

ภาคผนวก ค

ใบรับรองผลการวิเคราะห์

ภาคผนวก ค-1

คุณภาพอากาศในบรรยากาศ



Analysis / Test Report



TESTING
No.0009

Lot ID: 2333454

Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2604557-1

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Page 1 of 1

Sample Description		Air Quality	
Location		สส.พื้นที่อุตสาหกรรม (GPS 47P 0698599, 1589315)	
Date Analysis Commenced		Apr 28, 2023	
Condition of Sample		Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag	
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Atmospheric Temperature (°C)
2333454-1	Apr 19 - Apr 20, 2023	0.092	33
2333454-2	Apr 20 - Apr 21, 2023	0.135	34
2333454-3	Apr 21 - Apr 22, 2023	0.158	34
2333454-4	Apr 22 - Apr 23, 2023	0.113	34
2333454-5	Apr 23 - Apr 24, 2023	0.126	34
2333454-6	Apr 24 - Apr 25, 2023	0.121	34
2333454-7	Apr 25 - Apr 26, 2023	0.087	34
Guideline		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 : Teeravit Sukdee

Remark :

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

Approved by

Tanyalorn Mongkijirawat
Supervisor

This document is valid only for the indicated 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.

ADDRESS 104 Phattanakarn 40, Phattanakarn Rd., Khwaeng Phatthanaikan, 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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

0997-21 / THAIL

S:\Reports_Air Ambient\Days.rpt (1:44PM)



Analysis / Test Report



TESTING
No.0009

Lot ID: 2333454

Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2604557-2

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Page 1 of 1

Sample Description		Air Quality	
Location		สส.พื้นที่อุตสาหกรรม (GPS 47P 0697239, 1589433)	
Date Analysis Commenced		Apr 28, 2023	
Condition of Sample		Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag	
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Atmospheric Temperature (°C)
2333454-8	Apr 19 - Apr 20, 2023	0.109	0.066
2333454-9	Apr 20 - Apr 21, 2023	0.155	0.077
2333454-10	Apr 21 - Apr 22, 2023	0.151	0.088
2333454-11	Apr 22 - Apr 23, 2023	0.127	0.071
2333454-12	Apr 23 - Apr 24, 2023	0.145	0.065
2333454-13	Apr 24 - Apr 25, 2023	0.122	0.054
2333454-14	Apr 25 - Apr 26, 2023	0.092	0.045
Guideline		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 : Teeravit Sukdee

Remark :

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

Approved by

Tanyalorn Mongkijirawat
Supervisor

This document is valid only for the indicated 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.

ADDRESS 104 Phattanakarn 40, Phattanakarn Rd., Khwaeng Phatthanaikan, 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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

0997-21 / THAIL

S:\Reports_Air Ambient\Days.rpt (1:44PM)



Analysis / Test Report



TESTING
No.0009

Lot ID: 2333454
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2604557-3

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Page 1 of 1

Sample Description		Air Quality	
Location	Address	Address	
Date Analysis Commenced	Apr 28, 2023	Address	
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag	Address	
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Atmospheric Temperature (°C)
2333454-15	Apr 19 - Apr 20, 2023	0.111	35
2333454-16	Apr 20 - Apr 21, 2023	0.141	35
2333454-17	Apr 21 - Apr 22, 2023	0.136	35
2333454-18	Apr 22 - Apr 23, 2023	0.113	35
2333454-19	Apr 23 - Apr 24, 2023	0.122	35
2333454-20	Apr 24 - Apr 25, 2023	0.161	35
2333454-21	Apr 25 - Apr 26, 2023	0.131	35
Guideline		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 : Teeravut Sukdee			
Remark :			
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.			

Approved by

Tanyatorn Mongkijirawat
Supervisor

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 this Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6047-21 / EMAIL

S: Reports_Air Ambient/Days rpt (1-4PM)



Analysis / Test Report



TESTING
No.0009

Lot ID: 2333454
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2604557-4

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Page 1 of 1

Sample Description		Air Quality			
Location	Address	Address			
Date Analysis Commenced	Apr 28, 2023	Address			
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag	Address			
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Atmospheric Temperature (°C)		
2333454-22	Apr 19 - Apr 20, 2023	0.116	0.067	754	35
2333454-23	Apr 20 - Apr 21, 2023	0.151	0.082	754	35
2333454-24	Apr 21 - Apr 22, 2023	0.156	0.092	754	35
2333454-25	Apr 22 - Apr 23, 2023	0.130	0.072	754	35
2333454-26	Apr 23 - Apr 24, 2023	0.183	0.068	754	35
2333454-27	Apr 24 - Apr 25, 2023	0.220	0.084	754	35
2333454-28	Apr 25 - Apr 26, 2023	0.152	0.058	754	35
Guideline		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 : Teeravut Sukdee					
Remark :					
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.					

Approved by

Tanyatorn Mongkijirawat
Supervisor

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 this Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6047-21 / EMAIL

S: Reports_Air Ambient/Days rpt (1-4PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakadi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL
Lot ID: 2333060
Date Received : Apr 27, 2023
Date Reported : May 05, 2023
Report Number: 2604553-1

Page 1 of 1

Sample Description Location Parameter Measurement Date Measurement by	Air Quality		ร. ปรมาณูสิ่งแวดล้อม กรุงเทพมหานคร (GPS 47P 0698599, 1589315)		ร. ปรมาณูสิ่งแวดล้อม กรุงเทพมหานคร (GPS 47P 0698599, 1589315)	
	Time	2333060-1 Apr 19, 2023	2333060-2 Apr 20, 2023	2333060-3 Apr 21, 2023	2333060-4 Apr 22, 2023	2333060-5 Apr 23, 2023
Nitrogen dioxide (ppm) Teravit Sukdee	10:00 AM - 11:00 AM	0.004	0.004	0.003	0.004	0.004
	11:00 AM - 12:00 PM	0.004	0.004	0.003	0.004	0.007
	12:00 PM - 01:00 PM	0.003	0.004	0.003	0.004	0.005
	01:00 PM - 02:00 PM	0.004	0.004	0.003	0.004	0.002
	02:00 PM - 03:00 PM	0.003	0.006	0.004	0.004	0.002
	03:00 PM - 04:00 PM	0.003	0.006	0.004	0.004	0.007
	04:00 PM - 05:00 PM	0.003	0.007	0.004	0.002	0.006
	05:00 PM - 06:00 PM	0.003	0.006	0.004	0.004	0.005
	06:00 PM - 07:00 PM	0.002	0.006	0.004	0.003	0.002
	07:00 PM - 08:00 PM	0.002	0.005	0.004	0.002	0.005
	08:00 PM - 09:00 PM	0.003	0.004	0.002	0.003	0.005
	09:00 PM - 10:00 PM	0.004	0.004	0.002	0.005	0.004
	10:00 PM - 11:00 PM	0.003	0.004	0.002	0.004	0.004
	11:00 PM - 12:00 AM	0.003	0.003	0.002	0.004	0.004
	12:00 AM - 01:00 AM	0.005	0.003	0.001	0.004	0.005
	01:00 AM - 02:00 AM	0.004	0.004	0.002	0.003	0.004
Average	10:00 AM - 02:00 AM	0.005	0.004	0.002	0.005	0.004
	02:00 AM - 03:00 AM	0.006	0.004	0.006	0.004	0.006
	03:00 AM - 04:00 AM	0.006	0.004	0.007	0.004	0.003
	04:00 AM - 05:00 AM	0.004	0.004	0.007	0.004	0.003
	05:00 AM - 06:00 AM	0.003	0.004	0.002	0.005	0.002
	06:00 AM - 07:00 AM	0.002	0.004	0.002	0.006	0.001
	07:00 AM - 08:00 AM	0.004	0.003	0.003	0.005	0.005
	08:00 AM - 09:00 AM	0.004	0.003	0.004	0.006	0.007
	09:00 AM - 10:00 AM	0.004	0.003	0.004	0.005	0.008
	Average	0.003	0.004	0.003	0.004	0.004
	1hr - Maximum	0.006	0.007	0.007	0.006	0.008
	Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170
	Standard					
	Reference Method	: Notification of the National Environment Board No. 33, 2009 (B.E. 2552); US EPA Method Part 50 App. F (Chemiluminescence)				

The above results are valid only for the analyzed/tested sample(s) as indicated in the report. The results are not valid for other sample(s) or for other purpose without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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

LIFE SCIENCES
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

6947-2/1 EMAIL

S: Reports_Air SO: No. rpt (3.42PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakadi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL
Lot ID: 2333060
Date Received : Apr 27, 2023
Date Reported : May 05, 2023
Report Number: 2642000-1

Page 1 of 1

Sample Description Location Parameter Measurement Date Measurement by	Air Quality		ร. ปรมาณูสิ่งแวดล้อม กรุงเทพมหานคร (GPS 47P 0697239, 1589433)		ร. ปรมาณูสิ่งแวดล้อม กรุงเทพมหานคร (GPS 47P 0697239, 1589433)	
	Time	2333060-8 Apr 19, 2023	2333060-9 Apr 20, 2023	2333060-10 Apr 21, 2023	2333060-11 Apr 22, 2023	2333060-12 Apr 23, 2023
Nitrogen dioxide (ppm) Teravit Sukdee	11:00 AM - 12:00 PM	0.001	0.002	0.006	0.004	0.002
	12:00 PM - 01:00 PM	0.003	0.004	0.004	0.002	0.001
	01:00 PM - 02:00 PM	0.002	0.001	0.003	0.002	<0.001
	02:00 PM - 03:00 PM	0.003	0.003	0.003	0.002	<0.001
	03:00 PM - 04:00 PM	0.004	0.003	0.004	0.003	0.005
	04:00 PM - 05:00 PM	0.005	0.008	0.004	0.003	0.007
	05:00 PM - 06:00 PM	0.008	0.008	0.008	0.006	0.014
	06:00 PM - 07:00 PM	0.012	0.016	0.016	0.010	0.017
	07:00 PM - 08:00 PM	0.012	0.017	0.014	0.011	0.021
	08:00 PM - 09:00 PM	0.010	0.016	0.023	0.009	0.010
	09:00 PM - 10:00 PM	0.012	0.018	0.003	0.008	0.013
	10:00 PM - 11:00 PM	0.014	0.018	0.019	0.010	0.011
	11:00 PM - 12:00 AM	0.011	0.013	0.019	0.008	0.012
	12:00 AM - 01:00 AM	0.008	0.010	0.016	0.006	0.012
	01:00 AM - 02:00 AM	0.006	0.008	0.010	0.006	0.009
	02:00 AM - 03:00 AM	0.006	0.008	0.007	0.005	0.010
Average	03:00 AM - 04:00 AM	0.006	0.006	0.007	0.004	0.011
	04:00 AM - 05:00 AM	0.006	0.006	0.009	0.005	0.016
	05:00 AM - 06:00 AM	0.006	0.007	0.007	0.005	0.010
	06:00 AM - 07:00 AM	0.008	0.010	0.009	0.007	0.018
	07:00 AM - 08:00 AM	0.009	0.012	0.010	0.007	0.022
	08:00 AM - 09:00 AM	0.005	0.006	0.006	0.004	0.029
	09:00 AM - 10:00 AM	0.004	0.004	0.004	0.002	0.007
	10:00 AM - 11:00 AM	0.002	0.004	0.004	0.002	0.016
	Average	0.007	0.009	0.009	0.005	0.011
	1hr - Maximum	0.014	0.018	0.023	0.011	0.022
	Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170
	Standard					
	Reference Method	: Notification of the National Environment Board No. 33, 2009 (B.E. 2552); US EPA Method Part 50 App. F (Chemiluminescence)				

The above results are valid only for the analyzed/tested sample(s) as indicated in the report. The results are not valid for other sample(s) or for other purpose without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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

LIFE SCIENCES
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

6947-2/1 EMAIL

S: Reports_Air SO: No. rpt (3.42PM)



Analysis / Test Report

Lot ID: 2333060
 Date Received : Apr 27, 2023
 Date Reported : May 05, 2023
 Report Number: 2642005-1

Client: WHA Saraburi Industrial Land Co., Ltd.
 111 Moo 7, Nongplakadi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009
Project Name : Monitoring

Page 1 of 1

[illegible]

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

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

Orawan R.

Orawan Rakyon
Scientist (3)

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

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6047-21/ EMAIL

S:\Reports_Air SOxNOx.rpt (3:42PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2333452

Date Received : Apr 27, 2023
Date Reported : May 05, 2023
Report Number: 2604555-1

Page 1 of 1

Sample Description Location Parameter Measurement Date Measurement by	Air Quality ร. ปรมาณูสิ่งสกปรก (GPS 47P 0698599, 1589315) Sulfur Dioxide (ppm) Apr 19, 2023 - Apr 26, 2023 Teeravit Sukdee											
	Time											
	2333452-1											
	2333452-2											
10:00 AM - 11:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 AM - 12:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 PM - 01:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 PM - 02:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 PM - 03:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 PM - 04:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<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	<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	<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	<0.001	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 AM - 10:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1hr - Maximum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	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	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 the above description. The results are not valid for other sample(s) without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

0947-21/EMAIL

S:\Reports_Air SO\Nox.rpt (3.27PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2333452

Date Received : Apr 27, 2023
Date Reported : May 05, 2023
Report Number: 2642009-1

Page 1 of 1

Sample Description Location Parameter Measurement Date Measurement by	Air Quality ร. ปรมาณูสิ่งสกปรก (GPS 47P 0697239, 1589433) Sulfur Dioxide (ppm) Apr 19, 2023 - Apr 26, 2023 Teeravit Sukdee											
	Time											
	2333452-8											
	2333452-9											
11:00 AM - 12:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 PM - 01:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 PM - 02:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 PM - 03:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 PM - 04:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<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	<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	<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	<0.001	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 AM - 10:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1hr - Maximum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	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	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 the above description. The results are not valid for other sample(s) without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

0947-21/EMAIL

S:\Reports_Air SO\Nox.rpt (3.27PM)

Approved by
Orawan R.
Orawan Rakying
Scientist (3)

Approved by
Orawan R.
Orawan Rakying
Scientist (3)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2333452

Date Received : Apr 27, 2023
Date Reported : May 05, 2023
Report Number: 2642010-1

Page 1 of 1

Sample Description		Air Quality									
Location		ร. ไร่ท้าว สุพรรณบุรี (GPS 47P 0698465, 1594331)									
Parameter		Sulfur Dioxide (ppm)									
Measurement Date		Apr 19, 2023 - Apr 26, 2023									
Measurement by		Teerawat Sukdee									
Time		2333452-15	2333452-16	2333452-17	2333452-18	2333452-19	2333452-20	2333452-21			
		Apr 19, 2023	Apr 20, 2023	Apr 21, 2023	Apr 22, 2023	Apr 23, 2023	Apr 24, 2023	Apr 25, 2023			
01:00 PM - 02:00 PM		0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
02:00 PM - 03:00 PM		0.003	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
03:00 PM - 04:00 PM		0.003	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
04:00 PM - 05:00 PM		0.004	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
05:00 PM - 06:00 PM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
06:00 PM - 07:00 PM		0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
07:00 PM - 08:00 PM		0.004	0.005	0.004	0.005	0.004	0.004	0.004	0.004	0.004	
08:00 PM - 09:00 PM		0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
09:00 PM - 10:00 PM		0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
10:00 PM - 11:00 PM		0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
11:00 PM - 12:00 AM		0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
12:00 AM - 01:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
01:00 AM - 02:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
02:00 AM - 03:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
03:00 AM - 04:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
04:00 AM - 05:00 AM		0.004	0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.004	
05:00 AM - 06:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
06:00 AM - 07:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
07:00 AM - 08:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
08:00 AM - 09:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
09:00 AM - 10:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
10:00 AM - 11:00 AM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
11:00 AM - 12:00 PM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
12:00 PM - 01:00 PM		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Average		0.004	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004	
1hr - Maximum		0.004	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004	
Standard 1hr - Average		0.3	0.3	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	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

Orawan R.

Orawan Rakyoung
Scientist (3)

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

0947-21/ EMAIL

S:\Reports_Air SO\NOx.rpt (3.28PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2333452

Date Received : Apr 27, 2023
Date Reported : May 05, 2023
Report Number: 2642011-1

Page 1 of 1

Sample Description		Air Quality									
Location		ร. ไร่สุพรรณภิรมย์ ตำบลบ้านไร่ อำเภอเมืองสุพรรณบุรี (GPS 47P 0700733, 1590964)									
Parameter		Sulfur Dioxide (ppm)									
Measurement Date		Apr 19, 2023 - Apr 26, 2023									
Measurement by		Teravit Sukdee									
Time		2333452-22	2333452-23	2333452-24	2333452-25	2333452-26	2333452-27	2333452-28			
		Apr 19, 2023	Apr 20, 2023	Apr 21, 2023	Apr 22, 2023	Apr 23, 2023	Apr 24, 2023	Apr 25, 2023			
12:00 PM - 01:00 PM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
01:00 PM - 02:00 PM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
02:00 PM - 03:00 PM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
03:00 PM - 04:00 PM		<0.001	<0.001	<0.001	<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	<0.001		
05:00 PM - 06:00 PM		<0.001	<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	<0.001		
07:00 PM - 08:00 PM		<0.001	<0.001	<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	<0.001		
09:00 PM - 10:00 PM		<0.001	<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	<0.001		
11:00 PM - 12:00 AM		<0.001	<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	<0.001		
01:00 AM - 02:00 AM		<0.001	<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	<0.001		
03:00 AM - 04:00 AM		<0.001	<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	<0.001		
05:00 AM - 06:00 AM		<0.001	<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	<0.001		
07:00 AM - 08:00 AM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
08:00 AM - 09:00 AM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
09:00 AM - 10:00 AM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
10:00 AM - 11:00 AM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
11:00 AM - 12:00 PM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Average		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
1hr - Maximum		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Standard 1hr - Average		0.3	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	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

Orawan R.

Orawan Rakyoung
Scientist (3)

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

0947-21/ EMAIL

S:\Reports_Air SO\NOx.rpt (3.28PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

Lot ID : 2333455

Date Received : Apr 27, 2023

Date Reported : May 03, 2023

Report Number : 2604559-1

Page 1 of 2

Sample Number

2333455-1 to 7

Parameter

Wind Speed / Wind Direction

เครื่องวัดความเร็วลม (GPS 47P 0698599, 1589315)

Location

Apr 19 - Apr 26, 2023

Sampling Date

Teeravut Sukdee

Sampling by

	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)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)			
10:00 AM - 11:00 AM	1.9	189.0	S	0.8	276.0	W	1.4	201.0	SSW	0.3	162.0	SSE	2.4	182.0	S	0.2	-	0.3	281.0	NW	
11:00 AM - 12:00 PM	0.9	193.0	SSW	0.9	203.0	SSW	0.9	203.0	SSW	0.9	188.0	S	2.3	162.0	S	1.5	209.0	SSW	0.8	320.0	NW
12:00 PM - 01:00 PM	1.9	203.0	SSW	2.3	203.0	SSW	0.7	188.0	S	1.1	154.0	SSE	2.9	187.0	S	2.8	297.0	WNW	1.6	278.0	W
01:00 PM - 02:00 PM	1.4	204.0	SSW	0.9	186.0	S	0.4	284.0	WNW	1.1	105.0	ESE	1.8	182.0	S	2.1	313.0	NW	0.2	-	-
02:00 PM - 03:00 PM	1.4	197.0	SSW	0.5	197.0	SSW	1.3	188.0	S	1.4	138.0	SE	1.8	132.0	S	3.8	86.0	E	0.7	90.0	E
03:00 PM - 04:00 PM	1.8	198.0	SSW	1.1	206.0	SSW	1.4	184.0	S	1.1	192.0	SSW	1.8	135.0	SE	2.6	66.0	ENE	1.4	164.0	SSE
04:00 PM - 05:00 PM	1.1	184.0	S	0.7	198.0	SSW	0.0	-	-	1.7	192.0	SSW	0.5	140.0	SE	0.0	-	2.9	177.0	S	-
05:00 PM - 06:00 PM	0.3	186.0	S	0.0	-	-	0.6	190.0	S	0.7	198.0	SSW	0.9	186.0	S	0.0	-	0.6	114.0	ESE	-
06:00 PM - 07:00 PM	0.0	-	0.6	197.0	SSW	0.7	189.0	S	1.8	104.0	ESE	0.2	-	0.0	-	0.0	-	0.8	173.0	S	-
07:00 PM - 08:00 PM	1.4	187.0	S	0.9	195.0	SSW	0.3	190.0	S	0.2	-	0.6	114.0	ESE	0.0	-	1.5	139.0	SE	-	-
08:00 PM - 09:00 PM	1.5	193.0	SSW	1.1	194.0	SSW	0.9	189.0	S	0.0	-	0.0	-	0.0	-	0.0	-	0.7	88.0	E	-
09:00 PM - 10:00 PM	0.0	-	0.0	-	0.0	-	0.6	189.0	S	0.4	113.0	ESE	0.0	-	0.0	-	0.0	-	0.2	-	-
10:00 PM - 11:00 PM	0.0	-	0.0	-	0.0	-	0.7	189.0	S	0.3	112.0	ESE	0.6	114.0	ESE	0.0	-	1.0	82.0	E	-
11:00 PM - 12:00 AM	0.0	-	0.0	-	0.0	-	0.3	189.0	S	0.3	112.0	ESE	0.1	-	0.2	-	1.4	84.0	E	-	-
12:00 AM - 01:00 AM	0.0	-	0.0	-	0.0	-	1.5	189.0	S	0.1	-	0.7	114.0	ESE	0.0	-	0.0	-	0.0	-	-
01:00 AM - 02:00 AM	0.0	-	0.0	-	0.0	-	0.2	-	0.7	114.0	ESE	0.2	-	0.0	-	0.0	-	0.5	197.0	SSW	-
02:00 AM - 03:00 AM	0.0	-	0.0	-	0.0	-	0.0	-	0.4	110.0	ESE	0.4	114.0	ESE	0.0	-	0.0	-	0.0	-	-
03:00 AM - 04:00 AM	0.0	-	0.3	158.0	SSE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.3	79.0	E	0.0	-	-
04:00 AM - 05:00 AM	0.0	-	0.0	-	0.0	-	0.4	184.0	S	0.5	114.0	ESE	1.0	113.0	ESE	0.0	-	0.4	88.0	E	-
05:00 AM - 06:00 AM	0.0	-	0.0	-	0.0	-	0.2	-	0.2	-	0.0	-	0.2	-	0.0	-	0.2	-	0.0	-	-
06:00 AM - 07:00 AM	0.0	-	0.0	-	0.0	-	1.3	103.0	ESE	0.5	104.0	ESE	0.1	-	0.0	-	0.0	-	0.0	-	-
07:00 AM - 08:00 AM	0.0	-	1.2	196.0	SSW	1.0	119.0	ESE	1.4	174.0	S	1.4	5.0	N	0.0	-	0.0	-	0.0	-	-
08:00 AM - 09:00 AM	1.1	197.0	SSW	0.3	197.0	SSW	1.6	170.0	S	1.7	184.0	S	0.4	195.0	SSW	0.1	-	0.4	341.0	NNW	-
09:00 AM - 10:00 AM	1.2	194.0	SSW	0.9	186.0	S	1.3	186.0	S	1.4	189.0	S	0.5	352.0	N	0.2	-	0.6	340.0	NNW	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the wind speed and direction 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) is strongly recommended that this report is not reproduced except in full.

