ภาคผนวก ค-5

คุณลักษณะน้ำเสียก่อนเข้าและหลังออกจากระบบบำบัดน้ำเสียส่วนกลาง

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 24141599
Date Received : Jan 03, 2025
Date Reported : Jan 15, 2025
Report Number : 3193158-1

Page 1 of 1

Sample Number 24141599-1
Sampled Date Jan 03, 2025 9:40 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Jan 03, 2025
Condition of Sample Contained in two glass vials, 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 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	46.6	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	42	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	5.4	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C	-	-	-	6.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong
Temperature *	Degree C	-	-	34.6	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	280	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong

Technical Management: Chonticha Subengkoch, Scientist (1), [illegible]
Approved by: Dej Changchier, Senior Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. [illegible]

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 24141599
Date Received : Jan 03, 2025
Date Reported : Jan 15, 2025
Report Number : 3193158-1

Page 1 of 1

Sample Number 24141599-1
Sampled Date Jan 03, 2025 9:40 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Jan 03, 2025
Condition of Sample Contained in two glass vials, 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 some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	8.2	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai [illegible] , Samart Khumphlee [illegible]

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: Chonticha Subengkoch, Scientist (1), [illegible]
Approved by: Dej Changchier, Senior Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. [illegible]

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 24141599
Date Received : Jan 03, 2025
Date Reported : Jan 11, 2025
Report Number : 3193158-2

Page 1 of 1

Sample Number 24141599-1
Sampled Date Jan 03, 2025 9:40 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Jan 06, 2025
Condition of Sample Contained in two glass vials, 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 some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.004	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0001	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0002	0.0005	0.002	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	<0.0005	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Manganese	mg/L	0.0001	0.0005	0.24	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Suwimon Chaisangpet, Scientist (1), [illegible]
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. [illegible]

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 24141599
Date Received : Jan 03, 2025
Date Reported : Jan 11, 2025
Report Number : 3193158-2

Page 1 of 1

Sample Number 24141599-1
Sampled Date Jan 03, 2025 9:40 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Jan 06, 2025
Condition of Sample Contained in two glass vials, 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 some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.2	0.5	<0.5	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai [illegible] , Samart Khumphlee [illegible]

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.

Technical Management: Suwimon Chaisangpet, Scientist (1), [illegible]
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. [illegible]

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 24141599
Date Received : Jan 03, 2025
Date Reported : Jan 11, 2025
Report Number : 3193158-2

Page 1 of 1

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

Technical Management: Suwimon Chaisangpet, Scientist (1), [illegible]
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. [illegible]

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 24141599
Date Received : Jan 03, 2025
Date Reported : Jan 11, 2025
Report Number : 3193158-3

Page 1 of 1

Sample Number 24141599-1
Sampled Date Jan 03, 2025 9:40 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Jan 04, 2025
Condition of Sample Contained in two glass vials, 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 some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.21	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Anionic Surfactant as MBAS *	mg/L	0.015	0.05	.18	≤30	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5540 B, C	Bangkok
Conductivity at 25 Degree C *	microsiemens/cm	-	0.5	922	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai , Samart Khumphlee

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

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. [illegible]

Approved by: Suwimon Chaisangpet, Scientist (1)

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 257496
Date Received : Feb 03, 2025
Date Reported : Feb 11, 2025
Report Number : 3215040-1

Page 1 of 1

Sample Number 257496-1
Sampled Date Feb 03, 2025 10:10 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Feb 03, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, a lot of 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	8.7	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	47	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	5.5	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C	-	-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong
Temperature *	Degree C	-	-	34.7	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	110	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong

Technical Management: Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchier, Senior Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 257496
Date Received : Feb 03, 2025
Date Reported : Feb 11, 2025
Report Number : 3215040-1

Page 1 of 1

Sample Number 257496-1
Sampled Date Feb 03, 2025 10:10 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Feb 03, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	5.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Somsoen Khuyoksai [illegible] , Thanasoun [illegible]

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.

Technical Management: Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchier, Senior Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 257496
Date Received : Feb 03, 2025
Date Reported : Feb 11, 2025
Report Number : 3215040-2

Page 1 of 1

Sample Number 257496-1
Sampled Date Feb 03, 2025 10:10 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.005	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0001	0.0003	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0002	0.0005	0.004	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.01	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Manganese	mg/L	0.0001	0.0005	0.13	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Siriluk Bunnak, Section Head, [illegible]
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 257496

Date Received : Feb 03, 2025
Date Reported : Feb 11, 2025
Report Number : 3210940-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	257496-1
Sampled Date	Feb 03, 2025 10:10 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0001	0.0005	0.01	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.34	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.2	0.5	1.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyokkul ทะเบียนเลขที่ ร-323-4-0005 , Thanasoun Namakunya ทะเบียนเลขที่ ร-204-4-0101

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.

Technical Management: Siriluk P. — Siriluk Bunnak, Section Head, ทะเบียนเลขที่ ร-204-4-0013
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ร-204-4-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 257496

Date Received : Feb 03, 2025
Date Reported : Feb 11, 2025
Report Number : 3210940-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Technical Management: Siriluk P. — Siriluk Bunnak, Section Head, ทะเบียนเลขที่ ร-204-4-0013
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ร-204-4-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 257496

Date Received : Feb 03, 2025
Date Reported : Feb 11, 2025
Report Number : 3210940-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	257496-1
Sampled Date	Feb 03, 2025 10:10 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.87	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Anionic Surfactant as MBAS *	mg/L	0.015	0.05	0.92	≤30	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5540 B, C	Bangkok
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	851	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyokkul , Thanasoun Namakunya

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

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Approved by: Siriluk P. — Siriluk Bunnak, Section Head

Analysis / Test Report

TESTING No.0042

Lot ID: 2518383

Date Received : Mar 03, 2025
Date Reported : Mar 11, 2025
Report Number : 3243741-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2518383-1
Sampled Date	Mar 03, 2025 11:25 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in two glass vials, 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	63	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	48	≤600	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease	mg/L	-	5	<5	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C	-	-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong
Temperature *	Degree C	-	-	36.7	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 Degree C	mg/L	-	5	432	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ร-323-4-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ร-325-4-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2518383

Date Received : Mar 03, 2025
Date Reported : Mar 11, 2025
Report Number : 3243741-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2518383-1
Sampled Date	Mar 03, 2025 11:25 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in two glass vials, 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	4.3	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyokkul ทะเบียนเลขที่ ร-323-4-0005 , Thanasoun Namakunya ทะเบียนเลขที่ ร-204-4-0101

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ร-323-4-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ร-325-4-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2518383

Date Received : Mar 03, 2025
Date Reported : Mar 11, 2025
Report Number : 3243741-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2518383-1
Sampled Date	Mar 03, 2025 11:25 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Mar 04, 2025
Condition of Sample	Contained in two glass vials, 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0001	0.0005	0.004	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0001	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0001	0.0005	0.004	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0001	0.0005	0.01	≤2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0001	0.0005	0.003	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Manganese	mg/L	0.0001	0.0005	0.11	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsaengsri, Manager, ทะเบียนเลขที่ ร-205-4-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ร-204-4-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2518383

Date Received : Mar 03, 2025
Date Reported : Mar 11, 2025
Report Number : 3243741-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2518383-1
Sampled Date	Mar 03, 2025 11:25 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Mar 04, 2025
Condition of Sample	Contained in two glass vials, 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Mercury *	mg/L	0.0001	0.0005	0.0006	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0001	0.0005	0.01	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.34	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.2	0.5	1	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyokkul ทะเบียนเลขที่ ร-323-4-0005 , Thanasoun Namakunya ทะเบียนเลขที่ ร-204-4-0101

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

Technical Management: Sawitree N. — Sawitree Nilsaengsri, Manager, ทะเบียนเลขที่ ร-205-4-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ร-204-4-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2518383

Date Received : Mar 03, 2025
Date Reported : Mar 11, 2025
Report Number : 3243741-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsaengsri, Manager, ทะเบียนเลขที่ ร-205-4-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ร-204-4-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2518383

Date Received : Mar 03, 2025
Date Reported : Mar 11, 2025
Report Number : 3243741-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2518383-1
Sampled Date	Mar 03, 2025 11:25 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in two glass vials, 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.49	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Anionic Surfactant as MBAS *	mg/L	0.015	0.05	0.88	≤30	Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5540 B, C	Bangkok
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	1440	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyokkul , Thanasoun Namakunya

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by: Sawitree N. — Sawitree Nilsaengsri, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528353
Date Received : Apr 07, 2025
Date Reported : Apr 25, 2025
Report Number : 3250313-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528353-1
Sampled Date Apr 07, 2025 10:51 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Apr 07, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	11.2	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	45	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
pH at 25 degree C		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong
Temperature *	Degree C	-		27.4	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	390	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	3.1	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528353
Date Received : Apr 07, 2025
Date Reported : Apr 25, 2025
Report Number : 3250313-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528353-1
Sampled Date Apr 07, 2025 10:51 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Apr 07, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	40	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Note : This Analysis test report is reissued to supersede report No.3264998-1, Date Reported : Apr 16, 2025 due to revise analytical information.
Sampling By : Sankoen Khuiyoksu ... ว-325-ส-0005 , Pattarapol Sawangjaitam ... ว-204-ส-0002

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2528353
Date Received : Apr 07, 2025
Date Reported : Apr 25, 2025
Report Number : 3250313-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528353-1
Sampled Date Apr 07, 2025 10:51 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.006	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0001	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0002	0.0005	0.004	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.008	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.0009	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.12	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2528353
Date Received : Apr 07, 2025
Date Reported : Apr 25, 2025
Report Number : 3250313-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528353-1
Sampled Date Apr 07, 2025 10:51 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.28	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.2	0.5	0.6	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Note : This Analysis test report is reissued to supersede report No.3264998-2, Date Reported : Apr 16, 2025 due to revise analytical information.
Sampling By : Sankoen Khuiyoksu ... ว-325-ส-0005 , Pattarapol Sawangjaitam ... ว-204-ส-0002

Remark :
- LOD : Limit of Detection

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2528353
Date Received : Apr 07, 2025
Date Reported : Apr 25, 2025
Report Number : 3250313-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

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

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2528353
Date Received : Apr 07, 2025
Date Reported : Apr 25, 2025
Report Number : 3250313-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528353-1
Sampled Date Apr 07, 2025 10:51 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Apr 07, 2025
Condition of Sample Contained in one amber glass bottle, two glass vials 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 (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.67	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Anionic Surfactant as MBAS *	mg/L	0.015	0.05	0.66	≤30	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5540 B, C	Bangkok
Conductivity at 25 Degree C *	microsiemens/cm	-	0.5	1269	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Note : This Analysis test report is reissued to supersede report No.3264998-3, Date Reported : Apr 16, 2025 due to revise analytical information.
Sampling By : Sanpoen Khuiyoksu , Pattarapol Sawangjaitam

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

Approved by: Sawitree N. — Sawitree Nilsangiam, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528355
Date Received : Apr 21, 2025
Date Reported : Apr 28, 2025
Report Number : 3265030-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528355-1
Sampled Date Apr 21, 2025 10:45 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced Apr 22, 2025
Condition of Sample Contained in one amber glass bottle and 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							
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hunchamnaw ... ว-323-ส-0030

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2538357
Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3289441-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2538357-1
Sampled Date May 02, 2025 11:33 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced May 02, 2025
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, a lot of 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	16.8	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	33	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	1	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	1	≤600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2120 F	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L		3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong
Temperature *	Degree C	-	-	28.2	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2538357
Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3289441-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Page 1 of 1

Sample Number 2538357-1
Sampled Date May 02, 2025 11:33 AM
Sample Description Influent
Location WHA EIE : Pumping Station
Date Analysis Commenced May 02, 2025
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, a lot of solid and some 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	828	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	17	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	92	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sanpoen Khuiyoksu ... ว-323-ส-0005 , Pattarapol Sawangjaitam ... ว-204-ส-0002

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2538357

Date Received: May 02, 2025
Date Reported: May 13, 2025
Report Number: 3289441-2

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 1

Sample Number	2538357-1
Sampled Date	May 02, 2025 11:15 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	May 06, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.009	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0005	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0002	0.0005	0.007	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.17	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ฉ-0007
Approved by: Kanokkorn Anek — Assistant General Manager, ทะเบียนเลขที่ ว-204-ฉ-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2538357

Date Received: May 02, 2025
Date Reported: May 13, 2025
Report Number: 3289441-2

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 1

Sample Number	2538357-1
Sampled Date	May 02, 2025 11:15 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	May 06, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.29	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.2	0.5	.4	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Samoem Khuiyokau ทะเบียนเลขที่ ว-323-ฉ-0005 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ฉ-0002

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

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ฉ-0007
Approved by: Kanokkorn Anek — Assistant General Manager, ทะเบียนเลขที่ ว-204-ฉ-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2538357

Date Received: May 02, 2025
Date Reported: May 13, 2025
Report Number: 3289441-2

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 1

- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ฉ-0007
Approved by: Kanokkorn Anek — Assistant General Manager, ทะเบียนเลขที่ ว-204-ฉ-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2538357

Date Received: May 02, 2025
Date Reported: May 13, 2025
Report Number: 3289441-3

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 1

Sample Number	2538357-1
Sampled Date	May 02, 2025 11:15 AM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	May 02, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	1.77	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Anionic Surfactant as MBAS *	mg/L	0.015	0.05	0.85	≤30	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5540 B, C	Bangkok
Conductivity at 25 Degree C *	microsiemens/cm	-	0.5	750	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Samoem Khuiyokau , Pattarapol Sawangjaitam

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025
- Sampling is not included in scope of accreditation ISO/IEC 17025

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Approved by: Sawitree N. — Sawitree Nilsangiam, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2552012

Date Received: Jun 02, 2025
Date Reported: Jun 10, 2025
Report Number: 3310942-1

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 1

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	21	35	≤800	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Cyanide as HCN	mg/L	0.003	0.005	0.007	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.02	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.39	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong

Technical Management: Jitsupa P. — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฉ-0004
Approved by: Dej Changchor — Senior Manager, ทะเบียนเลขที่ ว-323-ฉ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2552012

Date Received: Jun 02, 2025
Date Reported: Jun 10, 2025
Report Number: 3310942-1

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 1

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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							
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	30.9	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	970	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	13	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	74	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Wanlop Hanchemeow ทะเบียนเลขที่ ว-323-ฉ-0030 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ฉ-0002

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P. — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฉ-0004
Approved by: Dej Changchor — Senior Manager, ทะเบียนเลขที่ ว-323-ฉ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received: Jun 02, 2025
Date Reported: Jun 11, 2025
Report Number: 3310942-2

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 1 of 3

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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	0.009	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Barium	mg/L	0.0005	0.0005	0.11	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0002	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.02	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.0009	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ฉ-0007
Approved by: Kanokkorn Anek — Assistant General Manager, ทะเบียนเลขที่ ว-204-ฉ-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received: Jun 02, 2025
Date Reported: Jun 11, 2025
Report Number: 3310942-2

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 2 of 3

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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							
Manganese	mg/L	0.0003	0.0005	0.18	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	0.02	≤0.75	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.30	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ฉ-0007
Approved by: Kanokkorn Anek — Assistant General Manager, ทะเบียนเลขที่ ว-204-ฉ-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received: Jun 02, 2025
Date Reported: Jun 11, 2025
Report Number: 3310942-2

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name:
Project Location: WHA EIE

Page 3 of 3

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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
Pesticides - Organochlorine Group							
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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ฉ-0007
Approved by: Kanokkorn Anek — Assistant General Manager, ทะเบียนเลขที่ ว-204-ฉ-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : 3310941-2

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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
Pesticides - Organochlorine Group							
alpha-Chlordane *	ug/L	0.01	0.02	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ส-0007
Approved by: Kanokkorn Anek — Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ส-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : 3310941-2

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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
Pesticides - Organochlorine Group							
Endrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Heptachlor Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.1	0.5	9.8	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Humchaenpow ทะเบียนเลขที่ ว-325-ส-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ส-0002

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

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ส-0007
Approved by: Kanokkorn Anek — Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ส-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : 3310941-2

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ส-0007
Approved by: Kanokkorn Anek — Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ส-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : 3310941-3

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	2552012-1
Sampled Date	Jun 02, 2025 1:50 PM
Sample Description	Influent
Location	WHA EIE : Pumping Station
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles 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	1.58	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Pesticides - Organochlorine Group							
gamma-Chlordane *	ug/L	0.01	0.02	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Hexachlorobenzene *	ug/L	0.01	0.02	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Mirex *	ug/L	0.01	0.02	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Water Testing							
Anionic Surfactant as MBAS *	mg/L	0.015	0.05	4.54	≤30	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5540 B, C	Bangkok
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	508	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Humchaenpow , Pattarapol Sawangjaitam

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

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by: Sawitree N. — Sawitree Nilsangiam, Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2552012

Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : 3310941-3

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by: Sawitree N. — Sawitree Nilsangiam, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24141629

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : 3095329-3

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	24141629-1
Sampled Date	Jan 03, 2025 10:25 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no 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	<2.0	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Cyanide as CN	mg/L	0.001	0.005	0.013	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	<0.010	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong

Technical Management: Chontichak — Chontichak Subongkoch, Scientist (I), ทะเบียนเลขที่ ว-325-ส-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ส-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 24141629

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : 3095329-3

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	24141629-1
Sampled Date	Jan 03, 2025 10:25 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	31.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	720	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.5	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	8	9	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornrit Wongsachai ทะเบียนเลขที่ ว-323-ส-0040 , Samart Khumphee ทะเบียนเลขที่ ว-204-ส-0094

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: Chontichak — Chontichak Subongkoch, Scientist (I), ทะเบียนเลขที่ ว-323-ส-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ส-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 24141629

Date Received : Jan 03, 2025
Date Reported : Jan 10, 2025
Report Number : 3095329-2

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	24141629-1
Sampled Date	Jan 03, 2025 10:25 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no 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, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0005	0.0005	0.07	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0002	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.003	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok

Technical Management: Siriluk P. — Siriluk Punnak, Section Head, ทะเบียนเลขที่ ว-204-ส-0013
Approved by: Kanokkorn Anek — Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ส-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 24141629

Date Received : Jan 03, 2025
Date Reported : Jan 10, 2025
Report Number : 3095329-2

Client : WHA Utilities and Power Public Company Limited
18, Paisornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Sample Number	24141629-1
Sampled Date	Jan 03, 2025 10:25 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Manganese	mg/L	0.0003	0.0005	0.51	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0003	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	0.0009	≤0.02	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.11	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.1	0.5	[illegible]	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	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 Punnak, Section Head, ทะเบียนเลขที่ ว-204-ส-0013
Approved by: Kanokkorn Anek — Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ส-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 24141629

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 10, 2025
Report Number : 3195329-2

Page 1 of 1

Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornvich Wongsachai [illegible] ว-323- น-0040 , Samart Khumphlee [illegible] ว-204-น-0084

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 Bunnak, Section Head, [illegible] ว-204-น-0013
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible] ว-204-น-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. In part of this report 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.

Analysis / Test Report

TESTING No.0009

Lot ID: 24141629

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 10, 2025
Report Number : 3195329-3

Page 1 of 1

Sample Number	24141629-1
Sampled Date	Jan 03, 2025 10:25 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jan 04, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	3.43	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	0.05	0.1	4.6	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (D)	Rayong
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	1056	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong
Nitrate as N *	mg/L	0.015	0.05	1.40	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NO3 (E)	Rayong
Silica as SiO2 *	mg/L	0.1	0.3	4.6	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SiO2 (C)	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornvich Wongsachai , Samart Khumphlee

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

Approved by: Sawittree Noisangpan, Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report 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.

Analysis / Test Report

TESTING No.0042

Lot ID: 257512

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3210051-3

Page 1 of 1

Sample Number	257512-1
Sampled Date	Feb 03, 2025 10:40 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Feb 03, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and nine 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	17	≤16	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	25	47	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Cyanide as CN	mg/L	0.001	0.005	<0.005	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong

Technical Management: Chontichak Subongkoch, Scientist (3), [illegible] ว-323-น-0011
Approved by: Dej Changchim, Senior Manager, [illegible] ว-325-น-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 257512

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3210051-1

Page 1 of 1

Sample Number	257512-1
Sampled Date	Feb 03, 2025 10:40 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Feb 03, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and nine 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							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	29.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	980	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.5	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	8	8	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyoksui [illegible] ว-323-น-0005 , Thanasoun Namakorna [illegible] ว-204-น-0101

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

Technical Management: Chontichak Subongkoch, Scientist (3), [illegible] ว-323-น-0011
Approved by: Dej Changchim, Senior Manager, [illegible] ว-325-น-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 257512

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3210051-2

Page 1 of 1

Sample Number	257512-1
Sampled Date	Feb 03, 2025 10:40 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and nine 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							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Cadmium	mg/L	0.0002	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.002	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.003	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	0.0007	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok

Technical Management: Chanattagorn Inchum, Section Head, [illegible] ว-204-น-0008
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible] ว-204-น-0004

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Analysis / Test Report

TESTING No.0009

Lot ID: 257512

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3210051-2

Page 1 of 1

Sample Number	257512-1
Sampled Date	Feb 03, 2025 10:40 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and nine 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							
Manganese	mg/L	0.0003	0.0005	0.42	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 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, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0006	≤0.02	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 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, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.15	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.2	0.5	2	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	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: Chanattagorn Inchum, Section Head, [illegible] ว-204-น-0008
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible] ว-204-น-0004

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Analysis / Test Report

TESTING No.0009

Lot ID: 257512

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3210051-2

Page 1 of 1

Sampling By : Samoen Khuiyoksui [illegible] ว-323-น-0005 , Thanasoun Namakorna [illegible] ว-204-น-0101

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

Technical Management: Chanattagorn Inchum, Section Head, [illegible] ว-204-น-0008
Approved by: Kanokkorn Anek, Assistant General Manager, [illegible] ว-204-น-0004

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Analysis / Test Report

Lot ID: 257512

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3210051-3

Page 1 of 1

Sample Number	257512-1
Sampled Date	Feb 03, 2025 10:40 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials and nine 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	3.15	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 F	Bangkok
Water Testing							
Ammonia Nitrogen	mg/L	0.05	0.1	4.3	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (D)	Rayong
Conductivity at 25 Degree C	micromhos/cm	-	0.5	1450	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong
Nitrate as N	mg/L	0.015	0.05	1.06	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NO3 (E)	Rayong
Silica as SiO2	mg/L	0.1	0.3	7.8	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SiO2 (C)	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyoksui , Thanasoun Namakorna

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

Approved by: Chontichak Subongkoch, Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2518401

Client : WHA Utilities and Power Public Company Limited
18, Paksrisongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 3243786-1

Page 1 of 1

Sample Number	2518401-1
Sampled Date	Mar 03, 2025 1:50 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine 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	12.0	≤16	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	25	46	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Cyanide as CN	mg/L	0.001	0.005	0.006	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong

Technical Management: Chontichak Subongkoch, Scientist (3), [illegible] ว-323-น-0011
Approved by: Dej Changchim, Senior Manager, [illegible] ว-325-น-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2518401
Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 2043786-1

Sample Number	2518401-1
Sampled Date	Mar 03, 2025 1:50 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine 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							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	37.2	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	1172	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.8	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sanoem Khuiyoksui , Thanasoun Nemakunna

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

Technical Management: Chontichak — Chonticha Suberngkoch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2518401
Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 2043786-2

Sample Number	2518401-1
Sampled Date	Mar 03, 2025 1:50 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Mar 04, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine 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	0.0001	0.0005	0.002	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Barium	mg/L	0.0001	0.0005	0.08	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0001	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0001	0.0005	0.003	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0001	0.0005	0.003	≤2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0001	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Sasithree N. — Sasithree Nilsangpiem, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2518401
Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 2043786-2

Sample Number	2518401-1
Sampled Date	Mar 03, 2025 1:50 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Mar 04, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine 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							
Manganese	mg/L	0.0001	0.0005	0.48	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0001	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Selenium	mg/L	0.0001	0.0005	0.001	≤0.02	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.001	0.005	0.19	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.1	0.5	3	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	Bangkok

Technical Management: Sasithree N. — Sasithree Nilsangpiem, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2518401
Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 2043786-2

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sanoem Khuiyoksui , Thanasoun Nemakunna

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sasithree N. — Sasithree Nilsangpiem, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2518401
Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 2043786-3

Sample Number	2518401-1
Sampled Date	Mar 03, 2025 1:50 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine 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	0.001	0.005	0.17	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	0.05	0.1	0.4	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (D)	Rayong
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	643	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong
Nitrate as N *	mg/L	0.015	0.05	0.44	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NO3 (E)	Rayong
Silica as SiO2 *	mg/L	0.1	0.5	3.1	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-SiO2 (C)	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sanoem Khuiyoksui , Thanasoun Nemakunna

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by: Sasithree N. — Sasithree Nilsangpiem, Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2518401
Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 2043786-3

Approved by: Sasithree N. — Sasithree Nilsangpiem, Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2528360
Date Received : Apr 07, 2025
Date Reported : Apr 17, 2025
Report Number : 3265013-1

Sample Number	2528360-1
Sampled Date	Apr 07, 2025 10:29 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Apr 07, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials 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	<2.0	≤16	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	3.5	15	19	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Cyanide as CN	mg/L	0.001	0.005	0.008	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong

Technical Management: Photchana S. — Photchana Sooda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2528360
Date Received : Apr 07, 2025
Date Reported : Apr 17, 2025
Report Number : 3265013-1

Sample Number	2528360-1
Sampled Date	Apr 07, 2025 10:29 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Apr 07, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials 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							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	34.4	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	1080	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	2	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sanoem Khuiyoksui , Pattarapol Sawangjaitam

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

Technical Management: Photchana S. — Photchana Sooda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location: WHA EIE

Lot ID: 2528360
Date Received : Apr 07, 2025
Date Reported : Apr 17, 2025
Report Number : 3265013-2

Sample Number	2528360-1
Sampled Date	Apr 07, 2025 10:29 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle, two glass vials 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
Metals Testing							
Arsenic	mg/L	0.0001	0.0005	0.001	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Barium	mg/L	0.0001	0.0005	0.06	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0001	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0001	0.0005	0.002	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Copper	mg/L	0.0001	0.0005	0.002	≤2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0001	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Suwimon C. — Suwimon Chaisangsuwit, Scientist (3)
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2528360

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Apr 07, 2025
Date Reported : Apr 17, 2025
Report Number : 3265013-2

Page 1 of 1

Sample Number : 2528360-1
Sampled Date : Apr 07, 2025 10:29 AM
Sample Description : Effluent
Location : WHA EIE : WWTP
Date Analysis Commenced : Apr 08, 2025
Condition of Sample : Contained in one amber glass bottle, two glass vials and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, some odour, solid and no Limits

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Manganese	mg/L	0.0003	0.0005	0.26	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0006	≤0.02	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.15	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.1	0.1	[illegible]	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	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: Suwimon C — Suwimon Chainangkool, Scientist (3), ทะเบียนเลขที่ ว-204-ค-0018
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ค-0004

Analysis / Test Report

TESTING No.0009

Lot ID: 2528360

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Apr 07, 2025
Date Reported : Apr 17, 2025
Report Number : 3265013-2

Page 1 of 1

Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyoksui ทะเบียนเลขที่ ว-323-ค-0005 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ค-0002

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Suwimon C — Suwimon Chainangkool, Scientist (3), ทะเบียนเลขที่ ว-204-ค-0018
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ค-0004

Analysis / Test Report

TESTING No.0009

Lot ID: 2528360

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Apr 07, 2025
Date Reported : Apr 17, 2025
Report Number : 3265013-3

Page 1 of 1

Sample Number : 2528360-1
Sampled Date : Apr 07, 2025 10:29 AM
Sample Description : Effluent
Location : WHA EIE : WWTP
Date Analysis Commenced : Apr 07, 2025
Condition of Sample : Contained in one amber glass bottle, two glass vials and eight plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, some odour, solid and no Limits

