level Meter : 00296517

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359665-1

TESTING  
No.0042

Page 3 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	54.6	72.6	42.5
03:55 AM - 04:00 AM	62.8	78.0	43.1
04:00 AM - 04:05 AM	62.4	77.6	43.0
04:05 AM - 04:10 AM	58.4	74.4	46.3
04:10 AM - 04:15 AM	54.6	70.6	44.9
04:15 AM - 04:20 AM	60.7	83.6	44.6
04:20 AM - 04:25 AM	57.1	76.1	40.6
04:25 AM - 04:30 AM	60.0	76.9	40.5
04:30 AM - 04:35 AM	58.2	76.4	41.4
04:35 AM - 04:40 AM	57.5	73.2	43.7
04:40 AM - 04:45 AM	53.9	70.6	44.8
04:45 AM - 04:50 AM	55.8	72.7	41.9
04:50 AM - 04:55 AM	58.6	80.1	43.7
04:55 AM - 05:00 AM	58.2	74.4	45.1
05:00 AM - 05:05 AM	53.1	70.2	48.0
05:05 AM - 05:10 AM	52.8	69.3	42.3
05:10 AM - 05:15 AM	53.6	72.0	41.0
05:15 AM - 05:20 AM	64.1	77.9	42.1
05:20 AM - 05:25 AM	57.5	74.7	41.6
05:25 AM - 05:30 AM	57.1	70.5	42.4
05:30 AM - 05:35 AM	63.1	77.3	53.2
05:35 AM - 05:40 AM	65.6	87.0	53.7
05:40 AM - 05:45 AM	65.6	90.4	53.5
05:45 AM - 05:50 AM	59.7	67.8	51.6
05:50 AM - 05:55 AM	58.6	78.8	42.1
05:55 AM - 06:00 AM	58.6	80.7	40.0
06:00 AM - 06:05 AM	58.1	78.9	50.9
06:05 AM - 06:10 AM	57.0	80.5	42.1
06:10 AM - 06:15 AM	59.0	80.4	48.5
06:15 AM - 06:20 AM	62.3	80.2	48.2
06:20 AM - 06:25 AM	60.4	83.2	55.2
06:25 AM - 06:30 AM	55.4	74.5	51.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report No.: 2359666-1

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-13

Parameter Noise  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140 (Shut down)  
Measurement Date Jun 27 - 23, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	64.1	75.4	60.3
01:00 PM - 02:00 PM	64.8	80.7	58.9
02:00 PM - 03:00 PM	58.1	82.6	50.4
03:00 PM - 04:00 PM	52.7	73.6	50.4
04:00 PM - 05:00 PM	49.9	63.0	46.6
05:00 PM - 06:00 PM	52.4	66.2	42.9
06:00 PM - 07:00 PM	47.0	73.5	41.8
07:00 PM - 08:00 PM	51.3	78.5	41.9
08:00 PM - 09:00 PM	50.6	74.7	45.6
09:00 PM - 10:00 PM	56.3	78.7	41.7
10:00 PM - 10:05 PM	51.3	68.4	42.9
10:05 PM - 10:10 PM	47.3	62.0	41.0
10:10 PM - 10:15 PM	47.5	60.8	43.9
10:15 PM - 10:20 PM	61.5	77.6	44.9
10:20 PM - 10:25 PM	62.0	76.1	45.0
10:25 PM - 10:30 PM	56.6	75.7	44.7
10:30 PM - 10:35 PM	62.7	79.1	44.5
10:35 PM - 10:40 PM	65.0	79.3	47.0
10:40 PM - 10:45 PM	64.0	78.0	48.4
10:45 PM - 10:50 PM	63.1	79.7	47.1
10:50 PM - 10:55 PM	65.3	80.1	48.7
10:55 PM - 11:00 PM	63.2	77.4	48.8
11:00 PM - 11:05 PM	64.1	79.5	48.3
11:05 PM - 11:10 PM	62.7	76.2	49.0
11:10 PM - 11:15 PM	63.7	77.4	50.6
11:15 PM - 11:20 PM	64.8	78.7	49.4
11:20 PM - 11:25 PM	63.5	76.8	50.1
11:25 PM - 11:30 PM	64.3	80.3	50.6
11:30 PM - 11:35 PM	62.8	79.0	47.9
11:35 PM - 11:40 PM	61.2	76.3	49.7
11:40 PM - 11:45 PM	62.1	79.6	50.3
11:45 PM - 11:50 PM	57.1	69.5	49.7
11:50 PM - 11:55 PM	59.3	75.2	49.3
11:55 PM - 12:00 AM	63.5	78.1	50.4
12:00 AM - 12:05 AM	62.6	76.5	50.9
12:05 AM - 12:10 AM	59.5	73.6	50.5
12:10 AM - 12:15 AM	61.2	77.8	51.4
12:15 AM - 12:20 AM	58.0	74.4	51.3
12:20 AM - 12:25 AM	59.6	74.9	49.3
12:25 AM - 12:30 AM	60.3	76.9	47.0

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received: Jun 27, 2022  
Date Reported: Jun 29, 2022  
Report No.: 2359666-1

P/O : RUN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-13

Parameter Noise  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140 (Shut down)  
Measurement Date Jun 27 - 23, 2022  
Measurement by Anurak Tongthajonsakda  
Sound Level Meter 00296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	64.0	79.4	45.0
12:35 AM - 12:40 AM	61.0	77.0	47.8
12:40 AM - 12:45 AM	59.1	74.8	47.8
12:45 AM - 12:50 AM	62.4	77.2	45.5
12:50 AM - 12:55 AM	59.0	77.7	45.6
12:55 AM - 01:00 AM	54.9	67.6	45.1
01:00 AM - 01:05 AM	59.9	74.8	46.0
01:05 AM - 01:10 AM	58.2	75.4	45.8
01:10 AM - 01:15 AM	56.9	72.7	45.6
01:15 AM - 01:20 AM	60.0	82.6	45.7
01:20 AM - 01:25 AM	54.8	69.4	45.3
01:25 AM - 01:30 AM	62.8	80.4	53.9
01:30 AM - 01:35 AM	53.8	71.1	42.6
01:35 AM - 01:40 AM	53.8	71.5	43.5
01:40 AM - 01:45 AM	55.5	73.4	45.3
01:45 AM - 01:50 AM	56.8	74.1	45.4
01:50 AM - 01:55 AM	66.2	72.2	63.5
01:55 AM - 02:00 AM	61.7	66.3	58.1
02:00 AM - 02:05 AM	55.2	69.8	49.8
02:05 AM - 02:10 AM	55.9	75.7	48.7
02:10 AM - 02:15 AM	61.7	79.6	47.2
02:15 AM - 02:20 AM	54.3	73.9	45.5
02:20 AM - 02:25 AM	60.0	76.7	45.0
02:25 AM - 02:30 AM	61.7	78.0	46.0
02:30 AM - 02:35 AM	65.2	80.0	47.9
02:35 AM - 02:40 AM	61.1	78.4	46.5
02:40 AM - 02:45 AM	54.1	75.2	45.6
02:45 AM - 02:50 AM	60.1	76.5	46.4
02:50 AM - 02:55 AM	61.2	77.6	44.5
02:55 AM - 03:00 AM	51.5	72.8	43.7
03:00 AM - 03:05 AM	53.6	70.9	42.4
03:05 AM - 03:10 AM	53.4	71.1	43.1
03:10 AM - 03:15 AM	55.0	72.9	44.8
03:15 AM - 03:20 AM	56.5	73.8	45.1
03:20 AM - 03:25 AM	58.0	73.5	45.0
03:25 AM - 03:30 AM	54.2	66.1	47.2
03:30 AM - 03:35 AM	62.1	79.2	46.3
03:35 AM - 03:40 AM	64.2	78.8	46.9
03:40 AM - 03:45 AM	63.8	79.1	45.8
03:45 AM - 03:50 AM	57.7	77.4	45.6

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Sample No. : 2270912-13  
Parameter : Noise  
Location : ถนนพหลโยธิน หมู่ 2 ตำบลบึงนาราง 15 (N2) (GPS 47P 233654, 1434034) (Shut down)  
Measurement Date : Jun 22 - 23, 2022  
Measurement by : Anurak Tongthajonsakda  
Sound Level Meter : 00295517

Page 3 of 3



TESTING  
No.0042

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359666-1

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	52.6	67.3	41.4
03:55 AM - 04:00 AM	61.0	80.0	45.8
04:00 AM - 04:05 AM	51.3	67.5	45.1
04:05 AM - 04:10 AM	59.4	77.5	44.8
04:10 AM - 04:15 AM	60.0	76.9	45.7
04:15 AM - 04:20 AM	53.4	66.5	45.0
04:20 AM - 04:25 AM	59.7	82.1	45.2
04:25 AM - 04:30 AM	59.0	74.5	44.1
04:30 AM - 04:35 AM	56.1	73.6	41.2
04:35 AM - 04:40 AM	60.4	78.4	44.6
04:40 AM - 04:45 AM	60.5	77.0	43.2
04:45 AM - 04:50 AM	62.4	76.7	44.6
04:50 AM - 04:55 AM	61.2	78.6	43.1
04:55 AM - 05:00 AM	61.2	77.3	45.5
05:00 AM - 05:05 AM	54.5	70.0	43.3
05:05 AM - 05:10 AM	58.6	75.6	49.0
05:10 AM - 05:15 AM	60.5	78.0	47.2
05:15 AM - 05:20 AM	59.9	78.9	46.4
05:20 AM - 05:25 AM	61.3	78.9	46.0
05:25 AM - 05:30 AM	58.6	79.1	45.2
05:30 AM - 05:35 AM	59.8	79.2	45.8
05:35 AM - 05:40 AM	58.2	77.2	45.9
05:40 AM - 05:45 AM	61.2	80.1	44.8
05:45 AM - 05:50 AM	51.4	65.9	41.8
05:50 AM - 05:55 AM	60.1	77.6	39.6
05:55 AM - 06:00 AM	57.7	77.4	43.2
06:00 AM - 06:05 AM	57.5	84.7	48.0
06:05 AM - 06:10 AM	58.3	81.5	46.0
06:10 AM - 06:15 AM	57.3	77.8	45.1
06:15 AM - 06:20 AM	58.4	82.6	50.6
06:20 AM - 06:25 AM	57.4	78.6	52.6
06:25 AM - 06:30 AM	56.5	82.4	49.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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## Analysis / Test Report

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140  
P/O : RJN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :  
Sample No. : 2270912-14  
Parameter : Noise  
Location : ถนนพหลโยธิน หมู่ 2 ตำบลบึงนาราง 15 (N2) (GPS 47P 233654, 1434034) (Shut down)  
Measurement Date : Jun 23 - 24, 2022  
Measurement by : Anurak Tongthajonsakda  
Sound Level Meter : 00295517

Page 1 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	57.9	73.0	55.1
01:00 PM - 02:00 PM	58.9	84.3	55.4
02:00 PM - 03:00 PM	56.5	76.4	53.5
03:00 PM - 04:00 PM	57.4	81.4	53.3
04:00 PM - 05:00 PM	58.8	83.5	52.2
05:00 PM - 06:00 PM	56.3	73.4	53.0
06:00 PM - 07:00 PM	53.4	76.4	46.4
07:00 PM - 08:00 PM	53.4	73.1	46.0
08:00 PM - 09:00 PM	55.4	77.6	47.1
09:00 PM - 10:00 PM	54.7	77.8	46.1
10:00 PM - 10:05 PM	58.2	76.2	46.1
10:05 PM - 10:10 PM	61.1	76.2	46.1
10:10 PM - 10:15 PM	56.4	76.2	45.8
10:15 PM - 10:20 PM	53.9	69.7	45.2
10:20 PM - 10:25 PM	61.0	78.8	44.3
10:25 PM - 10:30 PM	64.1	78.2	44.6
10:30 PM - 10:35 PM	63.8	76.5	46.9
10:35 PM - 10:40 PM	63.0	76.9	49.1
10:40 PM - 10:45 PM	64.3	79.2	47.8
10:45 PM - 10:50 PM	64.1	79.6	49.6
10:50 PM - 10:55 PM	63.0	76.8	50.1
10:55 PM - 11:00 PM	63.7	78.3	49.5
11:00 PM - 11:05 PM	64.5	80.5	49.7
11:05 PM - 11:10 PM	61.5	76.4	50.1
11:10 PM - 11:15 PM	61.3	77.4	49.2
11:15 PM - 11:20 PM	62.1	75.9	49.5
11:20 PM - 11:25 PM	63.2	80.0	49.2
11:25 PM - 11:30 PM	59.6	76.2	50.1
11:30 PM - 11:35 PM	56.8	76.1	49.8
11:35 PM - 11:40 PM	67.8	92.9	52.4
11:40 PM - 11:45 PM	64.0	77.5	50.6
11:45 PM - 11:50 PM	65.0	77.5	53.4
11:50 PM - 11:55 PM	63.3	75.2	53.7
11:55 PM - 12:00 AM	63.2	72.2	51.7
12:00 AM - 12:05 AM	63.3	71.2	56.0
12:05 AM - 12:10 AM	68.3	77.2	64.8
12:10 AM - 12:15 AM	63.8	72.0	54.4
12:15 AM - 12:20 AM	69.7	73.6	68.4
12:20 AM - 12:25 AM	69.7	74.4	66.6
12:25 AM - 12:30 AM	67.0	75.4	62.9

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359667-1

P/O : KIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-14

Parameter Noise  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140 (Shut down)  
Measurement Date Jun 23 - 24, 2022  
Measurement by Anurak Tongthapongsakda  
Sound Level Meter 00296517

Page 2 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	67.5	78.8	61.0
12:35 AM - 12:40 AM	67.1	78.6	59.1
12:40 AM - 12:45 AM	66.8	77.2	58.2
12:45 AM - 12:50 AM	66.7	80.4	58.1
12:50 AM - 12:55 AM	66.3	77.4	56.2
12:55 AM - 01:00 AM	66.2	76.7	53.6
01:00 AM - 01:05 AM	63.8	77.3	50.4
01:05 AM - 01:10 AM	64.6	77.1	53.0
01:10 AM - 01:15 AM	63.0	74.9	53.4
01:15 AM - 01:20 AM	64.0	79.0	53.7
01:20 AM - 01:25 AM	61.4	71.6	52.3
01:25 AM - 01:30 AM	62.7	71.6	52.0
01:30 AM - 01:35 AM	62.2	71.9	50.5
01:35 AM - 01:40 AM	62.4	74.1	51.2
01:40 AM - 01:45 AM	62.8	71.8	51.3
01:45 AM - 01:50 AM	63.3	71.5	52.9
01:50 AM - 01:55 AM	62.9	70.8	55.6
01:55 AM - 02:00 AM	61.5	71.4	50.0
02:00 AM - 02:05 AM	64.2	72.8	49.6
02:05 AM - 02:10 AM	67.8	80.7	52.0
02:10 AM - 02:15 AM	64.6	79.8	50.2
02:15 AM - 02:20 AM	62.9	71.3	51.6
02:20 AM - 02:25 AM	62.8	78.4	50.2
02:25 AM - 02:30 AM	61.4	83.4	48.9
02:30 AM - 02:35 AM	58.3	76.6	43.9
02:35 AM - 02:40 AM	58.0	75.4	46.3
02:40 AM - 02:45 AM	54.9	74.3	48.6
02:45 AM - 02:50 AM	58.2	73.3	47.7
02:50 AM - 02:55 AM	53.6	73.3	47.7
02:55 AM - 03:00 AM	53.2	66.5	46.8
03:00 AM - 03:05 AM	55.3	67.9	45.8
03:05 AM - 03:10 AM	61.7	76.7	53.6
03:10 AM - 03:15 AM	62.1	74.7	54.7
03:15 AM - 03:20 AM	55.7	70.3	51.9
03:20 AM - 03:25 AM	64.8	81.6	52.5
03:25 AM - 03:30 AM	63.0	77.9	52.3
03:30 AM - 03:35 AM	62.4	72.1	50.7
03:35 AM - 03:40 AM	63.2	72.2	51.7
03:40 AM - 03:45 AM	63.8	72.0	54.4
03:45 AM - 03:50 AM	63.5	71.4	55.2

The above results are valid only for the audited/checked area(s) as indicated in this report. No other results or conclusions can be reproduced from this report. It is recommended that this report is not reproduced except in full.

Approved by

*D. Chongchon*

Dej Chongchon  
Senior Manager

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## Analysis / Test Report

TESTING  
No.0042

Client : Rojana Industrial Park Rayong 2 Co., Ltd.  
54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140

Lot ID: 2270912  
Date Received : Jun 27, 2022  
Date Reported : Jun 29, 2022  
Report No. : 2359667-1

P/O : KIN(2)-019/64  
Project Name : Pluak Daeng  
Project Location :

Sample No. 2270912-14

Parameter Noise  
Location 54/5 Moo 1, Map Yang Phon, Pluak Daeng, Rayong Thailand 21140 (Shut down)  
Measurement Date Jun 23 - 24, 2022  
Measurement by Anurak Tongthapongsakda  
Sound Level Meter 00296517

Page 3 of 3

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	64.4	78.0	49.8
03:55 AM - 04:00 AM	68.2	81.0	52.3
04:00 AM - 04:05 AM	68.1	80.9	52.2
04:05 AM - 04:10 AM	65.1	78.3	50.7
04:10 AM - 04:15 AM	63.2	77.5	52.2
04:15 AM - 04:20 AM	62.7	78.7	50.5
04:20 AM - 04:25 AM	61.8	82.8	52.2
04:25 AM - 04:30 AM	58.5	76.0	49.1
04:30 AM - 04:35 AM	58.3	75.7	46.6
04:35 AM - 04:40 AM	53.5	66.8	49.1
04:40 AM - 04:45 AM	55.6	70.2	51.8
04:45 AM - 04:50 AM	61.9	76.9	53.8
04:50 AM - 04:55 AM	62.0	83.0	52.4
04:55 AM - 05:00 AM	59.0	76.5	49.6
05:00 AM - 05:05 AM	58.7	76.1	49.0
05:05 AM - 05:10 AM	55.7	75.1	49.4
05:10 AM - 05:15 AM	58.9	74.1	48.4
05:15 AM - 05:20 AM	54.2	73.9	48.3
05:20 AM - 05:25 AM	53.7	67.0	49.3
05:25 AM - 05:30 AM	65.0	81.0	50.2
05:30 AM - 05:35 AM	65.2	82.0	52.9
05:35 AM - 05:40 AM	62.9	77.8	52.2
05:40 AM - 05:45 AM	62.6	72.3	50.9
05:45 AM - 05:50 AM	65.2	71.7	53.6
05:50 AM - 05:55 AM	64.8	79.7	48.3
05:55 AM - 06:00 AM	68.1	79.4	61.6
06:00 AM - 06:05 AM	64.9	68.1	58.4
06:05 AM - 06:10 AM	64.0	80.9	52.8
06:10 AM - 06:15 AM	63.3	80.8	52.7
06:15 AM - 06:20 AM	64.8	81.1	52.4
06:20 AM - 06:25 AM	64.6	81.0	54.1
06:25 AM - 06:30 AM	62.4	81.1	52.8

Reference Method : Based on ISO 1996-1 and ISO 1996-2

Approved by

*D. Chongchon*

Dej Chongchon  
Senior Manager

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# ภาคผนวก ง

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มาตรฐานที่เกี่ยวข้อง



ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

ฉบับที่ ๒๔ (พ.ศ. ๒๕๔๗)

เรื่อง กำหนดมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป

อาศัยอำนาจตามความในมาตรา ๓๒ และมาตรา ๓๔ แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ อันเป็นพระราชบัญญัติที่มีบทบัญญัติบางประการเกี่ยวกับบทจำกัดสิทธิและเสรีภาพของบุคคล จึงมาตรา ๒๙ ประกอบกับมาตรา ๓๕ มาตรา ๔๔ มาตรา ๕๐ และมาตรา ๕๑ ของรัฐธรรมนูญแห่งราชอาณาจักรไทยบัญญัติให้กระทำได้โดยอาศัยอำนาจตามบทบัญญัติแห่งกฎหมาย คณะกรรมการสิ่งแวดล้อมแห่งชาติ จึงได้มีมติในคราวการประชุมครั้งที่ ๒๒๕๔๗ เมื่อวันที่ ๒๔ กุมภาพันธ์ ๒๕๔๗ ให้ปรับปรุงแก้ไขมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป ดังต่อไปนี้

ข้อ ๑ ให้ยกเลิกความใน (๔) ของข้อ ๒ แห่งประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๐ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ ซึ่งกำหนดมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป และให้มีความต่อไปนี้แทน

“(๔) ค่าเฉลี่ยของก๊าซซัลเฟอร์ไดออกไซด์ ในเวลา ๒๔ ชั่วโมง จะต้องไม่เกิน ๐.๑๒ ส่วนในล้านส่วน หรือไม่เกิน ๐.๓๐ มิลลิกรัมต่อลูกบาศก์เมตร และค่ามัธยฐานเลขคณิต (Arithmetic Mean) ในเวลา ๑ ปี จะต้องไม่เกิน ๐.๐๔ ส่วนในล้านส่วน หรือไม่เกิน ๐.๑๐ มิลลิกรัมต่อลูกบาศก์เมตร”

ข้อ ๒ ให้ยกเลิกความใน (๒) และ (๓) ของข้อ ๔ แห่งประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๐ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ เรื่อง กำหนดมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป และให้มีความต่อไปนี้แทน

“(๒) ค่าเฉลี่ยของฝุ่นละอองขนาดเล็กไม่เกิน ๑๐ ไมครอน ในเวลา ๒๔ ชั่วโมง จะต้องไม่เกิน ๐.๑๒ มิลลิกรัมต่อลูกบาศก์เมตร และค่ามัธยฐานเลขคณิต (Arithmetic Mean) ในเวลา ๑ ปี จะต้องไม่เกิน ๐.๐๕ มิลลิกรัมต่อลูกบาศก์เมตร

(๓) ค่าเฉลี่ยของฝุ่นละอองขนาดเล็กไม่เกิน ๑๐๐ ไมครอน ในเวลา ๒๔ ชั่วโมง จะต้องไม่เกิน ๐.๓๓ มิลลิกรัมต่อลูกบาศก์เมตร และค่ามัธยฐานเลขคณิต (Arithmetic Mean) ในเวลา ๑ ปี จะต้องไม่เกิน ๐.๑๐ มิลลิกรัมต่อลูกบาศก์เมตร”

ประกาศ ณ วันที่ ๙ สิงหาคม พ.ศ. ๒๕๔๗

(ลงนาม) จาตุรนต์ อายแสง  
(นายจาตุรนต์ อายแสง)  
รองนายกรัฐมนตรี

ปฏิบัติหน้าที่ประธานคณะกรรมการสิ่งแวดล้อมแห่งชาติ

ราชกิจจานุเบกษา ฉบับประกาศทั่วไป เล่ม ๑๒๑ ตอนพิเศษ ๑๐๔ ง วันที่ ๒๒ กันยายน ๒๕๔๗



ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

ฉบับที่ ๓๓ (พ.ศ. ๒๕๕๒)

เรื่อง กำหนดมาตรฐานค่าก๊าซไนโตรเจนไดออกไซด์ในบรรยากาศโดยทั่วไป

โดยที่เป็นการสมควรกำหนดมาตรฐานค่าก๊าซไนโตรเจนไดออกไซด์ในบรรยากาศโดยทั่วไป เพื่อเป็นเกณฑ์ทั่วไปสำหรับการส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมคนพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕

อาศัยอำนาจตามความในมาตรา ๓๒ (๔) และมาตรา ๓๔ แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ อันเป็นพระราชบัญญัติที่มีบทบัญญัติบางประการเกี่ยวกับการจัดตั้งและวิธีปฏิบัติแห่งกฎหมาย มาตรา ๒๕ ประกอบกับมาตรา ๓๓ มาตรา ๓๔ มาตรา ๔๑ และมาตรา ๔๓ ของรัฐธรรมนูญแห่งราชอาณาจักรไทย บัญญัติให้กระทำได้โดยอาศัยอำนาจตามบทบัญญัติแห่งกฎหมาย คณะกรรมการสิ่งแวดล้อมแห่งชาติจึงออกประกาศกำหนดมาตรฐานค่าก๊าซไนโตรเจนไดออกไซด์ในบรรยากาศโดยทั่วไปไว้ ดังต่อไปนี้

ข้อ ๑ ในประกาศนี้

“เครื่องวัดระบบเคมีลูมิเนสเซนซ์” (Chemiluminescence) หมายความว่า เครื่องวัดค่าก๊าซไนโตรเจนไดออกไซด์โดยใช้ก๊าซไฮโดรเจนทำปฏิกิริยากับก๊าซไนตริกออกไซด์ซึ่งถูกเปลี่ยนมาจากก๊าซไนโตรเจนไดออกไซด์แล้ววัดความเข้มของแสงซึ่งเกิดจากปฏิกิริยานี้ ณ ที่ความยาวคลื่นที่ต่ำกว่า ๖๐๐ นาโนเมตร (Nanometer)

ข้อ ๒ ให้ยกเลิก

(๑) ความใน (๒) ของข้อ ๒ แห่งประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๐ (พ.ศ. ๒๕๓๔) ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ เรื่อง กำหนดมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป

(๒) ความใน (๑) ของข้อ ๖ แห่งประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๐ (พ.ศ. ๒๕๓๔) ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ เรื่อง กำหนดมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป แก้ไขเพิ่มเติมโดยประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๒๔ (พ.ศ. ๒๕๕๐) เรื่อง กำหนดมาตรฐานคุณภาพอากาศในบรรยากาศโดยทั่วไป

ข้อ ๓ ให้กำหนดมาตรฐานค่าก๊าซไนโตรเจนไดออกไซด์ในบรรยากาศโดยทั่วไปไว้ ดังต่อไปนี้

(๑) ค่าเฉลี่ยของก๊าซไนโตรเจนไดออกไซด์ในเวลา ๑ ชั่วโมง จะต้องไม่เกิน ๐.๑๖ ส่วนในล้านส่วนหรือไม่เกิน ๐.๓๒ มิลลิกรัมต่อลูกบาศก์เมตร

(๒) ค่าหัชมิมเลขคณิต (Arihmetic Mean) ของก๊าซไนโตรเจนไดออกไซด์ในเวลา ๑ ปี จะต้องไม่เกิน ๐.๐๓ ส่วนในล้านส่วน หรือไม่เกิน ๐.๐๕๗ มิลลิกรัมต่อลูกบาศก์เมตร

ข้อ ๔ การคำนวณค่าความเข้มข้นของก๊าซไนโตรเจนไดออกไซด์ในบรรยากาศโดยทั่วไป ให้คำนวณเท่ากับค่าความดัน ๑ บรรยากาศ และอุณหภูมิ ๒๕ องศาเซลเซียส

ข้อ ๕ การวัดค่าเฉลี่ยของก๊าซไนโตรเจนไดออกไซด์ในเวลา ๑ ชั่วโมง หรือค่าหัชมิมเลขคณิต (Arihmetic Mean) ในเวลา ๑ ปี ให้ใช้เครื่องมือวัดระบบเคมีลูมิเนสเซนซ์ หรือระบบอื่นที่กรมควบคุมมลพิษ ให้ความเห็นชอบ

ประกาศ ณ วันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๕๒  
อภิสิทธิ์ เวชชาชีวะ

นายกรัฐมนตรี  
ประธานกรรมการสิ่งแวดล้อมแห่งชาติ





ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ  
ฉบับที่ ๒๑ (พ.ศ. ๒๕๔๔)  
ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ  
พ.ศ. ๒๕๓๕  
เรื่อง กำหนดมาตรฐานค่าก๊าซซัลเฟอร์ไดออกไซด์ในบรรยากาศโดยทั่วไป  
ในเวลา ๑ ชั่วโมง

อาศัยอำนาจตามความในมาตรา ๓๒ และมาตรา ๓๔ แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ คณะกรรมการสิ่งแวดล้อมแห่งชาติ จึงปรับปรุงแก้ไขมาตรฐานค่าก๊าซซัลเฟอร์ไดออกไซด์ในบรรยากาศโดยทั่วไปในเวลา ๑ ชั่วโมงไว้ดังต่อไปนี้

(๑) ให้ยกเลิกข้อ ๒ แห่งประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๒ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ เรื่อง กำหนดมาตรฐานค่าก๊าซซัลเฟอร์ไดออกไซด์ในบรรยากาศโดยทั่วไปในเวลา ๑ ชั่วโมง

(๒) ให้ยกเลิกข้อ ๓ และข้อ ๕ แห่งประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๒ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ เรื่อง กำหนดมาตรฐานค่าก๊าซซัลเฟอร์ไดออกไซด์ในบรรยากาศโดยทั่วไปในเวลา ๑ ชั่วโมง และให้ใช้ความต่อไปนี้เป็นแทน

“ข้อ ๓ ค่าเฉลี่ยความเข้มข้นของก๊าซซัลเฟอร์ไดออกไซด์ในบรรยากาศโดยทั่วไปในเวลา ๑ ชั่วโมง จะต้องไม่เกิน ๐.๓๐ ส่วนในล้านส่วน (ppm) หรือไม่เกิน ๑๕๐ ไมโครกรัมต่อลูกบาศก์เมตร”

“ข้อ ๕ การวัดค่าเฉลี่ยความเข้มข้นของก๊าซซัลเฟอร์ไดออกไซด์ในบรรยากาศโดยทั่วไปในเวลา ๑ ชั่วโมง ตามข้อ ๓ ให้ใช้เครื่องมือ ยวี่ ฟลูออเรสเซน หรือระบบอื่นที่กรมควบคุมมลพิษประกาศในราชกิจจานุเบกษา”

ประกาศ ณ วันที่ ๕ เมษายน พ.ศ. ๒๕๔๔  
(นายเศรษฐ บุญ-หลง)

รองนายกรัฐมนตรี ปฏิบัติหน้าที่  
ประธานคณะกรรมการสิ่งแวดล้อมแห่งชาติ

(ประกาศในราชกิจจานุเบกษา เล่ม ๑๑๘ ตอนพิเศษ ๓๕ ง ลงวันที่ ๓๐ เมษายน ๒๕๔๔)



ประกาศกระทรวงอุตสาหกรรม  
เรื่อง กำหนดมาตรฐานควบคุมการระบายน้ำทิ้งจากโรงงาน  
พ.ศ. ๒๕๖๐

โดยที่เป็นการสมควรปรับปรุงการกำหนดมาตรฐานควบคุมการระบายน้ำทิ้งจากการประกอบกิจการโรงงาน เพื่อให้มีมาตรฐานและวิธีการตรวจสอบน้ำทิ้งจากโรงงาน ให้เหมาะสมและเป็นไปตามมาตรฐานสากล รวมถึงเป็นการควบคุมการระบายน้ำทิ้งจากโรงงาน อาทิ อุตสาหกรรมในข้อ ๑๔ แห่งกฎกระทรวงฉบับที่ ๒ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติโรงงาน พ.ศ. ๒๕๓๕ ที่ระบุว่า "ห้ามระบายน้ำทิ้งออกจากโรงงาน เว้นแต่ได้ทำการอย่างใดอย่างหนึ่งหรือหลายอย่างจนน้ำทิ้งนั้นมีลักษณะเป็นไปตามที่รัฐมนตรีกำหนดโดยประกาศในราชกิจจานุเบกษา แต่ทั้งนี้ต้องไม่ใช้วิธีทำให้เจือจาง (dilution)" รัฐมนตรีว่าการกระทรวงอุตสาหกรรมจึงออกประกาศ ดังต่อไปนี้

ข้อ ๑ ประกาศนี้เรียกว่า "ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดมาตรฐานควบคุมการระบายน้ำทิ้งจากโรงงาน พ.ศ. ๒๕๖๐"

ข้อ ๒ ประกาศนี้ใช้บังคับตั้งแต่วันถัดจากวันประกาศในราชกิจจานุเบกษา เป็นต้นไป

ข้อ ๓ ให้ยกเลิกประกาศกระทรวงอุตสาหกรรม ฉบับที่ ๒ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติโรงงาน พ.ศ. ๒๕๓๕ เรื่อง กำหนดคุณลักษณะของน้ำทิ้งที่ระบายออกจากโรงงาน ลงวันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๓๕

ข้อ ๔ ในประกาศนี้

"โรงงาน" หมายความว่า โรงงานจำพวกที่ ๑ จำพวกที่ ๒ จำพวกที่ ๓ ตามกฎหมายว่าด้วย

โรงงาน

"น้ำทิ้ง" หมายความว่า น้ำที่เกิดจากการประกอบกิจการโรงงาน น้ำจากการใช้น้ำของคณะหรือนักงานกิจกรรมอื่นในโรงงาน ที่ระบายออกจากร่างงาน หรือจุดประกอบการอุตสาหกรรม

ข้อ ๕ มาตรฐานน้ำทิ้ง ต้องมีคุณภาพดังต่อไปนี้

๕.๑ ความเป็นกรดและด่าง (pH) ตั้งแต่ ๕.๕ ถึง ๙.๐

๕.๒ อุณหภูมิ (Temperature) ไม่เกิน ๔๐ องศาเซลเซียส

๕.๓ สี (Color) ไม่เกิน ๓๐๐ เอิตีเอ็มโ

๕.๔ ของแข็งละลายน้ำทั้งหมด (Total Dissolved Solids หรือ TDS) มีค่าดังนี้

(๑) กรณีระบายลงแหล่งน้ำ ต้องไม่เกิน ๓,๐๐๐ มิลลิกรัมต่อลิตร

(๒) กรณีระบายลงแหล่งน้ำที่มีค่าของแข็งละลายน้ำทั้งหมดเกินกว่า

๓,๐๐๐ มิลลิกรัมต่อลิตร ค่าของแข็งละลายน้ำทั้งหมดในน้ำทิ้งที่จะระบายได้ต้องมีค่าเกินกว่าค่าของแข็ง

ละลายน้ำทั้งหมดที่มีอยู่ในแหล่งน้ำนั้นไม่เกิน ๕,๐๐๐ มิลลิกรัมต่อลิตร

๕.๕ ของแข็งแขวนลอยทั้งหมด (Total Suspended Solids) ไม่เกิน ๕๐ มิลลิกรัม

ต่อลิตร

๕.๖ บีโอดี (Biochemical Oxygen Demand) ไม่เกิน ๒๐ มิลลิกรัมต่อลิตร

๕.๗ ซีโอดี (Chemical Oxygen Demand) ไม่เกิน ๑๒๐ มิลลิกรัมต่อลิตร

๕.๘ ซัลไฟด์ (Sulfide) ไม่เกิน ๑ มิลลิกรัมต่อลิตร

/๕.๙ โฟสไฟต์...

๕.๙ ไซยาไนด์ (Cyanides CN) ไม่เกิน ๐.๒ มิลลิกรัมต่อลิตร

๕.๑๐ น้ำมันแฉะไขมัน (Oil and Grease) ไม่เกิน ๕ มิลลิกรัมต่อลิตร

๕.๑๑ ฟอรัมาลดีไฮด์ (Formaldehyde) ไม่เกิน ๑ มิลลิกรัมต่อลิตร

๕.๑๒ สารประกอบฟีนอล (Phenols) ไม่เกิน ๑ มิลลิกรัมต่อลิตร

๕.๑๓ คลอรีนอิสระ (Free Chlorine) ไม่เกิน ๑ มิลลิกรัมต่อลิตร

๕.๑๔ สารกำจัดศัตรูพืชและสัตว์ (Pesticide) ต้องตรวจไม่พบ

๕.๑๕ ทัตเตน (Total Kjeldahl Nitrogen) ไม่เกิน ๑๐๐ มิลลิกรัมต่อลิตร

๕.๑๖ โลหะหนัก มีค่าดังนี้

(๑) สังกะสี (Zn) ไม่เกิน ๕.๐ มิลลิกรัมต่อลิตร

(๒) โครเมียมเฮกซะวาเลนต์ (Hexavalent Chromium) ไม่เกิน ๐.๒๕

มิลลิกรัมต่อลิตร

(๓) โครเมียมไตรวาเลนต์ (Trivalent Chromium) ไม่เกิน ๐.๗๕ มิลลิกรัม

ต่อลิตร

(๔) สารหนู (As) ไม่เกิน ๐.๒๕ มิลลิกรัมต่อลิตร

(๕) ทองแดง (Cu) ไม่เกิน ๒.๐ มิลลิกรัมต่อลิตร

(๖) พรอท (Hg) ไม่เกิน ๐.๐๐๕ มิลลิกรัมต่อลิตร

(๗) แคดเมียม (Cd) ไม่เกิน ๐.๐๓ มิลลิกรัมต่อลิตร

(๘) แบเรียม (Ba) ไม่เกิน ๑.๐ มิลลิกรัมต่อลิตร

(๙) ซีลีเนียม (Se) ไม่เกิน ๐.๐๒ มิลลิกรัมต่อลิตร

(๑๐) ตะกั่ว (Pb) ไม่เกิน ๐.๒ มิลลิกรัมต่อลิตร

(๑๑) นิกเกิล (Ni) ไม่เกิน ๑.๐ มิลลิกรัมต่อลิตร

(๑๒) แมงกานีส (Mn) ไม่เกิน ๕.๐ มิลลิกรัมต่อลิตร

ข้อ ๖ การตรวจสอบค่ามาตรฐานน้ำทิ้งจากโรงงาน ตามข้อ ๕ ให้ใช้วิธีดังต่อไปนี้

๖.๑ ความเป็นกรดและด่าง ให้ใช้เครื่องวัดความเป็นกรดและด่างของน้ำ (pH Meter) ที่มีความละเอียดไม่ต่ำกว่า ๐.๑ หน่วย

๖.๒ อุณหภูมิ ให้ใช้เครื่องวัดอุณหภูมิวัดขณะทำการเก็บตัวอย่าง

๖.๓ สี ให้ใช้วิธีเอิตีเอ็มโ (ADMI Method)

๖.๔ ของแข็งละลายน้ำทั้งหมด ให้ใช้วิธีหยดตัวอย่างที่กรองผ่านกระดาษกรองในแก้ว (Glass Fiber Filter Disk) และอบแห้งที่อุณหภูมิ ๑๘๐ องศาเซลเซียส เป็นเวลาอย่างน้อย ๑ ชั่วโมง

๖.๕ ของแข็งแขวนลอยทั้งหมด ให้ใช้วิธีการกรองผ่านกระดาษกรองในแก้ว (Glass Fiber Filter) และอบแห้งที่อุณหภูมิ ๑๐๓ - ๑๐๕ องศาเซลเซียส เป็นเวลาอย่างน้อย ๑ ชั่วโมง

๖.๖ บีโอดี ให้ใช้วิธีนำตัวอย่างที่อุณหภูมิ ๒๐ องศาเซลเซียส เป็นเวลา ๕ วัน ติดต่อกัน และหาค่าออกซิเจนละลายด้วยวิธีเอไซด์มอดิฟิเคชัน (Azide Modification) หรือวิธีเมมเบรนอิเล็กโทรด (Membrane Electrode)

๖.๗ ซีโอดี ให้ใช้วิธีย่อยสลายโดยใช้โพแทสเซียมไดโครเมต (Potassium Dichromate)

๖.๘ ซัลไฟด์ ให้ใช้วิธีไอโอดิเมตริก (Iodometric Method) หรือวิธีเมทิลีนบลู (Methylene Blue Method)

๖.๙ โฟสไฟต์ ให้ใช้วิธีไอโอดิเมตริก (Iodometric Method) หรือวิธีเมทิลีนบลู (Methylene Blue Method)

๖.๑๐ ซัลไฟด์ ให้ใช้วิธีไอโอดิเมตริก (Iodometric Method) หรือวิธีเมทิลีนบลู (Methylene Blue Method)

/๖.๑๑ โฟสไฟต์...