Approved by

Sarayuth Jitranont

Assistant General Manager

ADDRESS 104 Phatthanan 40, Phatthanan Rd., Khwaeng Phatthanan, 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

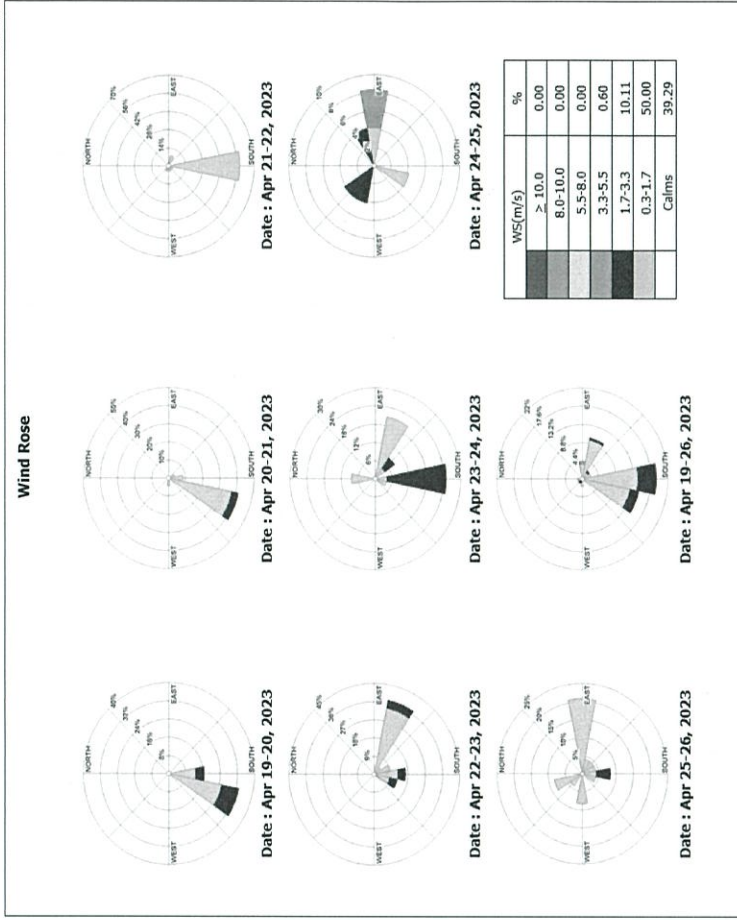
Lot ID : 2333455

Date Received : Apr 27, 2023

Date Reported : May 03, 2023

Report Number : 2604559-1

Page 2 of 2



The above results are valid only for the wind speed and direction 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) is strongly recommended that this report is not reproduced except in full.

Approved by

Sarayuth Jitranont

Assistant General Manager

ADDRESS 104 Phatthanan 40, Phatthanan Rd., Khwaeng Phatthanan, 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhlae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA STL

Lot ID : 2333455
Date Received : Apr 27, 2023
Date Reported : May 03, 2023
Report Number : 2604559-1

Sample Number : 2333455-8 to 14
Parameter : Wind Speed / Wind Direction
Location : 55.15111111111111, 100.00000000000000 (GPS 47P 0697239, 1589433)
Sampling Date : Apr 19 - Apr 26, 2023
Sampling by : Teeravut Sukdee

Time	Apr 19 - Apr 20, 2023		Apr 20 - Apr 21, 2023		Apr 21 - Apr 22, 2023		Apr 22 - Apr 23, 2023		Apr 23 - Apr 24, 2023		Apr 24 - Apr 25, 2023		Apr 25 - Apr 26, 2023								
	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	1.4	247.0	WSW	0.0	-	0.0	-	0.0	-	0.9	168.0	SSE	1.0	133.0	SE	0.0	-				
12:00 PM - 01:00 PM	1.7	254.0	WSW	3.0	252.0	WSW	0.0	-	2.0	141.0	SE	0.4	169.0	S	0.9	263.0	W	0.0	-		
01:00 PM - 02:00 PM	1.5	203.0	SSW	1.6	268.0	W	0.0	-	0.7	254.0	WSW	0.0	-	0.6	359.0	N	0.0	-	-		
02:00 PM - 03:00 PM	1.9	155.0	SSE	1.2	219.0	SW	0.0	-	0.0	-	0.0	-	0.4	203.0	SSW	0.0	-	-	-		
03:00 PM - 04:00 PM	0.8	281.0	W	1.2	275.0	W	0.0	-	3.4	170.0	S	0.0	-	0.0	-	0.6	144.0	SE	-		
04:00 PM - 05:00 PM	2.1	169.0	S	2.5	232.0	SW	0.0	-	1.2	208.0	SSW	0.0	-	0.0	-	0.9	167.0	SSE	-		
05:00 PM - 06:00 PM	2.6	187.0	S	1.8	277.0	W	0.0	-	2.9	187.0	S	0.0	-	2.8	62.0	ENE	0.0	-	-		
06:00 PM - 07:00 PM	0.0	-	0.2	-	0.9	154.0	SSE	3.0	177.0	S	0.0	-	2.2	85.0	E	0.0	-	-	-		
07:00 PM - 08:00 PM	1.3	168.0	SSE	1.1	170.0	S	0.9	137.0	SE	0.0	-	3.1	132.0	SE	0.0	-	0.0	-	-		
08:00 PM - 09:00 PM	0.0	-	-	2.5	176.0	S	0.6	166.0	SSE	3.0	144.0	SE	2.4	118.0	ESE	0.5	188.0	S	0.0	-	
09:00 PM - 10:00 PM	0.0	-	-	1.9	176.0	S	0.4	161.0	SSE	2.9	147.0	SSE	0.0	-	0.7	176.0	S	0.0	-	-	
10:00 PM - 11:00 PM	1.3	150.0	SSE	1.0	157.0	SSE	0.0	-	1.4	150.0	SSE	1.4	138.0	SE	1.5	126.0	SE	0.0	-	-	
11:00 PM - 12:00 AM	0.0	-	-	0.8	120.0	ESE	0.0	-	1.6	115.0	ESE	0.8	165.0	SSE	0.4	148.0	SSE	0.6	124.0	SE	
12:00 AM - 01:00 AM	0.0	-	-	0.6	105.0	ESE	0.0	-	0.0	-	1.1	148.0	SSE	1.9	125.0	SE	0.4	113.0	ESE	-	
01:00 AM - 02:00 AM	1.7	134.0	SE	0.0	-	1.1	184.0	S	1.9	134.0	SE	1.7	132.0	SE	1.9	132.0	SE	0.0	-	-	
02:00 AM - 03:00 AM	0.9	117.0	ESE	2.3	137.0	SE	0.0	-	1.8	171.0	S	0.5	120.0	ESE	1.1	133.0	SE	0.6	178.0	S	
03:00 AM - 04:00 AM	1.1	131.0	SE	0.0	-	0.0	-	-	1.8	155.0	SSE	0.0	-	1.3	140.0	SE	1.0	159.0	SSE	-	
04:00 AM - 05:00 AM	2.6	199.0	SSE	0.0	-	1.0	114.0	ESE	0.0	-	0.0	-	0.9	105.0	ESE	2.0	359.0	N	-	-	
05:00 AM - 06:00 AM	0.0	-	-	0.7	142.0	SE	3.7	116.0	ESE	0.0	-	0.0	-	1.0	100.0	E	2.6	95.0	E	-	
06:00 AM - 07:00 AM	0.0	-	-	0.9	159.0	SSE	1.9	141.0	SE	0.0	-	0.0	-	1.1	98.0	E	1.0	120.0	ESE	-	
07:00 AM - 08:00 AM	0.0	-	-	1.1	188.0	S	3.2	125.0	SE	0.0	-	0.0	-	0.9	124.0	SE	0.9	58.0	ENE	-	
08:00 AM - 09:00 AM	0.0	-	-	0.0	-	2.8	152.0	SSE	0.0	-	0.0	-	0.0	-	0.6	130.0	SE	0.6	49.0	NE	-
09:00 AM - 10:00 AM	0.0	-	-	0.0	-	0.0	-	0.0	-	1.1	125.0	SE	0.4	295.0	VVVV	0.7	40.0	NE	-	-	
10:00 AM - 11:00 AM	0.0	-	-	0.0	-	1.2	213.0	SSW	0.0	-	1.0	206.0	SSW	0.0	-	0.0	-	0.0	-	-	

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the wind direction (speed) as indicated in the report. The results are not valid for the wind speed (direction) without further consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jitrantorn
Assistant General Manager

Approved by

Sarayuth Jitrantorn
Assistant General Manager

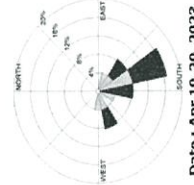


Analysis / Test Report

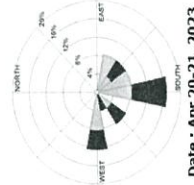
Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhlae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA STL

Lot ID : 2333455
Date Received : Apr 27, 2023
Date Reported : May 03, 2023
Report Number : 2604559-1

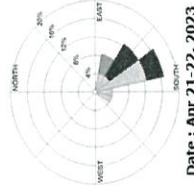
Wind Rose



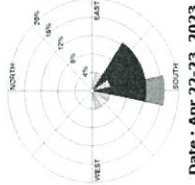
Date : Apr 19-20, 2023



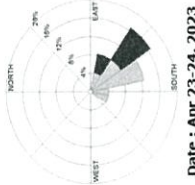
Date : Apr 20-21, 2023



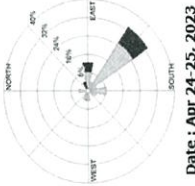
Date : Apr 21-22, 2023



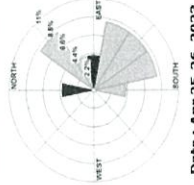
Date : Apr 22-23, 2023



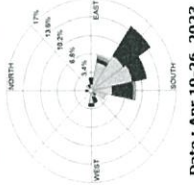
Date : Apr 23-24, 2023



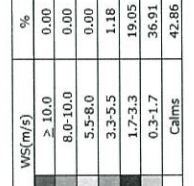
Date : Apr 24-25, 2023



Date : Apr 25-26, 2023



Date : Apr 26-27, 2023



Date : Apr 27-28, 2023

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	19.05
0.3-1.7	36.91
Calms	42.86

The above results are valid only for the wind direction (speed) as indicated in the report. The results are not valid for the wind speed (direction) without further consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jitrantorn
Assistant General Manager



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Lot ID : 2333455
Date Received : Apr 27, 2023
Date Reported : May 03, 2023
Report Number : 2694559-1

Page 2 of 2

10

Wind Rose

Date : Apr 19-20, 2023

Date : Apr 20-21, 2023

Date : Apr 21-22, 2023

Date : Apr 22-23, 2023

Date : Apr 23-24, 2023

Date : Apr 24-25, 2023

Date : Apr 25-26, 2023

Date : Apr 26-27, 2023

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	4.17
1.7-3.3	19.64
0.3-1.7	65.67
Calims	
	9.52

1

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. A/S Laboratory Group (Thailand) abroad recommends that this report is not reproduced or stored in full.

Approved for

Sarayuth Jittranont
Assistant General Manager

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
AISI LABORATORY GROUP (THAI) AND CO., LTD. An AISI Limited Company

LIFE SCIENCES

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

SOLUTIONS RIGHT PA



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA STL

Lot ID : 2333455

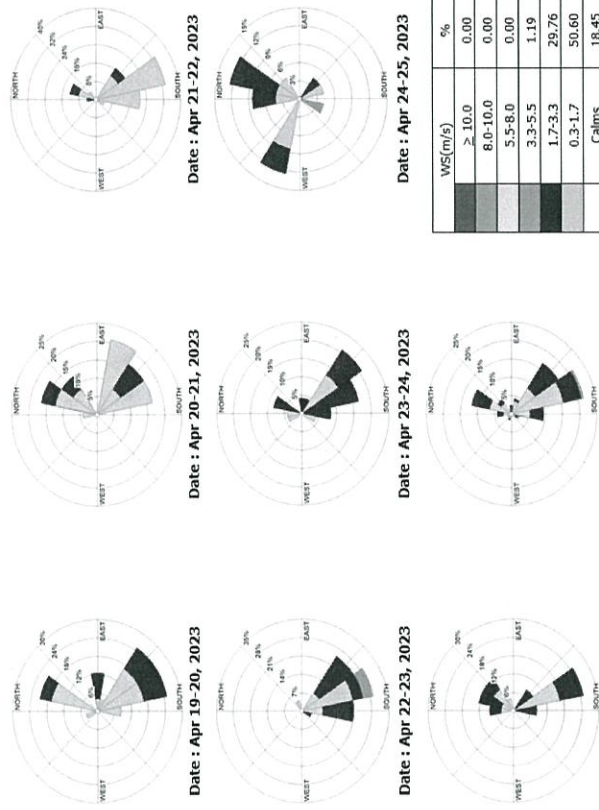
Date Received : Apr 27, 2023

Date Reported : May 03, 2023

Report Number : 2604559-1

Page 2 of 2

Wind Rose



Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

above results are valid only for the end year 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. A/S Laboratory Group (Thailand)

Approved by

Sarayuth Jittranont
Assistant General Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ภาคผนวก ค-2

ระดับเสียงในบรรยากาศโดยทั่วไป



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643886-1

Page 1 of 1

Sample Number	2311951-1
Parameter	Noise (Leq 24 hrs)
Location	บริเวณทางเข้าหมู่บ้าน (GPS 47P 0698599, 1589315)
Measurement Date	Apr 20 - Apr 21, 2023
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572552

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	53.3	70.5	49.9
11:00 AM - 12:00 PM	53.3	74.4	49.2
12:00 PM - 01:00 PM	54.7	73.5	48.9
01:00 PM - 02:00 PM	52.5	74.7	48.7
02:00 PM - 03:00 PM	53.5	76.6	49.0
03:00 PM - 04:00 PM	53.1	68.5	49.1
04:00 PM - 05:00 PM	54.8	79.8	50.4
05:00 PM - 06:00 PM	54.7	72.8	50.6
06:00 PM - 07:00 PM	54.3	76.0	50.0
07:00 PM - 08:00 PM	54.1	72.9	50.4
08:00 PM - 09:00 PM	55.2	75.0	51.5
09:00 PM - 10:00 PM	53.7	65.0	50.8
10:00 PM - 11:00 PM	52.2	67.7	49.5
11:00 PM - 12:00 AM	52.5	74.7	49.6
12:00 AM - 01:00 AM	51.9	66.4	49.2
01:00 AM - 02:00 AM	50.4	73.9	48.2
02:00 AM - 03:00 AM	49.4	64.0	48.0
03:00 AM - 04:00 AM	49.1	64.1	47.3
04:00 AM - 05:00 AM	49.3	62.2	47.7
05:00 AM - 06:00 AM	50.6	63.2	48.2
06:00 AM - 07:00 AM	54.4	72.2	49.3
07:00 AM - 08:00 AM	57.3	78.7	52.3
08:00 AM - 09:00 AM	55.9	76.3	50.6
09:00 AM - 10:00 AM	53.4	73.4	48.5
Leq Average 24 hrs. (dB(A))	53.5	79.8	49.2
Lmax (dB(A))			
L90 (dB(A))			
Ldn (dB(A))	58.4		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศกระทรวงมหาดไทย เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงรบกวน และระดับเสียงที่อาจก่อให้เกิดการ
บาดเจ็บ พ.ศ. 2548

Technical Management

Approved by

Supt S.

Tanyatorn Mongkijrajawit

Supot Salameeh

Supot Salameeh

Section Head

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.

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

Life Sciences

RIGHT SOLUTIONS RIGHT PARTNER

www.alsglobal.com

6947-21/ EMAIL

S:\Reports_Air Noise ppt (1.37PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643887-1

Page 1 of 1

Sample Number	2311951-2
Parameter	Noise (Leq 24 hrs)
Location	บริเวณทางเข้าหมู่บ้าน (GPS 47P 0698599, 1589315)
Measurement Date	Apr 21 - Apr 22, 2023
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572552

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	53.5	74.0	48.7
11:00 AM - 12:00 PM	57.4	75.4	49.0
12:00 PM - 01:00 PM	54.3	75.3	48.9
01:00 PM - 02:00 PM	54.1	75.9	48.6
02:00 PM - 03:00 PM	62.3	80.1	49.5
03:00 PM - 04:00 PM	54.4	71.1	50.0
04:00 PM - 05:00 PM	53.3	71.3	49.6
05:00 PM - 06:00 PM	55.9	69.5	51.5
06:00 PM - 07:00 PM	55.9	75.8	50.9
07:00 PM - 08:00 PM	55.1	71.9	50.8
08:00 PM - 09:00 PM	54.0	71.3	50.9
09:00 PM - 10:00 PM	52.3	65.8	50.1
10:00 PM - 11:00 PM	52.1	67.7	50.1
11:00 PM - 12:00 AM	53.0	71.6	50.1
12:00 AM - 01:00 AM	52.2	69.6	49.2
01:00 AM - 02:00 AM	50.5	69.1	48.4
02:00 AM - 03:00 AM	49.5	70.1	47.7
03:00 AM - 04:00 AM	49.0	60.8	47.8
04:00 AM - 05:00 AM	49.9	64.0	48.3
05:00 AM - 06:00 AM	50.7	72.9	48.2
06:00 AM - 07:00 AM	54.9	74.8	49.9
07:00 AM - 08:00 AM	57.3	74.9	52.2
08:00 AM - 09:00 AM	59.6	76.9	50.9
09:00 AM - 10:00 AM	62.8	80.2	50.9
Leq Average 24 hrs. (dB(A))	56.1	80.2	49.6
Lmax (dB(A))			
L90 (dB(A))			
Ldn (dB(A))	59.6	115	
Standard (dB(A))	70		

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศกระทรวงมหาดไทย เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงรบกวน และระดับเสียงที่อาจก่อให้เกิดการ
บาดเจ็บ พ.ศ. 2548

Technical Management

Approved by

Supt S.

Tanyatorn Mongkijrajawit

Supot Salameeh

Supot Salameeh

Section Head

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.

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

Life Sciences

RIGHT SOLUTIONS RIGHT PARTNER

www.alsglobal.com

6947-21/ EMAIL

S:\Reports_Air Noise ppt (1.01PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643888-1

Page 1 of 1

Sample Number	2311951-3
Parameter	Noise (Leq 24 hrs)
Location	บริเวณใกล้ถนนรั้ว (GPS 47P 0698599, 1589315)
Measurement Date	Apr 22 - Apr 23, 2023
Measurement by	Teerawut Sukdee
Sound Level meter	Serial No. 572552

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	62.1	77.0	51.7
11:00 AM - 12:00 PM	52.4	71.2	49.1
12:00 PM - 01:00 PM	53.8	79.4	48.3
01:00 PM - 02:00 PM	61.6	81.0	49.4
02:00 PM - 03:00 PM	56.2	91.9	49.6
03:00 PM - 04:00 PM	53.4	78.5	49.6
04:00 PM - 05:00 PM	54.4	74.8	50.5
05:00 PM - 06:00 PM	53.7	75.6	49.3
06:00 PM - 07:00 PM	52.4	70.3	48.9
07:00 PM - 08:00 PM	53.6	72.5	50.4
08:00 PM - 09:00 PM	52.0	65.0	50.2
09:00 PM - 10:00 PM	51.8	68.5	49.8
10:00 PM - 11:00 PM	52.5	71.2	49.9
11:00 PM - 12:00 AM	51.8	70.7	48.9
12:00 AM - 01:00 AM	49.7	68.5	47.9
01:00 AM - 02:00 AM	48.7	61.1	47.5
02:00 AM - 03:00 AM	49.0	67.2	47.6
03:00 AM - 04:00 AM	49.7	62.2	48.0
04:00 AM - 05:00 AM	49.6	61.6	47.8
05:00 AM - 06:00 AM	53.8	72.6	49.5
06:00 AM - 07:00 AM	54.9	75.7	50.1
07:00 AM - 08:00 AM	55.0	76.6	50.3
08:00 AM - 09:00 AM	54.0	71.9	49.2
09:00 AM - 10:00 AM	52.8	71.9	48.7

Leq Average 24 hrs. (dB(A))	54.9
Lmax (dB(A))	91.9
L90 (dB(A))	49.4
Ldn (dB(A))	115
Standard (dB(A))	70
Reference Method : ISO1996-1 and 1996-2	
Standard	1. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านถนน 15 (ก.ม. 2540) ด้านถนนสายถนนสายหลัก 2. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านถนนสายรองและถนนสายซอย
วันที่ น.ร. 2548	

Suppt S.

Supot Salamteh
Section Head

Approved by

Dim.

Tanyatom Mongkollajirawat
Supervisor

Technical Management

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.