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.29	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	0.05	0.1	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (D)	Rayong
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	1756	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong
Nitrate as N *	mg/L	0.015	0.05	1.08	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NO3 (E)	Rayong
Silica as SiO2 *	mg/L	0.1	0.1	3.5	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-SiO2 (C)	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyoksui , Pattarapol Sawangjaitam

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

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by: Chanatt L. — Chanattagarn Inchom, Section Head

Analysis / Test Report

TESTING No.0042

Lot ID: 2538398

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3269516-1

Page 1 of 1

Sample Number : 2538398-1
Sampled Date : May 02, 2025 10:50 AM
Sample Description : Effluent
Location : WHA EIE : WWTP
Date Analysis Commenced : May 02, 2025
Condition of Sample : Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, some odour, solid and no Limits

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤16	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	<3	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	[illegible]	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	[illegible]	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2120 F	Rayong
Cyanide as CN	mg/L	0.001	0.005	0.007	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C	-	-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ทะเบียนเลขที่ ว-323-ค-0029
Approved by: Dej Changchler, Senior Manager, ทะเบียนเลขที่ ว-323-ค-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2538398

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3269516-1

Page 1 of 1

Sample Number : 2538398-1
Sampled Date : May 02, 2025 10:50 AM
Sample Description : Effluent
Location : WHA EIE : WWTP
Date Analysis Commenced : May 02, 2025
Condition of Sample : Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, some odour, solid and no Limits

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	16.0	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1248	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	3	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuiyoksui ทะเบียนเลขที่ ว-323-ค-0005 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ค-0002

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ทะเบียนเลขที่ ว-323-ค-0029
Approved by: Dej Changchler, Senior Manager, ทะเบียนเลขที่ ว-323-ค-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2538398

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3269516-1

Page 1 of 1

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ทะเบียนเลขที่ ว-323-ค-0029
Approved by: Dej Changchler, Senior Manager, ทะเบียนเลขที่ ว-323-ค-0001

Analysis / Test Report

TESTING No.0009

Lot ID: 2538398

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3269516-2

Page 1 of 1

Sample Number : 2538398-1
Sampled Date : May 02, 2025 10:50 AM
Sample Description : Effluent
Location : WHA EIE : WWTP
Date Analysis Commenced : May 06, 2025
Condition of Sample : Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, some odour, solid and no Limits

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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0002	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.002	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management: Chanatt L. — Chanattagarn Inchom, Section Head, ทะเบียนเลขที่ ว-204-ค-0008
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ค-0004

Analysis / Test Report

TESTING No.0009

Lot ID: 2538398

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3269516-2

Page 1 of 1

Sample Number : 2538398-1
Sampled Date : May 02, 2025 10:50 AM
Sample Description : Effluent
Location : WHA EIE : WWTP
Date Analysis Commenced : May 06, 2025
Condition of Sample : Contained in two glass vials, one amber glass bottle and nine plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property : Yellow, some odour, solid and no Limits

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Manganese	mg/L	0.0003	0.0005	0.31	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0006	≤0.02	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.18	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.1	0.1	[illegible]	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	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: Chanatt L. — Chanattagarn Inchom, Section Head, ทะเบียนเลขที่ ว-204-ค-0008
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ค-0004

Analysis / Test Report

TESTING No.0009

Lot ID: 2538398

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : 3269516-2

Page 1 of 1

Sampling By : Samoen Khuiyoksui ทะเบียนเลขที่ ว-323-ค-0005 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ค-0002

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chanatt L. — Chanattagarn Inchom, Section Head, ทะเบียนเลขที่ ว-204-ค-0008
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ค-0004

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2538398
Date Received : May 02, 2025
Date Reported : May 13, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2538398-1
Sampled Date	May 02, 2025 10:00 AM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	May 02, 2025
Condition of Sample	Contained in two glass vials, one amber glass bottle and nine 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	3.29	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	0.05	0.1	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (D)	Rayong
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	1523	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong
Nitrate as N *	mg/L	0.015	0.05	1.41	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NO3 (E)	Rayong
Silica as SiO2 *	mg/L	0.1	0.1	8.0	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-SiO2 (C)	Rayong

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 : Samoen Khoyoksa , Pattarapol Sawangjattam

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by : Chanatt L.
Chanattagarn Inchom
Section Head

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 09, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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	<2.0	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	15	11	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Cyanide as CN	mg/L	0.001	0.005	0.009	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (F)	Rayong

Technical Management : Jitsupa P.
Jitsupa Prakuengpuk
Scientist (2)
[illegible]

Approved by : D. Chang
Dej Changchior
Senior Manager
[illegible]

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Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 09, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	30.0	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	880	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	8	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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 : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wantop Horchainaow [illegible] , Pattarapol Sawangjattam [illegible]

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

Technical Management : Jitsupa P.
Jitsupa Prakuengpuk
Scientist (2)
[illegible]

Approved by : D. Chang
Dej Changchior
Senior Manager
[illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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	0.003	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Cadmium	mg/L	0.0002	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.003	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Technical Management : Sawitree N.
Sawitree Nilsangnam
Manager
[illegible]

Approved by : Kanokkorn Anek
Kanokkorn Anek
Assistant General Manager
[illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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							
Manganese	mg/L	0.0003	0.0005	0.33	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	0.0007	≤0.02	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.16	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok

Technical Management : Sawitree N.
Sawitree Nilsangnam
Manager
[illegible]

Approved by : Kanokkorn Anek
Kanokkorn Anek
Assistant General Manager
[illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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
Pesticides - Organochlorine Group							
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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok

Technical Management : Sawitree N.
Sawitree Nilsangnam
Manager
[illegible]

Approved by : Kanokkorn Anek
Kanokkorn Anek
Assistant General Manager
[illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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
Pesticides - Organochlorine Group							
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok

Technical Management : Sawitree N.
Sawitree Nilsangnam
Manager
[illegible]

Approved by : Kanokkorn Anek
Kanokkorn Anek
Assistant General Manager
[illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 04, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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
Pesticides - Organochlorine Group							
Heptachlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Water Testing							
Total Phosphorus as P *	mg/L	0.1	0.1	1	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-P (B, E)	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 : Wantop Horchainaow [illegible] , Pattarapol Sawangjattam [illegible]

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management : Sawitree N.
Sawitree Nilsangnam
Manager
[illegible]

Approved by : Kanokkorn Anek
Kanokkorn Anek
Assistant General Manager
[illegible]

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Paiornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2552036
Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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	3.88	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, 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, 24th ed., 2023, part 6630 D, part 6410 B	Bangkok
Water Testing							
Ammonia Nitrogen *	mg/L	0.05	0.1	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-NH3 (D)	Rayong
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	1989	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2510 B	Rayong

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by : Sawitree N.
Sawitree Nilsangnam
Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2552036

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Jun 02, 2025
Date Reported : Jun 11, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2552036-1
Sampled Date	Jun 02, 2025 2:10 PM
Sample Description	Effluent
Location	WHA EIE : WWTP
Date Analysis Commenced	Jun 02, 2025
Condition of Sample	Contained in two glass vials, three amber glass bottles and nine 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							
Nitrate as N *	mg/L	0.015	0.05	4.6	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-NO3 (E)	Rayong
Silica as SiO2 *	mg/L	0.2	0.5	8.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SiO2 (C)	Rayong

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 : [illegible]

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by: Sawitree N.
[illegible]
Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24141586

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24141586-1
Sampled Date	Jan 03, 2025 12:15 PM
Sample Description	Wastewater
Location	WHA EIE : Effluent_High TDS
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment / preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no 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	[illegible]	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	15	[illegible]	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	[illegible]	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	4	2500	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by: Dej Changchier, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 24141586

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : [illegible]

Page 1 of 1

Sampling By : [illegible]

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: Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 257478

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	257478-1
Sampled Date	Feb 03, 2025 12:00 PM
Sample Description	Wastewater
Location	WHA EIE : Effluent_High TDS
Date Analysis Commenced	Feb 03, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	15	[illegible]	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	[illegible]	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	4	2500	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by: Dej Changchier, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 257478

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : [illegible]

Page 1 of 1

Sampling By : Samoeen Khayyokaor [illegible]

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

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518371

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2518371-1
Sampled Date	Mar 03, 2025 1:05 PM
Sample Description	Wastewater
Location	WHA EIE : Effluent_High TDS
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	15	[illegible]	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	[illegible]	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	4	2080	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by: Dej Changchier, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2518371

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : [illegible]

Page 1 of 1

Sampling By : Samoeen Khayyokaor [illegible]

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528346

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Apr 07, 2025
Date Reported : Apr 18, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2528346-1
Sampled Date	Apr 07, 2025 11:40 AM
Sample Description	Wastewater
Location	WHA EIE : Effluent_High TDS
Date Analysis Commenced	Apr 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	15	[illegible]	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	[illegible]	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	4	[illegible]	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563

Technical Management: Photchana S. — Scientist (4)
Approved by: Dej Changchier, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528346

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Date Received : Apr 07, 2025
Date Reported : Apr 18, 2025
Report Number : [illegible]

Page 1 of 1

Sampling By : Samoeen Khayyokaor [illegible]

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Scientist (4)
Approved by: Dej Changchier, Senior Manager

ภาคผนวก ค-6

คุณลักษณะน้ำเสียโรงงาน

Analysis / Test Report

TESTING No.0042

Lot ID: 2538333

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name
Project Location: WHA EIE

Date Received : May 01, 2025
Date Reported : May 09, 2025
Report Number : 3269776-3

Page 1 of 1

Sample Number 2538333-1
Sampled Date May 02, 2025 11:35 AM
Sample Description Wastewater
Location WHA EIE : Effluent_High TDS
Date Analysis Commenced May 02, 2025
Condition of Sample Contained in one amber glass bottle and three 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	12.0	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	15	49	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C	-	-	-	6.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	27.0	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 Degree C	mg/L	-	5	2000	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resources 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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,400 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Technical Management: Photchanna S. — Prodchanis Seyala, Scientist (4)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2538333

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name
Project Location: WHA EIE

Date Received : May 01, 2025
Date Reported : May 09, 2025
Report Number : 3269776-3

Page 1 of 1

Sampling By : Sanoon Khuyoon ระดับเชี่ยวชาญ 222-4-0099

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

Technical Management: Photchanna S. — Prodchanis Seyala, Scientist (4)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2552007

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name
Project Location: WHA EIE

Date Received : Jun 02, 2025
Date Reported : Jun 09, 2025
Report Number : 3316624-3

Page 1 of 1

Sample Number 2552007-1
Sampled Date Jun 02, 2025 11:45 AM
Sample Description Wastewater
Location WHA EIE : Effluent_High TDS
Date Analysis Commenced Jun 02, 2025
Condition of Sample Contained in one amber glass bottle and three 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	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	15	49	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C	-	-	-	6.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.5	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 Degree C	mg/L	-	5	2040	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resources 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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,400 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Note : BOD Guideline set by Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Technical Management: Jitsupa P. — Jitsupa Prakongsuk, Scientist (2)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2552007

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name
Project Location: WHA EIE

Date Received : Jun 02, 2025
Date Reported : Jun 09, 2025
Report Number : 3316624-3

Page 1 of 1

Sampling By : Wanlop Hunchanson ระดับเชี่ยวชาญ 222-4-0099

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P. — Jitsupa Prakongsuk, Scientist (2)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2142265

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location: WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : 3197554-3

Page 1 of 1

Sample Number 2142265-1
Sampled Date Jan 02, 2025 10:15 AM
Sample Description Wastewater
Contract ID L_EIE_001_2564 **Plot** G-66,G-70 **Site** Aditya Birla Chemicals (Thailand) Ltd. (Advanced Materials)
Date Analysis Commenced Jan 02, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.3	≤600	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	15	64	≤730	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	388	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirunit ระดับเชี่ยวชาญ 323-4-0019

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management: Chontichak — Chontiche Subongkuak, Scientist (3)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142261

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location: WHA EIE

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025
Report Number : 3197850-3

Page 1 of 1

Sample Number 2142261-1
Sampled Date Jan 07, 2025 9:35 AM
Sample Description Wastewater
Contract ID L_EIE_019_2564 **Plot** G-6X **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced Jan 07, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	10.6	≤600	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	15	96	≤730	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Eksakul Tunlong ระดับเชี่ยวชาญ 323-4-0023

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management: Photchanna S. — Prodchanis Seyala, Scientist (4)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142303

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location: WHA EIE

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025
Report Number : 3197857-3

Page 1 of 1

Sample Number 2142303-1
Sampled Date Jan 07, 2025 9:50 AM
Sample Description Wastewater
Contract ID L_EIE_002_2564 **Plot** G-15 to G-17 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced Jan 07, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.0	≤600	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	15	49	≤730	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	444	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Eksakul Tunlong ระดับเชี่ยวชาญ 323-4-0023

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

Technical Management: Photchanna S. — Prodchanis Seyala, Scientist (4)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142252

Client : WHA Utilities and Power Public Company Limited
18, Pleonrongkondhraj Road, Tambol Huayporng, Amphur Muang,Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location: WHA EIE

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025
Report Number : 3197850-3

Page 1 of 1

Sample Number 2142252-1
Sampled Date Jan 07, 2025 10:10 AM
Sample Description Wastewater
Contract ID L_EIE_014_2564 **Plot** G-35 **Site** Allnex (Thailand) Ltd.
Date Analysis Commenced Jan 07, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	86	≤600	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	15	194	≤730	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	492	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Eksakul Tunlong ระดับเชี่ยวชาญ 323-4-0023

Remark :
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Technical Management: Photchanna S. — Prodchanis Seyala, Scientist (4)
Approved by: Dej Changjohn, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142253

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142253-1
Sampled Date	Jan 06, 2025 10:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2564 Plot G-29 Site Arakawa Chemical (Thailand) Ltd.
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.3	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	41	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	440	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] ว-323-ง-0023

Remark :
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Technical Management: Chontichak — Chonticha Subangluch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142254

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142254-1
Sampled Date	Jan 02, 2025 11:24 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2564 Plot G-09 Site Asia Petroleum Thailand Co.,Ltd.
Date Analysis Commenced	Jan 02, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	<2.0	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.9	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	80	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kinorh [illegible] ว-323-ง-0019

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: Chontichak — Chonticha Subangluch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142271

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142271-1
Sampled Date	Jan 06, 2025 10:30 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2564 Plot H-37 Site Bangkok Industrial Gas Company Limited
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Yellow, some odour, no 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	<2.0	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hutchamnuay [illegible] ว-323-ง-0038

Remark :
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- 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: Chontichak — Chonticha Subangluch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142305

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142305-1
Sampled Date	Jan 07, 2025 11:25 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2564 Plot G-37 Site Cariside Chemical (Thailand) Ltd.
Location	Inspection manhole
Date Analysis Commenced	Jan 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	3.8	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	38	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	604	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] ว-323-ง-0022

Remark :
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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142302

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142302-1
Sampled Date	Jan 06, 2025 1:50 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2564 Plot G-1/1 Site E-COATINGS ASIA COMPANY LIMITED
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.8	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	48	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] ว-323-ง-0023

Remark :
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Technical Management: Chontichak — Chonticha Subangluch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142276

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142276-1
Sampled Date	Jan 07, 2025 10:35 AM
Sample Description	Wastewater
Contract ID	L_WHA_EIE_006_2563 Plot G.77, G.77/1, H.42, H.44 Site GC Polyols Company Limited
Date Analysis Commenced	Jan 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	4.9	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	39	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	328	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] ว-323-ง-0022

Remark :
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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142267

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 10, 2025
Date Reported : Jan 16, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142267-1
Sampled Date	Jan 10, 2025 10:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2551 Plot G-06A Site Global Green Chemicals Co.,Ltd.
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	3.1	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	40	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	432	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuankaeo [illegible] ว-323-ง-0000

Remark :
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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142263

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142263-1
Sampled Date	Jan 03, 2025 2:53 PM
Sample Description	Wastewater
Contract ID	L_EIE_024_2560 Plot G-7A Site Global Power Synergy Co.,Ltd.
Location	CUP-1
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.5	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	218	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kinorh [illegible] ว-323-ง-0018

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
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Technical Management: Chontichak — Chonticha Subangluch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142262

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	24142262-1
Sampled Date	Jan 03, 2025 2:11 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2551 Plot H-17 Site Global Power Synergy Co.,Ltd.
Location	CUP-3
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	1.5	25	30	≤750	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	390	≤3000	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kinorh [illegible] ว-323-ง-0018

Remark :
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Technical Management: Chontichak — Chonticha Subangluch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142266

Client : WHA Utilities and Power Public Company Limited, 18, Paholyothin Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jan 07, 2025 — Date Reported : Jan 14, 2025 — Report Number : [illegible]

Sample Number	24142266-1
Sampled Date	Jan 07, 2025 2:20 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / G-06 / HMC Polymers Co.,Ltd.
Date Analysis Commenced	Jan 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	68	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekachai Tunting

Remark :
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- "<" : 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: Photchana S. (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142292

Client : WHA Utilities and Power Public Company Limited, 18, Paholyothin Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
Project Name : Factory / Monthly — **Project Location** : WHA EIE

Date Received : Jan 06, 2025 — Date Reported : Jan 13, 2025

Sample Number	24142292-1
Sampled Date	Jan 06, 2025 2:25 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / H.52A / [illegible] Chemical (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	31	≤200	Rayong
COD	mg/L	15	25	48	≤400	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	112	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	7	≤200	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekachai Tunting

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142304

Date Received : Jan 03, 2025 — Date Reported : Jan 09, 2025

Sample Number	24142304-1
Sampled Date	Jan 03, 2025 1:49 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / G.25,G.26 / Interpretive Co.,Ltd.
Date Analysis Commenced	Jan 03, 2025
Physical Property	Colorless, odourless, no solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Rayong
COD	mg/L	15	25	<25	≤750	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Rayong
pH (on site) *		-	-	6.7	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	48	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Rayong

Sampling By : Wasan Kinorit

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142250

Date Received : Jan 06, 2025 — Date Reported : Jan 13, 2025

Sample Number	24142250-1
Sampled Date	Jan 06, 2025 10:30 AM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / G-30 / KLJ Organic (Thailand) Ltd.
Date Analysis Commenced	Jan 06, 2025
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Rayong
COD	mg/L	15	25	<25	≤750	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	80	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Rayong

Sampling By : Ekachai Tunting

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142297

Date Received : Jan 06, 2025 — Date Reported : Jan 13, 2025

Sample Number	24142297-1
Sampled Date	Jan 06, 2025 3:00 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / H.13a, H.13e, PW.27-1, H.47b / Kuraray Advanced chemicals(Thailand) Co., Ltd.
Date Analysis Commenced	Jan 06, 2025
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤260	Rayong
COD	mg/L	15	25	<25	≤400	Rayong
Oil & Grease	mg/L	-	3	<3	≤16	Rayong
pH (on site) *		-	-	6.6	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	34	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekachai Tunting

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142296

Date Received : Jan 06, 2025 — Date Reported : Jan 13, 2025

Sample Number	24142296-1
Sampled Date	Jan 06, 2025 2:50 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / PW.28, PW.31, H.47a, H.47c, H.31 / Kuraray GC Advanced Materials Co., Ltd. (North)
Date Analysis Commenced	Jan 06, 2025
Physical Property	Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	15	≤260	Rayong
COD	mg/L	15	25	32	≤400	Rayong
Oil & Grease	mg/L	-	3	<3	≤16	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	200	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Rayong

Sampling By : Ekachai Tunting

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142260

Date Received : Jan 02, 2025 — Date Reported : Jan 08, 2025

Sample Number	24142260-1
Sampled Date	Jan 02, 2025 2:13 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / G-14 / Linde (Thailand) PLC.
Date Analysis Commenced	Jan 02, 2025
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	6.5	≤500	Rayong
COD	mg/L	15	25	48	≤750	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	394	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	12	≤200	Rayong

Sampling By : Wasan Kinorit

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142272

Date Received : Jan 03, 2025 — Date Reported : Jan 09, 2025

Sample Number	24142272-1
Sampled Date	Jan 03, 2025 10:50 AM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / H-10 , H-11 / Linde (Thailand) Public Company Limited
Date Analysis Commenced	Jan 03, 2025
Physical Property	Colorless, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Rayong
COD	mg/L	15	25	39	≤750	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Rayong
pH (on site) *		-	-	6.7	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	872	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	2	≤200	Rayong

Sampling By : Wasan Kinorit

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142268

Date Received : Jan 02, 2025 — Date Reported : Jan 08, 2025

Sample Number	24142268-1
Sampled Date	Jan 02, 2025 3:44 PM
Sample Description	Wastewater
Contract ID / Plot / Site	[illegible] / G-03 / MCLS Asia Co.,Ltd.
Date Analysis Commenced	Jan 02, 2025
Physical Property	Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
BOD (5 days at 20 Degree C)	mg/L	-	2.0	11.1	≤500	Rayong
COD	mg/L	15	25	32	≤750	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	440	≤3000	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	5	≤200	Rayong

Sampling By : Wasan Kinorit

Technical Management: Chontichak (Scientist) — Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142256

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : 3107844-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142256-1
Sampled Date Jan 02, 2025 2:03 PM
Sample Description Wastewater
Contract ID L_EIE_011_2560 **Plot** G-11 **Site** [illegible] Chemical Co.,Ltd.
Date Analysis Commenced Jan 02, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	46	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirutti [illegible] ว-323-ง-0019

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: Chontichak — Chonticha Subengluoh, Scientist (I) [illegible]
Approved by: [signature] — Dej Changchier, Senior Manager [illegible]

[illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 24142240

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : 3107174-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142240-1
Sampled Date Jan 03, 2025 3:04 PM
Sample Description Wastewater
Contract ID L_EIE_025_2560 **Plot** G-41 **Site** [illegible] Co.,Ltd.
Date Analysis Commenced Jan 03, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	28	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirutti [illegible] ว-323-ง-0019

Remark :
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- "<" : 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: Chontichak — Chonticha Subengluoh, Scientist (I) [illegible]
Approved by: [signature] — Dej Changchier, Senior Manager [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 24142330

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : 3107907-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142330-1
Sampled Date Jan 02, 2025 9:47 AM
Sample Description Wastewater
Contract ID L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced Jan 02, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, 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	4.1	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	40	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirutti [illegible] ว-323-ง-0019 , Pattarapol Sawangpattam [illegible] ว-204-ง-0002

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: Chontichak — Chonticha Subengluoh, Scientist (I) [illegible]
Approved by: [signature] — Dej Changchier, Senior Manager [illegible]

Analysis / Test Report

TESTING No.0009

Lot ID: 24142330

Date Received : Jan 02, 2025
Date Reported : Jan 09, 2025
Report Number : 3107907-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142330-1
Sampled Date Jan 02, 2025 9:47 AM
Sample Description Wastewater
Contract ID L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced Jan 03, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, some solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.81	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirutti [illegible] ว-323-ง-0019 , Pattarapol Sawangpattam [illegible] ว-204-ง-0002

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: Chanatt L. — Chanattagorn Inchom, Section Head [illegible] ว-204-ง-0008
Approved by: Kanokkorn Anek, Assistant General Manager [illegible] ว-204-ง-0004

Analysis / Test Report

TESTING No.0009

Lot ID: 24142330

Date Received : Jan 02, 2025
Date Reported : Jan 09, 2025
Report Number : 3107907-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142330-1
Sampled Date Jan 02, 2025 9:47 AM
Sample Description Wastewater
Contract ID L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced Jan 03, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, 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	0.23	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirutti , Pattarapol Sawangpattam

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.

[illegible]

Approved by: Chanatt L. — Chanattagorn Inchom, Section Head

Analysis / Test Report

TESTING No.0042

Lot ID: 24142322

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3107906-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142322-1
Sampled Date Jan 06, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_020_2560 **Plot** G-56 - G-66,68 **Site** [illegible] United Steel Co.,Ltd.
Location Factory 1
Date Analysis Commenced Jan 06, 2025
Condition of Sample Contained in one amber glass bottle and four 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.4	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	31.2	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	536	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022 , Thanasoun Namsiumma [illegible] ว-204-ง-0100

Remark :
- LOD : Limit of Detection

Technical Management: Chontichak — Chonticha Subengluoh, Scientist (I) [illegible]
Approved by: [signature] — Dej Changchier, Senior Manager [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 24142322

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3107906-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 2 of 2

- "<" : 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: Chontichak — Chonticha Subengluoh, Scientist (I) [illegible]
Approved by: [signature] — Dej Changchier, Senior Manager [illegible]

Analysis / Test Report

TESTING No.0009

Lot ID: 24142322

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3107906-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142322-1
Sampled Date Jan 06, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_020_2560 **Plot** G-56 - G-66,68 **Site** [illegible] United Steel Co.,Ltd.
Location Factory 1
Date Analysis Commenced Jan 07, 2025
Condition of Sample Contained in one amber glass bottle and four 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
Metals Testing							
Iron	mg/L	0.003	0.005	1.36	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong , Thanasoun Namsiumma

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.