- ๖.๙ ไนยาโนด ให้ใช้การกลั่น (Distillation) และตรวจวัดด้วยวิธีเทียบสี (Colorimetric Method) หรือวิธี Flow Injection Analysis
- ๖.๑๐ น้ำมันและไขมัน ให้ใช้วิธีสกัดด้วยเทคนิค Liquid – Liquid Extraction หรือ Soxhlet Extraction ด้วยตัวทำละลายละลายแยกกันน้ำหนักของน้ำมันและไขมัน
- ๖.๑๑ ฟอรัมัลดีไฮด์ ให้ใช้วิธีเทียบสี (Colorimetric Method)
- ๖.๑๒ สารประกอบฟีนอล ให้ใช้การกลั่น (Distillation) และตรวจวัดด้วยวิธีเทียบสี (Colorimetric Method)
- ๖.๑๓ คลอรีนอิสระ ให้ใช้วิธีไตเตรท (Titrimetric Method) หรือวิธีเทียบสี (Colorimetric Method)
- ๖.๑๔ สารฆ่าศัตรูพืชและสัตว์ ให้ใช้วิธีก๊าซโครมาโตกราฟี (Gas-Chromatographic Method) หรือวิธีเพอร์ฟอร์มเบซ ลิกวิด โครมาโตกราฟี (High-Performance Liquid Chromatographic Method)
- ๖.๑๕ ที่เคเอ็น ให้ใช้วิธีเจลาตาล (Kjeldahl)
- ๖.๑๖ โลหะหนัก
- (๑) สังกะสี ทองแดง แคดเมียม แบเรียม ตะกั่ว นิกเกิลและแมงกานีส ให้ใช้วิธีย่อยสลายด้วยวิธีกรด (Acid digestion) และวัดหาปริมาณโลหะด้วยวิธีอะตอมมิกแอบซอร์ปชัน สเปกโตรเมตรี (Atomic Absorption Spectrometry : AAS) หรือวิธีอินดักทีฟพลาสมา (Inductively Coupled Plasma)
- (๒) โครเมียม
- ก) โครเมียมทั้งหมด ให้ใช้วิธีย่อยสลายด้วยตัวกรด (Acid digestion) และวัดหาปริมาณโลหะด้วยวิธีอะตอมมิกแอบซอร์ปชันสเปกโตรเมตรี (Atomic Absorption Spectrometry : AAS) หรือวิธีอินดักทีฟพลาสมา (Inductively Coupled Plasma)
- ข) โครเมียมแยกเฉพาะแลนท ให้ใช้วิธีเทียบสี (Colorimetric Method) หรือวิธีสกัดด้วยวิธีอะตอมมิกแอบซอร์ปชันสเปกโตรเมตรี (Atomic Absorption Spectrometry : AAS) หรือวิธีสกัดด้วยวิธีอินดักทีฟพลาสมา (Inductively Coupled Plasma)
- ค) โครเมียมโครมาโทกราฟี
- (๓) สารหนูและซีลีเนียม ให้ใช้วิธีอะตอมมิกแอบซอร์ปชันสเปกโตรโฟโตเมตรี (Atomic Absorption Spectrophotometry) ชนิดไฮโดรเจนเนอเรน (Hydride Generation) หรือวิธีอินดักทีฟพลาสมา (Inductively Coupled Plasma)
- (๔) บรอม ให้ใช้วิธีโฟลว์อินเจกชันอะตอมมิกแอบซอร์ปชันสเปกโตรเมตรี (Cold Vapor Atomic Fluorescence Spectrometry) หรือวิธีอินดักทีฟพลาสมา (Inductively Coupled Plasma)
- ข้อ ๗ การตรวจสอบค่ามาตรฐานน้ำทิ้งจากโรงงาน ตามข้อ ๖ ให้เป็นไปตามคู่มือวิเคราะห์น้ำและน้ำเสียของสมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย หรือ Standard Methods for the Examination of Water and Wastewater ซึ่ง American Public Health Association, American Water Work / Association .

Association และ Water Environment Federation ของประเทศสหรัฐอเมริกา กำหนด หรือตามที่กรมโรงงานอุตสาหกรรมกำหนด

ข้อ ๘ การเก็บตัวอย่างน้ำทิ้งเพื่อการตรวจสอบค่ามาตรฐาน ตามข้อ ๕ ให้เป็นดังต่อไปนี้

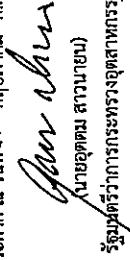
๘.๑ จุดเก็บตัวอย่าง ให้เก็บในจุดระบายทิ้งออกจากโรงงาน ไม่ว่าจะจุดเดียวหรือหลายจุดก็ตาม หรือจุดอื่นที่สามารถใช้เป็นตัวแทนของน้ำทิ้งที่ระบายออกจากโรงงาน กรณีมีการระบายทิ้งหลายจุดให้เก็บทุกจุด

๘.๒ วิธีการเก็บตัวอย่างน้ำทิ้ง ณ จุดเก็บตัวอย่างตาม ๘.๑ ให้เก็บแบบจ้วง (Grab Sample)

ข้อ ๙ การกำหนดค่ามาตรฐานน้ำทิ้งให้แตกต่างกันไปจากข้อ ๕ สำหรับโรงงานในประเภท หรือชนิดใดเป็นการเฉพาะให้เป็นไปตามประกาศกรมโรงงานอุตสาหกรรม

ข้อ ๑๐ ให้ประกาศกรมโรงงานอุตสาหกรรม (พ.ศ.๒๕๓๔) เรื่อง กำหนดคุณลักษณะ น้ำทิ้งที่ระบายออกนอกโรงงานให้มีค่าแตกต่างจากที่กำหนดไว้ในประกาศกระทรวงอุตสาหกรรม ฉบับที่ ๒ (พ.ศ. ๒๕๓๔) เรื่อง กำหนดคุณลักษณะของน้ำทิ้งที่ระบายออกนอกโรงงาน ลงวันที่ ๑๘ กุมภาพันธ์ พ.ศ. ๒๕๔๐ ยังคงบังคับใช้ต่อไปจนกว่าจะได้มีการยกเลิก

ประกาศ ณ วันที่ ๔๖ พฤษภาคม พ.ศ. ๒๕๖๐

  
นายอุดม สวามาน

รัฐมนตรีว่าการกระทรวงอุตสาหกรรม

ตารางที่ 2-1 เกณฑ์ลักษณะสมบัติได้แก่สิ่งจากโรงงานอุตสาหกรรมที่ยอมให้ระบายเข้าสู่ระบบ

บำบัดน้ำเสียส่วนกลางของโครงการ

ลำดับที่	ดัชนีคุณภาพ	หน่วย	มาตรฐาน
1.	บีโอดี (BOD <sub>5</sub> ที่ 20 °C)	mg/l	≤ 500
2.	ซีโอดี (COD)	mg/l	≤ 750
3.	ค่าความเป็นกรดและด่าง (pH)	-	5.5-9.0
4.	ค่าทีเอสเอส (TSS)	mg/l	≤ 3,000
5.	สารแขวนลอย (SS)	mg/l	≤ 200
6.	ค่าทีเอสเอ็น (TSEN)	mg/l	≤ 100
7.	ปรอท (Hg)	mg/l	≤ 0.005
8.	เหล็ก (Fe)	mg/l	≤ 0.02
9.	แคดเมียม (Cd)	mg/l	≤ 0.03
10.	ตะกั่ว (Pb)	mg/l	≤ 0.20
11.	อาร์เซนิก (As)	mg/l	≤ 0.25
12.	โคบอลต์ไดโครมาต (Cr <sup>3+</sup> )	mg/l	≤ 0.75
13.	โครเมียมไดโครมาต (Cr <sup>6+</sup> )	mg/l	≤ 0.25
14.	เบเรียม (Ba)	mg/l	≤ 1.0
15.	นิเกิล (Ni)	mg/l	≤ 1.0
16.	ทองแดง (Cu)	mg/l	≤ 2.0
17.	สังกะสี (Zn)	mg/l	≤ 5.0
18.	แมงกานีส (Mn)	mg/l	≤ 5.0
19.	เงิน (Ag)	mg/l	≤ 1.0
20.	เหล็กทั้งหมด (Total Iron)	mg/l	≤ 10.0
21.	ซัลไฟด์ (Sulfide)	mg/l	≤ 1.0
22.	ไซยาไนด์ (CN)	mg/l	≤ 0.2
23.	ฟอร์มัลดีไฮด์ (Formaldehyde)	mg/l	≤ 1.0
24.	สารประกอบฟีนอล (Phenols Compound)	mg/l	≤ 1.0
25.	คลอรีนอิสระ (Free Chlorine)	mg/l	≤ 1.0
26.	คลอรีนทั้งหมด (Chlorine as Cl <sub>2</sub> )	mg/l	≤ 2,000
27.	ฟลูออไรด์ (Fluoride)	mg/l	≤ 5.0
28.	สารที่ป้องกันเชื้อรา (Fungicide)	-	ตรวจไม่พบ
29.	อุณหภูมิ (Temperature)	°C	≤ 45
30.	สี (Color)	-	120 PC-Co
31.	กลิ่น (Odor)	-	ไม่เหม็นหรือมีกลิ่น
32.	น้ำมันและไขมัน (Oil/Grease)	mg/l	≤ 10.0
33.	สารซักฟอก (Surfactants)	mg/l	≤ 30.0

ที่มา : บริษัท สาขาสถาปัตยกรรม โรงงาน ระบบ 2 จำกัด , 2558.

ลงชื่อ .....  
(นายเจริญ คัดค้านัด)  
ผู้มีอำนาจ  
บริษัท สาขาสถาปัตยกรรม โรงงาน ระบบ 2 จำกัด  
ลงชื่อ .....  
(นายเกษม งาม)  
ผู้มีอำนาจ  
บริษัท ทัศนวิสัยสิ่งแวดล้อมไทย จำกัด

จำนวน 2558  
หน้า 124/178



## ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

ฉบับที่ ๘ (พ.ศ. ๒๕๓๙)

ออกตามความในพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ

พ.ศ. ๒๕๓๕

### เรื่อง กำหนดมาตรฐานคุณภาพน้ำในแหล่งน้ำผิวดิน

อาศัยอำนาจตามความในมาตรา ๓๒ (๑) แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ คณะกรรมการสิ่งแวดล้อมแห่งชาติประกาศกำหนดมาตรฐานคุณภาพน้ำในแหล่งน้ำผิวดิน ไว้ดังต่อไปนี้

หมวด ๑  
บททั่วไป

#### ข้อ ๑ ในประกาศนี้

“แหล่งน้ำผิวดิน” หมายถึง แม่น้ำ ลำคลอง หนอง บึง ทะเลสาบ อ่างเก็บน้ำ และแหล่งน้ำสาธารณะอื่นๆ ที่อยู่ภายในพื้นแผ่นดิน ซึ่งหมายความรวมถึงแหล่งน้ำสาธารณะที่อยู่ภายในพื้นดินบนเกาะด้วย แต่ไม่รวมถึงน้ำบาดาล และในกรณีแหล่งน้ำนั้นอยู่ติดกับทะเล ให้หมายความถึงแหล่งน้ำที่อยู่ภายในปากแม่น้ำหรือปากทะเลสาบ ปากแม่น้ำและปากทะเลสาบให้ถือเป็นแหล่งน้ำผิวดินที่กรมเจ้าท่ากำหนด

## หมวด ๒

### ประเภทและมาตรฐานคุณภาพน้ำในแหล่งน้ำผิวดิน

ข้อ ๒ ให้แบ่งแหล่งน้ำผิวดินออกเป็น ๕ ประเภทคือ แหล่งน้ำประเภทที่ ๑ แหล่งน้ำประเภทที่ ๒ แหล่งน้ำประเภทที่ ๓ แหล่งน้ำประเภทที่ ๔ และแหล่งน้ำประเภทที่ ๕

(๑) แหล่งน้ำประเภทที่ ๑ ได้แก่ แหล่งน้ำที่คุณภาพน้ำมีสภาพตาม

ธรรมชาติโดยปราศจากน้ำทิ้งจากกิจกรรมทุกประเภทและสามารถเป็นประโยชน์เพื่อ

(ก) การอุปโภคและบริโภคโดยตรงผ่านการฆ่าเชื้อโรคตามปกติก่อน

(ข) การขยายพันธุ์ตามธรรมชาติของสิ่งมีชีวิตระดับพื้นฐาน

(ค) การอนุรักษ์ระบบนิเวศของแหล่งน้ำ

(๒) แหล่งน้ำประเภทที่ ๒ ได้แก่ แหล่งน้ำที่ได้รับน้ำทิ้งจากกิจกรรมบาง

ประเภทและสามารถเป็นประโยชน์เพื่อ

(ก) การอุปโภคและบริโภค โดยต้องผ่านการฆ่าเชื้อโรคตามปกติ

และผ่านกระบวนการปรับปรุงคุณภาพน้ำทั่วไปก่อน

(ข) การอนุรักษ์สัตว์น้ำ

(ค) การประมง

(ง) การว่ายน้ำและกีฬาทางน้ำ

(๓) แหล่งน้ำประเภทที่ ๓ ได้แก่ แหล่งน้ำที่ได้รับน้ำทิ้งจากกิจกรรมบาง

ประเภทและสามารถเป็นประโยชน์เพื่อ

(ก) การอุปโภคและบริโภค โดยต้องผ่านการฆ่าเชื้อโรคตามปกติ

และผ่านกระบวนการปรับปรุงคุณภาพน้ำทั่วไปก่อน

(ข) การเกษตร

(๔) แหล่งน้ำประเภทที่ ๔ ได้แก่ แหล่งน้ำที่ได้รับน้ำทิ้งจากกิจกรรมบาง

ประเภทและสามารถเป็นประโยชน์เพื่อ

(ก) การอุปโภคและบริโภค โดยต้องผ่านการฆ่าเชื้อโรคตามปกติ

และผ่านกระบวนการปรับปรุงคุณภาพน้ำเป็นพิเศษก่อน

(ข) การอุตสาหกรรม

(๕) แหล่งน้ำประเภทที่ ๕ ได้แก่ แหล่งน้ำที่ได้รับน้ำทิ้งจากกิจกรรมบางประเภท และสามารถเป็นประโยชน์เพื่อการคมนาคม

ข้อ ๓ คุณภาพน้ำในแหล่งน้ำประเภทที่ ๑ ต้องมีสภาพตามธรรมชาติ และสามารถให้ประโยชน์ได้ตามข้อ ๒ (๑)

ข้อ ๔ คุณภาพน้ำในแหล่งน้ำประเภทที่ ๒ ต้องมีมาตรฐานดังต่อไปนี้

(๑) ไม่มีวัตถุหรือสิ่งของที่เกิดจากการกระทำของมนุษย์ซึ่งจะทำให้สี กลิ่น และรสของน้ำเปลี่ยนไปตามธรรมชาติ

(๒) อุณหภูมิ (Temperature) ไม่สูงกว่าอุณหภูมิตามธรรมชาติเกิน ๓ องศาเซลเซียส

(๓) ความเป็นกรดและด่าง (pH) มีค่าระหว่าง ๕.๐-๙.๐

(๔) ออกซิเจนละลาย (DO) มีค่าไม่น้อยกว่า ๖.๐ มิลลิกรัมต่อลิตร

(๕) บีโอดี (BOD) มีค่าไม่เกินกว่า ๑.๕ มิลลิกรัมต่อลิตร

(๖) แบคทีเรียกลุ่มโคลิฟอร์มทั้งหมด (Total Coliform Bacteria) มีค่าไม่เกินกว่า ๕,๐๐๐ เอ็ม.พี.เอ็น. ต่อ ๑๐๐ มิลลิลิตร

(๗) แบคทีเรียกลุ่มฟีคอลลีท็อรม (Fecal Coliform Bacteria) มีค่าไม่เกินกว่า ๑,๐๐๐ เอ็ม.พี.เอ็น. ต่อ ๑๐๐ มิลลิลิตร

(๘) ไนเตรต (NO<sub>3</sub>) ในหน่วยไนโตรเจน มีค่าไม่เกินกว่า ๕.๐ มิลลิกรัมต่อลิตร

(๙) แอมโมเนีย (NH<sub>3</sub>) ในหน่วยไนโตรเจน มีค่าไม่เกินกว่า ๐.๕ มิลลิกรัมต่อลิตร

(๑๐) ฟีนอล (Phenols) มีค่าไม่เกินกว่า ๐.๐๐๕ มิลลิกรัมต่อลิตร

(๑๑) ทองแดง (Cu) มีค่าไม่เกินกว่า ๐.๑ มิลลิกรัมต่อลิตร

(๑๒) นิกเกิล (Ni) มีค่าไม่เกินกว่า ๐.๑ มิลลิกรัมต่อลิตร

(๑๓) แมงกานีส (Mn) มีค่าไม่เกินกว่า ๑.๐ มิลลิกรัมต่อลิตร

(๑๔) สังกะสี (Zn) มีค่าไม่เกินกว่า ๑.๐ มิลลิกรัมต่อลิตร

(๑๕) แคดเมียม (Cd) ในน้ำที่มีความกระด้างในรูปของ CaCO<sub>3</sub> ไม่เกินกว่า ๑๐๐ มิลลิกรัมต่อลิตร มีค่าไม่เกินกว่า ๐.๐๐๕ มิลลิกรัมต่อลิตร และในน้ำที่มีความกระด้างในรูปของ CaCO<sub>3</sub> เกินกว่า ๑๐๐ มิลลิกรัมต่อลิตร มีค่าไม่เกินกว่า ๐.๐๕ มิลลิกรัมต่อลิตร

(๑๖) โครเมียมทริเฮกซะวาเลนต์ (Cr Hexavalent) มีค่าไม่เกินกว่า ๐.๐๕ มิลลิกรัมต่อลิตร

(๑๗) ตะกั่ว (Pb) มีค่าไม่เกิน ๐.๐๕ มิลลิกรัมต่อลิตร

(๑๘) บรอมทั้งหมด (Total Hg) มีค่าไม่เกินกว่า ๐.๐๐๒ มิลลิกรัมต่อลิตร

(๑๙) สารหนู (As) มีค่าไม่เกินกว่า ๐.๐๑ มิลลิกรัมต่อลิตร

(๒๐) ไซยาไนด์ (Cyanide) มีค่าไม่เกินกว่า ๐.๐๐๕ มิลลิกรัมต่อลิตร

(๒๑) กัมมันตภาพรังสี (Radioactivity) มีค่ารังสีแอลฟา (Alpha) ไม่เกินกว่า

๐.๑ เบคเคอเรลต่อลิตร และรังสีเบตา (Beta) ไม่เกินกว่า ๑.๐ เบคเคอเรลต่อลิตร

(๒๒) สารฆ่าศัตรูพืชและสัตว์ชนิดที่มีคลอรีนทั้งหมด (Total Organochlorine Pesticides) มีค่าไม่เกินกว่า ๐.๐๕ มิลลิกรัมต่อลิตร

(๒๓) ดีดีที (DDT) มีค่าไม่เกินกว่า ๑.๐ ไมโครกรัมต่อลิตร

(๒๔) บีเอชซีทีบีดีแอลฟา (Alpha-BHC) มีค่าไม่เกินกว่า ๐.๐๒

ไมโครกรัมต่อลิตร

(๒๕) ดีดีลิน (Dieldrin) มีค่าไม่เกินกว่า ๐.๑ ไมโครกรัมต่อลิตร

(๒๖) อัลดริน (Aldrin) มีค่าไม่เกินกว่า ๐.๑ ไมโครกรัมต่อลิตร

(๒๗) เฮปตาคลออร์ (Heptachlor) และเฮปตาคลอริอีปอกไซต์ (Heptachlor epoxide) มีค่าไม่เกินกว่า ๐.๒ ไมโครกรัมต่อลิตร

(๒๘) เอนดริน (Endrin) ไม่สามารถตรวจพบได้ตามวิธีการตรวจสอบที่กำหนด

ข้อ ๕ คุณภาพน้ำในแหล่งน้ำประเภทที่ ๓ ต้องมีมาตรฐานตาม ข้อ ๔ เว้นแต่

(๑) ออกซิเจนละลาย มีค่าไม่น้อยกว่า ๔.๐ มิลลิกรัมต่อลิตร

(๒) บีโอดี มีค่าไม่เกินกว่า ๒.๐ มิลลิกรัมต่อลิตร

(๓) เบคทีเรียกลุ่มโคลิฟอร์มทั้งหมด มีค่าไม่เกินกว่า ๒๐,๐๐๐ เอ็ม.พี.เอ็น.

ต่อ ๑๐๐ มิลลิลิตร

(๔) เบคทีเรียกลุ่มฟีคอลโคลิฟอร์ม มีค่าไม่เกินกว่า ๔,๐๐๐ เอ็ม.พี.เอ็น.

ต่อ ๑๐๐ มิลลิลิตร

ข้อ ๖ คุณภาพน้ำในแหล่งน้ำประเภทที่ ๔ ต้องมีมาตรฐานตามข้อ ๔ (๑) ถึง (๕) และ (๘) ถึง (๒๘) เว้นแต่

(๑) ออกซิเจนละลาย มีค่าไม่น้อยกว่า ๒.๐ มิลลิกรัมต่อลิตร

(๒) บีโอดี มีค่าไม่เกินกว่า ๔.๐ มิลลิกรัมต่อลิตร

ข้อ ๗ คุณภาพน้ำในแหล่งน้ำประเภทที่ ๕ ต้องมีมาตรฐานต่ำกว่าคุณภาพน้ำ ในแหล่งน้ำประเภทที่ ๔

ข้อ ๘ การกำหนดให้แหล่งน้ำผิวดินแหล่งใดแหล่งหนึ่งเป็นประเภทใดตามข้อ ๒ ให้เป็นไปตามที่กรมควบคุมมลพิษประกาศในราชกิจจานุเบกษา

### หมวด ๓

#### วิธีการเก็บตัวอย่างและตรวจสอบคุณภาพน้ำในแหล่งน้ำผิวดิน

ข้อ ๙ การเก็บตัวอย่างน้ำเพื่อตรวจสอบคุณภาพตามข้อ ๓ ถึง ข้อ ๗ ให้ใช้วิธีการดังต่อไปนี้

(๑) แหล่งน้ำไหล ซึ่งได้แก่ แม่น้ำ ลำคลอง เป็นต้น ให้เก็บที่จุดกึ่งกลางความกว้างของแหล่งน้ำที่ระดับกึ่งกลางลิก ณ จุดตรวจสอบ เว้นแต่แบบที่เรียกกลุ่มโคลิฟอร์มทั้งหมดและเบคทีเรียกลุ่มฟีคอลโคลิฟอร์ม ให้เก็บที่ระดับความลึก ๓๐ เซนติเมตร ณ จุดตรวจสอบ

(๒) แหล่งน้ำนิ่ง ซึ่งได้แก่ ทะเลสาบ หนอง บึง อ่างเก็บน้ำ เป็นต้น ให้เก็บที่ระดับความลึก ๑ เมตร ณ จุดตรวจสอบสำหรับแหล่งน้ำที่มีความลึกเกินกว่า ๒ เมตร และให้เก็บที่จุดกึ่งกลางลิก ณ จุดตรวจสอบสำหรับแหล่งน้ำที่มีความลึกไม่เกิน ๒ เมตร เว้นแต่เบคทีเรียกลุ่มโคลิฟอร์มทั้งหมดและเบคทีเรียกลุ่มฟีคอลโคลิฟอร์ม ให้เก็บที่ระดับความลึก ๓๐ เซนติเมตร ณ จุดตรวจสอบ

จุดตรวจสอบตาม (๑) และ (๒) ของแหล่งน้ำที่กำหนดตามข้อ ๘ ให้เป็นไปตามที่กรมควบคุมมลพิษกำหนด

ข้อ ๑๐ การตรวจสอบคุณภาพน้ำตามข้อ ๓ ถึงข้อ ๗ ให้ใช้วิธีการดังต่อไปนี้  
ทำการเก็บตัวอย่างน้ำ  
(๑) การตรวจสอบอุณหภูมิ ให้ใช้เครื่องวัดอุณหภูมิ (Thermometer) วัดขณะทำการเก็บตัวอย่างน้ำ

(๒) การตรวจสอบค่าความเป็นกรดและด่าง ให้ใช้เครื่องวัดความเป็นกรดและด่างของน้ำ (pH meter) ตามวิธีการทำแบบอิเล็กโตรเมตริก (Electrometric)

(๓) การตรวจสอบค่าออกซิเจนละลาย ให้ใช้วิธีอะไซด์ไมเคชัน (Azide Modification)

- (๔) การตรวจสอบค่าบีไอดี ให้ใช้วิธีอะไซด์โมดิฟิเคชัน (Azide Modification) ที่อุณหภูมิ ๒๐ องศาเซลเซียส เป็นเวลา ๕ วันติดต่อกัน
- (๕) การตรวจสอบค่าแบคทีเรียกลุ่มโคลิฟอร์มทั้งหมดและค่าแบคทีเรียกลุ่มฟีคอลโคลิฟอร์ม ให้ใช้วิธีมัลติเทิล ทิวป์ เฟอว์เมนเคชัน เทคนิค (Multiple Tube Fermentation Technique)
- (๖) การตรวจสอบค่าไนเตรดในหน่วยไนโตรเจน ให้ใช้วิธีแคดเมียมรีดักชัน (Cadmium Reduction)
- (๗) การตรวจสอบค่าแอมโมเนียในหน่วยไนโตรเจน ให้ใช้วิธีดีสทิลเลชันเนสเตอเรไรเซชัน (Distillation Nesslerization)
- (๘) การตรวจสอบค่าฟีนอล ให้ใช้วิธีดีสทิลเลชัน ๔ - อะมิโนแอนติไพรีน (Distillation, 4-Amino antipyrine)
- (๙) การตรวจสอบค่าทางของแดง นิกเกิล แมงกานีส สังกะสี แคดเมียม โคบอลต์และสังกะสี และตะกั่ว ให้ใช้วิธีอะตอมมิก แอซเพชัน ไคร์ก แอสไพเรชัน (Atomic Absorption - Direct Aspiration)
- (๑๐) การตรวจสอบค่าปรอททั้งหมด ให้ใช้วิธีอะตอมมิก แอซเพชัน ไคร์ก เทคนิค (Atomic Absorption-Cold Vapour Technique)
- (๑๑) การตรวจสอบค่าสารหนู ให้ใช้วิธีอะตอมมิก แอซเพชัน แก๊สไฮไดรด์ (Atomic Absorption - Gaseous Hydride)
- (๑๒) การตรวจสอบค่าไซยาไนด์ ให้ใช้วิธีไพรีดิน บาร์บิทูริก แอซิด (Pyridine - Barbituric Acid)
- (๑๓) การตรวจสอบค่ากับมันดภาพริงส์ ให้ใช้วิธีโลว์ เบ็คกราวด์พร็อพอร์ชันนอล เคาน์เตอร์ (Low Background Proportional Counter)
- (๑๔) การตรวจสอบค่าสารกำจัดศัตรูพืชและสัตว์ชนิดที่มีคลอรีนทั้งหมด คีตีที่มีเอชซีชนิดแอลฟา คีลครีน อัลครีน เฮปตาคลอไร้อีพอกไซด์ และเฮนดรีน ให้ใช้วิธีแก๊สโครมาโตกราฟี (Gas - Chromatography)

ข้อ ๑๑ การตรวจสอบค่าออกซิเจนและลายให้ใช้ค่าเปอร์เซ็นต์ไทล์ที่ ๒๐ (20<sup>th</sup> Percentile Value) ส่วนการตรวจสอบค่าบีไอดี แบคทีเรียกลุ่มโคลิฟอร์มทั้งหมด และแบคทีเรียกลุ่มฟีคอลโคลิฟอร์ม ให้ใช้ค่าเปอร์เซ็นต์ไทล์ที่ ๘๐ โดยจำนวนและระยะเวลาสำหรับการเก็บตัวอย่างน้ำดังกล่าว ให้เป็นไปตามที่กรมควบคุมมลพิษกำหนด

ข้อ ๑๒ การเก็บตัวอย่างน้ำตามข้อ ๕ และการตรวจสอบคุณภาพน้ำตามข้อ ๑๐ จะต้องเป็นไปตามวิธีการมาตรฐานสำหรับการวิเคราะห์น้ำและน้ำเสีย (Standard Methods for Examination of Water and Wastewater) ซึ่ง American Public Health Association และ American Water Works Association กับ Water Pollution Control Federation ของสหรัฐอเมริกา ร่วมกันกำหนดไว้ด้วย

ประกาศ ณ วันที่ ๒๐ มกราคม พ.ศ. ๒๕๓๗

ชวน หลีกภัย

นายกรัฐมนตรี

ประธานคณะกรรมการสิ่งแวดล้อมแห่งชาติ

(ประกาศในราชกิจจานุเบกษา เล่ม ๑๑๑ ตอนที่ ๑๖ ง วันที่ ๒๔ กุมภาพันธ์ ๒๕๓๗)

## ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

เรื่อง กำหนดมาตรฐานคุณภาพดิน

โดยที่เป็นการสมควรปรับปรุงมาตรฐานคุณภาพดิน ให้เหมาะสมตามความก้าวหน้าในด้านวิทยาศาสตร์ เทคโนโลยี เศรษฐกิจและสังคมของประเทศ เพื่อให้เป็นไปตามหลักการประเมินและการจัดการความเสี่ยงต่อสุขภาพมนุษย์จากการสัมผัสสารในระบะยาว (Risk-based Approach) โดยใช้ข้อมูลของคนไทยมาประกอบการคำนวณ อันเป็นหลักสำคัญในการกำหนดมาตรฐานคุณภาพสิ่งแวดล้อม

อาศัยอำนาจตามความในมาตรา ๓๒ (๖) และมาตรา ๓๔ แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ และคำสั่งสำนักนายกรัฐมนตรี ที่ ๒๓๔/๒๕๖๓ ลงวันที่ ๑๓ สิงหาคม พ.ศ. ๒๕๖๓ เรื่อง มอบหมายและมอบอำนาจให้รองนายกรัฐมนตรี และรัฐมนตรีประจำสำนักนายกรัฐมนตรี ปฏิบัติหน้าที่ประธานกรรมการในคณะกรรมการดังกล่าว ตามกฎกระทรวงและระเบียบสำนักนายกรัฐมนตรี ประกอบกับมติคณะกรรมการสิ่งแวดล้อมแห่งชาติ ในการประชุมครั้งที่ ๗/๒๕๖๓ เมื่อวันที่ ๔ พฤศจิกายน พ.ศ. ๒๕๖๓ จึงออกประกาศไว้ ดังต่อไปนี้

ข้อ ๑ ให้ยกเลิกประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๒๕ (พ.ศ. ๒๕๕๗) เรื่อง กำหนดมาตรฐานคุณภาพดิน ลงวันที่ ๔ กันยายน พ.ศ. ๒๕๕๗

ข้อ ๒ ในประกาศนี้

“มาตรฐานคุณภาพดิน” หมายความว่า มาตรฐานการปนเปื้อนของสารอันตรายที่ยอมให้มีได้ในดิน โดยไม่ก่อให้เกิดอันตรายหรือผลกระทบต่อสุขภาพอนามัยของประชาชนที่สัมผัสผิวดินทางตรง ได้แก่ ทางปาก ทางผิวหนัง และทางการหายใจ

ข้อ ๓ ให้แบ่งคุณภาพดินตามลักษณะการใช้ประโยชน์ที่ดิน ออกเป็น ๒ ประเภท ดังต่อไปนี้

๓.๑ คุณภาพดินที่ใช้ประโยชน์เพื่อการอยู่อาศัย โดยมีวัตถุประสงค์เพื่อปกป้องประชาชนทั่วไปในพื้นที่แบบการอยู่อาศัย รวมถึงกลุ่มประชากรเสี่ยง ได้แก่ เด็กอายุไม่เกิน ๖ ขวบ

๓.๒ คุณภาพดินที่ใช้ประโยชน์เพื่อการค้าขาย เกษตรกรรม และกิจการอื่น ๆ โดยมีวัตถุประสงค์ เพื่อปกป้องประชาชนผู้เกี่ยวข้อง รวมถึงเกษตรกรที่เพาะปลูกพืชสวนและพืชไร่

ข้อ ๔ กำหนดมาตรฐานคุณภาพดินตามข้อ ๓.๑ ไว้ ดังต่อไปนี้

๔.๑ โลหะหนัก (Heavy Metals) ได้แก่

- (๑) สารหนู (Arsenic) ไม่เกิน ๖ มิลลิกรัมต่อกิโลกรัม
- (๒) แคดเมียม (Cadmium) ไม่เกิน ๖๗ มิลลิกรัมต่อกิโลกรัม
- (๓) โครเมียมชนิดเฮกซะวาเลนต์ (Hexavalent Chromium) ไม่เกิน

๑๗.๕ มิลลิกรัมต่อกิโลกรัม

- (๔) ทองแดง (Copper) ไม่เกิน ๒,๕๒๐ มิลลิกรัมต่อกิโลกรัม
  - (๕) ตะกั่ว (Lead) ไม่เกิน ๔๐๐ มิลลิกรัมต่อกิโลกรัม
  - (๖) แมงกานีส (Manganese) ไม่เกิน ๑,๗๑๐ มิลลิกรัมต่อกิโลกรัม
  - (๗)ปรอท (Mercury) ไม่เกิน ๒๒ มิลลิกรัมต่อกิโลกรัม
  - (๘) นิกเกิล (Nickel) ไม่เกิน ๔๓๖.๕ มิลลิกรัมต่อกิโลกรัม
  - (๙) ซีลีเนียม (Selenium) ไม่เกิน ๓๖.๕ มิลลิกรัมต่อกิโลกรัม
- ๔.๒ สารอินทรีย์ระเหยง่าย (Volatile Organic Compounds) ได้แก่
- (๑) เบนซีน (Benzene) ไม่เกิน ๑ มิลลิกรัมต่อกิโลกรัม
  - (๒) คาร์บอนเตตระคลอไรด์ (Carbon Tetrachloride) ไม่เกิน ๗ มิลลิกรัมต่อกิโลกรัม
  - (๓) ๑,๒ - ไดคลอโรอีเทน (1,2 - Dichloroethane) ไม่เกิน ๕ มิลลิกรัมต่อกิโลกรัม
  - (๔) ๑,๑ - ไดคลอโรเอทิลีน (1,1 - Dichloroethylene) ไม่เกิน ๒๒๗ มิลลิกรัมต่อกิโลกรัม
  - (๕) ซิส - ๑,๒ - ไดคลอโรเอทิลีน (cis - 1,2 - Dichloroethylene) ไม่เกิน ๑๔๖ มิลลิกรัมต่อกิโลกรัม
  - (๖) ทรานส์ - ๑,๒ - ไดคลอโรเอทิลีน (trans - 1,2 - Dichloroethylene) ไม่เกิน ๑,๕๖๐ มิลลิกรัมต่อกิโลกรัม
  - (๗) ไดคลอโรมีเทน (Dichloromethane) ไม่เกิน ๓๓๖ มิลลิกรัมต่อกิโลกรัม
  - (๘) เอทิลเบนซีน (Ethylbenzene) ไม่เกิน ๓,๖๖๕ มิลลิกรัมต่อกิโลกรัม
  - (๙) สไตรีน (Styrene) ไม่เกิน ๕,๔๔๕ มิลลิกรัมต่อกิโลกรัม
  - (๑๐) เตตระคลอโรเอทิลีน (Tetrachloroethylene) ไม่เกิน ๘๐ มิลลิกรัมต่อกิโลกรัม
  - (๑๑) โทลูอีน (Toluene) ไม่เกิน ๔,๖๓๐ มิลลิกรัมต่อกิโลกรัม
  - (๑๒) ไตรคลอโรเอทิลีน (Trichloroethylene) ไม่เกิน ๑.๕ มิลลิกรัม
  - (๑๓) ๑,๑,๑ - ไตรคลอโรอีเทน (1,1,1 - Trichloroethane) ไม่เกิน ๘๑๒.๕ มิลลิกรัม
  - (๑๔) ๑,๑,๒ - ไตรคลอโรอีเทน (1,1,2 - Trichloroethane) ไม่เกิน ๑.๕ มิลลิกรัม
  - (๑๕) ไวนิลคลอไรด์ (Vinyl Chloride) ไม่เกิน ๐.๐๖ มิลลิกรัมต่อกิโลกรัม
  - (๑๖) ซิลีนทั้งหมด (Total Xylenes) ไม่เกิน ๕๗.๕ มิลลิกรัมต่อกิโลกรัม