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

www.alsglobal.com

Life Sciences
RIGHT SOLUTIONS RIGHT PARTNER

6947-21 / EMAIL

S (Reports)_Air Noise rpt (1 of 1PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643889-1

Page 1 of 1

Sample Number	2311951-4
Parameter	Noise (Leq 24 hrs)
Location	บริเวณใกล้ถนนรั้ว (GPS 47P 0697239, 1589433)
Measurement Date	Apr 20 - Apr 21, 2023
Measurement by	Teerawut Sukdee
Sound Level meter	Serial No. 572563

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	52.6	73.5	44.7
12:00 PM - 01:00 PM	52.2	76.4	45.2
01:00 PM - 02:00 PM	60.5	99.0	44.2
02:00 PM - 03:00 PM	50.6	68.6	43.2
03:00 PM - 04:00 PM	52.8	72.0	45.9
04:00 PM - 05:00 PM	68.3	101.6	45.1
05:00 PM - 06:00 PM	53.3	75.3	45.5
06:00 PM - 07:00 PM	51.2	77.4	45.2
07:00 PM - 08:00 PM	50.6	69.4	46.4
08:00 PM - 09:00 PM	50.0	64.0	47.5
09:00 PM - 10:00 PM	49.9	61.0	48.0
10:00 PM - 11:00 PM	49.7	70.5	45.5
11:00 PM - 12:00 AM	61.5	74.4	57.5
12:00 AM - 01:00 AM	61.2	68.1	48.6
01:00 AM - 02:00 AM	58.1	72.3	46.5
02:00 AM - 03:00 AM	49.8	72.7	45.8
03:00 AM - 04:00 AM	49.9	66.2	47.8
04:00 AM - 05:00 AM	48.9	70.3	47.8
05:00 AM - 06:00 AM	51.8	68.4	48.3
06:00 AM - 07:00 AM	52.7	77.4	47.9
07:00 AM - 08:00 AM	53.7	76.9	46.2
08:00 AM - 09:00 AM	50.3	73.5	44.1
09:00 AM - 10:00 AM	55.0	83.2	44.2
10:00 AM - 11:00 AM	50.5	69.2	44.2

Leq Average 24 hrs. (dB(A))	57.7
Lmax (dB(A))	101.6
L90 (dB(A))	45.8
Ldn (dB(A))	115
Standard (dB(A))	70
Reference Method : ISO1996-1 and 1996-2	
Standard	1. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านถนน 15 (ก.ม. 2540) ด้านถนนสายถนนสายหลัก 2. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านถนนสายรองและถนนสายซอย
วันที่ น.ร. 2548	

Suppt S.

Supot Salamteh
Section Head

Approved by

Dim.

Tanyatom Mongkollajirawat
Supervisor

Technical Management

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.

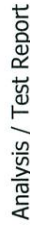
ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

www.alsglobal.com

Life Sciences
RIGHT SOLUTIONS RIGHT PARTNER

6947-21 / EMAIL

S (Reports)_Air Noise rpt (1 of 2PM)



Page 1 of 1

Page 1 of 1



Page 1 of 1

Leq Average 24 hrs. (dB(A))	54.9		
Lmax (dB(A))		84.1	
L90 (dB(A))			46.4
Ldn (dB(A))	60.3		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศกระทรวงมหาดไทย เรื่องเสียงรบกวน พ.ศ. 2540
 2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงการรบกวน และระดับเสียงที่อาจก่อให้เกิดการ
 13 ธ.ค. พ.ศ. 2548

Technical Management

Tanyatorn Mongkoljirawut

Tanyatorn Mongkoljirawut
Supervisor

Approved by

Suppt S.

Suppt. Salameeth
Section Head

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

S:\Reports\ Air Noise.mxd (1:02PM)

Leq Average 24 hrs. (dB(A))	54.3		
Lmax (dB(A))		84.0	
L90 (dB(A))			46.4
L01n (dB(A))	62.5		
Standard (dB(A))	70	115	
Reference Method : ISO1996-1 and 1996-2			
Standard : 1. ปริมาณค่าการรบกวนต่อสุขภาพของประชาชน (พ.ร.บ. 2540) ค่าการรบกวนการรบกวนสิ่งแวดล้อมโดยทั่วไป			
2. ปริมาณค่าการรบกวนต่อสุขภาพของประชาชน (พ.ร.บ. 2540) ค่าการรบกวนการรบกวน และระดับเสียงที่อาจทำให้เกิดการรบกวน			
15 ม.ค. 2548			

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Kwaeng 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

S:\Reports\ Air Noise.rpt (1:02PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643892-1

Page 1 of 1

Sample Number	2311951-7
Parameter	Noise (Leq 24 hrs)
Location	ร. ไร่กลาง ชุมชนบ้านไร่กลางทาง (GPS 47P 0698465, 1594331)
Measurement Date	Apr 20 - Apr 21, 2023
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572564

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.7	72.6	49.5
02:00 PM - 03:00 PM	55.6	74.2	48.1
03:00 PM - 04:00 PM	55.4	78.3	48.0
04:00 PM - 05:00 PM	55.0	88.2	47.9
05:00 PM - 06:00 PM	54.5	72.2	48.1
06:00 PM - 07:00 PM	53.8	74.6	48.3
07:00 PM - 08:00 PM	51.8	71.4	47.5
08:00 PM - 09:00 PM	51.2	67.8	47.8
09:00 PM - 10:00 PM	50.7	65.0	47.9
10:00 PM - 11:00 PM	49.7	69.3	46.8
11:00 PM - 12:00 AM	49.8	63.5	46.7
12:00 AM - 01:00 AM	50.9	59.6	46.9
01:00 AM - 02:00 AM	49.5	68.4	45.7
02:00 AM - 03:00 AM	50.4	71.2	45.4
03:00 AM - 04:00 AM	50.1	66.2	45.9
04:00 AM - 05:00 AM	53.2	68.8	46.4
05:00 AM - 06:00 AM	56.9	71.7	48.1
06:00 AM - 07:00 AM	58.9	90.2	50.6
07:00 AM - 08:00 AM	58.3	81.4	51.6
08:00 AM - 09:00 AM	57.4	80.8	49.5
09:00 AM - 10:00 AM	60.5	82.5	50.2
10:00 AM - 11:00 AM	55.5	73.5	47.8
11:00 AM - 12:00 PM	54.6	74.6	46.8
12:00 PM - 01:00 PM	53.9	85.7	45.7

Leq Average 24 hrs. (dB(A))	55.2
Lmax (dB(A))	90.2
L90 (dB(A))	47.8
Ldn (dB(A))	115
Standard (dB(A))	70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านพื้นที่ 15 (ก.ม. 2540) ที่บริเวณทางหลวงหมายเลข 101
2. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านพื้นที่ 15 (ก.ม. 2540) ที่บริเวณทางหลวงหมายเลข 101

วันที่ 15 พฤษภาคม 2566

Supt S.

Approved by

Tanyatom Mongkollajiwat
Supervisor

Technical Management

Supot Salameth
Section Head

The above results are valid only for the analyzed (treated) 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.

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

694721/ENAIL

S:\Reports_Air Noise\pt (102PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643893-1

Page 1 of 1

Sample Number	2311951-8
Parameter	Noise (Leq 24 hrs)
Location	ร. ไร่กลาง ชุมชนบ้านไร่กลางทาง (GPS 47P 0698465, 1594331)
Measurement Date	Apr 21 - Apr 22, 2023
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572564

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	53.7	75.3	46.3
02:00 PM - 03:00 PM	53.9	79.2	46.3
03:00 PM - 04:00 PM	56.1	81.1	47.6
04:00 PM - 05:00 PM	55.2	79.8	47.4
05:00 PM - 06:00 PM	60.8	82.1	50.5
06:00 PM - 07:00 PM	56.4	88.4	50.0
07:00 PM - 08:00 PM	52.0	74.9	48.3
08:00 PM - 09:00 PM	53.9	71.9	51.1
09:00 PM - 10:00 PM	53.0	73.9	50.0
10:00 PM - 11:00 PM	54.1	79.7	52.0
11:00 PM - 12:00 AM	53.7	67.3	50.6
12:00 AM - 01:00 AM	52.8	61.6	47.9
01:00 AM - 02:00 AM	49.2	62.1	46.2
02:00 AM - 03:00 AM	50.6	73.6	46.0
03:00 AM - 04:00 AM	49.8	68.6	44.8
04:00 AM - 05:00 AM	53.2	69.0	46.7
05:00 AM - 06:00 AM	57.6	71.5	50.0
06:00 AM - 07:00 AM	58.9	88.4	51.6
07:00 AM - 08:00 AM	57.8	86.0	51.7
08:00 AM - 09:00 AM	56.6	72.6	51.0
09:00 AM - 10:00 AM	56.5	73.9	50.3
10:00 AM - 11:00 AM	58.5	80.1	49.9
11:00 AM - 12:00 PM	54.6	72.8	48.0
12:00 PM - 01:00 PM	54.7	73.0	47.6

Leq Average 24 hrs. (dB(A))	55.6
Lmax (dB(A))	89.4
L90 (dB(A))	48.3
Ldn (dB(A))	115
Standard (dB(A))	70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านพื้นที่ 15 (ก.ม. 2540) ที่บริเวณทางหลวงหมายเลข 101
2. ปริมาณการจราจรและยานพาหนะที่วิ่งผ่านพื้นที่ 15 (ก.ม. 2540) ที่บริเวณทางหลวงหมายเลข 101

วันที่ 15 พฤษภาคม 2566

Supt S.

Approved by

Tanyatom Mongkollajiwat
Supervisor

Technical Management

Supot Salameth
Section Head

The above results are valid only for the analyzed (treated) 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.

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

694721/ENAIL

S:\Reports_Air Noise\pt (102PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643894-1

Page 1 of 1

Sample Number	2311951-9
Parameter	Noise (Leq 24 hrs)
Location	ร. ไร่หลวง ชุมชนบ้านไร่หลวงกลาง (GPS 47P 0698465, 1594331)
Measurement Date	Apr 22 - Apr 23, 2023
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572564

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	57.8	75.2	47.9
02:00 PM - 03:00 PM	59.2	86.0	48.6
03:00 PM - 04:00 PM	54.7	86.4	47.1
04:00 PM - 05:00 PM	55.5	77.2	49.1
05:00 PM - 06:00 PM	55.5	79.1	50.1
06:00 PM - 07:00 PM	55.2	76.0	50.4
07:00 PM - 08:00 PM	51.7	64.9	49.0
08:00 PM - 09:00 PM	53.0	80.5	49.7
09:00 PM - 10:00 PM	54.4	69.0	51.0
10:00 PM - 11:00 PM	56.0	90.8	50.2
11:00 PM - 12:00 AM	53.0	69.0	47.2
12:00 AM - 01:00 AM	49.6	68.1	45.4
01:00 AM - 02:00 AM	51.5	68.9	45.7
02:00 AM - 03:00 AM	48.6	63.0	45.6
03:00 AM - 04:00 AM	49.4	68.0	43.7
04:00 AM - 05:00 AM	52.5	68.5	45.7
05:00 AM - 06:00 AM	57.9	74.7	49.0
06:00 AM - 07:00 AM	59.2	89.6	50.5
07:00 AM - 08:00 AM	56.8	79.7	51.3
08:00 AM - 09:00 AM	55.9	73.3	51.4
09:00 AM - 10:00 AM	57.2	81.4	51.1
10:00 AM - 11:00 AM	55.9	76.7	50.7
11:00 AM - 12:00 PM	55.4	71.0	50.1
12:00 PM - 01:00 PM	55.0	72.7	49.5
Leq Average 24 hrs. (dB(A))	55.5	90.8	49.1
Lmax (dB(A))			
L90 (dB(A))			
Ldn (dB(A))	61.2	115	
Standard (dB(A))	70		
Reference Method : ISO 1996-1 and 1996-2			
Standard : 1. ประกาศกระทรวงสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงในชุมชน			
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงรบกวน และระดับเสียงที่อาจก่อให้เกิดการรบกวน			
รายงาน พ.ศ. 2548			

Technical Management

Tanyatorn Mongkollajuwat
Supervisor

Approved by

Suppt S.

Suppt Salameh
Section Head

The above results are valid only for the analyzed (tested sample) 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.

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

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/ EMAIL

S:\Reports_Air Noise\pt (103PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643895-1

Page 1 of 1

Sample Number	2311951-10
Parameter	Noise (Leq 24 hrs)
Location	ร. ไร่หลวง ชุมชนบ้านไร่หลวงใต้ (GPS 47P 0700733, 1590964)
Measurement Date	Apr 20 - Apr 21, 2023
Measurement by	Teeravut Sukdee
Sound Level meter	Serial No. 572565

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	56.8	73.5	45.4
01:00 PM - 02:00 PM	54.0	71.6	44.4
02:00 PM - 03:00 PM	54.5	73.5	43.7
03:00 PM - 04:00 PM	55.8	78.5	45.9
04:00 PM - 05:00 PM	55.8	77.5	46.1
05:00 PM - 06:00 PM	56.2	73.2	46.4
06:00 PM - 07:00 PM	62.9	75.4	49.6
07:00 PM - 08:00 PM	53.3	78.6	42.5
08:00 PM - 09:00 PM	52.7	75.0	42.0
09:00 PM - 10:00 PM	51.3	75.2	42.5
10:00 PM - 11:00 PM	47.1	70.0	42.4
11:00 PM - 12:00 AM	48.2	70.3	42.6
12:00 AM - 01:00 AM	47.7	69.0	42.5
01:00 AM - 02:00 AM	47.4	67.2	42.9
02:00 AM - 03:00 AM	45.7	68.7	43.0
03:00 AM - 04:00 AM	45.5	60.8	43.5
04:00 AM - 05:00 AM	48.5	67.5	43.3
05:00 AM - 06:00 AM	60.4	72.4	42.7
06:00 AM - 07:00 AM	54.7	78.0	45.5
07:00 AM - 08:00 AM	55.8	75.8	46.7
08:00 AM - 09:00 AM	55.7	77.2	45.8
09:00 AM - 10:00 AM	56.7	78.8	45.2
10:00 AM - 11:00 PM	55.4	77.5	44.8
11:00 AM - 12:00 PM	57.5	74.1	45.0
Leq Average 24 hrs. (dB(A))	55.5	78.8	43.7
Lmax (dB(A))			
L90 (dB(A))			
Ldn (dB(A))	60.1	115	
Standard (dB(A))	70		
Reference Method : ISO 1996-1 and 1996-2			
Standard : 1. ประกาศกระทรวงสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงในชุมชน			
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงรบกวน และระดับเสียงที่อาจก่อให้เกิดการรบกวน			
รายงาน พ.ศ. 2548			

Technical Management

Tanyatorn Mongkollajuwat
Supervisor

Approved by

Suppt S.

Suppt Salameh
Section Head

The above results are valid only for the analyzed (tested sample) 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.

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

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/ EMAIL

S:\Reports_Air Noise\pt (103PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643896-1

Page 1 of 1

Sample Number	2311951-11
Parameter	Noise (Leq 24 hrs)
Location	ร. หนองปลาไหล อ.เมือง จ.สุพรรณบุรี (GPS 47P 0700733, 1590964)
Measurement Date	Apr 21 - Apr 22, 2023
Measurement by	Teeravit Sukdee
Sound Level meter	Serial No. 572565

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	54.5	74.6	44.5
01:00 PM - 02:00 PM	55.4	72.1	43.7
02:00 PM - 03:00 PM	55.8	79.4	44.5
03:00 PM - 04:00 PM	55.0	76.3	44.0
04:00 PM - 05:00 PM	56.3	75.7	46.8
05:00 PM - 06:00 PM	56.4	80.5	46.7
06:00 PM - 07:00 PM	59.3	75.1	47.2
07:00 PM - 08:00 PM	52.7	77.2	43.8
08:00 PM - 09:00 PM	54.8	85.9	42.9
09:00 PM - 10:00 PM	53.1	78.7	42.2
10:00 PM - 11:00 PM	48.0	69.1	42.2
11:00 PM - 12:00 AM	49.7	71.4	41.9
12:00 AM - 01:00 AM	48.4	71.1	41.8
01:00 AM - 02:00 AM	44.0	62.9	41.8
02:00 AM - 03:00 AM	46.4	71.0	42.3
03:00 AM - 04:00 AM	44.4	60.6	42.3
04:00 AM - 05:00 AM	58.1	84.1	53.4
05:00 AM - 06:00 AM	58.3	73.0	53.9
06:00 AM - 07:00 AM	58.8	85.0	53.9
07:00 AM - 08:00 AM	58.3	75.6	53.1
08:00 AM - 09:00 AM	58.5	77.3	53.5
09:00 AM - 10:00 AM	57.2	75.8	53.4
10:00 AM - 11:00 AM	60.2	75.4	53.4
11:00 AM - 12:00 PM	55.5	77.2	53.0

Leq Average 24 hrs. (dB(A))	56.0
Lmax (dB(A))	85.9
L90 (dB(A))	44.5
L5n (dB(A))	61.1
Standard (dB(A))	70

Reference Method : ISO 1996-1 and 1996-2
Standard : 1. ปริมาณการจราจรทางบกในพื้นที่ 15 (ก.ม. 2540) จังหวัดสุพรรณบุรี
2. ปริมาณการจราจรทางบกในพื้นที่ 15 (ก.ม. 2540) จังหวัดสุพรรณบุรี

วันที่ 25/8

Technical Management

Tanyatorn Mongkornjirawut
Supervisor

Approved by

Supt S.

Supot Salameh
Section Head

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.

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

Life Sciences

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/EMAIL

S:\Reports_Air Noise\pt (103PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2311951
Date Received : Apr 27, 2023
Date Reported : May 08, 2023
Report Number: 2643897-1

Page 1 of 1

Sample Number	2311951-12
Parameter	Noise (Leq 24 hrs)
Location	ร. หนองปลาไหล อ.เมือง จ.สุพรรณบุรี (GPS 47P 0700733, 1590964)
Measurement Date	Apr 22 - Apr 23, 2023
Measurement by	Teeravit Sukdee
Sound Level meter	Serial No. 572565

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	55.7	81.9	44.2
01:00 PM - 02:00 PM	49.8	68.1	43.2
02:00 PM - 03:00 PM	48.4	69.2	43.0
03:00 PM - 04:00 PM	49.5	74.9	43.4
04:00 PM - 05:00 PM	46.0	63.5	42.3
05:00 PM - 06:00 PM	44.4	59.7	42.1
06:00 PM - 07:00 PM	44.9	65.2	42.6
07:00 PM - 08:00 PM	45.3	64.2	42.1
08:00 PM - 09:00 PM	45.7	67.0	41.7
09:00 PM - 10:00 PM	58.5	76.4	43.1
10:00 PM - 11:00 PM	56.5	83.9	46.2
11:00 PM - 12:00 AM	56.2	75.5	48.1
12:00 AM - 01:00 AM	54.6	75.0	46.8
01:00 AM - 02:00 AM	55.5	76.5	46.1
02:00 AM - 03:00 AM	56.8	76.3	46.2
03:00 AM - 04:00 AM	57.0	80.9	47.1
04:00 AM - 05:00 AM	56.6	82.5	46.5
05:00 AM - 06:00 AM	53.9	72.8	45.5
06:00 AM - 07:00 AM	55.2	72.3	43.6
07:00 AM - 08:00 AM	57.7	76.8	45.2
08:00 AM - 09:00 AM	54.2	70.7	49.8
09:00 AM - 10:00 AM	58.2	86.3	43.4
10:00 AM - 11:00 AM	53.1	76.5	46.5
11:00 AM - 12:00 PM	54.7	76.5	44.0

Leq Average 24 hrs. (dB(A))	54.7
Lmax (dB(A))	86.3
L90 (dB(A))	44.2
L5n (dB(A))	62.2
Standard (dB(A))	70

Reference Method : ISO 1996-1 and 1996-2
Standard : 1. ปริมาณการจราจรทางบกในพื้นที่ 15 (ก.ม. 2540) จังหวัดสุพรรณบุรี
2. ปริมาณการจราจรทางบกในพื้นที่ 15 (ก.ม. 2540) จังหวัดสุพรรณบุรี

วันที่ 25/8

Technical Management

Tanyatorn Mongkornjirawut
Supervisor

Approved by

Supt S.

Supot Salameh
Section Head

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.

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

Life Sciences

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/EMAIL

S:\Reports_Air Noise\pt (103PM)

ภาคผนวก ค-3

คุณภาพน้ำผิวดิน



Analysis / Test Report

TESTING
No.0009

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Date Received : Mar 07, 2023
Date Reported : Mar 15, 2023
Report Number : 2579181-1
Project Name : Monitoring
Project Location : WHA SIL

Page 1 of 9

Sample Number	2322036-1
Sampled Date	Mar 07, 2023 1:35 PM
Sample Description	Surface water
Location	คลองระพีพัฒน์ อีราวัณบุรีนาเกลือและนาเกลือของ บริษัทฯ 500 ไร่
Date Analysis Commenced	Mar 08, 2023
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	Result	Guideline / Specification	Method	Testing Location
Metals Testing						
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Bangkok
Lead	mg/L	0.0003	0.0005	0.0006	≤0.05	Bangkok
Microbiological Testing						
Total Coliform	MPN/100mL	-	3300.0	≤20000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing						
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, -O (C)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	331	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Cyanide as CN	mg/L	0.002	0.005	Not Detected	≤0.005	Bangkok

The above results are valid only for the analyzed (tested) sample(s) as indicated in the Laboratory ALS Laboratory Group (Thailand) Co., Ltd. An ALS Limited Company without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Savitree N.