[illegible]

Approved by: Sawitree N — Sawitree Nonsangnan, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142326

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3107905-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142326-1
Sampled Date Jan 06, 2025 11:00 AM
Sample Description Wastewater
Contract ID L_EIE_003_2560 **Plot** G-67 **Site** [illegible] United Steel Co.,Ltd.
Location Factory 2
Date Analysis Commenced Jan 06, 2025
Condition of Sample Contained in one amber glass bottle and four 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	488	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022 , Thanasoun Namsiumma [illegible] ว-204-ง-0100

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: Chontichak — Chonticha Subengluoh, Scientist (I) [illegible]
Approved by: [signature] — Dej Changchier, Senior Manager [illegible]

Analysis / Test Report

TESTING No.0009

Lot ID: 24142326

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3197900-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142326-1
Sampled Date	Jan 06, 2025 11:00 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2556 **Plot** G-67 **Site** [illegible] United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	Jan 07, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.008	0.40	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ว-0022 , Thanasorn Namakunna ทะเบียนเลขที่ ว-204-ว-0100

Remark :
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- "<" : 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: Sawitree N. — Sawitree Noisangiam, Manager, ทะเบียนเลขที่ ว-204-ว-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ว-0004

Analysis / Test Report

TESTING No.0042

Lot ID: 24142270

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025
Report Number : 3197884-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142270-1
Sampled Date	Jan 07, 2025 3:10 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2554 **Plot** H-12 **Site** PTT Asahi Chemical Co.,Ltd.
Date Analysis Commenced	Jan 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	16	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	1164	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		4	2	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ว-0023

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.
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 24142259

Date Received : Jan 10, 2025
Date Reported : Jan 16, 2025
Report Number : 3197847-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142259-1
Sampled Date	Jan 10, 2025 10:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2554 **Plot** G-02,03 **Site** PTT Global Chemical Public Company Limited (EA Plant)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	95	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	158	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	308	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khunkhai ทะเบียนเลขที่ ว-323-ว-0005

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 24142307

Date Received : Jan 10, 2025
Date Reported : Jan 18, 2025
Report Number : 3197892-1

Client : WHA Utilities and Power Public Company Limited
65, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142307-1
Sampled Date	Jan 10, 2025 11:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2550 **Plot** G-03-004-01 **Site** PTT Global Chemical Public Company Limited (EO Plant)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	5.8	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	54	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	760	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Sansern Khunkhai ทะเบียนเลขที่ ว-323-ว-0005

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

Lot ID: 24142307

Date Received : Jan 10, 2025
Date Reported : Jan 18, 2025
Report Number : 3197892-2

Client : WHA Utilities and Power Public Company Limited
65, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142307-1
Sampled Date	Jan 10, 2025 11:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2550 **Plot** G-03-004-01 **Site** PTT Global Chemical Public Company Limited (EO Plant)
Date Analysis Commenced	Jan 14, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
Chloride as Cl	mg/L	0.5	1	204	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (B)	Rayong

Sampling By : Sansern Khunkhai

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

Approved by: Photchana S. — Photchana Seeda, Scientist (4)

Analysis / Test Report

TESTING No.0042

Lot ID: 24142315

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : 3197901-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142315-1
Sampled Date	Jan 03, 2025 11:15 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2553 **Plot** H-29 **Site** PTT Global Chemical Public Company Limited.
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in two amber glass bottles and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	83	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	98	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	4	914	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kinunb ทะเบียนเลขที่ ว-323-ว-0019

Remark :
- LOD : Limit of Detection
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Technical Management: Chontichak — Chonticha Suberngkoch, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0031
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 24142315

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : 3197901-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
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Technical Management: Chontichak — Chonticha Suberngkoch, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0031
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 24142291

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3197889-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142291-1
Sampled Date	Jan 06, 2025 10:15 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2552 **Plot** H-20-21 **Site** PTT Global Chemical Public Company Limited
Location	Station - 1 (Admin)
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	84	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	148	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ว-0022

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

Technical Management: Chontichak — Chonticha Suberngkoch, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0031
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 24142319

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3197902-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	24142319-1
Sampled Date	Jan 06, 2025 10:00 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2552 **Plot** H-20-21 **Site** PTT Global Chemical Public Company Limited
Location	Station - 2 (Factory)
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	11	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site)				7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1744	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ว-0022

Technical Management: Chontichak — Chonticha Suberngkoch, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0031
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 24142319

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : [illegible]

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 Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142290

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : [illegible]

Sample Number	24142290-1
Sampled Date	Jan 06, 2025 9:30 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2553 **Plot** H-23A,H-T1 **Site** PTT Global Chemical Public Company Limited
Location	Ex - Phenol A
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	48	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] ร-325-ร-0022

Remark :
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- "<" : 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 Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142295

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : [illegible]

Sample Number	24142295-1
Sampled Date	Jan 03, 2025 10:31 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_004_2563 **Plot** H-13/1 **Site** Quechen Silica (Thailand) Co.,Ltd.
Location	Domestic wastewater
Date Analysis Commenced	Jan 03, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	35.2	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	67	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	138	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Appendix)
Sampling By : Wasan Kirunti [illegible] ร-325-ร-0019

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 Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142264

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : [illegible]

Sample Number	24142264-1
Sampled Date	Jan 02, 2025 10:00 AM
Sample Description	Wastewater
Contract ID	L_EIE_005_2560 **Plot** G-7/1 **Site** Rockwool (Thailand) Limited
Date Analysis Commenced	Jan 02, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	86	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	407	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	430	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirunti [illegible] ร-325-ร-0019

Remark :
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- "<" : 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 Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142333

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : [illegible]

Sample Number	24142333-1
Sampled Date	Jan 02, 2025 3:19 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 1
Date Analysis Commenced	Jan 02, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	27	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	31.4	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	272	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirunti [illegible] ร-325-ร-0019

Remark :
- LOD : Limit of Detection

Technical Management Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142333

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025
Report Number : [illegible]

- "<" : 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 Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142342

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 20, 2025
Report Number : [illegible]

Sample Number	24142342-1
Sampled Date	Jan 02, 2025 3:25 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 2
Date Analysis Commenced	Jan 02, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	-	2.0	17	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	77	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 C	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Wasan Kirunti [illegible] ร-325-ร-0019

Technical Management Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142342

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 02, 2025
Date Reported : Jan 20, 2025
Report Number : [illegible]

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.
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Technical Management Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142340

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : [illegible]

Sample Number	24142340-1
Sampled Date	Jan 06, 2025 2:10 PM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** H-45 **Site** SEKISUI SPECIALTY CHEMICALS (THAILAND) CO.,LTD
Date Analysis Commenced	Jan 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	30.5	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] ร-325-ร-0022

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

Technical Management Chontichak — Chonticha Subongkoch, Scientist (1)
Approved by — Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 24142340

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

- 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: Chontichak — Chontichak Subongkoch, Scientist (3)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142255

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142255-1
Sampled Date Jan 02, 2025 1:47 PM
Sample Description Wastewater
Contract ID L_EIE_013_2560 **Plot** G-10 **Site** Siam Stabilizers & Chemicals Co.,Ltd.
Date Analysis Commenced Jan 02, 2025
Condition of Sample Contained in one amber glass bottle and three 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	6.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	58	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	448	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	25	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirunti

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
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Technical Management: Chontichak — Chontichak Subongkoch, Scientist (3)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142274

Date Received : Jan 07, 2025
Date Reported : Jan 14, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142274-1
Sampled Date Jan 07, 2025 10:20 AM
Sample Description Wastewater
Contract ID L_EIE_001_2561 **Plot** G-34/1 **Site** Solvay (Thailand) Limited
Date Analysis Commenced Jan 07, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	6	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	488	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumrong

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: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142311

Date Received : Jan 10, 2025
Date Reported : Jan 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142311-1
Sampled Date Jan 10, 2025 10:10 AM
Sample Description Wastewater
Contract ID L_EIE_026_2560 **Plot** G-05 **Site** Thai Ethoxylate Co.,Ltd.
Date Analysis Commenced Jan 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	3.9	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	3	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	34	≤2000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Somporn Khonyokaur

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142311

Date Received : Jan 10, 2025
Date Reported : Jan 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

- 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: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142269

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142269-1
Sampled Date Jan 06, 2025 3:35 PM
Sample Description Wastewater
Contract ID L_EIE_016_2560 **Plot** G-51 **Site** Thai Fei Resin Co.,Ltd.
Location Station - 1
Date Analysis Commenced Jan 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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	3.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	18	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	876	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumrong

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: Chontichak — Chontichak Subongkoch, Scientist (3)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142314

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142314-1
Sampled Date Jan 02, 2025 2:56 PM
Sample Description Wastewater
Contract ID L_EIE_021_2560 **Plot** G-04 **Site** Vanachai Chemical Industries Co.,Ltd.
Date Analysis Commenced Jan 02, 2025
Condition of Sample Contained in two amber glass bottles and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	40	≤2000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirunti

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

Technical Management: Chontichak — Chontichak Subongkoch, Scientist (3)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142314

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

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Technical Management: Chontichak — Chontichak Subongkoch, Scientist (3)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142273

Date Received : Jan 02, 2025
Date Reported : Jan 08, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142273-1
Sampled Date Jan 02, 2025 10:35 AM
Sample Description Wastewater
Contract ID L_EIE_004_2558 **Plot** G-18 G-19 P-7 **Site** Vencorex (Thailand) Co.,Ltd.
Date Analysis Commenced Jan 02, 2025
Condition of Sample Contained in one amber glass bottle and three 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	5.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	48	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	480	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wasan Kirunti

Remark :
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Technical Management: Chontichak — Chontichak Subongkoch, Scientist (3)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142282

Date Received : Jan 06, 2025
Date Reported : Jan 13, 2025
Report Number : 3197839-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142282-1
Sampled Date Jan 06, 2025 1:55 PM
Sample Description Wastewater
Contract ID L_EIE_022_2560 **Plot** G-01 **Site** Zeon Chemical (Thailand) Co.,Ltd.
Date Analysis Commenced Jan 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	8	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	1	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	260	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<3	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong [illegible] ว-323-ง-0023

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Technical Management: Chonticha Subongkoch, Scientist (3) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 24142294

Date Received : Jan 03, 2025
Date Reported : Jan 09, 2025
Report Number : 3197882-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 24142294-1
Sampled Date Jan 03, 2025 9:40 AM
Sample Description Wastewater
Contract ID L_WHA EIE_001_2563 **Plot** H-49 **Site** Zeon Chemicals Asia Co.,Ltd.
Date Analysis Commenced Jan 03, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	25	8	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	460	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Wasan Kinurit [illegible] ว-323-ง-0019

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Technical Management: Chonticha Subongkoch, Scientist (3) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258945

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222880-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258945-1
Sampled Date Feb 04, 2025 8:50 AM
Sample Description Wastewater
Contract ID L_EIE_001_2560 **Plot** G-69,G-70 **Site** Aditya Birla Chemicals (Thailand) Ltd. (Advanced Materials)
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	14.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	82	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	1	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	472	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansaen Khunkhao [illegible] ว-323-ง-0005

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Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258941

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3222574-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258941-1
Sampled Date Feb 06, 2025 10:50 AM
Sample Description Wastewater
Contract ID L_EIE_019_2560 **Plot** G-08 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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	14.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	94	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	440	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<4	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansaen Khunkhao [illegible] ว-323-ง-0005

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Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258969

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3223027-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258969-1
Sampled Date Feb 06, 2025 10:35 AM
Sample Description Wastewater
Contract ID L_EIE_002_2560 **Plot** G-15 to G-17 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, 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	13	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	42	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	128	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	4	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansaen Khunkhao [illegible] ว-323-ง-0005

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Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258933

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3222944-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258933-1
Sampled Date Feb 05, 2025 3:20 PM
Sample Description Wastewater
Contract ID L_EIE_014_2560 **Plot** G-35 **Site** [illegible] (Thailand) Ltd.
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	10.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	50	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	416	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	6	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansaen Khunkhao [illegible] ว-323-ง-0005

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Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258934

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222565-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258934-1
Sampled Date Feb 04, 2025 10:15 AM
Sample Description Wastewater
Contract ID L_EIE_001_2560 **Plot** G-29 **Site** Arakawa Chemical (Thailand) Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	15.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	30	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	400	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansaen Khunkhao [illegible] ว-323-ง-0005

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Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258935

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222566-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258935-1
Sampled Date Feb 04, 2025 1:55 PM
Sample Description Wastewater
Contract ID L_EIE_002_2560 **Plot** G-09 **Site** Asia Petroleum Thailand Co.,Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	78	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansaen Khunkhao [illegible] ว-323-ง-0005

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.

Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258951

Date Received : Feb 03, 2025
Date Reported : Feb 10, 2025
Report Number : 3222992-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258951-1
Sampled Date Feb 03, 2025 10:15 AM
Sample Description Wastewater
Contract ID L_EIE_002_2560 **Plot** H-37 **Site** Bangkok Industrial Gas Company Limited
Date Analysis Commenced Feb 03, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	120	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hunchanlaw [illegible] ว-323-ง-0038

Remark :
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Technical Management: Photchana Seeda, Scientist (4) — Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258971

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3222994-1

Page 1 of 1

Sample Number	258971-1
Sampled Date	Feb 07, 2025 10:25 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2560 **Plot** G-37 **Site** [illegible] Chemical (Thailand) Ltd.
Location	Inspection manhole
Date Analysis Commenced	Feb 07, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Colorless, a lot of odour, 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	2.9	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	31	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				6.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	148	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

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Technical Management: Thanitak. — Thanida Kulsumwong, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258968

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223026-1

Page 1 of 1

Sample Number	258968-1
Sampled Date	Feb 04, 2025 1:46 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 **Plot** G-1/1 **Site** E-COATINGS ASIA COMPANY LIMITED
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	1.8	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	49	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	452	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258947

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3222687-1

Page 1 of 1

Sample Number	258947-1
Sampled Date	Feb 06, 2025 11:10 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2551 **Plot** G-06A **Site** Global Green Chemicals Co., Ltd.
Date Analysis Commenced	Feb 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	3.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	688	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

Remark :
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Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258943

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3222578-1

Page 1 of 1

Sample Number	258943-1
Sampled Date	Feb 07, 2025 2:40 PM
Sample Description	Wastewater
Contract ID	L_EIE_024_2560 **Plot** G-7N **Site** Global Power Synergy Co., Ltd.
Location	CUP - 1
Date Analysis Commenced	Feb 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	124	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

Remark :
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Technical Management: Thanitak. — Thanida Kulsumwong, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258942

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3222577-1

Page 1 of 1

Sample Number	258942-1
Sampled Date	Feb 07, 2025 2:19 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2551 **Plot** H-17 **Site** Global Power Synergy Co., Ltd.
Location	CUP - 3
Date Analysis Commenced	Feb 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	15	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	33	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	204	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

Remark :
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Technical Management: Thanitak. — Thanida Kulsumwong, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258946

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3222583-1

Page 1 of 1

Sample Number	258946-1
Sampled Date	Feb 07, 2025 1:46 PM
Sample Description	Wastewater
Contract ID	L_EIE_003_2551 **Plot** G-06 **Site** HMC Polymers Co., Ltd.
Date Analysis Commenced	Feb 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	316	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

Remark :
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Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025

Technical Management: Thanitak. — Thanida Kulsumwong, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258961

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3222998-1

Page 1 of 1

Sample Number	258961-1
Sampled Date	Feb 05, 2025 10:32 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2561 **Plot** H-32A **Site** [illegible] Chemical (Thailand) Co., Ltd.
Date Analysis Commenced	Feb 05, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Sanseen Khuyotkiao [illegible]

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258970

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3224033-1

Page 1 of 1

Sample Number	258970-1
Sampled Date	Feb 04, 2025 10:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2567 **Plot** G-25,G-26 **Site** Interpretive Co.,Ltd.
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	72	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258931

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222557-1

Page 1 of 1

Sample Number	258931-1
Sampled Date	Feb 04, 2025 10:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_005_2552 **Plot** G-30 **Site** KLJ Organic (Thailand) Ltd.
Date Analysis Commenced	Feb 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	140	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyotkiao [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible]
Approved by: Dej Changchien, Senior Manager, [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258965

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3223025-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258965-1
Sampled Date : Feb 06, 2025 3:25 PM
Sample Description : Wastewater
Contract ID : L_EIE_002_2565 **Plot** H.13a, H.13e, PW.2*-1, H.47b **Site** Kuraray Advanced chemicals(Thailand) Co., Ltd.
Date Analysis Commenced : Feb 06, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	8.4	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	25	42	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Sanaen Khuyoksi

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

Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258964

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3223025-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258964-1
Sampled Date : Feb 06, 2025 3:35 PM
Sample Description : Wastewater
Contract ID : L_EIE_001_2565 **Plot** PW.28, PW.31, H.47a, H.47c, H.31 **Site** Kuraray GC Advanced Materials Co., Ltd. (North)
Date Analysis Commenced : Feb 06, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	6.7	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	25	34	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	432	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Sanaen Khuyoksi

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Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258940

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222575-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258940-1
Sampled Date : Feb 04, 2025 2:30 PM
Sample Description : Wastewater
Contract ID : L_EIE_015_2560 **Plot** G-14 **Site** Linde (Thailand) PLC.
Date Analysis Commenced : Feb 04, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	18.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	83	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	184	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	14	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi

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Analysis / Test Report

TESTING No.0042

Lot ID: 258952

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3222993-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258952-1
Sampled Date : Feb 05, 2025 2:15 PM
Sample Description : Wastewater
Contract ID : L_EIE_004_2554 **Plot** H-10, H-11 **Site** Linde (Thailand) Public Company Limited
Date Analysis Commenced : Feb 05, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	41	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	180	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi

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Analysis / Test Report

TESTING No.0042

Lot ID: 258932

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222660-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258932-1
Sampled Date : Feb 04, 2025 10:40 AM
Sample Description : Wastewater
Contract ID : L_EIE_002_2551 **Plot** G-21 **Site** MARC (Thailand) Co.,Ltd.
Date Analysis Commenced : Feb 04, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	11.6	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	138	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	480	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	28	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi

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Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258948

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3222987-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

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Sample Number : 258948-1
Sampled Date : Feb 05, 2025 11:26 AM
Sample Description : Wastewater
Contract ID : L_EIE_010_2560 **Plot** G-03 **Site** MCLS Asia Co.,Ltd.
Date Analysis Commenced : Feb 05, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	37	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	97	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	640	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	18	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi

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Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258937

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222970-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258937-1
Sampled Date : Feb 04, 2025 2:15 PM
Sample Description : Wastewater
Contract ID : L_EIE_011_2560 **Plot** G-12 **Site** Hexcentz Chemical Co.,Ltd.
Date Analysis Commenced : Feb 04, 2025
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property : Colorless, 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	9.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	68	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi

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Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258930

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222556-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258930-1
Sampled Date : Feb 04, 2025 3:30 PM
Sample Description : Wastewater
Contract ID : L_EIE_025_2560 **Plot** G-43 **Site** MSD Production Co.,Ltd.
Date Analysis Commenced : Feb 04, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	168	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi

Remark :
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Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 258982

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223019-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 258982-1
Sampled Date : Feb 04, 2025 8:40 AM
Sample Description : Wastewater
Contract ID : L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced : Feb 04, 2025
Condition of Sample : Contained in one amber glass bottle and four 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	8.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	3.5	15	41	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	324	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanaen Khuyoksi, Thanasorn Natsuksiri

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.

Technical Management: Photchana S. — Phatchana Seuda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

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Analysis / Test Report

TESTING No.0009

Lot ID: 258982

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223019-2

Page 1 of 1

Sample Number 258982-1
Sampled Date Feb 04, 2025 8:40 AM
Sample Description Wastewater
Contract ID L_EIE_003_2554 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	0.02	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3120 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005 , Thanasoun Namakuma ทะเบียนเลขที่ ว-204-ง-0101

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

Technical Management: Chanatt L. — Chanattagarn Inchom, Section Head, ทะเบียนเลขที่ ว-204-ง-0008
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 258982

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223019-3

Page 1 of 1

Sample Number 258982-1
Sampled Date Feb 04, 2025 8:40 AM
Sample Description Wastewater
Contract ID L_EIE_003_2554 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and four 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	.72	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3120 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui , Thanasoun Namakuma

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025

Approved by: Chanatt L. — Chanattagarn Inchom, Section Head

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 258979

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3223017-1

Page 1 of 1

Sample Number 258979-1
Sampled Date Feb 07, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_020_2554 **Plot** G-56 - G-66,68 **Site** Gi-Gam United Steel Co.,Ltd.
Location Factory 1
Date Analysis Commenced Feb 07, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Yellow, some odour, a lot of 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	16.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			22.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	460	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 258979

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3223017-1

Page 1 of 1

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0009

Lot ID: 258979

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3223017-2

Page 1 of 1

Sample Number 258979-1
Sampled Date Feb 07, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_020_2554 **Plot** G-56 - G-66,68 **Site** Gi-Gam United Steel Co.,Ltd.
Location Factory 1
Date Analysis Commenced Feb 10, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	.39	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3120 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-308-ง-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 258983

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3223018-1

Page 1 of 1

Sample Number 258983-1
Sampled Date Feb 07, 2025 11:00 AM
Sample Description Wastewater
Contract ID L_EIE_003_2554 **Plot** G-67 **Site** Gi-Gam United Steel Co.,Ltd.
Location Factory 2
Date Analysis Commenced Feb 07, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	444	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005 , Samart Khumphlee ทะเบียนเลขที่ ว-204-ง-0084

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

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Analysis / Test Report

TESTING No.0009

Lot ID: 258983

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 07, 2025
Date Reported : Feb 15, 2025
Report Number : 3223018-2

Page 1 of 1

Sample Number 258983-1
Sampled Date Feb 07, 2025 11:00 AM
Sample Description Wastewater
Contract ID L_EIE_003_2554 **Plot** G-67 **Site** Gi-Gam United Steel Co.,Ltd.
Location Factory 2
Date Analysis Commenced Feb 10, 2025
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Colorless, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.54	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3120 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005 , Samart Khumphlee ทะเบียนเลขที่ ว-204-ง-0084

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-308-ง-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

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Analysis / Test Report

TESTING No.0042

Lot ID: 258950

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3222990-1

Page 1 of 1

Sample Number 258950-1
Sampled Date Feb 06, 2025 3:46 PM
Sample Description Wastewater
Contract ID L_EIE_002_2554 **Plot** H-12 **Site** PTT Asahi Chemical Co.,Ltd.
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	544	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 258939

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3222972-1

Page 1 of 1

Sample Number 258939-1
Sampled Date Feb 06, 2025 2:35 PM
Sample Description Wastewater
Contract ID L_EIE_003_2554 **Plot** G-02,03 **Site** PTT Global Chemical Public Company Limited (EA Plant)
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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	93	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	272	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuiyoksui ทะเบียนเลขที่ ว-323-ง-0005

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 258972

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258972-1
Sampled Date Feb 06, 2025 2:05 PM
Sample Description Wastewater
Contract ID [illegible] **Plot** [illegible] **Site** PTT Global Chemical Public Company Limited. (EO Plant)
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	10.9	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	58	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	672	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Sansoen Khuiyoksu ทะเบียนเลขที่ ว-323-ห-0005

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

Lot ID: 258972

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : [illegible]-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258972-1
Sampled Date Feb 06, 2025 2:05 PM
Sample Description Wastewater
Contract ID [illegible] **Plot** [illegible] **Site** PTT Global Chemical Public Company Limited. (EO Plant)
Date Analysis Commenced Feb 10, 2025
Condition of Sample Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
Chloride as Cl	mg/L	0.5	1	176	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (B)	Rayong

Sampling By : Sansoen Khuiyoksu

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

Approved by: Photchana S. — Photchana Seeda, Scientist (4)

Analysis / Test Report

TESTING No.0042

Lot ID: 258975

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258975-1
Sampled Date Feb 04, 2025 2:15 PM
Sample Description Wastewater
Contract ID L_EIE_001_2551 **Plot** H-29 **Site** PTT Global Chemical Public Company Limited.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in two amber glass bottles and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	86	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	443	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	372	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	94	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksu ทะเบียนเลขที่ ว-323-ห-0005

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258975

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258955

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258955-1
Sampled Date Feb 04, 2025 11:30 AM
Sample Description Wastewater
Contract ID L_WHA EIE_002_2553 **Plot** G.18/1, G.20/1, H.28/1, H.34/1, PW18/1, PW.20, PW.27 **Site** PTT Global Chemical Public Company Limited
Location จุดที่ 1
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Yellow, some odour, a lot of 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	16.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	81	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	13	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	378	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	34	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksu ทะเบียนเลขที่ ว-323-ห-0005

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258955

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2512360

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2512360-1
Sampled Date Feb 06, 2025 10:05 AM
Sample Description Wastewater
Contract ID L_WHA EIE_002_2553 **Plot** G.18/1, G.20/1, H.28/1, H.34/1, PW18/1, PW.20, PW.27 **Site** PTT Global Chemical Public Company Limited
Location จุดที่ 2
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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	4.5	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	41	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	13	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	4172	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guidelines : 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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Sansoen Khuiyoksu ทะเบียนเลขที่ ว-323-ห-0005

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2512360

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258960

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : [illegible]-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258960-1
Sampled Date Feb 06, 2025 8:50 AM
Sample Description Wastewater
Contract ID L_EIE_001_2552 **Plot** H-28-22 **Site** PTT Global Chemical Public Company Limited
Location Station - 1 (Admin)
Date Analysis Commenced Feb 06, 2025
Condition of Sample Contained in one amber glass bottle and three 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	12.1	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	67	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	312	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksu ทะเบียนเลขที่ ว-323-ห-0005

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ห-0029
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ห-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258977

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3223016-1

Page 1 of 2

Sample Number	258977-1
Sampled Date	Feb 06, 2025 9:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2552 **Plot** H-20-21 **Site** PTT Global Chemical Public Company Limited
Location	Station - 2 (Factory)
Date Analysis Commenced	Feb 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	18	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	46	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1950	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Sarawon Khuyoksui [illegible]

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258977

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3223016-1

Page 2 of 2

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258959

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 06, 2025
Date Reported : Feb 14, 2025
Report Number : 3222581-1

Page 1 of 1

Sample Number	258959-1
Sampled Date	Feb 06, 2025 9:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2553 **Plot** H-23A,H-31 **Site** PTT Global Chemical Public Company Limited
Location	Ex - Phenol A
Date Analysis Commenced	Feb 06, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	544	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarawon Khuyoksui [illegible]

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258963

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3223006-1

Page 1 of 1

Sample Number	258963-1
Sampled Date	Feb 05, 2025 11:10 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_004_2563 **Plot** H-33/1 **Site** Quechen Silica (Thailand) Co.,Ltd.
Location	Domestic wastewater
Date Analysis Commenced	Feb 05, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	43	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	220	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Sarawon Khuyoksui [illegible]

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258944

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3222579-1

Page 1 of 1

Sample Number	258944-1
Sampled Date	Feb 05, 2025 8:58 AM
Sample Description	Wastewater
Contract ID	L_EIE_005_2564 **Plot** G-7/1 **Site** Rockwool (Thailand) Limited
Date Analysis Commenced	Feb 05, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	88	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	146	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	6	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	880	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarawon Khuyoksui [illegible]

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258984

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3223020-1

Page 1 of 2

Sample Number	258984-1
Sampled Date	Feb 05, 2025 2:00 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 1
Date Analysis Commenced	Feb 05, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	5.6	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	52	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	28.6	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	484	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarawon Khuyoksui [illegible]

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258984

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3223020-1

Page 2 of 2

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258987

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 17, 2025
Report Number : 3223021-1

Page 1 of 2

Sample Number	258987-1
Sampled Date	Feb 05, 2025 2:10 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 2
Date Analysis Commenced	Feb 05, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	76	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 C	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			28.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	4400	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Sarawon Khuyoksui [illegible]

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 258987

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Feb 05, 2025
Date Reported : Feb 17, 2025
Report Number : 3223021-1

Page 2 of 2

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4) [illegible]
Approved by: Dej Changchier, Senior Manager [illegible]

Results apply to the sample(s) as submitted. [illegible]

Analysis / Test Report

TESTING
No.0042

Lot ID: 258985
Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3223022-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258985-1
Sampled Date Feb 05, 2025 10:10 AM
Sample Description Wastewater
Contract ID L_EIE_003_2560 **Plot** H-45 **Site** SEKISUI SPECIALTY CHEMICALS (THAILAND) CO.,LTD.
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and three 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	6.7	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	8	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	28.7	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	592	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	2	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyokaur [illegible] 1-323-4-0005

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

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258985
Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3223022-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258936
Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222999-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258936-1
Sampled Date Feb 04, 2025 2:20 PM
Sample Description Wastewater
Contract ID L_EIE_013_2560 **Plot** G-10 **Site** Siam Stabilizers & Chemicals Co.,Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	17.4	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	68	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyokaur [illegible] 1-323-4-0005

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

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258954
Date Received : Feb 05, 2025
Date Reported : Feb 13, 2025
Report Number : 3222997-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258954-1
Sampled Date Feb 05, 2025 3:25 PM
Sample Description Wastewater
Contract ID L_EIE_001_2561 **Plot** G-34/1 **Site** Solvay (Thailand) Limited
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and three 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	8.1	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	70	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	464	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyokaur [illegible] 1-323-4-0005

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Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258973
Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223001-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258973-1
Sampled Date Feb 04, 2025 2:53 PM
Sample Description Wastewater
Contract ID L_EIE_026_2560 **Plot** G-05 **Site** The Ekkoyont Co.,Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	46.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	32	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	482	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyokaur [illegible] 1-323-4-0005

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

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258973
Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223001-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258949
Date Received : Feb 05, 2025
Date Reported : Feb 11, 2025
Report Number : 3222989-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258949-1
Sampled Date Feb 05, 2025 3:00 PM
Sample Description Wastewater
Contract ID L_EIE_016_2560 **Plot** G-51 **Site** Thai Fat Kaset Co.,Ltd.
Location Station - 1
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	7.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	96	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2060	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyokaur [illegible] 1-323-4-0005

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258974
Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223014-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258974-1
Sampled Date Feb 04, 2025 2:40 PM
Sample Description Wastewater
Contract ID L_EIE_021_2560 **Plot** G-04 **Site** Vanachai Chemical Industries Co.,Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in two amber glass bottles and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	456	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyokaur [illegible] 1-323-4-0005

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

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING
No.0042

Lot ID: 258974
Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3223014-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seela, Scientist (4), [illegible] 1-323-4-0028
Approved by: [signature] — Dej Changchin, Senior Manager, [illegible] 1-323-4-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258953

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222996-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258953-1
Sampled Date Feb 04, 2025 10:25 AM
Sample Description Wastewater
Contract ID L_EIE_004_2558 **Plot** G.18 G.19 P.7 **Site** Vencorex (Thailand) Co.,Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	9.1	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	75	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	480	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samsen Khuyakaur [illegible] ว-323-ผ-0005