- ๔.๓ สารป้องกันกำจัดศัตรูพืชและสัตว์ (Pesticides) ได้แก่
- (๑) อะทราซีน (Atrazine) ไม่เกิน ๒,๐๘๗ มิลลิกรัมต่อกรัม
  - (๒) คลอร์เดน (Chlordane) ไม่เกิน ๑๖ มิลลิกรัมต่อกรัม
  - (๓) คลอไพริฟอส (Chlorpyrifos) ไม่เกิน ๖๐ มิลลิกรัมต่อกรัม
  - (๔) ๒,๔ - ดี (2,4 - D) ไม่เกิน ๖๕๖.๕ มิลลิกรัมต่อกรัม
  - (๕) ดีดีที (DDT) ไม่เกิน ๑๘ มิลลิกรัมต่อกรัม
  - (๖) ดีลดีริน (Dieldrin) ไม่เกิน ๐.๓ มิลลิกรัมต่อกรัม
  - (๗) ไกลโฟเสต (Glyphosate) ไม่เกิน ๕,๙๖๐ มิลลิกรัมต่อกรัม
  - (๘) เฮปตาคลอร์ (Heptachlor) ไม่เกิน ๑ มิลลิกรัมต่อกรัม
  - (๙) เฮปตาคลอร์ อีพ็อกไซด์ (Heptachlor Epoxide) ไม่เกิน ๐.๗ มิลลิกรัม
- ๑๐) ลินเดน (Lindane) ไม่เกิน ๕ มิลลิกรัมต่อกรัม
- ๑๑) พาราควอต ไดคลอไรด์ (Paraquat Dichloride) ไม่เกิน ๖๖๘ มิลลิกรัม
- ๑๒) เพนตะคลอโรฟีนอล (Pentachlorophenol) ไม่เกิน ๑๐ มิลลิกรัม
- ๔.๔ สารอันตรายอื่น ๆ ได้แก่
- (๑) เบนโซ (Benzo) (a) pyrene ไม่เกิน ๐.๑ มิลลิกรัม
  - (๒) โซยาไนด์ (Cyanide) ไม่เกิน ๒๒ มิลลิกรัมต่อกรัม
  - (๓) พีซีบี - ๑๒๖ (PCB - 126) ไม่เกิน ๐.๔ ไมโครกรัมต่อกรัม
  - (๔) ๒,๓,๗,๘ - ทีซีดี (2,3,7,8 - TCDD) ไม่เกิน ๕ นาโนกรัมต่อกรัม
- ๕.๑ โลหะหนัก (Heavy Metals) ได้แก่
- (๑) สารหนู (Arsenic) ไม่เกิน ๒๕ มิลลิกรัมต่อกรัม
  - (๒) แคดเมียม (Cadmium) ไม่เกิน ๗๖๒ มิลลิกรัมต่อกรัม
  - (๓) โครเมียม ชนิดเฮกซะวาเลนต์ (Hexavalent Chromium) ไม่เกิน ๒๑๒ มิลลิกรัมต่อกรัม
  - (๔) ทองแดง (Copper) ไม่เกิน ๓๕,๐๔๐ มิลลิกรัมต่อกรัม
  - (๕) ตะกั่ว (Lead) ไม่เกิน ๘๐๐ มิลลิกรัมต่อกรัม
  - (๖) แมงกานีส (Manganese) ไม่เกิน ๑๙,๖๔๐ มิลลิกรัมต่อกรัม
  - (๗)ปรอท (Mercury) ไม่เกิน ๖๖๓ มิลลิกรัมต่อกรัม

- (๘) นิกเกิล (Nickel) ไม่เกิน ๕,๒๐๕ มิลลิกรัมต่อกรัม
  - (๙) ซีลีเนียม (Selenium) ไม่เกิน ๔,๓๘๐ มิลลิกรัมต่อกรัม
- ๕.๒ สารอินทรีย์ระเหยง่าย (Volatile Organic Compounds) ได้แก่
- (๑) เบนซีน (Benzene) ไม่เกิน ๕ มิลลิกรัมต่อกรัม
  - (๒) คาร์บอน เตตระคลอไรด์ (Carbon Tetrachloride) ไม่เกิน ๓๐ มิลลิกรัม
  - (๓) ๑,๒ - ไดคลอโรอีเทน (1,2 - Dichloroethane) ไม่เกิน ๒๑ มิลลิกรัม
  - (๔) ๑,๑ - ไดคลอโรเอทิลีน (1,1 - Dichloroethylene) ไม่เกิน ๙๕๓ มิลลิกรัม
  - (๕) จิส - ๑,๒ - ไดคลอโรเอทิลีน (cis - 1,2 - Dichloroethylene) ไม่เกิน ๑,๓๕๐ มิลลิกรัมต่อกรัม
  - (๖) ทรานส์ - ๑,๒ - ไดคลอโรเอทิลีน (trans - 1,2 - Dichloroethylene) ไม่เกิน ๑๗,๕๐๐ มิลลิกรัมต่อกรัม
  - (๗) ไดคลอโรมีเทน (Dichloromethane) ไม่เกิน ๒,๗๕๐ มิลลิกรัม
  - (๘) เอทิลเบนซีน (Ethylbenzene) ไม่เกิน ๑๙,๓๕๐ มิลลิกรัม
  - (๙) สไตรีน (Styrene) ไม่เกิน ๓๓,๑๙๐ มิลลิกรัมต่อกรัม
  - (๑๐) เตตระคลอโรเอทิลีน (Tetrachloroethylene) ไม่เกิน ๓๕๒ มิลลิกรัม
  - (๑๑) โทลูอีน (Toluene) ไม่เกิน ๔๐,๑๔๐ มิลลิกรัมต่อกรัม
  - (๑๒) ไตรคลอโรเอทิลีน (Trichloroethylene) ไม่เกิน ๖ มิลลิกรัม
  - (๑๓) ๑,๑,๑ - ไตรคลอโรอีเทน (1,1,1 - Trichloroethane) ไม่เกิน ๓๕,๔๐๐ มิลลิกรัมต่อกรัม
  - (๑๔) ๑,๑,๒ - ไตรคลอโรอีเทน (1,1,2 - Trichloroethane) ไม่เกิน ๖ มิลลิกรัม
  - (๑๕) ไวนิลคลอไรด์ (Vinyl Chloride) ไม่เกิน ๑.๖ มิลลิกรัมต่อกรัม
  - (๑๖) ไซลีนทั้งหมด (Total Xylenes) ไม่เกิน ๒,๔๙๘ มิลลิกรัมต่อกรัม
- ๕.๓ สารป้องกันกำจัดศัตรูพืชและสัตว์ (Pesticides) ได้แก่
- (๑) อะทราซีน (Atrazine) ไม่เกิน ๒๒,๙๕๕ มิลลิกรัมต่อกรัม
  - (๒) คลอร์เดน (Chlordane) ไม่เกิน ๖๔ มิลลิกรัมต่อกรัม
  - (๓) คลอไพริฟอส (Chlorpyrifos) ไม่เกิน ๘๑๙ มิลลิกรัมต่อกรัม

- (๔) ๒,๔-ดี (2,4-D) ไม่เกิน ๗,๕๐๐ มิลลิกรัมต่อกิโลกรัม  
 (๕) ดีดีที (DDT) ไม่เกิน ๗๐ มิลลิกรัมต่อกิโลกรัม  
 (๖) ดีดีริน (Dieldrin) ไม่เกิน ๑ มิลลิกรัมต่อกิโลกรัม  
 (๗) ไกลโฟเสต (Glyphosate) ไม่เกิน ๖๕,๕๔๐ มิลลิกรัมต่อกิโลกรัม  
 (๘) เฮปตาคลออร์ (Heptachlor) ไม่เกิน ๕ มิลลิกรัมต่อกิโลกรัม  
 (๙) เฮปตาคลออร์ อีพอกไซด์ (Heptachlor Epoxide) ไม่เกิน ๓ มิลลิกรัม

ต่อกิโลกรัม

- (๑๐) ลินเดน (Lindane) ไม่เกิน ๒๑ มิลลิกรัมต่อกิโลกรัม  
 (๑๑) พาราควอต ไดคลอไรด์ (Paraquat Dichloride) ไม่เกิน ๒,๙๕๐ มิลลิกรัม  
 (๑๒) เพนตะคลอโรฟีนอล (Pentachlorophenol) ไม่เกิน ๓๖ มิลลิกรัม

ต่อกิโลกรัม

ต่อกิโลกรัม

- ๕.๔ สารอันตรายอื่น ๆ  
 (๑) เบนโซ (เอ) ไพรีน (Benzo (a) pyrene) ไม่เกิน ๑.๘ มิลลิกรัม

ต่อกิโลกรัม

- (๒) ไซยาไนด์ (Cyanide) ไม่เกิน ๑๓๘ มิลลิกรัมต่อกิโลกรัม  
 (๓) พีซีบี - ๑๒๖ (PCB - 126) ไม่เกิน ๑ ไมโครกรัมต่อกิโลกรัม  
 (๔) ๒,๓,๗,๘-ทีซีดีดี (2,3,7,8-TCDD) ไม่เกิน ๒๐ นาโนกรัมต่อกิโลกรัม

ข้อ ๖ การเก็บตัวอย่างดิน ให้เก็บด้วยเครื่องมือเก็บตัวอย่างทำจากวัสดุสังเคราะห์หรือโลหะปลอดสนิม ที่บริเวณพื้นผิวดินและ/หรือระดับความลึกต่าง ๆ ที่ต้องการประเมินการปนเปื้อน และรักษาสภาพตัวอย่างให้เป็นไปตามที่กำหนดไว้ในภาคผนวกท้ายประกาศนี้

ข้อ ๗ การตรวจสอบคุณภาพดิน ให้ใช้วิธีการวิเคราะห์ตาม Test Methods of Evaluating Solid Waste, Physical/Chemical Methods (SW - 846) ขององค์การพิทักษ์สิ่งแวดล้อมแห่งสหรัฐอเมริกา (United States Environmental Protection Agency) หรือวิธีที่กำหนดไว้ในภาคผนวกแบบท้ายประกาศนี้

ข้อ ๘ ประกาศนี้ให้ใช้บังคับตั้งแต่วันถัดจากวันประกาศในราชกิจจานุเบกษาเป็นต้นไป

ประกาศ ณ วันที่ ๖ มกราคม พ.ศ. ๒๕๖๔

พลเอก ประวิตร วงษ์สุวรรณ

รองนายกรัฐมนตรี ปฏิบัติหน้าที่

ประธานกรรมการสิ่งแวดล้อมแห่งชาติ

# ภาคผนวกท้าย

## ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

### เรื่อง กำหนดมาตรฐานคุณภาพดิน

#### วิธีการวิเคราะห์คุณภาพดิน

สารเคมี	วิธีการวิเคราะห์
โลหะหนัก	
๑. สารหนู (Arsenic) CAS No.: 7440-38-2	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธี Atomic Absorption, Gaseous Hydride หรือ วิธี Atomic Absorption, Borohydride Reduction หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๒. แคดเมียม (Cadmium) CAS No.: 7440-43-9	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Flame Atomic Absorption Spectrophotometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธี Atomic Absorption Spectrometry, Direct Aspiration หรือ วิธี Atomic Absorption Spectrometry, Furnace Technique หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๓. โครเมียมชนิดเฮกซาวาเลนต์ (Hexavalent Chromium) CAS No.: 18540-29-9	วิธี Colorimetric หรือ วิธี Ion Chromatography หรือ วิธี Elemental and Molecular Speciated Isotope Dilution Mass Spectrometry หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๔. ทองแดง (Copper) CAS No.: 7440-50-8	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Flame Atomic Absorption Spectrophotometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๕. ตะกั่ว (Lead) CAS No.: 7439-92-1	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Flame Atomic Absorption Spectrophotometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ

พารามิเตอร์	วิธีการวิเคราะห์
๖. แมงกานีส (Manganese) CAS No.: 7439-96-5	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Flame Atomic Absorption Spectrophotometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๗. ปรอท (Mercury) CAS No.: 7439-97-6	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Thermal Decomposition - Atomic Absorption Spectrophotometry หรือ วิธี Cold - Vapor Atomic Fluorescence Spectrometry (CVAFS) หรือ วิธี Cold - Vapor Atomic Absorption Spectrometry (CVAAS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๘. นิกเกิล (Nickel) CAS No.: 7440-02-0	วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Flame Atomic Absorption Spectrophotometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๙. ซีลีเนียม (Selenium) CAS No.: 7782-49-2	วิธี Inductively Coupled Plasma - Optical Emission Spectrometry หรือ วิธี Inductively Coupled Plasma - Mass Spectrometry หรือ วิธี Graphite Furnace Atomic Absorption Spectrophotometry หรือ วิธี Atomic Absorption, Furnace Technique หรือ วิธี Atomic Absorption, Gaseous Hydride หรือ วิธี Atomic Absorption, Borohydride Reduction หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
สารป้องกันกำจัดศัตรูพืชและสัตว์ (Pesticides)	
๑. อะทราซีน (Atrazine) CAS No.: 1912-24-9	วิธี Gas chromatography - Atomic Emission Detector (GC - AED) หรือ วิธี Gas chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี Gas Chromatograph - Mass Spectrometry (GC - MS) หรือ วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๒. คลอร์ดีน (Chlordane) CAS No.: 12789-03-6	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas Chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas Chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ

พารามิเตอร์	วิธีการวิเคราะห์
๓. คลอไพริฟอส (Chlorpyrifos) CAS No.: 2921-88-2	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas Chromatography - Flame Photometric Detection (GC - FPD) หรือ วิธี Gas Chromatography - Nitrogen-Phosphorus Detection (GC - NPD) หรือ วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๔. ๒,๔-ดี (2,4-D) CAS No.: 94-75-7	วิธี Gas Chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Liquid Chromatography - Mass Spectrometer (LC-MS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๕. ดีดีที (DDT) CAS No.: 50-29-3	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๖. ดีลดีริน (Dieldrin) CAS No.: 60-57-1	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๗. ไกลโฟสเฟต (Glyphosate) CAS No.: 1071-83-6	วิธี Gas Chromatography - Mass Spectrometry (GC-MS) หรือ วิธี Gas Chromatography - Mass Spectrometry/Mass Spectrometry (GC - MS/MS) หรือ วิธี Gas Chromatography - Flame Photometric Detection (GC - FPD) หรือ วิธี High Performance Liquid Chromatography - Flame Photometric Detection (HPLC - FPD) หรือ วิธี High Performance Liquid Chromatography - Mass Spectrometry (HPLC - MS) หรือ วิธี High Performance Liquid Chromatography - UV Detector (HPLC - UV) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๘. เฮปทาคลอร์ (Heptachlor) CAS No.: 76-44-8	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี High Resolution Gas Chromatography- High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ

พารามิเตอร์	วิธีการวิเคราะห์
๕. เฮปทาคลออร์ อีพอกไซด์ (heptachlor Epoxide) CAS No.: 1024-57-3	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๑๐. ลินเดน (lindane; gamma Hexachlorocyclohexane) CAS No.: 58-89-9	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๑๑. พาราควอต ไดคลอไรด์ (Paraquat Dichloride) CAS No.: 1910-42-5	วิธี High Performance Liquid Chromatography - UV detection (HPLC - UV) หรือ วิธี High Performance Liquid Chromatography - Mass Spectrometry/ Mass Spectrometry (HPLC - MS/MS) หรือ วิธี High Performance Liquid Chromatography - Diode Array Detector (HPLC - DAD) หรือ วิธี Spectrophotometer หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๑๒. เพนทาคลอโรฟีนิล (Pentachlorophenol) CAS No.: 87-86-5	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas Chromatography - Electron Capture Detection (GC - ECD) หรือ วิธี Gas Chromatography - Flame Ionization Detector (GC - FID) หรือ วิธี Gas Chromatography - Atomic Emission Detector (GC - AED) หรือ วิธี Gas Chromatography - Fourier Transform Infrared Spectrometry (GC - FTIR) หรือ วิธี UV - Induced Colorimetry หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
สารอินทรีย์ระเหยง่าย (Volatile Organic Compounds: VOCs)	
๑. เบนซีน (Benzene) CAS No.: 71-43-2	วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Gas Chromatography - Photoionization Detector (GC - PID) หรือ วิธี Gas Chromatography - Electrolytic Conductivity Detectors (GC - ECD) หรือ วิธี Vacuum Distillation - Gas Chromatography/Mass Spectrometry (VD - GC/MS) หรือ
๒. คาร์บอนเตตระคลอไรด์ (Carbon Tetrachloride) CAS No.: 56-23-5	วิธี Direct Sampling Ion Trap Mass Spectrometry (DSTIMS) หรือ วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ
๓. ๑,๒-ไดคลอโรอีเทน (1,2-Dichloroethane) CAS No.: 107-06-2	
๔. ๑,๑-ไดคลอโรเอทิลีน (1,1-Dichloroethylene) CAS No.: 75-35-4	

พารามิเตอร์	วิธีการวิเคราะห์
๕. ซิส-๑,๒-ไดคลอโรเอทิลีน (cis-1,2-Dichloroethylene) CAS No.: 156-59-2	
๖. ทรานส์-๑,๒-ไดคลอโรเอทิลีน (trans-1,2-Dichloroethylene) CAS No.: 156-60-5	
๗. ไดคลอโรมีเทน (Dichloromethane) CAS No.: 75-09-2	
๘. เอทิลเบนซีน (Ethylbenzene) CAS No.: 100-41-4	
๙. สไตรีน (Styrene) CAS No.: 100-42-5	
๑๐. เทตราคลอโรเอทิลีน (Tetrachloroethylene) CAS No.: 127-18-4	
๑๑. โทลูอีน (Toluene) CAS No.: 108-88-3	
๑๒. ไตรคลอโรเอทิลีน (Trichloroethylene) CAS No.: 79-01-6	
๑๓. ๑,๑,๑-ไตรคลอโรอีเทน (1,1,1-Trichloroethane) CAS No.: 71-55-6	
๑๔. ๑,๑,๒-ไตรคลอโรอีเทน (1,1,2-Trichloroethane) CAS No.: 79-00-5	
๑๕. ไวนิลคลอไรด์ (Vinyl Chloride) CAS No.: 75-01-4	
๑๖. ไซลีน (Xylenes) CAS No.: 1330-20-7	
สารอันตรายอื่น ๆ	
๑. เบนโซ (เอ) ไพรีน (Benzo[a]pyrene) CAS No.: 50-32-8	วิธี Gas Chromatography - Flame Ionization Detector (GC - FID) หรือ วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ วิธี Thermal Extraction - Gas Chromatography/Mass Spectrometry (TE - GC/MS) หรือ

พารามิเตอร์	วิธีการวิเคราะห์
	<p>วิธี Gas Chromatography - Fourier Transform Infrared Spectrometry (GC - FTIR) หรือ</p> <p>วิธี High Performance Liquid Chromatography - UV Detection (HPLC-UV) หรือ</p> <p>วิธี High Performance Liquid Chromatography - Flame Ionization Detection (HPLC - FID) หรือ</p> <p>วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ</p>
๖. ไซยาไนต์ (Cyanide) CAS No.: 71-43-2	<p>วิธี Colorimetric with Manual Digestion หรือ</p> <p>วิธี Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP - AES) หรือ</p> <p>วิธี Atomic Absorption, Furnace Technique หรือ</p> <p>วิธี Atomic Absorption, Gaseous Hydride หรือ</p> <p>วิธี Atomic Absorption, Borchhydride Reduction หรือ</p> <p>วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ</p>
๗. ฟิซีบี ๑๒๖ (PCB-126) CAS No.: 57465-28-8	<p>วิธี Gas Chromatography - Electron Capture Detection (GC - ECD) หรือ</p> <p>วิธี Gas Chromatography - Electrolytic Conductivity Detector (GC - ELCD) หรือ</p> <p>วิธี Gas Chromatography - Fourier Transform Infrared Spectrometry (GC - FTIR) หรือ</p> <p>วิธี Thermal Extraction - Gas Chromatography/Mass Spectrometry (TE - GC/MS) หรือ</p> <p>วิธี Gas Chromatography - Mass Spectrometry (GC - MS) หรือ</p> <p>วิธี Gas Chromatography - Mass Spectrometry/Mass Spectrometry (GC - MS/MS) หรือ</p> <p>วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ</p>
๘. ๒,๓,๗,๘-ฟิซีดีที (2,3,7,8-TCDD; 2,3,7,8-tetrachlorodibenzo-p-dioxin) CAS No.: 1746-01-6	<p>วิธี High Resolution Gas Chromatography - High Resolution Mass Spectrometry (HRGC - HRMS) หรือ</p> <p>วิธีการอื่นที่กรมควบคุมมลพิษเห็นชอบ</p>

การรักษาสภาพตัวอย่างดิน

พารามิเตอร์ (Parameter)	ภาชนะบรรจุ* (Container)	การรักษาสภาพ* (Preservative)	ระยะเวลาเก็บรักษา* (Holding Time)
โลหะหนัก (ยกเว้นโครเมียมชนิดหกวาเลนต์และปรอท) (Heavy Metals)	พลาสติกหรือแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๑๘๐ วัน
โครเมียมชนิดหกวาเลนต์ (Hexavalent Chromium)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๓๐ วันก่อนการเตรียมตัวอย่าง ๔๐ วันหลังทำการเตรียมตัวอย่าง
ปรอท (Mercury)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๒๘ วัน
สารอินทรีย์ระเหยง่าย (Volatile Organic Compounds)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๑๔ วัน
สารป้องกันกำจัดศัตรูพืชและสัตว์ (Pesticides)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๑๔ วันก่อนการเตรียมตัวอย่าง ๔๐ วันหลังทำการเตรียมตัวอย่าง
เบนโซ (เอ) ไพรีน (Benzo[a]pyrene)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๑๔ วันก่อนการเตรียมตัวอย่าง ๔๐ วันหลังทำการเตรียมตัวอย่าง
ไซยาไนด์ (Cyanide)	พลาสติกหรือแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๑๔ วันก่อนการเตรียมตัวอย่าง
พีซีบี (PCBs)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๑๔ วันก่อนการเตรียมตัวอย่าง ๔๐ วันหลังทำการเตรียมตัวอย่าง
๒,๓,๗,๘-ฟิซีดีที (2,3,7,8-TCDD)	ขวดแก้ว	แช่เย็นที่อุณหภูมิ ๔ ± ๒ องศาเซลเซียส	๓๐ วันก่อนการเตรียมตัวอย่าง ๔๕ วันหลังทำการเตรียมตัวอย่าง

\* รายละเอียดเพิ่มเติมตาม Test Methods of Evaluating Solid Waste, Physical/Chemical Methods (SW-846) ขององค์การพิทักษ์สิ่งแวดล้อมแห่งสหรัฐอเมริกา (United States Environmental Protection Agency)



## ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

ฉบับที่ ๑๕ (พ.ศ. ๒๕๔๐)

### เรื่อง กำหนดมาตรฐานระดับเสียงโดยทั่วไป

อาศัยอำนาจตามความในมาตรา ๓๒ (๕) แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ คณะกรรมการสิ่งแวดล้อมแห่งชาติกำหนดมาตรฐานระดับเสียงโดยทั่วไปไว้ดังต่อไปนี้

ข้อ ๑ ในประกาศนี้

“ระดับเสียงโดยทั่วไป” หมายความว่า ระดับเสียงที่เกิดขึ้นในสิ่งแวดล้อม  
“ค่าระดับเสียงสูงสุด” หมายความว่า ค่าระดับเสียงสูงสุดที่เกิดขึ้นในขณะ

โดยขณะหนึ่งระหว่างการตรวจวัดระดับเสียง โดยมีหน่วยเป็นเดซิเบลเอ หรือ dB (A)  
“ค่าระดับเสียงเฉลี่ย ๒๔ ชั่วโมง” หมายความว่า ค่าระดับเสียงซึ่งมีระยะเวลาเทียบเท่าระดับเสียงที่เกิดขึ้นจริง ซึ่งมีระดับเสียงเปลี่ยนแปลงตามเวลาในช่วง ๒๔ ชั่วโมง (๒๔ hours A-weighted Equivalent Continuous Sound Level) ซึ่งเรียกโดยย่อว่า Leq ๒๔ hr โดยมีหน่วยเป็นเดซิเบลเอ หรือ dB (A)

“มาตรฐานระดับเสียง” หมายความว่า เครื่องวัดระดับเสียงตามมาตรฐาน IEC ๖๕๑ หรือ IEC ๘๐๔ ของคณะกรรมการกึ่งระหว่างประเทศว่าด้วยเทคนิคไฟฟ้า (International Electrotechnical Commission, IEC)

ข้อ ๒ ให้กำหนดมาตรฐานระดับเสียงโดยทั่วไปไว้ดังต่อไปนี้

- (๑) ค่าระดับเสียงสูงสุด ไม่เกิน ๑๑๕ เดซิเบลเอ
- (๒) ค่าระดับเสียงเฉลี่ย ๒๔ ชั่วโมง ไม่เกิน ๖๐ เดซิเบลเอ

ข้อ ๓ การตรวจวัดระดับเสียงโดยทั่วไป ให้ดำเนินการดังต่อไปนี้

(๑) การตรวจวัดค่าระดับเสียงสูงสุด ให้ใช้มาตรระดับเสียงตรวจวัดระดับเสียงในบริเวณที่มีคนอยู่หรืออาศัยอยู่

(๒) การตรวจวัดค่าระดับเสียงเฉลี่ย ๒๔ ชั่วโมง ให้ใช้มาตรระดับเสียงตรวจวัดระดับเสียงอย่างต่อเนื่องตลอดเวลา ๒๔ ชั่วโมงใดๆ

(๓) การตั้งไมโครโฟนของมาตรระดับเสียงที่บริเวณภายนอกอาคารให้ตั้งสูงจากพื้นไม่น้อยกว่า ๑.๒๐ เมตร โดยในรัศมี ๓.๕๐ เมตร ตามแนวราบรอบไมโครโฟนต้องไม่มีกำแพงหรือสิ่งอื่นใดที่มีคุณสมบัติในการสะท้อนเสียงกีดขวางอยู่

(๔) การตั้งไมโครโฟนของมาตรระดับเสียงที่บริเวณภายในอาคารให้ตั้งสูงจากพื้นไม่น้อยกว่า ๑.๒๐ เมตร โดยในรัศมี ๑.๐๐ เมตร ตามแนวราบรอบไมโครโฟนต้องไม่มีกำแพงสิ่งอื่นใดที่มีคุณสมบัติในการสะท้อนเสียงกีดขวางอยู่และต้องห่างจากช่องหน้าต่างหรือช่องทางที่เปิดออกนอกอาคารอย่างน้อย ๑.๕๐ เมตร

ข้อ ๔ การคำนวณค่าระดับเสียงจะต้องเป็นไปตามวิธีการที่องค์การระหว่างประเทศว่าด้วยมาตรฐาน (International Organization for Standardization, ISO) กำหนด ซึ่งกรมควบคุมมลพิษจะประกาศในราชกิจจานุเบกษา

ประกาศ ณ วันที่ ๑๒ มีนาคม พ.ศ. ๒๕๔๐

พลเอก ขวฤดี ยงใจยุทธ

นายกรัฐมนตรี

ประธานคณะกรรมการสิ่งแวดล้อมแห่งชาติ

(ประกาศในราชกิจจานุเบกษา เล่ม ๑๑๔ ตอนที่ ๒๗ ง วันที่ ๓ เมษายน ๒๕๔๐)

ประกาศกระทรวงอุตสาหกรรม

เรื่อง กำหนดระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน

พ.ศ. ๒๕๔๕

อาศัยอำนาจตามความในข้อ ๑๗ แห่งกฎกระทรวง ฉบับที่ ๒ (พ.ศ. ๒๕๓๕) ออกตามความในพระราชบัญญัติโรงงาน พ.ศ. ๒๕๓๕ อันเป็นพระราชบัญญัติที่มีบทบัญญัติบางประการเกี่ยวกับการจำกัดสิทธิและเสรีภาพของบุคคล ซึ่งมาตรา ๒๙ ประกอบกับมาตรา ๓๕ มาตรา ๔๗ และมาตรา ๕๐ ของรัฐธรรมนูญแห่งราชอาณาจักรไทย บัญญัติให้กระทำได้โดยอาศัยอำนาจตามบทบัญญัติแห่งกฎหมาย รัฐมนตรีว่าการกระทรวงอุตสาหกรรมจึงได้ออกประกาศไว้ ดังต่อไปนี้

ข้อ ๑ ในประกาศนี้

“เสียงรบกวน” หมายความว่า ระดับเสียงตรวจวัดนอกบริเวณโรงงาน ที่เกิดจากการประกอบกิจการโรงงาน ขณะมีการรบกวน ซึ่งมีระดับเสียงสูงกว่าระดับเสียงพื้นฐาน และมีระดับการรบกวนเกินกว่าค่าที่กำหนดไว้ในประกาศนี้

“ระดับเสียงพื้นฐาน” หมายความว่า ระดับเสียงที่ตรวจวัดในสิ่งแวดล้อมเดิม ขณะยังไม่มีเสียงรบกวนจากการประกอบกิจการโรงงานเป็นระดับเสียงปอร์เซ็นไทล์ที่ ๕๐ (Percentile Level 90,  $L_{90}$ )

“ระดับเสียงปอร์เซ็นไทล์ที่ ๕๐ ( $L_{90}$ )” หมายความว่า ระดับเสียงที่ร้อยละ ๕๐ ของเวลาที่ตรวจวัดจะมีระดับเสียงเกินระดับนี้

“ระดับเสียงขณะมีการรบกวน” หมายความว่า ระดับเสียงที่ตรวจวัดหรือคำนวณจากการประกอบกิจการโรงงานขณะเกิดเสียงรบกวน

“ระดับการรบกวน” หมายความว่า ระดับความแตกต่างของระดับเสียงขณะมีการรบกวนกับระดับเสียงพื้นฐาน

“ระดับเสียงเฉลี่ย ๒๔ ชั่วโมง” หมายความว่า ระดับเสียงคงที่นอกบริเวณโรงงานที่มีพลังงานเทียบเท่าระดับเสียงที่เกิดขึ้นจริง ซึ่งมีระดับเสียงเปลี่ยนแปลงตามเวลาในช่วง ๒๔ ชั่วโมง (24 hours A-weighted Equivalent Continuous Sound Level) ซึ่งเรียกโดยย่อว่า Leq 24 hr โดยมีหน่วยเป็นเดซิเบล หรือ dB(A)

“ระดับเสียงสูงสุด” หมายความว่า ระดับเสียงสูงสุดนอกบริเวณโรงงาน ที่เกิดขึ้นในขณะใดขณะหนึ่งระหว่างการตรวจวัดระดับเสียง โดยมีหน่วยเป็นเดซิเบล หรือ dB(A)

“มาตรฐานระดับเสียง” หมายความว่า เครื่องวัดระดับเสียงตามมาตรฐาน IEC 60804 หรือ IEC 61672 ของคณะกรรมการระหว่างประเทศว่าด้วยเทคนิคไฟฟ้า (International Electrotechnical Commission, IEC)

ข้อ ๒ ถ้าระดับการรบกวน ที่เกิดจากการประกอบกิจการโรงงาน ไม่เกิน ๑๐ เดซิเบล

ข้อ ๓ ถ้าระดับเสียงเฉลี่ย ๒๔ ชั่วโมง ที่เกิดจากการประกอบกิจการโรงงาน ไม่เกิน ๖๐ เดซิเบล

ข้อ ๔ ถ้าระดับเสียงสูงสุด ที่เกิดจากการประกอบกิจการโรงงาน ไม่เกิน ๑๑๕ เดซิเบล

ข้อ ๕ วิธีการตรวจวัดระดับเสียงการรบกวน ระดับเสียงเฉลี่ย ๒๔ ชั่วโมง และระดับเสียงสูงสุด ที่เกิดจากการประกอบกิจการโรงงาน ให้เป็นไปตามที่กรมโรงงานอุตสาหกรรมกำหนด ทั้งนี้ ให้ใช้บังคับตั้งแต่วันถัดจากวันประกาศในราชกิจจานุเบกษาเป็นต้นไป

ประกาศ ณ วันที่ ๒๗ ธันวาคม พ.ศ. ๒๕๔๕

สุริยะ จิรังเรืองกิจ

รัฐมนตรีว่าการกระทรวงอุตสาหกรรม

ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ

ฉบับที่ ๒๕ (พ.ศ. ๒๕๕๐)  
เรื่อง ค่าระดับเสียงรบกวน

โดยที่เป็นการสมควร ปรับปรุงมาตรฐานระดับเสียงรบกวน ให้เหมาะสมกับกฎเกณฑ์และหลักฐานทางวิทยาศาสตร์ โดยคำนึงถึงความเป็นไปได้ในเชิงเศรษฐกิจสังคมและเทคโนโลยีที่เกี่ยวข้อง อาศัยอำนาจตามความในมาตรา ๓๕ แห่งพระราชบัญญัติส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ. ๒๕๓๕ และคำสั่งสำนักนายกรัฐมนตรี ที่ ๑๑/๒๕๕๐ คณะกรรมการสิ่งแวดล้อมแห่งชาติ จึงออกประกาศกำหนดค่าระดับเสียงรบกวน ไว้ดังต่อไปนี้

ข้อ ๑ ให้ยกเลิกประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ ๑๑ (พ.ศ. ๒๕๔๓) ลงวันที่ ๖ มิถุนายน ๒๕๔๓ เรื่อง ค่าระดับเสียงรบกวน

ข้อ ๒ ให้กำหนดระดับเสียงรบกวนเท่ากับ ๑๐ เดซิเบลเอ  
หากระดับการรบกวนที่คำนวณได้มีค่ามากกว่าระดับเสียงรบกวนตามวรรคแรก ให้ถือว่าเป็นเสียงรบกวน

ข้อ ๓ วิธีการตรวจวัดระดับเสียงพื้นฐาน ระดับเสียงขณะไม่มีการรบกวน การตรวจวัด และกำหนดระยะเวลาหับเสียงขณะมีการรบกวน การคำนวณค่าระดับการรบกวน และแบบบันทึกการตรวจวัด เสียงรบกวนให้ยื่นไปตามที่ คณะกรรมการควบคุมมลพิษประกาศในราชกิจจานุเบกษา

ประกาศ ณ วันที่ ๒๕ มิถุนายน พ.ศ. ๒๕๕๐  
ใจเลิด ปันเปี่ยมวิชัย  
รองนายกรัฐมนตรี  
ประธานกรรมการสิ่งแวดล้อมแห่งชาติ



# ภาคผนวก จ

เอกสารการสอบเทียบเครื่องมือตรวจวิเคราะห์



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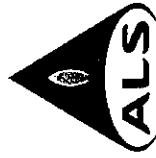
Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Ambient	Total Suspended Particulate	High Volume	RYG_FS0394	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_FS0393	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_FS0396	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_FS0291	-	-	On site Calibration
Ambient	Total Suspended Particulate	Digital Balance	RYG_EN0001	23-Mar-22	23-Mar-23	12
Ambient	Particulate Matter (PM-10)	High Volume	RYG_FS0185	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	RYG_FS0186	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	RYG_FS0400	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	RYG_FS0398	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	Digital Balance	RYG_EN0001	23-Mar-22	23-Mar-23	12
Ambient	Nitrogen Dioxide	NO2 Analyzer	RYG_FS0463	4-Jan-22	4-Jul-22	6
Ambient	Nitrogen Dioxide	NO2 Analyzer	RYG_FS0264	4-Jan-22	4-Jul-22	6
Ambient	Nitrogen Dioxide	NO2 Analyzer	RYG_FS0533	4-Jan-22	4-Jul-22	6
Ambient	Nitrogen Dioxide	NO2 Analyzer	RYG_FS0535	4-Jan-22	4-Jul-22	6
Ambient	Sulfur Dioxide	SO2 Analyzer	RYG_FS0462	4-Jan-22	4-Jul-22	6
Ambient	Sulfur Dioxide	SO2 Analyzer	RYG_FS0263	4-Jan-22	4-Jul-22	6
Ambient	Sulfur Dioxide	SO2 Analyzer	RYG_FS0532	4-Jan-22	4-Jul-22	6
Ambient	Sulfur Dioxide	SO2 Analyzer	RYG_FS0534	4-Jan-22	4-Jul-22	6
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	RYG_FS0530	14-Jul-21	12-Jan-23	18
Noise	Leq 24 hrs	Sound Calibrator	RYG_FS0215	9-Aug-21	9-Aug-22	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_FS0431	21-Jan-22	21-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_FS0438	6-Aug-21	6-Aug-22	12



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Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Noise	Leq 5 min	Sound Calibrator	RYG_FS0215	9-Aug-21	9-Aug-22	12
Noise	Leq 5 min	Sound Level Meter	RYG_FS0431	21-Jan-22	21-Jan-23	12
Noise	Leq 5 min	Sound Level Meter	RYG_FS0438	6-Aug-21	6-Aug-22	12
Noise	Noise Annoyance	Sound Calibrator	RYG_FS0215	9-Aug-21	9-Aug-22	12
Noise	Noise Annoyance	Sound Level Meter	RYG_FS0431	21-Jan-22	21-Jan-23	12
Noise	Noise Annoyance	Sound Level Meter	RYG_FS0438	6-Aug-21	6-Aug-22	12
Noise	Noise Annoyance	Sound Calibrator	RYG_FS0215	9-Aug-21	9-Aug-22	12
Noise	Noise Annoyance	Sound Level Meter	RYG_FS0437	6-Aug-21	6-Aug-22	12
Water Lab	Hexavalent Chromium	Spectrophotometer	BKK_EN0018	15-Oct-21	15-Oct-22	12
Water Lab	Silver	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Silver	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Silver	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Aluminium	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Aluminium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Aluminium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Copper	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Copper	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Copper	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Lead	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Lead	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Lead	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Nickel	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18



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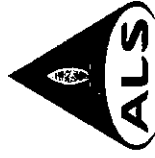
Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Water Lab	Nickel	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Nickel	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Arsenic	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Arsenic	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Arsenic	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Cadmium	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Cadmium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Cadmium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Zinc	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Zinc	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Zinc	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Trivalent Chromium	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Trivalent Chromium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Trivalent Chromium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Mercury	CVAFS	BKK_EL0011	7-Jun-22	6-Jun-23	12
Water Lab	Cyanide	Spectrophotometer	BKK_EN0018	15-Oct-21	15-Oct-22	12
Water Lab	Cyanide	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Phenol	Spectrophotometer	BKK_EN0018	15-Oct-21	15-Oct-22	12
Water Lab	Phenol	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	pH at 25 oC	pH meter	BKK_EN0072	26-Mar-21	24-Sep-22	18
Water Lab	Ammonia Nitrogen	Discrete analyzer	BKK_EN0037	28-Jun-21	28-Jun-22	12
Water Lab	Dissolved Oxygen	Burette	BKK_EN0171	30-Mar-21	28-Sep-22	18



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Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Water Lab	Dissolved Oxygen	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Water Lab	Nitrate	Ion Chromatography	BKK_EN0069	12-Jan-22	12-Jan-23	12
Water Lab	BOD (5 days at 20°C)	DO Meter	BKK_EN0205	19-Jan-21	20-Jul-22	18
Water Lab	BOD (5 days at 20°C)	Incubator	BKK_EN0005	4-Oct-21	4-Apr-23	18
Water Lab	Temperature	pH Meter	BKK_LG0031	23-Dec-21	23-Dec-22	12
Water Lab	Total Coliform	Autoclave	BKK_ML0043	1-Dec-21	1-Jun-23	18
Water Lab	Total Coliform	Incubator	BKK_ML0010	21-Jan-22	22-Jul-23	18
Water Lab	Total Coliform	Hot Air Oven	BKK_ML0013	7-Jun-21	6-Dec-22	18
Water Lab	Fecal Coliform	Autoclave	BKK_ML0043	1-Dec-21	1-Jun-23	18
Water Lab	Fecal Coliform	Incubator	BKK_ML0010	21-Jan-22	22-Jul-23	18
Water Lab	Fecal Coliform	Hot Air Oven	BKK_ML0013	7-Jun-21	6-Dec-22	18
Water Lab	Fecal Coliform	Water Bath	BKK_ML0052	21-Feb-22	21-Feb-23	12
Sludge	Silver	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Silver	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Silver	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Aluminium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Aluminium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Aluminium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Mercury	CVAFS	BKK_EL0011	7-Jun-22	6-Jun-23	12
Sludge	Copper	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Copper	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Copper	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18