Savitree Nongsinglam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-2U EMAIL

S:\Report\LA_GL_rpt (8-5394)



Analysis / Test Report

TESTING
No.0009

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Date Received : Mar 07, 2023
Date Reported : Mar 15, 2023
Report Number : 2579181-1
Project Name : Monitoring
Project Location : WHA SIL

Page 2 of 9

Sample Number	2322036-1
Sampled Date	Mar 07, 2023 1:35 PM
Sample Description	Surface water
Location	คลองระพีพัฒน์ อีราวัณบุรีนาเกลือและนาเกลือของ บริษัทฯ 500 ไร่
Date Analysis Commenced	Mar 08, 2023
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	Result	Guideline / Specification	Method	Testing Location
Water Testing						
Dissolved Oxygen *	mg/L	-	0.1	7.1	≥4	Bangkok
Nitrate as N	mg/L	0.06	0.2	<0.2	≤5	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	Bangkok
pH at 25 degree C	-	-	7.6	5.0-9.0	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
Temperature *	Degree C	-	27.9	n ¹	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	220	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	28	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Guideline : 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)
Quality Act : B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)
n¹ : Change from Natural condition not more than 3 degree C
Sampling By : Teerawat Puangsuak

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

The above results are valid only for the analyzed (tested) sample(s) as indicated in the Laboratory ALS Laboratory Group (Thailand) Co., Ltd. An ALS Limited Company without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Savitree N.

Savitree Nongsinglam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-2U EMAIL

S:\Report\LA_GL_rpt (8-5394)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

* 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.

Page 3 of 9



TESTING
No.0009
Lot ID: 2322036

Date Received : Mar 07, 2023

Date Reported : Mar 15, 2023

Report Number : 2579181-1

Sample Number

Sample Date

Sample Description

Location

Date Analysis Commenced

Condition of Sample

Unit

LOD

LOQ (LOR)

Result

Guideline / Specification

Method

Testing Location

Metals Testing

Hexavalent Chromium

mg/L

0.003

0.01

Not Detected

≤0.05

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B

Lead

mg/L

0.0003

0.0005

0.001

≤0.05

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F

Microbiological Testing

Total Coliform

MPN/100mL

-

490.0

No Standard

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B

Water Testing

Ammonia Nitrogen *

mg/L

-

0.06

<0.06

≤0.5

Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)

BOD (5 days at 20 degree C) *

mg/L

-

2.0

3.4

≤4

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)

Conductivity at 25 degree C *

micromhos/cm

-

0.5

473

No Standard

Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B

Cyanide as CN

mg/L

0.002

0.005

<0.005

0.005

In-house method : STM 04-007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)

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

Sawitree N.

Sawitree Nolsangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942-21 EMAIL

S:\Report\AL_Gr.pdf (8.53PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

Page 4 of 9



TESTING
No.0009
Lot ID: 2322036

Date Received : Mar 07, 2023

Date Reported : Mar 15, 2023

Report Number : 2579181-1

Sample Number

Sample Date

Sample Description

Location

Date Analysis Commenced

Condition of Sample

Unit

LOD

LOQ (LOR)

Result

Guideline / Specification

Method

Testing Location

Metals Testing

Hexavalent Chromium

mg/L

0.003

0.01

Not Detected

≤0.05

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B

Lead

mg/L

0.0003

0.0005

0.001

≤0.05

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F

Microbiological Testing

Total Coliform

MPN/100mL

-

490.0

No Standard

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B

Water Testing

Ammonia Nitrogen *

mg/L

-

0.06

<0.06

≤0.5

Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)

BOD (5 days at 20 degree C) *

mg/L

-

2.0

3.4

≤4

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)

Conductivity at 25 degree C *

micromhos/cm

-

0.5

473

No Standard

Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B

Cyanide as CN

mg/L

0.002

0.005

<0.005

0.005

In-house method : STM 04-007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)

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

Sawitree N.

Sawitree Nolsangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942-21 EMAIL

S:\Report\AL_Gr.pdf (8.53PM)



Analysis / Test Report

TESTING
No.0009

Lot ID: 2322036
Date Received : Mar 07, 2023
Date Reported : Mar 15, 2023
Report Number : 2579181-1

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

Page 5 of 9

Sample Number	2322036-2
Sample Date	Mar 07, 2023 12:05 PM
Sample Description	Surface water
Location	ถนนพหลโยธิน บริเวณซอย 500 เมตร
Date Analysis Commenced	Mar 08, 2023
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Dissolved Oxygen *	mg/L	-	0.1	10.8	≥2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	0.3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.9	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Temperature *	Degree C	-	-	28.1	n ^o	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	304	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	26	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : 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)

Sampling By : Teerawat Pungsuks

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.

Approved by 
Sawitree Nosingiam
Manager

The above results are valid only for the individual sample(s) 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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10350 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

6947-21J THAIL

S:\Report\AL_GL.rpt (8.53PM)

Analysis / Test Report

TESTING
No.0009

Lot ID: 2322036
Date Received : Mar 07, 2023
Date Reported : Mar 15, 2023
Report Number : 2579181-1

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

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

The above results are valid only for the individual sample(s) 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


Sawitree Nosingiam
Manager

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10350 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

6947-21J THAIL

S:\Report\AL_GL.rpt (8.53PM)



Analysis / Test Report

TESTING
No.0009

Lot ID: 2322036

Date Received : Mar 07, 2023

Date Reported : Mar 15, 2023

Report Number: 2579181-1

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location: WHA SIL

Page 7 of 9

Sample Number	2322036-3
Sample Date	Mar 07, 2023 11:30 AM
Sample Description	Surface water
Location	คลองน้ำท่าจากถนนหน้าห้องลม 500 เมตร
Date Analysis Commenced	Mar 08, 2023
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.0007	≤0.05	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125-B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	490.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221-B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	≤0.5	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2.0	2.6	≤4	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210-B, 4500 - O (C)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	330	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510-B	Bangkok
Cyanide as CN	mg/L	0.002	0.005	<0.005	0.005	In-house method : STM 04-007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)	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

Savitree N.

Savitree Nolsangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942 31 (MAL)

S:\Report\AL_Gr.pdf (8.529M)



Analysis / Test Report

TESTING
No.0009

Lot ID: 2322036

Date Received : Mar 07, 2023

Date Reported : Mar 15, 2023

Report Number: 2579181-1

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location: WHA SIL

Page 8 of 9

Sample Number	2322036-3
Sample Date	Mar 07, 2023 11:30 AM
Sample Description	Surface water
Location	คลองน้ำท่าจากถนนหน้าห้องลม 500 เมตร
Date Analysis Commenced	Mar 08, 2023
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Dissolved Oxygen *	mg/L	-	0.1	9.3	≥2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	<0.2	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4110-B	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520-B	Bangkok
pH at 25 degree C		-	-	7.7	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Temperature *	Degree C	-	-	27.3	n ^o	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550-B	Bangkok
Total Dissolved Solids Dried at 180 degree C *	mg/L	-	5	200	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540-C	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	26	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540-D	Bangkok

Guideline : 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)

n^o: Change from Natural condition not more than 3 degree C

Sampling By : Teerawat Puangsuk

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 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

Savitree N.

Savitree Nolsangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942 31 (MAL)

S:\Report\AL_Gr.pdf (8.529M)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2322036
Date Received : Mar 07, 2023
Date Reported : Mar 15, 2023
Report Number : 2579181-1

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025. Page 9 of 9



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699921-1

Page 1 of 4

Sample Number 2356071-1
Sample Date Jun 06, 2023 2:40 PM
Sample Description Surface water
Location ภาณุราชธานี 111 หมู่ 7 ถนนพหลโยธินสายเก่า ตำบลหนองพลับ อำเภอนครหลวง จังหวัดพระนครศรีอยุธยา 50000
Date Analysis Commenced Jun 07, 2023
Condition of Sample Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.01	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.001	≤0.10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	<0.0005	≤0.05	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.06	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	In-house method : STM 05-007 based on United States Environmental Protection Agency, 2002, EPA Method 1631, Revision E	Bangkok
Nickel	mg/L	0.0003	0.0005	0.0009	≤0.10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	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

Savitree N.
Savitree Naisianglam
Manager

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

Savitree N.
Savitree Naisianglam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/EMAIL

S:\Reports\ALN_GL.rpt (8.53PM)

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/EMAIL

S:\Reports\ALN_GL.rpt (2:58PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699921-1

Page 2 of 4

Sample Number	2356071-1
Sample Date	Jun 06, 2023 2:40 PM
Sample Description	Surface water
Location	คลองระพีพัฒน์ บริเวณด้านทิศใต้ของแปลงที่ดินหมายเลข 500 ไร่
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	<0.005	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3010 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	490.0	≤20000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	≤0.5	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2.0	<2.0	≤2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	436	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Cyanide as CN	mg/L	0.002	0.005	Not Detected	≤0.005	In-house method : STM 04-007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	6.9	≥4	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	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 the written permission of ALS Laboratory Group (Thailand) Co., Ltd. We strongly recommend that this report is not reproduced except in full.

Approved by

Savitree N.

Savitree Nongsiam
Manager

ADDRESS 104 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942-321 (MAL)

S:\Report\AU_GA.pdf (2.569K)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699921-1

Page 3 of 4

Sample Number	2356071-1
Sample Date	Jun 06, 2023 2:40 PM
Sample Description	Surface water
Location	คลองระพีพัฒน์ บริเวณด้านทิศใต้ของแปลงที่ดินหมายเลข 500 ไร่
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Nitrate as N	mg/L	0.06	0.2	0.5	≤5	In-house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	8.1	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Temperature *	Degree C	-	-	33.1	n ^a	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved Solids Dried at 180 degree C *	mg/L	-	5	210	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	26	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : 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)
n^a: Change from Natural condition not more than 3 degree C
n^b: Not Change from natural condition

Note : This Analysis test report is issued to supersede report No.2655370-1, Date Reported : Jun 14, 2023 due to revise analytical information.

Sampling By : Teerawat Puangsuk

Remark :

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

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 the written permission of ALS Laboratory Group (Thailand) Co., Ltd. We strongly recommend that this report is not reproduced except in full.

Approved by

Savitree N.

Savitree Nongsiam
Manager

ADDRESS 104 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942-321 (MAL)

S:\Report\AU_GA.pdf (2.569K)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699921-1

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

Page 3 of 4



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699922-1

Page 1 of 3

Sample Number	Sample Date	Sample Description	Location	Date Analysis Commenced	Condition of Sample	Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
2356071-2	Jun 06, 2023 1:30 PM	Surface water	หน้าสวนยาง 111 มอ 7 ถนนสาย 101 ตำบลหนองปลาไหล อำเภอนกขะราช จังหวัดสระบุรี	Jun 07, 2023	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)								
Metals Testing													
Arsenic		mg/L	0.0003	0.0005	0.002	≤0.01						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium		mg/L	0.0003	0.0005	Not Detected	≤0.005						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper		mg/L	0.0003	0.0005	0.002	≤0.1						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium		mg/L	0.003	0.01	Not Detected	≤0.05						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead		mg/L	0.0003	0.0005	0.002	≤0.05						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese		mg/L	0.0003	0.0005	0.07	≤1						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury		mg/L	0.0001	0.0005	Not Detected	≤0.002						In-house method : STM 05-007 based on United States Environmental Protection Agency, 8160Z, EPA Method 1631, Revision E	Bangkok
Nickel		mg/L	0.0003	0.0005	0.004	≤0.1						Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	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

Savitree N.
Savitree Nongsiam
Manager

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

Savitree N.
Savitree Nongsiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/ENAL

S:\Reports\LA_GL_rpt (2:58PM)

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-21/ENAL

S:\Reports\LA_GL_rpt (2:58PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699922-1

Page 2 of 3

Sample Number	2356071-2
Sample Date	Jun 06, 2023 1:30 PM
Sample Description	Surface water
Location	คลองหนอง น้ประทุมรัตนโกสินทร์บริเวณท่าเรือประมง 500 เมตร
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.009	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	13.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	≤0.5	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	926	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Cyanide as CN	mg/L	0.002	0.005	Not Detected	0.005	In-house method : STM 04-007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	9.4	≥2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	1.9	≤5	In-house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4110 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

Savitree N.

Savitree Nolsangiam
Manager

ADDRESS: 104 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-211 PIAL

S:\Report\AU_GL.rpt (2:58PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699922-1

Page 3 of 3

Sample Number	2356071-2
Sample Date	Jun 06, 2023 1:30 PM
Sample Description	Surface water
Location	คลองหนอง น้ประทุมรัตนโกสินทร์บริเวณท่าเรือประมง 500 เมตร
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	8.9	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Temperature *	Degree C	-	-	33.1	n ^o	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved Solids Dried at 180 degree C *	mg/L	-	5	535	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	35	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : 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)

n^o: Change from Natural condition not more than 3 degree C

Note : This Analysis test report is issued to supersede report No.2655370-1, Date Reported : Jun 14, 2023 due to revise analytical information.

Sampling By : Teerawat Puangsuk

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.

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

Savitree N.

Savitree Nolsangiam
Manager

ADDRESS: 104 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6947-211 PIAL

S:\Report\AU_GL.rpt (2:58PM)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name : Monitoring
Project Location : WHA SIL

Lot ID: 2368827
Date Received : Jun 20, 2023
Date Reported : Jun 27, 2023
Report Number : 2688629-1

Page 1 of 1

Sample Number	2368827-1
Sample Date	Jun 20, 2023 10:45 AM
Sample Description	Surface water
Location	คลองน้ำไหลในเขตโรงงานอุตสาหกรรม 500 เมตร
Date Analysis Commenced	Jun 21, 2023
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 degree C)	mg/L	-	2.0	2.9	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok

Sampling By : Teerawat Puangsuk

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



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071

Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699923-1

Page 1 of 3

Sample Number	2356071-3
Sample Date	Jun 06, 2023 11:10 AM
Sample Description	Surface water
Location	คลองน้ำไหลในเขตโรงงานอุตสาหกรรม 500 เมตร
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.01	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.002	≤0.1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.05	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.09	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.002	In-house method : STM 05-007 based on United States Environmental Protection Agency, 2002, EPA Method 1631, Revision E	Bangkok
Nickel	mg/L	0.0003	0.0005	0.003	≤0.1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	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

Savitree N.

Savitree Nongsilam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6047-2U (EMIL)

S:\Report\AL_IL_M001.rpt (3.249K)

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6047-2U (EMIL)

S:\Report\AL_IL_M001.rpt (2.519K)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699923-1

Page 2 of 3

Sample Number	2356071-3
Sample Date	Jun 06, 2023 11:10 AM
Sample Description	Surface water
Location	คลองหลวง พื้นที่ทางเกษตรกรรมที่คลองหลวง 500 เมตร
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.008	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	130.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	0.18	≤0.5	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2.0	3.7	≤4	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, 4500 - O (C)	Bangkok
Conductivity at 25 degree C *	microhm/cm	-	0.5	989	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Cyanide as CN	mg/L	0.002	0.005	Not Detected	0.005	In-house method : STM 04-007 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	7.1	≥2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	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 permission from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Savitree N.

Savitree Nolsangiam
Manager

ADDRESS 104 Phatthanakan 40, 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942-21 ENAL

S:\Reports\AL_Grpt (23599)



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O : 54230009
Project Name : Monitoring
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2356071
Date Received : Jun 06, 2023
Date Reported : Jun 28, 2023
Report Number : 2699923-1

Page 3 of 3

Sample Number	2356071-3
Sample Date	Jun 06, 2023 11:10 AM
Sample Description	Surface water
Location	คลองหลวง พื้นที่ทางเกษตรกรรมที่คลองหลวง 500 เมตร
Date Analysis Commenced	Jun 07, 2023
Condition of Sample	Contained in one amber glass bottle, two glass vials, two BOD bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Nitrate as N	mg/L	0.06	0.2	1.9	≤5	In-house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C	-	-	-	8.4	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Temperature *	Degree C	-	-	32.9	n ^o	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved Solids Dried at 180 degree C *	mg/L	-	5	583	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Suspended Solids Dried at 103-105 degree C *	mg/L	-	5	28	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : 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)
n^o: Change from Natural condition not more than 3 degree C

Note : This Analysis test report is issued to supersede report No.2655370-1, Date Reported : Jun 14, 2023 due to revise analytical information.

Sampling By : Teerawat Puangsuk

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.

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 permission from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Savitree N.

Savitree Nolsangiam
Manager

ADDRESS 104 Phatthanakan 40, 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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

6942-21 ENAL

S:\Reports\AL_Grpt (23599)

ภาคผนวก ค-4

ปริมาณโลหะหนักในตะกอนดิน



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

Lot ID: 2343049

Date Received : May 16, 2023

Date Reported : Jun 16, 2023

Report Number : 2627288-1 Rev. No.1

Page 1 of 6

Sample Number	2343049-1
Sampled Date	May 16, 2023 12:00 PM
Sample Description	Soil (Dry Basis)
Location	คลองหนอง รุ ดินน้ำเหนือจุดระบายน้ำทั้งจากโครงการ ประมาณ 500 เมตร
Date Analysis Commenced	May 17, 2023
Condition of Sample	Packed in one glass bottle and one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Metals Testing								
Arsenic	mg/kg	-	0.50	<0.50	≤10	≤33	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤1	≤5	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	32.8	≤31.5	≤150	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3060A and 7196A	Bangkok
Lead	mg/kg	-	1.00	13.9	≤36	≤130	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	483	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤0.2	≤1	United States Environmental Protection Agency, EPA Method 7473	Bangkok
Nickel	mg/kg	-	1.00	10.7	≤23	≤50	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Selenium	mg/kg	-	0.50	<0.50	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	28.6	≤120	≤460	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Physical Parameters								
Moisture	%	-	0.1	37.0	No Standard	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 G	Bangkok

Guideline : (1) Notification of The National Environmental Board B.E.2565, for protect benthic animals
(2) Notification of The National Environmental Board B.E.2565, Annex1

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

Sawitree N.

Sawitree Noisangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

Lot ID: 2343049

Date Received : May 16, 2023

Date Reported : Jun 16, 2023

Report Number : 2627288-1 Rev. No.1

Page 2 of 6

Note : 1. Analysis Results expressed on dry basis.

2. This Analysis test report is reissued to supersede report No.2627288-1, Date Reported : May 25, 2023 due to revise analytical information.

Sampling By : Teerawat Puangsuk ทะเบียนเลขที่ ว-204-จ-7107

Remark :

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

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

Sawitree N.

Sawitree Noisangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :

Project Name : Monitoring

Project Location : WHA SIL

Lot ID: 2361890

Date Received : May 30, 2023

Date Reported : Jun 28, 2023

Report Number : 2666362-1 Rev. No.1

Page 3 of 4

Sample Number	2361890-3							
Sampled Date	May 30, 2023 11:10 AM							
Sample Description	Soil (Dry Basis)							
Location	คลองหนองรู บริเวณจุดระบายน้ำทิ้งจากโครงการ							
Date Analysis Commenced	May 31, 2023							
Condition of Sample	Packed in one glass bottle and one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Metals Testing								
Arsenic	mg/kg	-	0.50	<0.50	≤10	≤33	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤1	≤5	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	38.4	≤31.5	≤150	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	1.15	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3060A and 7196A	Bangkok
Lead	mg/kg	-	1.00	19.4	≤36	≤130	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	606	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤0.2	≤1	United States Environmental Protection Agency, EPA Method 7473	Bangkok
Nickel	mg/kg	-	1.00	18.5	≤23	≤50	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Selenium	mg/kg	-	0.50	<0.50	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	54.8	≤120	≤460	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Physical Parameters								
Moisture	%	-	0.1	38.2	No Standard	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 G	Bangkok

Guideline : (1) Notification of The National Environmental Board B.E.2565, for protect benthic animals
(2) Notification of The National Environmental Board B.E.2565, Annex1

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

Savitree N.

Savitree Noisangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :

Project Name : Monitoring

Project Location : WHA SIL

Lot ID: 2361890

Date Received : May 30, 2023

Date Reported : Jun 28, 2023

Report Number : 2666362-1 Rev. No.1

Page 4 of 4

Note : 1. Analysis Results expressed on dry basis.

2. This Analysis test report is reissued to supersede report No.2666362-1, Date Reported : Jun 08, 2023 due to revise guideline/specification

Sampling By : Jiranat Khowlaor ทะเบียนเลขที่ ๖-204-๖-7517

Remark :

- LOD : Limit of Detection

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

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

Sawitree N.

Sawitree Noisangiam

Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

Lot ID: 2343049

Date Received : May 16, 2023

Date Reported : Jun 16, 2023

Report Number : 2627288-1 Rev. No.1

Page 5 of 6

Sample Number	2343049-3							
Sampled Date	May 16, 2023 11:00 AM							
Sample Description	Soil (Dry Basis)							
Location	คลองหนองรู ห้วยจตุรเขาน้ำทิ้งของโครงการ ประมาณ 500 เมตร							
Date Analysis Commenced	May 17, 2023							
Condition of Sample	Packed in one glass bottle and one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Metals Testing								
Arsenic	mg/kg	-	0.50	<0.50	≤10	≤33	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤1	≤5	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Copper	mg/kg	-	1.00	50.2	≤31.5	≤150	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3060A and 7196A	Bangkok
Lead	mg/kg	-	1.00	82.2	≤36	≤130	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	756	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤0.2	≤1	United States Environmental Protection Agency, EPA Method 7473	Bangkok
Nickel	mg/kg	-	1.00	20.6	≤23	≤50	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Selenium	mg/kg	-	0.50	0.88	No Standard	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Zinc	mg/kg	-	1.00	276	≤120	≤460	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Physical Parameters								
Moisture	%	-	0.1	71.7	No Standard	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 G	Bangkok

Guideline : (1) Notification of The National Environmental Board B.E.2565, for protect benthic animals
(2) Notification of The National Environmental Board B.E.2565, Annex1

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

Savitree N.

Savitree Noisangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Saraburi Industrial Land Co., Ltd.

111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O : 54230009

Project Name : Monitoring

Project Location : WHA SIL

Lot ID: 2343049

Date Received : May 16, 2023

Date Reported : Jun 16, 2023

Report Number : 2627288-1 Rev. No.1

Page 6 of 6

Note : 1. Analysis Results expressed on dry basis.

2. This Analysis test report is reissued to supersede report No.2627288-1, Date Reported : May 25, 2023 due to revise analytical information.

Sampling By : Teerawat Puangsuk ทะเบียนเลขที่ ว-204-จ-7107

Remark :

- LOD : Limit of Detection

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

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

Sawitree N.