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.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ผ-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258958

Date Received : Feb 04, 2025
Date Reported : Feb 11, 2025
Report Number : 3222962-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258958-1
Sampled Date Feb 04, 2025 1:40 PM
Sample Description Wastewater
Contract ID L_EIE_022_2560 **Plot** G-01 **Site** Zeon Chemical (Thailand) Co.,Ltd.
Date Analysis Commenced Feb 04, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, 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	5.6	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	49	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1006	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	2	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samsen Khuyakaur [illegible] ว-323-ผ-0005

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ผ-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 258962

Date Received : Feb 05, 2025
Date Reported : Feb 13, 2025
Report Number : 3223002-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 258962-1
Sampled Date Feb 05, 2025 2:40 PM
Sample Description Wastewater
Contract ID L_WHA EIE_001_2553 **Plot** H-49 **Site** Zeon Chemicals Asia Co.,Ltd.
Date Analysis Commenced Feb 05, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤250	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	31	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	532	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Samsen Khuyakaur [illegible] ว-323-ผ-0005

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ผ-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518656

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244076-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518656-1
Sampled Date Mar 10, 2025 9:35 AM
Sample Description Wastewater
Contract ID L_EIE_001_2566 **Plot** G-69,G-70 **Site** Aditya Birla Chemicals (Thailand) Ltd. (Advanced Materials)
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	156	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	404	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	528	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonting [illegible] ว-323-ผ-0023

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chontichа Subongkoch, Scientist (3), [illegible] ว-323-ผ-0031
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518652

Date Received : Mar 12, 2025
Date Reported : Mar 18, 2025
Report Number : 3244074-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518652-1
Sampled Date Mar 12, 2025 2:00 PM
Sample Description Wastewater
Contract ID L_EIE_019_2566 **Plot** G-08 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced Mar 12, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	15	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	133	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	332	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonting [illegible] ว-323-ผ-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ผ-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518684

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3244189-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518684-1
Sampled Date Mar 12, 2025 2:15 PM
Sample Description Wastewater
Contract ID L_EIE_002_2566 **Plot** G-15 to G-17 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced Mar 12, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	3.3	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	46	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	358	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonting [illegible] ว-323-ผ-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ผ-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518644

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244065-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518644-1
Sampled Date Mar 10, 2025 10:20 AM
Sample Description Wastewater
Contract ID L_EIE_014_2566 **Plot** G-35 **Site** [illegible] (Thailand) Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	44	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	133	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	472	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonting [illegible] ว-323-ผ-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chontichа Subongkoch, Scientist (3), [illegible] ว-323-ผ-0031
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518645

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244063-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518645-1
Sampled Date Mar 10, 2025 10:50 AM
Sample Description Wastewater
Contract ID L_EIE_001_2560 **Plot** G-29 **Site** Arakawa Chemical (Thailand) Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	31.5	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	48	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	464	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonting [illegible] ว-323-ผ-0023

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chontichа Subongkoch, Scientist (3), [illegible] ว-323-ผ-0031
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518646

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244066-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518646-1
Sampled Date Mar 10, 2025 2:00 PM
Sample Description Wastewater
Contract ID L_EIE_002_2560 **Plot** G-09 **Site** Asia Petroleum Thailand Co.,Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500-O G	Rayong
COD	mg/L	15	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H+ B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	92	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonting [illegible] ว-323-ผ-0023

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chontichа Subongkoch, Scientist (3), [illegible] ว-323-ผ-0031
Approved by: Dej Changchier, Senior Manager, [illegible] ว-325-ผ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518662

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 03, 2025
Date Reported : Mar 10, 2025
Report Number : 3344052-3

Page 1 of 1

Sample Number	2518662-1
Sampled Date	Mar 03, 2025 11:00 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2556 Plot H-37 Site Bangkok Industrial Gas Company Limited
Date Analysis Commenced	Mar 03, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	45	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	476	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wantop Hutchamsow [illegible] ว-323-ง-0038

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chonticha Suberngkloch, Scientist (3), [illegible] ว-323-ง-0031
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518686

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 13, 2025
Date Reported : Mar 19, 2025
Report Number : 3344095-3

Page 1 of 1

Sample Number	2518686-1
Sampled Date	Mar 13, 2025 10:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2560 Plot G-37 Site Carlsile Chemical (Thailand) Ltd.
Location	Inspection manhole
Date Analysis Commenced	Mar 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	468	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong [illegible] ว-323-ง-0022

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518683

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3344138-3

Page 1 of 1

Sample Number	2518683-1
Sampled Date	Mar 10, 2025 1:45 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 Plot G-1/1 Site E-COATINGS ASIA COMPANY LIMITED
Date Analysis Commenced	Mar 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.8	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	400	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0023

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chonticha Suberngkloch, Scientist (3), [illegible] ว-323-ง-0031
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518667

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3344120-3

Page 1 of 1

Sample Number	2518667-1
Sampled Date	Mar 12, 2025 10:25 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_006_2563 Plot G.77, G.77/1, H.42, H.44 Site GC Polyols Company Limited
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	4.5	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	492	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	7	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong [illegible] ว-323-ง-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518658

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3344033-3

Page 1 of 1

Sample Number	2518658-1
Sampled Date	Mar 12, 2025 2:50 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2561 Plot G-06A Site Global Green Chemicals Co.,Ltd.
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.8	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	44	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	476	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518654

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 13, 2025
Date Reported : Mar 19, 2025
Report Number : 3344076-3

Page 1 of 1

Sample Number	2518654-1
Sampled Date	Mar 13, 2025 11:15 AM
Sample Description	Wastewater
Contract ID	L_EIE_024_2560 Plot G-7R Site Global Power Synergy Co.,Ltd.
Location	CUP - 1
Date Analysis Commenced	Mar 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong [illegible] ว-323-ง-0022

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518653

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3344078-3

Page 1 of 1

Sample Number	2518653-1
Sampled Date	Mar 12, 2025 3:25 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2551 Plot H-17 Site Global Power Synergy Co.,Ltd.
Location	CUP - 3
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	18	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	28	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	160	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong [illegible] ว-323-ง-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518657

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 13, 2025
Date Reported : Mar 19, 2025
Report Number : 3344032-3

Page 1 of 1

Sample Number	2518657-1
Sampled Date	Mar 13, 2025 1:50 PM
Sample Description	Wastewater
Contract ID	L_EIE_003_2553 Plot G-06 Site HMC Polymers Co.,Ltd.
Date Analysis Commenced	Mar 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	128	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0023

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518675

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3344150-3

Page 1 of 1

Sample Number	2518675-1
Sampled Date	Mar 11, 2025 10:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2561 Plot H-32A Site Dairen Chemical (Thailand) Co., Ltd.
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	460	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0023

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518685

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3344150-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518685-1
Sampled Date Mar 10, 2025 11:20 AM
Sample Description Wastewater
Contract ID L_EIE_001_2567 **Plot** G-25,G-26 **Site** Interpretive Co.,Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	60	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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Technical Management: Chontichak — Chonticha Subongkosh, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518642

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3344058-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518642-1
Sampled Date Mar 10, 2025 10:40 AM
Sample Description Wastewater
Contract ID L_EIE_005_2552 **Plot** G-30 **Site** KLJ Organic (Thailand) Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	58	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chonticha Subongkosh, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518679

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3344157-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518679-1
Sampled Date Mar 12, 2025 11:20 AM
Sample Description Wastewater
Contract ID L_EIE_002_2565 **Plot** H.13a, H.13e, PW.2*-1, H.47b **Site** Kuraray Advanced chemicals(Thailand) Co., Ltd.
Date Analysis Commenced Mar 12, 2025
Condition of Sample Contained in one amber glass bottle and three 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	8.6	≤260	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	5.5	25	40	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	13	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-325-ว-0022

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518678

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3344144-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518678-1
Sampled Date Mar 12, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_001_2565 **Plot** PW.28, PW.31, H.47a, H.47c, H.31 **Site** Kuraray GC Advanced Materials Co., Ltd. (North)
Date Analysis Commenced Mar 12, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	4.1	≤260	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	5.5	25	32	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		9	440	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-325-ว-0022

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518651

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3344073-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518651-1
Sampled Date Mar 10, 2025 2:35 PM
Sample Description Wastewater
Contract ID L_EIE_015_2560 **Plot** G-14 **Site** Linde (Thailand) PLC.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	16.5	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	80	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	7	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	416	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	41	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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Technical Management: Chontichak — Chonticha Subongkosh, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518663

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3344084-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518663-1
Sampled Date Mar 11, 2025 10:55 AM
Sample Description Wastewater
Contract ID L_EIE_004_2556 **Plot** H-10, H-11 **Site** Linde (Thailand) Public Company Limited
Date Analysis Commenced Mar 11, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	48	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		9	892	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518643

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3344060-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518643-1
Sampled Date Mar 10, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_002_2551 **Plot** G-23 **Site** HARC (Thailand) Co.,Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	10.8	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	73	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	364	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	6	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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Technical Management: Chontichak — Chonticha Subongkosh, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518659

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3344084-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518659-1
Sampled Date Mar 11, 2025 3:15 PM
Sample Description Wastewater
Contract ID L_EIE_010_2560 **Plot** G-03 **Site** MCLS Asia Co.,Ltd.
Date Analysis Commenced Mar 11, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	25	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	118	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	628	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	13	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0028
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518648

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3344069-1

Client : WHA Utilities and Power Public Company Limited
18, Paisonsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2518648-1
Sampled Date Mar 10, 2025 2:25 PM
Sample Description Wastewater
Contract ID L_EIE_011_2560 **Plot** G-11 **Site** Hexamia Chemical Co.,Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	1	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	1	9	44	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ทะเบียนเลขที่ ว-323-ว-0023

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Technical Management: Chontichak — Chonticha Subongkosh, Scientist (3), ทะเบียนเลขที่ ว-323-ว-0011
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518641

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244057-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518641-1
Sampled Date Mar 10, 2025 11:30 AM
Sample Description Wastewater
Contract ID L_EIE_025_2560 **Plot** G-43 **Site** MSD Production Co.,Ltd.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	13	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	35	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	732	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chonticha Subangkuch, Scientist (3), ทะเบียนเลขที่ ว-323-ง-0031
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518698

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244138-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518698-1
Sampled Date Mar 10, 2025 9:55 AM
Sample Description Wastewater
Contract ID L_EIE_001_2550 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited.
Date Analysis Commenced Mar 10, 2025
Condition of Sample Contained in one amber glass bottle and four 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	18	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	4	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chonticha Subangkuch, Scientist (3), ทะเบียนเลขที่ ว-323-ง-0031
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

TESTING No.0009

Lot ID: 2518698

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244138-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518698-1
Sampled Date Mar 10, 2025 9:55 AM
Sample Description Wastewater
Contract ID L_EIE_001_2550 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited.
Date Analysis Commenced Mar 11, 2025
Condition of Sample Contained in one amber glass bottle and four 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
Metals Testing							
Zinc	mg/L	0.003	0.005	0.02	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

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

Technical Management: Sawitree Nimsangiam, Manager, ทะเบียนเลขที่ ว-205-ง-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

Analysis / Test Report

TESTING No.0009

Lot ID: 2518698

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244138-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518698-1
Sampled Date Mar 10, 2025 9:55 AM
Sample Description Wastewater
Contract ID L_EIE_001_2550 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited.
Date Analysis Commenced Mar 11, 2025
Condition of Sample Contained in one amber glass bottle and four 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
Metals Testing							
Iron	mg/L	0.003	0.005	1.54	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong , Pattarapol Sawangjaitam

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by: Sawitree Nimsangiam, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518696

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244130-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518696-1
Sampled Date Mar 11, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_020_2550 **Plot** G-66 - G-68,66 **Site** NS-Siam United Steel Co.,Ltd.
Location Factory 1
Date Analysis Commenced Mar 11, 2025
Condition of Sample Contained in one amber glass bottle and four 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	2.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	39	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	13	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C		-	31.7	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	452	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002
Remark :

Technical Management: Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518696

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244130-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

TESTING No.0009

Lot ID: 2518696

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244130-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518696-1
Sampled Date Mar 11, 2025 11:10 AM
Sample Description Wastewater
Contract ID L_EIE_020_2550 **Plot** G-66 - G-68,66 **Site** NS-Siam United Steel Co.,Ltd.
Location Factory 1
Date Analysis Commenced Mar 12, 2025
Condition of Sample Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	0.40	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong , Pattarapol Sawangjaitam

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

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Approved by: Sawitree Nimsangiam, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518697

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244133-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number 2518697-1
Sampled Date Mar 11, 2025 11:15 AM
Sample Description Wastewater
Contract ID L_EIE_001_2556 **Plot** D-97 **Site** Ns-Siam United Steel Co.,Ltd.
Location Factory 2
Date Analysis Commenced Mar 11, 2025
Condition of Sample Contained in one amber glass bottle and four 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	4.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	28	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	13	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518697

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244133-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Technical Management: Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

TESTING
No.0009

Lot ID: 2518697
Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244133-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518697-1
Sampled Date	Mar 11, 2025 11:15 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2556 **Plot** D-F7 **Site** Ns-Siam United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	1.54	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sittachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022 , Pattarapol Saisengjadee ทะเบียนเลขที่ ว-204-ง-0002

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Sawitree N. — Sawitree Niisangiam, Manager
Approved by: Kanokkorn Anek — Assistant General Manager

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518661
Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244084-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518661-1
Sampled Date	Mar 11, 2025 2:30 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2554 **Plot** H-12 **Site** PTT Asahi Chemical Co.,Ltd.
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	138	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0023

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seoda, Scientist (4)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518688
Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244122-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518688-1
Sampled Date	Mar 10, 2025 3:15 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2550 **Plot** G-02-024-01 **Site** PTT Global Chemical Public Company Limited. (EO Plant)
Date Analysis Commenced	Mar 10, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	18.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	252	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	36	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

Lot ID: 2518688
Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244122-2

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518688-1
Sampled Date	Mar 10, 2025 3:15 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2550 **Plot** G-02-024-01 **Site** PTT Global Chemical Public Company Limited. (EO Plant)
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
Chloride as Cl	mg/L	0.5	1	51	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (B)	Rayong

Sampling By : Ekkachai Tuntong

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

Approved by: Chontichak — Chonticha Subongkoch, Scientist (3)

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518693
Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244126-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518693-1
Sampled Date	Mar 10, 2025 3:20 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2551 **Plot** H-29 **Site** PTT Global Chemical Public Company Limited.
Date Analysis Commenced	Mar 10, 2025
Condition of Sample	Contained in two amber glass bottles and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	57	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	23	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	372	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	40	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022

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

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518693
Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244126-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518673
Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3244081-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518673-1
Sampled Date	Mar 12, 2025 10:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2552 **Plot** H-20-22 **Site** PTT Global Chemical Public Company Limited
Location	Station - 1 (Admin)
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	83	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	153	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seoda, Scientist (4)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518695
Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3244128-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2518695-1
Sampled Date	Mar 12, 2025 9:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2552 **Plot** H-20-22 **Site** PTT Global Chemical Public Company Limited
Location	Station - 2 (Factory)
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	50	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenols	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1050	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ง-0022

Technical Management: Photchana S. — Photchana Seoda, Scientist (4)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

TESTING
No.0042

Lot ID: 2518695
Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3244128-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seoda, Scientist (4)
Approved by: Dej Changchin — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518672

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : 3244079-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2518672-1
Sampled Date	Mar 12, 2025 9:30 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2553 **Plot** H-23A,H-T1 **Site** PTT Global Chemical Public Company Limited
Location	Bk - Phenol A
Date Analysis Commenced	Mar 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	558	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤260	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518677

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244118-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2518677-1
Sampled Date	Mar 11, 2025 2:05 PM
Sample Description	Wastewater
Contract ID	L_WHA EIE_004_2553 **Plot** H-13/1 **Site** Quechen Silica (Thailand) Co.,Ltd.
Location	Domestic wastewater
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	4.8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	38	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	134	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518677

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244118-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518655

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : 3244077-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2518655-1
Sampled Date	Mar 10, 2025 9:45 AM
Sample Description	Wastewater
Contract ID	L_EIE_005_2564 **Plot** G-7/1 **Site** Rockwood (Thailand) Limited
Date Analysis Commenced	Mar 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	99	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	148	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	6	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	458	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0023

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chontichak — Chontichak Subongkoch, Scientist (3), [illegible] ว-323-ง-0031
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518700

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244140-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2518700-1
Sampled Date	Mar 11, 2025 2:50 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 1
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	35	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	400	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	6	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.0	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518700

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244140-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518703

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244141-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2518703-1
Sampled Date	Mar 11, 2025 2:35 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 2
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	15	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	67	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 C	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			30.7	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	9700	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518703

Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244141-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518702

Date Received : Mar 11, 2025
Date Reported : Mar 19, 2025
Report Number : 3244142-1

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2518702-1
Sampled Date	Mar 11, 2025 9:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2558 **Plot** H-45 **Site** SEKISUI SPECIALTY CHEMICALS (THAILAND) CO.,LTD
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	84	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	144	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	8	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	31.7	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	432	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tuntong [illegible] ว-323-ง-0022

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), [illegible] ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, [illegible] ว-323-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2518702

Date Received : Mar 11, 2025
Date Reported : Mar 19, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518647

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 2518647-1
Sampled Date : Mar 10, 2025 2:05 PM
Sample Description : Wastewater
Contract ID : L_EIE_013_2560 **Plot** G-10 **Site** Siam Stabilizers & Chemicals Co.,Ltd.
Date Analysis Commenced : Mar 10, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	10.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	180	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] 1-323-4-0023

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

Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518665

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 2518665-1
Sampled Date : Mar 10, 2025 10:30 AM
Sample Description : Wastewater
Contract ID : L_EIE_001_2561 **Plot** G-34/1 **Site** Solvay (Thailand) Limited
Date Analysis Commenced : Mar 10, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	4.8	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] 1-323-4-0023

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Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518691

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 2518691-1
Sampled Date : Mar 12, 2025 [illegible] PM
Sample Description : Wastewater
Contract ID : L_EIE_026_2564 **Plot** G-09 **Site** [illegible] Co.,Ltd.
Date Analysis Commenced : Mar 12, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	32	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	142	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤2000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	40	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] 1-323-4-0022

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518691

Date Received : Mar 12, 2025
Date Reported : Mar 19, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518660

Date Received : Mar 13, 2025
Date Reported : Mar 19, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 2518660-1
Sampled Date : Mar 13, 2025 10:05 AM
Sample Description : Wastewater
Contract ID : L_EIE_016_2560 **Plot** G-51 **Site** [illegible] Co.,Ltd.
Location : Station - 1
Date Analysis Commenced : Mar 13, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	104	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] 1-323-4-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518692

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 2518692-1
Sampled Date : Mar 10, 2025 2:30 PM
Sample Description : Wastewater
Contract ID : L_EIE_021_2560 **Plot** G-04 **Site** Vanachai Chemical Industries Co.,Ltd.
Date Analysis Commenced : Mar 10, 2025
Condition of Sample : Contained in two amber glass bottles and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤2000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] 1-323-4-0022

Remark :
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Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518692

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
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Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2518664

Date Received : Mar 10, 2025
Date Reported : Mar 17, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number : 2518664-1
Sampled Date : Mar 10, 2025 11:00 AM
Sample Description : Wastewater
Contract ID : L_EIE_004_2558 **Plot** G-19 G-19 P-7 **Site** Vencorex (Thailand) Co.,Ltd.
Date Analysis Commenced : Mar 10, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumtong [illegible] 1-323-4-0023

Remark :
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Technical Management: Chontichak — Chonticha Subongkoch, Scientist (3)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2518671
Date Received : Mar 10, 2025
Date Reported : Mar 18, 2025
Report Number : 3244062-1

Page 1 of 1

Sample Number	2518671-1
Sampled Date	Mar 10, 2025 1:50 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2550 Plot G-61 Site Eden Chemical (Thailand) Co.,Ltd.
Date Analysis Commenced	Mar 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	42.4	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	134	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	6600	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	56	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ส-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2518676
Date Received : Mar 11, 2025
Date Reported : Mar 18, 2025
Report Number : 3244112-3

Page 1 of 1

Sample Number	2518676-1
Sampled Date	Mar 11, 2025 10:05 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_001_2553 Plot H-44 Site Zeon Chemicals Asia Co.,Ltd.
Date Analysis Commenced	Mar 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	41	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-8.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	540	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	3	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Ekkachai Tuntong ทะเบียนเลขที่ ว-323-ส-0022

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528601
Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3257683-3

Page 1 of 1

Sample Number	2528601-1
Sampled Date	Apr 04, 2025 9:45 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2556 Plot G-69,G-70 Site Aditya Birla Chemicals (Thailand) Ltd. (Advanced Materials)
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	32	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	112	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	72	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ทะเบียนเลขที่ ว-323-ส-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528597
Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257679-3

Page 1 of 1

Sample Number	2528597-1
Sampled Date	Apr 08, 2025 10:10 AM
Sample Description	Wastewater
Contract ID	L_EIE_019_2560 Plot G-08 Site AGC Vinythai Public Company Limited
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, some colour, 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	6.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	34	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aroonwith Wongsachai ทะเบียนเลขที่ ว-323-ส-0040

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528629
Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257707-3

Page 1 of 1

Sample Number	2528629-1
Sampled Date	Apr 08, 2025 10:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2560 Plot G-15 to G-17 Site AGC Vinythai Public Company Limited
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, some colour, 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	4.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	84	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	416	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528589
Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257682-3

Page 1 of 1

Sample Number	2528589-1
Sampled Date	Apr 08, 2025 9:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_014_2560 Plot G-35 Site Almon (Thailand) Ltd.
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of 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	18.1	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	71	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	376	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	12	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aroonwith Wongsachai ทะเบียนเลขที่ ว-323-ส-0040

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528590
Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3257684-3

Page 1 of 1

Sample Number	2528590-1
Sampled Date	Apr 04, 2025 10:11 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 Plot G-29 Site Arakawa Chemical (Thailand) Ltd.
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	10.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	43	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	464	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	9	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ทะเบียนเลขที่ ว-323-ส-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528591
Date Received : Apr 04, 2025
Date Reported : Apr 10, 2025
Report Number : 3257685-3

Page 1 of 1

Sample Number	2528591-1
Sampled Date	Apr 04, 2025 1:59 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2560 Plot G-09 Site Asia Petroleum Thailand Co.,Ltd.
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, some colour, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	316	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ทะเบียนเลขที่ ว-323-ส-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2528607
Date Received : Apr 09, 2025
Date Reported : Apr 16, 2025
Report Number : 3257686-3

Page 1 of 1

Sample Number	2528607-1
Sampled Date	Apr 09, 2025 3:25 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2556 Plot H-37 Site Bangkok Industrial Gas Company Limited
Date Analysis Commenced	Apr 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	492	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ทะเบียนเลขที่ ว-323-ส-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ส-0029
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ส-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2528632

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 09, 2025
Date Reported : Apr 16, 2025
Report Number : 3257701-1

Page 1 of 1

Sample Number	2528632-1
Sampled Date	Apr 09, 2025 10:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2564 **Plot** G-37 **Site** Cariode Chemical (Thailand) Ltd.
Location	Inspection manhole
Date Analysis Commenced	Apr 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	6.6	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	38	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	292	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong ทะเบียนเลขที่ ว-323-ผ-0022

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528628

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257703-1

Page 1 of 1

Sample Number	2528628-1
Sampled Date	Apr 08, 2025 1:45 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2566 **Plot** G-1/1 **Site** E-COATINGS ASIA COMPANY LIMITED
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	8.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	44	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	140	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	106	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwith Wongsachai ทะเบียนเลขที่ ว-323-ผ-0040

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528612

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3257719-1

Page 1 of 1

Sample Number	2528612-1
Sampled Date	Apr 04, 2025 1:50 PM
Sample Description	Wastewater
Contract ID	L_WHA EIE_006_2563 **Plot** G.77, G.77/1, H.42, H.44 **Site** GC Polyols Company Limited
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	42	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	148	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ทะเบียนเลขที่ ว-323-ผ-0023

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528603

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257688-1

Page 1 of 1

Sample Number	2528603-1
Sampled Date	Apr 08, 2025 2:30 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2551 **Plot** G-06A **Site** Global Green Chemicals Co.,Ltd.
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	5.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	71	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	440	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	7	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwith Wongsachai ทะเบียนเลขที่ ว-323-ผ-0040

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528599

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257681-1

Page 1 of 1

Sample Number	2528599-1
Sampled Date	Apr 08, 2025 11:16 AM
Sample Description	Wastewater
Contract ID	L_EIE_024_2566 **Plot** G-76 **Site** Global Power Synergy Co.,Ltd.
Location	CUP - 1
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	24	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwith Wongsachai ทะเบียนเลขที่ ว-323-ผ-0040

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528598

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257680-1

Page 1 of 1

Sample Number	2528598-1
Sampled Date	Apr 08, 2025 10:55 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2551 **Plot** H-17 **Site** Global Power Synergy Co.,Ltd.
Location	CUP - 3
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	51	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	968	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	3	3	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwith Wongsachai ทะเบียนเลขที่ ว-323-ผ-0040

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528602

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 09, 2025
Date Reported : Apr 16, 2025
Report Number : 3257687-1

Page 1 of 1

Sample Number	2528602-1
Sampled Date	Apr 09, 2025 2:00 PM
Sample Description	Wastewater
Contract ID	L_EIE_003_2553 **Plot** G-06 **Site** HMC Polymers Co.,Ltd.
Date Analysis Commenced	Apr 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	150	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong ทะเบียนเลขที่ ว-323-ผ-0023

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528621

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3257707-1

Page 1 of 1

Sample Number	2528621-1
Sampled Date	Apr 08, 2025 10:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2561 **Plot** H-52A **Site** Dwarakat Chemical (Thailand) Co., Ltd.
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	8.6	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	60	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	118	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Wanlop Hutchanaw ทะเบียนเลขที่ ว-323-ผ-0038

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528630

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3257709-1

Page 1 of 1

Sample Number	2528630-1
Sampled Date	Apr 04, 2025 10:45 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2567 **Plot** G.25,G.26 **Site** Interpretive Co.,Ltd.
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	58	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ทะเบียนเลขที่ ว-323-ผ-0023

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
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ผ-0023
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ผ-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528587
Date Received : Apr 04, 2025
Date Reported : Apr 15, 2025
Report Number : 3267955-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528587-1
Sampled Date Apr 04, 2025 10:02 AM
Sample Description Wastewater
Contract ID L_EIE_005_2562 **Plot** G-30 **Site** KLJ Organic (Thailand) Ltd.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, some colour, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	68	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisit ว-323-ห-0023

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528625
Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3267953-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528625-1
Sampled Date Apr 08, 2025 3:35 PM
Sample Description Wastewater
Contract ID L_EIE_002_2565 **Plot** H-13a, H-13e, PW-27-1, H-47b **Site** Kuraray Advanced Chemicals (Thailand) Co., Ltd.
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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	2.4	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	48	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	13	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Wanlop Hutchamnon ว-323-ห-0038

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528624
Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3267950-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528624-1
Sampled Date Apr 08, 2025 3:15 PM
Sample Description Wastewater
Contract ID L_EIE_001_2565 **Plot** PW-28, PW-31, H-47a, H-47c, H-31 **Site** Kuraray GC Advanced Materials Co., Ltd. (North)
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, 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	6.4	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	69	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Wanlop Hutchamnon ว-323-ห-0038

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528596
Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3267678-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528596-1
Sampled Date Apr 04, 2025 2:37 PM
Sample Description Wastewater
Contract ID L_EIE_015_2560 **Plot** G-14 **Site** Linde (Thailand) PLC.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	34.2	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	78	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisit ว-323-ห-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528608
Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : 3267700-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528608-1
Sampled Date Apr 08, 2025 2:20 PM
Sample Description Wastewater
Contract ID L_EIE_004_2564 **Plot** H-10, H-11 **Site** Linde (Thailand) Public Company Limited.
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	47	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	448	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hutchamnon ว-323-ห-0038