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Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Sludge	Nickel	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Nickel	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Nickel	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Arsenic	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Arsenic	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Arsenic	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Cadmium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Cadmium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Cadmium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Zinc	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Zinc	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Zinc	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Trivalent Chromium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Trivalent Chromium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Trivalent Chromium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Sludge	Hexavalent Chromium	Spectrophotometer	BKK_EN0018	15-Oct-21	15-Oct-22	12
Soil	Mercury	CVAFS	BKK_EL0011	7-Jun-22	6-Jun-23	12
Soil	Aluminium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Aluminium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Aluminium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Arsenic	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Arsenic	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18



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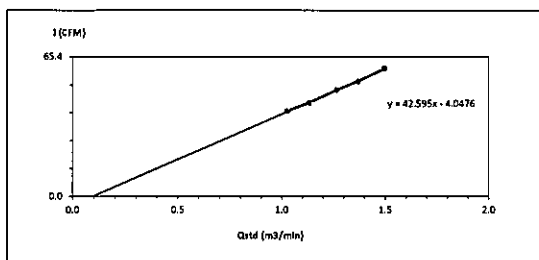
Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Soil	Arsenic	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Cadmium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Cadmium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Cadmium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Copper	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Copper	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Copper	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Nickel	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Nickel	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Nickel	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Silver	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Silver	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Silver	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Trivalent Chromium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Trivalent Chromium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Trivalent Chromium	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Zinc	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Zinc	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Zinc	Chamber (Cold Room)	BKK_EN0167	18-May-21	16-Nov-22	18
Soil	Hexavalent Chromium	Spectrophotometer	BKK_EN0018	15-Oct-21	15-Oct-22	12



### High Volume Air Sampler Calibration Worksheet

Project Site: Rojana Industrial Park Rayong 2 Co., Ltd. Barometric Pressure (mm Hg): 756  
Calibrate Location: ท่าอากาศยาน (A1) Temperature (°C): 32  
Calibrate Date: 17-Jun-22 High Volume ID: RYG-FS0394  
Calibration Sheet No.: C-170622-RYG-FS0394 High Volume Model: TE-S170D  
Calibrator ID: RYG-FS0206 High Volume S/N: 5690  
Calibrator Model: TE-S028A Calibrator Slope: 1.4867  
Calibrator S/N: 1543 Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.2	1.0281	40	Slope: 42.5951 Intercept: -4.0476 Correlation Coefficient: 0.9994
2	2.7	1.1341	44	
3	3.4	1.2672	50	
4	4.0	1.3707	54	
5	4.8	1.4973	60	



Calibrated by: Mr. Anurak Tongkajonsakda  
Field Scientist(1)

Approved by: Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

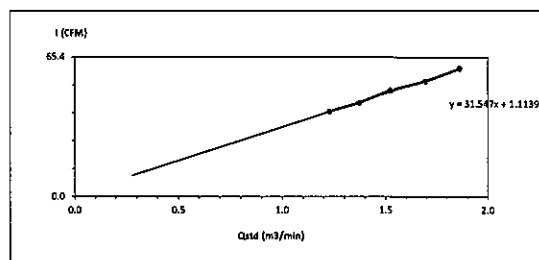
FORM NO: F 06-073 REVISION NO.: ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site: Rojana Industrial Park Rayong 2 Co., Ltd. Barometric Pressure (mm Hg): 756  
Calibrate Location: ท่าอากาศยาน (A2) Temperature (°C): 32  
Calibrate Date: 17-Jun-22 High Volume ID: RYG-FS0393  
Calibration Sheet No.: C-170622-RYG-FS0393 High Volume Model: TE-S170D  
Calibrator ID: RYG-FS0206 High Volume S/N: 5682  
Calibrator Model: TE-S028A Calibrator Slope: 1.4867  
Calibrator S/N: 1543 Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	3.2	1.2307	40	Slope: 31.5466 Intercept: 1.1139 Correlation Coefficient: 0.9979
2	4.0	1.3707	44	
3	5.0	1.5273	50	
4	6.2	1.6956	54	
5	7.5	1.8505	60	



Calibrated by: Mr. Anurak Tongkajonsakda  
Field Scientist(1)

Approved by: Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

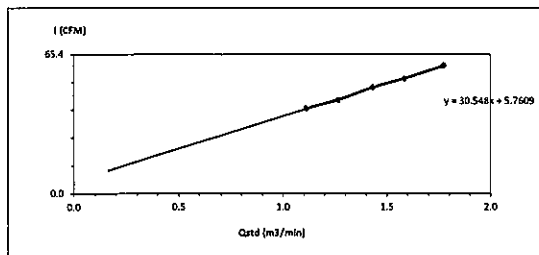
FORM NO: F 06-073 REVISION NO.: ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site: Rojana Industrial Park Rayong 2 Co., Ltd. Barometric Pressure (mm Hg): 756  
Calibrate Location: ท่าอากาศยาน (A3) Temperature (°C): 32  
Calibrate Date: 17-Jun-22 High Volume ID: RYG-FS0295  
Calibration Sheet No.: C-170622-RYG-FS0295 High Volume Model: TE-S170D  
Calibrator ID: RYG-FS0206 High Volume S/N: 5688  
Calibrator Model: TE-S028A Calibrator Slope: 1.4867  
Calibrator S/N: 1543 Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.6	1.1137	40	Slope: 30.5477 Intercept: 5.7609 Correlation Coefficient: 0.9991
2	3.4	1.2672	44	
3	4.4	1.4355	50	
4	5.4	1.5854	54	
5	6.8	1.7737	60	



Calibrated by: Mr. Anurak Tongkajonsakda  
Field Scientist(1)

Approved by: Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

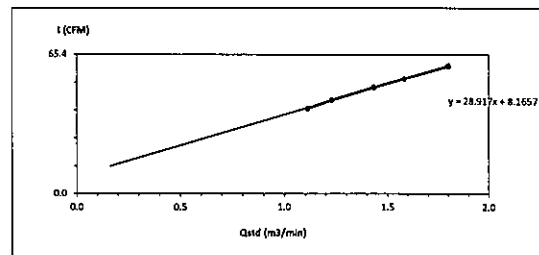
FORM NO: F 06-073 REVISION NO.: ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site: Rojana Industrial Park Rayong 2 Co., Ltd. Barometric Pressure (mm Hg): 756  
Calibrate Location: ท่าอากาศยาน (A4) Temperature (°C): 32  
Calibrate Date: 17-Jun-22 High Volume ID: RYG-FS0291  
Calibration Sheet No.: C-170622-RYG-FS0291 High Volume Model: TE-S170D  
Calibrator ID: RYG-FS0206 High Volume S/N: 5333  
Calibrator Model: TE-S028A Calibrator Slope: 1.4867  
Calibrator S/N: 1543 Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.6	1.1137	40	Slope: 28.9174 Intercept: 8.1657 Correlation Coefficient: 0.9993
2	3.2	1.2307	44	
3	4.4	1.4355	50	
4	5.4	1.5854	54	
5	7.0	1.7989	60	



Calibrated by: Mr. Anurak Tongkajonsakda  
Field Scientist(1)

Approved by: Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

FORM NO: F 06-073 REVISION NO.: ISSUE DATE: 14/03/16





**PENTA CALIBRATION CO., LTD.**  
66/124 The Connect 33 Village Kancharaphisek Road  
Dokmai Pratek Bangkok 10250  
Tel: +66 (0) 2069-9773  
www.pentalcal.com

## Certificate of Calibration

Represent to Certificate of Calibration, PTC07/22102

Certificate No.: PTC07/22102 Page: 1 of 2  
Equipment: Digital Balance Condition: Normal  
Manufacturer: Sartorius Serial No: 25409084  
Model: LA130S-F ID No: RYG\_EN0001  
Type of Balance: Single interval



Customer: ALS Laboratory Group (Thailand) Co., Ltd.  
616/10 Moo 5 T.Maenamkoo, A.Pluakdaeng,  
Rayong 21140, Thailand

REVIEW BY: *Thirabul*  
APPROVED BY: *R. J.*  
NEXT CAL. DATE: 23/09/23

Environment Condition: Temperature 23.9 °C ± 0.3 °C  
Humidity 58.1 %RH ± 4.4 %RH  
Air density 1.17 kg/m<sup>3</sup>

Calibration Place: ALS Laboratory Group (Thailand) Co., Ltd.  
616/10 Moo 5 T.Maenamkoo, A.Pluakdaeng,  
Rayong 21140, Thailand

The Method used: In house method, PTC-WI-07, base on Euramet cg. 18

Traceability: This certificate is traceable to the SI Units through Thai Calibration Service Co., Ltd.  
NSC-ONS Accreditation No.: Calibration 0189

Date Received: March 23, 2022

Calibration Date: March 23, 2022

Issued Date: March 25, 2022

Calibration By: Mr. Rungroje Metakul



Reviewed by: *(Signature)*  
(Mr. Kiangsak Kalsat)  
Reviewed by

Approved By: *(Signature)*  
(Mr. Keattisak Kerdlo)  
Laboratory Manager

This certificate is issued by the unit of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognized national standard laboratories.

The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The effect that the results relate only to the items calibrated.

This calibration certificate shall not be reproduced except in full only, without written approval from penta calibration co., ltd

PTC-ENC-07-02 2 Feb 2020



**PENTA CALIBRATION CO., LTD.**  
66/124 The Connect 33 Village Kancharaphisek Road  
Dokmai Pratek Bangkok 10250  
Tel: +66 (0) 2069-9773  
www.pentalcal.com

Represent to Certificate of Calibration, PTC07/22102

Certificate No.: PTC07/22102

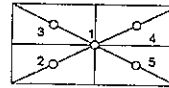
Page: 2 of 2

## Measurement Results:

Without Adjustment:

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3, 1/2 or of Maximum capacity



Eccentricity test 50 (g)

Position (g)				
1	2	3	4	5
0.0000	0.0000	-0.0001	0.0000	0.0001
Maximum deviation: 0.0001				

Repeatability Test: Weight to be 1/2 ≤ L<sub>1</sub> ≤ Maximum capacity

Determination of the standard deviation of weighing balance, Readability 0.0001 (g)

Nominal test value (g)	Standard Deviation
100	0.00009

Error of Indication: from nominal value, Readability 0.0001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
0	0.00000	0.0000	0.0000	0.00026	2.87
0.01	0.01000	0.0100	0.0000	0.00026	2.65
0.05	0.05000	0.0500	0.0000	0.00026	2.65
0.1	0.10000	0.1000	0.0000	0.00026	2.65
0.5	0.50000	0.4999	0.0001	0.00026	2.65
1	1.00000	0.9999	0.0001	0.00026	2.65
2	2.00000	1.9999	0.0001	0.00026	2.65
5	5.00001	5.0000	0.0000	0.00026	2.65
10	10.00000	10.0001	-0.0001	0.00026	2.65
20	20.00003	20.0001	-0.0001	0.00026	2.52
100	100.00004	100.0001	-0.0001	0.00027	2.18

Note: Weight of adjust (g)

The End of Certificate

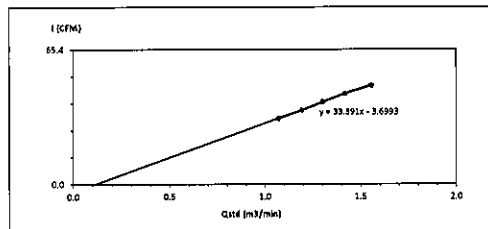
PTC-ENC-07-02 2 Feb 2020



## High Volume Air Sampler Calibration Worksheet

Project Site: Rajana Industrial Park Rayong 2 Co., Ltd.  
Calibrate Location: 5x1000mm (A1)  
Calibrate Date: 17-Jun-22  
Calibration Sheet No: C-170622-RYG\_PS0185  
Calibrator ID: RYG\_PS0206  
Calibrator Model: TE-5028A  
Calibrator S/N: 1543  
Barometric Pressure (mm Hg): 756  
Temperature (°C): 32  
High Volume ID: RYG\_PS0185  
High Volume Model: TE-5009X  
High Volume S/N: 4793  
Calibrator Slope: 1.4867  
Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>air</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.4	1.0718	32	Slope: 23.3905 Intercept: -3.6993 Correlation Coefficient: 0.9993
2	3.0	1.1930	36	
3	3.6	1.3027	40	
4	4.3	1.4196	44	
5	5.2	1.5566	48	



Calibrated by: *(Signature)*  
(Mr. Anurak Tonghajomakda)  
Field Scientist (1)

Approved by: *(Signature)*  
(Mr. Noppong Juntarupan)  
Envirom Field Coordinator Scientist (3)

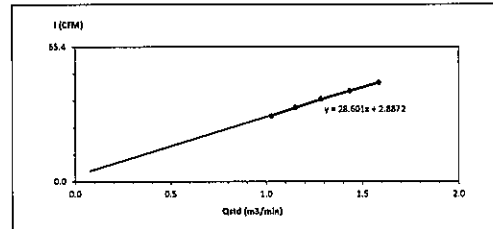
FORM NO: F 06-074 REVISION NO.: ISSUE DATE: 14/03/16



## High Volume Air Sampler Calibration Worksheet

Project Site: Rajana Industrial Park Rayong 2 Co., Ltd.  
Calibrate Location: 5x1000mm (A2)  
Calibrate Date: 17-Jun-22  
Calibration Sheet No: C-170622-RYG\_PS0186  
Calibrator ID: RYG\_PS0206  
Calibrator Model: TE-5028A  
Calibrator S/N: 1543  
Barometric Pressure (mm Hg): 756  
Temperature (°C): 32  
High Volume ID: RYG\_PS0186  
High Volume Model: TE-5009X  
High Volume S/N: 4794  
Calibrator Slope: 1.4867  
Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>air</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.2	1.0281	32	Slope: 26.6007 Intercept: 2.8872 Correlation Coefficient: 0.9991
2	2.8	1.1541	36	
3	3.5	1.2851	40	
4	4.4	1.4355	44	
5	5.4	1.5854	48	



Calibrated by: *(Signature)*  
(Mr. Anurak Tonghajomakda)  
Field Scientist (1)

Approved by: *(Signature)*  
(Mr. Noppong Juntarupan)  
Envirom Field Coordinator Scientist (3)

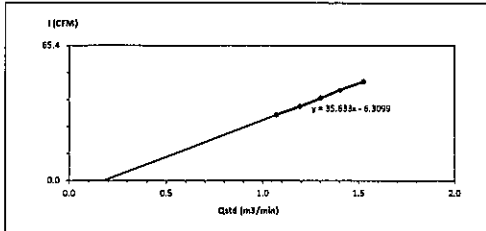
FORM NO: F 06-074 REVISION NO.: ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site: Rojana Industrial Park Rayong 2 Co., Ltd  
 Calibrate Location: สุราษฎร์ธานี (SA)  
 Calibrate Date: 17-Jun-22  
 Calibration Sheet No.: C-170622-RYG-FS0400  
 Calibrator ID: RYG-FS0206  
 Calibrator Model: TE-5028A  
 Calibrator S/N: 1543  
 Barometric Pressure (mm Hg): 756  
 Temperature (°C): 32  
 High Volume ID: RYG-FS0400  
 High Volume Model: TE-5009X  
 High Volume S/N: 569  
 Calibrator Slope: 1.4867  
 Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>air</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.4	1.0718	32	Slope: 35.6327 Intercept: -6.3099 Correlation Coefficient: 0.9995
2	3.0	1.1930	36	
3	3.6	1.3027	40	
4	4.2	1.4035	44	
5	5.0	1.5273	48	



Calibrated by: [Signature]  
 (Mr. Anurak Tongkhajonsakda)  
 Field Scientist (1)

Approved by: [Signature]  
 (Mr. Noppong Juntaruporn)  
 Enviro Field Coordinator Scientist (3)

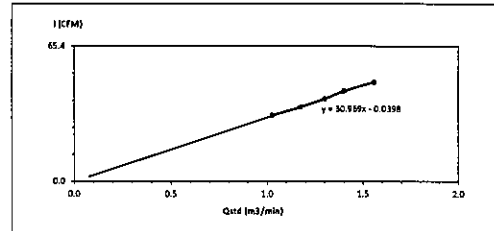
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site: Rojana Industrial Park Rayong 2 Co., Ltd  
 Calibrate Location: สุราษฎร์ธานี (SA)  
 Calibrate Date: 17-Jun-22  
 Calibration Sheet No.: C-170622-RYG-FS0398  
 Calibrator ID: RYG-FS0206  
 Calibrator Model: TE-5028A  
 Calibrator S/N: 1543  
 Barometric Pressure (mm Hg): 756  
 Temperature (°C): 32  
 High Volume ID: RYG-FS0398  
 High Volume Model: TE-5009X  
 High Volume S/N: 568  
 Calibrator Slope: 1.4867  
 Calibrator Intercept: -0.0445

Test No.	Delta H <sub>2</sub> O (Inch)	Q <sub>air</sub> (m <sup>3</sup> /min)	I: Chart (CFM)	Linear Regression
1	2.2	1.0281	32	Slope: 30.9687 Intercept: -0.0398 Correlation Coefficient: 0.9982
2	2.9	1.1737	36	
3	3.6	1.3027	40	
4	4.2	1.4035	44	
5	5.2	1.5566	48	



Calibrated by: [Signature]  
 (Mr. Anurak Tongkhajonsakda)  
 Field Scientist (1)

Approved by: [Signature]  
 (Mr. Noppong Juntaruporn)  
 Enviro Field Coordinator Scientist (3)

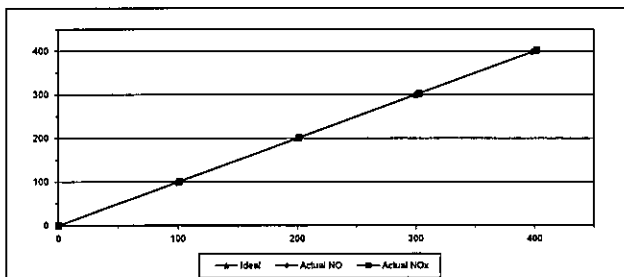
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



### MULTIPOINT CALIBRATION REPORT

Calibration Date: 4-Jan-22  
 Manufacturer: HORIBA  
 Serial No.: R0610177  
 Calibrator Manufacturer: Teledyne API  
 Serial No.: 947  
 Std. Gas Concentration (PPM): 51.33  
 Cylinder Pressure (psi): 1200  
 Certified Date: 18-Mar-14  
 Equipment Name: NOx Analyzer  
 Model: APNA-370  
 Equipment ID: RYG-FS0463  
 Model: 700  
 Cylinder No.: LL38633  
 Certified By: Algae Inc.  
 Expired Date: 18-Mar-22

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20	101.10	1.10	1.10
2	200.00	201.80	1.80	0.90	201.50	1.50	0.75
3	300.00	298.40	-0.60	-0.20	302.60	2.60	0.87
4	400.00	398.10	-1.90	-0.47	401.90	1.90	0.47
AVERAGE (%)				-0.18			0.68



Calibrated By: [Signature]  
 (Mr. Jirawat Sakam)  
 Field Environmental Scientist (3)

Approved By: [Signature]  
 (Mr. Sarayuth Jitranont)  
 Assistant General Manager

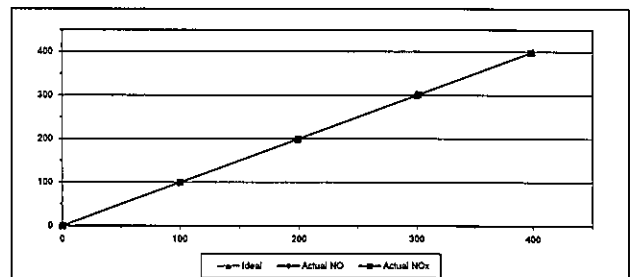
ALS Laboratory Group  
 FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



### MULTIPOINT CALIBRATION REPORT

Calibration Date: 4-Jan-22  
 Manufacturer: HORIBA  
 Serial No.: 80314J3K  
 Calibrator Manufacturer: Teledyne API  
 Serial No.: 947  
 Std. Gas Concentration (PPM): 51.33  
 Cylinder Pressure (psi): 1200  
 Certified Date: 18-Mar-14  
 Equipment Name: NOx Analyzer  
 Model: APNA-370  
 Equipment ID: RYG-FS0284  
 Model: 700  
 Cylinder No.: LL38633  
 Certified By: Algae Inc.  
 Expired Date: 18-Mar-22

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.05	0.05	0.05	0.10	0.10	0.10
1	100.00	99.20	-0.80	-0.80	100.10	0.10	0.10
2	200.00	198.40	-1.60	-0.80	199.10	-0.90	-0.45
3	300.00	298.80	-1.40	-0.47	301.50	1.50	0.50
4	400.00	398.10	-1.90	-0.47	398.00	-2.00	-0.50
AVERAGE (%)				-0.50			-0.05



Calibrated By: [Signature]  
 (Mr. Jirawat Sakam)  
 Field Environmental Scientist (3)

Approved By: [Signature]  
 (Mr. Sarayuth Jitranont)  
 Assistant General Manager

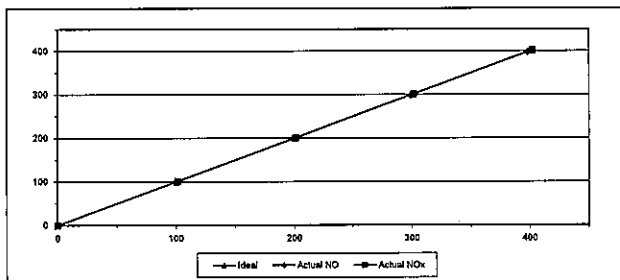
ALS Laboratory Group  
 FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	7238	Equipment ID	RYG_F80533
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	847		
Std. Gas Concentration (PPM)	51.33	Cylinder No.	LL38633
Cylinder Pressure (psi)	1200	Certified By	Algas Inc.
Certified Date	18-Mar-14	Expired Date	18-Mar-22

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.50	-0.50	-0.50	101.10	1.10	1.10
2	200.00	198.70	-1.30	-0.65	201.20	1.20	0.60
3	300.00	298.80	-1.20	-0.40	301.10	1.10	0.37
4	400.00	398.00	-2.00	-0.50	402.00	2.00	0.50
AVERAGE (%)				-0.38			0.53



Calibrated By

*(Signature)*  
(Mr. Jirawat Sakam)  
Field Environmental Scientist (3)

Approved By

*(Signature)*  
(Mr. Sarayuth Jittharont)  
Assistant General Manager

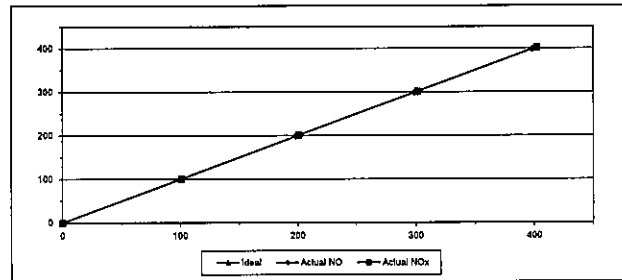
ALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	7238	Equipment ID	RYG_F80535
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	847		
Std. Gas Concentration (PPM)	51.33	Cylinder No.	LL38633
Cylinder Pressure (psi)	1200	Certified By	Algas Inc.
Certified Date	18-Mar-14	Expired Date	18-Mar-22

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.60	-0.40	-0.40	101.00	1.00	1.00
2	200.00	198.30	-1.70	-0.85	201.10	1.10	0.55
3	300.00	298.80	-1.20	-0.40	301.50	1.50	0.50
4	400.00	396.20	-1.80	-0.45	402.30	2.30	0.58
AVERAGE (%)				-0.40			0.55



Calibrated By

*(Signature)*  
(Mr. Jirawat Sakam)  
Field Environmental Scientist (3)

Approved By

*(Signature)*  
(Mr. Sarayuth Jittharont)  
Assistant General Manager

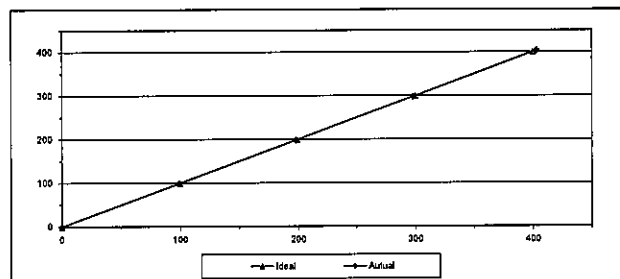
ALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-22	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	XL28Y85B	Equipment ID	RYG_F80462
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	847		
Std. Gas Concentration (PPM)	50.87	Cylinder No.	LL38633
Cylinder Pressure (psi)	1200	Certified By	Algas Inc.
Certified Date	18-Mar-14	Expired Date	18-Mar-22

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	99.10	-0.90	-0.90
2	200.00	198.10	-1.90	-0.95
3	300.00	297.90	-2.10	-0.70
4	400.00	403.20	3.20	0.80
AVERAGE (%)				-0.33



Calibrated By

*(Signature)*  
(Mr. Jirawat Sakam)  
Field Environmental Scientist (3)

Approved By

*(Signature)*  
(Mr. Sarayuth Jittharont)  
Assistant General Manager

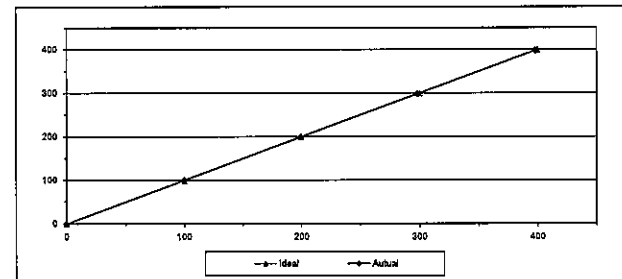
ALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-22	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	YPRXJ20	Equipment ID	RYG_F80283
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	847		
Std. Gas Concentration (PPM)	50.87	Cylinder No.	LL38633
Cylinder Pressure (psi)	1200	Certified By	Algas Inc.
Certified Date	18-Mar-14	Expired Date	18-Mar-22

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	99.80	-0.20	-0.20
2	200.00	199.40	-0.60	-0.30
3	300.00	298.20	-1.80	-0.60
4	400.00	398.00	-2.00	-0.50
AVERAGE (%)				-0.30



Calibrated By

*(Signature)*  
(Mr. Jirawat Sakam)  
Field Environmental Scientist (3)

Approved By

*(Signature)*  
(Mr. Sarayuth Jittharont)  
Assistant General Manager

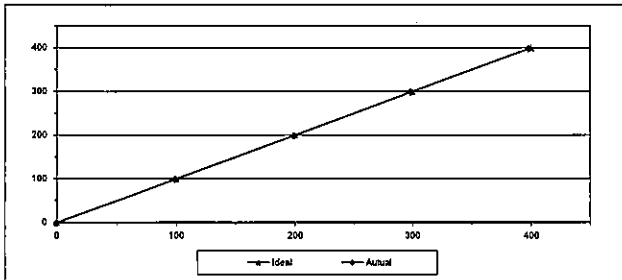
ALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-22	Equipment Name	SO2 Analyzer
Manufacturer	Teledyne API	Model	T100
Serial No.	8080	Equipment ID	RYG_FB0532
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	50.87	Cylinder No.	LL36833
Cylinder Pressure (psi)	1200	Certified By	Algas Inc.
Certified Date	18-Mar-14	Expired Date	18-Mar-22

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	198.50	-1.40	-0.70
3	300.00	298.30	-1.70	-0.57
4	400.00	397.60	-2.40	-0.60
AVERAGE (%)				-0.59



Calibrated By

(Mr.Jirawat Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr.Saranyuth Jitranont)  
Assistant General Manager

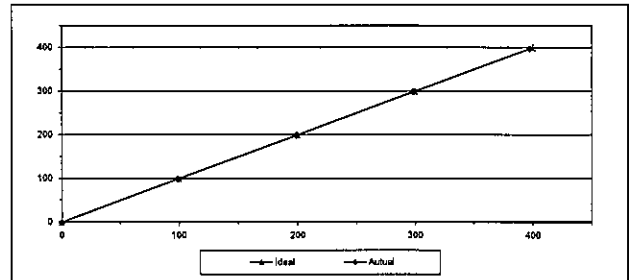
ALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-22	Equipment Name	SO2 Analyzer
Manufacturer	Teledyne API	Model	T100
Serial No.	8081	Equipment ID	RYG_FB0534
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	50.87	Cylinder No.	LL36833
Cylinder Pressure (psi)	1200	Certified By	Algas Inc.
Certified Date	18-Mar-14	Expired Date	18-Mar-22

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.80	-1.20	-1.20
2	200.00	198.70	-1.30	-0.65
3	300.00	298.30	-1.70	-0.57
4	400.00	397.30	-2.70	-0.67
AVERAGE (%)				-0.60



Calibrated By

(Mr.Jirawat Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr.Saranyuth Jitranont)  
Assistant General Manager

ALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



63/14-15,67/35-36, Soi Petchkasem 7,7/1, Petchkasem Rd,  
Wallthepa, Bangkokyai, Bangkok 10600 Thailand.  
Tel: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranelee.com

## CERTIFICATE OF CALIBRATION

Certificate No: WS-08072021  
Page 1 of 2 pages

Measurement Item: Cup anemometer with data logger

Manufacturer: Data logger: Novatek, Cup anemometer: Novatek

Model/Type: Data logger: I10-VN126DL-D, Cup anemometer: WS-09F

Serial Number: Data logger: A5060, Cup anemometer: WS0 014

ID No: Data logger: , Cup anemometer:

Customer: ALS Laboratory Group (Thailand) Co., Ltd., 104 Phatthanasirak Rd, Phatthanasirak Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand

Test Conditions: Wind tunnel cross flow section area: 900 cm<sup>2</sup>, Anemometer frontal area: 160 cm<sup>2</sup>, Diameter of mounting pipe: mm, Radius ratio of test object: 0.111 (-)

Test Conditions: Air temperature: 20.4 ±0.5 °C, Air pressure: 1006.2 ±0.4 hPa, Relative air humidity: 59.0 ±3.6 %RH

Calibration Procedure: Calibration was carried out using the ISO 9140 12-1 (C1): 2005-Foxair Performance Measurement of Directly Producing Wind Turbines, UCASACT Anemometer Calibration Procedure - Version 2: 2009.

Traceability: This calibration documents the procedure to national standards, which realize the unit of measurement according to the International System of Units (SI) through National Institute of Metrology (Thailand) (NIMT).

Measurement Date: 1 Jul 14, 2021,  
Issued Date: 1 Jul 15, 2021

Calibrated By:  
☒ Mr. Sorwet Thirathed  
☐ Miss Orathai Waiwattave



Approved Signature: Mr. Parinya Booncharoen  
Technical Support  
and Calibration Manager

THIS CERTIFICATE MAY NOT BE REPRODUCED EXCEPT IN FULL, UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.



63/14-15,67/35-36, Soi Petchkasem 7,7/1, Petchkasem Rd,  
Wallthepa, Bangkokyai, Bangkok 10600 Thailand.  
Tel: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranelee.com

Continuation of Certificate of Calibration Number

Certificate No: WS-08072021  
Page 2 of 2 Pages

Result of calibration: ☒ Without adjustment ☐ With adjustment  
Calibration in the range of 1 - 10 m/s at a calibration interval of 1 m/s.  
The results of calibration and associated measurement uncertainties are reported in the table below.

Wind Reading m/s	Wind Reading m/s	Error (m/s)	Uncertainty (%)
2.069	1.9	-0.2	2.5
4.122	4.0	0.1	1.2
6.022	6.0	0.0	0.9
7.977	8.0	0.0	0.84
9.98	10.0	0.0	0.69
12.02	12.1	0.1	0.47
13.99	14.2	0.2	0.45
15.98	16.2	0.2	0.55
17.99	18.2	0.2	0.39
19.02	19.1	0.1	0.45
11.02	11.1	0.1	0.63
8.09	8.0	0.0	0.70
5.98	7.0	0.0	0.98
6.112	5.0	-0.1	1.2
2.975	3.0	0.0	1.5
1.023	0.0	0.1	5.3

MUC: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.

Appendix 1: Instrumentations

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Plot Mate	TESTO INC.	02352145	July 16, 2020	MAI 0035 20	0 - 30 m/s
2	Precision Differential Pressure Meter	Zijlab	DPW2600	July 16, 2020	MAI 0035 20	0 - 32 m/s
3	Air velocity transducer (hot wire)	TSI INC.	8445 12	July 23, 2020	MAI 0035M-20	0 - 5 m/s
4	Temperature	DS18B20	DS18B20	March 30, 2021	CP-0275-21	30 - 70 °C
5	Relative humidity	Zijlab	DSH-RH1	March 30, 2021	DP-0303-2021	0 - 100 %RH
6	Atmospheric pressure	Zijlab	DSH-TP	March 30, 2021	BP 0103-2021	500 - 1100 hPa
7	Wind Tunnel	DS20M	MP3300			0 - 20 m/s

\*\*\*End of certificate of calibration\*\*\*



## CERTIFICATE OF CALIBRATION

Certificate No: WD-08072021  
Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger

Manufacturer : Data logger: Novolyne,  
: Wind direction sensor: Novolyne.

Model/Type : Data logger: 110-WS-20DL-D,  
: Wind direction sensor: WS-02P.

Serial Number : Data logger: A5000,  
: Wind direction sensor: WSD-014.

ID No : Data logger :  
: Wind direction sensor :

Customer : ALS laboratory group (Thailand) Co.Ltd.  
104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250  
Thailand.

Environmental Conditions:  
The measurement was carried out in an ambient temperature of (23±3)°C, and relative humidity of (40±10)%.

Measurement Method:  
The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counter-clockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability:  
The measurement results are traceable to the International system of units (SI) through Certificate No: CC503-07-0045,  
Certificate No: KW563/0044.

Measurement Date : Jul 14, 2021.  
Issued Date : Jul 15, 2021.



Approved Signatory: *[Signature]*  
Mr. Parinya Booncharoen  
Technical Support  
and Calibration Manager

Performed by  
☒ Mr. Soravit Thachalad  
☐ Miss Orathai Wiwatwittaya

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Continuation of Certificate of Calibration Number

Certificate No: WD-08072021  
Page 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.  
Calibration in the range of 0 - 360 ° at a calibration interval of 45°.  
The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC* Reading (°)	Error (°)	Uncertainty ±(°)
1	Clockwise	0/360	360	359	-1	3.0
2		45	45	42	-3	3.0
3		90	90	87	-3	3.0
4		135	135	134	-1	3.0
5		180	180	182	2	3.0
6		225	225	226	1	3.0
7		270	270	273	3	3.0
8		315	315	318	3	3.0
9	Counter Clockwise	0/360	360	359	-1	3.0
10		45	45	42	-3	3.0
11		90	90	87	-3	3.0
12		135	135	134	-1	3.0
13		180	180	182	2	3.0
14		225	225	226	1	3.0
15		270	270	273	3	3.0
16		315	315	318	3	3.0

UUC\*: Unit Under Calibration. The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

\*\*\*End of Certificate of Calibration\*\*\*



## CERTIFICATE OF CALIBRATION

Certificate No.: CL-050-64  
Page 1 of 2

Equipment Name : Data Logger with Temperature  
Sensor

Manufacturer : Novolyne  
Model : 110-WS-25  
Serial No. : A5660  
ID No. : -

Customer  
Name : ALS laboratory group (Thailand) Co., Ltd.  
Address : 104 Phatthanakan 40, Phatthanakan  
Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok  
10250 Thailand.

Received date : 12 JUL 2021  
Calibration date : 13 JUL 2021  
Issue date : 13 JUL 2021

Reference Used During Calibration  
1. Standard Temperature Probe Model : STS-100 A500,  
Serial No. : 667682-09, Due date : 25 Mar 2022  
2. Digital Temperature Indicator Model : DTI-1000-A MK  
II, Serial No. : 671407-00591 Due date : 04 June 2022

Calibration Condition  
Temperature : (23±3)°C  
Relative Humidity : (55±15)%

Calibration Procedure  
The temperature calibration was done by In-House  
calibration method as WI-CL-001 according to  
comparison method with standard digital temperature  
indicator and standard temperature probe. The  
temperature scale use was based on ITS 90.

Traceability  
The measurement results are traceable to the  
international system of units (SI) through National  
Institute of Metrology Thailand (NIMT) Certificate  
number : TT-0036-21, Certificate number : ER-0032-  
21

Calibrated by  
☐ Mr. Soravit Thachalad  
☒ Miss Orathai Wiwatwittaya



Approved Signatory: *[Signature]*  
Mr. Parinya Booncharoen  
Technical Support  
and Calibration Manager

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Certificate No.: CL-050-64  
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment  
Calibration Range: 20°C - 40 °C

### Function

This equipment was connected with temperature sensor Model : HMP60 S/N : T0210901

Dimension : Diameter 12mm, Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty ±(°C)
60	20.050	19.7	-0.3	0.080
60	24.875	24.5	-0.4	0.13
60	29.864	29.5	-0.4	0.080
60	34.629	34.3	-0.5	0.080
60	39.831	39.4	-0.5	0.95

UUC\*: Unit Under Calibration  
The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

\* End of Certificate \*

## CALIBRATION REPORT

Calibration No.: PH-02072021  
Page 1 of 1 Pages

**Measurement Item** : Relative humidity with data logger.  
**Manufacturer** : Data logger: Novolyn,  
Relative humidity sensor: Novolyn.  
**Model/Type** : Data logger: 110-WB-200-LD,  
Relative humidity sensor: HMP60.  
**Serial Number** : Data logger: A5060,  
Relative humidity sensor: T0210001.  
**ID No** : Data logger :  
Relative humidity sensor :  
**Customer** : ALS laboratory group (Thailand) co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250  
Thailand.

**Environmental Condition:**  
The measurement was carried out in an ambient temperature of (25±3)°C and relative humidity of (50±15)%.

**Measurement Method:**  
The Relative humidity with data logger, Unit Under Calibration (UUC) was calibrated by comparison method with the equilibrium of standard salt solution (CH<sub>3</sub>COOK Potassium Acetate, Mg(NO<sub>3</sub>)<sub>2</sub> Magnesium Nitrate, KCl Potassium Chloride) to determine the errors.