Sawitree Noisangiam
Manager

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ภาคผนวก ค-5

คุณภาพน้ำทิ้ง (ระบบบำบัดน้ำเสียรวมทางชีวภาพ)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539396-1

Page 1 of 2

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2	13	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	77	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Bangkok
Oil & Grease *	mg/L	-	3	9	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	1.0	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	26.8	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1280	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Siriluk P.
Siriluk Puengsang
Supervisor
โทร: 09-00000000-204-4-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: 09-00000000-204-4-6111

The above results are valid only for the analyzed (tested sample) 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.
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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
5137-044 (BNAI) S (Report), AL GL, GL (1/2023)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539396-2

Page 1 of 2

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.31	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	170000.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	7.65	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1858	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	7.5	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	1.39	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	3.5	No Standard	In house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

The above results are valid only for the analyzed (tested sample) 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

Savitree N.
Savitree Naisangam
Manager

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
5137-044 (BNAI) S (Report), AL GL, GL (1/2023)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539396-1

Page 2 of 2

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	10.6	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	38	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuksit โทร: 09-00000000-204-4-7107

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.

Technical Management

Siriluk P.
Siriluk Puengsang
Supervisor
โทร: 09-00000000-204-4-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: 09-00000000-204-4-6111

The above results are valid only for the analyzed (tested sample) 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.
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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
5137-044 (BNAI) S (Report), AL GL, GL (1/2023)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539396-2

Page 2 of 2

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.31	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	170000.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	7.65	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1858	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	7.5	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	1.39	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	3.5	No Standard	In house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

The above results are valid only for the analyzed (tested sample) 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

Savitree N.
Savitree Naisangam
Manager

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
5137-044 (BNAI) S (Report), AL GL, GL (1/2023)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 22150311
Date Received : Jan 10, 2023
Date Reported : Jan 13, 2023
Report Number : 2520789-1

Page 1 of 1

Sample Number	22150311-1						
Sampled Date	Jan 10, 2023 2:25 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๓๓ Equalization Tank						
Date Analysis Commenced	Jan 11, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	1.5	5	142	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	58	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks ๓๓๓๓๓๓๓๓ ๓-204-๔-7107

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.

Technical Management

Siriluk P.

Siriluk Puangsuks
Supervisor
๓๓๓๓๓๓๓๓ ๓-204-๔-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๓-204-๔-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS P.L.C. (P. ๒๕๖๔) P. ๒๕๖๔

S (Report), AL GL (p. 1) (4.0000)

3137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 22150379
Date Received : Jan 17, 2023
Date Reported : Jan 21, 2023
Report Number : 2520797-1

Page 1 of 1

Sample Number	22150379-1						
Sampled Date	Jan 17, 2023 11:30 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๓๓ Equalization Tank						
Date Analysis Commenced	Jan 18, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	160	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	63	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks ๓๓๓๓๓๓๓๓ ๓-204-๔-7107

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.

Technical Management

Nann Satseng

Nann Satseng
Supervisor
๓๓๓๓๓๓๓๓ ๓-204-๔-4715

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๓-204-๔-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS P.L.C. (P. ๒๕๖๔) P. ๒๕๖๔

S (Report), AL GL (p. 1) (2.3300)

3137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 232764
Date Received : Jan 24, 2023
Date Reported : Jan 27, 2023
Report Number : 2538367-1

Page 1 of 1

Sample Number	232764-1						
Sampled Date	Jan 24, 2023 11:20 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๓๓ Equalization Tank						
Date Analysis Commenced	Jan 25, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	137	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	55	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks ๓๓๓๓๓๓๓๓ ๓-204-๔-7107

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.

Technical Management

Siriluk P.

Siriluk Puangsuks
Supervisor
๓๓๓๓๓๓๓๓ ๓-204-๔-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๓-204-๔-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS P.L.C. (P. ๒๕๖๔) P. ๒๕๖๔

S (Report), AL GL (p. 1) (6.1500)

3137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 232765
Date Received : Jan 31, 2023
Date Reported : Feb 03, 2023
Report Number : 2538369-1

Page 1 of 1

Sample Number	232765-1						
Sampled Date	Jan 31, 2023 10:55 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๓๓ Equalization Tank						
Date Analysis Commenced	Feb 01, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	149	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	56	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks ๓๓๓๓๓๓๓๓ ๓-204-๔-7107

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.

Technical Management

Siriluk P.

Siriluk Puangsuks
Supervisor
๓๓๓๓๓๓๓๓ ๓-204-๔-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๓-204-๔-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS P.L.C. (P. ๒๕๖๔) P. ๒๕๖๔

S (Report), AL GL (p. 1) (3.1500)

3137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239169
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551611-1

Page 1 of 2

Sample Number : 239169-1
Sampled Date : Feb 07, 2023 11:32 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๓๓ Equalization Tank
Date Analysis Commenced : Feb 08, 2023
Condition of Sample : Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	41.6	≤500	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	182	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1	Watercolor analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	0.02	≤1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	31.2	≤45	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1460	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Narin Saiseng
Supervisor
โทร: 09-09090917-204-4-4715

Approved by

Kanokkorn Anek
Senior Manager
โทร: 09-09090917-204-6-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
5137-1641 (ENGL) S:\Reports\AL GL.rpt (8.1379)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239169
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551611-1

Page 2 of 2

Sample Number : 239169-1
Sampled Date : Feb 07, 2023 11:32 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๓๓ Equalization Tank
Date Analysis Commenced : Feb 08, 2023
Condition of Sample : Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	26.0	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	95	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Jirarat Khowlaor โทร: 09-09090917-204-4-7517

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.

Technical Management

Narin Saiseng
Supervisor
โทร: 09-09090917-204-4-4715

Approved by

Kanokkorn Anek
Senior Manager
โทร: 09-09090917-204-6-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
5137-1641 (ENGL) S:\Reports\AL GL.rpt (8.1379)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239169
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551611-2

Page 1 of 2

Sample Number : 239169-1
Sampled Date : Feb 07, 2023 11:32 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๓๓ Equalization Tank
Date Analysis Commenced : Feb 08, 2023
Condition of Sample : Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.74	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	4900000.0	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	18.5	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	microhmhos/cm	-	0.5	2710	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	2.0	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	4.9	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

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

Approved by

Sawitree Nolsiang
Manager

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
5137-1641 (ENGL) S:\Reports\AL GL.rpt (8.1379)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239169
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551611-2

Page 2 of 2

Sample Number : 239169-1
Sampled Date : Feb 07, 2023 11:32 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๓๓ Equalization Tank
Date Analysis Commenced : Feb 08, 2023
Condition of Sample : Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

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.

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

Approved by

Sawitree Nolsiang
Manager

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
5137-1641 (ENGL) S:\Reports\AL GL.rpt (8.1379)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239175
Date Received : Feb 14, 2023
Date Reported : Feb 16, 2023
Report Number : 2551624-1

Page 1 of 1

Sample Number	239175-1						
Sampled Date	Feb 14, 2023 9:50 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗ Equalization Tank						
Date Analysis Commenced	Feb 15, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	217	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	75	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Noraset Komal ๗๗๗๗๗๗๗ ๗-204-๙-5411

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.

Technical Management Suwimon C.
Suwimon Chaiyapongwut
Scientist (2)
๗๗๗๗๗๗๗ ๗-204-๙-5417

Approved by Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๗๗๗๗๗๗ ๗-204-๙-6111

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

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PART TEE P

5137-004/ENAL S (Version), AL, GL, opt (1-16PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239176
Date Received : Feb 21, 2023
Date Reported : Feb 24, 2023
Report Number : 2551627-1

Page 1 of 1

Sample Number	239176-1						
Sampled Date	Feb 21, 2023 10:05 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗ Equalization Tank						
Date Analysis Commenced	Feb 22, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Gray, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	190	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	96	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Thanwa Jariya ๗๗๗๗๗๗๗ ๗-204-๙-5414

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.

Technical Management Chan S.
Narin Saiseng
Supervisor
๗๗๗๗๗๗๗ ๗-204-๙-4715

Approved by Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๗๗๗๗๗๗ ๗-204-๙-6111

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

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PART TEE P

5137-004/ENAL S (Version), AL, GL, opt (1-16PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239177
Date Received : Feb 28, 2023
Date Reported : Mar 03, 2023
Report Number : 2551635-1

Page 1 of 1

Sample Number	239177-1						
Sampled Date	Feb 28, 2023 11:10 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗ Equalization Tank						
Date Analysis Commenced	Mar 01, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	134	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	59	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks ๗๗๗๗๗๗๗ ๗-204-๙-7107

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.

Technical Management Suwimon C.
Suwimon Chaiyapongwut
Scientist (2)
๗๗๗๗๗๗๗ ๗-204-๙-5417

Approved by Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๗๗๗๗๗๗ ๗-204-๙-6111

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

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PART TEE P

5137-004/ENAL S (Version), AL, GL, opt (1-16PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2324902
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584251-1

Page 1 of 3

Sample Number	2324902-1						
Sampled Date	Mar 07, 2023 11:43 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗ Equalization Tank						
Date Analysis Commenced	Mar 08, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Gray, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.03	≤2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.009	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.19	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Technical Management Siriluk P.
Siriluk Puangpang
Supervisor
๗๗๗๗๗๗๗ ๗-204-๙-4720

Approved by Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๗๗๗๗๗๗ ๗-204-๙-6111

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

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PART TEE P

5137-004/ENAL S (Version), AL, GL, opt (1-16PM)



Analysis / Test Report



TESTING

No.0009

Lot ID: 2324902
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584251-1

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

Page 2 of 3

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	44.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	143	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	9	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	0.6	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	31.3	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok

Technical Management

Siriluk P.

Siriluk Puengsang
Supervisor
โทร: 09-00000000-204-9-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
โทร: 09-00000000-204-9-6111

The above results are valid only for the analyzed (tested) sample(s) as indicated in this report. No part of the 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.

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

Life Sciences RIGHT SOLUTIONS. RIGHT PARTNERS. S (Report), AL, GL, PL (S, SPM)



Analysis / Test Report



TESTING

No.0009

Lot ID: 2324902
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584251-2

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

Page 1 of 2

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.63	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	240000.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	10.5	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2184	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	5.1	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	3.7	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

The above results are valid only for the analyzed (tested) sample(s) as indicated in this report. No part of the 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

Siriluk P.

Siriluk Puengsang
Supervisor

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

Life Sciences RIGHT SOLUTIONS. RIGHT PARTNERS. S (Report), AL, GL, PL (S, SPM)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2324902
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584251-1

Page 3 of 3

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1412	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	15.7	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Nitrogen (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	68	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Chuladet Warm โทร: 09-00000000-204-9-6120

Remark :

- LOD : Limit of Detection
- "x" : 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.

Technical Management

Siriluk P.

Siriluk Puengsang
Supervisor
โทร: 09-00000000-204-9-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
โทร: 09-00000000-204-9-6111

The above results are valid only for the analyzed (tested) sample(s) as indicated in this report. No part of the 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.

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

Life Sciences RIGHT SOLUTIONS. RIGHT PARTNERS. S (Report), AL, GL, PL (S, SPM)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2324902
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584251-2

Page 2 of 2

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.63	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	240000.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	10.5	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2184	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	5.1	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	3.7	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

The above results are valid only for the analyzed (tested) sample(s) as indicated in this report. No part of the 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

Siriluk P.

Siriluk Puengsang
Supervisor

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

Life Sciences RIGHT SOLUTIONS. RIGHT PARTNERS. S (Report), AL, GL, PL (S, SPM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2324907
Date Received : Mar 14, 2023
Date Reported : Mar 18, 2023
Report Number : 2586200-1

Page 1 of 1

Sample Number	2324907-1						
Sampled Date	Mar 14, 2023 1:15 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗๓ Equalization Tank						
Date Analysis Commenced	Mar 15, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	177	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	70	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Nantawat Permpoon ๗๓๒๐๙๗๓ ๗-204-๗-7516

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.

Technical Management

Surimon C.
Surimon Chaimuangnui
Scientist (2)
๗๓๒๐๙๗๓ ๗-204-๗-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๓๒๐๙๗๓ ๗-204-๗-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PEOPLE RIGHT TIME
S117-044 (ENGL) S (Version): AL GL rpt (3.23/09)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2324909
Date Received : Mar 28, 2023
Date Reported : Apr 01, 2023
Report Number : 2586221-1

Page 1 of 1

Sample Number	2324909-1						
Sampled Date	Mar 28, 2023 10:35 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗๓ Equalization Tank						
Date Analysis Commenced	Mar 29, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	76	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	6.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	60	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks ๗๓๒๐๙๗๓ ๗-204-๗-7107

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.

Technical Management

Nantawat Sornboon
Nantawat Sornboon
Specialist 1
๗๓๒๐๙๗๓ ๗-204-๗-4716

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๓๒๐๙๗๓ ๗-204-๗-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PEOPLE RIGHT TIME
S117-044 (ENGL) S (Version): AL GL rpt (3.23/09)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2324908
Date Received : Mar 21, 2023
Date Reported : Mar 25, 2023
Report Number : 2586202-1

Page 1 of 1

Sample Number	2324908-1						
Sampled Date	Mar 21, 2023 11:05 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗๓ Equalization Tank						
Date Analysis Commenced	Mar 22, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	163	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	80	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Panupong Homewong ๗๓๒๐๙๗๓ ๗-204-๗-7829

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.

Technical Management

Surimon C.
Surimon Chaimuangnui
Scientist (2)
๗๓๒๐๙๗๓ ๗-204-๗-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๓๒๐๙๗๓ ๗-204-๗-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PEOPLE RIGHT TIME
S117-044 (ENGL) S (Version): AL GL rpt (3.23/09)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2335226
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607067-1

Page 1 of 2

Sample Number	2335226-1						
Sampled Date	Apr 04, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๗๓ Equalization Tank						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	51.8	≤500	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	159	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	6	≤10	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5530 B	Bangkok
pH at 25 degree C *	-	-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	0.002	≤1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, P)	Bangkok
Temperature *	Degree C	-	-	33.3	≤45	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1372	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Nantawat Sornboon
Nantawat Sornboon
Specialist 1
๗๓๒๐๙๗๓ ๗-204-๗-4716

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๗๓๒๐๙๗๓ ๗-204-๗-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PEOPLE RIGHT TIME
S117-044 (ENGL) S (Version): AL GL rpt (3.23/09)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2335226
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607067-1

Page 2 of 2

Sample Number	2335226-1						
Sample Date	Apr 04, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	24.4	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Nitrog (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	105	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuk ๓๐๔๖๖๓๓ ๖-204-๖-7107

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.

Technical Management

Nant Somb
Nanthawadee Sombon
Specialist 1
๓๐๔๖๖๓๓ ๖-204-๖-4716

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๐๔๖๖๓๓ ๖-204-๖-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5137-044 (ENGL) S (Report), AL GL (pt) (4.2796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2335226
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607067-2

Page 2 of 2

Sampling By : Teerawat Puangsuk

Remark :

- LOD : Limit of Detection
- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * 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.

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Kanchai Suttha ๓๐๔๖๖๓๓ ๖-204-๖-8614

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.

Approved by

Sithichok T.
Sithichok Thongpueen
Scientist (3)

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5137-044 (ENGL) S (Report), AL GL (pt) (4.2796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2335226
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607067-2

Page 1 of 2

Sample Number	2335226-1						
Sampled Date	Apr 04, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.60	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	13000000.0	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	18.5	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2473	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	5.0	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

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

Approved by

Sithichok T.
Sithichok Thongpueen
Scientist (3)

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5137-044 (ENGL) S (Report), AL GL (pt) (4.2796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2335227
Date Received : Apr 11, 2023
Date Reported : Apr 18, 2023
Report Number : 2607069-1

Page 1 of 1

Sample Number	2335227-1						
Sample Date	Apr 11, 2023 12:00 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Apr 12, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	145	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	84	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Kanchai Suttha ๓๐๔๖๖๓๓ ๖-204-๖-8614

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.

Technical Management

Siriluk P.
Siriluk Puangsang
Supervisor
๓๐๔๖๖๓๓ ๖-204-๖-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๐๔๖๖๓๓ ๖-204-๖-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5137-044 (ENGL) S (Report), AL GL (pt) (4.2796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2335228
Date Received : Apr 18, 2023
Date Reported : Apr 21, 2023
Report Number : 2607070-1

Page 1 of 1

Sample Number	2335228-1						
Sample Date	Apr 18, 2023 2:05 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Apr 19, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, a lot of solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	100	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Kamchai Suttha วิจัยและทดสอบ ๒-๒๐๔-๔-๘๖14

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.

Technical Management

Summon C.
Summon Chaiyungwut
Scientist (3)
วิทย์และทดสอบ ๒-๒๐๔-๔-๕๔17

Approved by

Kanokorn Anek
Senior Manager
วิทย์และทดสอบ ๒-๒๐๔-๔-๖111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS PRECISION & INTEGRITY
S (Vapour), AL, GL, GP (1-20PM)

5317-3041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2335229
Date Received : Apr 25, 2023
Date Reported : Apr 28, 2023
Report Number : 2607074-1

Page 1 of 1

Sample Number	2335229-1						
Sample Date	Apr 25, 2023 1:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Apr 26, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	125	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	52	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Kamchai Suttha วิจัยและทดสอบ ๒-๒๐๔-๔-๘๖14

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.

Technical Management

Siriluk P.
Siriluk Puenggang
Supervisor
วิทย์และทดสอบ ๒-๒๐๔-๔-๔720

Approved by

Kanokorn Anek
Senior Manager
วิทย์และทดสอบ ๒-๒๐๔-๔-๖111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS PRECISION & INTEGRITY
S (Vapour), AL, GL, GP (1-20PM)

5317-3041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2347902
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635762-1

Page 1 of 2

Sample Number	2347902-1						
Sample Date	May 02, 2023 2:15 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	May 03, 2023						
Condition of Sample	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	17.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	97	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Color (at Original pH) *	ADMI	-	5	14	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Color (at pH 7.0) *	ADMI	-	5	13	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	0.003	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok

Technical Management

Siriluk P.
Siriluk Puenggang
Supervisor
วิทย์และทดสอบ ๒-๒๐๔-๔-๔720

Approved by

Kanokorn Anek
Senior Manager
วิทย์และทดสอบ ๒-๒๐๔-๔-๖111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS PRECISION & INTEGRITY
S (Vapour), AL, GL, GP (1-20PM)

5317-3041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2347902
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635762-1

Page 2 of 2

Sample Number	2347902-1						
Sample Date	May 02, 2023 2:15 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	May 03, 2023						
Condition of Sample	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Temperature *	Degree C	-	-	32.3	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1196	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	13.8	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	59	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuks วิจัยและทดสอบ ๒-๒๐๔-๔-๗107

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.

Technical Management

Siriluk P.
Siriluk Puenggang
Supervisor
วิทย์และทดสอบ ๒-๒๐๔-๔-๔720

Approved by

Kanokorn Anek
Senior Manager
วิทย์และทดสอบ ๒-๒๐๔-๔-๖111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS PRECISION & INTEGRITY
S (Vapour), AL, GL, GP (1-20PM)

5317-3041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2347902
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635762-2

Page 1 of 2

Sample Number	2347902-1						
Sample Date	May 02, 2023 2:15 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : an Equalization Tank						
Date Analysis Commenced	May 03, 2023						
Condition of Sample	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.62	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	3300000.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	9.55	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1823	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	5.3	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	2.96	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	0.33	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	5.1	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

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

Approved by

Savitree N.
Savitree Noisangam
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S (Pernak), AL GL, pr (12-23PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2347902
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635762-2

Page 2 of 2

Sample Number	2347902-1						
Sample Date	May 02, 2023 2:15 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : an Equalization Tank						
Date Analysis Commenced	May 03, 2023						
Condition of Sample	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.62	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	3300000.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	9.55	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1823	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	5.3	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	2.96	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	0.33	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	5.1	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

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

Approved by

Savitree N.
Savitree Noisangam
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S (Pernak), AL GL, pr (12-23PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2351180
Date Received : May 09, 2023
Date Reported : May 12, 2023
Report Number : 2643153-1

Page 1 of 1

Sample Number	2351180-1						
Sample Date	May 09, 2023 12:15 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : an Equalization Tank						
Date Analysis Commenced	May 10, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	101	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	58	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuksak ๖๖๖๖๖๖๖๖ ๖-204-๖-7107

Remark :
- LOD : Limit of Detection
- "x" : 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.



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2351181
Date Received : May 16, 2023
Date Reported : May 19, 2023
Report Number : 2643154-1

Page 1 of 1

Sample Number	2351181-1						
Sample Date	May 16, 2023 1:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : an Equalization Tank						
Date Analysis Commenced	May 17, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	117	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	76	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuksak ๖๖๖๖๖๖๖๖ ๖-204-๖-7107

Remark :
- LOD : Limit of Detection
- "x" : 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.

Technical Management

CV S.
Narin Saiseng
Supervisor
๖๖๖๖๖๖๖๖ ๖-204-๖-4715

Approved by

K.
Kanokorn Anek
Senior Manager
๖๖๖๖๖๖๖๖ ๖-204-๖-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S (Pernak), AL GL, pr (12-23PM)

Technical Management

S.
Suwimon Chainuanwut
Scientist (3)
๖๖๖๖๖๖๖๖ ๖-204-๖-5417

Approved by

K.
Kanokorn Anek
Senior Manager
๖๖๖๖๖๖๖๖ ๖-204-๖-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S (Pernak), AL GL, pr (12-23PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 2351182
Date Received : May 23, 2023
Date Reported : May 27, 2023
Report Number : 2643155-1

Page 1 of 1

Sample Number	2351182-1						
Sampled Date	May 23, 2023 9:32 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	May 24, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	200	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Noraset Komol วิจัยและพัฒนา ๖-204-๖-5411

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.