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528588
Date Received : Apr 04, 2025
Date Reported : Apr 15, 2025
Report Number : 3267957-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528588-1
Sampled Date Apr 04, 2025 10:35 AM
Sample Description Wastewater
Contract ID L_EIE_002_2561 **Plot** G-23 **Site** HARC (Thailand) Co.,Ltd.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	7.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	8	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	218	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisit ว-323-ห-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528604
Date Received : Apr 09, 2025
Date Reported : Apr 16, 2025
Report Number : 3267665-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528604-1
Sampled Date Apr 09, 2025 10:15 AM
Sample Description Wastewater
Contract ID L_EIE_010_2560 **Plot** G-03 **Site** MCLS Asia Co.,Ltd.
Date Analysis Commenced Apr 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	15.5	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	112	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	840	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tonthong ว-323-ห-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528593
Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3267656-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528593-1
Sampled Date Apr 04, 2025 2:20 PM
Sample Description Wastewater
Contract ID L_EIE_011_2560 **Plot** G-12 **Site** [illegible] Chemical Co.,Ltd.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	60	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisit ว-323-ห-0023

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528586
Date Received : Apr 04, 2025
Date Reported : Apr 15, 2025
Report Number : 3267952-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2528586-1
Sampled Date Apr 04, 2025 3:44 PM
Sample Description Wastewater
Contract ID L_EIE_025_2560 **Plot** G-43 **Site** HSD Production Co.,Ltd.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, some colour, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	46	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisit ว-323-ห-0023

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528644

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528644-1
Sampled Date	Apr 04, 2025 9:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** G-72 **Site** NS Bluescope (Thailand) Limited
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	3.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	49	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	6	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	712	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ง-0023 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

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Technical Management: Photchana S. — Phatchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.
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Analysis / Test Report

TESTING No.0009

Lot ID: 2528644

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528644-1
Sampled Date	Apr 04, 2025 9:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** G-72 **Site** NS Bluescope (Thailand) Limited
Date Analysis Commenced	Apr 05, 2025
Condition of Sample	Contained in one amber glass bottle and four 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
Metals Testing							
Zinc	mg/L	0.003	0.005	0.02	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ง-0023 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ง-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

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Analysis / Test Report

TESTING No.0009

Lot ID: 2528644

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528644-1
Sampled Date	Apr 04, 2025 9:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** G-72 **Site** NS Bluescope (Thailand) Limited
Date Analysis Commenced	Apr 05, 2025
Condition of Sample	Contained in one amber glass bottle and four 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
Metals Testing							
Iron	mg/L	0.003	0.005	.32	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh , Pattarapol Sawangjaitam

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

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Approved by: Sawitree N. — Sawitree Nilsangiam, Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528640

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528640-1
Sampled Date	Apr 04, 2025 11:10 AM
Sample Description	Wastewater
Contract ID	L_EIE_020_2560 **Plot** G-56 - G-66,66 **Site** Siam United Steel Co.,Ltd.
Location	Factory 1
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			28.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ง-0023 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Phatchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528640

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

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Technical Management: Photchana S. — Phatchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

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Analysis / Test Report

TESTING No.0009

Lot ID: 2528640

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528640-1
Sampled Date	Apr 04, 2025 11:10 AM
Sample Description	Wastewater
Contract ID	L_EIE_020_2560 **Plot** G-56 - G-66,66 **Site** Siam United Steel Co.,Ltd.
Location	Factory 1
Date Analysis Commenced	Apr 05, 2025
Condition of Sample	Contained in one amber glass bottle and four 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
Metals Testing							
Iron	mg/L	0.003	0.005	0.39	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh , Pattarapol Sawangjaitam

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Approved by: Sawitree N. — Sawitree Nilsangiam, Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528642

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528642-1
Sampled Date	Apr 04, 2025 11:30 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2556 **Plot** G-67 **Site** Siam United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and four 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	1.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-		7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	400	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ง-0023 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Phatchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

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Analysis / Test Report

TESTING No.0009

Lot ID: 2528642

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528642-1
Sampled Date	Apr 04, 2025 11:30 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2556 **Plot** G-67 **Site** Siam United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	Apr 05, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	0.40	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ง-0023 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nilsangiam, Manager, ทะเบียนเลขที่ ว-208-ง-0007
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528606

Date Received : Apr 08, 2025
Date Reported : Apr 18, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Paksroongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2528606-1
Sampled Date	Apr 05, 2025 2:45 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2554 **Plot** H-12 **Site** PTT Asahi Chemical Co.,Ltd.
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	128	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hunchanlaow ทะเบียนเลขที่ ว-323-ง-0038

Remark :
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Technical Management: Photchana S. — Phatchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528637

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3267729-1

Sample Number	2528637-1
Sampled Date	Apr 04, 2025 3:30 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2553 **Plot** H-29 **Site** PTT Global Chemical Public Company Limited
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in two amber glass bottles and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	06	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	142	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	08	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ล-0023

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528637

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3267729-1

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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528620

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 18, 2025
Report Number : 3267683-1

Sample Number	2528620-1
Sampled Date	Apr 08, 2025 9:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2552 **Plot** H-20-22 **Site** PTT Global Chemical Public Company Limited
Location	Station - 1 (Admin)
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.2	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	28	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	136	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	3	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hunchamlow ทะเบียนเลขที่ ว-323-ล-0038

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528639

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 18, 2025
Report Number : 3267731-1

Sample Number	2528639-1
Sampled Date	Apr 08, 2025 9:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2552 **Plot** H-20-22 **Site** PTT Global Chemical Public Company Limited
Location	Station - 2 (Factory)
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	4.5	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	90	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	<0.005	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	348	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Wanlop Hunchamlow ทะเบียนเลขที่ ว-323-ล-0038

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528639

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 18, 2025
Report Number : 3267731-1

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528619

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 09, 2025
Date Reported : Apr 18, 2025
Report Number : 3267684-1

Sample Number	2528619-1
Sampled Date	Apr 09, 2025 9:45 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2553 **Plot** H-23A,H-31 **Site** PTT Global Chemical Public Company Limited
Location	Ex - Phenol A
Date Analysis Commenced	Apr 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	44	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	20	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Ekkachai Tumong ทะเบียนเลขที่ ว-323-ล-0022

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528623

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 18, 2025
Report Number : 3267718-1

Sample Number	2528623-1
Sampled Date	Apr 08, 2025 10:55 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_004_2553 **Plot** H-33/1 **Site** Quechen Silica (Thailand) Co.,Ltd
Location	Domestic wastewater
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	7.7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	33	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	82	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Wanlop Hunchamlow ทะเบียนเลขที่ ว-323-ล-0038

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528623

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 18, 2025
Report Number : 3267718-1

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528600

Client : WHA Utilities and Power Public Company Limited
18, Paiorrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21180
P/O :
Project Name : Factory l Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3267682-1

Sample Number	2528600-1
Sampled Date	Apr 04, 2025 9:39 AM
Sample Description	Wastewater
Contract ID	L_EIE_005_2560 **Plot** G-71 **Site** Rockwool (Thailand) Limited
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	44	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	90	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ล-0023

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025.

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ล-0028
Approved by: Dej Changchim, Senior Manager, ทะเบียนเลขที่ ว-323-ล-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528645

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2528645-1
Sampled Date	Apr 08, 2025 11:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2550 **Plot** H-15 **Site** S and L Specialty Polymers Co., Ltd.
Location	Station 1
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	27	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			[illegible]	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	490	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	15	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hunchaiwaew

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528645

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528648

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2528648-1
Sampled Date	Apr 08, 2025 11:10 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2550 **Plot** H-15 **Site** S and L Specialty Polymers Co., Ltd.
Location	Station 2
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Colorless, 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	[illegible]	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 C	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			[illegible]	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	[illegible]	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Wanlop Hunchaiwaew

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528648

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528646

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2528646-1
Sampled Date	Apr 08, 2025 10:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2550 **Plot** H-45 **Site** SEKISUI SPECIALTY CHEMICALS (THAILAND) CO.,LTD.
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			[illegible]	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	2	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hunchaiwaew

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528646

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528592

Date Received : Apr 04, 2025
Date Reported : Apr 15, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2528592-1
Sampled Date	Apr 04, 2025 2:00 PM
Sample Description	Wastewater
Contract ID	L_EIE_013_2550 **Plot** G-10 **Site** Siam Stabilizers & Chemicals Co.,Ltd.
Date Analysis Commenced	Apr 04, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		4	<1	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528610

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2528610-1
Sampled Date	Apr 08, 2025 9:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2561 **Plot** G-34/1 **Site** Solvay (Thailand) Limited
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Amonwich Wongsachai

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528635

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Paiboonsongkhroh Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Sample Number	2528635-1
Sampled Date	Apr 08, 2025 2:00 PM
Sample Description	Wastewater
Contract ID	L_EIE_026_2550 **Plot** G-05 **Site** Thai Ethoxylate Co.,Ltd.
Date Analysis Commenced	Apr 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	33	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		4	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Amonwich Wongsachai

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2528635

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : [illegible]

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528605

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : [illegible]

Sample Number 2528605-1
Sampled Date Apr 08, 2025 2:00 PM
Sample Description Wastewater
Contract ID L_EIE_014_2560 **Plot** G-51 **Site** Thai Pet Resin Co.,Ltd.
Location Station - 1
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<5	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				[illegible]	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	160	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wanlop Hanchamnan [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528636

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3257724-1

Sample Number 2528636-1
Sampled Date Apr 04, 2025 2:57 PM
Sample Description Wastewater
Contract ID L_EIE_021_2560 **Plot** G-04 **Site** Vanachai Chemical Industries Co.,Ltd.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in two amber glass bottles and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	36	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528636

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : 3257724-1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528609

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 04, 2025
Date Reported : Apr 11, 2025
Report Number : [illegible]

Sample Number 2528609-1
Sampled Date Apr 04, 2025 10:22 AM
Sample Description Wastewater
Contract ID L_EIE_004_2558 **Plot** G.19 G.19 P.7 **Site** Vencorex (Thailand) Co.,Ltd.
Date Analysis Commenced Apr 04, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	80	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2528616

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : [illegible]

Sample Number 2528616-1
Sampled Date Apr 08, 2025 1:40 PM
Sample Description Wastewater
Contract ID [illegible] **Plot** [illegible] **Site** Eternal Chemical (Thailand) Co.,Ltd.
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Colorless, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	63	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L		3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2476	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Amornwich Wongpachai [illegible]

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2528622

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Apr 08, 2025
Date Reported : Apr 16, 2025
Report Number : [illegible]

Sample Number 2528622-1
Sampled Date Apr 08, 2025 11:30 AM
Sample Description Wastewater
Contract ID L_WHA EIE_001_2563 **Plot** H-49 **Site** Zeon Chemicals Asia Co.,Ltd.
Date Analysis Commenced Apr 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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	12.0	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	31	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	920	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	3	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Wanlop Hanchamnan [illegible]

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2540013

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Sample Number 2540013-1
Sampled Date May 07, 2025 9:50 AM
Sample Description Wastewater
Contract ID L_EIE_001_2556 **Plot** G-69,G-70 **Site** Aditya Birla Chemicals (Thailand) Ltd. (Advanced Materials)
Date Analysis Commenced May 07, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, some solid and a lot of 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	17.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	89	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	[illegible]	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	718	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Waranyoo Chimphalee [illegible]

Remark :
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2540009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : May 13, 2025
Date Reported : May 19, 2025
Report Number : [illegible]

Sample Number 2540009-1
Sampled Date May 13, 2025 2:45 PM
Sample Description Wastewater
Contract ID L_EIE_019_2560 **Plot** G-08 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced May 13, 2025
Condition of Sample Contained in one amber glass bottle and three 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	9.1	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	47	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L		3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	444	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2540039

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 13, 2025
Date Reported : May 19, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540039-1
Sampled Date	May 13, 2025 1:20 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2566 **Plot** G-15 to G-17 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced	May 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	4.4	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	<8	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	396	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ว-323-ฉ-0023

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540000

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540000-1
Sampled Date	May 07, 2025 11:03 AM
Sample Description	Wastewater
Contract ID	L_EIE_014_2566 **Plot** G-35 **Site** Allnex (Thailand) Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	96.4	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	133	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	464	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	46	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ว-323-ฉ-0020

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540001

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540001-1
Sampled Date	May 07, 2025 10:15 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2566 **Plot** G-29 **Site** Arakawa Chemical (Thailand) Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of 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	16.7	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	38	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	196	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	12	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ว-323-ฉ-0020

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540002

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540002-1
Sampled Date	May 07, 2025 3:30 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2566 **Plot** G-09 **Site** Asia Petroleum Thailand Co.,Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Yellow, some odour, a lot of 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	125	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	120	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ว-323-ฉ-0020

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540019

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 14, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540019-1
Sampled Date	May 08, 2025 10:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2566 **Plot** H-37 **Site** Bangkok Industrial Gas Company Limited
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	18	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	232	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	15	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Wantop Hutchamaw ว-323-ฉ-0038

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540041

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 13, 2025
Date Reported : May 19, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540041-1
Sampled Date	May 13, 2025 3:20 PM
Sample Description	Wastewater
Contract ID	L_EIE_004_2566 **Plot** G-37 **Site** Cariside Chemical (Thailand) Ltd.
Location	Inspection manhole
Date Analysis Commenced	May 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	17	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	32	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	140	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	15	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthisin ว-323-ฉ-0023

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540038

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540038-1
Sampled Date	May 08, 2025 1:45 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2566 **Plot** G-1/1 **Site** E-COATINGS ASIA COMPANY LIMITED
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	5.8	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	35	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	380	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	9	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Sampling By : Anonwith Wongsachai ว-323-ฉ-0040

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540024

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2540024-1
Sampled Date	May 09, 2025 10:00 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_006_2563 **Plot** G.77, G.77/1, H.42, H.44 **Site** GC Polyols Company Limited
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	17.3	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	58	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	6	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	332	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	7	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Anonwith Wongsachai ว-323-ฉ-0040

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540015

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

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Sample Number	2540015-1
Sampled Date	May 07, 2025 3:20 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2561 **Plot** G-06A **Site** Global Green Chemicals Co.,Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	72.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	109	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	744	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ว-323-ฉ-0020

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4), ว-323-ฉ-0023
Approved by: Dej Changchin, Senior Manager, ว-325-ฉ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540011

Date Received : May 09, 2025
Date Reported : May 16, 2025
Report Number : 3293076-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540011-1
Sampled Date May 09, 2025 11:15 AM
Sample Description Wastewater
Contract ID L_EIE_024_2560 **Plot** G-76 **Site** Global Power Synergy Co.,Ltd.
Location CUP - 1
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	124	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540010

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293077-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540010-1
Sampled Date May 08, 2025 10:30 AM
Sample Description Wastewater
Contract ID L_EIE_002_2551 **Plot** H-17 **Site** Global Power Synergy Co.,Ltd.
Location CUP - 3
Date Analysis Commenced May 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	34	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	170	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540014

Date Received : May 09, 2025
Date Reported : May 16, 2025
Report Number : 3293084-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540014-1
Sampled Date May 09, 2025 2:00 PM
Sample Description Wastewater
Contract ID L_EIE_003_2553 **Plot** G-06 **Site** HMC Polymers Co.,Ltd.
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Yellow, some odour, a lot of 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	56	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	6	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Aronwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540030

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293095-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540030-1
Sampled Date May 08, 2025 3:30 PM
Sample Description Wastewater
Contract ID L_EIE_001_2561 **Plot** H-52A **Site** [illegible] Chemical (Thailand) Co., Ltd.
Date Analysis Commenced May 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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	17.4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	44	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	416	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Aronwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540040

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : 3293139-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540040-1
Sampled Date May 07, 2025 10:44 AM
Sample Description Wastewater
Contract ID L_EIE_001_2567 **Plot** G.25,G.26 **Site** Interpretive Co.,Ltd.
Date Analysis Commenced May 07, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Colorless, some odour, no 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	58	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ทะเบียนเลขที่ ว-323-ง-0020

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2539998

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : 3293044-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2539998-1
Sampled Date May 07, 2025 10:00 AM
Sample Description Wastewater
Contract ID L_EIE_005_2552 **Plot** G-30 **Site** KLJ Organic (Thailand) Ltd.
Date Analysis Commenced May 07, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property Colorless, 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	34	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ทะเบียนเลขที่ ว-323-ง-0020

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540034

Date Received : May 13, 2025
Date Reported : May 19, 2025
Report Number : 3293136-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540034-1
Sampled Date May 12, 2025 11:00 AM
Sample Description Wastewater
Contract ID L_EIE_002_2565 **Plot** H.13a, H.13e, PW.27-1, H.47b **Site** Kuraray Advanced chemicals(Thailand) Co., Ltd.
Date Analysis Commenced May 13, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	Not Detected	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	12	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Phongthep Sitthilok ทะเบียนเลขที่ ว-323-ง-0023

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Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540033

Date Received : May 13, 2025
Date Reported : May 19, 2025
Report Number : 3293135-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540033-1
Sampled Date May 12, 2025 10:45 AM
Sample Description Wastewater
Contract ID L_EIE_001_2565 **Plot** PW.28, PW.31, H.47a, H.47c, H.31 **Site** Kuraray GC Advanced Materials Co., Ltd. (North)
Date Analysis Commenced May 13, 2025
Condition of Sample Contained in one amber glass bottle and three 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	8.2	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	47	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	128	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	2	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Phongthep Sitthilok ทะเบียนเลขที่ ว-323-ง-0023

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Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540008

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : 3293075-3

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2540008-1
Sampled Date May 07, 2025 2:20 PM
Sample Description Wastewater
Contract ID L_EIE_015_2560 **Plot** G-14 **Site** Linde (Thailand) Plc.
Date Analysis Commenced May 07, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	46.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	80	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	328	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	14	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ทะเบียนเลขที่ ว-323-ง-0020

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.
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Analysis / Test Report

TESTING No.0042

Lot ID: 2540020

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 13, 2025 | Date Reported: May 19, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540020-1
Sampled Date: May 13, 2025 4:00 PM
Sample Description: Wastewater
Contract ID: L_EIE_004_2556 **Plot** H-10, H-11 **Site** Linde (Thailand) Public Company Limited
Date Analysis Commenced: May 13, 2025
Condition of Sample: Contained in one amber glass bottle and three 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	1.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	540	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Phongthep Sitthisit [illegible]

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2539999

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 07, 2025 | Date Reported: May 15, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2539999-1
Sampled Date: May 07, 2025 10:33 AM
Sample Description: Wastewater
Contract ID: L_EIE_002_2561 **Plot** G-21 **Site** HARC (Thailand) Co.,Ltd.
Date Analysis Commenced: May 07, 2025
Condition of Sample: Contained in one amber glass bottle and three 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	11	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	34	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	452	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	11	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Warunyoo Chimphalee [illegible]

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540016

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 08, 2025 | Date Reported: May 15, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540016-1
Sampled Date: May 08, 2025 3:00 PM
Sample Description: Wastewater
Contract ID: L_EIE_010_2560 **Plot** G-03 **Site** MCLS Asia Co.,Ltd.
Date Analysis Commenced: May 08, 2025
Condition of Sample: Contained in one amber glass bottle and three 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	83	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	99	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	16	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	656	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	41	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Aronwich Wongsachai [illegible]

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540004

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 08, 2025 | Date Reported: May 15, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540004-1
Sampled Date: May 08, 2025 10:15 AM
Sample Description: Wastewater
Contract ID: L_EIE_011_2560 **Plot** G-12 **Site** Hexanta Chemical Co.,Ltd.
Date Analysis Commenced: May 08, 2025
Condition of Sample: Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	46	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Warunyoo Chimphalee [illegible]

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2539997

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 07, 2025 | Date Reported: May 15, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2539997-1
Sampled Date: May 07, 2025 11:30 AM
Sample Description: Wastewater
Contract ID: L_EIE_005_2560 **Plot** G-43 **Site** MEC Production Co.,Ltd.
Date Analysis Commenced: May 07, 2025
Condition of Sample: Contained in one amber glass bottle and three 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	10	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	79	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	580	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Sampling By: Warunyoo Chimphalee [illegible]

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540054

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 08, 2025 | Date Reported: May 15, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540054-1
Sampled Date: May 08, 2025 9:50 AM
Sample Description: Wastewater
Contract ID: L_EIE_003_2560 **Plot** G-72 **Site** NS Bluescope (Thailand) Limited
Date Analysis Commenced: May 08, 2025
Condition of Sample: Contained in one amber glass bottle and four 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	10.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	35	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	436	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	6	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Aronwich Wongsachai [illegible], Thanasorn Namsukumw [illegible]

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Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2540054

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 08, 2025 | Date Reported: May 16, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540054-1
Sampled Date: May 08, 2025 9:50 AM
Sample Description: Wastewater
Contract ID: L_EIE_003_2560 **Plot** G-72 **Site** NS Bluescope (Thailand) Limited
Date Analysis Commenced: May 09, 2025
Condition of Sample: Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	0.07	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Aronwich Wongsachai [illegible], Thanasorn Namsukumw [illegible]

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Technical Management: Sawitree N. — Sawitree Nissangwan, Manager
Approved by: Kanokkorn Anek, Assistant General Manager

Analysis / Test Report

TESTING No.0009

Lot ID: 2540054

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 08, 2025 | Date Reported: May 16, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540054-1
Sampled Date: May 08, 2025 9:50 AM
Sample Description: Wastewater
Contract ID: L_EIE_003_2560 **Plot** G-72 **Site** NS Bluescope (Thailand) Limited
Date Analysis Commenced: May 09, 2025
Condition of Sample: Contained in one amber glass bottle and four 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	1.84	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Aronwich Wongsachai, Thanasorn Namsukumw

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Approved by: Sawitree N. — Sawitree Nissangwan, Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540051

Client: WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O:
Project Name: Factory I Monthly
Project Location: WHA EIE

Date Received: May 08, 2025 | Date Reported: May 15, 2025 | Report Number: [illegible]

Page 1 of 1

Sample Number: 2540051-1
Sampled Date: May 08, 2025 11:05 AM
Sample Description: Wastewater
Contract ID: L_EIE_020_2560 **Plot** G-56 - G-66,68 **Site** Bi-Sam United Steel Co.,Ltd.
Location: Factory 1
Date Analysis Commenced: May 08, 2025
Condition of Sample: Contained in one amber glass bottle and four 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	3.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	26	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				6.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			35.5	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	204	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline: Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By: Aronwich Wongsachai [illegible], Thanasorn Namsukumw [illegible]

Remark:
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seuda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540051
Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293134-1

Page 1 of 1

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchin, Senior Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540051
Date Received : May 08, 2025
Date Reported : May 16, 2025
Report Number : 3293134-2

Page 1 of 1

Sample Number	2540051-1
Sampled Date	May 08, 2025 11:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_020_2550 **Plot** G-56 - G-66,68 **Site** Ni-Sam United Steel Co.,Ltd.
Location	Factory 1
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one amber glass bottle and four 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	.85	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai , Thanasoon Namsouma

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by: Sawitree N. — Sawitree Nonsangpan, Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540053
Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293134-3

Page 1 of 1

Sample Number	2540053-1
Sampled Date	May 08, 2025 11:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2550 **Plot** G-67 **Site** Ni-Sam United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and four 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	3.5	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	28	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	140	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	1	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040 , Thanasoon Namsouma ทะเบียนเลขที่ ว-204-ง-0101

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchin, Senior Manager

Analysis / Test Report

TESTING No.0009

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540053
Date Received : May 08, 2025
Date Reported : May 16, 2025
Report Number : 3293134-2

Page 1 of 1

Sample Number	2540053-1
Sampled Date	May 08, 2025 11:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2550 **Plot** G-67 **Site** Ni-Sam United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	9.85	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040 , Thanasoon Namsouma ทะเบียนเลขที่ ว-204-ง-0101

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Sawitree N. — Sawitree Nonsangpan, Manager
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540018
Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3293537-1

Page 1 of 1

Sample Number	2540018-1
Sampled Date	May 09, 2025 3:00 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2554 **Plot** H-12 **Site** PTT Asahi Chemical Co.,Ltd.
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	104	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	1	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchin, Senior Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540007
Date Received : May 13, 2025
Date Reported : May 19, 2025
Report Number : 3293074-1

Page 1 of 1

Sample Number	2540007-1
Sampled Date	May 13, 2025 9:58 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2554 **Plot** G-02,03 **Site** PTT Global Chemical Public Company Limited. (EA Plant)
Date Analysis Commenced	May 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	47	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	38	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Phongthep Sitthiloh ทะเบียนเลขที่ ว-323-ง-0023

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchin, Senior Manager

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540043
Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3293105-1

Page 1 of 1

Sample Number	2540043-1
Sampled Date	May 09, 2025 2:30 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2550 **Plot** G-02-024-01 **Site** PTT Global Chemical Public Company Limited. (EO Plant)
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
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, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				8.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	126	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Amornwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ง-0028
Approved by: Dej Changchin, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540043
Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3293105-2

Page 1 of 1

Sample Number	2540043-1
Sampled Date	May 09, 2025 2:30 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2550 **Plot** G-02-024-01 **Site** PTT Global Chemical Public Company Limited. (EO Plant)
Date Analysis Commenced	May 15, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
Chloride as Cl	mg/L	0.5	1	25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (B)	Rayong

Sampling By : Amornwich Wongsachai

Remark :
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Approved by: Photchana S. — Photchana Seeda, Scientist (4)

Analysis / Test Report

TESTING No.0042

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Lot ID: 2540047
Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293122-1

Page 1 of 1

Sample Number	2540047-1
Sampled Date	May 08, 2025 10:45 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2551 **Plot** H-29 **Site** PTT Global Chemical Public Company Limited.
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	9.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	30	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	98	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornwich Wongsachai ทะเบียนเลขที่ ว-323-ง-0040

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchin, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540047

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 15, 2025

Page 1 of 1

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Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540023

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 15, 2025

Page 1 of 1

Sample Number 2540023-1
Sampled Date May 08, 2025 10:05 AM
Sample Description Wastewater
Contract ID L_WHA EIE_001_2563 **Plot** G.18/2, G.20/1, H.28/1, H.24/1, FN14/1, FN.22, FN-27 **Site** PTT Global Chemical Public Company Limited
Location
Date Analysis Commenced May 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	57	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	348	≤5000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Amornrich Wongsachai

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Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540023

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 15, 2025

Page 1 of 1

- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540029

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 09, 2025
Date Reported : May 17, 2025

Page 1 of 1

Sample Number 2540029-1
Sampled Date May 09, 2025 9:45 AM
Sample Description Wastewater
Contract ID L_EIE_001_2552 **Plot** H-20-21 **Site** PTT Global Chemical Public Company Limited
Location Station - 1 (Admin)
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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	13.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	51	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	116	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Amornrich Wongsachai

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Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540049

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 09, 2025
Date Reported : May 17, 2025

Page 1 of 1

Sample Number 2540049-1
Sampled Date May 09, 2025 9:30 AM
Sample Description Wastewater
Contract ID L_EIE_001_2552 **Plot** H-20-21 **Site** PTT Global Chemical Public Company Limited
Location Station - 2 (Factory)
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	49	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	1040	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L

Sampling By : Amornrich Wongsachai

Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540049

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 09, 2025
Date Reported : May 17, 2025

Page 1 of 1

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540028

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 09, 2025
Date Reported : May 17, 2025

Page 1 of 1

Sample Number 2540028-1
Sampled Date May 09, 2025 10:50 AM
Sample Description Wastewater
Contract ID L_EIE_004_2553 **Plot** H-23A,H-31 **Site** PTT Global Chemical Public Company Limited
Location Bu - Phenol A
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	3.5	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	35	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	128	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Amornrich Wongsachai