**Measurement Date** : Jul. 14, 2021  
**Issued Date** : Jul. 14, 2021

**Measurement Result:**  
The results of calibration are reported in table below.

Standard salt solution	Standard (RH%)	UUC Reading	Error
CH <sub>3</sub> COOK Potassium Acetate	22.51	22.7	-0.2
Mg(NO <sub>3</sub> ) <sub>2</sub> Magnesium Nitrate	52.89	52.3	-0.6
KCl Potassium Chloride	84.34	83.6	-0.5

**Performed by**  
☒ Mr. Soravit Thachalad  
☐ Miss Orathai Wiewattayak



**Approved Signature:** *Orathai Wiewattayak*  
Mr. Panya Boonchaisri,  
Technician Support  
and Calibration Manager

THIS CALIBRATION REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.

## SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd, Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel: 0-2435-8800 Fax: 0-2433-1679 e-mail: cal-center@sithiporn.com http://www.sithiporn.com



Cert. No.: ACC21009  
Pages : 1 of 3

## Calibration Certificate

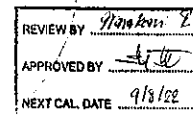
**Equipment** : SOUND CALIBRATOR  
**Manufacturer** : RION  
**Model** : NC-74  
**Serial No.** : 34178123  
**ID No.** : RYQ\_FS0215

**Condition As Found** : GOOD

**Customer** : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location** :  
**Ambient Temperature** : ( 23.0 ± 3 ) °C  
**Pressure** : ( 101.3 ± 3 ) kPa  
**Relative Humidity** : ( 50.0 ± 2.0 ) %

**Received Date** : 05 AUGUST 2021  
**Calibration Date** : 09 AUGUST 2021  
**Date of Issue** : 11 AUGUST 2021



**Calibrated by** : Nuthakorn Pisutpaian

**Approved by** : *T. Petchu.*  
( Thanakul Petchurui )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QF-TS12-04-04-020664

## SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

### Continuation of Calibration Certificate

Cert. No.: ACC21009  
Job No.: VC64AC0058  
Pages : 2 of 3

**Calibration Procedure** : CP-AC-03

#### Calibration Method :

This equipment was calibrated by based on IEC-60942-2003 Standard.  
The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

#### Condition of this result of calibration :

##### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	8846A	1997025	EEL.BP. 06/0264	05-Feb-22
Digital Multimeter	33461A	MY53220116	EEL.BP. 04/0264	10-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22
Audio Analyzer	AVR-3360A	V744B6069	EF-0010-21	10-Feb-22

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

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

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

## SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

### Continuation of Calibration Certificate

Cert. No.: ACC21009  
Job No.: VC64AC0058  
Pages : 3 of 3

#### Result of calibration :

##### 1. Sound pressure level

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Tolerance limit (dB)
94	94.06	0.06	0.14	0.40

##### 2. Frequency

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Uncertainty (%)	Tolerance limit (%)
1000	1001.5	0.1	0.1	1.0

##### 3. Total distortion

Measured value (%)	Uncertainty (%)	Tolerance limit (%)
1.67	0.30	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthon Rd, Bangbunruy, Bangkok 10700 THAILAND.  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22058  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No.: 00296518 / 179118 / 87525  
ID No.: RYG\_FS0431

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTANAKAN 40, PHATTANAKAN ROAD,  
KHWAENG PHATTANAKAN, KHET SUAN I. UANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 14 JANUARY 2022  
Calibration Date : 21-24 JANUARY 2022  
Date of Issue : 25 JANUARY 2022

REVIEW BY : *Nathakorn P.*  
APPROVED BY : *T. Petchurai*  
NEXT CAL. DATE : 31/1/23

Calibrated by : Nathakorn Pisutpaisan

Approved by :

*T. Petchurai*  
( Thanakul Petchurai )

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QI-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL-BP_05.0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL-BP_03.0264	08-Feb-22
Digital Multimeter	34461A	MY60024273	1-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KA1	34560495	AA-3003-21	16-Feb-22

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

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

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QI-TS12-04-04-020664

*T. Petchurai*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QI-TS12-04-04-020664

*T. Petchurai*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
14.6

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	11.6
C-weight	17.6
Flat	23.2

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.1	0.1	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.8	0.9	0.9	± 5.0

QI-TS12-04-04-020664

*T. Petchurai*

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	0.0	±2.0
125	0.0	0.0	-0.1	±1.5
250	-0.1	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.0	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

## 6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

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T. P. A.

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.1	0.1	±1.1
135.0	135.1	0.1	±1.1
134.0	134.1	0.1	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.1	0.1	±1.1
114.0	114.1	0.1	±1.1
109.0	109.0	0.0	±1.1
104.0	104.1	0.1	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	34.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.0	±1.1
27.0	27.1	0.1	±1.1
26.0	26.1	0.1	±1.1
25.0	25.1	0.1	±1.1

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T. P. A.

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	116.9	-0.1	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
SEL	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.8	-0.6	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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T. P. A.

## Continuation of Calibration Certificate

Cert. No. : ACL22058  
Job No. : VC65AC0043  
Pages : 8 of 8

## 11. Overload Indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	0.0	±1.5
89.7	89.7		

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. P. A.



# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sindhorn Rd, Banghumnu, Bangkok Bangkok 10700 THAILAND.  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL21079  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RJON  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No. : 00597168 / 180412 / 88182  
ID No. : RYG\_FS0438

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTANAKAN 40, PHATTANAKAN ROAD,  
KHAENG PHATTANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 05 AUGUST 2021  
Calibration Date : 06-10 AUGUST 2021  
Date of Issue : 11 AUGUST 2021

REVIEW BY *Nathakorn P.*  
APPROVED BY *T. Petchurai*  
NEXT CAL. DATE 6/8/22

Calibrated by : Nathakorn Piatpolsan

Approved by : *T. Petchurai*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL-BP_05/0264	10-Feb-22
Digital Multimeter	8846A	1997025	EEL-BP_06/0264	05-Feb-22
Digital Multimeter	33461A	MY53220116	EEL-BP_04/0264	10-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KA1	34560495	AA-3003-21	16-Feb-22

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

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

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
14.8

##### 2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	11.6
C-weight	17.8
Flat	23.5

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.3	±1.5
1000	-0.1	-0.1	-0.1	±1.0
8000	0.6	0.7	0.7	±5.0

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.2	-0.2	-0.1	±2.0
125	-0.1	-0.1	-0.1	±1.5
250	-0.1	-0.1	-0.1	±1.5
500	-0.1	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
6000	0.0	0.0	0.0	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

## 5.2 Time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

## 6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	93.9	94.0	0.1	±0.3

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.1	0.1	±1.1
135.0	135.1	0.1	±1.1
134.0	134.1	0.1	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.1	0.1	±1.1
114.0	114.1	0.1	±1.1
109.0	109.0	0.0	±1.1
104.0	104.1	0.1	±1.1
99.0	99.1	0.1	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	34.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	28.9	-0.1	±1.1
28.0	27.9	-0.1	±1.1
27.0	26.9	-0.1	±1.1
26.0	25.9	-0.1	±1.1
25.0	25.0	0.0	±1.1

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## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5; -5.0
	2	8	117.0	116.9	-0.1	1.0; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5; -5.0
	200	800	127.6	127.6	0.0	±1.0
	200	800	128.0	128.0	0.0	±1.0
SEL	0.25	1	99.0	98.8	-0.2	1.5; -5.0
	2	8	108.0	107.9	-0.1	1.0; -2.5
	200	800	128.0	128.0	0.0	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.2	-0.2	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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## Continuation of Calibration Certificate

Cert. No. : ACL21079  
Job No. : VC64AC0058  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthom Rd, Bangbunri, Bangkok 10700 THAILAND  
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Cert. No. : ACL21078  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No. : 00597167 / 157778 / 34375  
ID No. : RYG\_FS0437

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 05 AUGUST 2021  
Calibration Date : 06 - 10 AUGUST 2021  
Date of Issue : 11 AUGUST 2021

Calibrated by : Nathakorn Pisutpaisan

Approved by :

( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 05/0264	10-Feb-22
Digital Multimeter	8846A	1997025	EEL.BP. 06/0264	05-Feb-22
Digital Multimeter	33461A	MY53220116	EEL.BP. 04/0264	10-Feb-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22

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

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

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.35
12. High level stability	✓	-	0.1	0.1

QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
16.5

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	12.0
C - weight	18.6
Flat	24.5

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.5	0.6	0.6	± 1.5
1000	-0.1	-0.1	0.0	± 1.0
8000	-1.6	-1.6	-1.6	±5.0

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

## 6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.1	0.1	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	34.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	28.9	-0.1	±1.1
28.0	27.9	-0.1	±1.1
27.0	26.9	-0.1	±1.1
26.0	25.9	-0.1	±1.1
25.0	24.9	-0.1	±1.1

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
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## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	108.0	0.0	1.5; -5.0
	2	8	117.0	117.0	0.0	1.0; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5; -5.0
	2	8	108.0	108.0	0.0	1.0; -2.5
	200	800	128.0	128.1	0.1	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lepeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.0	-0.4	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.1	0.1	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

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## Continuation of Calibration Certificate

Cert. No. : ACL21078  
Job No. : VC64AC0058  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.6	0.0	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664



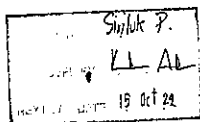
Bara Scientific Co., Ltd.  
968 U Chu Liang Building Floor 7 Rama 4 Road  
Siam Bangkok Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



## Certificate of Calibration

Number of Page(s) 1 of 3

Certificate No. BSCC-UV-290/21  
Equipment UV/Vis Spectrophotometer  
Model UV-1800  
Manufacturer Shimadzu  
Serial No. A11454908539CD  
ID No. BKK\_EN0018  
Date of receipt 15 October 2021  
Date of calibration 15 October 2021  
Date of issue 25 October 2021



Customer name ALS Laboratory Group (Thailand) Co., Ltd  
Address 104 Soi Phatthanasak 40, Phatthanasak Road, Phatthanasak, Suan Luang, Bangkok 10250

Temperature (25.0 - 26.4) °C (On site)  
Humidity (49.5 - 53.4) %RH (On site)

Equipment condition Good Operation

Calibration Location Organic Prep

Calibration Procedure In-house method W-UV-702-01 based on ASTM E275-01

Traceability Wavelength Accuracy is traceable to certificate No. 67839 and 87844  
Photometric Accuracy is traceable to certificate No. 87846 and 87877  
Stray Light is traceable to certificate No. 87825  
The above certificate are traceable to SI unit through NIST Scientific Ltd.  
(UKAS accredited calibration laboratory NO. 0659)

Calibrated by Mr. Wanchana Janloy

Approved by

Mr. Kanchit Choottep  
Technical Manager

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate.  
Advertising the report / Certificate and publicity of the results are prohibited and also shall not be reproduced  
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FM-UV-708-02 Rev 01 (23/01/23)



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968 U Chu Liang Building Floor 7 Rama 4 Road  
Siam Bangkok Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
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## Certificate of Calibration

Certificate No. BSCC-UV-290/21

Number of Page(s) 2 of 3

Calibration Results:

### 1. Wavelength Accuracy

Certified Wavelength (nm)	UUC (nm)	Error (nm)	Uncertainty (nm)
241.70	241.55	-0.15	0.18
334.02	333.80	-0.22	0.18
418.53	418.40	-0.13	0.18
572.99	572.85	-0.14	0.18
679.41	679.15	-0.26	0.18

### 2. Photometric Accuracy (UV)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (ΔA)
235	0.0000	0.0000	0.0000	0.0075
	0.7174	0.7198	0.0024	0.0075
257	0.0000	-0.0001	-0.0001	0.0075
	0.8382	0.8377	-0.0005	0.0075
313	0.0000	0.0000	0.0000	0.0075
	0.2778	0.2803	0.0025	0.0075
350	0.0000	-0.0001	-0.0001	0.0075
	0.6202	0.6221	0.0019	0.0075

\*CNR = Customer not request

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## Certificate of Calibration

Certificate No. BSCC-UV-290/21

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Calibration Results:

### 3. Photometric Accuracy (Visible)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (ΔA)
420.0	0.0000	0.0000	0.0000	0.0042
	0.5631	0.5570	-0.0061	0.0042
	0.7390	0.7334	-0.0056	0.0042
	1.0953	1.0816	-0.0137	0.0042
440.0	0.0000	0.0000	0.0000	0.0042
	0.5524	0.5469	-0.0055	0.0042
	0.7217	0.7166	-0.0051	0.0042
	1.0606	1.0570	-0.0036	0.0042
465.0	0.0000	0.0000	0.0000	0.0042
	0.5018	0.4966	-0.0052	0.0042
	0.6657	0.6610	-0.0047	0.0042
	0.9775	0.9740	-0.0035	0.0042
546.1	0.0000	0.0000	0.0000	0.0042
	0.5147	0.5113	-0.0034	0.0042
	0.6743	0.6705	-0.0038	0.0042
	0.9506	0.9480	-0.0026	0.0042
590.0	0.0000	0.0000	0.0000	0.0042
	0.5427	0.5394	-0.0033	0.0042
	0.7037	0.7001	-0.0036	0.0042
	1.0336	1.0323	-0.0013	0.0042
635.0	0.0000	0.0000	0.0000	0.0042
	0.5268	0.5235	-0.0033	0.0042
	0.6720	0.6685	-0.0035	0.0042
	0.9864	0.9847	-0.0017	0.0042

\*CNR = Customer not request

### 4. Stray Light\*

Standard cut-off wavelength (nm)	Unit Under Calibration (UUC) Wavelength (nm)	Transmission (%)	Absorbance (A)
200.91±0.1 nm	200.31	0.9399	2.0274

The stray light transmission reference is less than 1.0% and stray light absorbance reference is greater than 2.00A  
\*Stray Light not NSC-ONS Accredited.

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

\*\*\*End of Certificate\*\*\*

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FM-UV-708-02 Rev 01 (23/01/23)

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Agilent CrossLab Compliance Services



### Agilent CrossLab Compliance

Qualification Type: ICPMS-QQ  
System ID: JP15471169  
EQP Name: Agilent Recommended  
EQP Revision: ICPMS.02.50  
EQP Publish Date: March 2020  
Date: September 30, 2021 4:07:18 PM  
Report Type: Report  
Org. Name: ALS Laboratory Group (Thailand) Co., Ltd.  
Org. Location: 104 Phatthanasak 40, Suan Luang, Bangkok 10250.

REVIEW BY   
APPROVED BY   
NEXT CAL. DATE 29 March 2023

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Test Summary

## Purpose

This section includes a status for each scheduled test and the overall qualification. For each test that is run, (1) the status is automatically determined based on pre-defined limits, and (2) the total number of times the test was run is displayed. For detailed results and specifications for a test, refer to the test results in this EQR.

## Details

Test	Status	Runs
Autosampler Check : SPS4	Pass	1
Integrated Sample Introduction System (ISIS) Check : ISIS3	Pass	1
Autotune : G8403A	Pass	1
Background (No Gas Mode) : G8403A	Pass	1
Background (Gas Modes) : G8403A	Pass	1
20-Minute Stability (No Gas Mode) : G8403A	Pass	1

## Overall Qualification Status

Pass

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## Service Details

## Purpose

This section includes local contact and delivery details for this service.

## General Details

Service Order No./Request: 0004637154  
EQP Name: Agilent Recommended  
EQP Revision: ICPMS.02.50  
Report Type: Report

## Organization Details

Name: ALS Laboratory Group (Thailand) Co., Ltd.  
Location: 104 Phattana Karn 40, Suan Luang, Bangkok 10250.

## Local Contact Details

Name: Chatchanal Komarakul  
Job Title: Manager  
Qualification Location: Laboratory

## Operator Details

Name: Panthep Kurastachin  
Job Title: Field Service Engineer.

## Data Acquisition Details

Acquisition Software Name: MassHunter  
Acquisition Software Revision: C.01.04

## Customer Data System (CDS):

IcpMac: MassHunter

Date: September 30, 2021 4:07:18 PM  
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## Instrument Details

## Purpose

This section describes the as found system configuration.

## Details

## ICP-MS 1

Manufacturer	Agilent Technologies
Name	7000
Model Number	G8403A
Installed Options	#100H: Standard Package with Hydrogen option
Detector Type	SQ
Nebulizer	Mist Mix (G3161)
Spray Chamber	Quartz
Torch	Quartz
Sampling Cone	NI
Skimmer Cone	NI
Serial Number	JP15471169
Firmware Revision	C.01.04

## ISIS 1

Manufacturer	Agilent Technologies
Name	ISIS3
Model Number	G8411A
Type	Peristaltic pump system
Serial Number	JP15510227

## Autosampler 1

Manufacturer	Agilent Technologies
Name	SPS4
Model Number	G8410A
Serial Number	AU15430722

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## Chiller 1

Manufacturer	Agilent Technologies
Name	Chiller
Model Number	G3222A
Serial Number	3U1810713

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## Calculation Formulas

## Purpose

This section includes calculation formulas for all available tests. Depending upon which tests are scheduled, all or some apply to your qualification.

For a description of calculations for ICP-MS tests performed by the MassHunter software, refer to the MassHunter application and documentation.

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Protocol Details

## Purpose

This section lists the revisions for all test units used in this report. For complete test-specific and high-level change details, refer to the Revision History document.

Test Revision	Test
ICPMS.02.50	20-Minute Stability (No Gas Mode)
ICPMS.02.50	Autosampler Check
ICPMS.02.50	Autotune
ICPMS.02.50	Background (Gas Mode)
ICPMS.02.50	Background (No Gas Mode)
ICPMS.02.50	Integrated Sample Introduction System (ISIS) Check

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## Autosampler Check

## Purpose

This test demonstrates that the autosampler module is correctly installed and connected. It does not test module performance.

## Setpoint

Result	Critere	Observed Result	Expected Result	Status
--------	---------	-----------------	-----------------	--------

After the self test, is probe in the home position?

Yes	Yes	Pass
Yes	Yes	Pass

As commanded, is the probe positioned at vial 2?

Yes	Yes	Pass
Yes	Yes	Pass

Setpoint Status:

Pass

Runs: 1

Overall Autosampler Check Test Status

Pass

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## Integrated Sample Introduction System (ISIS) Check

## Purpose

This test demonstrates that the ISIS module is correctly installed and connected. It does not test module performance.

## Setpoint

Results

Criteria	Observed Result	Expected Result	Status
As commanded, does the pump rotate?	Yes	Yes	Pass
As commanded, do the valves load and inject?	Yes	Yes	Pass

Setpoint Status: Pass

Runs: 1

Overall Integrated Sample Introduction System (ISIS) Check Test Status

Pass

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System ID: JP15471169

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## Autotune

## Purpose

This test uses traceable checkout standards to run a software-executed autotune in all modes. The tune report provides values for peak width, mass axis, sensitivity, oxide species, and doubly-charged species tests.

## Setpoint

## Results

Peakwidth Mass 7

Agilent Recommended:

0.719 AMU

&gt;= 0.65

&lt;= 0.80

Status: Pass

Peakwidth Mass 89

Agilent Recommended:

0.750 AMU

&gt;= 0.65

&lt;= 0.80

Status: Pass

Peakwidth Mass 205

Agilent Recommended:

0.713 AMU

&gt;= 0.65

&lt;= 0.80

Status: Pass

Mass Axis 7

Agilent Recommended:

7.05 AMU

&gt;= 6.9

&lt;= 7.1

Status: Pass

Mass Axis 89

Agilent Recommended:

88.95 AMU

&gt;= 88.9

&lt;= 89.1

Status: Pass

Mass Axis 205

Agilent Recommended:

205.00 AMU

&gt;= 204.9

&lt;= 205.1

Status: Pass

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Mass 7 Sensitivity No Gas

Agilent Recommended:

94.28 Mcps/ppm

&gt;= 25.5

Status: Pass

Mass 89 Sensitivity No Gas

Agilent Recommended:

307.15 Mcps/ppm

&gt;= 127.5

Status: Pass

Mass 205 Sensitivity No Gas

Agilent Recommended:

303.77 Mcps/ppm

&gt;= 78.5

Status: Pass

Mass 59 Sensitivity He

Agilent Recommended:

28.38 Mcps/ppm

&gt;= 23.8

Status: Pass

Mass 89 Sensitivity H2

Agilent Recommended:

1128.27 Mcps/ppm

&gt;= 85

Status: Pass

Oxide Ratio 155/140

Agilent Recommended:

1.047 %

&lt;= 1.38

Status: Pass

Doubly Charged Species Ratio 70/140

Agilent Recommended:

1.482 %

&lt;= 2.3

Status: Pass

Setpoint Status: Pass

Runs: 1

Overall Autotune Test Status

Pass

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## Background (No Gas Mode)

## Purpose

This test examines the background of the ICP-MS in no gas mode by monitoring ions during a blank run.

## Setpoint

## Conditions

Masses:

7 AMU

89 AMU

205 AMU

## Measurements and Results

Masses (AMU):

Measured Value:

Agilent Recommended:

Status:

7	89	205
3.200	3.300	9.600
<= 6.9	<= 4.8	<= 11.5
Pass	Pass	Pass

 cps

Setpoint Status: Pass

Runs: 1

Overall Background (No Gas Mode) Test Status

Pass

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**Background (Gas Mode)****Purpose**

This test examines the background of the ICP-MS in the various gas modes by monitoring ions during a blank run.

Setpoint	Gas Mode:	Helium
<b>Conditions</b>		
Mass:	78	AMU
Integration Time:	1.0	sec
Cycles:	20	
<b>Measurements and Results</b>		
Mass (AMU):	78	
Measured Value:	142,8500	cps
Agilent Recommended:	<= 115	
Status:	Pass	
Setpoint Status:	Pass	Runs: 1

Setpoint	Gas Mode:	Hydrogen
<b>Conditions</b>		
Mass:	78	AMU
Integration Time:	1.0	sec
Cycles:	20	
<b>Measurements and Results</b>		
Mass (AMU):	78	
Measured Value:	2,1600	cps
Agilent Recommended:	<= 14.0	
Status:	Pass	
Setpoint Status:	Pass	Runs: 1

**Overall Background (Gas Mode) Test Status**

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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**20-Minute Stability (No Gas Mode)****Purpose**

This test monitors the abundance of ions present in the checkout standard over a 20-minute period to verify that the signal is stable. The %RSD of the abundance of given ions is calculated internally by the software and compared to the limit.

Setpoint			
<b>Conditions</b>			
Mode:	Spectrum		
Masses:	7, 8, 56, 89, 140, 205		
Integration Time:	9.89	sec	
Peak Pattern:	13	points/peak	
Repetitions:	20		
Sweeps/Replicates:	100		
<b>Measurements and Results</b>			
Masses (AMU):	7	8	205
Stability RSD:	0.99400	0.51495	0.73011 %
Agilent Recommended:	<= 2.3	<= 2.3	<= 2.3
Status:	Pass	Pass	Pass
Setpoint Status:	Pass	Runs: 1	

**Overall 20-Minute Stability (No Gas Mode) Test Status**

Pass

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**Declaration of Change Control**

This document is under change control. Revision history is maintained and printed on each document. Access to the master document is limited to process owners. Documents receive periodic review and cannot be assigned an evergreen status. The qualification performed according to this document refers only to the hardware/software configuration in place at the time of the qualification. Agilent Technologies recommends that instrument configuration change management procedures be in place in order to maintain the validation process. Any changes to the analytical or computer hardware or software must be clearly specified. A change management system provides a means for determining the degree of requalification required according to the extent of the changes made. All details of the changes must be thoroughly recorded and documented, together with details of completed tests and their results. **Note:** Hardware/software configuration management is the customer's responsibility.

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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**Attachments**

Training requirements note: The delivery engineer attaches an ACE technique-specific training certificate to the Equipment Qualification Report (EQR). Obtaining ACE technique-specific certification includes pre-requisite trainings for Data Integrity, General Compliance topics (GMP, GLP, ALCOA, etc.), instrument hardware and software components, and the ACE technique itself. The one certificate encompasses all pre-requisite trainings as documented in the Agilent Learning Management System called Success Factors.

Location	Category	Document Name	Page
EQR	General	Certificate of System Qualification	18
EQR	General	Operator's training certificate and qualifications	19
EQR	General	Certificate of Qualification for ACE	20
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General

Document Name: Certificate of System Qualification



## Agilent Compliance Engine Self Qualification

Date: September 14, 2021 4:06:15 PM  
Drive Serial #: ACA20209 Platform Revision: ACE 3.11

Individual self-qualification reports for each specific technique included are also available upon request. They provide additional details on the general report how the controls summary and are structured by the actual algorithms challenged during the process. There is not a one-to-one relationship between algorithms and QC program tests because some algorithms are used by several tests and across multiple similar hardware components of the qualified systems.

Technique Type	Tests Completed	Result
Atomic Absorption	7	Conforms
Cathodic Electrodeposition	10	Conforms
Dissolution	6	Conforms
Enthalpy Spectroscopy	3	Conforms
Gas Chromatography - GCMS	17	Conforms
Gas Chromatography	29	Conforms
Gas Permeation Chromatography	8	Conforms
ICP-MS	6	Conforms
Infrared Spectroscopy	7	Conforms
Liquid Chromatography	17	Conforms
Liquid Chromatography - LCMS	8	Conforms
Microfluidics	16	Conforms
Sample Preparation - Gas Chromatography	9	Conforms
Sample Preparation - Liquid Chromatography	8	Conforms
Supercritical Fluid Chromatography	18	Conforms
Software	8	Conforms
UV-Vis Spectrophotometer	13	Conforms

Overall Qualification Status:  
ConformsDate: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Operator's training certificate and qualifications



## Certificate of Completion

Learner Name: Parthap Kumarasain  
Title Of Course: AN-CB-ICPMS-2-031-A: Agilent 7900 ICPMS FSE update training  
Completion Date: June 7, 2014  
Certified By Company: Learning at Agilent

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

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

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Certificate of Qualification for ACE



## Certificate of Completion

Learner Name: Parthap Kumarasain  
Title Of Course: AN-CB-SS-11-030-A: ACE 3.1 User Update Training  
Completion Date: July 7, 2020  
Certified By Company: Learning at Agilent

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

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Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Certificate of Qualification for ACE



## Certificate of Completion

Learner Name: Parthap Kumarasain  
Title Of Course: AN-CB-ICPMS-2-035-D: CrossLab Compliance Hardware Specific Delivery for Agilent ICP-MS Systems  
Completion Date: October 31, 2020  
Certified By Company: Learning at Agilent

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

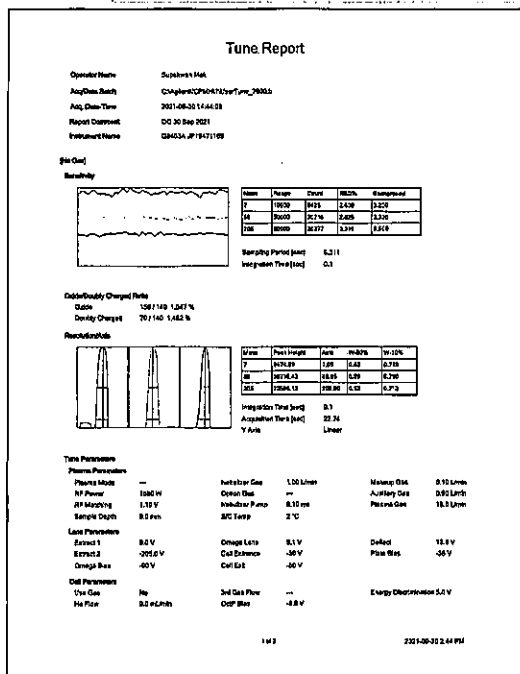
A certificate for Service and Support training is only valid while employed by Agilent Technologies or while working as an Agilent-authorized service provider, through which the service employee has ongoing access to Agilent's Safety Alerts, Service Notes, internal technical updates, update training,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

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System ID: JP15471169

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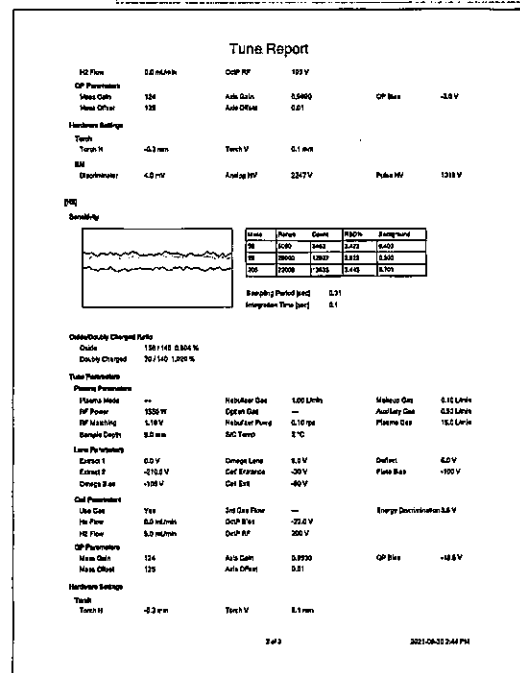
General

Document Name: Tune reports

Date: September 30, 2021 4:07:18 PM  
 System ID: JP15471189

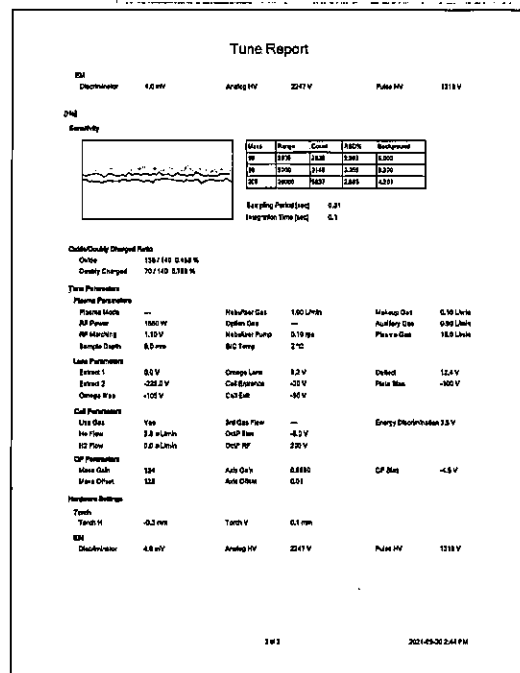
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Document Name: Tune reports

Date: September 30, 2021 4:07:18 PM  
 System ID: JP15471189

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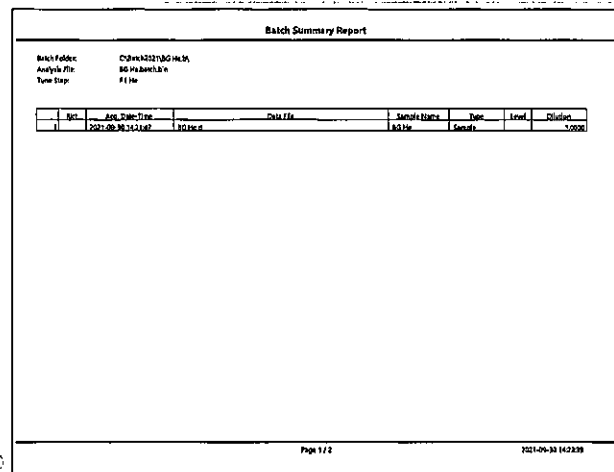
Document Name: Tune reports

Date: September 30, 2021 4:07:18 PM  
 System ID: JP15471189

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General

Document Name: Test Report

Date: September 30, 2021 4:07:18 PM  
 System ID: JP15471189

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Document Name: Test Report

## Batch Summary Report

Analysis Table	
Sample Name	CRS
Sample No.	Q1390

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2021-09-30 14:23:40

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Test Report

## Batch Summary Report

Batch Folder: D:\Agilent Services\00\_30 Sep 2021\MS 102 new MS  
Analysis File: MS 102 new batch.MS  
Time Step: 01102

Run	Acq. Date/Time	Data File	Sample Name	Time	Level	Duration
1	2021-09-30 11:05:56	MS 102.d	MS 102	3.00 min	Trace	1.0000

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2021-09-30 13:10:21

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name: Test Report

## Batch Summary Report

Analysis Table	
Sample Name	CRS
Sample No.	Q1390

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2021-09-30 15:10:31

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Test Report

## Batch Summary Report

Batch Folder: D:\Agilent Services\00\_30 Sep 2021\MS 102 new MS  
Analysis File: MS 102 new batch.MS  
Time Step: 01102

Run	Acq. Date/Time	Data File	Sample Name	Time	Level	Duration
1	2021-09-30 15:17:44	MS 102.d	MS 102	3.00 min	Trace	1.0000

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2021-09-30 15:44:42

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name:

Test Report

## Batch Summary Report

ANALYSIS	7_116a_Gas1	8_116a_Gas1	9_116a_Gas1	10_116a_Gas1	11_116a_Gas1	12_116a_Gas1	13_116a_Gas1
Sample Name	Q75-810	Q75-810	Q75-810	Q75-810	Q75-810	Q75-810	Q75-810
112420	83680	720164	241647	251495	61274	21201	

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2021-09-30 15:48:43

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471159

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## Electronic Signature

## Purpose

This signature page was created and published because the ACE sign-off action was executed, which is valid for the entire document, including attachments. The ACE sign-off is an electronic signature that requires two distinct identification components: unique username and personal password. The Agilent representative who has delivered this service understands the meaning and legal status of an electronic signature. As a trained official operator, the Agilent representative has a unique password and login to access ACE and electronically sign this document. (Other e-signatures can be applied to this document using a Document Content Management or other suitable method defined in your data access and control procedures.)

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Full Name of Signer: Panthep Kurassathin  
Logged On User Name: panthep\_kurassathin@agilent.com  
Signature Creation Date: September 30, 2021  
Reason for Signature: Executed protocol and published this original version of document

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Date: September 30, 2021 4:07:18 PM  
System ID: JP15471159

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User Name: panthep\_kurassathin  
Username: ASB/KW315  
Print Date: September 30, 2021 4:07:21 PM  
System ID: JP15471159

## ALB QGHW 7166 20Sep21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 30, 2021 3:50:07 PM	Auth	SessionCreated	Session	None
September 30, 2021 3:50:07 PM	Start	Configuration	Session	None
September 30, 2021 3:50:07 PM	Auth	Endiement	License	User is First Engineer and does not require an unlock code
September 30, 2021 3:50:57 PM	Auth	Explicated	Session	EDP details for primary technique (logfile) + File path: [Photoshop\Agilent\Conf\unlocked2.307\unlocked 30.0.0\EGP File Name: [logfile.21.00.00.egp], EGP Name: [AgilentRecommended]
September 30, 2021 3:52:04 PM	End	Configuration	Session	None
September 30, 2021 3:52:57 PM	Start	Qualification	Session	OQ
September 30, 2021 3:52:57 PM	Start	Execution	Autosampler Check: SP54: Autosampler Check	None
September 30, 2021 3:53:03 PM	End	Execution	Autosampler Check: SP54: Autosampler Check	Run Count: 1
September 30, 2021 3:53:04 PM	Start	Execution	Integrated Sample Introduction System (SIS) Check: H513: Integrated Sample Introduction System (SIS) Check	None
September 30, 2021 3:53:09 PM	End	Execution	Integrated Sample Introduction System (SIS) Check	Run Count: 1

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Date: September 30, 2021 4:07:18 PM  
System ID: JP15471159

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User Name: panthep\_kurassathin  
Username: ASB/KW315  
Print Date: September 30, 2021 4:07:22 PM  
System ID: JP15471159

## ALB QGHW 7166 20Sep21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 30, 2021 3:53:10 PM	Start	Execution	Autosave: G0403A: Autosave 1	None
September 30, 2021 3:55:08 PM	End	Execution	Autosave: G0403A: Autosave 1	Run Count: 1
September 30, 2021 3:55:12 PM	Start	Execution	Background (No Gas Mode): G0403A: No Gas Mode Background 1	None
September 30, 2021 3:55:40 PM	End	Execution	Background (No Gas Mode): G0403A: No Gas Mode Background 1	Run Count: 1
September 30, 2021 3:55:43 PM	Start	Execution	Background (Gas Mode): G0403A: Gas Mode Background: Helium	None
September 30, 2021 3:55:17 PM	End	Execution	Background (Gas Mode): G0403A: Gas Mode Background: Helium	Run Count: 1
September 30, 2021 3:55:19 PM	Start	Execution	Background (Gas Mode): G0403A: Gas Mode Background: Hydrogen	None
September 30, 2021 3:56:38 PM	End	Execution	Background (Gas Mode): G0403A: Gas Mode Background: Hydrogen	Run Count: 1
September 30, 2021 3:56:41 PM	Start	Execution	20-Minute Stability (No Gas Mode): G0403A: 20-Minute Stability (No Gas Mode) 1	None
September 30, 2021 3:57:22 PM	End	Execution	20-Minute Stability (No Gas Mode): G0403A: 20-Minute Stability (No Gas Mode) 1	Run Count: 1
September 30, 2021 3:57:24 PM	End	Qualification	Session	OQ
September 30, 2021 3:57:24 PM	Start	Reporting	Session	None

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Date: September 30, 2021 4:07:18 PM  
System ID: JP15471159

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User Name: panthep, narasachul  
Host Name: ASBCHON315

System ID: JP15471169  
Print Date: September 30, 2021 4:57:18 PM

ALS CQM 7950 Sclap21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 30, 2021 4:03:07 PM	Audit	Reporting	Session	Report Generated: Certificate
September 30, 2021 4:03:17 PM	Audit	Reporting	Session	Report Generated: Report
September 30, 2021 4:03:08 PM	Start	Qualification	Session	OO
September 30, 2021 4:04:28 PM	End	Qualification	Session	OO
September 30, 2021 4:04:08 PM	Start	Reporting	Session	None
September 30, 2021 4:04:28 PM	Audit	Reporting	Session	Report Generated: Certificate
September 30, 2021 4:04:36 PM	Audit	Reporting	Session	Report Generated: Report

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Date: September 30, 2021 4:57:18 PM  
System ID: JP15471169

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## Metrological Center

SCI ECO Services Company Limited

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Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T220730

Page 1 of 6

### Certificate of Calibration

Equipment : HEATING BLOCK

Manufacturer : Environmental Express

Model : SC 196

Serial No. : 6974CECW3285

Customer Code : BKK\_EL0054

ID No. : T5306A3

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,  
Khet Suan Luang, Bangkok 10250

Customer Location : Acid Digestion Lab

Date of Receipt : 30 March 2022

Calibrated By : Watcharapon Sangtong (Technician)

Approved By : / Sujjar Nakhakred (Site Calibration Manager)

Date of Issue : 12 APR 2022

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

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

FM-L12 108/30-05-57



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Certificate No. T220730

Page 2 of 6

### Calibration Report

Equipment : HEATING BLOCK  
Date of Calibration : 7 April 2022  
Environment : Temperature : 21.8-23.1 °C  
Line Voltage : 221.6-226.3 V  
Relative Humidity : 55 - 65 %RH

#### Condition of this results of calibration :

1. This equipment was calibrated by insert nine standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20.

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

#### 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN221-TN230	T210008	08 June 2022
TC	TYPE T	TN231-TN240	T210008	08 June 2022
DATA LOGGER	34970A	T149	T210008	08 June 2022

#### 3. This certificate is traceable to :

National Institute of Metrology ( Thailand ) through Metrological Center ( NSC-TISI-TIS 17025 CALIBRATION 0244 )

#### 4. Condition of calibrated item : good

##### Equipment Description :

Time Constant : 2 Hour 25 Minute At 95 °C  
Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available

#### 5. Adjustment :

( ) without adjustment ( X ) after adjustment

Approved By:

FM-L13 108/30-05-57



## Metrological Center

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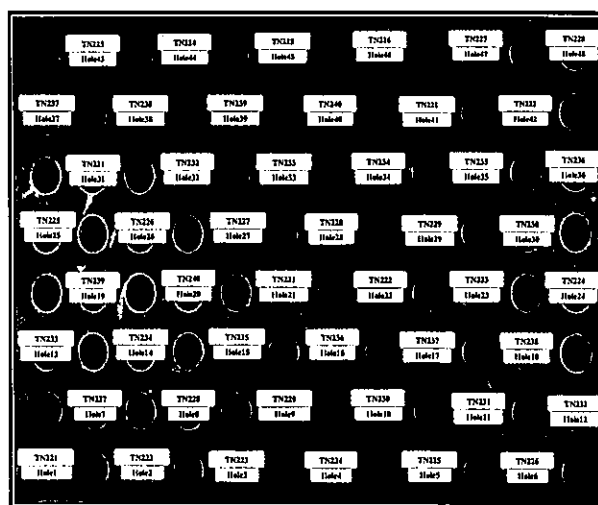
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Page 3 of 6

### Calibration Report





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Certificate No. T220730

Page 4 of 6

### Calibration Report

#### Measurement Results

Calibration Point		Average Standard Reading at each position (°C)					
R1 Hole1-Hole6		TN221	TN222	TN223	TN224	TN225	TN226
CAL POINT	Max	93.60	93.82	94.03	94.20	94.36	94.26
	Min	93.07	93.26	93.51	93.66	93.82	93.71
	Average	93.33	93.54	93.78	93.93	94.09	93.98
R2 Hole7-Hole12		TN227	TN228	TN229	TN230	TN231	TN232
	Max	94.59	94.79	94.93	94.55	94.82	95.00
	Min	94.05	94.25	94.08	93.97	94.26	94.44
	Average	94.32	94.52	94.56	94.26	94.54	94.72
R3 Hole13-Hole18		TN233	TN234	TN235	TN236	TN237	TN238
	Max	95.03	94.54	94.78	94.84	95.06	94.73
	Min	94.46	93.98	94.20	94.28	94.49	94.18
	Average	94.74	94.26	94.49	94.56	94.78	94.45
R4 Hole19-Hole24		TN239	TN240	TN241	TN242	TN243	TN244
	Max	94.89	94.82	95.73	95.85	95.73	96.10
	Min	94.33	94.26	95.51	95.62	95.51	95.85
	Average	94.61	94.54	95.62	95.73	95.62	95.97
R5 Hole25-Hole30		TN245	TN246	TN247	TN248	TN249	TN250
	Max	96.28	96.39	96.37	96.54	96.19	96.04
	Min	96.01	96.10	96.02	96.20	95.89	95.71
	Average	96.15	96.24	96.20	96.37	96.04	95.88
R6 Hole31-Hole36		TN251	TN252	TN253	TN254	TN255	TN256
	Max	96.84	96.97	97.03	96.48	96.33	95.76
	Min	96.53	96.63	96.71	96.08	95.98	95.43
	Average	96.68	96.81	96.87	96.28	96.16	95.60
R7 Hole37-Hole42		TN257	TN258	TN259	TN260	TN261	TN262
	Max	96.45	96.13	96.19	96.06	96.93	97.09
	Min	96.13	95.84	95.83	95.72	96.64	96.78
	Average	96.30	95.99	96.02	95.89	96.80	96.93
R8 Hole43-Hole48		TN263	TN264	TN265	TN266	TN267	TN268
	Max	96.91	96.58	96.13	96.19	96.34	96.19
	Min	96.55	96.21	95.80	95.87	96.03	95.88
	Average	96.73	96.40	95.96	96.03	96.18	96.03

Approved By.