Technical Management

Sumimon C.
Sumimon Chairungwut
Scientist (3)
วิทย์พัฒนา ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์พัฒนา ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5137-084 (BAG)

S (Report), AL, GL, IP (S.23PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-1

Page 1 of 7

Sample Number	2364005-1						
Sampled Date	Jun 06, 2023 12:55 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.16	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.05	≤2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.006	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.17	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok

Technical Management

Savitree N.
Savitree Noisangam
Manager
วิทย์พัฒนา ๖-204-๖-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์พัฒนา ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5137-084 (BAG)

S (Report), AL, GL, IP (S.23PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 2351183
Date Received : May 30, 2023
Date Reported : Jun 02, 2023
Report Number : 2643156-1

Page 1 of 1

Sample Number	2351183-1											
Sampled Date	May 30, 2023 12:05 PM											
Sample Description	Group 1 Wastewater WW-Plant											
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank											
Date Analysis Commenced	May 31, 2023											
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)											
Physical Property	Yellow, a lot of odour, solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
COD	mg/L	-	25	126	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok					
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	60	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok					

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Jirarat Khowlaor วิจัยและพัฒนา ๖-204-๖-7517

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.

Technical Management

Sumimon C.
Sumimon Chairungwut
Scientist (3)
วิทย์พัฒนา ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์พัฒนา ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5137-084 (BAG)

S (Report), AL, GL, IP (S.23PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-1

Page 2 of 7

Sample Number	2364005-1						
Sampled Date	Jun 06, 2023 12:55 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.07	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	0.0005	≤0.02	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	0.02	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.19	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Pesticides - Organochlorine Group							
2,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DEE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Savitree N.
Savitree Noisangam
Manager
วิทย์พัฒนา ๖-204-๖-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์พัฒนา ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5137-084 (BAG)

S (Report), AL, GL, IP (S.23PM)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140P/O :
Project Name :
Project Location : WHA SILLot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-1

Page 3 of 7

Sample Number	2364005-1						
Sampled Date	Jun 06, 2023 12:55 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DOE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Savitree N.
Savitree Nonsangiam
Manager
โทร: ๐๒-๖๒๖๖๓๖๓ ๖-๒๐๔-๙-๔709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: ๐๒-๖๒๖๖๓๖๓ ๖-๒๐๔-๙-๖111

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5127-1841 (BML)

S:\Report\AL_GL\ร (8.13PM)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140P/O :
Project Name :
Project Location : WHA SILLot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-1

Page 5 of 7

Page 3 of 3

Sample Number	2364005-1						
Sampled Date	Jun 06, 2023 12:55 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	30.0	≤500	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O-G	Bangkok
COD	mg/L	-	25	125	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Color (at Original pH) *	ADMI	-	5	22	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Color (at pH 7.0) *	ADMI	-	5	18	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Cyanide as CN *	mg/L	0.002	0.005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)	Bangkok

Technical Management

Savitree N.
Savitree Nonsangiam
Manager
โทร: ๐๒-๖๒๖๖๓๖๓ ๖-๒๐๔-๙-๔709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: ๐๒-๖๒๖๖๓๖๓ ๖-๒๐๔-๙-๖111

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5127-1841 (BML)

S:\Report\AL_GL\ร (8.13PM)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140P/O :
Project Name :
Project Location : WHA SILLot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-1

Page 4 of 7

Sample Number	2364005-1							Page 1 of 1
Sampled Date	Jun 06, 2023 12:55 PM							
Sample Description	Group 1 Wastewater WW-Plant							
Location	WHA SIL : WW-IN : ๙๓ Equalization Tank							
Date Analysis Commenced	Jun 07, 2023							
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Physical Property	Yellow, a lot of odour, solid and turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Pesticides - Organochlorine Group								
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	
delta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	
Dieldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	
Endosulfan I *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	
Endosulfan II *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	
Endrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	
Heptachlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok	

Technical Management

Savitree N.
Savitree Nonsangiam
Manager
โทร: ๐๒-๖๒๖๖๓๖๓ ๖-๒๐๔-๙-๔709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: ๐๒-๖๒๖๖๓๖๓ ๖-๒๐๔-๙-๖111

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER

5127-1841 (BML)

S:\Report\AL_GL\ร (8.13PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-1

Page 7 of 7

Sample Number : 2364005-1
Sampled Date : Jun 06, 2023 12:55 PM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๙๓ Equalization Tank
Date Analysis Commenced : Jun 07, 2023
Condition of Sample : Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	61	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teeawat Puangsuk ๓๖๖๖๖๖๖๖ ๓-๒04-๙-7107

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.

Technical Management

Savitree N.
Savitree Nolsangiam
Manager
๓๖๖๖๖๖๖๖ ๓-๒04-๙-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๖๖๖๖๖๖๖ ๓-๒04-๙-6111

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) Co., Ltd. An ALS Limited Company
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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S117-044 (ENGL) S (Value), AL GL (P) (S.194P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-2

Page 2 of 2

Sample Number : 2364005-1
Sampled Date : Jun 06, 2023 12:55 PM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๙๓ Equalization Tank
Date Analysis Commenced : Jun 07, 2023
Condition of Sample : Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2025	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	3.8	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	0.28	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	0.24	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	2.7	No Standard	16-hour method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teeawat Puangsuk

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.

Approved by

Savitree N.
Savitree Nolsangiam
Manager

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) Co., Ltd. An ALS Limited Company
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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S117-044 (ENGL) S (Value), AL GL (P) (S.194P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364005
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670420-2

Page 1 of 2

Sample Number : 2364005-1
Sampled Date : Jun 06, 2023 12:55 PM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๙๓ Equalization Tank
Date Analysis Commenced : Jun 07, 2023
Condition of Sample : Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.89	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Microbiological Testing

Total Coliform
MPN/100mL - 3300000.0
No Standard
Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B

Pesticides - Organochlorine Group
alpha-Chlordane *
ug/L 0.01 0.02 Not Detected Not Detected
Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B

gamma-Chlordane *
ug/L 0.01 0.02 Not Detected Not Detected
Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B

Hexachlorobenzene *
ug/L 0.01 0.02 Not Detected Not Detected
Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B

Mirex *
ug/L 0.01 0.02 Not Detected Not Detected
Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B

Water Testing

Ammonia Nitrogen *
mg/L - 0.06 7.49
No Standard
Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)

Approved by

Savitree N.
Savitree Nolsangiam
Manager

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) Co., Ltd. An ALS Limited Company
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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S117-044 (ENGL) S (Value), AL GL (P) (S.194P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2367160
Date Received : Jun 13, 2023
Date Reported : Jun 17, 2023
Report Number : 2679226-1

Page 1 of 1

Sample Number : 2367160-1
Sampled Date : Jun 13, 2023 12:00 PM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-IN : ๙๓ Equalization Tank
Date Analysis Commenced : Jun 14, 2023
Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Black, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	216	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	196	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teeawat Puangsuk ๓๖๖๖๖๖๖๖ ๓-๒04-๙-7107

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.

Technical Management

Swimon C.
Swimon Chairuangnont
Scientist (3)
๓๖๖๖๖๖๖๖ ๓-๒04-๙-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๖๖๖๖๖๖๖ ๓-๒04-๙-6111

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) Co., Ltd. An ALS Limited Company
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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S117-044 (ENGL) S (Value), AL GL (P) (S.194P)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2367161
Date Received : Jun 20, 2023
Date Reported : Jun 24, 2023
Report Number : 2679228-1

Page 1 of 1

Sample Number	2367161-1						
Sample Date	Jun 20, 2023 10:55 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : in Equalization Tank						
Date Analysis Commenced	Jun 21, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	135	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	70	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuk ๓๓๓๓๓๓๓๓ ๖-204-๖-7107

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.

Technical Management

Sumimon C.
Sumimon Chairuangwut
Scientist (3)
๓๓๓๓๓๓๓๓ ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๖-204-๖-6111

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

Life Sciences **www.alsglobal.com**
RIGHT SOLUTIONS. RIGHT PARTNER

3137-3841 ENGL

5 (Page 1) of 1 (4-3890)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539397-1

Page 1 of 2

Page 1 of 2

Sample Number	22150308-2						
Sample Date	Jan 03, 2023 11:50 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : in Chlorine Contact Tank						
Date Analysis Commenced	Jan 04, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	38	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 D	Bangkok
Oil & Grease *	mg/L	-	3	4	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	26.8	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1092	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Siriluk P.
Siriluk Puangsang
Supervisor
๓๓๓๓๓๓๓๓ ๖-204-๖-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๖-204-๖-6111

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

Life Sciences **www.alsglobal.com**
RIGHT SOLUTIONS. RIGHT PARTNER

3137-3841 ENGL

5 (Page 1) of 1 (4-3890)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2367162
Date Received : Jun 27, 2023
Date Reported : Jun 30, 2023
Report Number : 2679230-1

Page 1 of 1

Sample Number	2367162-1						
Sample Date	Jun 27, 2023 11:20 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-IN : in Equalization Tank						
Date Analysis Commenced	Jun 28, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	166	≤750	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	59	≤200	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Standard of WHA Saraburi Industrial Land, Maximum levels for wastewater discharging to central wastewater treatment plant.

Sampling By : Teerawat Puangsuk ๓๓๓๓๓๓๓๓ ๖-204-๖-7107

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.

Technical Management

Sumimon C.
Sumimon Chairuangwut
Scientist (3)
๓๓๓๓๓๓๓๓ ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๖-204-๖-6111

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

Life Sciences **www.alsglobal.com**
RIGHT SOLUTIONS. RIGHT PARTNER

3137-3841 ENGL

5 (Page 1) of 1 (4-3890)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539397-1

Page 2 of 2

Page 2 of 2

Sample Number	22150308-2						
Sample Date	Jan 03, 2023 11:50 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : in Chlorine Contact Tank						
Date Analysis Commenced	Jan 04, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2546 (2017).

Sampling By : Teerawat Puangsuk ๓๓๓๓๓๓๓๓ ๖-204-๖-7107

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.

Technical Management

Siriluk P.
Siriluk Puangsang
Supervisor
๓๓๓๓๓๓๓๓ ๖-204-๖-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๖-204-๖-6111

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

Life Sciences **www.alsglobal.com**
RIGHT SOLUTIONS. RIGHT PARTNER

3137-3841 ENGL

5 (Page 2) of 2 (4-3890)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539397-2

Page 1 of 2

Sample Number	22150308-2						
Sample Date	Jan 03, 2023 11:50 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Jan 03, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.24	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	33000.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1660	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	5.9	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	16.2	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	4.7	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Sawitree N.
Sawitree Nongplamoh
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

1317-0941 (ENGL)

5 (Specimen), AL GL (pt 1 & 20PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 22150377
Date Received : Jan 10, 2023
Date Reported : Jan 13, 2023
Report Number : 2520792-1

Page 1 of 1

Sample Number	22150377-1						
Sample Date	Jan 10, 2023 2:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Jan 11, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	1.5	5	26	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsuksa ๓๓๓๓๓๓๓๓ ๓-204-๔-7107

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

Technical Management

Siriluk P.
Siriluk Puengpang
Supervisor
๓๓๓๓๓๓๓๓ ๓-204-๔-4720

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๓-204-๔-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

1317-0941 (ENGL)

5 (Specimen), AL GL (pt 1 & 40PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539397-2

Page 2 of 2

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

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

Approved by

Sawitree N.
Sawitree Nongplamoh
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

1317-0941 (ENGL)

5 (Specimen), AL GL (pt 1 & 20PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 232761
Date Received : Jan 17, 2023
Date Reported : Jan 21, 2023
Report Number : 2538365-1

Page 1 of 1

Sample Number	232761-1						
Sample Date	Jan 17, 2023 11:25 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Jan 18, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsuksa ๓๓๓๓๓๓๓๓ ๓-204-๔-7107

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

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
๓๓๓๓๓๓๓๓ ๓-204-๔-4715

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
๓๓๓๓๓๓๓๓ ๓-204-๔-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

1317-0941 (ENGL)

5 (Specimen), AL GL (pt 1 & 20PM)



Analysis / Test Report



TESTING

Lot ID: 232766
Date Received : Jan 24, 2023
Date Reported : Jan 27, 2023
Report Number : 2538372-1

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Sample Number	232766-1						
Sampled Date	Jan 24, 2023 11:15 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Jan 25, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	28	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuks ๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๗๑๗

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.



Analysis / Test Report



TESTING

Lot ID: 232767
Date Received : Jan 31, 2023
Date Reported : Feb 03, 2023
Report Number : 2538373-1

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Sample Number	232767-1						
Sampled Date	Jan 31, 2023 10:50 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Feb 01, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	35	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuks ๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๗๑๗

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.

Technical Management

Siriluk P.
Siriluk Puangsuksang
Supervisor
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๗๑๗

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๖๑๑๑

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (6.13PM)

Technical Management

Siriluk P.
Siriluk Puangsuksang
Supervisor
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๗๑๗

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๖๑๑๑

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (3.36PM)



Analysis / Test Report



TESTING

Lot ID: 239182
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551647-1

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Page 1 of 1

Sample Number	239182-1						
Sampled Date	Feb 07, 2023 11:20 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Feb 08, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	7.0	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - C	Bangkok
COD	mg/L	-	25	52	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	30.9	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1408	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๔๗๑๕

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๖๑๑๑

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (6.13PM)



Analysis / Test Report



TESTING

Lot ID: 239182
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551647-1

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Sample Number	239182-1						
Sampled Date	Feb 07, 2023 11:20 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Feb 08, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	2.3	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Jirarat Khawlaor ๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๗๑๗

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.

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๔๗๑๕

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๐๒๔๒๒๒ ๒-๒๐๔-๖-๖๑๑๑

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (6.13PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No. 0009
Lot ID: 239182
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551647-2

Page 1 of 2

Sample Number	239182-1						
Sampled Date	Feb 07, 2023 11:20 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Feb 08, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.10	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	11000.0	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	1.64	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2653	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	1.8	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	2.64	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	0.22	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	2.0	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Savitree N.
Savitree Nonglamang
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S:\Report\AL GL\pt (1-4796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No. 0009
Lot ID: 239252
Date Received : Feb 14, 2023
Date Reported : Feb 18, 2023
Report Number : 2551931-1

Page 1 of 1

Sample Number	239252-1						
Sampled Date	Feb 14, 2023 9:45 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Feb 15, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	50	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Technical Management

Sumimon C.
Sumimon Chaiyungwut
Scientist (2)
โทรศัพท์ ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ ๖-204-๖-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S:\Report\AL GL\pt (1-4796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No. 0009
Lot ID: 239182
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551647-2

Page 2 of 2

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

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

Approved by

Savitree N.
Savitree Nonglamang
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S:\Report\AL GL\pt (1-4796)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhay, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No. 0009
Lot ID: 239254
Date Received : Feb 21, 2023
Date Reported : Feb 24, 2023
Report Number : 2551934-1

Page 1 of 1

Sample Number	239254-1						
Sampled Date	Feb 21, 2023 10:00 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Feb 22, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	44	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
โทรศัพท์ ๖-204-๖-4715

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ ๖-204-๖-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S:\Report\AL GL\pt (1-4796)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 239255
Date Received : Feb 26, 2023
Date Reported : Mar 02, 2023
Report Number : 2551941-1

Page 1 of 1

Sample Number	239255-1						
Sample Date	Feb 28, 2023 11:05 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Mar 01, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	35	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 520 D	Bangkok
pH at 25 degree C *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksak ๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

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.

Technical Management

Sumimon C.
Sumimon Chairanvut
Scientist (2)
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (4-2020)

5137-1841 (BML)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2324911
Date Received : Mar 02, 2023
Date Reported : Mar 14, 2023
Report Number : 2584259-1

Page 1 of 3

Sample Number	2324911-1						
Sampled Date	Mar 07, 2023 11:18 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Mar 08, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.005	≤2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.003	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.12	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Technical Management

Siriluk P.
Siriluk Puangsuksak
Supervisor
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (3-2020)

5137-1841 (BML)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2324911
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584259-1

Page 2 of 3

Page 2 of 2

Sample Number	2324911-1						
Sampled Date	Mar 07, 2023 11:18 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Mar 08, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odorless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	2.3	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	44	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *		-	-	7.9	5.5-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - F (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	0.6	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	30.2	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok

Technical Management

Siriluk P.
Siriluk Puangsuksak
Supervisor
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (3-2020)

5137-1841 (BML)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2324911
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584259-1

Page 3 of 3

page 2 of 2

Sample Number	2324911-1						
Sample Date	Mar 07, 2023 11:18 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : 1st Chlorine Contact Tank						
Date Analysis Commenced	Mar 08, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1908	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	1.6	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Chulalard Warin ๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

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.

Technical Management

Siriluk P.
Siriluk Puangsuksak
Supervisor
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๒๒๒๒๒๒๒๒ ๒-๒๐๔-๖๓๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
S:\Report\AL_GL_01 (3-2020)

5137-1841 (BML)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2324911
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584259-2

Page 1 of 2

Sample Number	2324911-1						
Sample Date	Mar 07, 2023 11:18 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Mar 08, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.14	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3123 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	3300.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	0.13	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2603	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	3.6	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (I)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	7.70	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	2.2	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Siriluk P.
Siriluk Puengpang
Supervisor

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5137-094 (ENGL)

5 (Version), AL GL ver (1.510P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2325881
Date Received : Mar 14, 2023
Date Reported : Mar 18, 2023
Report Number : 2586230-1

Page 1 of 1

Sample Number	2325881-1						
Sample Date	Mar 14, 2023 1:20 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Mar 15, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Nareeet Pornpoom นิสิตวณิชกุล ๖-204-๖-7536

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

Technical Management

Sumimon C.
Sumimon Chairuangwut
Scientist (2)
นิตินันท์ ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
นิตินันท์ ๖-204-๖-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5137-094 (ENGL)

5 (Version), AL GL ver (2.249P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2324911
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584259-2

Page 2 of 2

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

Sample Number	2324911-1						
Sample Date	Mar 07, 2023 11:18 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Mar 08, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	50	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Siriluk P.
Siriluk Puengpang
Supervisor

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5137-094 (ENGL)

5 (Version), AL GL ver (1.510P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2325882
Date Received : Mar 21, 2023
Date Reported : Mar 25, 2023
Report Number : 2586234-1

Page 1 of 1

Sample Number	2325882-1						
Sample Date	Mar 21, 2023 11:00 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chorine Contact Tank						
Date Analysis Commenced	Mar 22, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Colorless, odourless, no solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	50	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panpung Homwong นิตินันท์ ๖-204-๖-7829

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

Technical Management

Sumimon C.
Sumimon Chairuangwut
Scientist (2)
นิตินันท์ ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
นิตินันท์ ๖-204-๖-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5137-094 (ENGL)

5 (Version), AL GL ver (2.249P)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2325883
Date Received : Mar 28, 2023
Date Reported : Apr 01, 2023
Report Number : 2586237-1

Page 1 of 1

Sample Number	2325883-1							Page 1 of 2
Sample Date	Mar 28, 2023 10:30 AM							
Sample Description	Group 1 Wastewater WW-Plant							
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank							
Date Analysis Commenced	Mar 29, 2023							
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Physical Property	Yellow, odourless, some solid and no turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
COD	mg/L	-	25	37	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok	
pH at 25 degree C *	-	-	-	6.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok	

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksak ๙๙๙๙๙๙๙๙ ๙-204-๙-7107

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.

Technical Management
Nant Somb
Nanthawadee Somborn
Specialist 1
๙๙๙๙๙๙๙๙ ๙-204-๙-4716

Approved by
Kankorn Anek
Kankorn Anek
Senior Manager
๙๙๙๙๙๙๙๙ ๙-204-๙-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Report), AL, GL, GP (3-40PM)

5127-1841 (BML)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2335230
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607075-1

Page 2 of 2

Page 2 of 2

Sample Number	2335230-1						
Sample Date	Apr 04, 2023 11:40 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksak ๙๙๙๙๙๙๙๙ ๙-204-๙-7107

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.

Technical Management
Siriluk P.
Siriluk Puengpang
Supervisor
๙๙๙๙๙๙๙๙ ๙-204-๙-4720

Approved by
Kankorn Anek
Kankorn Anek
Senior Manager
๙๙๙๙๙๙๙๙ ๙-204-๙-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Report), AL, GL, GP (3-40PM)

5127-1841 (BML)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2335230
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607075-1

Page 1 of 2

Page 3 of 8

Sample Number	2335230-1						
Sample Date	Apr 04, 2023 11:40 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	2.2	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O (C)	Bangkok
COD	mg/L	-	25	31	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	6.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	32.7	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1556	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management
Siriluk P.
Siriluk Puengpang
Supervisor
๙๙๙๙๙๙๙๙ ๙-204-๙-4720

Approved by
Kankorn Anek
Kankorn Anek
Senior Manager
๙๙๙๙๙๙๙๙ ๙-204-๙-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Report), AL, GL, GP (3-40PM)

5127-1841 (BML)



Analysis / Test Report



TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2335230
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607075-2

Page 1 of 2

Page 1 of 2

Sample Number	2335230-1						
Sample Date	Apr 04, 2023 11:40 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample (APHA, USEPA)	Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.06	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	490000.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	0.89	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2542	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	2.2	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	16.4	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	4.0	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Technical Management
Siriluk P.
Siriluk Puengpang
Supervisor
๙๙๙๙๙๙๙๙ ๙-204-๙-4720

Approved by
Sithichok T.
Sithichok Thongpueen
Scientist (3)

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Report), AL, GL, GP (3-40PM)

5127-1841 (BML)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2335230
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607075-2

Page 2 of 2

Sampling By : Teerawat Puangsuk

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



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2335232
Date Received : Apr 11, 2023
Date Reported : Apr 18, 2023
Report Number : 2607094-1

Page 1 of 1

Sample Number : 2335232-1

Sample Date : Apr 11, 2023 11:50 AM

Sample Description : Group 1 Wastewater WW-Plant

Location : WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank

Date Analysis Commenced : Apr 12, 2023

Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Physical Property : Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	34	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๖-8614

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

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

Approved by

Sithichok T.
Sithichok Thongpueen
Scientist (3)

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

5137-041 (BML)

5 (Report), AL GL, ๔ (4.30PM)

Technical Management

Siriluk P.
Siriluk Puangpang
Supervisor
วิเศษสุธา ๖-204-๖-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๖-6111

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

5137-041 (BML)

5 (Report), AL GL, ๔ (4.30PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2335233
Date Received : Apr 18, 2023
Date Reported : Apr 21, 2023
Report Number : 2607097-1

Page 1 of 1

Sample Number : 2335233-1

Sample Date : Apr 18, 2023 2:00 PM

Sample Description : Group 1 Wastewater WW-Plant

Location : WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank

Date Analysis Commenced : Apr 19, 2023

Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Physical Property : Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	39	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๖-8614

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



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2335234
Date Received : Apr 25, 2023
Date Reported : Apr 28, 2023
Report Number : 2607101-1

Page 1 of 1

Sample Number : 2335234-1

Sample Date : Apr 25, 2023 1:25 PM

Sample Description : Group 1 Wastewater WW-Plant

Location : WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank

Date Analysis Commenced : Apr 26, 2023

Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Physical Property : Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	34	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๖-8614

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

Technical Management

Sunimon C.
Sunimon Chaiyungwut
Scientist (3)
วิเศษสุธา ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๖-6111

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

5137-041 (BML)

5 (Report), AL GL, ๔ (4.30PM)

Technical Management

Siriluk P.
Siriluk Puangpang
Supervisor
วิเศษสุธา ๖-204-๖-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๖-6111

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

5137-041 (BML)

5 (Report), AL GL, ๔ (4.30PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2351184
Date Received : May 09, 2023
Date Reported : May 12, 2023
Report Number : 2643157-1

Page 1 of 1

Sample Number	2351184-1						
Sampled Date	May 09, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	May 10, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	29	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsook ๓๓๓๓๓๓๓๓ ๓-204-๓-7107

- Remark :
- LOD : Limit of Detection
 - "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
 - Analyte(s) marked * 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.