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540032

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 15, 2025

Page 1 of 1

Sample Number 2540032-1
Sampled Date May 08, 2025 2:25 PM
Sample Description Wastewater
Contract ID L_WHA EIE_004_2563 **Plot** H.33/1 **Site** Quechen Silica (Thailand) Co.,Ltd.
Location Domestic wastewater
Date Analysis Commenced May 08, 2025
Condition of Sample Contained in one amber glass bottle and three 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	3.0	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	35	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	244	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	3	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)

Sampling By : Amornrich Wongsachai

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540032

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory I Monthly

Project Location : WHA EIE

Date Received : May 08, 2025
Date Reported : May 15, 2025

Page 1 of 1

Technical Management: Photchana S. — Phokhana Seeda, Scientist (4)

Approved by: Dej Changchier, Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2540012

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : 3293079-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540012-1
Sampled Date	May 07, 2025 9:42 AM
Sample Description	Wastewater
Contract ID	L_EIE_005_2560 **Plot** G-71 **Site** Rockwood (Thailand) Limited
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	45	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	116	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	400	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	10	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ทะเบียนเลขที่ ว-323-ว-0020

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540055

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293130-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540055-1
Sampled Date	May 08, 2025 2:40 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 1
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			[illegible]	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	258	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	15	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornrich Wongsachai ทะเบียนเลขที่ ว-323-ว-0040

Remark :
- LOD : Limit of Detection

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540055

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293130-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540057

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293131-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540057-1
Sampled Date	May 08, 2025 2:45 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co.,Ltd.
Location	Station 2
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	53	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 C	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			31.1	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	4450	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Amornrich Wongsachai ทะเบียนเลขที่ ว-323-ว-0040

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540057

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : 3293131-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540056

Date Received : May 08, 2025
Date Reported : May 16, 2025
Report Number : 3293133-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540056-1
Sampled Date	May 08, 2025 3:15 PM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** H-45 **Site** SEKISUI SPECIALTY CHEMICALS (THAILAND) CO.,LTD.
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	6.5	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	7	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			32.5	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		4	80	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Amornrich Wongsachai ทะเบียนเลขที่ ว-323-ว-0040

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540056

Date Received : May 08, 2025
Date Reported : May 16, 2025
Report Number : 3293133-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540003

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : 3293070-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540003-1
Sampled Date	May 07, 2025 2:33 PM
Sample Description	Wastewater
Contract ID	L_EIE_013_2560 **Plot** G-10 **Site** Siam Stabilizers & Chemicals Co.,Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	6.9	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	39	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	258	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		4	18	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ทะเบียนเลขที่ ว-323-ว-0020

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540022

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : 3293093-1

Client : WHA Utilities and Power Public Company Limited
18, Paksrosongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540022-1
Sampled Date	May 07, 2025 11:15 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2561 **Plot** G-34/1 **Site** Solvay (Thailand) Limited
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	3.1	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	49	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	140	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		4	8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chimphalee ทะเบียนเลขที่ ว-323-ว-0020

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4), ทะเบียนเลขที่ ว-323-ว-0029
Approved by: [signature] — Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-325-ว-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2540045

Date Received : May 07, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540045-1
Sampled Date	May 07, 2025 2:55 PM
Sample Description	Wastewater
Contract ID	L_EIE_026_2560 **Plot** G-05 **Site** [illegible] Co.,Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	24	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	21	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chomphalee [illegible]

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

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540045

Date Received : May 07, 2025
Date Reported : May 15, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540017

Date Received : May 09, 2025
Date Reported : May 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540017-1
Sampled Date	May 09, 2025 10:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_014_2560 **Plot** G-51 **Site** [illegible] Co.,Ltd.
Location	Station - 1
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	[illegible]	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Amornrich Wongsachai [illegible]

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540046

Date Received : May 07, 2025
Date Reported : May 15, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540046-1
Sampled Date	May 07, 2025 2:35 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2560 **Plot** G-04 **Site** Vanachai Chemical Industries Co.,Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chomphalee [illegible]

Remark :
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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540046

Date Received : May 07, 2025
Date Reported : May 15, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540021

Date Received : May 07, 2025
Date Reported : May 15, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540021-1
Sampled Date	May 07, 2025 10:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2560 **Plot** [illegible] **Site** Vencorex (Thailand) Co.,Ltd.
Date Analysis Commenced	May 07, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	12.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Warunyoo Chomphalee [illegible]

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540026

Date Received : May 08, 2025
Date Reported : May 15, 2025
Report Number : [illegible]

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540026-1
Sampled Date	May 08, 2025 1:48 PM
Sample Description	Wastewater
Contract ID	[illegible] **Plot** [illegible] **Site** Zeon Chemicals (Thailand) Co.,Ltd.
Date Analysis Commenced	May 08, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12.8	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	56	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L		3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.7	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	29	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Amornrich Wongsachai [illegible]

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2540031

Date Received : May 13, 2025
Date Reported : May 19, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2540031-1
Sampled Date	May 13, 2025 11:35 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_001_2563 **Plot** [illegible] **Site** Zeon Chemicals Asia Co.,Ltd.
Date Analysis Commenced	May 13, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	61	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	452	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Phongthep [illegible]

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551185

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551185-1
Sampled Date	Jun 09, 2025 10:05 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2556 **Plot** G-69,G-70 **Site** Aditya Birla Chemicals (Thailand) Ltd. (Advanced Materials)
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	3.1	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	15	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	[illegible]	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	[illegible]	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : [illegible]

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551181

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3310538-3

Page 1 of 1

Sample Number : 2551181-1
Sampled Date : Jun 12, 2025 10:20 AM
Sample Description : Wastewater
Contract ID : L_EIE_019_2560 **Plot** G-08 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced : Jun 12, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	27.8	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	81	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	176	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	15	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

Remark :
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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2551213

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3310591-3

Page 1 of 1

Sample Number : 2551213-1
Sampled Date : Jun 12, 2025 10:05 AM
Sample Description : Wastewater
Contract ID : L_EIE_002_2560 **Plot** G-15 to G-17 **Site** AGC Vinythai Public Company Limited
Date Analysis Commenced : Jun 12, 2025
Condition of Sample : Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.2	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	42	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	424	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	3	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2551173

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 18, 2025
Report Number : 3310524-3

Page 1 of 1

Sample Number : 2551173-1
Sampled Date : Jun 09, 2025 3:26 PM
Sample Description : Wastewater
Contract ID : L_EIE_014_2560 **Plot** G-35 **Site** Aleees (Thailand) Ltd.
Date Analysis Commenced : Jun 09, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	86	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	174	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	438	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	46	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551174

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310525-3

Page 1 of 1

Sample Number : 2551174-1
Sampled Date : Jun 09, 2025 10:25 AM
Sample Description : Wastewater
Contract ID : L_EIE_001_2560 **Plot** G-29 **Site** Asahi Chemical (Thailand) Ltd.
Date Analysis Commenced : Jun 09, 2025
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property : Yellow, a lot of odour, some solid and a lot of 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	16.5	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	36	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	488	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	12	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551175

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310526-3

Page 1 of 1

Sample Number : 2551175-1
Sampled Date : Jun 09, 2025 1:40 PM
Sample Description : Wastewater
Contract ID : L_EIE_002_2560 **Plot** G-09 **Site** Asia Petroleum Thailand Co.,Ltd.
Date Analysis Commenced : Jun 09, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	72	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551191

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310553-3

Page 1 of 1

Sample Number : 2551191-1
Sampled Date : Jun 09, 2025 10:25 AM
Sample Description : Wastewater
Contract ID : L_EIE_002_2560 **Plot** H-37 **Site** Bangkok Industrial Gas Company Limited
Date Analysis Commenced : Jun 09, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	846	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Chaiyasorn Lertnarthakulchai [illegible] ว-323-ง-0041

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551215

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3310593-3

Page 1 of 1

Sample Number : 2551215-1
Sampled Date : Jun 12, 2025 11:20 AM
Sample Description : Wastewater
Contract ID : L_EIE_004_2560 **Plot** G-37 **Site** Carlsile Chemical (Thailand) Ltd.
Location : Inspection manhole
Date Analysis Commenced : Jun 12, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	5.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	34	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	868	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551212

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310550-3

Page 1 of 1

Sample Number : 2551212-1
Sampled Date : Jun 09, 2025 1:30 PM
Sample Description : Wastewater
Contract ID : L_EIE_001_2560 **Plot** G-1/1 **Site** E-COATINGS ASIA COMPANY LIMITED
Date Analysis Commenced : Jun 09, 2025
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property : Yellow, a lot of odour, some solid and a lot of solid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	6.2	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	33	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	444	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551196

Client : WHA Utilities and Power Public Company Limited, 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory / Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3310571-3

Page 1 of 1

Sample Number : 2551196-1
Sampled Date : Jun 12, 2025 9:45 AM
Sample Description : Wastewater
Contract ID : L_WHA EIE_006_2563 **Plot** G.77, G.77/1, H.42, H.44 **Site** GC Polyols Company Limited
Date Analysis Commenced : Jun 12, 2025
Condition of Sample : Contained in one amber glass bottle and three 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	17	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	92	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	440	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sarisaen Khuyotkao [illegible] ว-323-ง-0005

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), [illegible] ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, [illegible] ว-325-ง-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551187

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 18, 2025
Report Number : 3310948-1

Page 1 of 1

Sample Number 2551187-1
Sampled Date Jun 12, 2025 10:43 AM
Sample Description Wastewater
Contract ID L_EIE_001_2551 **Plot** G-06A **Site** Global Green Chemicals Co.,Ltd.
Date Analysis Commenced Jun 12, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, 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	5.9	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	33	16	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	472	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuyotkaw ว-323-ช-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551183

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310938-1

Page 1 of 1

Sample Number 2551183-1
Sampled Date Jun 11, 2025 11:08 AM
Sample Description Wastewater
Contract ID L_EIE_024_2550 **Plot** G-7R **Site** Global Power Synergy Co.,Ltd.
Location CUF - 1
Date Analysis Commenced Jun 11, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	212	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansern Khuyotkaw ว-323-ช-0005

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551182

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310937-1

Page 1 of 1

Sample Number 2551182-1
Sampled Date Jun 11, 2025 1:50 PM
Sample Description Wastewater
Contract ID L_EIE_002_2551 **Plot** H-17 **Site** Global Power Synergy Co.,Ltd.
Location CUF - 3
Date Analysis Commenced Jun 11, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	440	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Sampling By : Sansern Khuyotkaw ว-323-ช-0005

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Technical Management: Photchana S. — Photchana Seeda, Scientist (4)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551186

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3310945-1

Page 1 of 1

Sample Number 2551186-1
Sampled Date Jun 12, 2025 2:00 PM
Sample Description Wastewater
Contract ID L_EIE_003_2553 **Plot** G-06 **Site** HMC Polymers Co.,Ltd.
Date Analysis Commenced Jun 12, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	120	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Sampling By : Sansern Khuyotkaw ว-323-ช-0005

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551204

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3310960-1

Page 1 of 1

Sample Number 2551204-1
Sampled Date Jun 10, 2025 10:45 AM
Sample Description Wastewater
Contract ID L_EIE_002_2941 **Plot** H-52A **Site** Dinamikel Chemical (Thailand) Co., Ltd.
Date Analysis Commenced Jun 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	33	Not Detected	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	38	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Sampling By : Sansern Khuyotkaw ว-323-ช-0005

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551214

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310952-1

Page 1 of 1

Sample Number 2551214-1
Sampled Date Jun 11, 2025 10:00 AM
Sample Description Wastewater
Contract ID L_EIE_001_2967 **Plot** G.25,G.26 **Site** Interpretive Co.,Ltd.
Date Analysis Commenced Jun 11, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	33	Not Detected	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	84	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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TESTING No.0042

Lot ID: 2551171

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310920-1

Page 1 of 1

Sample Number 2551171-1
Sampled Date Jun 09, 2025 10:18 AM
Sample Description Wastewater
Contract ID L_EIE_005_2552 **Plot** G-30 **Site** KLJ Organic (Thailand) Ltd.
Date Analysis Commenced Jun 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	98	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551208

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310939-1

Page 1 of 1

Sample Number 2551208-1
Sampled Date Jun 11, 2025 3:00 PM
Sample Description Wastewater
Contract ID L_EIE_002_2565 **Plot** H.13a, H.13e, PW.27-1, H.47b **Site** Kuraray Advanced chemicals(Thailand) Co., Ltd.
Date Analysis Commenced Jun 11, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤250	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	25	Not Detected	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	34	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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TESTING No.0042

Lot ID: 2551207

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310938-1

Page 1 of 1

Sample Number 2551207-1
Sampled Date Jun 11, 2025 2:45 PM
Sample Description Wastewater
Contract ID L_EIE_001_2565 **Plot** PW.28, PW.31, H.47a, H.47c, H.31 **Site** Kuraray GC Advanced Materials Co., Ltd. (North)
Date Analysis Commenced Jun 11, 2025
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property Yellow, a lot of odour, 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	9.8	≤250	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B. part 4500 - O G	Rayong
COD	mg/L	1.5	25	73	≤400	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1,012	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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Technical Management: Jitsupa P. — Jitsupa Prakuengsuk, Scientist (2)
Approved by: Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551180

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 18, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551180-1
Sampled Date	Jun 09, 2025 2:25 PM
Sample Description	Wastewater
Contract ID	L_EIE_015_2560 **Plot** G-14 **Site** Linde (Thailand) PLC.
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.4	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	83	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	1	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	238	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	<1	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible]

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Technical Management: Jitsupa P. — Jitsupa Pratuangsuk, Scientist (2)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551192

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551192-1
Sampled Date	Jun 10, 2025 3:05 PM
Sample Description	Wastewater
Contract ID	L_EIE_004_2556 **Plot** H-10, H-11 **Site** Linde (Thailand) Public Company Limited
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	428	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	4	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible]

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management: Jitsupa P. — Jitsupa Pratuangsuk, Scientist (2)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551172

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 18, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551172-1
Sampled Date	Jun 09, 2025 10:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2551 **Plot** G-21 **Site** HARC (Thailand) Co.,Ltd.
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	86	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	331	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	1	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	472	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	2	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible]

Remark :
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Technical Management: Jitsupa P. — Jitsupa Pratuangsuk, Scientist (2)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551188

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551188-1
Sampled Date	Jun 10, 2025 2:48 PM
Sample Description	Wastewater
Contract ID	L_EIE_010_2560 **Plot** G-03 **Site** MCLS Asia Co.,Ltd.
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of 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	96.5	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	190	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	588	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	12	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible]

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management: Jitsupa P. — Jitsupa Pratuangsuk, Scientist (2)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551177

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551177-1
Sampled Date	Jun 11, 2025 10:10 AM
Sample Description	Wastewater
Contract ID	L_EIE_011_2560 **Plot** G-32 **Site** [illegible] Chemical Co.,Ltd.
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	31.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	50	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	5.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	394	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	15	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible]

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Technical Management: Photchana S. — Photchana Saeda, Scientist (4)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551170

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551170-1
Sampled Date	Jun 09, 2025 11:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_025_2560 **Plot** G-43 **Site** [illegible] Production Co.,Ltd.
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment \ preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, 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	17	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	68	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	756	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	2	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible]

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Technical Management: Jitsupa P. — Jitsupa Pratuangsuk, Scientist (2)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551224

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551224-1
Sampled Date	Jun 09, 2025 9:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of 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	9.2	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	15	33	[illegible]	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H+ (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	9	840	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	4	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible], Thanasoun Nanakuma [illegible]

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P. — Jitsupa Pratuangsuk, Scientist (2)
Approved by: [signature] — Dej Changchien, Senior Manager

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Analysis / Test Report

TESTING No.0009

Lot ID: 2551224

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551224-1
Sampled Date	Jun 09, 2025 9:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of 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	2.16	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 E	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul , Thanasoun Nanakuma

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Approved by: Chanatt L. — Chanattagarn Inchom, Section Head

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Analysis / Test Report

TESTING No.0009

Lot ID: 2551224

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :

Project Name : Factory l Monthly

Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : [illegible]

Page 1 of 1

Sample Number	2551224-1
Sampled Date	Jun 09, 2025 9:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2560 **Plot** G-72 **Site** NS BlueScope (Thailand) Limited
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment / preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
[illegible]	mg/L	0.003	0.005	0.81	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 3125 & 3030 E	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563

Sampling By : Sansoen Khuyokkul [illegible], Thanasoun Nanakuma [illegible]

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management: Chanatt L. — Chanattagarn Inchom, Section Head
Approved by: [signature] — Kanokkorn Anek, Assistant General Manager

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551222

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3319577-1

Page 1 of 1

Sample Number	2551222-1
Sampled Date	Jun 10, 2025 11:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_020_2560 **Plot** G-56 - G-66,68 **Site** [illegible] United Steel Co.,Ltd.
Location	Factory I
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and four 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	4.7	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	46	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				6.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			31.6	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	676	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	2	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyoksui ทะเบียนเลขที่ ว-323-ง-0005 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-ง-0002

Remark :
- LOD : Limit of Detection

Technical Management: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

[illegible]

Analysis / Test Report

TESTING No.0042

Lot ID: 2551222

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3319577-1

Page 1 of 1

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Analysis / Test Report

TESTING No.0009

Lot ID: 2551222

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3319577-2

Page 1 of 1

Sample Number	2551222-1
Sampled Date	Jun 10, 2025 11:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_020_2560 **Plot** G-56 - G-66,68 **Site** [illegible] United Steel Co.,Ltd.
Location	Factory I
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and four 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	1.52	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyoksui , Pattarapol Sawangjaitam

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

Approved by: Chanatt L. — Chanattagarn Inchom, Section Head

Analysis / Test Report

TESTING No.0042

Lot ID: 2551223

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3319578-1

Page 1 of 1

Sample Number	2551223-1
Sampled Date	Jun 10, 2025 11:29 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2556 **Plot** G-47 **Site** [illegible] United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and four 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	628	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyoksui ทะเบียนเลขที่ ว-323-ง-0005

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Analysis / Test Report

TESTING No.0009

Lot ID: 2551223

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3319578-2

Page 1 of 1

Sample Number	2551223-1
Sampled Date	Jun 10, 2025 11:29 AM
Sample Description	Wastewater
Contract ID	L_EIE_003_2556 **Plot** G-47 **Site** [illegible] United Steel Co.,Ltd.
Location	Factory 2
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and four 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							
Zinc	mg/L	0.003	0.005	0.50	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyoksui ทะเบียนเลขที่ ว-323-ง-0005

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Chanatt L. — Chanattagarn Inchom, Section Head, ทะเบียนเลขที่ ว-204-ง-0008
Approved by: Kanokkorn Anek, Assistant General Manager, ทะเบียนเลขที่ ว-204-ง-0004

Analysis / Test Report

TESTING No.0042

Lot ID: 2551190

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3319582-1

Page 1 of 1

Sample Number	2551190-1
Sampled Date	Jun 12, 2025 2:35 PM
Sample Description	Wastewater
Contract ID	L_EIE_002_2554 **Plot** H-12 **Site** PTT Asahi Chemical Co.,Ltd.
Date Analysis Commenced	Jun 12, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	872	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	[illegible]	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyoksui ทะเบียนเลขที่ ว-323-ง-0005

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Technical Management: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551179

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3319532-1

Page 1 of 1

Sample Number	2551179-1
Sampled Date	Jun 09, 2025 2:10 PM
Sample Description	Wastewater
Contract ID	L_EIE_003_2554 **Plot** G-02,03 **Site** PTT Global Chemical Public Company Limited. (EA Plant)
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	700	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuyoksui ทะเบียนเลขที่ ว-323-ง-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-325-ง-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551216

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3319572-1

Page 1 of 1

Sample Number	2551216-1
Sampled Date	Jun 12, 2025 3:20 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2550 **Plot** G-02-024-03 **Site** PTT Global Chemical Public Company Limited. (EG Plant)
Date Analysis Commenced	Jun 12, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	42	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	5	<5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	632	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	<5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Sansoen Khuyoksui ทะเบียนเลขที่ ว-323-ง-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ง-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ง-0001

Analysis / Test Report

Lot ID: 2551216

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 12, 2025
Date Reported : Jun 19, 2025
Report Number : 3319572-2

Page 1 of 1

Sample Number	2551216-1
Sampled Date	Jun 12, 2025 3:20 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2550 **Plot** G-02-024-03 **Site** PTT Global Chemical Public Company Limited. (EG Plant)
Date Analysis Commenced	Jun 14, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	Method	Testing Location
Water Testing						
Chloride as Cl	mg/L	0.5	1	145	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (B)	Rayong

Sampling By : Sansoen Khuyoksui

Remark :
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Approved by: Jitsupa P — Jitsupa Prasaengsuk, Scientist (2)

Analysis / Test Report

TESTING No.0042

Lot ID: 2551220

Client : WHA Utilities and Power Public Company Limited
18, Paholyothin (Phaholyothin)... 18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310578-3

Page 1 of 1

Sample Number	2551220-1
Sampled Date	Jun 11, 2025 10:50 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2551 **Plot** H-29 **Site** PTT Global Chemical Public Company Limited
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	28	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	114	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater analysis manual. Environmental Engineering Association of Thailand, 4th ed.,2004	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	376	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuyoksui ทะเบียนเลขที่ ว-323-ฯ-0005

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551220

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310578-3

Page 1 of 1

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551195

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310943-3

Page 1 of 1

Sample Number	2551195-1
Sampled Date	Jun 11, 2025 1:35 PM
Sample Description	Wastewater
Contract ID	L_WHA EIE_002_2563 **Plot** G.18/2, G.20/1, H.28/1, H.24/1, PW18/1, PW.20, PW.27 **Site** PTT Global Chemical Public Company Limited
Location	จุดที่ 1
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	333	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuyoksui ทะเบียนเลขที่ ว-323-ฯ-0005

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551195

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310943-3

Page 1 of 1

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Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551202

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310942-3

Page 1 of 1

Sample Number	2551202-1
Sampled Date	Jun 11, 2025 9:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_001_2552 **Plot** H-26-32 **Site** PTT Global Chemical Public Company Limited
Location	Station - 1 (Admin)
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	12	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	42	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	136	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	73	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuyoksui ทะเบียนเลขที่ ว-323-ฯ-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551221

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310578-3

Page 1 of 1

Sample Number	2551221-1
Sampled Date	Jun 11, 2025 9:20 AM
Sample Description	Wastewater
Contract ID	L_EIE_002_2552 **Plot** H-26-32 **Site** PTT Global Chemical Public Company Limited
Location	Station - 2 (Factory)
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	48	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5530 B, D	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	780	(1)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Samoen Khuyoksui ทะเบียนเลขที่ ว-323-ฯ-0005

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551221

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310578-3

Page 1 of 1

Remark :
- LOD : Limit of Detection
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551201

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 11, 2025
Date Reported : Jun 18, 2025
Report Number : 3310941-3

Page 1 of 1

Sample Number	2551201-1
Sampled Date	Jun 11, 2025 10:35 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2553 **Plot** H-23A,H-31 **Site** PTT Global Chemical Public Company Limited
Location	Bo - Phenol A
Date Analysis Commenced	Jun 11, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	492	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563
Sampling By : Samoen Khuyoksui ทะเบียนเลขที่ ว-323-ฯ-0005

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551206

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150

P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3310567-3

Page 1 of 1

Sample Number	2551206-1
Sampled Date	Jun 10, 2025 2:08 PM
Sample Description	Wastewater
Contract ID	L_WHA EIE_004_2563 **Plot** H.E3/1 **Site** Quechen Silica (Thailand) Co.,Ltd.
Location	Domestic wastewater
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	8	84	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Put), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Samoen Khuyoksui ทะเบียนเลขที่ ว-323-ฯ-0005

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prahuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ฯ-0004
Approved by: Dej Changchier, Senior Manager, ทะเบียนเลขที่ ว-323-ฯ-0001

Analysis / Test Report

TESTING No.0042

Lot ID: 2551206
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551184
Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2551184-1
Sampled Date Jun 09, 2025 9:55 AM
Sample Description Wastewater
Contract ID L_EIE_005_2560 **Plot** G-7/1 **Site** Rockwool (Thailand) Limited
Date Analysis Commenced Jun 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	55	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	413	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	6	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	444	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	20	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksui

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551225
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2551225-1
Sampled Date Jun 10, 2025 2:20 PM
Sample Description Wastewater
Contract ID L_EIE_001_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co., Ltd.
Location Station 1
Date Analysis Commenced Jun 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	<5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			28.9	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	200	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	5	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksui

Remark :
- LOD : Limit of Detection

Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551225
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

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Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551232
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2551232-1
Sampled Date Jun 10, 2025 2:26 PM
Sample Description Wastewater
Contract ID L_EIE_002_2560 **Plot** H-15 **Site** S and L Specialty Polymers Co., Ltd.
Location Station 2
Date Analysis Commenced Jun 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	12	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	67	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 C	Rayong
Oil & Grease	mg/L	-	5	<5	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *				7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			28.8	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2500	(1)	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
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, 24th ed., 2023, part 2540 D	Rayong

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).
(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L, TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.
Sampling By : Sansoen Khuiyoksui

Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551232
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

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Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551226
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2551226-1
Sampled Date Jun 10, 2025 9:40 AM
Sample Description Wastewater
Contract ID L_EIE_003_2560 **Plot** H-45 **Site** SEKISUI SPECIALTY CHEMICALS (THAILAND) CO.,LTD
Date Analysis Commenced Jun 10, 2025
Condition of Sample Contained in one amber glass bottle and three 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	24	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	46	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	16	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C			32.5	≤45	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	348	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	3	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksui

Remark :
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Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551226
Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
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Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551176
Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number 2551176-1
Sampled Date Jun 09, 2025 1:50 PM
Sample Description Wastewater
Contract ID L_EIE_013_2560 **Plot** G-10 **Site** Siam Stabilizers & Chemicals Co.,Ltd.
Date Analysis Commenced Jun 09, 2025
Condition of Sample Contained in one amber glass bottle and three 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	19	≤500	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	93	≤750	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	5	5	≤10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *		-	-	8.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	408	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	20	≤200	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sansoen Khuiyoksui

Remark :
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P. — Scientist (2)
Approved by: Dej Changchier — Senior Manager

Analysis / Test Report

TESTING No.0042

Lot ID: 2551194

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310559-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551194-1
Sampled Date	Jun 09, 2025 3:33 PM
Sample Description	Wastewater
Contract ID	L_EIE_001_2561 **Plot** G.34/1 **Site** Solvay (Thailand) Limited
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	40.2	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	28	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	400	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyokaur ทะเบียนเลขที่ ว-323-ร-0005

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

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2551218

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310561-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551218-1
Sampled Date	Jun 09, 2025 2:50 PM
Sample Description	Wastewater
Contract ID	L_EIE_026_2560 **Plot** G-05 **Site** Thai Ethoxylate Co.,Ltd.
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	6.7	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	42	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual. Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	452	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyokaur ทะเบียนเลขที่ ว-323-ร-0005

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

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

TESTING No.0042

Lot ID: 2551218

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310561-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551189

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3310551-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551189-1
Sampled Date	Jun 10, 2025 3:43 PM
Sample Description	Wastewater
Contract ID	L_EIE_016_2560 **Plot** G-31 **Site** Thai Fei Resin Co.,Ltd.
Location	Station - 1
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	8.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	52	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	884	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<3	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyokaur ทะเบียนเลขที่ ว-323-ร-0005

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551219

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310574-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551219-1
Sampled Date	Jun 09, 2025 2:38 PM
Sample Description	Wastewater
Contract ID	L_EIE_021_2560 **Plot** G-04 **Site** Vanachai Chemical Industries Co.,Ltd.
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in two amber glass bottles and three 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	<2.0	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater analysis manual. Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	84	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyokaur ทะเบียนเลขที่ ว-323-ร-0005

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

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551219

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310574-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551193

Date Received : Jun 09, 2025
Date Reported : Jun 16, 2025
Report Number : 3310558-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551193-1
Sampled Date	Jun 09, 2025 10:40 AM
Sample Description	Wastewater
Contract ID	L_EIE_004_2558 **Plot** G.19 G.19 P.7 **Site** Vencorex (Thailand) Co.,Ltd.
Date Analysis Commenced	Jun 09, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	7.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	99	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	252	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563
Sampling By : Sanseen Khuyokaur ทะเบียนเลขที่ ว-323-ร-0005