FM-1.13 108/30-05-57



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Certificate No. T220730

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### Calibration Report

#### Measurement Results

Calibration Point		Average Standard Reading at each position (°C)					
R1 Hole1-Hole6		TN221	TN222	TN223	TN224	TN225	TN226
CAL POINT	Max	104.47	104.65	104.79	105.31	105.47	105.46
	Min	104.15	104.27	104.45	104.98	105.14	105.20
	Average	104.31	104.46	104.62	105.15	105.31	105.33
R2 Hole7-Hole12		TN227	TN228	TN229	TN230	TN231	TN232
	Max	105.55	105.73	105.65	105.84	105.97	106.07
	Min	105.28	105.43	105.35	105.52	105.68	105.83
	Average	105.42	105.58	105.50	105.68	105.82	105.95
R3 Hole13-Hole18		TN233	TN234	TN235	TN236	TN237	TN238
	Max	106.14	106.06	105.81	106.05	105.81	105.87
	Min	105.85	105.81	105.55	105.80	105.53	105.64
	Average	106.00	105.94	105.68	105.92	105.67	105.75
R4 Hole19-Hole24		TN239	TN240	TN241	TN242	TN243	TN244
	Max	105.86	105.60	104.44	104.51	104.28	104.78
	Min	105.61	105.37	104.27	104.35	104.12	104.61
	Average	105.74	105.48	104.35	104.43	104.20	104.69
R5 Hole25-Hole30		TN245	TN246	TN247	TN248	TN249	TN250
	Max	104.94	104.93	104.97	105.08	104.68	104.69
	Min	104.77	104.75	104.76	104.90	104.51	104.49
	Average	104.85	104.84	104.86	104.99	104.60	104.59
R6 Hole31-Hole36		TN251	TN252	TN253	TN254	TN255	TN256
	Max	105.44	105.45	105.61	104.95	104.84	104.42
	Min	105.27	105.27	105.44	104.76	104.66	104.25
	Average	105.35	105.36	105.53	104.85	104.75	104.32
R7 Hole37-Hole42		TN257	TN258	TN259	TN260	TN261	TN262
	Max	105.17	104.70	104.59	104.51	105.22	105.53
	Min	105.00	104.53	104.41	104.35	105.04	105.37
	Average	105.08	104.62	104.50	104.43	105.13	105.45
R8 Hole43-Hole48		TN263	TN264	TN265	TN266	TN267	TN268
	Max	105.61	105.45	105.10	104.77	104.87	105.02
	Min	105.44	105.28	104.92	104.60	104.70	104.85
	Average	105.53	105.37	105.01	104.69	104.79	104.93

Approved By.

FM-1.13 108/30-05-57



## Metrological Center

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Website : www.sceco.co.th E-Mail : calibrate@sceco.co.th

Certificate No. T220730

Page 5 of 6

### Calibration Report

#### Measurement Results

Setting (°C)	HEATING BLOCK		Temperature Distribution	
	Reading (°C)		Stability (±°C)	Uncertainty (±°C)
	Min, Max	Average		
100.0	100.0, 100.4	100.1	0.29	0.83
105.0	105.0, 105.4	105.1	0.20	0.79

\* The quoted uncertainty exclude " uniformity "

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95% .

Approved By.

FM-1.13 108/30-05-57



## Metrological Center

SCI ECO Services Company Limited

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Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851 , +668 9247 2360

Website : www.sceco.co.th E-Mail : calibrate@sceco.co.th



Certificate No. T211009

Page 1 of 4

### Certificate of Calibration

Equipment : Chamber (Cold Room)

Manufacturer : KOLDTECH

Model : KM 320

Serial No. : TBN-1012061/05

Customer Code : BKK\_EN0167

ID No. : T2463A3

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,  
Khet Suan Luang, Bangkok 10250

Customer Location : Laboratory

Date of Receipt : 6 May 2021

Calibrated By : Watcharapon Songthong (Technician)

Approved By : / Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 20 MAY 2021

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

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

FM-1.14 117/01-02-64

Certificate No. T211009

Page 2 of 4

### Calibration Report

Equipment : Chamber (Cold Room)  
Date of Calibration : 18 May 2021  
Environment : Temperature : 23.4-24.9 °C  
Line Voltage : 221.4-230.2 V  
Relative Humidity : 55 - 65 %RH

#### Condition of this results of calibration :

1. This equipment was calibrated by insert 16 standard thermocouples type T into its chamber, the other one standard thermocouples type T use for ambient temperature measurement. The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2001) and AS2853-1986).  
All data show below were final values and the initial data from customer request. The temperature scale used was based on ITS - 90.

#### 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN161-TN170	T210009	8 January 2022
TC	TYPE T	TN171-TN180	T210009	8 January 2022
DATA LOGGER	34970A	T149	T210009	8 January 2022

#### 3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244).

#### 4. Condition of calibrated item : good

##### Equipment Description :

Time Constant : 1 Hour  
Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available

#### 5. Adjustment :

( X ) without adjustment ( ) after adjustment

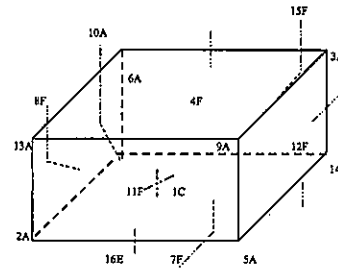
Approved By: [Signature]

FM-L15 11/7/15-05-63

Certificate No. T211009

Page 3 of 4

### Calibration Report



C = Centre, F = Centre of Face, A = Corner, E = Centre of Edge

1C = TN161	12F = TN172
2A = TN162	13A = TN173
3A = TN163	14A = TN174
4F = TN164	15F = TN175
5A = TN165	16E = TN176
6A = TN166	
7F = TN167	
8F = TN168	
9A = TN169	
10A = TN170	
11F = TN171	

Approved By: [Signature]

FM-L15 11/7/15-05-63

Certificate No. T211009

Page 4 of 4

### Calibration Report

#### Measurement Results

Calibration Point	Average Standard Reading at each position (°C)									
	TN161	TN162	TN163	TN164	TN165	TN166	TN167	TN168	TN169	TN170
3	3.23	3.38	3.23	3.41	3.35	3.52	3.51	3.11	3.29	3.50
	TN171	TN172	TN173	TN174	TN175	TN176				
	3.36	3.18	3.52	3.22	3.28	3.31				

Chamber (Cold Room)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (±°C)	Uniformity (°C)	Uncertainty (±°C)	Coverage Factor k
	Min	Max					
3.0	2.7	3.4	3.0	1.00	1.10	1.46	2.00

\* The Accepted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 %.

Approved By: [Signature]

FM-L15 11/7/15-05-63

analytikjena  
As a Laboratory Company

REVIEW BY	<u>Sudarat N.</u>
APPROVED BY	<u>[Signature]</u>
NEXT CAL DATE	<u>01/06/2023</u>

## Maintenance Protocol

### Atomic Fluorescence Spectrometer mercur / mercur plus



1

Maintenance Protocol mercury / mercury plus | update 27.06.2016 | Version 2.1 | Kloeber  
Anasth. Jena AG | Konrad-Zuse-Str. 1 | 07744 Jena, Germany

[illegible][illegible]

Wartungsprotokoll mercur / mercur plus | update 27.06.2016 | Version 2.1 | Konrad  
Anzahl Jena AG | Konrad-Zürcher-Str. 1 | 07745 Jena | Germany

Signature Customer  
06/06/2022  
Place, Date (DD/MM/YYYY)



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
5344 PATTANAKARN ROAD SOI 16, SUANLUANG, SUANLUANG DISTRICT BANGKOK 10250  
TEL. 0-2719-900-27 FAX. 0-2719-900-24



Cert.No.: 21CH452  
Page: 1 of 3

## Certificate of Calibration

Equipment : pH Meter  
Manufacturer : Mettler Toledo  
Model : SevenCompact S220  
Serial No. : B520948426  
ID No. : BKK\_EN0072  
Condition As-Received : Used Item  
Received Date : 24 March 2021  
Calibration Date : 28 March 2021  
Reference : 2103-1008DSC-1  
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khaeng Phatthanakan, Khwaeng Suan Luang,  
Bangkok 10250 Thailand

Ambient Temperature :  $(25 \pm 2.5) ^\circ\text{C}$   
Relative Humidity :  $(50 \pm 15) \%$   
Calibration Procedure : In-house method :  
- CP-CHS by direct measurement with standard  
voltage calibrator and direct measurement with  
certified reference material (CRM)  
- CP-CHS by comparison with standard thermometer

REVIEW BY : *Sirita P.*  
APPROVED BY : *K. L. A.*  
NEXT CAL. DATE : 9/4/22

Calibrated by : Warakorn Lemgagrakul

Approved by : *Mala*  
Approved Signatory

( ) Maloo Butkrua  
( ) Salhip Meangmai  
( ) Warakorn Lemgagrakul

Issue Date : 31 March 2021

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written  
Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0026590



Cert.No.: 21CH452  
Page: 2 of 3

### Condition of this calibration result

#### 1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	1385032	130RC022	2084213	24 Nov 2021
2) Ref. Standard Thermometer	4982054	110RC044	2011233	15 Oct 2021

This certification is traceable to the International System of Unit maintained at:  
- Traceable to National Institute of Metrology (Thailand), NIMT

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd.,  
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	706594	08 Sep 2022
pH 6.985	CPA chem	722285	19 Dec 2021
pH 10.012	CPA chem	722287	19 Dec 2021

3. This certificate is valid only to the item calibrated on date and place of calibration.

### Calibration Results

#### Function : mV Measurement

Performing standard curve by Fluke at pH (4.7,10)

Uncertainty of Measurement					Uncertainty of Measurement ( $\pm$ mV)	Coverage factor k
Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading			
pH Meter SN: B520948426	pH	mV	mV	pH		
	4.000	177.48	177.4	4.000	0.058	2.00
	7.000	0.00	-0.1	7.000	0.058	2.00
	10.000	-177.48	-177.5	10.000	0.058	2.00

*Mala*

a 1048959



Cert.No.: 21CH452  
Page: 3 of 3

### Calibration Results

#### Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4.7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement ( $\pm$ )	Coverage factor k
pH Electrode S/N.: 9265091	4.008	4.010	150.3	0.0048	2.05
	6.985	6.989	-22.5	0.0077	2.00
	10.012	10.011	-183.7	0.013	2.00

### Function : Temperature Measurement

(\*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : InLab Expert Pro-ISM

- Serial No. : 9255091

Dimension of probe;

- Length : 120 mm.

- Diameter : 12 mm.

- Immersion Depth : 100 mm.

Calibration Point ( $^{\circ}\text{C}$ )	Standard Temperature ( $^{\circ}\text{C}$ )	UUC* Reading ( $^{\circ}\text{C}$ )	Error ( $^{\circ}\text{C}$ )	Uncertainty of measurement ( $\pm$ $^{\circ}\text{C}$ )	Coverage factor k
25.0	25.003	25.2	0.197	0.20	2.00

Remark : - UUC\* = Unit Under Calibration

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

-00-

*Mala*

a 1048958



บริษัท ดับเบิล เอส ไดแอกโนสติกส์ จำกัด  
DOUBLE S DIAGNOSTICS CO., LTD.

43/3 หมู่ 11 ต.บ้านใหม่ อ.เมือง จ.นนทบุรี 11000 โทร: 02-552-5555  
E-Mail: ds@dsd.co.th, ds@dsd.com Fax: (02) 747-7000

Maintenance Plan YEAR : 2021

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

### Periodical maintenance check list for Konelab

	6M	12M	Notel
1. Diluent/wash tubing change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. ISE tubing change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Syringe check/change	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Dispensing check/ change	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Waste tubing change when necessary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6. Lamp check/change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. M-ver paddle/paddle change(not Konelab20)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. ISE needles check/change	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9. Pump tubing check/ change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10. Broken/vrom out part check /change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11. Peristaltic pump check /cleaning/ lubrication	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12. Heating check	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
13. Cooling check	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
14. Dispenser mechanic check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
15. Cuvette transfer mechanic check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
16. Dispenser movement check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
17. Sample/reagent register check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
18. Dispensing tubing tightness check	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
19. Photometer and optics cleaning/check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
20. Workstation PC cleaning if necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
21. Mechanic cleaning/lubrication	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
22. Instrument cleaning if necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
23. Complete analyzer testing with waterblank/QC or sample	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
24. Test parameters/Adjustment/config. Save to USB key	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
25. UPS Test	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Place: *AS Lab* Instrument: *Aquakem 350*  
Date/Time: *28-03-21* Serial no: *20391*  
Service done by: *D. P.* Install date: *2021*  
Signature of customer: *Mala* Date/Time: *28/3/21*



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL: 0-2717-3000 FAX: 0-2719-9484



Cert.No.: 21CG1446  
Page: 1 of 2

## Certificate of Calibration

Equipment: Burette  
Capacity: 50 mL  
Serial No.:  
ID No.: BKK\_EN0171  
Manufacturer: Witeg  
Made in: Germany  
Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.  
Khwaeng Phatthanakan, Khet Suan Luang  
Bangkok 10250 Thailand  
Ambient Temperature: (20 ± 2.5) °C  
Relative Humidity: (50 ± 10) %  
Barometric Pressure: 755 mmHg  
Calibration Procedure: ASTM E 542 - 01  
Calibrated by: Sa-nguankam Wongsa

Approved by: Malee Bulkrus  
Approved Signatory

- ( ) Pomhippa Tameyakul  
(x) Malee Bulkrus  
( ) Ponpan Palpim  
( ) Srisuda Khamtha

Issue Date: 31 March 2021

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3: Equipment Calibration and Testing Services

A 0026589



Equipment: Burette  
Received Date: 24 March 2021  
Condition As-Received: Used Item  
Calibration Date: 30 March 2021  
Reference: 2103-1008DSC-5

Cert.No.: 21CG1446  
Page: 2 of 2

## Condition of this result of calibration

### 1. Reference Standard Instruments:

Instrument	Model	Serial No.	ID No.	Certificate No.	Traceability	Due date
1) Balance	XP205	B134208712	140RC007	21MM181	NIMT	02 Mar 2022
2) Thermo-Hygrometer	TH 803	09153022	140EC004	20H1434	NIST, NIMT	19 June 2021
3) Thermometer		1594592	140EC010	20I1191	NIMT	08 Oct 2021

This certification is traceable to SI Unit

2. The certificate is valid only to the item calibrated on date and place of calibration.  
3. True value is converted to true volume at the standard temperature of 20 °C

### Calibration result:

Nominal capacity (mL)	Reading (mL)	Uncertainty (± mL)	k Factor
50	50.0041	0.011	2.00

Remark: mL = cm<sup>3</sup>

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

-00-

a 1048960



REVIEW BY: Autcharawan S.  
APPROVED BY: Somchai M.  
NEXT CAL DATE: 12/Jan/22

## Certificate of Calibration

ICS-2100: Anion (ID#659)

This certificate is to verify that Instrument below are calibrated  
by Archemica Lab Co., Ltd.

ICS-2100 S/N: 15010977  
AS-HV S/N: 5450A36659

For

ALS Laboratory Group (Thailand) Co., Ltd.



Operator Signature: [Signature] Date: Jan 12, 2022

(Mr.Thitpong Piromkripuk)

Applications Chemist



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL: 0-2717-3000 FAX: 0-2719-9484

Cert.No.: 21TW6  
Page: 1 of 2

## Certificate of Testing

Equipment: DO Meter  
Manufacturer: YSI  
Model: 5100  
Serial No.: 15L103204  
ID No.: BKK\_EN0205  
Received Date: 15 January 2021  
Test Date: 19 January 2021  
Reference: 2101-0428WSC-5  
Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Laboratory Condition: Temperature (25 ± 5) °C  
Humidity (50 ± 20) %  
Test Procedure: In-house method: CP-CH9  
by Comparison Technique with Azida Modification Method

Calibrated by: Waialek Sirithan

Approved by: [Signature]  
Approved Signatory

- (x) Malee Bulkrus  
( ) Sathip Meangmal  
( ) Werakorn Lemgagrakul

Issue Date: 25 January 2021

B 0251901



Cert.No.: 21TW5  
Page: 2 of 2

Result : Dissolved Oxygen Meter Adjustment With Air 100 %

Dissolved Oxygen Probe No.: 18C100772

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
8.10	8.10	0.0055

This report was certified only for the instrument we tested. It is allowable to use for study the system efficiency. The environmental impact control and present to organization it may concerned. Intend to use for advertising and referral purpose is prohibited. This report may not be reproduced other in full, without written approval of the laboratory.

-000-

a 1037070



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 19, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3065-27 FAX. 0-2717-9144



Cert. No.: 21TM188  
Page: 1 of 2

## Certificate of Calibration

Equipment : DO Meter with Sensor  
Manufacturer : YSI  
Model : 5100  
Serial No. : 15L103204  
ID No. : BKK\_EN0205  
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Location : TPA On Site Calibration Laboratory  
Received Order : 15 January 2021  
Calibrated Date : 21 January 2021  
Ambient Temperature : (28 ± 10) °C  
Relative Humidity : (50 ± 30) %  
AC Line Voltage : (220 ± 22) V  
Calibrated by : Kritsada Chaitrong  
Approved by :   
( ) Pornthip Tamayakul  
( ) Malee Butkruea  
( ) Suwit Imjai  
Issue Date : 28 January 2021

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0023875



Equipment : DO Meter with Sensor  
Condition As-Received : Used Item  
Reference : 2101-0428WSC-8

Cert. No.: 21TM188  
Page: 2 of 2

### Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) into Temperature Bath.

The temperature scale used was based on ITS-90.

### Condition of this result of calibration

#### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Digital Thermometer	1523	2188060	2011389	20 Nov 2021

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit maintained at:-

- National Institute of Metrology Thailand (NIMT)

### Result of Calibration :- ( ) Without Adjustment

Function : Temperature measurement.

This instrument was connected with temperature sensor, S/N: 18C100772

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty (±°C)	Coverage Factor k
20.00	60	20.002	19.94	-0.062	0.15	2.00

UUC\* : Unit Under Calibration

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

-000-

a 1038215



## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Keengkhol, Saraburi 18110, Thailand.

Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851 , +668 8247 2360

Website : www.scieco.co.th E-Mail : calibrate@scg.co.th



Certificate No. T212123

Page 1 of 3

## Certificate of Calibration

Equipment : Chamber (Incubator)  
Manufacturer : SHEL LAB  
Model : 2020-2E  
Serial No. : 802899  
Customer Code : BKK\_EN0005  
ID No. : T7499A0  
Customer : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,  
Khet Suan Luang, Bangkok 10250  
Customer Location : Wet Chemistry Lab2  
Date of Receipt : 1 October 2021  
Calibrated By : Sujjar Naknakred (Site Calibration Manager)  
Approved By : / Boonchai Suriyawong (Site Calibration Manager)  
Date of Issue : 07 OCT 2021

REVIEW BY	
APPROVED BY	
NEXT CAL DATE	4/4/22

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

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

FM-L14 117/01-02-64



Certificate No. T212123

Page 2 of 3

## Calibration Report

Equipment : Chamber (Incubator)  
Date of Calibration : 4-5 October 2021  
Environment : Temperature : 23.8-24.9 °C  
Line Voltage : 227.5-231.1 V  
Relative Humidity : 55 - 65 %RH

### Condition of this results of calibration :

1. This equipment was calibrated by insert nine resistance thermometer detectors into its chamber, the other one resistance thermometer detector use for ambient temperature measurement. The calibration was done in according to WI-720 (based on ASTM E145-94 (Reapproved 2001) and AS2853-1986). All data show below were final values and the initial data from customer request. The temperature scale used was based on ITS - 90.

### 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
RTD	100 ohm	29-CH1-10	T210118	2 February 2022
DATA LOGGER	34970A	T47	T210118	2 February 2022

### 3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TIS-1715 17025 CALIBRATION 0244)

### 4. Condition of calibrated item : good

#### Equipment Description :

Time Constant : 2 Hour 20 Minute At 20 °C  
Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☒ Close  
☒ Not Available

### 5. Adjustment :

( ) without adjustment ( X ) after adjustment

Approved By

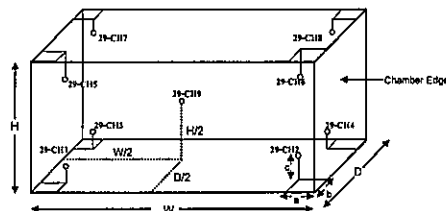
FM-L15 117/15-05-63



Certificate No. T212123

Page 3 of 3

## Calibration Report



### Remark :

Internal Dimensions of Chamber : W (Width) = 70 cm., H (Height) = 130 cm. and D (Depth) = 55 cm.  
Size of installed Standard sensor number 29-CH1 to number 29-CH8 : a = 5 cm., b = 5 cm. and c = 5 cm.  
Size of installed Standard sensor number 29-CH9 : W/2 = 70 cm./2, H/2 = 130 cm./2 and D/2 = 55cm./2

### Measurement Results

Calibration Point	Average Standard Reading at each position (°C)							
	29-CH1	29-CH2	29-CH3	29-CH4	29-CH5	29-CH6	29-CH7	29-CH8
20	20.04	20.06	20.19	19.86	19.68	20.08	20.12	19.80
25	24.99	25.06	25.18	24.89	24.74	25.12	25.16	24.80

Chamber (Incubator)			Temperature Distribution			
Setting (°C)	Reading (°C)		Stability (°C)	Uniformity (°C)	Uncertainty (°C)	Coverage Factor k
	Min, Max	Average				
20.0	-	20.0	0.05	1.01	0.38	2.00
25.0	-	25.0	0.07	0.96	0.38	2.00

\* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 %.

Approved By

FM-L15 117/15-05-63



Cert.No.: 21CH1730  
Page.: 1 of 2

## Certificate of Calibration

Equipment : pH Meter  
Manufacturer : Mettler Toledo  
Model : SevenGo  
Serial No. : B553912470  
ID No. : BRK\_LG0031  
Condition As-Received :  
Received Date : 22 December 2021  
Calibration Date : 23 December 2021  
Reference : 2112-0571DSC-3  
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Ambient Temperature : (25 ± 2.5) °C  
Relative Humidity : (50 ± 15) %  
Calibration Procedure : In-house method :  
- CP-CH5 by direct measurement with standard voltage calibrator and direct measurement with certified reference material (CRM)

Calibrated by : Waleak Sirithean

Approved by :   
Approved Signatory

( ) Males Butkruea  
( ) Saitthip Meangmal  
( ) Warakorn Lomgagrakul

Issue Date : 24 December 2021

The Uncertainties are for a confidence probability of approximately 95%

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A 0036353



Cert. No.: 21CH1730  
Page.: 2 of 2

### Condition of this calibration result

#### 1. Reference Standard Instrument :

Instrument	Serial No.	ID No.	Cert. No.	Due Date
Document Process Calibrator	43160066	130RC092	21E1223/1	27 Apr 2022

This certification is traceable to the International System of Unit maintained at:-

- Traceable to National Institute of Metrology (Thailand), NIMT

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	781016	02 Aug 2023
pH 6.982	CPA chem	781017	02 Aug 2022
pH 10.015	CPA chem	781018	02 Aug 2022

3. This certificate is valid only to the item calibrated on date and place of calibration.

### Calibration Results

#### Function : mV Measurement

#### Performing standard curve by Fluke at pH (4,7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (mV)	Coverage factor k
			mV	pH		
pH Meter	4.00	177.48	177	4.00	0.58	2.00
S/N: B553912470	7.00	0.00	0	7.00	0.58	2.00
	10.00	-177.48	-176	10.00	0.58	2.00

#### Function : pH Measurement

#### Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement (±)	Coverage factor k
pH Electrode	4.008	4.01	171	0.0071	2.00
	6.982	6.98	-4	0.0099	2.00
	10.015	10.01	-179	0.0095	2.00

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

-00-

a 1087316



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
5444 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert. No.: 21TM2304  
Page: 1 of 2

## Certificate of Calibration

Equipment : pH Meter with Sensor  
Manufacturer : Mettler Toledo  
Model : Seven2Go  
Serial No. : B553912470  
ID No. : BKK\_LG0031  
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Location : TPA On Site Calibration Laboratory  
Received Order : 22 December 2021  
Calibrated Date : 27 December 2021  
Ambient Temperature : ( 26 ± 10 ) °C  
Relative Humidity : ( 50 ± 30 ) %  
AC Line Voltage : ( 220 ± 22 ) V

Calibrated by : Preecha Hiahib

Approved by :   
Approved Signatory

( ) Pombhippa Tameyakul  
( ) Malee Butkruea  
( ) Suwit Imjai

Issue Date : 6 January 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written  
approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.

A 0036304



Equipment : pH Meter with Sensor  
Condition As-Received : Used Item  
Reference : 2112-0571DSC-2

Cert. No.: 21TM2304  
Page: 2 of 2

### Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with  
Industrial Platinum Resistance Thermometer ( IPRT ) into Temperature Bath.

The temperature scale used was based on ITS-90.

### Condition of this result of calibration

#### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Digital Thermometer	1502A	A52847	2111144	20 Oct 2022

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration : ( \* ) Without Adjustment

Function : Temperature measurement.

This instrument was connected with thermocouple Type T, S/N: 0191151

Calibration Point ( °C )	Immersion Depth ( mm )	Standard Temperature ( °C )	UUC* Reading ( °C )	Error ( °C )	Uncertainty ( ± °C )	Coverage Factor K
20.0	100	20.009	20.1	0.091	0.30	2.00
25.0	100	24.999	25.1	0.101	0.30	2.00
30.0	100	30.003	30.2	0.197	0.30	2.00
35.0	100	35.004	35.2	0.198	0.30	2.00
40.0	100	40.003	40.2	0.197	0.30	2.00
45.0	100	45.008	45.2	0.192	0.30	2.00
50.0	100	50.004	50.2	0.198	0.30	2.00

UUC\* : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor K, providing a level of confidence of approximately 95 %.

-o0o-

a 1088339



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CALIBRATION AND TESTING EQUIPMENT SERVICES  
5444 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000-24 FAX. 0-2719-9484

Cert. No.: 21TM2188  
Page: 1 of 3

## Certificate of Calibration

Equipment : Autoclave  
Manufacturer : AES Laboratory  
Model : Masterclave 528  
Serial No. : 34577152  
ID No. : BKK\_ML0043

Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Location : Media Preparation Room

Received Order : 1 December 2021  
Calibration Date : 1 December 2021  
Ambient Temperature : ( 26 ± 10 ) °C  
Relative Humidity : ( 50 ± 30 ) %

Calibrated by : Khil Rutanaprapachal

Approved by :   
Approved Signatory

( ) Pombhippa Tameyakul  
( ) Malee Butkruea  
( ) Suwit Imjai

Issue Date : 7 December 2021

The Uncertainties are for a confidence probability of approximately 95%

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approval of the head of Calibration and Testing Equipment Services.

A 0007203



Equipment : Autoclave  
Condition As-Received : Used Item  
Reference : 2112-0002OC-2

Cert. No.: 21TM2188  
Page: 2 of 3

### Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT03 according to direct  
measurement method with Data Acquisition which connected with Thermocouple Type T

The temperature scale used was based on ITS-90.

### Condition of this result of calibration

#### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34970A	MY44060450	21LM4/1	08 Mar 2022

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

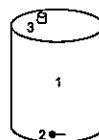
4. This result of calibration covers laboratory autoclaves for the sterilization of goods and material which  
could be infected with organisms categorized as Hazard Group 1, 2 and 3\*\*

(\*\* = Categorization of pathogens according to hazard and categories of containment, second edition, 1990 )  
It does not cover autoclaves for use with material infect with organisms in Hazard Group 4, for which  
complete containment and sterilization of infected condensate is considered to be essential.

This result of calibration does not apply to sterilizers or disinfectors used for medical, dental, pharmaceutical  
or veterinary purposes which are directly concerned with patient care, or those used for fabrics subjected to  
sterilization which are required to be dry at the end of cycle.

Result of Calibration : ( \* ) Without Adjustment

Function of UUC\* : Temperature Source



	Environmental		
	( °C )	( %R.H. )	( Volt )
Beginning of Calibration	24	51	220
Finished of Calibration	25	53	221

Position	Description	Ref. Std. ID No.:
1 =	Center of chamber	19-14TC-01
2 =	Temperature sensor	19-14TC-02
3 =	Exhaust port	19-14TC-03

a 1085616



Equipment : Autoclave  
Condition As-Received : Used Item  
Reference : 2112-0002OC-2  
Result of Calibration : ( \* ) Without Adjustment

Cert. No.: 21TM2188  
Page: 3 of 3

Operating parameter Set : Temperature = 121.0 °C  
Sterilization period = 15 minute

UUC* Setting ( °C )	UUC* Reading ( °C )	Position	Average* Standard Reading ( °C )	Stability ( ± °C )	Pressure Reading ( bar )	Uncertainty ( ± °C )	Coverage Factor k
121.0	120.7	1	120.792	0.076	1.1	0.75	2
		2	120.674				
		3	120.815				

Average\* : The average of 30 values in each position.  
Stability : One-half of the greatest maximum difference of measured temperature at any one probe.  
UUC\* : Unit Under Calibration  
Note : The reported uncertainty of measurement was included stability and excluded uniformity.  
The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-o0o-

a 1085615



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TEL. 0-2717-9000-21 FAX. 0-2719-9004



Cert. No.: 22TM102  
Page: 1 of 3

## Certificate of Calibration

Equipment : Incubator

Manufacturer : SHEL-LAB

Model : 1915A

Serial No. : 0200599

ID No. : BKK\_ML0010

Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Location : Incubation & Micrological Reading

Received Order : 21 January 2022

Calibration Date : 21 January 2022

Ambient Temperature : ( 28 ± 10 ) °C

Relative Humidity : ( 50 ± 30 ) %

Calibrated by : Krisda Malee

Approved by :   
Approved Signatory

( ) Pornthippa Temeyakul  
( ) Malee Butkrusa  
( ) Suwit Imjai

Issue Date : 3 February 2022

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0037377



Equipment : Incubator  
Condition As-Received : Used Item  
Reference : 2201-0616OC-1  
Procedure Used :-

Cert. No.: 22TM102  
Page: 2 of 3

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector ( RTD ).

The temperature scale used was based on ITS-90.

### Condition of this result of calibration

1. Reference standard Instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1 ) Data Acquisition	34972A	MY57013711	21LM7	16 Jun 2022

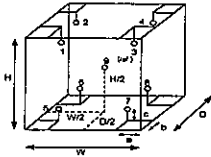
2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration :- ( \* ) Without Adjustment

Function of UUC\* : Temperature Source

Fresh air setting : Close



Probe Installation Details : Dimension of Chamber :  
a = 10 cm D = 0.90 m  
b = 10 cm W = 0.75 m  
c = 10 cm H = 1.2 m  
Capacity = 0.81 m<sup>3</sup>

Environment during calibration		
	Beginning	Finished
Temp. ( °C )	26	25
REL.Humid. ( % )	53	54
AC Supply ( Volt )	220	221

Position :	Ref. Std. ID No.:
1	18-18RTD-01
2	18-18RTD-02
3	18-18RTD-03
4	18-18RTD-04
5	18-18RTD-05
6	18-18RTD-06
7	18-18RTD-07
8	18-18RTD-08
9 (ref.)	18-18RTD-09

a 1092309



Equipment : Incubator  
Condition As-Received : Used Item  
Reference : 2201-0616OC-1  
Result of Calibration :- ( \* ) Without Adjustment  
Function of UUC\* : Temperature Source  
Fresh air setting : Close

Cert. No.: 22TM102  
Page: 3 of 3

Calibration Point ( °C )	UUC* Setting ( °C )	UUC* Reading ( °C )	Temperature stability ( ± °C )	Temperature uniformity ( °C )	Overall Variation ( °C )	Uncertainty ( ± °C )	Coverage Factor k
35.0	35.0	35.0	0.043	0.41	0.42	0.30	2

Calibration Point ( °C )	Measured Temperature ( °C )							
	Position							
	1	2	3	4	5	6	7	8 (ref.)
35.0	34.801	34.868	34.882	35.012	35.040	35.010	35.084	35.040

Average\* : The average of 30 values in each position.  
Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.  
Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.  
Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.  
UUC\* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

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

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a 1092308



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TEL. 0-2717-9400-27 FAX. 0-2719-9454



Cert. No.: 21TM1101  
Page: 1 of 3

## Certificate of Calibration

Equipment: Hot Air Oven  
Manufacturer: Binder  
Model: ED240/E2  
Serial No.: 00-15533  
ID No.: BKK\_ML0013

Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Location: Media Preparation Room

Received Order: 7 June 2021  
Calibration Date: 7 June 2021  
Ambient Temperature:  $(26 \pm 10) ^\circ\text{C}$   
Relative Humidity:  $(50 \pm 30) \%$

Calibrated by: Preecha Hishib

Approved by:  
( ) Pornhippa Tamayakul  
(x) Malee Butkruea  
( ) Suwit Imjai

Issue Date: 21 June 2021

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services & Equipment Calibration and Testing Services

A 0029135



Equipment: Hot Air Oven  
Condition As-Received: Used Item  
Reference: 2106-0101OC-2  
Procedure Used:-

Cert. No.: 21TM1101  
Page: 2 of 3

Calibration was conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Thermocouple Type T.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34972A	MY57013823	21LM3	26 Feb 2022

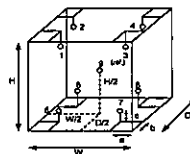
2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certificate is traceable to the International System of Unit.

Result of Calibration:- (\*\*) Without Adjustment

Function of UUC: Temperature Source

Fresh air setting: Close



Probe Installation Details: Dimension of Chamber:

a = 5.0 cm	D = 0.50 m
b = 5.0 cm	W = 0.80 m
c = 5.0 cm	H = 0.80 m
Capacity = 0.24 m <sup>3</sup>	

Environment during calibration		
	Beginning	Finished
Temp. ( °C )	26	27
REL.Humid. ( % )	65	72
AC Supply ( Volt )	220	222

Position	Ref. Std. ID No.:
1	19-17TC-01
2	19-17TC-02
3	19-17TC-03
4	19-17TC-04
5	19-17TC-05
6	19-17TC-06
7	19-17TC-07
8	19-17TC-08
9 (ref.)	19-17TC-09

a 1059245



Equipment: Hot Air Oven  
Condition As-Received: Used Item  
Reference: 2106-0101OC-2  
Result of Calibration: (\*\*) Without Adjustment  
Function of UUC: Temperature Source

Cert. No.: 21TM1101  
Page: 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Uncertainty (± °C)	Coverage Factor
180	180	180	0.67	2.4	3.3	1.5	2

Calibration Point (°C)	Measured Temperature (°C)								
	1	2	3	4	5	6	7	8	9 (ref.)
180	179.315	181.248	178.684	180.035	179.941	180.511	178.429	180.268	179.065

Average\*: The average of 30 values in each position.