Technical Management

Surin Saisang
Narin Saisang
Supervisor
๓๓๓๓๓๓๓ ๓-204-๓-4715

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
๓๓๓๓๓๓๓ ๓-204-๓-6111

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

ADDRESS 104 Phathanakanan Rd. Phathanakanan Rd. Khwaeng Phathanakanan, 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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNERS

5137-104/ ENGL

5137-104/ AL GL rpt (12-20PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2351186
Date Received : May 23, 2023
Date Reported : May 27, 2023
Report Number : 2643159-1

Page 1 of 1

Sample Number	2351186-1						
Sampled Date	May 23, 2023 9:30 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	May 24, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, no solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	38	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Norasat Komal ๓๓๓๓๓๓๓ ๓-204-๓-5411

- Remark :
- LOD : Limit of Detection
 - "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
 - Analyte(s) marked * 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.

Technical Management

Surimon C.
Surimon Chainanpant
Scientist (3)
๓๓๓๓๓๓๓ ๓-204-๓-5417

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
๓๓๓๓๓๓๓ ๓-204-๓-6111

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

ADDRESS 104 Phathanakanan Rd. Phathanakanan Rd. Khwaeng Phathanakanan, 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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNERS

5137-104/ ENGL

5137-104/ AL GL rpt (12-20PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2351185
Date Received : May 16, 2023
Date Reported : May 19, 2023
Report Number : 2643158-1

Page 1 of 1

Sample Number	2351185-1						
Sampled Date	May 16, 2023 1:25 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	May 17, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, no solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsook ๓๓๓๓๓๓๓ ๓-204-๓-7107

- Remark :
- LOD : Limit of Detection
 - "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
 - Analyte(s) marked * 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.

Technical Management

Surimon C.
Surimon Chainanpant
Scientist (3)
๓๓๓๓๓๓๓ ๓-204-๓-5417

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
๓๓๓๓๓๓๓ ๓-204-๓-6111

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

ADDRESS 104 Phathanakanan Rd. Phathanakanan Rd. Khwaeng Phathanakanan, 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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNERS

5137-104/ ENGL

5137-104/ AL GL rpt (12-20PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2351187
Date Received : May 30, 2023
Date Reported : Jun 02, 2023
Report Number : 2643160-1

Page 1 of 1

Sample Number	2351187-1						
Sampled Date	May 30, 2023 12:01 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	May 31, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	50	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Jirarat Khonkhar ๓๓๓๓๓๓๓ ๓-204-๓-7517

- Remark :
- LOD : Limit of Detection
 - "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
 - Analyte(s) marked * 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.

Technical Management

Surimon C.
Surimon Chainanpant
Scientist (3)
๓๓๓๓๓๓๓ ๓-204-๓-5417

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
๓๓๓๓๓๓๓ ๓-204-๓-6111

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

ADDRESS 104 Phathanakanan Rd. Phathanakanan Rd. Khwaeng Phathanakanan, 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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNERS

5137-104/ ENGL

5137-104/ AL GL rpt (12-20PM)



Analysis / Test Report

TESTING
No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-1

Page 1 of 7

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.05	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.002	≤2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.0006	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.01	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok

Technical Management

Sawitree N.
Sawitree Nongsiam
Manager
โทร: ๐๒-๖๖๖-๖๖๖-๖๖๖

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: ๐๒-๖๖๖-๖๖๖-๖๖๖

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER.

3137-1841 (ENGL)

S (Vapour), AL, GL, PL (7-49PH)



Analysis / Test Report

TESTING
No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-1

Page 3 of 7

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odorless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDO *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Sawitree N.
Sawitree Nongsiam
Manager
โทร: ๐๒-๖๖๖-๖๖๖-๖๖๖

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: ๐๒-๖๖๖-๖๖๖-๖๖๖

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER.

3137-1841 (ENGL)

S (Vapour), AL, GL, PL (7-49PH)



Analysis / Test Report

TESTING
No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-1

Page 2 of 7

Page 2 of 3

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๙๓ Chorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0005	≤0.02	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	0.0010	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	0.75	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.03	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Pesticides - Organochlorine Group							
2,4-DDO *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Sawitree N.
Sawitree Nongsiam
Manager
โทร: ๐๒-๖๖๖-๖๖๖-๖๖๖

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: ๐๒-๖๖๖-๖๖๖-๖๖๖

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNER.

3137-1841 (ENGL)

S (Vapour), AL, GL, PL (7-49PH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-1

Page 5 of 7

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๗๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
COD	mg/L	-	25	33	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Color (at Original pH) *	ADMI	-	5	13	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Color (at pH 7.0) *	ADMI	-	5	14	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Cyanide as CN *	mg/L	0.002	0.005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - CN (C, E)	Bangkok

Technical Management : Sawitree N. Savitree Nongsangman Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-4709
Approved by : Kanokkorn Anek Senior Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-6111
The above results are valid only for the analyzed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com RIGHT SOLUTIONS RIGHT PARTNER S (Vapour), AL, CL, ppt (7.43PH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-1

Page 6 of 7

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๗๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	32.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1128	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Technical Management : Sawitree N. Sawitree Nongsangman Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-4709
Approved by : Kanokkorn Anek Senior Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-6111
The above results are valid only for the analyzed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com RIGHT SOLUTIONS RIGHT PARTNER S (Vapour), AL, CL, ppt (7.43PH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-1

Page 7 of 7

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๗๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuks ๗๗๖๖๗๗๗ ๖-๒04-๖-7107
Remark :
• LOD : Limit of Detection
• <L : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
• Analyte(s) marked * : were not included in scope of Accreditation ISO/IEC 17025.
• The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management : Sawitree N. Sawitree Nongsangman Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-4709
Approved by : Kanokkorn Anek Senior Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-6111
The above results are valid only for the analyzed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com RIGHT SOLUTIONS RIGHT PARTNER S (Vapour), AL, CL, ppt (7.43PH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670432-2

Page 1 of 2

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๗๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.08	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	94000.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Pesticides - Organochlorine Group							
alpha-Chlordane *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
gamma-Chlordane *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Hexachlorobenzene *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Mirex *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH2 (B, F)	Bangkok

Technical Management : Sawitree N. Sawitree Nongsangman Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-4709
Approved by : Kanokkorn Anek Senior Manager ๗๗๖๖๗๗๗ ๖-๒04-๖-6111
The above results are valid only for the analyzed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com RIGHT SOLUTIONS RIGHT PARTNER S (Vapour), AL, CL, ppt (7.43PH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2364048
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 26704932-2

Page 2 of 2

Sample Number	2364048-1						
Sampled Date	Jun 06, 2023 12:30 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odorless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1963	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	2.7	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	9.96	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	1.8	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuk

Remark :
- LOD : Limit of Detection
- "C" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * value 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

Savitree N.
Savitree Nolsangiam
Manager

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5127-1841 (ENGL)

S (Report) AL GL-04 (4-2049)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2367164
Date Received : Jun 20, 2023
Date Reported : Jun 24, 2023
Report Number : 2679233-1

Page 1 of 1

Sample Number	2367164-1						
Sample Date	Jun 20, 2023 10:50 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 21, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, Colorless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	36	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuk

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

Technical Management

Swimon C.
Swimon Chairuangwut
Scientist (3)
โทร: 02-204-5417

Approved by

Kanokorn A.
Kanokorn Anek
Senior Manager
โทร: 02-204-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5127-1841 (ENGL)

S (Report) AL GL-04 (4-2049)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2367163
Date Received : Jun 13, 2023
Date Reported : Jun 17, 2023
Report Number : 2679231-1

Page 1 of 1

Sample Number	2367163-1						
Sample Date	Jun 13, 2023 11:55 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 14, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, no solid, and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	30	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuk

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

Technical Management

Swimon C.
Swimon Chairuangwut
Scientist (3)
โทร: 02-204-5417

Approved by

Kanokorn A.
Kanokorn Anek
Senior Manager
โทร: 02-204-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5127-1841 (ENGL)

S (Report) AL GL-04 (4-2049)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2367165
Date Received : Jun 27, 2023
Date Reported : Jun 30, 2023
Report Number : 2679234-1

Page 1 of 1

Sample Number	2367165-1						
Sampled Date	Jun 27, 2023 11:10 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-EF : ๓๓ Chlorine Contact Tank						
Date Analysis Commenced	Jun 28, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, no solid, and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	58	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuk

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

Technical Management

Swimon C.
Swimon Chairuangwut
Scientist (3)
โทร: 02-204-5417

Approved by

Kanokorn A.
Kanokorn Anek
Senior Manager
โทร: 02-204-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.

5127-1841 (ENGL)

S (Report) AL GL-04 (4-2049)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539398-1

Page 1 of 2

Sample Number	22150308-3						
Sampled Date	Jan 03, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๗๓ Retention Pond						
Date Analysis Commenced	Jan 04, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2	9	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	46	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater Analysis	Bangkok
Oil & Grease *	mg/L	-	3	3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	8.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	0.6	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	26.0	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1180	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Siriluk P.

Siriluk Puangpang
Supervisor
โทรศัพท์มือถือ : 2-204-4-4720

Approved by

Kankorn Anek

Kankorn Anek
Senior Manager
โทรศัพท์มือถือ : 2-204-4-6111

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

ADDRESS 104 Phathanakan 40, Phathanakan Rd., Khwaeng Phathanakan, 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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S1317-3041 (ENGL)

S (Page) / AL (G) (P) (E) (30PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539398-2

Page 1 of 2

Sample Number	22150308-3						
Sampled Date	Jan 03, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๗๓ Retention Pond						
Date Analysis Commenced	Jan 03, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.13	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	3300.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1827	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	13.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	8.27	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	0.26	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	1.8	No Standard	In-house method based on United States Environmental Protection	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Approved by

Savitree N.

Savitree Notsangiam
Manager

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

ADDRESS 104 Phathanakan 40, Phathanakan Rd., Khwaeng Phathanakan, 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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S1317-3041 (ENGL)

S (Page) / AL (G) (P) (E) (30PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 22150308
Date Received : Jan 03, 2023
Date Reported : Jan 10, 2023
Report Number : 2539398-1

Page 2 of 2

Sample Number	22150308-3						
Sampled Date	Jan 03, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๗๓ Retention Pond						
Date Analysis Commenced	Jan 04, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	2.8	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Nitrogen (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	21	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : เติมน้ำจากถังเก็บน้ำดิบ

Remark :
- LOD : Limit of Detection
- <LQ : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : 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.

Technical Management

Siriluk P.

Siriluk Puangpang
Supervisor
โทรศัพท์มือถือ : 2-204-4-4720

Approved by

Kankorn Anek

Kankorn Anek
Senior Manager
โทรศัพท์มือถือ : 2-204-4-6111

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

ADDRESS 104 Phathanakan 40, Phathanakan Rd., Khwaeng Phathanakan, 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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S1317-3041 (ENGL)

S (Page) / AL (G) (P) (E) (30PM)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 22150378
Date Received : Jan 10, 2023
Date Reported : Jan 13, 2023
Report Number : 2520795-1

Page 1 of 1

Sample Number	22150378-1						
Sample Date	Jan 10, 2023 2:40 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : in Retention Pond						
Date Analysis Commenced	Jan 11, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	1.5	5	34	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksin ๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

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.

Technical Management

Siriluk P.

Siriluk Puangsuksin
Supervisor
๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๒๒๐๔๖๓๗๑-๒๐๔๖-๖๑๑๑

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. AIS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
3137-8841 (BNAI) S:\Report\AL_GL_01 (3-60P)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 232762
Date Received : Jan 17, 2023
Date Reported : Jan 21, 2023
Report Number : 2538366-1

Page 1 of 1

Sample Number	232762-1						
Sample Date	Jan 17, 2023 11:15 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : 4n Retention Pond						
Date Analysis Commenced	Jan 18, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	28	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksin ๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

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.

Technical Management

Narin Saiseng

Narin Saiseng
Supervisor
๒๒๐๔๖๓๗๑-๒๐๔๖-๔๗๑๕

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๒๒๐๔๖๓๗๑-๒๐๔๖-๖๑๑๑

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. AIS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
3137-8841 (BNAI) S:\Report\AL_GL_01 (2-39P)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 232769
Date Received : Jan 24, 2023
Date Reported : Jan 27, 2023
Report Number : 2538374-1

Page 1 of 1

Sample Number	232769-1						
Sample Date	Jan 24, 2023 11:10 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : in Retention Pond						
Date Analysis Commenced	Jan 25, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	40	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksin ๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

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.

Technical Management

Siriluk P.

Siriluk Puangsuksin
Supervisor
๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๒๒๐๔๖๓๗๑-๒๐๔๖-๖๑๑๑

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. AIS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
3137-8841 (BNAI) S:\Report\AL_GL_01 (6-12P)



Analysis / Test Report



TESTING

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 232770
Date Received : Jan 31, 2023
Date Reported : Feb 03, 2023
Report Number : 2538377-1

Page 1 of 1

Sample Number	232770-1						
Sample Date	Jan 31, 2023 11:05 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : in Retention Pond						
Date Analysis Commenced	Feb 01, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	39	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuksin ๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

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.

Technical Management

Siriluk P.

Siriluk Puangsuksin
Supervisor
๒๒๐๔๖๓๗๑-๒๐๔๖-๗๑๗

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
๒๒๐๔๖๓๗๑-๒๐๔๖-๖๑๑๑

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. AIS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER
3137-8841 (BNAI) S:\Report\AL_GL_01 (2-39P)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239259
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551948-1

Page 1 of 2

Sample Number	239259-1						
Sampled Date	Feb 07, 2023 11:43 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Feb 08, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, a lot solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	6.3	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	54	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	8.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	31.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1272	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
โทร: 09-00000000-204-4-4715

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: 09-00000000-204-6-6111

The above results are valid only for the analysed/tested sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
ADDRESS 104 Phathanakan Rd. Khwaeng Phathanakan, 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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
5 (Vapour), AL GL, pr (8-2799)

5117-041 (ENH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239259
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551948-2

Page 1 of 2

Sample Number	239259-1						
Sample Date	Feb 07, 2023 11:43 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Feb 08, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, a lot solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.08	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	490.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2384	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	7.7	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	1.75	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	0.26	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	0.9	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Savitree N.
Savitree Nolsangiam
Manager

ADDRESS 104 Phathanakan Rd. Khwaeng Phathanakan, 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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
5 (Vapour), AL GL, pr (8-2799)

5117-041 (ENH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239259
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551948-1

Page 2 of 2

Sample Number	239259-1						
Sample Date	Feb 07, 2023 11:43 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Feb 08, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, a lot solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	1.3	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Jiranat Khovlaor

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.

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
โทร: 09-00000000-204-4-4715

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทร: 09-00000000-204-6-6111

The above results are valid only for the analysed/tested sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
ADDRESS 104 Phathanakan Rd. Khwaeng Phathanakan, 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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
5 (Vapour), AL GL, pr (8-2799)

5117-041 (ENH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 239259
Date Received : Feb 07, 2023
Date Reported : Feb 14, 2023
Report Number : 2551948-2

Page 2 of 2

Page 4 of 4

Sampling By : Jiranat Khawlaer

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * 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.

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Savitree N.
Savitree Nolsangiam
Manager

ADDRESS 104 Phathanakan Rd. Khwaeng Phathanakan, 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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
5 (Vapour), AL GL, pr (8-2799)

5117-041 (ENH)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 239261
Date Received : Feb 14, 2023
Date Reported : Feb 15, 2023
Report Number : 2551957-1

Page 1 of 1

Sample Number 239261-1
Sampled Date Feb 14, 2023 10:00 AM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๙๙ Retention Pond
Date Analysis Commenced Feb 15, 2023
Condition of Sample Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Green, odourless, some solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	41	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Noraset Komal วิไลสุธรรม ๖-204-๖-5411

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.



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 239262
Date Received : Feb 21, 2023
Date Reported : Feb 24, 2023
Report Number : 2551976-1

Page 1 of 1

Sample Number 239262-1
Sampled Date Feb 21, 2023 10:10 AM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๙๙ Retention Pond
Date Analysis Commenced Feb 22, 2023
Condition of Sample Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Green, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	55	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Thanwa Janyis วิไลสุธรรม ๖-204-๖-5414

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.

Technical Management

Swimon C.
Swimon Chaiwongwut
Scientist (2)
วิไลสุธรรม ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิไลสุธรรม ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S:\Report\AL_GL_01 (3.1299)

Technical Management

Narin Saiseng
Narin Saiseng
Supervisor
วิไลสุธรรม ๖-204-๖-4715

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิไลสุธรรม ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S:\Report\AL_GL_01 (3.1299)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 239263
Date Received : Feb 28, 2023
Date Reported : Mar 03, 2023
Report Number : 2551984-1

Page 1 of 1

Sample Number 239263-1
Sampled Date Feb 28, 2023 11:15 AM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๙๙ Retention Pond
Date Analysis Commenced Mar 01, 2023
Condition of Sample Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, odourless, some solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	43	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuk วิไลสุธรรม ๖-204-๖-7107

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.



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrati Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL



TESTING

No.0009
Lot ID: 2324919
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584295-1

Page 1 of 3

Sample Number 2324919-1
Sampled Date Mar 07, 2023 11:55 AM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๙๙ Retention Pond
Date Analysis Commenced Mar 08, 2023
Condition of Sample Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Green, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.002	≤2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.02	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Technical Management

Swimon C.
Swimon Chaiwongwut
Scientist (2)
วิไลสุธรรม ๖-204-๖-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิไลสุธรรม ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S:\Report\AL_GL_01 (4.1299)

Technical Management

Sawitree N.
Sawitree Naisangam
Manager
วิไลสุธรรม ๖-204-๖-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิไลสุธรรม ๖-204-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER.
S:\Report\AL_GL_01 (4.1299)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2324919
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584295-1

Page 2 of 3

Sample Number : 2324919-1
Sample Date : Mar 07, 2023 11:55 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-RP : ๗ Retention Pond
Date Analysis Commenced : Mar 08, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Green, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	3.1	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	46	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5320 B	Bangkok
pH at 25 degree C *	-	-	-	8.6	5.5-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5330 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok
Temperature *	Degree C	-	-	29.9	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok

Technical Management

Savitree N.

Savitree Nongiam
Manager
โทร ๐๒-๖๒๖-๖๖๖๖

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
โทร ๐๒-๖๒๖-๖๖๖๖

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

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Vapour), AL GL (p (6.12PM))

5137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2324919
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584295-2

Page 1 of 2

Sample Number : 2324919-1
Sample Date : Mar 07, 2023 11:55 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-RP : ๗ Retention Pond
Date Analysis Commenced : Mar 08, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Green, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.08	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	490.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1929	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	12.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O2 (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	5.59	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Chuladet Wain

Remark :

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

Approved by

Savitree N.

Savitree Nongiam
Manager

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Vapour), AL GL (p (6.12PM))

5137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2324919
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584295-1

Page 3 of 3

Sample Number : 2324919-1
Sample Date : Mar 07, 2023 11:55 AM
Sample Description : Group 1 Wastewater WW-Plant
Location : WHA SIL : WW-RP : ๗ Retention Pond
Date Analysis Commenced : Mar 08, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Green, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Dissolved Solids Dried at 180 degrees C	mg/L	-	5	1372	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	2.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	1.0	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Chuladet Wain โทร ๐๒-๖๒๖-๖๖๖๖

Remark :

- LOD : Limit of Detection
- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * 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.

Technical Management

Savitree N.

Savitree Nongiam
Manager
โทร ๐๒-๖๒๖-๖๖๖๖

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
โทร ๐๒-๖๒๖-๖๖๖๖

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

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Vapour), AL GL (p (6.12PM))

5137-044 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING

Lot ID: 2324919
Date Received : Mar 07, 2023
Date Reported : Mar 14, 2023
Report Number : 2584295-2

Page 2 of 2

- LOD : Limit of Detection
- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * 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.

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

Approved by

Savitree N.

Savitree Nongiam
Manager

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
Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER
S (Vapour), AL GL (p (6.12PM))

5137-044 (ENGL)



TESTING
No. 0009

Lot ID: 2325884
Date Received : Mar 14, 2023
Date Reported : Mar 24, 2023
Report Number : 2602969-1

Page 1 of 2

Sample Number	2325685-1						
Sample Date	Mar 21, 2023 11:30 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SBL : WW-RP : 9a Retention Pond						
Date Analysis Commenced	Mar 22, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	71	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	46	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Note: This Analysis test report is reissued to supersede report No.2586242-1. Date Reported : Mar 25, 2023 due to revise analytical information.

Sampling By : Panupong Homewong พนักงานช่าง ๖-204-๖7829

Remark :

- LOD : Limit of Detection
- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte's marked * 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

Kanokkorn Anek
Senior Manager

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of the 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.