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

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Analysis / Test Report

TESTING No.0042

Lot ID: 2551205

Date Received : Jun 10, 2025
Date Reported : Jun 17, 2025
Report Number : 3310562-1

Client : WHA Utilities and Power Public Company Limited
18, Paknamsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name : Factory I Monthly
Project Location : WHA EIE

Page 1 of 1

Sample Number	2551205-1
Sampled Date	Jun 10, 2025 10:20 AM
Sample Description	Wastewater
Contract ID	L_WHA EIE_001_2563 **Plot** H-49 **Site** Zeon Chemicals Asia Co.,Ltd.
Date Analysis Commenced	Jun 10, 2025
Condition of Sample	Contained in one amber glass bottle and three 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	<2.0	≤250	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B; part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH (on site) *	-	-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	500	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Amendment details report of Environmental Health Impact Assessment Report of WHA Eastern Industrial Estate (Map Ta Phut), 4th edition 2020, B.E. 2563 (Expansion)
Sampling By : Sanseen Khuyokaur ทะเบียนเลขที่ ว-323-ร-0005

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management: Jitsupa P — Jitsupa Prakuengsuk, Scientist (2), ทะเบียนเลขที่ ว-323-ร-0004
Approved by: Dej Changchien, Senior Manager, ทะเบียนเลขที่ ว-323-ร-0001

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ภาคผนวก ค-7

ระดับเสียงโดยทั่วไป

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261228-1

Sample Number 2517900-1
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศเหนือ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N1) (GPS 47P 729363, 1405578)
Measurement Date Mar 08 - Mar 09, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	54.1	80.0	46.7
11:00 AM - 12:00 PM	48.3	62.1	43.7
12:00 PM - 01:00 PM	47.5	60.8	45.2
01:00 PM - 02:00 PM	49.1	56.5	46.4
02:00 PM - 03:00 PM	49.0	62.7	43.1
03:00 PM - 04:00 PM	52.9	64.6	45.0
04:00 PM - 05:00 PM	54.0	77.7	46.3
05:00 PM - 06:00 PM	48.8	58.5	46.2
06:00 PM - 07:00 PM	50.5	63.3	47.4
07:00 PM - 08:00 PM	50.1	60.1	48.7
08:00 PM - 09:00 PM	53.2	67.1	49.1
09:00 PM - 10:00 PM	48.7	60.0	47.9
10:00 PM - 11:00 PM	48.8	56.3	47.8
11:00 PM - 12:00 AM	51.8	65.6	47.3
12:00 AM - 01:00 AM	51.5	70.8	47.7
01:00 AM - 02:00 AM	47.6	51.5	47.0
02:00 AM - 03:00 AM	47.5	50.3	46.9
03:00 AM - 04:00 AM	47.7	52.9	47.2
04:00 AM - 05:00 AM	49.0	51.7	48.3
05:00 AM - 06:00 AM	55.5	74.3	48.7
06:00 AM - 07:00 AM	56.0	71.1	48.6
07:00 AM - 08:00 AM	51.3	68.6	48.3
08:00 AM - 09:00 AM	59.0	75.3	51.8
09:00 AM - 10:00 AM	50.8	72.5	44.7
Leq Average 24 hrs. (dB(A))	52.2		
Lmax (dB(A))		80.0	
L90 (dB(A))			47.2
Ldn (dB(A))	58.3		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261229-1

Sample Number 2517900-2
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศเหนือ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N1) (GPS 47P 729363, 1405578)
Measurement Date Mar 09 - Mar 10, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	45.7	54.4	43.6
11:00 AM - 12:00 PM	49.9	68.6	44.6
12:00 PM - 01:00 PM	50.8	65.3	46.7
01:00 PM - 02:00 PM	49.5	55.6	48.0
02:00 PM - 03:00 PM	48.9	60.6	47.1
03:00 PM - 04:00 PM	53.2	73.4	46.7
04:00 PM - 05:00 PM	50.0	71.3	46.2
05:00 PM - 06:00 PM	48.6	61.2	46.6
06:00 PM - 07:00 PM	52.4	68.7	47.9
07:00 PM - 08:00 PM	52.5	67.9	46.3
08:00 PM - 09:00 PM	46.5	57.3	45.5
09:00 PM - 10:00 PM	48.4	53.3	47.6
10:00 PM - 11:00 PM	54.3	69.3	47.7
11:00 PM - 12:00 AM	46.7	50.3	46.2
12:00 AM - 01:00 AM	47.5	53.3	46.9
01:00 AM - 02:00 AM	47.9	54.1	47.3
02:00 AM - 03:00 AM	49.4	62.3	48.0
03:00 AM - 04:00 AM	49.9	54.7	49.0
04:00 AM - 05:00 AM	48.9	55.7	48.0
05:00 AM - 06:00 AM	52.0	61.2	50.2
06:00 AM - 07:00 AM	61.4	76.2	49.7
07:00 AM - 08:00 AM	53.9	75.7	47.7
08:00 AM - 09:00 AM	52.1	69.1	47.0
09:00 AM - 10:00 AM	51.1	71.6	43.9
Leq Average 24 hrs. (dB(A))	52.3		
Lmax (dB(A))		76.2	
L90 (dB(A))			47.0
Ldn (dB(A))	60.0		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261230-1

Sample Number 2517900-3
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศเหนือ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N1) (GPS 47P 729363, 1405578)
Measurement Date Mar 10 - Mar 11, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	45.5	58.3	44.0
11:00 AM - 12:00 PM	47.6	57.9	45.5
12:00 PM - 01:00 PM	50.4	59.2	47.1
01:00 PM - 02:00 PM	48.4	56.4	47.0
02:00 PM - 03:00 PM	49.1	62.3	47.3
03:00 PM - 04:00 PM	49.6	61.3	46.7
04:00 PM - 05:00 PM	52.7	73.0	46.3
05:00 PM - 06:00 PM	60.1	81.8	47.0
06:00 PM - 07:00 PM	51.8	72.3	47.8
07:00 PM - 08:00 PM	51.0	62.4	48.1
08:00 PM - 09:00 PM	48.5	66.9	46.7
09:00 PM - 10:00 PM	50.2	58.9	48.1
10:00 PM - 11:00 PM	53.1	62.5	49.2
11:00 PM - 12:00 AM	47.5	53.7	47.1
12:00 AM - 01:00 AM	48.5	58.5	48.0
01:00 AM - 02:00 AM	49.6	61.7	47.7
02:00 AM - 03:00 AM	48.7	53.7	48.0
03:00 AM - 04:00 AM	48.9	59.5	46.7
04:00 AM - 05:00 AM	47.6	53.0	46.5
05:00 AM - 06:00 AM	51.9	65.7	47.9
06:00 AM - 07:00 AM	53.5	65.4	47.7
07:00 AM - 08:00 AM	54.4	70.7	48.7
08:00 AM - 09:00 AM	51.2	65.6	44.8
09:00 AM - 10:00 AM	52.6	65.0	48.0
Leq Average 24 hrs. (dB(A))	51.9		
Lmax (dB(A))		81.8	
L90 (dB(A))			47.1
Ldn (dB(A))	57.3		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261231-1

Sample Number 2517900-4
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศเหนือ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N1) (GPS 47P 729363, 1405578)
Measurement Date Mar 11 - Mar 12, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	47.9	54.6	45.8
11:00 AM - 12:00 PM	50.4	61.1	47.1
12:00 PM - 01:00 PM	49.9	65.6	46.6
01:00 PM - 02:00 PM	50.9	59.4	48.2
02:00 PM - 03:00 PM	56.0	73.7	48.2
03:00 PM - 04:00 PM	54.8	69.8	48.4
04:00 PM - 05:00 PM	52.9	62.7	48.7
05:00 PM - 06:00 PM	49.4	56.9	47.7
06:00 PM - 07:00 PM	51.6	65.3	49.3
07:00 PM - 08:00 PM	54.4	63.9	52.0
08:00 PM - 09:00 PM	51.9	67.6	48.3
09:00 PM - 10:00 PM	52.2	67.1	48.4
10:00 PM - 11:00 PM	53.7	78.9	48.1
11:00 PM - 12:00 AM	48.5	50.2	47.9
12:00 AM - 01:00 AM	48.5	57.9	47.7
01:00 AM - 02:00 AM	48.8	58.6	47.7
02:00 AM - 03:00 AM	50.3	63.2	48.0
03:00 AM - 04:00 AM	49.8	54.4	48.8
04:00 AM - 05:00 AM	50.9	73.4	48.3
05:00 AM - 06:00 AM	52.7	60.4	49.2
06:00 AM - 07:00 AM	54.0	63.2	49.4
07:00 AM - 08:00 AM	50.2	59.2	46.4
08:00 AM - 09:00 AM	50.1	63.7	47.2
09:00 AM - 10:00 AM	50.2	65.6	47.2
Leq Average 24 hrs. (dB(A))	51.8		
Lmax (dB(A))		78.9	
L90 (dB(A))			48.1
Ldn (dB(A))	57.8		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261232-1

Sample Number 2517900-5
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศใต้ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N2) (GPS 47P 730277, 1403898)
Measurement Date Mar 08 - Mar 09, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900072

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.2	76.7	52.9
11:00 AM - 12:00 PM	57.1	74.3	52.5
12:00 PM - 01:00 PM	58.6	82.3	52.8
01:00 PM - 02:00 PM	63.9	87.3	52.8
02:00 PM - 03:00 PM	58.5	79.4	53.9
03:00 PM - 04:00 PM	57.5	73.0	53.6
04:00 PM - 05:00 PM	57.6	72.4	53.6
05:00 PM - 06:00 PM	60.2	80.5	54.4
06:00 PM - 07:00 PM	59.6	82.5	54.0
07:00 PM - 08:00 PM	56.6	70.5	53.7
08:00 PM - 09:00 PM	56.5	70.8	53.5
09:00 PM - 10:00 PM	56.8	79.0	53.3
10:00 PM - 11:00 PM	56.3	67.7	53.4
11:00 PM - 12:00 AM	56.2	64.5	53.2
12:00 AM - 01:00 AM	56.2	70.1	53.2
01:00 AM - 02:00 AM	56.2	65.0	53.3
02:00 AM - 03:00 AM	59.1	77.4	53.4
03:00 AM - 04:00 AM	60.1	80.4	53.6
04:00 AM - 05:00 AM	61.1	78.1	54.2
05:00 AM - 06:00 AM	61.3	88.7	54.7
06:00 AM - 07:00 AM	63.5	89.4	54.2
07:00 AM - 08:00 AM	57.9	79.1	53.5
08:00 AM - 09:00 AM	57.6	78.6	52.5
09:00 AM - 10:00 AM	60.1	84.1	52.1
Leq Average 24 hrs. (dB(A))	59.2		
Lmax (dB(A))		89.4	
L90 (dB(A))			53.4
Ldn (dB(A))	66.0		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261233-1

Sample Number 2517900-6
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศใต้ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N2) (GPS 47P 730277, 1403898)
Measurement Date Mar 09 - Mar 10, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900072

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	58.8	81.4	52.0
11:00 AM - 12:00 PM	55.8	74.9	51.7
12:00 PM - 01:00 PM	55.2	69.2	52.3
01:00 PM - 02:00 PM	63.8	84.5	51.9
02:00 PM - 03:00 PM	55.8	79.6	51.9
03:00 PM - 04:00 PM	56.7	78.4	52.4
04:00 PM - 05:00 PM	56.6	76.8	52.7
05:00 PM - 06:00 PM	57.4	76.0	53.8
06:00 PM - 07:00 PM	58.5	83.2	53.9
07:00 PM - 08:00 PM	57.2	77.0	54.0
08:00 PM - 09:00 PM	56.8	79.4	53.7
09:00 PM - 10:00 PM	56.4	71.9	53.6
10:00 PM - 11:00 PM	56.3	67.0	53.6
11:00 PM - 12:00 AM	59.4	74.4	53.7
12:00 AM - 01:00 AM	60.5	84.7	53.5
01:00 AM - 02:00 AM	57.3	73.6	53.2
02:00 AM - 03:00 AM	63.5	82.0	54.8
03:00 AM - 04:00 AM	61.0	78.9	54.8
04:00 AM - 05:00 AM	62.7	85.0	55.6
05:00 AM - 06:00 AM	60.1	81.1	55.2
06:00 AM - 07:00 AM	62.3	82.2	54.3
07:00 AM - 08:00 AM	58.8	81.5	52.9
08:00 AM - 09:00 AM	58.2	75.8	52.9
09:00 AM - 10:00 AM	57.4	76.0	52.8
Leq Average 24 hrs. (dB(A))	59.4		
Lmax (dB(A))		85.0	
L90 (dB(A))			53.5
Ldn (dB(A))	67.0		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261234-1

Sample Number 2517900-7
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศใต้ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N2) (GPS 47P 730277, 1403898)
Measurement Date Mar 10 - Mar 11, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900072

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	56.6	71.7	53.0
11:00 AM - 12:00 PM	58.2	78.4	52.9
12:00 PM - 01:00 PM	58.0	76.1	52.7
01:00 PM - 02:00 PM	57.2	78.5	52.8
02:00 PM - 03:00 PM	61.5	82.5	53.0
03:00 PM - 04:00 PM	57.7	77.4	53.0
04:00 PM - 05:00 PM	57.1	73.8	52.8
05:00 PM - 06:00 PM	65.0	88.4	54.0
06:00 PM - 07:00 PM	60.1	82.9	53.6
07:00 PM - 08:00 PM	56.8	82.4	53.4
08:00 PM - 09:00 PM	56.0	72.1	53.4
09:00 PM - 10:00 PM	55.8	68.5	53.6
10:00 PM - 11:00 PM	56.2	80.9	53.4
11:00 PM - 12:00 AM	55.8	65.7	53.7
12:00 AM - 01:00 AM	55.8	70.5	53.8
01:00 AM - 02:00 AM	63.1	84.8	53.9
02:00 AM - 03:00 AM	61.2	79.4	53.8
03:00 AM - 04:00 AM	58.0	74.0	53.8
04:00 AM - 05:00 AM	59.8	75.4	53.9
05:00 AM - 06:00 AM	62.2	80.7	54.8
06:00 AM - 07:00 AM	58.8	77.0	54.2
07:00 AM - 08:00 AM	56.9	78.7	52.2
08:00 AM - 09:00 AM	58.6	88.5	52.3
09:00 AM - 10:00 AM	57.8	78.9	52.4
Leq Average 24 hrs. (dB(A))	59.3		
Lmax (dB(A))		88.5	
L90 (dB(A))			53.4
Ldn (dB(A))	66.1		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261235-1

Sample Number 2517900-8
Parameter Noise (Leq 24 hrs)
Location ริมรั้วนิคมฯ ทางด้านทิศใต้ (บริเวณที่อยู่ใกล้เคียงพื้นที่ชุมชนมากที่สุด)(N2) (GPS 47P 730277, 1403898)
Measurement Date Mar 11 - Mar 12, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900072

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	58.6	82.5	52.2
11:00 AM - 12:00 PM	56.5	76.4	51.8
12:00 PM - 01:00 PM	56.4	79.3	51.7
01:00 PM - 02:00 PM	60.8	84.5	52.0
02:00 PM - 03:00 PM	59.4	82.0	52.3
03:00 PM - 04:00 PM	57.1	75.7	52.9
04:00 PM - 05:00 PM	56.8	77.5	52.9
05:00 PM - 06:00 PM	58.8	81.2	53.7
06:00 PM - 07:00 PM	56.8	72.9	53.6
07:00 PM - 08:00 PM	55.8	72.6	52.8
08:00 PM - 09:00 PM	55.5	73.0	52.3
09:00 PM - 10:00 PM	56.3	73.2	52.4
10:00 PM - 11:00 PM	56.2	75.5	52.7
11:00 PM - 12:00 AM	60.0	78.7	52.4
12:00 AM - 01:00 AM	55.6	78.3	52.3
01:00 AM - 02:00 AM	56.4	71.4	52.4
02:00 AM - 03:00 AM	59.8	78.3	52.8
03:00 AM - 04:00 AM	57.4	72.7	52.7
04:00 AM - 05:00 AM	57.2	77.4	53.2
05:00 AM - 06:00 AM	58.9	79.0	54.5
06:00 AM - 07:00 AM	58.9	77.4	53.6
07:00 AM - 08:00 AM	60.7	81.6	52.1
08:00 AM - 09:00 AM	61.8	88.6	51.7
09:00 AM - 10:00 AM	61.9	92.9	52.0
Leq Average 24 hrs. (dB(A))	58.5		
Lmax (dB(A))		92.9	
L90 (dB(A))			52.4
Ldn (dB(A))	64.6		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261236-1

Sample Number 2517900-9
Parameter Noise (Leq 24 hrs)
Location สำนักงานนิคมอุตสาหกรรมดับบลิวเอชเอตะวันออก(มาบตาพุด)(N3) (GPS 47P 0730910, 1405267)
Measurement Date Mar 08 - Mar 09, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900071

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	59.9	75.9	54.6
11:00 AM - 12:00 PM	59.5	74.9	54.0
12:00 PM - 01:00 PM	60.8	75.5	54.4
01:00 PM - 02:00 PM	61.2	86.4	54.8
02:00 PM - 03:00 PM	59.8	75.4	54.6
03:00 PM - 04:00 PM	59.4	75.7	55.0
04:00 PM - 05:00 PM	60.4	77.6	55.1
05:00 PM - 06:00 PM	60.2	76.0	55.1
06:00 PM - 07:00 PM	59.5	74.0	55.2
07:00 PM - 08:00 PM	59.3	76.4	54.7
08:00 PM - 09:00 PM	57.4	73.2	54.5
09:00 PM - 10:00 PM	56.9	71.8	54.5
10:00 PM - 11:00 PM	56.6	74.1	54.3
11:00 PM - 12:00 AM	55.6	68.1	54.3
12:00 AM - 01:00 AM	55.8	70.5	54.3
01:00 AM - 02:00 AM	56.0	71.7	54.2
02:00 AM - 03:00 AM	54.9	69.1	54.1
03:00 AM - 04:00 AM	55.2	71.0	54.0
04:00 AM - 05:00 AM	56.2	71.7	54.2
05:00 AM - 06:00 AM	58.5	75.4	54.7
06:00 AM - 07:00 AM	61.2	80.5	55.7
07:00 AM - 08:00 AM	60.5	75.3	55.0
08:00 AM - 09:00 AM	62.5	81.1	55.6
09:00 AM - 10:00 AM	60.5	77.9	54.4
Leq Average 24 hrs. (dB(A))	59.2		
Lmax (dB(A))		86.4	
L90 (dB(A))			54.5
Ldn (dB(A))	64.1		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261237-1

Sample Number 2517900-10
Parameter Noise (Leq 24 hrs)
Location สำนักงานนิคมอุตสาหกรรมดับบลิวเอชเอตะวันออก(มาบตาพุด)(N3) (GPS 47P 0730910, 1405267)
Measurement Date Mar 09 - Mar 10, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900071

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.1	78.4	55.1
11:00 AM - 12:00 PM	59.3	77.4	54.2
12:00 PM - 01:00 PM	61.3	80.6	55.3
01:00 PM - 02:00 PM	61.5	75.3	56.0
02:00 PM - 03:00 PM	61.0	78.1	56.4
03:00 PM - 04:00 PM	60.8	75.3	55.6
04:00 PM - 05:00 PM	61.1	76.5	55.5
05:00 PM - 06:00 PM	60.4	78.2	55.4
06:00 PM - 07:00 PM	58.5	77.3	55.3
07:00 PM - 08:00 PM	59.2	75.5	54.6
08:00 PM - 09:00 PM	57.8	76.1	54.2
09:00 PM - 10:00 PM	57.7	79.9	54.2
10:00 PM - 11:00 PM	55.8	69.2	54.1
11:00 PM - 12:00 AM	56.1	75.2	53.9
12:00 AM - 01:00 AM	56.2	76.8	54.0
01:00 AM - 02:00 AM	55.7	74.4	54.1
02:00 AM - 03:00 AM	55.9	70.7	54.4
03:00 AM - 04:00 AM	56.3	75.2	54.6
04:00 AM - 05:00 AM	56.9	72.2	54.4
05:00 AM - 06:00 AM	62.5	81.1	55.6
06:00 AM - 07:00 AM	57.2	74.1	53.4
07:00 AM - 08:00 AM	59.9	79.2	54.4
08:00 AM - 09:00 AM	59.2	74.0	53.7
09:00 AM - 10:00 AM	61.2	79.8	54.3
Leq Average 24 hrs. (dB(A))	59.4		
Lmax (dB(A))		81.1	
L90 (dB(A))			54.4
Ldn (dB(A))	64.5		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261238-1

Sample Number 2517900-11
Parameter Noise (Leq 24 hrs)
Location สำนักงานนิคมอุตสาหกรรมดับบลิวเอชเอตะวันออก(มาบตาพุด)(N3) (GPS 47P 0730910, 1405267)
Measurement Date Mar 10 - Mar 11, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900071

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	59.2	76.6	53.1
11:00 AM - 12:00 PM	59.8	77.1	53.8
12:00 PM - 01:00 PM	58.0	76.1	52.9
01:00 PM - 02:00 PM	60.0	79.3	54.0
02:00 PM - 03:00 PM	60.2	74.0	54.7
03:00 PM - 04:00 PM	59.7	76.8	55.1
04:00 PM - 05:00 PM	59.5	74.0	54.3
05:00 PM - 06:00 PM	59.8	75.2	54.2
06:00 PM - 07:00 PM	59.1	76.9	54.1
07:00 PM - 08:00 PM	58.1	76.9	54.9
08:00 PM - 09:00 PM	58.8	75.1	54.2
09:00 PM - 10:00 PM	57.4	75.7	53.8
10:00 PM - 11:00 PM	57.3	79.5	53.8
11:00 PM - 12:00 AM	55.4	68.8	53.7
12:00 AM - 01:00 AM	55.7	74.8	53.5
01:00 AM - 02:00 AM	55.8	76.4	53.6
02:00 AM - 03:00 AM	55.3	74.0	53.7
03:00 AM - 04:00 AM	55.5	70.3	54.0
04:00 AM - 05:00 AM	55.9	74.8	54.2
05:00 AM - 06:00 AM	56.5	71.8	54.0
06:00 AM - 07:00 AM	62.1	80.7	55.2
07:00 AM - 08:00 AM	59.1	75.1	53.8
08:00 AM - 09:00 AM	58.7	74.1	53.2
09:00 AM - 10:00 AM	60.0	74.7	53.6
Leq Average 24 hrs. (dB(A))	58.6		
Lmax (dB(A))		80.7	
L90 (dB(A))			53.8
Ldn (dB(A))	64.0		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261239-1

Sample Number 2517900-12
Parameter Noise (Leq 24 hrs)
Location สำนักงานนิคมอุตสาหกรรมดับบลิวเอชเอตะวันออก(มาบตาพุด)(N3) (GPS 47P 0730910, 1405267)
Measurement Date Mar 11 - Mar 12, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900071

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.4	85.6	54.0
11:00 AM - 12:00 PM	59.0	74.6	53.8
12:00 PM - 01:00 PM	58.6	74.9	54.2
01:00 PM - 02:00 PM	59.6	76.8	54.3
02:00 PM - 03:00 PM	59.4	75.2	54.3
03:00 PM - 04:00 PM	58.7	73.2	54.4
04:00 PM - 05:00 PM	58.5	75.6	53.9
05:00 PM - 06:00 PM	56.6	72.4	53.7
06:00 PM - 07:00 PM	56.1	71.0	53.7
07:00 PM - 08:00 PM	55.8	73.3	53.5
08:00 PM - 09:00 PM	54.7	67.2	53.4
09:00 PM - 10:00 PM	54.9	69.6	53.4
10:00 PM - 11:00 PM	55.1	70.8	53.3
11:00 PM - 12:00 AM	54.0	68.2	53.2
12:00 AM - 01:00 AM	54.3	70.1	53.1
01:00 AM - 02:00 AM	55.3	70.8	53.3
02:00 AM - 03:00 AM	54.3	69.0	52.8
03:00 AM - 04:00 AM	54.5	70.2	52.7
04:00 AM - 05:00 AM	53.4	67.6	52.6
05:00 AM - 06:00 AM	53.7	69.5	52.5
06:00 AM - 07:00 AM	54.7	70.2	52.7
07:00 AM - 08:00 AM	56.6	73.5	52.8
08:00 AM - 09:00 AM	59.3	78.6	53.8
09:00 AM - 10:00 AM	58.6	73.4	53.1
Leq Average 24 hrs. (dB(A))	57.1		
Lmax (dB(A))		85.6	
L90 (dB(A))			53.4
Ldn (dB(A))	61.6		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chonticha Subongkoch
Scientist (3)

Approved by Supot S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261240-1

Sample Number 2517900-13
Parameter Noise (Leq 24 hrs)
Location รังหนองแฟบ (N4) (GPS 47P 0729830, 1403321)
Measurement Date Mar 08 - Mar 09, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900073

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	64.9	79.8	62.1
11:00 AM - 12:00 PM	64.5	78.2	62.2
12:00 PM - 01:00 PM	63.1	73.4	60.5
01:00 PM - 02:00 PM	63.2	73.9	60.6
02:00 PM - 03:00 PM	64.6	79.4	61.4
03:00 PM - 04:00 PM	65.5	86.2	62.1
04:00 PM - 05:00 PM	64.6	77.6	61.8
05:00 PM - 06:00 PM	65.4	77.4	62.8
06:00 PM - 07:00 PM	66.4	75.7	63.8
07:00 PM - 08:00 PM	66.6	80.4	63.4
08:00 PM - 09:00 PM	67.1	75.4	63.9
09:00 PM - 10:00 PM	64.2	74.3	63.1
10:00 PM - 11:00 PM	63.8	70.5	62.8
11:00 PM - 12:00 AM	63.9	70.9	63.0
12:00 AM - 01:00 AM	64.3	74.6	63.3
01:00 AM - 02:00 AM	64.3	72.7	63.2
02:00 AM - 03:00 AM	63.6	73.7	62.6
03:00 AM - 04:00 AM	64.3	75.1	63.1
04:00 AM - 05:00 AM	64.9	72.9	63.3
05:00 AM - 06:00 AM	66.4	81.4	64.1
06:00 AM - 07:00 AM	65.9	77.0	63.9
07:00 AM - 08:00 AM	66.9	83.3	63.8
08:00 AM - 09:00 AM	65.7	80.1	62.6
09:00 AM - 10:00 AM	64.6	86.8	61.6
Leq Average 24 hrs. (dB(A))	65.1		
Lmax (dB(A))		86.8	
L90 (dB(A))			62.8
Ldn (dB(A))	71.2		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการบดบัน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chontícha Subongkoch
Scientist (3)

Approved by Supt S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261241-1

Sample Number 2517900-14
Parameter Noise (Leq 24 hrs)
Location รังหนองแฟบ (N4) (GPS 47P 0729830, 1403321)
Measurement Date Mar 09 - Mar 10, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900073