Temperature stability: One-half of the greatest maximum difference of measured temperature at any one sensor.  
Temperature uniformity: The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation: The Difference of the maximum and minimum measured temperatures throughout observation.  
UUC\*: Unit Under Calibration

Note: The reported uncertainty of measurement was included stability and excluded uniformity.

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

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a 1059244



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TEL. 0-2717-9400-27 FAX. 0-2719-9454



## Certificate of Calibration

Cert. No.: 22TM453  
Page: 1 of 3

Equipment: Water Bath

Manufacturer: Memmert

Model: WB 45

Serial No.: I704.0285

ID No.: BKK\_ML0052

Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Incubation & Microbiological Reading

Location: Incubation & Microbiological Reading

Received Order: 21 February 2022  
Calibration Date: 21 February 2022  
Ambient Temperature:  $(26 \pm 10) ^\circ\text{C}$   
Relative Humidity:  $(50 \pm 30) \%$

Calibrated by: Prawit Sodavitchit

Approved by:  
( ) Pornhippa Tamayakul  
(x) Malee Butkruea  
( ) Suwit Imjai

Issue Date: 25 February 2022

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services & Equipment Calibration and Testing Services

A 0038346





Equipment : Water Bath  
Condition As-Received : Used Item  
Reference : 2202-06150C-2  
Procedure Used :-

Cert. No.: 22TM453  
Page.: 2 of 3

Calibration were conducted using in-house calibration procedure CP-OT04 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

#### Condition of this result of calibration

##### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Data Acquisition	34970A	MY44035217	21LM30	23 Dec 2022

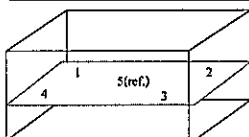
2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration :- ( ° ) Without Adjustment

Function of UUC\* : Temperature Source

	Environmental		AC Voltage Supply
	( °C )	( %R.H. )	
Beginning of Calibration	25	51	220
Finished of Calibration	25	50	220



Front

Position :	Ref. Std. S/N.:
1	N37P300726
2	N37P300727
3	N37P300728
4	N37P300729
5(ref.)	N37P300730

a 1097103



Equipment : Water Bath  
Condition As-Received : Used Item  
Reference : 2202-06150C-2  
Result of Calibration :- ( ° ) Without Adjustment  
Function of UUC\* : Temperature Source

Cert. No.: 22TM453  
Page.: 3 of 3

Calibration point ( °C )	UUC* Setting ( °C )	UUC* Reading ( °C )	Average* Standard Reading ( °C )				
			Position				
			1	2	3	4	5 (ref.)
44.5	45.1	45.1	44.503	44.454	44.497	44.519	44.476

Calibration point ( °C )	Uniformity ( °C )	Stability ( ± °C )	Uncertainty ( ± °C )	Coverage Factor k
44.5	0.13	0.063	0.15	2

Average\* : The average of 30 values in each position.

Uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC\* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

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

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a 1097102

BKK\_EL0037

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## Certificate of System Qualification

ES-OQ

System ID: MY15010005  
Organization Name: ALS Laboratory Group (Thailand) Co., Ltd.  
Organization Location: 104 Phatthanakan 40 Phatthanakan Rd., Bangkok 10250

Date: September 13, 2021 5:49:11 PM  
EQP Name: Agilent/Recommended  
EQP Revision: ES.02.50  
Overall Qualification Status: Pass

#### Preparation

Pass

#### Instrument Tests

Pass

#### Autosampler Operation

Pass

REVIEW BY Thitima B.  
APPROVED BY Savitree N.  
NEXT CAL. DATE 12 Mar 23

Date: September 13, 2021 5:49:11 PM  
System ID: MY15010005

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Agilent CrossLab Compliance Services

## Instrument Details

### Purpose

This section describes the as found system configuration.

### Details

#### Spectrometer 1

Manufacturer: Agilent Technologies  
Name: 6120 SVDV  
Model Number: G6010A  
Sample Introduction: Double pass glass cyclonic spraychamber and nebulizer  
Serial Number: MY15010005  
Firmware Revision: 5395

#### Chiller 1

Manufacturer: Agilent Technologies  
Name: Other/Unspecified  
Other Unspecified Name: Chiller  
Model Number: Other/Unspecified  
Other Unspecified Model Number: G3292-90201  
Serial Number: 2008-00159

#### Autosampler 1

Manufacturer: Agilent Technologies  
Name: SP64  
Model Number: G8410A  
Serial Number: AU15440764

#### Switching Valve Accessory 1

Manufacturer: Agilent Technologies  
Name: SVS 2+  
Model Number: G8485A  
Serial Number: AU18040115

Date: September 13, 2021 5:49:11 PM  
System ID: MY15010005

## Electronic Signature

## Purpose

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## Details

Full Name of Signer: Kanyakorn Sukphairajarn  
 Logged On User Name: phinprapha.jearaphong@agilent.com  
 Signature Creation Date: September 13, 2021  
 Reason for Signature: Executed protocol and published this original version of document

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Date: September 13, 2021 5:49:11 PM  
 System ID: MY16010005

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User Name: phinprapha.jearaphong System ID: MY16010005  
 Hostname: ASB-KGV0328 Print Date: September 13, 2021 5:49:12 PM

## OQHW STW ICPOES ALB 08Sep21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 8, 2021 8:49:58 AM	Auth	SessionCreated	Session	None
September 8, 2021 8:49:59 AM	Start	Configuration	Session	None
September 8, 2021 8:49:59 AM	Auth	EndSession	Unloading	User is Field Engineer and does not require an unlock code
September 8, 2021 9:07:06 AM	Auth	EngLoaded	Session	ECP details for primary technique (E) - File path: (ProtocolPath)\CalConfig\one02.00E\02.00.00.msp, ECP File Name: (E) 02.00.msp, ECP Name: (AgilentRecommended)
September 8, 2021 9:07:11 AM	End	Configuration	Session	None
September 8, 2021 9:07:19 AM	Start	Qualification	Session	OQ
September 8, 2021 9:07:19 AM	Start	Execution	Preparation: 0100 BVON; Qualitative Test - No setpoints associated	None
September 8, 2021 9:34:25 AM	End	Execution	Preparation: 0100 BVON; Qualitative Test - No setpoints associated	Run Count: 1
September 8, 2021 9:34:29 AM	Start	Execution	Instrument Tests: 0100 BVON; Qualitative Test - No setpoints associated	None
September 8, 2021 9:51:27 AM	End	Execution	Instrument Tests: 0100 BVON; Qualitative Test - No setpoints associated	Run Count: 1

Page 1 / 2

Date: September 13, 2021 5:49:11 PM  
 System ID: MY16010005

Page 4 / 5

User Name: phinprapha.jearaphong System ID: MY16010005  
 Hostname: ASB-KGV0328 Print Date: September 13, 2021 5:49:12 PM

## OQHW STW ICPOES ALB 08Sep21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 8, 2021 8:51:30 AM	Start	Execution	Autosampler Operation: Autosampler 1 - 0P54; Qualitative Test - No setpoints associated	None
September 8, 2021 9:21:36 AM	End	Execution	Autosampler Operation: Autosampler 1 - 0P54; Qualitative Test - No setpoints associated	Run Count: 1
September 8, 2021 9:21:38 AM	End	Qualification	Session	OQ
September 8, 2021 9:31:38 AM	Start	Reporting	Session	None
September 8, 2021 10:55:49 AM	Auth	AccRestarted	Session	None
September 13, 2021 6:01:26 PM	Auth	SessionTakeOver	Session	None
September 13, 2021 6:01:26 PM	Start	Qualification	Session	OQ
September 13, 2021 5:47:55 PM	Auth	Reporting	Session	Report Generated: Certificate

Page 2 / 2

Date: September 13, 2021 5:49:11 PM  
 System ID: MY16010005

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## Agilent CrossLab Compliance

Qualification Type: ES-OQ

System ID: MY16010005

ECP Name: AgilentRecommended

ECP Details: Agilent Technologies System

ECP Revision: ES.02.50

ECP Release Date: March 2020

Date: September 13, 2021 5:50:41 PM

Report Type: Report

Org. Name: ALS Laboratory Group (Thailand) Co., Ltd.

Org. Location: 104 Phatthanakan 40 Phatthanakan Rd., Bangkok 10250

Date: September 13, 2021 5:50:41 PM  
 System ID: MY16010005

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## Test Summary

## Purpose

This section includes a status for each scheduled test and the overall qualification. For each test that is run, (1) the status is automatically determined based on pre-defined limits, and (2) the total number of times the test was run is displayed. For detailed results and specifications for a test, refer to the test results in this EOR.

Details	Status	Runs
Test		
Preparation : 5100 SVDV	Pass	1
Instrument Tests : 5100 SVDV	Pass	1
Autosampler Operation : Autosampler 1 - SPS4	Pass	1
Overall Qualification Status		
Pass		

## Service Details

## Purpose

This section includes local contact and delivery details for this service.

## General Details

Service Order No/Request: 6004823273  
EQP Name: Agilent/Recommended  
EQP Revision: ES.02.50  
Report Type: Report

## Organization Details

Name: ALS Laboratory Group (Thailand) Co., Ltd.  
Location: 104 Phatthanakan 40 Phatthanakan Rd., Bangkok 10250

## Local Contact Details

Name: Khun Thilina Boonpong  
Job Title: Scientist 2, Life Sciences  
Qualification Location: ICP Room

## Operator Details

Name: Kanyasorn sukpathrajarn  
Job Title: Field Service Engineer

## Data Acquisition Details

Acquisition Software Name: ICP Expert  
Acquisition Software Revision: 7.5.3.11953

Customer Data System (CDS): Ex: ICP Expert

## Instrument Details

## Purpose

This section describes the as found system configuration.

## Details

## Spectrometer 1

Manufacturer: Agilent Technologies  
Name: 5100 SVDV  
Model Number: G6010A  
Sample Introduction: Double pass glass cyclonic spraychamber and nebulizer  
Serial Number: MY16010005  
Firmware Revision: 5365

## Chiller 1

Manufacturer: Agilent Technologies  
Name: Other Unspecified  
Other Unspecified Name: Chiller  
Model Number: Other Unspecified  
Other Unspecified Model Number: G3292-80201  
Serial Number: 2008-00158

## Autosampler 1

Manufacturer: Agilent Technologies  
Name: SPS4  
Model Number: G6410A  
Serial Number: AU15440764

## Switching Valve Accessory 1

Manufacturer: Agilent Technologies  
Name: SVS 2+  
Model Number: G6485A  
Serial Number: AU16040115

## Protocol Details

### Purpose

This section lists the revisions for all test units used in this report. For complete test-specific and high-level change details, refer to the Revision History document.

Test Revision	Test
ES.02.50	Autosampler Operation
ES.02.50	Instrument Tests
ES.02.50	Preparation

Date: September 13, 2021 5:50:41 PM  
System ID: MY16010005

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## Preparation

### Purpose

This test records a status for each preparation task for the Agilent ICP-OES.

### Configuration Details

Model/Serial No.:

G8010A

MY16010005

### Results

#### Criteria

Does the plasma ignite successfully in the first three attempts?

Observed Result Expected Result Status

Yes Yes Pass

Was the detector calibration performed and completed successfully?

Yes Yes Pass

Was the instrument calibration performed and completed successfully?

Yes Yes Pass

Date: September 13, 2021 5:50:41 PM  
System ID: MY16010005

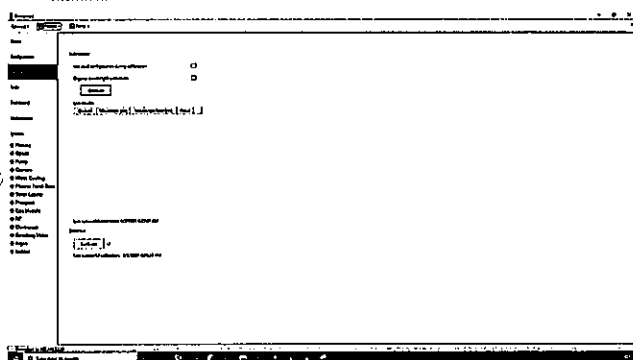
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### Test Evidence

Image Details: Was the detector calibration performed and completed successfully?

Date and Time: September 8, 2021 8:07:42 AM

Host Name: ASBKQW328



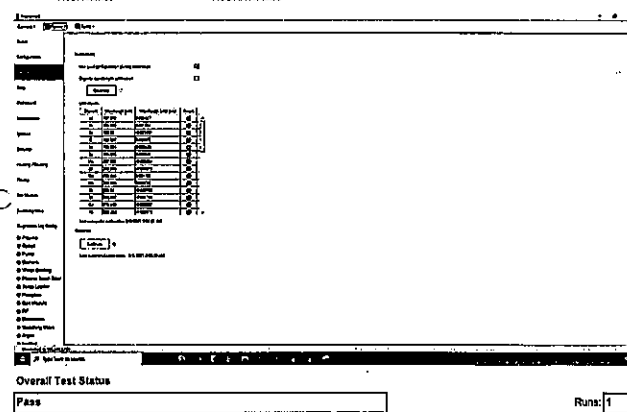
Date: September 13, 2021 5:50:41 PM  
System ID: MY16010005

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Image Details: Was the instrument calibration performed and completed successfully?

Date and Time: September 8, 2021 9:33:30 AM

Host Name: ASBKQW328



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System ID: MY16010005

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## Instrument Tests

### Purpose

This test records a status for each of the automated tests within the Agilent ICP-OES CDS. For detailed test criteria, refer to the attached report.

### Configuration Details

Model/Serial No.: G6010A MY16010005

Results Observed Result Expected Result Status

### Are the Functional Tests results within acceptance criteria?

#### Subsystem Communications

Yes Yes Pass

#### Air Flow

Yes Yes Pass

#### Water Flow

Yes Yes Pass

#### Gas Flows

Yes Yes Pass

#### RF Generator

Yes Yes Pass

#### Camera

Yes Yes Pass

#### Optics

Yes Yes Pass

### Are the Instrument Performance Tests results within acceptance criteria?

#### Resolution

Yes Yes Pass

#### Sensitivity

Yes Yes Pass

#### Precision

Yes Yes Pass

### Overall Test Status

Pass Runs: 1

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## Autosampler Operation

### Purpose

This test verifies that the autosampler operates properly.

### Configuration Details

Model/Serial No.: G6410A AU15440784

### Results

Criteria Observed Result Expected Result Status

Does the autosampler successfully move to the specified location(s)?

Yes Yes Pass

### Overall Test Status

Pass Runs: 1

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## Declaration of Change Control

This document is under change control. Revision history is maintained and printed on each document. Access to the master documents is limited to process owners. Documents receive periodic review and cannot be assigned an overgreen status. The qualification performed according to this document refers only to the hardware/software configuration in place at the time of the qualification. Agilent Technologies recommends that instrument configuration change management procedures be in place in order to maintain the validation process. Any changes to the analytical or computer hardware or software must be clearly specified. A change management system provides a means for determining the degree of requalification required according to the extent of the changes made. All details of the changes must be thoroughly recorded and documented, together with details of completed tests and their results. Note: Hardware/software configuration management is the customer's responsibility.

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## Attachments

Location	Category	Document Name	Page
EQR	General	Certificate of Qualification for ACE	1
EQR	General	Certificate of Qualification for ACE	1
EQR	General	Operator's training certificate and qualifications	1
EQR	Material	Certificate of Analysis Wavelength calibration solution	4
EQR	Comments	General	1
EQR	General	Instrument's Test Report	5
EQR	General	Instrument's Test Report	4

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General

Document Name: Certificate of Qualification for ACE



Agilent Technologies

## Agilent Compliance Engine Self Qualification

Date: September 8, 2021 10:10:10 AM  
Drive Serial #: EAF04372 Platform Revision: A.08.01

Individual self-qualification reports for each specific technique listed are also available upon request. They provide additional details on the general report from the statistics summary and are produced by the actual algorithms challenged during the process. There is not a one-to-one relationship between algorithms and OQ program tests because some algorithms are used by several tests and across multiple similar hardware components of the qualified systems.

Technique Type	Tests Completed	Result
UV-Vis Spectrophotometer	13	Conforms
Atomic Absorption	7	Conforms
Capillary Electrophoresis	10	Conforms
Flowcels	6	Conforms
Emission Spectroscopy	3	Conforms
Infrared Spectroscopy	7	Conforms

Overall Qualification Status

Conforms

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General

Document Name: Certificate of Qualification for ACE



Agilent Technologies

## Certificate of Completion

Learner Name: Kanyasree Subrahmaniam

Title Of Course: AN-CE-SS-II-030-A: ACE 3.X User Update Training

Completion Date: June 25, 2020

Certified By Company: Learning at Agilent

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

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

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System ID: MY16010005

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General

Document Name: Operator's training certificate and qualifications



Agilent Technologies

## Certificate of Completion

Learner Name: Kanyasree Subrahmaniam

Title Of Course: ANV-CE-ICFOES-2-008-A: Agilent 5100 ICV-OES Support Nonphysic Training

Completion Date: November 2, 2017

Certified By Company: Learning at Agilent

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

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

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System ID: MY16010005

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Materials

Document Name: Certificate of Analysis Wavelength calibration solution



## CERTIFICATE OF ANALYSIS

Agilent Product Name: Wavelength Calibration Solution for CE-OES & MP-AES, 5 mg/L, 100mL  
Agilent Part No: 84600000  
Lot No: 84600000

## Product Specifications

Analysis	Storage Interval	Cal F	Cal F	Cal F	Cal F	Cal F	Cal F	Cal F	Cal F
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L
As	1000	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L	1.000 ± 0.001 mg/L

Metric: 100000

Intended Use: This solution is intended for use as a certified reference material or calibration standard for laboratory equipped with atomic absorption spectrophotometry (AAS), inductively coupled plasma mass spectrometry (ICP-MS), flame atomic absorption spectrophotometry (FAAS), inductively coupled plasma atomic emission spectrometry (ICP-AES), or other techniques for elemental analysis.

Concentration & Traceability: This solution was manufactured under a quality management system that is registered to ISO 9001:2015 and ISO/IEC 17025. The solution was prepared to be a certified concentration stock solution by producing multiple using single element concentrations that were certified using the "High Performance ICV-OES" protocol developed by NIST and are directly traceable to the NIST SRM 900a. This solution was produced using high purity stock and (DILUTED AND MIXED WITH DILUTION) 10% solution without error. The solution used in the preparation of this solution was calibrated regularly with traceability to NIST. All volumetric solutions are prepared in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary calibration of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against NIST SRM 900a, 900b, 900c, 900d, 900e, 900f, 900g, 900h, 900i, 900j, 900k, 900l, 900m, 900n, 900o, 900p, 900q, 900r, 900s, 900t, 900u, 900v, 900w, 900x, 900y, 900z, 900aa, 900ab, 900ac, 900ad, 900ae, 900af, 900ag, 900ah, 900ai, 900aj, 900ak, 900al, 900am, 900an, 900ao, 900ap, 900aq, 900ar, 900as, 900at, 900au, 900av, 900aw, 900ax, 900ay, 900az, 900ba, 900bb, 900bc, 900bd, 900be, 900bf, 900bg, 900bh, 900bi, 900bj, 900bk, 900bl, 900bm, 900bn, 900bo, 900bp, 900bq, 900br, 900bs, 900bt, 900bu, 900bv, 900bw, 900bx, 900by, 900bz, 900ca, 900cb, 900cc, 900cd, 900ce, 900cf, 900cg, 900ch, 900ci, 900cj, 900ck, 900cl, 900cm, 900cn, 900co, 900cp, 900cq, 900cr, 900cs, 900ct, 900cu, 900cv, 900cw, 900cx, 900cy, 900cz, 900da, 900db, 900dc, 900dd, 900de, 900df, 900dg, 900dh, 900di, 900dj, 900dk, 900dl, 900dm, 900dn, 900do, 900dp, 900dq, 900dr, 900ds, 900dt, 900du, 900dv, 900dw, 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Document Name: Certificate of Analysis Wavelength calibration solution



Period of Validity: Agilent warrants the accuracy of this solution until the expiration date shown below, provided the instrument(s) for use are maintained. During the period of validity, this purchase will be voided if this product is recalled due to any Agilent-related reason in the history of the solution.

Signed for approval

  
Keith Anderson, Compliance OfficerDate of Purchase: 4 April 2020  
Date of expiration: 4 October 2021Date: September 13, 2021 5:50:41 PM  
System ID: MY16010005

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Document Name: Certificate of Analysis Wavelength calibration solution



Please refer to the Safety Data Sheet (SDS), which can be obtained at [www.agilent.com/chem/SDS](http://www.agilent.com/chem/SDS).

Recovery: This solution was developed to be homogeneous by procedures specified in the requirements of ISO 17024 and ISO 9001:2015. The homogeneous solution was produced to ensure homogeneity, in accordance with ISO 9001:2015. Homogeneity and stability. In order to ensure homogeneity, users should not take a smaller aliquot than specified in the procedure for this, or taking or not sampling the certified values and uncertainties.

Further Information: Please contact Agilent for further information about this OQA.

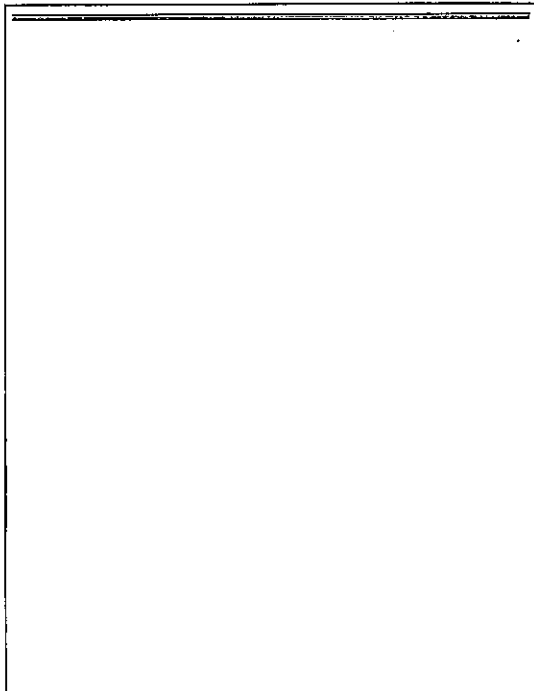
Quality Certification: This OQA was prepared under a quality management system that is:

- Registered to ISO 9001:2015 Quality Management System - Requirements (PDA/ISO/IEC 9001:2015) and ISO 17024:2015 - Requirements for the Competence of Persons Maintaining Products (ISO/IEC 17024:2015)
- ISO 17024 reference of third requirements specified in ISO 17024:2015 and ISO 9001:2015
- Accredited to ISO 9001:2015 - General Requirements for the Competence of Testing and Calibration Laboratories (ISO/IEC 17025:2017)

Date: September 13, 2021 5:50:41 PM  
System ID: MY16010005

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Document Name: Certificate of Analysis Wavelength calibration solution

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Comments

Date/Time: September 13, 2021 5:27:56 PM

Test: General

Comment: Start OQ on 09 Sep 21 and found water flow fail, So repair job complete for 13 Sep 21 and OQ continue to complete.

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General

Document Name: Instrument's Test Report

## Report Summary

Instrument Model Agilent 8100S110 EVDV ICA-065  
Instrument ID 0010A00214A  
Instrument Serial Number MY16010005  
Software Version 7.5.3.11933  
Firmware Version 5365  
Tested By Kanyatom B.  
Test Started On 9/23/21 9:51:21 AM  
Test Completed On 9/23/21 9:59:35 AM

## Results Summary

Subsystem Communications Test Pass  
Air Flow Test Stopped  
Water Flow Test Stopped  
Gas Flow Test Stopped  
RF Generator Test Stopped  
Camera Test Stopped  
Optics Test Pass  
Advanced Valve System Test Stopped  
Resolution Test Pass  
Sensitivity Test Pass  
Precision Test Pass

## Subsystem Communications Test

Pass

## Optics Test

Pass

	Radial	Asial	EVDV
Intensity	3082176	3162050	3419285
Wavelength	737.212	737.212	737.212

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Element Wavelength	Specification	Width
N (174.213 nm)	± 0.40	7.54
As (188.560 nm)	± 0.50	5.43
Se (196.029 nm)	± 11.00	6.88
Ala (202.020 nm)	± 0.50	6.50
Cr (220.353 nm)	± 13.40	11.03
Zn (213.857 nm)	± 8.70	7.27
Pb (220.353 nm)	± 9.50	7.52
Co (228.616 nm)	± 17.20	12.66
Ba (228.424 nm)	± 9.40	7.80
Mn (257.610 nm)	± 13.30	9.99
Mn (257.568 nm)	± 20.30	16.53
Cr (267.316 nm)	± 11.00	8.53
Co (274.794 nm)	± 25.00	16.14
Co (273.306 nm)	± 14.20	11.73
Se (293.071 nm)	± 33.50	26.94
Ba (455.403 nm)	± 44.00	33.57
Se (460.753 nm)	± 36.00	22.39
Ba (485.408 nm)	± 36.00	26.09
Se (514.151 nm)	± 42.00	28.49
Ar (773.253 nm)	± 74.00	60.58
K (766.481 nm)	± 80.00	66.42

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## Sensitivity Test

Pass

Element Wavelength	Specification	Method	Ratio	Standard	Blank
As (188.560 nm)	± 46.0	SRBR	58.9	966.1	94.9
Se (196.029 nm)	± 41.0	SRBR	55.5	706.4	113.8
Zn (213.857 nm)	± 1421.0	SRBR	2685.3	26874.4	187.9
Pb (220.353 nm)	± 48.0	SRBR	100.8	1382.6	152.2
Mn (257.610 nm)	± 3516.0	SRBR	6841.7	127413.9	368.9
Al (298.152 nm)	± 3.4	GBR	8.9	24237.9	3081.8
Ba (485.408 nm)	± 34.0	GBR	95.1	1019415.2	10683.7
K (766.481 nm)	± 1.9	GBR	4.4	82643.9	16321.6

Element Wavelength	Specification	Method	Ratio	Standard	Blank
As (188.560 nm)	± 206.0	SRBR	282.4	6195.6	273.5
Se (196.029 nm)	± 156.0	SRBR	199.9	3993.2	321.0
Zn (202.020 nm)	± 243.0	SRBR	793.6	17496.9	237.0
Zn (213.857 nm)	± 1743.0	SRBR	4924.8	109862.8	596.4
Co (214.439 nm)	± 4227.0	SRBR	4598.6	57882.4	976.1
Pb (220.353 nm)	± 320.0	SRBR	327.3	7693.1	430.3
Mn (257.610 nm)	± 10625.0	SRBR	16098.6	83298.1	1164.7
Cr (257.718 nm)	± 1041.0	SRBR	4115.3	173998.0	1751.9
Co (274.794 nm)	± 18.0	GBR	46.6	188305.3	3360.0
Al (298.152 nm)	± 5.0	GBR	16.7	118892.8	6877.5
Ba (485.408 nm)	± 60.0	GBR	168.0	537407.57	31797.5
K (766.481 nm)	± 21.0	GBR	54.9	2330127.0	35334.9

## Precision Test

Pass

Element Wavelength	Specification	Measured Value % RSD
As (188.560 nm)	± 2.80	1.08
Se (196.029 nm)	± 2.80	1.38
Zn (213.857 nm)	± 1.80	0.82
Pb (220.353 nm)	± 2.80	0.72
Mn (257.610 nm)	± 1.50	0.44

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Element Wavelength	Specification	Measured Value % RSD
Al (298.152 nm)	± 1.50	0.45
Ba (485.408 nm)	± 1.50	0.48
K (766.481 nm)	± 1.50	0.34

Element Wavelength	Specification	Measured Value % RSD
As (188.560 nm)	± 1.50	0.84
Se (196.029 nm)	± 1.50	1.58
Zn (202.020 nm)	± 1.50	0.29
Zn (213.857 nm)	± 1.50	0.36
Co (214.439 nm)	± 1.50	0.30
Pb (220.353 nm)	± 1.50	0.47
Mn (257.610 nm)	± 1.50	0.73
Cr (257.718 nm)	± 1.50	0.30
Co (274.794 nm)	± 1.50	0.45
Al (298.152 nm)	± 1.50	0.35
Ba (485.408 nm)	± 1.50	0.80
K (766.481 nm)	± 1.50	0.48

## Report Detail

Tests Run - Operator: Kanyatom B.  
Subsystem Communications Test - Passed  
RudSystem - Status  
Main Power Module - Passed  
Gas Control Module - Passed  
RF Generator - Passed  
Pre-optics Module - Passed  
Optics Camera Control Module - Passed  
Pneumatic Pump - Passed  
Subsystem Communications Test Completed - Passed  
Optics Test - Status  
Test View Mode Intensity Status  
LED Off - Passed  
Shutter opened - Passed  
Peak Intensity Radial mode 3082176.14 - Passed  
Shutter closed - Passed  
Peak Intensity (closed shutter) Radial mode 56.00 - Passed  
Shutter opened - Passed  
Optical Aperture Radial - Cancelled Value = 2.56, Factory Value = 2.50  
Peak Intensity Axial mode 3162050.48 - Passed

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Radio-Acid Intensity Ratio(Range 0-100) = 1.03 - Passed  
Peak Intensity Simultaneous mode 341287.63 - Passed  
Shutter closed - Passed  
Optics Test Completed - Passed  
Instrument Performance - Started  
Instrument Performance Completed - Passed

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General

Document Name: Instrument's Test Report

Report Summary  
Instrument Model: Agilent 5100/5110 BVDV ICP-OES  
Instrument ID: 0801DAV02814A  
Instrument Serial Number: MY16010005  
Software Version: 7.6.3.11853  
Firmware Version: 5395  
Tested By: Kanyakorn S.  
Test started on: 9/13/2021 5:31:48 PM  
Test Completed On: 9/13/2021 5:46:56 PM

Result Summary  
Subsystem Communications Test: Pass  
Air Flow Test: Pass  
Water Flow Test: Pass  
Gas Flow Test: Pass  
RF Generator Test: Pass  
Camera Test: Pass  
Optics Test: Pass  
Advanced Valve System Test: Skipped  
Resolution Test: Skipped  
Sensitivity Test: Skipped  
Precision Test: Skipped

Subsystem Communications Test: Pass

Air Flow Test: Pass  
50% Air Flow (relative speed): 11.00  
80% Air Flow (relative speed): 18.00

Water Flow Test: Pass  
RF Water Flow (L/min): 1.21  
Camera Water Flow (L/min): 1.14  
Water inlet Temperature (°C): 23.01

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Document Name: Instrument's Test Report

Gas Flow Test: Pass  
Nebulizer Target Flow: 0.70, Actual Flow: 0.71, Back Pressure: 270.73  
Auxiliary Target Flow: 2.60, Actual Flow: 2.53, Back Pressure: 106.21  
Makeup Target Flow: 2.00, Actual Flow: 2.00, Back Pressure: 108.63  
Plasma Target Flow: 15.00, Actual Flow: 17.99, Back Pressure: 19.78  
RF Generator Test: Pass  
RF Power Supply Test: Passed  
RF Power Supply (V): 150.332  
RF Oscillator Test: Passed  
RF Oscillator Frequency (MHz): 25.817  
Work Cell Current (A): 44.873  
RF Power Supply Current (A): 1.988  
Camera Test: Pass  
Back Level Test: Passed  
Noise Test: Passed  
Photo Response Test: Passed  
Gain Test: Pass  
Intensity: 293.943, Actual: 300947, BVDV: 3255638  
Wavelength: 173.212, Actual: 173.212, BVDV: 173.212

Report Detail  
Test Run - Operator: Kanyakorn S.  
Subsystem Communications Test: Started  
Subsystem Status  
Nebulizer Module - Passed  
Gas Control Module - Passed  
RF Generator - Passed  
Optics Module - Passed  
Optics/Camera Control Module - Passed

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Pneumatic Pump - Passed  
Subsystem Communications Test Completed - Passed  
Air Flow Started  
Fan Speed(%) Air Flow(relative speed) Status  
50% 11 - Passed  
60% 16 - Passed  
Air Flow Completed - Passed  
Water Flow Started  
RF Water Flow(L/min) = 1.21  
Camera Water Flow (L/min) = 1.14  
Water Inlet Temperature = 23.01  
RF Water Flow(L/min) set = 5.00  
Water Flow Completed - Passed  
Gas Flow Started  
Channel Target/Actual Pressure/Failure Status  
Auxiliary Gas 0.03 0.03 N/A - Passed  
Auxiliary Gas 2.00 2.00 N/A - Passed  
Nebulizer Gas 0.00 0.00 N/A - Passed  
Nebulizer Gas 0.70 0.71 270.73 N/A - Passed  
Plasma Gas 0.00 1.18 N/A - Passed  
Plasma Gas 15.00 17.99 N/A - Passed  
Makeup Gas 0.00 2.00 N/A - Passed  
Makeup Gas 2.00 2.00 N/A - Passed  
Purge Gas 0.70 0.70 N/A - Passed  
Purge Gas 3.75 3.75 N/A - Passed  
All Channel Inlet ON - Passed  
All Channel Inlet OFF - Passed  
Gas Flow Completed - Passed  
RF Generator Started  
RF generator turned off - Passed  
RF generator turned on - Passed  
Gas Control = 0 V - Passed  
RF Power Supply - Set Value = 150V, Actual Value = 150.33V - Passed  
RF Oscillator Started - Passed  
RF Oscillator Frequency (MHz) = 25.82, Workcell Current(Amps) = 44.87, RF Power Supply Current(Amps) = 2.00 - Passed  
RF Oscillator stopped - Passed  
RF generator turned off - Passed  
RF generator turned on - Passed  
Camera Test Started  
Back level test - PASSED  
Noise test - PASSED  
Photo response test - PASSED  
Camera Test Completed - Passed  
Optics Test Started  
Test View Mode/Intensities Status  
LED Off - Passed

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Plasma Ignite Started  
 Plasma Ignite - Passed  
 Waiting 5 min for plasma warm up  
 Shutter opened - Passed  
 Peak Intensity Radial mode 298632.00 - Passed  
 Shutter closed - Passed  
 Peak Intensity Radial mode 55.46 - Passed  
 Shutter opened - Passed  
 Optical Argon Radial, Chlorinated Valve = 2.53, Factory Valve = 2.82  
 Peak Intensity Axial mode 300947.39 - Passed  
 Radio-Axial Intensity Ratio (Range 0.100)-1.21 - Passed  
 Peak Intensity Simultaneous mode 2285528.45 - Passed  
 Shutter closed - Passed  
 Option Test Completed - Passed

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## Electronic Signature

## Purpose

This signature page was created and published because the ACE sign-off action was executed, which is valid for the entire document, including attachments. The ACE sign-off is an electronic signature that requires two distinct identification components: unique username and personal password. The Agilent representative who has delivered this service understands the meaning and legal status of an electronic signature. As a trained official operator, the Agilent representative has a unique password and login to access ACE and electronically sign this document. (Other e-signatures can be applied to this document using a Document Content Management or other suitable method defined in your data access and control procedures.)

## Details

Full Name of Signer: Kanyakorn Sukpathra/aren  
 Logged On User Name: phimpapha.jearphong@agilent.com  
 Signature Creation Date: September 13, 2021  
 Reason for Signature: Executed protocol and published this original version of document

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User Name: phimpapha.jearphong  
 Username: AREJOOWX328  
 System ID: MY16010005  
 Print Date: September 13, 2021 8:30:44 PM

## GDHW 5100 KFOES ALS 88Sep21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 8, 2021 8:49:58 AM	Audit	SessionCreated	Session	None
September 8, 2021 8:49:59 AM	Start	Configuration	Session	None
September 8, 2021 8:49:59 AM	Audit	EndSession	Session	User is Field Engineer and does not require an unlock code
September 8, 2021 8:57:06 AM	Audit	EqLoaded	Session	EQP details for primary workflow (F1): File path: (Protocol)P005/ExConfig/Inst012306s.02.50.wsp; EQP File Name: (SALS)S.wsp; EQP Name: (AgilentRecommended)
September 8, 2021 8:57:11 AM	End	Configuration	Session	None
September 8, 2021 8:57:15 AM	Start	Qualification	Session	OQ
September 8, 2021 8:57:15 AM	Start	Execution	Preparation: 5100 BYDV; Qualitative Test - No setpoints associated	None
September 8, 2021 8:54:35 AM	End	Execution	Preparation: 5100 BYDV; Qualitative Test - No setpoints associated	Run Count: 1
September 8, 2021 8:54:39 AM	Start	Execution	Instrument Tests: 5100 BYDV; Qualitative Test - No setpoints associated	None
September 8, 2021 9:51:27 AM	End	Execution	Instrument Tests: 5100 BYDV; Qualitative Test - No setpoints associated	Run Count: 1

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User Name: phimpapha.jearphong  
 Username: AREJOOWX328  
 System ID: MY16010005  
 Print Date: September 13, 2021 8:30:44 PM

## GDHW 5100 KFOES ALS 88Sep21 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 8, 2021 9:51:30 AM	Start	Execution	Autosampler Operation: Autosampler 1 - SP54; Qualitative Test - No setpoints associated	None
September 8, 2021 9:51:36 AM	End	Execution	Autosampler Operation: Autosampler 1 - SP54; Qualitative Test - No setpoints associated	Run Count: 1
September 8, 2021 9:51:36 AM	End	Qualification	Session	OQ
September 8, 2021 9:51:38 AM	Start	Reporting	Session	None
September 8, 2021 10:35:45 AM	Audit	AccClosed	Session	None
September 13, 2021 5:01:28 PM	Audit	AccNotStarted	Session	None
September 13, 2021 5:01:28 PM	Audit	SessionRelocated	Session	None
September 13, 2021 5:01:28 PM	Start	Qualification	Session	OQ
September 13, 2021 5:47:55 PM	Audit	Reporting	Session	Report Generated; Certificate

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 System ID: MY16010005

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User Name: phlographa.jee@phn00  
Host Name: ASB00000328System ID: MY16010005  
Print Date: September 13, 2021 8:58:44 PM

## CrossLab S100 ICP-DES ALS 09Sep21 Transaction Log:

Time	Transaction Date	Activity Performed	Type of Transaction	Optional Information
September 13, 2021 8:48:10 PM	Auto	Reporting	Session	Report Signed: Certificate PDF Name: C091W S100 ICP-DES ALS 09Sep21_20210913_Certific ate.pdf User Name: phlographa.jee@phn00 Full Name of Signer: Kanyakorn Sudephrajarn Reason for signature: Executed process and published the original version of document Report Generated : Report
September 13, 2021 8:49:23 PM	Auto	Reporting	Session	

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## ภาคผนวก จ

สำเนาหนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน



เอกสารแนบท้ายหนังสือรับรองทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
บริษัท เอนเทลอส แลเบอร์ทอรี กรุ๊ป (ประเทศไทย) จำกัด  
ที่ ออ ๓๑๑๐(๑)/ ๑๐๖๕ ลงวันที่ ๒๘ มกราคม ๒๕๖๕ เลขทะเบียน ๖-๒๐๕

น. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย

- ๑) นางสาวจิตตา ไชยธรรม ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๐๕
- ๒) นางสาววิภากร น้อยสุข ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๐๕
- ๓) นางสาวชนัญญาญจน์ อิ่มเพิ่ม ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๔) นางสาวรินพร สายแสง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๕) นางสาวนันทวิมล สมบูรณ์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๖) นางสาวศรีนยา เติมอรรถกุล ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๗) นางสาวสรวิทย์ มงคลจิราวุฒิ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๘) นางสาวศิริกัญญา พึ่งแพง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๒๐
- ๙) นายพงศ์ จันทพรพันธุ์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๘
- ๑๐) นายณรงค์กร โกมลาลย์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๑๑) นายธนากร จิรายา ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๔
- ๑๒) นางสาวกศรินทร์ แก้วมัน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๑๓) นางสาวอุบล ชัยเรืองวุฒิ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๑๔) นางสาวสุชาดา ธรรมการ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๑๕) นางสาวเม็กกา ชัยคณกุล ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๓
- ๑๖) นางสาวศิริกร หนูสวัสดิ์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๔
- ๑๗) นางสาวลลิตาญจน์ ภูมิอาพร ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๑๘) นายอภิสิทธิ์ สิงหา ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๑๙) นายศักดิ์สิทธิ์ โพธิ์ลาสิสุทธิ์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๒๐) ว่าที่ร้อยตรีหญิง พรหมภา จ้างเจริญ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๒๑) นางจิตตา คำบุญแก้ว ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๒๒) นางสาวอรรณ รักง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๒๓) นางสาวนพรัตน์ แย้มกรานต์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๒๔) นายจุลเดช วาจิรินทร์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๒๕) นางสาวดาญรัตน์ ร้องคำ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๒๖) นายนคร สุขเจริญ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๒๗) นายบัญชา นามเขตต์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๒
- ๒๘) นายพรมณ์ ศรีปิ่นแดง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๒๙) นายอุทิศ อุ่มเลิม ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๓๐) ว่าที่ร้อยตรี เติมเกียรติ อมรศรีเสริม ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๓๑) นางสาวกริยา สรรณา ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๓๒) นายอนุพงศ์ รัตนศรีประเสริฐ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๓๓) นางสาวจุฑาภรณ์ โอนเล่นทิยะ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๓๔) นางสาวจตุรรม พิมพ์อักษรทะยาน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๓

(นายศิระ จันทโรจน์)

๓๕) นางสาวปรางค์ทิพย์...