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

S:\Reports\All_GL.rpt (9:28AM)

Lot ID: 2331292
Date Received : Mar 22, 2023
Date Reported : Mar 24, 2023
Report Number : 2599755-1

Page 1 of 1

Sample Number	232586-1						
Sample Date	Mar 28, 2023 10:45 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : 9n Retention Pond						
Date Analysis Commenced	Mar 29, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odorless, no solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	47	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4550 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By: Teerawat Puangsuk โทร.08-204-9-7107

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

Kanokkorn Anek

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

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

Life Sciences www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2334725
Date Received : Mar 29, 2023
Date Reported : Mar 31, 2023
Report Number : 2606603-1

Page 1 of 1

Sample Number	2334725-1						
Sample Date	Mar 29, 2023 9:55 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Mar 30, 2023						
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, odourless, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
pH at 25 degree C	-			7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๙-8614

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

Technical Management

Siriluk P.

Siriluk Puengpang
Supervisor
วิเศษสุธา ๖-204-๙-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๙-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5317-044 (BNA)

5 (Report), AL GL (pt 1 & 40PP)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

Lot ID: 2335235
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607113-1

Page 2 of 2

Sample Number	2335235-1						
Sample Date	Apr 04, 2023 12:00 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	1.8	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Nitro (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	36	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsup วิเศษสุธา ๖-204-๙-7107

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

Technical Management

Siriluk P.

Siriluk Puengpang
Supervisor
วิเศษสุธา ๖-204-๙-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๙-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5317-044 (BNA)

5 (Report), AL GL (pt 1 & 40PP)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009

Lot ID: 2335235
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607113-1

Page 1 of 2

Sample Number	2335235-1						
Sample Date	Apr 04, 2023 12:00 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	3.4	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	47	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5530 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	32.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1540	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

Siriluk P.

Siriluk Puengpang
Supervisor
วิเศษสุธา ๖-204-๙-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๙-6111

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5317-044 (BNA)

5 (Report), AL GL (pt 1 & 33PP)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009

Lot ID: 2335235
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607113-2

Page 1 of 2

Sample Number	2335235-1						
Sample Date	Apr 04, 2023 12:00 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Apr 05, 2023						
Condition of Sample	Contained in one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.38	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	49000.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	0.55	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2334	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	9.2	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-D (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	12.8	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	2.2	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

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

Life Sciences
www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5317-044 (BNA)

5 (Report), AL GL (pt 1 & 30PP)



Sithichok T.

Sithichok Thongpueen
Scientist (3)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009

Lot ID: 2335235
Date Received : Apr 04, 2023
Date Reported : Apr 11, 2023
Report Number : 2607113-2

Page 2 of 2

Sampling By : Teerawat Puangsuks

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.



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009

Lot ID: 2335236
Date Received : Apr 11, 2023
Date Reported : Apr 18, 2023
Report Number : 2607118-1

Page 1 of 1

Sample Number : 2335236-1

Sample Date : Apr 11, 2023 11:55 AM

Sample Description : Group 1 Wastewater WW-Plant

Location : WHA SIL : WW-RP : 1st Retention Pond

Date Analysis Commenced : Apr 12, 2023

Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Physical Property : Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	36	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (8)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๖-8614

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.

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

Approved by

Sithichok T.

Sithichok Thonguen
Scientist (3)

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

Life Sciences

RIGHT SOLUTIONS. RIGHT PARTNER

3137-1841 (ENL)

5 (Page) of 4 (4.229H)

Technical Management

Siriluk P.

Siriluk Puengsang
Supervisor
วิเศษสุธา ๖-204-๖-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๖-6111

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

Life Sciences

RIGHT SOLUTIONS. RIGHT PARTNER

3137-1841 (ENL)

5 (Page) of 4 (4.229H)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009

Lot ID: 2335237
Date Received : Apr 18, 2023
Date Reported : Apr 21, 2023
Report Number : 2607123-1

Page 1 of 1

Sample Number : 2335237-1

Sample Date : Apr 18, 2023 2:10 PM

Sample Description : Group 1 Wastewater WW-Plant

Location : WHA SIL : WW-RP : 1st Retention Pond

Date Analysis Commenced : Apr 19, 2023

Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Physical Property : Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	50	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (8)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๖-8614

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.



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrudi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009

Lot ID: 2335239
Date Received : Apr 25, 2023
Date Reported : Apr 28, 2023
Report Number : 2607127-1

Page 1 of 1

Sample Number : 2335239-1

Sample Date : Apr 25, 2023 1:35 PM

Sample Description : Group 1 Wastewater WW-Plant

Location : WHA SIL : WW-RP : 1st Retention Pond

Date Analysis Commenced : Apr 26, 2023

Condition of Sample : Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Physical Property : Green, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	44	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (8)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Kamchai Suttha วิเศษสุธา ๖-204-๖-8614

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.

Technical Management

Summon C.

Summon Chaisungwut
Scientist (3)
วิเศษสุธา ๖-204-๖-5417

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๖-6111

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

Life Sciences

RIGHT SOLUTIONS. RIGHT PARTNER

3137-1841 (ENL)

5 (Page) of 4 (4.229H)

Technical Management

Siriluk P.

Siriluk Puengsang
Supervisor
วิเศษสุธา ๖-204-๖-4720

Approved by

Kanokorn Anek

Kanokorn Anek
Senior Manager
วิเศษสุธา ๖-204-๖-6111

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

Life Sciences

RIGHT SOLUTIONS. RIGHT PARTNER

3137-1841 (ENL)

5 (Page) of 4 (4.229H)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2347913
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635771-1

Page 1 of 2

Sample Number 2347913-1
Sample Date May 02, 2023 2:30 PM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๓ Retention Pond
Date Analysis Commenced May 03, 2023
Condition of Sample Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	4.1	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	-	25	33	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Color (at Original pH) *	ADMI	-	5	14	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Color (at pH 7.0) *	ADMI	-	5	13	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Formaldehyde *	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Bangkok
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C *	-	-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5320 C	Bangkok
Phenol *	mg/L	0.0005	0.001	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5320 C	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-52 (C, F)	Bangkok

Technical Management

Siriluk P.
Siriluk Puengpang
Supervisor
หมายเลขโทรศัพท์ ๖-204-๖-4720

Approved by

Kate Anh.
Kanokkorn Anek
Senior Manager
หมายเลขโทรศัพท์ ๖-204-๖-6111

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

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

Life Sciences RIGHT SOLUTIONS RIGHT PARTNER
5137-584/ (BNAI) S (Version) AL GL-apt (6.13994)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2347913
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635771-2

Page 1 of 2

Sample Number 2347913-1
Sample Date May 02, 2023 2:30 PM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๓ Retention Pond
Date Analysis Commenced May 03, 2023
Condition of Sample Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.21	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	3300.0	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	0.56	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	979	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	8.9	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	2.82	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	1.2	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Savitree N.
Savitree Nonglamjan
Manager

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

Life Sciences RIGHT SOLUTIONS RIGHT PARTNER
5137-584/ (BNAI) S (Version) AL GL-apt (6.13994)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2347913
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635771-1

Page 2 of 2

Sample Number 2347913-1
Sample Date May 02, 2023 2:30 PM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๓ Retention Pond
Date Analysis Commenced May 03, 2023
Condition of Sample Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Temperature *	Degree C	-	-	33.1	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	552	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	1.7	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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.

Technical Management

Siriluk P.
Siriluk Puengpang
Supervisor
หมายเลขโทรศัพท์ ๖-204-๖-4720

Approved by

Kate Anh.
Kanokkorn Anek
Senior Manager
หมายเลขโทรศัพท์ ๖-204-๖-6111

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

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

Life Sciences RIGHT SOLUTIONS RIGHT PARTNER
5137-584/ (BNAI) S (Version) AL GL-apt (6.13994)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2347913
Date Received : May 02, 2023
Date Reported : May 10, 2023
Report Number : 2635771-2

Page 2 of 2

Sample Number 2347913-1
Sample Date May 02, 2023 2:30 PM
Sample Description Group 1 Wastewater WW-Plant
Location WHA SIL : WW-RP : ๓ Retention Pond
Date Analysis Commenced May 03, 2023
Condition of Sample Contained in one amber glass bottle and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.21	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	3300.0	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	0.56	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	979	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	8.9	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	2.82	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	1.2	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

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

Approved by

Savitree N.
Savitree Nonglamjan
Manager

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

Life Sciences RIGHT SOLUTIONS RIGHT PARTNER
5137-584/ (BNAI) S (Version) AL GL-apt (6.13994)



Analysis / Test Report

TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :

Project Name :

Project Location : WHA SIL

Lot ID: 2351188
Date Received : May 09, 2023
Date Reported : May 12, 2023
Report Number : 2643161-1

Page 1 of 1

Sample Number	2351188-1							Page 1 of 2
Sampled Date	May 09, 2023 12:00 PM							
Sample Description	Group 1 Wastewater WW-Plant							
Location	WHA SIL : WW-RP : ๙๙ Retention Pond							
Date Analysis Commenced	May 10, 2023							
Condition of Sample								
Physical Property	Yellow, some odour, solid and turbid							
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
COD	mg/L	-	25	30	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok	
pH at 25 degree C *		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok	

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuks ๒๐๒๔-๖-๖๑๗

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.

Technical Management
Narin Saiseng
Supervisor
๒๐๒๔-๖-๖๑๗

Approved by
Kanokorn Anek
Senior Manager
๒๐๒๔-๖-๖๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5137-1841 (BNA)

5137-1841 (BNA) (12-12PM)



Analysis / Test Report

TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :

Project Name :

Project Location : WHA SIL

Lot ID: 2351189
Date Received : May 16, 2023
Date Reported : May 19, 2023
Report Number : 2643162-1

Page 1 of 1

Page 1 of 1

Sample Number	2351189-1						
Sampled Date	May 16, 2023 1:35 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๙๙ Retention Pond						
Date Analysis Commenced	May 17, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	37	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Teerawat Puangsuks ๒๐๒๔-๖-๖๑๗

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.

Technical Management
Sawimon Chainarungwut
Scientist (3)
๒๐๒๔-๖-๖๑๗

Approved by
Kanokorn Anek
Senior Manager
๒๐๒๔-๖-๖๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5137-1841 (BNA)

5137-1841 (BNA) (12-12PM)



Analysis / Test Report

TESTING

No.0009

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :

Project Name :

Project Location : WHA SIL

Lot ID: 2351190
Date Received : May 23, 2023
Date Reported : Jun 02, 2023
Report Number : 2671500-1

Page 1 of 1

Page 1 of 2

Sample Number	2351190-1						
Sampled Date	May 23, 2023 9:40 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๙๙ Retention Pond						
Date Analysis Commenced	May 24, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, odourless, some solid, and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	52	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	39	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Note : This Analysis test report is reissued to supersede report No.2643163-1, Date Reported : May 27, 2023 due to revise analytical information.
Sampling By : Norrasat Kornam ๒๐๒๔-๖-๖๑๗

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.

Technical Management
Siriluk Puengang
Supervisor
๒๐๒๔-๖-๖๑๗

Approved by
Kanokorn Anek
Senior Manager
๒๐๒๔-๖-๖๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5137-1841 (BNA)

5137-1841 (BNA) (9:00AM)



Analysis / Test Report

Lot ID: 2361888

Date Received : May 30, 2023
Date Reported : Jun 02, 2023
Report Number : 2666355-1

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrabi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :

Project Name :

Project Location : WHA SIL

Page 1 of 1

Page 1 of 1

Sample Number	2361888-1						
Sampled Date	May 30, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๙๙ Retention Pond						
Date Analysis Commenced	May 31, 2023						
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, some solid, and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
pH at 25 degree C	-	-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Jirarat Khonwara ๒๐๒๔-๖-๖๑๗

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

Technical Management
Sawimon Chainarungwut
Scientist (3)
๒๐๒๔-๖-๖๑๗

Approved by
Kanokorn Anek
Senior Manager
๒๐๒๔-๖-๖๑๗

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

5137-1841 (BNA)

5137-1841 (BNA) (12-12PM)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2351191
Date Received : May 30, 2023
Date Reported : Jun 02, 2023
Report Number : 2643164-1

Page 1 of 1

Sample Number	2351191-1						
Sample Date	May 30, 2023 12:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	May 31, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Green, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	69	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Jirarat Khosruek ๓๐๘๐๙๓๗ >204-๙-7537

- Remark :
- LOD : Limit of Detection
 - * : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
 - Analysis marked * : 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.

Technical Management

Sumimon C.
Sumimon Chaiyapum
Scientist (3)
๓๐๘๐๙๓๗ >204-๙-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๐๘๐๙๓๗ >204-๙-6111

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
ADDRESS 104 Phatthanakan Rd. Phatthanakan Rd. Khwaeng Phatthanakan, Thet Suwan Luang, Bangkok 10250 Thailand. PHONE +66 0 2760 3000 FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO. LTD. An ALS Limited Company

Life Sciences www.alsglobal.com RIGHT SOLUTIONS PRECISION PARTNERSHIP S (Private), AE GL (P) (7.989P)

5317-041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 2 of 7

Page 2 of 2

Sample Number	2364075-1						
Sample Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA) Yellow, some odour, solid and turbid						
Physical Property							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.004	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	0.75	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.02	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Pesticides - Organochlorine Group							
2,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Savitree N.
Savitree Naisiangam
Manager
๓๐๘๐๙๓๗ >204-๙-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๐๘๐๙๓๗ >204-๙-6111

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
ADDRESS 104 Phatthanakan Rd. Phatthanakan Rd. Khwaeng Phatthanakan, Thet Suwan Luang, Bangkok 10250 Thailand. PHONE +66 0 2760 3000 FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO. LTD. An ALS Limited Company

Life Sciences www.alsglobal.com RIGHT SOLUTIONS PRECISION PARTNERSHIP S (Private), AE GL (P) (7.989P)

5317-041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 1 of 7

Sample Number	2364075-1						
Sampled Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.03	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.002	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.006	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.09	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok

Technical Management

Savitree N.
Savitree Naisiangam
Manager
๓๐๘๐๙๓๗ >204-๙-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๐๘๐๙๓๗ >204-๙-6111

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
ADDRESS 104 Phatthanakan Rd. Phatthanakan Rd. Khwaeng Phatthanakan, Thet Suwan Luang, Bangkok 10250 Thailand. PHONE +66 0 2760 3000 FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO. LTD. An ALS Limited Company

Life Sciences www.alsglobal.com RIGHT SOLUTIONS PRECISION PARTNERSHIP S (Private), AE GL (P) (7.989P)

5317-041 (ENGL)



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL



TESTING
No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 3 of 7

Sample Number	2364075-1						
Sample Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA) Yellow, some odour, solid and turbid						
Physical Property							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Savitree N.
Savitree Naisiangam
Manager
๓๐๘๐๙๓๗ >204-๙-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
๓๐๘๐๙๓๗ >204-๙-6111

The above results are valid only for the analysed sample(s) as indicated in the report. No part of the report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that the report is not reproduced except in full.
ADDRESS 104 Phatthanakan Rd. Phatthanakan Rd. Khwaeng Phatthanakan, Thet Suwan Luang, Bangkok 10250 Thailand. PHONE +66 0 2760 3000 FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO. LTD. An ALS Limited Company

Life Sciences www.alsglobal.com RIGHT SOLUTIONS PRECISION PARTNERSHIP S (Private), AE GL (P) (7.989P)

5317-041 (ENGL)



TESTING

No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 4 of 7

Sample Number	2364075-1						
Sample Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SL : VW-RP : ʁa Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, ISEPA) Yellow, some odour, solid and turbid						
Physical Property							
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	2.1	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 -O-G	Bangkok
COD	mg/L	-	25	36	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Color (at Original pH) *	ADMI	-	5	11	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Color (at pH 7.0) *	ADMI	-	5	11	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Cyanide as CN *	mg/L	0.002	0.005	Not Detected	≤0.2	Standard Methods for the	Bangkok

Sawitree N.
Sawitree Nolsangiam
Manager

Kanokkorn Anek
Senior Manager

The above results are valid only for the analyzed/tested sample(s) as indicated in the 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.

ADDRESS 104 Phatthanakan Rd., 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

9387-564/99/021

5.18 (cont'd) At Q. 10 (2.50M)



TESTING

Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 6 of 7

Page 7 of 7

Sample Number	236-0075-1						
Sampled Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SBL : WW-RP : รพ Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	23	≤50	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 2560-D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsu กมลสุวกร ๓-204-๖-7107

Remark :

- LOD : Limit of Detection
- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * 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.

Sawitree N.
Sawitree Nolsangiam
Manager

Karok Korn Anek
Senior Manager

The above results are valid only for the analysed/tested sample(s) as indicated in the 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 the report is not reproduced except in full.

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

0377-8441/00/0000-0000\$10.00/0

Silberstein AB et al (2006)



TESTING

Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 5 of 7

Sample Number	2364075-1						
Sample Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SL - WW-RP : 7a Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA) Yellow, some odour, solid and turbid						
Physical Property							
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	2.1	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 -O-G	Bangkok
COD	mg/L	-	25	36	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
Color (at Original pH) *	ADMI	-	5	11	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Color (at pH 7.0) *	ADMI	-	5	11	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Bangkok
Cyanide as CN *	mg/L	0.002	0.005	Not Detected	≤0.2	Standard Methods for the	Bangkok

Sawitree N
Sawitree Noisangiam
Manager

Kanok Korn Anek
Senior Manager

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 the report is not reproduced except in full.

ADDRESS 104 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

5317-164/89\$07.00

5. (10 points) AB (2008) (2.50/2008)



TESTING

TESTING
No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-1

Page 2 of 2

[illegible]

Sawitree N
Sawitree Noisangiam
Manager


Kanokkorn Anek
Senior Manager

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

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 AIS Limited Company

053 7 36 42 8947

© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 395–402



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-2

Page 1 of 2

Sample Number	2364075-1						
Sample Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.18	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Microbiological Testing							
Total Coliform	MPN/100mL	-	-	790.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Pesticides - Organochlorine Group							
alpha-Chlordane *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
gamma-Chlordane *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Hexachlorobenzene *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Mirex *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok

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

Approved by

Savitree N.
Savitree Nolsangiam
Manager

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5317-84/1 (B&L)

5317-84/1 (B&L) (S/Report, AL GL-01 (1.139M))



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2367167
Date Received : Jun 13, 2023
Date Reported : Jun 17, 2023
Report Number : 2679244-1

Page 1 of 1

Sample Number	2367167-1						
Sample Date	Jun 13, 2023 11:45 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 14, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid, and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	28	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	24	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsuk โทร ๐๙-๐๙๐๙๙๙ ๖-๒๐4-๖-๖107

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

Technical Management

Sumwim C.
Sumwim Chaiyaput
Scientist (3)
โทร ๐๙-๐๙๐๙๙๙ ๖-๒๐4-๖-๕417

Approved by

Kanokorn A.
Kanokorn Anek
Senior Manager
โทร ๐๙-๐๙๐๙๙๙ ๖-๒๐4-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5317-84/1 (B&L)

5317-84/1 (B&L) (S/Report, AL GL-01 (1.139M))



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2364075
Date Received : Jun 06, 2023
Date Reported : Jun 14, 2023
Report Number : 2670440-2

Page 2 of 2

Sample Number	2364075-1						
Sample Date	Jun 06, 2023 1:10 PM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 07, 2023						
Condition of Sample	Contained in three amber glass bottle, two glass vials and ten plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Conductivity at 25 degree C *	micromhos/cm	-	0.5	862	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Dissolved Oxygen (on site) *	mg/L	-	0.1	14.3	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (G)	Bangkok
Nitrate as N *	mg/L	0.06	0.2	2.94	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok
Nitrite as N *	mg/L	0.06	0.2	<0.200	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO2 B	Bangkok
Total Phosphorus as P *	mg/L	0.2	0.5	0.7	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 365.4	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsuk

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : where 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

Savitree N.
Savitree Nolsangiam
Manager

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5317-84/1 (B&L)

5317-84/1 (B&L) (S/Report, AL GL-01 (1.139M))



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakrad Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140
P/O :
Project Name :
Project Location : WHA SIL

TESTING
No.0009
Lot ID: 2367169
Date Received : Jun 20, 2023
Date Reported : Jun 24, 2023
Report Number : 2679245-1

Page 1 of 1

Sample Number	2367169-1						
Sample Date	Jun 20, 2023 11:00 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : ๓ Retention Pond						
Date Analysis Commenced	Jun 21, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	30	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teerawat Puangsuk โทร ๐๙-๐๙๐๙๙๙ ๖-๒๐4-๖-๖107

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

Technical Management

Sumwim C.
Sumwim Chaiyaput
Scientist (3)
โทร ๐๙-๐๙๐๙๙๙ ๖-๒๐4-๖-๕417

Approved by

Kanokorn A.
Kanokorn Anek
Senior Manager
โทร ๐๙-๐๙๐๙๙๙ ๖-๒๐4-๖-6111

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

Life Sciences www.alsglobal.com
RIGHT SOLUTIONS. RIGHT PARTNER

5317-84/1 (B&L)

5317-84/1 (B&L) (S/Report, AL GL-01 (1.139M))



Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
111 Moo 7, Nongplakradi Road, Nongplamoh, Nongkhae, Saraburi Thailand 18140

P/O :
Project Name :
Project Location : WHA SIL

TESTING
No 0009
Lot ID: 2367170
Date Received : Jun 27, 2023
Date Reported : Jun 30, 2023
Report Number : 2679246-1

Page 1 of 1

Sample Number	2367170-1						
Sampled Date	Jun 27, 2023 11:15 AM						
Sample Description	Group 1 Wastewater WW-Plant						
Location	WHA SIL : WW-RP : 9a Retention Pond						
Date Analysis Commenced	Jun 28, 2023						
Condition of Sample	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
COD	mg/L	-	25	45	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	22	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Teserawat Puangsuksa วิไลสุวสุภา 2-204-57107

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.

Technical Management

Sumimon C.
Sawimon Chairuangwut
Scientist (3)
วิไลสุวสุภา 2-204-57107

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
วิไลสุวสุภา 2-204-61111

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS. RIGHT PARTNERS.

327-04/BNAL

5 (Page 1) of 4 (Page 1)