ผู้พิมพ์และจัดพิมพ์เอกสาร  
ผู้ดำเนินการจัดพิมพ์และจัดพิมพ์เอกสาร  
บริษัท เอนเทลอส แลเบอร์ทอรี กรุ๊ป (ประเทศไทย) จำกัด

- ๒ -

- ๓๕) นางสาวปรางค์ทิพย์ กิจไพศาลศักดิ์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๓๖) นางสาวเดือนใจ ทางกลาง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๓๗) นางสาวจิราพร ศิริเวช ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๓๘) นายวรากร ผูกกล้า ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๓
- ๓๙) นายทง วีระสมกิจ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๔
- ๔๐) นายธนิต เสงือบ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๔๑) นายคณิศร จำพูน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๔๒) นายอรรคพล นิยมวิทย์พาน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๔๓) นายภูวิช พรหมสะอาด ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๘
- ๔๔) นายณเดช โกธพิพัฒน์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๘
- ๔๕) นายชวฤทธิ์ วงษ์จันทร์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๔๖) นายอาทิตย์ ศรีเสน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๔๗) นายเจษฎาพร คงศักดิ์ไทย ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๒
- ๔๘) นายจรัส บุญอิง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๔๙) นายธนาธิปไตย เอกภ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๕๐) นายอภิวัฒน์ ทุมพู ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๕๑) นางสาวสุภาวัญ มาก ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๘
- ๕๒) นางสาวหิมาพร ชาวสมบูรณ์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๕๓) นางสาวอติมา บุญเพ็ง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๕๔) นางสาวนภอร เข้มเพชร ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๒
- ๕๕) นางสาวพัชรียา พงษ์สมบัติ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๓
- ๕๖) นางสาวภาณิดา สุรางค์ศรีกุล ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๔
- ๕๗) นางสาวภาณุมาศ นนวัฒน์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๕๘) นางสาวอุไรรัตน์ หิสรังแก่น ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๖
- ๕๙) นายธีรวัฒน์ ปงสุข ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๗
- ๖๐) นายอิทธิพล ยะโส ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๘
- ๖๑) นายประพจน์ วรรณสุขัย ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๖๒) นายชยธร พงษ์ทิพย์ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๖๓) นางสาวนภกรรณ์ จันทบาล ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๖๔) นางสาวนภสร หลักบุญ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๒
- ๖๕) นายสิทธิโชค รุ่งเงิน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๓
- ๖๖) นางสาววรรณใจบุญ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๕
- ๖๗) นางสาวพรหมธิดา ทุมคง ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๘
- ๖๘) นางสาวศรีนยา ยี่งัด ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๙
- ๖๙) นายเนกัทธ์ ศรีริยะ ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๐
- ๗๐) นายสุวิภา ทองอ่อน ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๑
- ๗๑) นายวิญญู บุญตะนัย ทะเบียนเลขที่ ๖-๒๐๕-จ-๕๗๑๓

(นายศิระ จันทโรจน์)

๗๒) นายสมบูรณ์...

ผู้พิมพ์และจัดพิมพ์เอกสาร  
ผู้ดำเนินการจัดพิมพ์และจัดพิมพ์เอกสาร  
บริษัท เอนเทลอส แลเบอร์ทอรี กรุ๊ป (ประเทศไทย) จำกัด



- ๑๔๖) นางสาวศุภกานต์ สุพรรณนาม  
๑๔๗) นางสาวศุภกานต์ นนทประสาท  
๑๔๘) นางสาววัชรินทร์ เขียวกลาง  
๑๔๙) นางสาวณัฐรัตน์ ศรีนิลหา  
๑๕๐) นางสาวณัฐรี คำจันทร์  
๑๕๑) นายบุญฤทธิ์ เอี่ยมเทศ  
๑๕๒) นายศิริวัฒน์ พานิชย์  
๑๕๓) นางสาวศุภรดา ปันยารา  
๑๕๔) นางสาวพิกุล สุดงาม  
๑๕๕) นางสาวจิราเจต พองดา  
๑๕๖) นางสาวนภกานต์ อูระ  
๑๕๗) นางสาวอารยา มีชัย  
๑๕๘) นางสาวจิตสุภา ประทองสูง  
๑๕๙) นางสาวอริสา วัชรินทร์ธรรม  
๑๖๐) นางสาววิชุดา นาคเจริญ  
๑๖๑) นางสาวนิตา ยอดอินทร์  
๑๖๒) นางสาวนันทิยา จันทร์สุน




(นายคิระ จันทรวิไล)  
ผู้อำนวยการศูนย์ปฏิบัติการวิจัยและติดตามผลกระทบ  
ผู้อำนวยการศูนย์ปฏิบัติการวิจัยและติดตามผลกระทบ  
ผู้อำนวยการศูนย์ปฏิบัติการวิจัยและติดตามผลกระทบ

เอกสารแนบท้ายหนังสือรับข้อร้องเรียนหนังสือแจ้งการวิเคราะห์เอกสาร  
บริษัท เอลเอส แลบริทอรี่ กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ๖-๒๐๔  
ที่ อก ๐๓๐(๑) / ๑ ๐ ๖ ๕ ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ขอขอบคุณสำหรับข้อมูลที่ได้รับการแจ้งจากกรมโรงงานอุตสาหกรรม จำนวน ๓๖๑ รายการ

แนบชื่อ จำนวน 59 รายการ

ลำดับที่	สารเคมี	วิธีการวิเคราะห์
1	Aldicarb	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
2	Aldicarb Sulfone	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
3	Aldicarb Sulfonide	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
4	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
5	Arsenic	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
6	Barium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
7	α-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
8	β-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
9	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
10	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
11	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method <sup>(a)</sup> 2) 5-Day BOD Test, Membrane Electrode Method <sup>(a)</sup>
12	Carbaryl	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
13	Carbofuran	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
14	Cadmium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
15	Chemical Oxygen Demand	1) Closed Reflux, Colorimetric Method <sup>(a)</sup> 2) Closed Reflux, Titrimetric Method <sup>(a)</sup>
16	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
17	Chromium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(a)</sup>
18	Color	ADMI Weighted-Ordinate Spectrophotometric Method

  
(นายคิระ จันทรวิไล)  
ผู้อำนวยการศูนย์ปฏิบัติการวิจัยและติดตามผลกระทบ  
และหน่วยงานที่เกี่ยวข้อง



ลำดับที่	สารเคมี	วิธีวิเคราะห์
19	Copper	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
20	Cyanide	Distillation, Colorimetric Method <sup>(a)</sup>
21	2,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
22	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
23	2,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
24	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
25	2,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
26	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
27	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
28	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
29	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
30	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
31	Endrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
32	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
33	Formaldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
34	Free Chlorine	Distillation, Colorimetric Method <sup>(a)</sup> 1) DPD Ferrous Titrimetric Method <sup>(a)</sup> 2) Iodometric Method <sup>(a)</sup>
35	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
36	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
37	Hexavalent Chromium	Filtration, Colorimetric Method <sup>(a)</sup>
38	3-Hydroxycarbofuran	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
39	Lead	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
40	Manganese	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
41	Mercury	Mass Spectrometric Method <sup>(a)</sup> 1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/Mass spectrometric Method <sup>(a)</sup>
42	Methiocarb	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
43	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>

44 Methomyl...

วิธีใหม่  
(นางสาวอุบล นิตกรกุลวิไล)  
ผู้ช่วยกรรมการบริหารฝ่ายวิชาการ/ทดสอบพิษ  
และความเป็นพิษกับสัตว์

ลำดับที่	สารเคมี	วิธีวิเคราะห์
44	Methomyl	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
45	Nickel	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
46	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method <sup>(a)</sup> 2) Soxhlet Extraction Method <sup>(a)</sup>
47	Oxamyl	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
48	Propoxur	High-Performance Liquid Chromatographic Method <sup>(a)</sup>
49	pH	Electrometric Method <sup>(a)</sup>
50	Phenols	1) Distillation, Chloroform Extraction Method <sup>(a)</sup> 2) Distillation, Direct Photometric Method <sup>(a)</sup>
51	Selenium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
52	Sulfide	Iodometric Method <sup>(a)</sup>
53	Temperature	Laboratory and Field Methods <sup>(a)</sup>
54	Total Dissolved Solids	Dried at 180 °C <sup>(a)</sup>
55	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method <sup>(a)</sup>
56	Total Suspended Solids	Dried at 103-105 °C <sup>(a)</sup>
57	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(a)</sup>
58	Trivalent Chromium	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation <sup>(a)</sup>
59	Zinc	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(a)</sup>

หน้าถัดไป จำนวน 126 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>

3 Aldrin...

วิธีใหม่  
(นางสาวอุบล นิตกรกุลวิไล)  
ผู้ช่วยกรรมการบริหารฝ่ายวิชาการ/ทดสอบพิษ  
และความเป็นพิษกับสัตว์

ลำดับที่	สารเคมี	วิธีวิเคราะห์
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
5	Antimony	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
8	Barium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
13	Benzoic Acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
15	Benzo(g,h,i)perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>

34

18 Bis(2-ethylhexyl)phthalate...

(นางวิภาญ์ อัครกุลกิจ)  
ผู้ควบคุมการปฏิบัติงานวิเคราะห์ในห้องปฏิบัติการ  
กรมส่งเสริมการค้าระหว่างประเทศ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
22	Butyl Benzyl Phthalate	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
23	Cadmium	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup> 1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
27	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
29	Chlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
33	Chromium	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>

34

34 Chromium (II)...

(นางวิภาญ์ อัครกุลกิจ)

ผู้ควบคุมการปฏิบัติงานวิเคราะห์ในห้องปฏิบัติการ  
กรมส่งเสริมการค้าระหว่างประเทศ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
34	Chromium (II)	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation <sup>(4)</sup>
35	Chromium (VI)	Colorimetric Method <sup>(4)</sup>
36	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
37	Cyanide	Distillation, Colorimetric Method <sup>(4)</sup>
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
39	DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
40	DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
41	DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
43	Di-n-Butyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
47	3,3-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>

51 cis-1,2-Dichloroethylene...

กรมส่งเสริมการค้าระหว่างประเทศ  
(นางวิภาดา ชัยพร) นักวิชาการ  
ผู้ชำนาญการพิเศษ หัวหน้างานวิชาการ ฝ่ายเทคนิค  
และงานสนับสนุนวิชาการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
57	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
58	Diethyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
63	Di-n-Octyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
64	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
65	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>

68 Fluorene...

กรมส่งเสริมการค้าระหว่างประเทศ  
(นางวิภาดา ชัยพร) นักวิชาการ  
ผู้ชำนาญการพิเศษ หัวหน้างานวิชาการ ฝ่ายเทคนิค  
และงานสนับสนุนวิชาการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
69	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
70	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
74	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
75	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
76	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
81	Lead	Mass Spectrometric Method <sup>(a)</sup> 1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
82	Manganese	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
83	Mercury	Mass Spectrometric Method <sup>(a)</sup> 1) Cold Vapor Atomic Absorption Spectrometric Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>

84 Methanol...

วิธีวิเคราะห์

(นางธิกาญจน์ อัครสกุลวิไล)

ผู้อำนวยการศูนย์การวิจัยวิทยาศาสตร์และเทคโนโลยี  
กรมส่งเสริมการค้าระหว่างประเทศ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
84	Methanol	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup> 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
92	Nickel	1) Digestion, Inductively Coupled Plasma Method <sup>(a)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(a)</sup>
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
95	N-Nitrosodi-n-Propylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB 1242 - PCB 1248 - PCB 1254 - PCB 1260	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(a)</sup>

97 Pentachlorophenol...

วิธีวิเคราะห์

(นางธิกาญจน์ อัครสกุลวิไล)

ผู้อำนวยการศูนย์การวิจัยวิทยาศาสตร์และเทคโนโลยี  
กรมส่งเสริมการค้าระหว่างประเทศ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
98	pH	Electrometric Method <sup>(4)</sup>
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
100	Phenol	1) Distillation, Direct Photometric Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
102	Selenium	1) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(4)</sup>
103	Silver	1) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(4)</sup>
104	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
105	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
106	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
107	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
108	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
109	TPH (C <sub>5</sub> -C <sub>8</sub> )	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(1)(3,24)</sup>
110	TPH (C <sub>9</sub> -C <sub>14</sub> )	Solvent Extraction, Gas Chromatographic Method <sup>(9,21)</sup>
111	TPH (C <sub>15</sub> -C <sub>33</sub> )	Solvent Extraction, Gas Chromatographic Method <sup>(9,21)</sup>
112	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
113	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>

114 1,1,2-Trichloroethane...

วิธีใหม่  
(นางริกาญูจน์ อัครสกุลวิไล)  
ผู้อำนวยการศูนย์มาตรฐานสิ่งแวดล้อมพิษ  
และระบบนิเวศวิทยา

ลำดับที่	สารเคมี	วิธีวิเคราะห์
114	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
115	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
116	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
117	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
118	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
119	Vanadium	1) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(4)</sup>
120	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
121	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
122	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
123	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
124	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
125	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(4)</sup>
126	Zinc	1) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(4)</sup>

ขยายผล (เปลี่ยนรายชื่อ) จำนวน 16 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Antimony	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>(5)</sup>
2	Arsenic	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>(5)</sup>

วิธีใหม่  
3 Carbon Monoxide...

(นางริกาญูจน์ อัครสกุลวิไล)  
ผู้อำนวยการศูนย์มาตรฐานสิ่งแวดล้อมพิษ  
และระบบนิเวศวิทยา

ลำดับที่	สารเคมี	วิธีวิเคราะห์
3	Carbon Monoxide	1) Sampling Bag Non-Dispersive Infrared Method <sup>[5]</sup> 2) Non-Dispersive Infrared Method <sup>[5]</sup> 3) Instrumental Analyzer Method <sup>[5]</sup>
4	Chlorine	1) Absorption Sampling, Ion Chromatographic Method <sup>[5]</sup> 2) Isokinetic Sampling, Ion Chromatographic Method <sup>[5]</sup>
5	Copper	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
6	Dioxins	Isokinetic Sampling, Analysis by ISO/IEC 17025 Accredited Laboratory or Analysis by Department of Industrial Works Registered Laboratory (Dioxins/Furans Analysis Approved) <sup>[5]</sup>
7	Hydrogen Chloride	1) Absorption Sampling, Ion Chromatographic Method <sup>[5]</sup> 2) Isokinetic Sampling, Ion Chromatographic Method <sup>[5]</sup>
8	Hydrogen Sulfide	Absorption Sampling, Iodometric Method <sup>[5]</sup>
9	Lead	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
10	Mercury	1) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[5]</sup> 2) Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
11	Opacity	Ringelmann's Method <sup>[2]</sup>
12	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method <sup>[5]</sup> 2) Chemiluminescence Method <sup>[5]</sup> 3) Instrumental Analyzer Method <sup>[5]</sup>
13	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup> 2) UV Fluorescence Method <sup>[5]</sup> 3) Instrumental Analyzer Method <sup>[5]</sup>
14	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup>
15	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method <sup>[5]</sup>
16	Xylene	Absorption Sampling, Gas Chromatographic Method <sup>[5]</sup>

สิ่งปลูก...

สิ่งปลูก...  
(นางริกาญจน์ ฉัตรสุกฤดี)  
ผู้อำนวยการศูนย์การศึกษานานาชาติเพื่อพัฒนา  
และส่งเสริมศักยภาพของนักศึกษา

สิ่งปลูกหรือวัตถุที่ไม่ใช่แล้ว จำนวน 35 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,2,5]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,13]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,13]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,13]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,13]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,13]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,13]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,13]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,13]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>

6 Cadmium...

สิ่งปลูก...  
(นางริกาญจน์ ฉัตรสุกฤดี)  
ผู้อำนวยการศูนย์การศึกษานานาชาติเพื่อพัฒนา  
และส่งเสริมศักยภาพของนักศึกษา

ลำดับที่	สารเคมี	วิธีวิเคราะห์
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1.6.13)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1.6.16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7.13)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7.14)</sup>
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1.9.23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10.22)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23.1)</sup>
8	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1.6.13)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1.6.16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7.13)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7.14)</sup>
9	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method <sup>(1.6.13,17)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method <sup>(1.6.16,17)</sup> 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>(7.8,13,17)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>(7.8,13,17)</sup>
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method <sup>(1.6.17)</sup> 2) Alkaline Digestion, Colorimetric Method <sup>(8.17)</sup>

gmp

(นางวิภากรรณ์ อัครสกุลวิไล)

ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ห้องเคมี

กรมส่งเสริมการค้าระหว่างประเทศ

11 Cobalt...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1.6.13)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1.6.16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7.13)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7.14)</sup>
12	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1.6.13)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1.6.16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7.13)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7.14)</sup>
13	2,4-D	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1.9.23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10.22)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23.1)</sup>
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1.9.23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10.22)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23.1)</sup>
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1.9.23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10.22)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23.1)</sup>
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1.9.23)</sup>

gmp

(นางวิภากรรณ์ อัครสกุลวิไล)

ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ห้องเคมี

กรมส่งเสริมการค้าระหว่างประเทศ

2) Soxhlet...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
17	Dieldrin	2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup> 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup>
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup>
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup>
20	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7,16)</sup>
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup>
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(1,6,18)</sup>

2) Waste Extraction...

Signature  
(นางรักกัญจน์ ชัยพรกุลกิจ)

ผู้อำนวยการศูนย์ปฏิบัติการด้านพิษวิทยา

ลำดับที่	สารเคมี	วิธีวิเคราะห์
23	Methoxychlor	2) Waste Extraction, Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>(1,6,19)</sup> 3) Waste Extraction, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method <sup>(1,6,20)</sup> 4) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(18)</sup> 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>(19)</sup> 6) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method <sup>(20)</sup> 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup>
24	Mirex	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,21)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(22,31)</sup>
25	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7,16)</sup>
26	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7,16)</sup>

27 Polychlorinated...

Signature  
(นางรักกัญจน์ ชัยพรกุลกิจ)

ผู้อำนวยการศูนย์ปฏิบัติการด้านพิษวิทยา



ลำดับที่	สารเคมี	วิธีวิเคราะห์
27	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,3-Dichlorobiphenyl - 2,2',3'-Trichlorobiphenyl - 2,4',5'-Trichlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2',3,4,4',5-Hexachlorobiphenyl - 2,2',3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6-Hexachlorobiphenyl - 2,2',4,4',5,5'-Hexachlorobiphenyl - 2,2',3,3',4,4',5'-Heptachlorobiphenyl - 2,2',3,4,4',5,5'-Heptachlorobiphenyl - 2,2',3,4,4',5,6'-Heptachlorobiphenyl - 2,2',3,4',5,5',6'-Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6'-Octachlorobiphenyl Nonachlorobiphenyl	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23)</sup>

28 Pentachlorophenol...

(นางวิภาดา วัฒนศิริกุล)

ผู้อำนวยการศูนย์วิจัยและพัฒนาสิ่งแวดล้อมพิษ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
28	Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23)</sup>
29	pH	Electrometric Method <sup>(29,30)</sup>
30	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7,16)</sup>
31	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7,16)</sup>
32	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(7,16)</sup>
33	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(1,9,23)</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(23)</sup>
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1,6,16)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup>

4) Digestion...

(นางวิภาดา วัฒนศิริกุล)

ผู้อำนวยการศูนย์วิจัยและพัฒนาสิ่งแวดล้อมพิษ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
35	Zinc	4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup> 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(1.6.15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>(1.6.14)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(7.15)</sup> 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup>

พิมพ์ จำนวน 125 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Acenaphthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14.24)</sup>
3	Aldrin	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10.22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
4	Anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
5	Antimony	1) Digestion, Inductively Coupled Plasma Method <sup>(7.15)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup>
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method <sup>(7.15)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup>
7	Atrazine	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10.22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
8	Barium	1) Digestion, Inductively Coupled Plasma Method <sup>(7.15)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup>

พิมพ์ 9 Benz(a)anthracene...

(นางสาวกัญจน์ นิตกรกุลวิไล)

ผู้อำนวยการศูนย์ปฏิบัติการวิเคราะห์ข้อมูล

ลำดับที่	สารเคมี	วิธีวิเคราะห์
9	Benz(a)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14.24)</sup>
11	Benzo(b)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
12	Benzo(k)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
13	Benzoic acid	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
14	Benzo(a)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
15	Benzo(g,h,i)perylene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method <sup>(7.15)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup>
17	Bis(2-chloroethyl)ether	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
18	Bis(2-ethylhexyl)phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14.24)</sup>
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14.24)</sup>
21	Butanol	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>(12.24)</sup>
22	Butyl Benzyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method <sup>(7.15)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7.14)</sup>
24	Carbazole	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25.31)</sup>
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14.24)</sup>

พิมพ์ 26 Carbon tetrachloride...

(นางสาวกัญจน์ นิตกรกุลวิไล)

ผู้อำนวยการศูนย์ปฏิบัติการวิเคราะห์ข้อมูล

ลำดับที่	สารเคมี	วิธีวิเคราะห์
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
27	Chlordane	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
28	p-Chloroaniline	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
32	2-Chlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
33	Chromium	1) Digestion, Inductively Coupled Plasma Method <sup>(7,15)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7,15)</sup>
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>(7,7A,15,17)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>(7A,16,17)</sup>
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method <sup>(8,17)</sup>
36	Chrysene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
37	Cyanide	Extraction, Distillation, Colorimetric Method <sup>(26,27,28)</sup>
38	2,4-D	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
39	DDD	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>

40 DDE...

วิมล (นางวิมลยุพณ์ อัครสกุลวิไล)

ผู้แทนภาคพื้นทวีปสำหรับวิธีการวิเคราะห์หัตถ์พิมพ์

ลำดับที่	สารเคมี	วิธีวิเคราะห์
40	DDE	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
41	DDT	1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
42	Dibenz(a,h)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
43	Di-n-Butyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
47	3,3-Dichlorobenzidine	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
53	2,4-Dichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>

57 Dieldrin...

วิมล (นางวิมลยุพณ์ อัครสกุลวิไล)

ผู้แทนภาคพื้นทวีปสำหรับวิธีการวิเคราะห์หัตถ์พิมพ์

ลำดับที่	สารเคมี	วิธีวิเคราะห์
57	Dieldrin	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
58	Diethyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
59	2,4-Dimethylphenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
60	2,4-Dinitrophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
61	2,4-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
62	2,6-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
63	Di-n-Octyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
64	Endosulfan	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
65	Endrin	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
66	Ethylbenzene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup> Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
67	Fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
68	Fluorene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
69	Heptachlor	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
70	Heptachlor Epoxide	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>

71 Hexachlorobenzene...

กรม  
(นางธิษฐาน ธีรสถิตวิไล)

ผู้อำนวยการศูนย์วิทยาศาสตร์การแพทย์เขตภาคกลาง

ลำดับที่	สารเคมี	วิธีวิเคราะห์
71	Hexachlorobenzene	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,20]</sup>
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,20]</sup>
74	α-HCH	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
75	β-HCH	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
76	γ-HCH	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
77	Hexachlorocyclopentadiene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
78	Hexachloroethane	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
79	Indeno(1,2,3-cd)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
80	Isophorone	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
81	Lead	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
82	Manganese	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[18]</sup>

กรม  
(นางธิษฐาน ธีรสถิตวิไล)

ผู้อำนวยการศูนย์วิทยาศาสตร์การแพทย์เขตภาคกลาง

www.nicm.go.th

2) Thermal...

ลำดับที่	สารเคมี	วิธีการหา
		2) Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry <sup>[19]</sup> 3) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method <sup>[20]</sup> Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>[12,21]</sup> 1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup> Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[10,24]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> 1) Digestion, Inductively Coupled Plasma Method <sup>[7,13]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,14]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> 1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,23]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[23,32]</sup>
84	Methanol	
85	Methoxychlor	
86	Methyl Bromide	
87	Methylene Chloride	
88	2-methylphenol	
89	2-Methylnaphthalene	
90	Methyl tert-Butyl Ether	
91	Naphthalene	
92	Nickel	
93	Nitrobenzene	
94	N-Nitrosodiphenylamine	
95	N-Nitrosodi-n-propylamine	
96	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232	

วิธีการ  
(เนจริกญูญ์ ถังศรีสุวิไล)  
ผู้ดำเนินการทดสอบสารพิษในสิ่งแวดล้อม  
- Aroclor 1242...

ลำดับที่	สารเคมี	วิธีการหา
	- Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2,3,4,5'-Pentachlorobiphenyl - 2,2,4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2,3,4,4',5'-Hexachlorobiphenyl - 2,2,3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6'- Hexachlorobiphenyl - 2,2',4,4',5,5'- Hexachlorobiphenyl - 2,2',3,3',4,4',5- Heptachlorobiphenyl - 2,2',3,4,4',5,5'- Heptachlorobiphenyl - 2,2',3,4,4',5,6- Heptachlorobiphenyl - 2,2',3,4',5,5',6- Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6- Nonachlorobiphenyl - Pentachlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup> Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[23,31]</sup>
97	Phenanthrene	
98	Phenol	
99	Pyrene	
100		

วิธีการ  
(เนจริกญูญ์ ถังศรีสุวิไล)  
ผู้ดำเนินการทดสอบสารพิษในสิ่งแวดล้อม  
101 Selenium...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
101	Selenium	1) Digestion, Inductively Coupled Plasma Method <sup>(7,19)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7,19)</sup>
102	Silver	1) Digestion, Inductively Coupled Plasma Method <sup>(7,19)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7,19)</sup>
103	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
106	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
107	Toxaphene	Mass Spectrometric Method <sup>(10,22)</sup> 1) Soxhlet Extraction, Gas Chromatographic Method <sup>(10,22)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
108	TPH (C <sub>5</sub> -C <sub>6</sub> )	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
109	TPH (C <sub>5</sub> - C <sub>10</sub> )	1) Solvent Extraction, Gas Chromatographic Method <sup>(11,21)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(21,31)</sup>
110	TPH (C <sub>16</sub> - C <sub>35</sub> )	1) Solvent Extraction, Gas Chromatographic Method <sup>(11,21)</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>(21,31)</sup>
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
114	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
115	2,4,5-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>

วิธีใหม่ 116 2,4,6-Trichlorophenol...

(นางสาวอุษา ธีรสถิตวิไล)  
ผู้อำนวยการศูนย์วิจัยการวิเคราะห์พิษวิทยา

ลำดับที่	สารเคมี	วิธีวิเคราะห์
116	2,4,6-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>(25,31)</sup>
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
118	Vanadium	1) Digestion, Inductively Coupled Plasma Method <sup>(7,19)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7,19)</sup>
119	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
120	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
121	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
122	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
123	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
124	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>(14,24)</sup>
125	Zinc	1) Digestion, Inductively Coupled Plasma Method <sup>(7,19)</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>(7,19)</sup>

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มาตรฐานห้องปฏิบัติการ

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วิมล  
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ผู้อำนวยการศูนย์บริการทดสอบและ  
มาตรฐานห้องปฏิบัติการ



ที่ อก ๐๓๐๖(๓)/ ๒๕ ๗๐

กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๕ มิถุนายน ๒๕๖๕

เรื่อง ขันทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด  
อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขอเปิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน  
ลงวันที่ ๒๔ เมษายน ๒๕๖๔

สิ่งที่ส่งมาด้วย เอกสารแบบท้ายหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน  
บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด จำนวน ๒ แผ่น  
ตามที่หนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอขึ้นทะเบียน  
ห้องปฏิบัติการวิเคราะห์เอกชน พร้อมรายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ เจ้าหน้าที่ประจำ  
ห้องปฏิบัติการวิเคราะห์ และรายการสารมลพิษที่จะทำการวิเคราะห์ ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้อำนาจให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป  
(ประเทศไทย) จำกัด ขันทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน มีเลขทะเบียน ๖-๓๐๓ สถานที่ตั้งเลขที่  
๒๖๖/๑๐ หมู่ที่ ๕ ตำบลแม่แก้ว อำเภอเวียงชัย จังหวัดเชียงราย โดยมีข้อสรุปอย่างดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์
- ๑) นายเดช ช้างชน ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๖
  - ๒) นางวิลาวัลย์ บรรณกิจ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๗
  - ๓) นายสุพจน์ สยามตะระ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๘
- ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
- ๑) นางสาวณุล บรรณกิจ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๙
  - ๒) นางพจนา สีดา ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๐
  - ๓) นางสาวอนิตา กลุสรีวงศ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๑
  - ๔) นายพิทยา ทองแดง ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๒
  - ๕) นางชลธิชา สุขเกษม ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๓
  - ๖) ว่าที่ ร.ต.รชชัย ม่วงมา ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๔
  - ๗) นายรณภูมิ พันพา ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๕
  - ๘) นายศักดิ์รินทร์ จรัสกาย ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๖
  - ๙) นายสุรศักดิ์ สาธิบ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๗
  - ๑๐) นางสาวเพชรคุณ กาญจนาพันธ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๘
  - ๑๑) นายสถาพร ภาแก้ว ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๙
  - ๑๒) นายสุรศักดิ์ ใจคปิตินันท์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๐

๑๓) นายวิมล...

-๒-

- ๑๓) นายวิมล หันไชยเนาว์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๗
- ๑๔) นางสาวนาถิ์ เจริญตระกูล ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๘
- ๑๕) นางสาวอนิตา ผดุงจิตต์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๕๙
- ๑๖) นายธนะสิทธิ์ วงศ์ไชย ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๐
- ๑๗) นายชัยนุสรณ์ เลิศนันทกุลชัย ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๑
- ๑๘) นายสังจา เพ็ชรแสง ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๒
- ๑๙) นายกันตภณ มณีสัมพันธ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๓
- ๒๐) นางสาวจันทิพย์ โทณชนะ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๔
- ๒๑) นายธรรณิษฐ์ อ็อกจินดา ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๕
- ๒๒) นายศุภณัฐ พิสัยพันธ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๖
- ๒๓) นายศุภชัย วงศ์จริยชัย ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๗
- ๒๔) นายปฐมพงศ์ กรสวัสดิ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๘
- ๒๕) นายไฉว ต้นโพธิ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๖๙
- ๒๖) นางสาวกิตติยา ลัญญาอริยาภรณ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๐
- ๒๗) นางสาวเจษฎาพร ศรีบุญเรือง ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๑
- ๒๘) นางสาวณัฐนิชา สิงห์งาม ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๒
- ๒๙) นางสาวอริสรา จันทร์ศิริ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๓
- ๓๐) นายพิพัฒน์ นิกรศิริราษฎร์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๔
- ๓๑) นายศิริวิทย์ เรืองสม ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๕
- ๓๒) นายปวิระเมศ สัตยาคุณ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๖
- ๓๓) นายณฤนาท ธรรมะโร ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๗
- ๓๔) นางสาวศุภกัณฑ์ ไชยพันธ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๘
- ๓๕) นายพชรกร อินทรเสนา ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๗๙
- ๓๖) นายทิวากร เข็มมาก ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๐
- ๓๗) นายอนุรักษ์ ทองขจรศักดิ์ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๑
- ๓๘) นายอภิชาติ วิลาศ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๒
- ๓๙) นายจักรวรรดิ ศรีรักษา ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๓
- ๔๐) นายประสาธมิตร เพ็ชรเพชร ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๔
- ๔๑) นายภาณุวัฒน์ วัชง ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๕
- ๔๒) นายสันติ ชัยชนะ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๖
- ๔๓) นายสิทธิชัย แก้วกัญ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๗
- ๔๔) นายทินกร กลุสชาติ ทะเบียนเลขที่ ๖-๓๐๓-จ-๔๔๘๘


ค. ขอขานำสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๑๕ รายการ  
ออกจากเสีย (เปลี่ยนระบบ) จำนวน ๗ รายการ และนำได้ดิน จำนวน ๓ รายการ รวมทั้งสิ้นจำนวน ๒๕ รายการ  
ตามนี้ที่ส่งมาด้วย



หนังสือฉบับนี้เมื่อ ๓ ปี นับจากวันที่กรมโรงงานอุตสาหกรรมออกหนังสือ หากประสงค์  
จะต่ออายุหนังสือขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์ห้องปฏิบัติการ ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบ  
คำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นสุดอายุของหนังสือขึ้นทะเบียนห้องปฏิบัติการ  
วิเคราะห์ห้องปฏิบัติการ ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

  
(นางจินดา เศรษฐ์จันทร์)  
ผู้อำนวยการศูนย์และห้องปฏิบัติการ  
ศูนย์วิศวกรรมเครื่องกลโรงงานอุตสาหกรรม

๒๘ มิ.ย. ๒๕๖๔

กองวิจัยและพัฒนาห้องปฏิบัติการโรงงาน

ศูนย์วิจัยและพัฒนาห้องปฏิบัติการโรงงานภาคตะวันออก

โทร. ๐ ๓๘๖๕ ๗๖๖๑-๓

ไปรษณีย์อิเล็กทรอนิกส์ [info.voc@nema.go.th](mailto:info.voc@nema.go.th)

เอกสารแนบท้ายหนังสือขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์ห้อง  
บริษัท เอนเอเอส แล็บอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ๖-๑๒๓  
ที่ อท ๐๓๑๐(๓)/ ๒๕๗๐ ลงวันที่ ๒๘ มิถุนายน ๒๕๖๔

ขอจ่ายค่าธรรมเนียมที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๕ รายการ

นี้เสีย จำนวน 14 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method <sup>[2]</sup> 2) 5-Day BOD Test, Azide Modification Method <sup>[2]</sup>
2	Chemical Oxygen Demand	1) Open Reflux, Titrimetric Method <sup>[2]</sup> 2) Closed Reflux, Colorimetric Method <sup>[2]</sup> 3) Closed Reflux, Titrimetric Method <sup>[2]</sup>
3	Color	ADMI Weighted – Ordinate Spectrophotometric Method <sup>[2]</sup>
4	Cyanide	Distillation, Colorimetric Method <sup>[2]</sup>
5	Formaldehyde	Distillation, Colorimetric Method <sup>[1]</sup>
6	Free Chlorine	DPD-Ferrous Titrimetric Method <sup>[2]</sup>
7	Oil and Grease	Liquid-Liquid Partition-Gravimetric Method <sup>[2]</sup>
8	pH	Electrometric Method <sup>[2]</sup>
9	Phenols	1) Distillation, Chloroform Extraction Method <sup>[2]</sup> 2) Distillation, Direct Photometric Method <sup>[2]</sup>
10	Sulfide	ZnS Precipitation, Iodometric Method <sup>[2]</sup>
11	Temperature	Laboratory and Field Method <sup>[2]</sup>
12	Total Dissolved Solids	Dried at 180 °C <sup>[2]</sup>
13	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method <sup>[2]</sup>
14	Total Suspended Solids	Dried at 103-105 °C <sup>[2]</sup>

ยกเลิกเสีย (เปลี่ยนรายการ) จำนวน 7 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Carbon Monoxide	1) Sampling Bag, Non-Dispersive Infrared Method <sup>[5]</sup> 2) Instrumental Analyzer Method <sup>[6]</sup>
2	Hydrogen Sulfide	Absorption Sampling, Iodometric Method <sup>[5]</sup>
3	Opacity	Ringelmann's Method <sup>[3,4]</sup>
4	Oxide of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method <sup>[6]</sup> 2) Instrumental Analyzer Method <sup>[7]</sup>
5	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup> 2) Instrumental Analyzer Method <sup>[10]</sup>

วิศกร สัมฤทธิ์

(นางสาววิชุดา สัมฤทธิ์เดช)

ผู้อำนวยการ

ศูนย์วิจัยและพัฒนาห้องปฏิบัติการโรงงานภาคตะวันออก

Sulfuric Acid...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
6	Sulfuric Acid	Isokinetic Sampling, Barium – Thorin Titrimetric Method <sup>[6]</sup>
7	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method <sup>[7]</sup>

#### น้ำดื่ม จำนวน 3 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Cyanide	Distillation, Colorimetric Method <sup>[2]</sup>
2	pH	Electrometric Method <sup>[2]</sup>
3	Phenols	Distillation, Direct Photometric Method <sup>[2]</sup>

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ผู้อำนวยการ

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก กรมโรงงานอุตสาหกรรม โทร ๐ ๒๖๐๕ ๖๖๑๓-๓