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	64.6	83.5	61.4
11:00 AM - 12:00 PM	62.0	75.8	60.0
12:00 PM - 01:00 PM	62.6	71.3	60.7
01:00 PM - 02:00 PM	63.2	80.1	60.3
02:00 PM - 03:00 PM	63.8	77.4	60.4
03:00 PM - 04:00 PM	63.4	76.0	60.8
04:00 PM - 05:00 PM	63.2	79.2	60.6
05:00 PM - 06:00 PM	64.4	74.0	61.6
06:00 PM - 07:00 PM	64.5	78.4	62.0
07:00 PM - 08:00 PM	63.9	75.1	61.9
08:00 PM - 09:00 PM	62.9	78.2	61.5
09:00 PM - 10:00 PM	62.2	75.1	61.1
10:00 PM - 11:00 PM	61.7	72.8	60.8
11:00 PM - 12:00 AM	62.2	72.2	61.2
12:00 AM - 01:00 AM	62.9	73.2	62.0
01:00 AM - 02:00 AM	62.1	70.3	61.1
02:00 AM - 03:00 AM	63.3	68.3	62.2
03:00 AM - 04:00 AM	63.5	69.9	62.6
04:00 AM - 05:00 AM	65.0	77.4	63.4
05:00 AM - 06:00 AM	66.0	76.0	64.0
06:00 AM - 07:00 AM	66.1	77.7	63.9
07:00 AM - 08:00 AM	63.7	76.9	61.9
08:00 AM - 09:00 AM	65.0	81.9	62.0
09:00 AM - 10:00 AM	66.1	86.6	62.5
Leq Average 24 hrs. (dB(A))	63.9		
Lmax (dB(A))		86.6	
L90 (dB(A))			61.5
Ldn (dB(A))	70.4		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการบดบัน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chontícha Subongkoch
Scientist (3)

Approved by Supt S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261242-1

Sample Number 2517900-15
Parameter Noise (Leq 24 hrs)
Location รังหนองแฟบ (N4) (GPS 47P 0729830, 1403321)
Measurement Date Mar 10 - Mar 11, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900073

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	65.9	85.5	62.8
11:00 AM - 12:00 PM	65.3	73.4	62.9
12:00 PM - 01:00 PM	64.4	78.7	61.9
01:00 PM - 02:00 PM	63.2	76.0	61.4
02:00 PM - 03:00 PM	63.1	75.7	60.3
03:00 PM - 04:00 PM	63.4	75.1	60.4
04:00 PM - 05:00 PM	63.9	77.4	60.9
05:00 PM - 06:00 PM	64.2	81.4	61.3
06:00 PM - 07:00 PM	63.8	77.4	60.6
07:00 PM - 08:00 PM	62.1	73.0	60.6
08:00 PM - 09:00 PM	61.6	74.9	60.2
09:00 PM - 10:00 PM	61.6	80.5	60.1
10:00 PM - 11:00 PM	61.4	75.2	60.4
11:00 PM - 12:00 AM	62.4	72.6	60.5
12:00 AM - 01:00 AM	62.0	69.1	60.5
01:00 AM - 02:00 AM	61.8	65.1	60.7
02:00 AM - 03:00 AM	61.3	69.4	60.2
03:00 AM - 04:00 AM	61.2	67.5	60.3
04:00 AM - 05:00 AM	63.2	74.5	61.5
05:00 AM - 06:00 AM	65.4	78.0	63.0
06:00 AM - 07:00 AM	66.1	83.9	62.9
07:00 AM - 08:00 AM	64.1	83.4	61.3
08:00 AM - 09:00 AM	63.3	78.9	60.6
09:00 AM - 10:00 AM	63.1	77.2	60.8
Leq Average 24 hrs. (dB(A))	63.5		
Lmax (dB(A))		85.5	
L90 (dB(A))			60.6
Ldn (dB(A))	69.6		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการบดบัน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chontícha Subongkoch
Scientist (3)

Approved by Supt S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261243-1

Sample Number 2517900-16
Parameter Noise (Leq 24 hrs)
Location รังหนองแฟบ (N4) (GPS 47P 0729830, 1403321)
Measurement Date Mar 11 - Mar 12, 2025
Measurement by Anurak Tongkhajonsakda
Sound Level meter Serial No. 900073

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	64.2	78.6	61.2
11:00 AM - 12:00 PM	62.8	78.1	60.4
12:00 PM - 01:00 PM	62.8	73.0	59.9
01:00 PM - 02:00 PM	62.9	74.0	60.0
02:00 PM - 03:00 PM	63.3	76.8	59.9
03:00 PM - 04:00 PM	63.3	78.0	59.9
04:00 PM - 05:00 PM	63.5	78.6	60.5
05:00 PM - 06:00 PM	64.9	79.9	61.6
06:00 PM - 07:00 PM	64.6	79.9	61.7
07:00 PM - 08:00 PM	63.8	72.3	60.6
08:00 PM - 09:00 PM	61.8	70.7	59.6
09:00 PM - 10:00 PM	61.1	69.9	59.2
10:00 PM - 11:00 PM	60.1	72.0	58.7
11:00 PM - 12:00 AM	62.2	67.2	61.0
12:00 AM - 01:00 AM	60.7	64.2	58.9
01:00 AM - 02:00 AM	61.5	69.0	60.0
02:00 AM - 03:00 AM	60.3	76.1	58.8
03:00 AM - 04:00 AM	59.6	67.7	58.3
04:00 AM - 05:00 AM	63.4	78.3	58.9
05:00 AM - 06:00 AM	64.7	75.9	61.7
06:00 AM - 07:00 AM	65.6	81.3	62.0
07:00 AM - 08:00 AM	63.0	73.3	60.1
08:00 AM - 09:00 AM	62.9	74.0	60.0
09:00 AM - 10:00 AM	61.6	74.9	60.2
Leq Average 24 hrs. (dB(A))	63.0		
Lmax (dB(A))		81.3	
L90 (dB(A))			60.0
Ldn (dB(A))	69.0		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการบดบัน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management Chontichak
Chontícha Subongkoch
Scientist (3)

Approved by Supt S.
Supot Salamteh
Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261244-1

Sample Number	2517900-17
Parameter	Noise (Leq 24 hrs)
Location	วัดมาบชลูด(NS) (GPS 47P 0730831, 1407365)
Measurement Date	Mar 08 - Mar 09, 2025
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 709746

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.5	83.0	44.9
11:00 AM - 12:00 PM	65.5	85.0	57.0
12:00 PM - 01:00 PM	64.2	81.3	49.1
01:00 PM - 02:00 PM	64.4	83.1	46.4
02:00 PM - 03:00 PM	55.9	72.2	42.5
03:00 PM - 04:00 PM	49.9	77.9	42.4
04:00 PM - 05:00 PM	47.6	73.9	42.3
05:00 PM - 06:00 PM	51.7	79.3	42.4
06:00 PM - 07:00 PM	55.6	79.1	43.9
07:00 PM - 08:00 PM	45.0	64.1	42.9
08:00 PM - 09:00 PM	45.9	64.8	43.2
09:00 PM - 10:00 PM	45.5	64.7	43.1
10:00 PM - 11:00 PM	45.5	61.7	43.1
11:00 PM - 12:00 AM	45.9	72.7	41.5
12:00 AM - 01:00 AM	43.7	60.9	41.2
01:00 AM - 02:00 AM	45.8	73.3	42.3
02:00 AM - 03:00 AM	52.2	82.3	41.2
03:00 AM - 04:00 AM	44.2	72.3	40.9
04:00 AM - 05:00 AM	45.7	72.3	40.5
05:00 AM - 06:00 AM	51.9	75.8	42.3
06:00 AM - 07:00 AM	56.4	79.2	45.5
07:00 AM - 08:00 AM	52.5	77.8	44.8
08:00 AM - 09:00 AM	52.8	74.6	43.5
09:00 AM - 10:00 AM	58.6	76.4	43.2
Leq Average 24 hrs. (dB(A))	57.2		
Lmax (dB(A))		85.0	
L90 (dB(A))			42.9
Ldn (dB(A))	59.5		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

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

Technical Management Chontichak — Chonticha Subongkoch, Scientist (3)

Approved by Supot S. — Supot Salamteh, Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261245-1

Sample Number	2517900-18
Parameter	Noise (Leq 24 hrs)
Location	วัดมาบชลูด(NS) (GPS 47P 0730831, 1407365)
Measurement Date	Mar 09 - Mar 10, 2025
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 709746

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	51.3	74.9	41.6
11:00 AM - 12:00 PM	49.3	76.3	41.1
12:00 PM - 01:00 PM	51.9	76.5	42.7
01:00 PM - 02:00 PM	52.6	73.5	46.7
02:00 PM - 03:00 PM	51.9	78.7	46.0
03:00 PM - 04:00 PM	55.4	88.8	43.3
04:00 PM - 05:00 PM	50.5	74.1	44.7
05:00 PM - 06:00 PM	52.5	80.9	42.9
06:00 PM - 07:00 PM	55.3	77.5	44.1
07:00 PM - 08:00 PM	46.6	62.8	43.5
08:00 PM - 09:00 PM	45.4	82.4	42.4
09:00 PM - 10:00 PM	46.6	65.3	41.0
10:00 PM - 11:00 PM	47.5	72.6	40.4
11:00 PM - 12:00 AM	42.5	62.3	39.1
12:00 AM - 01:00 AM	41.8	69.7	39.4
01:00 AM - 02:00 AM	43.2	59.6	40.7
02:00 AM - 03:00 AM	43.4	60.1	40.4
03:00 AM - 04:00 AM	43.7	66.8	40.2
04:00 AM - 05:00 AM	44.6	65.0	42.1
05:00 AM - 06:00 AM	51.1	77.0	42.7
06:00 AM - 07:00 AM	57.4	74.4	49.2
07:00 AM - 08:00 AM	55.2	78.7	48.5
08:00 AM - 09:00 AM	58.6	72.6	45.3
09:00 AM - 10:00 AM	51.4	76.6	44.5
Leq Average 24 hrs. (dB(A))	52.1		
Lmax (dB(A))		88.8	
L90 (dB(A))			42.7
Ldn (dB(A))	56.9		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

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

Technical Management Chontichak — Chonticha Subongkoch, Scientist (3)

Approved by Supot S. — Supot Salamteh, Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261246-1

Sample Number	2517900-19
Parameter	Noise (Leq 24 hrs)
Location	วัดมาบชลูด(NS) (GPS 47P 0730831, 1407365)
Measurement Date	Mar 10 - Mar 11, 2025
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 709746

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	51.1	76.5	44.6
11:00 AM - 12:00 PM	64.7	101.5	45.8
12:00 PM - 01:00 PM	60.8	95.4	45.9
01:00 PM - 02:00 PM	67.1	96.2	47.5
02:00 PM - 03:00 PM	57.4	86.7	46.0
03:00 PM - 04:00 PM	52.6	76.3	46.2
04:00 PM - 05:00 PM	53.7	76.0	46.8
05:00 PM - 06:00 PM	51.5	75.8	44.2
06:00 PM - 07:00 PM	58.3	80.1	46.1
07:00 PM - 08:00 PM	49.7	68.3	44.6
08:00 PM - 09:00 PM	47.9	60.3	43.4
09:00 PM - 10:00 PM	44.9	63.9	42.1
10:00 PM - 11:00 PM	46.6	73.1	42.5
11:00 PM - 12:00 AM	45.4	72.7	42.2
12:00 AM - 01:00 AM	48.7	77.7	40.7
01:00 AM - 02:00 AM	42.7	63.4	41.0
02:00 AM - 03:00 AM	46.0	74.6	41.4
03:00 AM - 04:00 AM	46.6	71.9	42.2
04:00 AM - 05:00 AM	46.2	71.2	42.2
05:00 AM - 06:00 AM	53.0	78.3	43.1
06:00 AM - 07:00 AM	56.7	80.3	45.8
07:00 AM - 08:00 AM	54.8	77.0	46.4
08:00 AM - 09:00 AM	60.5	78.9	45.7
09:00 AM - 10:00 AM	64.1	79.7	44.8
Leq Average 24 hrs. (dB(A))	58.3		
Lmax (dB(A))		101.5	
L90 (dB(A))			44.6
Ldn (dB(A))	60.2		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

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

Technical Management Chontichak — Chonticha Subongkoch, Scientist (3)

Approved by Supot S. — Supot Salamteh, Section Head

Analysis / Test Report

TESTING
No.0042

Client : WHA Eastern Industrial Estate Co., Ltd.
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O : 54250020
Project Name : Monitoring
Project Location : WHA EIE

Lot ID: 2517900
Date Received : Mar 15, 2025
Date Reported : Mar 19, 2025
Report Number: 3261247-1

Sample Number	2517900-20
Parameter	Noise (Leq 24 hrs)
Location	วัดมาบชลูด(NS) (GPS 47P 0730831, 1407365)
Measurement Date	Mar 11 - Mar 12, 2025
Measurement by	Anurak Tongkhajonsakda
Sound Level meter	Serial No. 709746

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	51.0	74.8	43.7
11:00 AM - 12:00 PM	58.3	78.8	47.7
12:00 PM - 01:00 PM	63.1	81.1	48.9
01:00 PM - 02:00 PM	52.8	75.8	46.2
02:00 PM - 03:00 PM	63.0	85.4	47.5
03:00 PM - 04:00 PM	56.1	80.7	46.8
04:00 PM - 05:00 PM	53.2	77.4	46.1
05:00 PM - 06:00 PM	52.0	75.7	45.9
06:00 PM - 07:00 PM	57.6	79.3	46.8
07:00 PM - 08:00 PM	48.0	63.2	45.1
08:00 PM - 09:00 PM	46.9	60.8	43.4
09:00 PM - 10:00 PM	44.4	60.8	42.0
10:00 PM - 11:00 PM	47.9	73.6	41.7
11:00 PM - 12:00 AM	48.6	65.6	41.3
12:00 AM - 01:00 AM	44.1	71.6	41.4
01:00 AM - 02:00 AM	49.1	72.9	42.0
02:00 AM - 03:00 AM	47.6	75.1	39.8
03:00 AM - 04:00 AM	41.7	53.4	40.0
04:00 AM - 05:00 AM	44.7	72.9	40.4
05:00 AM - 06:00 AM	52.4	73.8	42.5
06:00 AM - 07:00 AM	58.3	78.0	49.0
07:00 AM - 08:00 AM	56.2	77.2	49.6
08:00 AM - 09:00 AM	58.3	78.3	46.9
09:00 AM - 10:00 AM	58.2	74.2	48.8
Leq Average 24 hrs. (dB(A))	56.0		
Lmax (dB(A))		85.4	
L90 (dB(A))			45.1
Ldn (dB(A))	59.3		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

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

Technical Management Chontichak — Chonticha Subongkoch, Scientist (3)

Approved by Supot S. — Supot Salamteh, Section Head

ภาคผนวก ค-8

กากตะกอนจากระบบบำบัดน้ำเสียและระบบผลิตน้ำประปา

Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2538402
Date Received : May 02, 2025
Date Reported : May 20, 2025
Report Number : 3304055-1

Sample Number	2538402-1
Sampled Date	May 02, 2025 11:45 AM
Sample Description	Sludge
Location	WHA EIE : ตะกอนจากระบบบำบัดน้ำเสียส่วนกลาง (WWTP)
Date Analysis Commenced	May 06, 2025
Condition of Sample	Packed in two plastic bag, refrigerated

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Total Concentration Test (TTLC) : Metals							
Cadmium	mg/kg	-	0.50	<0.50	<100	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Chromium	mg/kg	-	1.00	38.1	<2500	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	<500	United States Environmental Protection Agency, EPA Method 3060 A and 7196 A	Bangkok
Lead	mg/kg	-	1.00	4.73	<1000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Mercury	mg/kg	-	0.10	0.57	<20	United States Environmental Protection Agency, EPA Method 7473	Bangkok
Nickel	mg/kg	-	1.00	25.6	<2000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Selenium	mg/kg	-	0.50	<0.50	<100	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Zinc	mg/kg	-	1.00	805	<5000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Waste Extraction Test (STLC) : Metals							
Chromium	mg/L	-	0.03	2.47	<5	MOI, B.E.2566	Bangkok
Mercury	mg/L	-	0.001	<0.001	<0.2	MOI, B.E.2566	Bangkok
Nickel	mg/L	-	0.01	1.31	<20	MOI, B.E.2566	Bangkok

Guideline : Notification of the Ministry of Industry regarding Waste or Used Material Disposal, B.E. 2566 (2023).
Sampling By : Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

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

Technical Management
Sawitree N.
Sawitree Noisangiam
Manager
ทะเบียนเลขที่ ว-204-จ-0007

Approved by
Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

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

Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2538402
Date Received : May 02, 2025
Date Reported : May 20, 2025
Report Number : 3304055-2

Sample Number	2538402-1
Sampled Date	May 02, 2025 11:45 AM
Sample Description	Sludge
Location	WHA EIE : ตะกอนจากระบบบำบัดน้ำเสียส่วนกลาง (WWTP)
Date Analysis Commenced	May 06, 2025
Condition of Sample	Packed in two plastic bag, refrigerated

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Physical Parameters							
Moisture	%	-	0.1	86.7	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 G	Bangkok
Total Concentration Test (TTLC) : Metals							
Iron	mg/kg	-	1.00	11860	No Standard	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok

Guideline : Notification of the Ministry of Industry regarding Waste or Used Material Disposal, B.E. 2566 (2023).
Sampling By : Pattarapol Sawangjaitam

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

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

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

Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2538402
Date Received : May 02, 2025
Date Reported : May 20, 2025
Report Number : 3304056-1

Sample Number	2538402-2
Sampled Date	May 02, 2025 12:05 PM
Sample Description	Sludge
Location	WHA EIE : ตะกอนจากระบบผลิตน้ำประปา (WTP)
Date Analysis Commenced	May 06, 2025
Condition of Sample	Packed in two plastic bag, refrigerated

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Total Concentration Test (TTLC) : Metals							
Cadmium	mg/kg	-	0.50	<0.50	<100	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Chromium	mg/kg	-	1.00	8.15	<2500	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Hexavalent Chromium	mg/kg	-	1.00	<1.00	<500	United States Environmental Protection Agency, EPA Method 3060 A and 7196 A	Bangkok
Lead	mg/kg	-	1.00	2.00	<1000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	<20	United States Environmental Protection Agency, EPA Method 7473	Bangkok
Nickel	mg/kg	-	1.00	2.33	<2000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Selenium	mg/kg	-	0.50	1.34	<100	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Zinc	mg/kg	-	1.00	20.6	<5000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Waste Extraction Test (STLC) : Metals							
Chromium	mg/L	-	0.03	0.55	<5	MOI, B.E.2566	Bangkok
Selenium	mg/L	-	0.01	0.01	<1	MOI, B.E.2566	Bangkok

Guideline : Notification of the Ministry of Industry regarding Waste or Used Material Disposal, B.E. 2566 (2023).

Sampling By : Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

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

Technical Management
Sawitree N.
Sawitree Noisangiam
Manager
ทะเบียนเลขที่ ว-204-จ-0007

Approved by
Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited
18, Pakornsongkrohraj Road, Tambol Huaypong, Amphur Muang, Rayong Thailand 21150
P/O :
Project Name :
Project Location : WHA EIE

Lot ID: 2538402
Date Received : May 02, 2025
Date Reported : May 20, 2025
Report Number : 3304056-2

Sample Number	2538402-2
Sampled Date	May 02, 2025 12:05 PM
Sample Description	Sludge
Location	WHA EIE : ตะกอนจากระบบผลิตน้ำประปา (WTP)
Date Analysis Commenced	May 06, 2025
Condition of Sample	Packed in two plastic bag, refrigerated

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Physical Parameters							
Moisture	%	-	0.1	87.8	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 G	Bangkok
Total Concentration Test (TTLC) : Metals							
Iron	mg/kg	-	1.00	809	No Standard	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok

Guideline : Notification of the Ministry of Industry regarding Waste or Used Material Disposal, B.E. 2566 (2023).

Sampling By : Pattarapol Sawangjaitam

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

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by
Sawitree N.
Sawitree Noisangiam
Manager

ภาคผนวก ง

เอกสารสอบเทียบเครื่องมือที่ใช้ในการวิเคราะห์

รายการเครื่องมือที่ใช้ในการวัดอากาศ / เสียง

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Month)
Ambient	Particulate Matter (PM 10)	High Volume	RYG_F00198			On site Calibration
Ambient	Particulate Matter (PM 10)	High Volume	RYG_F00199			On site Calibration
Ambient	Particulate Matter (PM 10)	High Volume	RYG_F00200			On site Calibration
Ambient	Particulate Matter (PM 10)	Digital Balance	RYG_E00001	20-Feb-25	20-Feb-26	12
Ambient	Total Suspended Particulate	High Volume	RYG_F00175			On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_F00176			On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_F00178			On site Calibration
Ambient	Total Suspended Particulate	Digital Balance	RYG_E00002	20-Feb-25	20-Feb-26	12
Ambient	Nitrogen Dioxide	NO_2 Analyzer	RYG_F00192	5-Jan-25	5-Jan-26	6
Ambient	Nitrogen Dioxide	NO_2 Analyzer	RYG_F00193	4-Jan-25	4-Jan-26	6
Ambient	Nitrogen Dioxide	NO_2 Analyzer	RYG_F00194	5-Jan-25	5-Jan-26	6
Ambient	Sulfur Dioxide	SO_2 Analyzer	RYG_F00240	4-Jan-25	4-Jan-26	6
Ambient	Sulfur Dioxide	SO_2 Analyzer	RYG_F00241	4-Jan-25	4-Jan-26	6
Ambient	Sulfur Dioxide	SO_2 Analyzer	RYG_F00266	4-Jan-25	4-Jan-26	6
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	RYG_F00408	16-Jan-25	17-Jan-26	18
Ambient	Temperature	Temperature Sensor	RYG_F00408	16-Jan-25	17-Jan-26	18
Ambient	Volatile Organic Compounds	GC-FID	RYG_F00136	5-Jan-24	4-Jan-25	18
Noise	Leq 24 hrs	Sound Calibrator	RYG_F00211	16-Jan-25	16-Jan-26	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_F00439	3-Oct-24	3-Oct-25	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_F00441	27-Jan-25	26-Jan-26	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_F00442	27-Jan-25	26-Jan-26	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_F00486	27-Jan-25	26-Jan-26	12
Noise	Leq 24 hrs	Sound Level Meter	RYG_F00487	27-Jan-25	26-Jan-26	12
Spraying Lab	Humidity	DIGI THERM HYGROMETER	RYG_E00057	16-Mar-25	16-Sep-26	18
Spraying Lab	Antimony Trioxide	SPECTROPHOTOMETER	RYG_E00015	14-May-25	13-Sep-26	18
Spraying Lab	BOD	DO meter with Stirrer	RYG_E00019	20-Jan-25	20-Jul-26	18
Spraying Lab	BOD	Incubator	RYG_E00024	3-Mar-24	3-May-26	18
Spraying Lab	BOD	Incubator	RYG_E00042	21-Oct-24	21-Oct-25	12
Spraying Lab	pH at 25 °C	pH Meter	RYG_E00021	19-Jan-24	19-Jul-25	18
Spraying Lab	Temperature	Digital Temperature	RYG_F00127	8-Oct-24	8-Oct-25	12
Spraying Lab	Dissolved Oxygen	Chamber (Cold Room)	RYG_E00024	13-Jan-24	13-Dec-25	18
Spraying Lab	Fat & Grease	Gravimetric Balance	RYG_E00032	20-Feb-25	20-Feb-26	12
Spraying Lab	Oil & Grease	Oil Air Oven	RYG_E00033	14-Mar-25	13-Mar-26	12
Spraying Lab	Oil & Grease	Water Bath	RYG_E00043	26-Mar-24	27-Dec-25	12
Reading Lab	COD	Spectrophotometer	RYG_E00007	18-Mar-25	17-Sep-26	18
Spraying Lab	Total Dissolved Solids (105°C)	Electronic Balance	RYG_E00032	20-Feb-25	20-Feb-26	12
Spraying Lab	Total Dissolved Solids (105°C)	Oil Air Oven	RYG_E00033	25-Mar-24	25-Sep-26	18
Spraying Lab	Total Suspended Solids	Electronic Balance	RYG_E00032	20-Feb-25	20-Feb-26	12
Spraying Lab	Total Suspended Solids	Oil Air Oven	RYG_E00033	26-Mar-24	25-Sep-26	18
Spraying Lab	Total Coliform	Chamber (Cold Room)	RYG_E00024	13-Jan-24	13-Dec-25	18
Water Lab	Total Coliform Bacteria	Incubator	RYG_E00041	4-Mar-25	3-Sep-27	30
Water Lab	Total Coliform Bacteria	Autoclave	RYG_AE0001	7-Dec-24	7-Dec-25	12
Water Lab	Total Coliform Bacteria	Oil Air Oven	RYG_E00033	25-Apr-24	25-Oct-25	18
Water Lab	Volatile Organic Compounds	Gas Chromatography (VOC)	RYG_E00109	25-Jan-25	25-Dec-26	18
Water Lab	Monomer Chemicals	Gas Chromatography	RYG_E00139	13-Jan-24	13-Jan-25	12
Water Lab	Lead	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Lead	Hot Block	RYG_E00150	8-Mar-25	8-Sep-26	18
Water Lab	Lead	Chamber (Cooling Room)	RYG_E00152	8-Jan-25	8-Dec-26	18
Water Lab	Manganese	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Manganese	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Water Lab	Manganese	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Water Lab	Copper	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Copper	Hot Block	RYG_E00150	8-Mar-25	8-Sep-26	18
Water Lab	Copper	Chamber (Cooling Room)	RYG_E00152	8-Jan-25	8-Dec-26	18
Water Lab	Nickel	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Nickel	Hot Block	RYG_E00150	8-Mar-25	8-Sep-26	18
Water Lab	Nickel	Chamber (Cooling Room)	RYG_E00152	8-Jan-25	8-Dec-26	18

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รายการเครื่องมือที่ใช้ในการวัดอากาศ / เสียง

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Month)
Water Lab	Arsenic	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Arsenic	Hot Block	RYG_E00150	8-Mar-25	8-Sep-26	18
Water Lab	Arsenic	Chamber (Cooling Room)	RYG_E00152	8-Jan-25	8-Dec-26	18
Water Lab	Cadmium	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Cadmium	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Water Lab	Cadmium	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Water Lab	Zinc	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Water Lab	Zinc	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Water Lab	Zinc	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Water Lab	Mercury	AFS(CMV) (CVAAS)	RYG_E00003	12-Dec-24	12-Jan-26	18
Water Lab	Iron	Furnace	RYG_E00013	6-Jan-25	6-Jan-26	18
Water Lab	Iron	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Water Lab	Iron	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Water Lab	Selenium	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Water Lab	Selenium	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Dissolved Hydrocarbon	Gas Chromatography (GC)	RYG_E00033	7-May-24	7-May-26	12
Sea Water	Volatile Organic Compounds	Gas Chromatography (GC)	RYG_E00109	25-Jan-25	25-Dec-26	18
Sea Water	Monomer Chemicals	Gas Chromatography	RYG_E00139	13-Jan-24	13-Jan-25	12
Sea Water	Lead	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Lead	Hot Block	RYG_E00150	8-Mar-25	8-Sep-26	18
Sea Water	Lead	Chamber (Cooling Room)	RYG_E00152	8-Jan-25	8-Dec-26	18
Sea Water	Manganese	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Manganese	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Manganese	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Copper	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Copper	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Copper	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Nickel	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Nickel	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Nickel	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Arsenic	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Arsenic	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Arsenic	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Cadmium	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Cadmium	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Cadmium	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Zinc	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Zinc	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Zinc	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Mercury	AFS(CMV) (CVAAS)	RYG_E00003	12-Dec-24	12-Jan-26	18
Sea Water	Iron	ICP-MS	RYG_E00147	4-Oct-24	3-Apr-26	18
Sea Water	Iron	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Iron	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Selenium	Hot Block	RYG_E00150	4-Mar-25	4-Sep-26	18
Sea Water	Selenium	Chamber (Cooling Room)	RYG_E00152	4-Jan-25	4-Dec-26	18
Sea Water	Cyanide	Chamber (Cooling Room)	RYG_E00152	8-Jan-25	8-Dec-26	18
Sea Water	Dissolved Hydrocarbon	Gas Chromatography (GC)	RYG_E00033	7-May-24	7-May-26	12

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High Volume Air Sampler Calibration Worksheet

Project Site :	WHA Eastern Industrial Estate Co., Ltd.	Barometric Pressure (mm Hg) :	758.4
Calibrate Location :	สำนักงานใหญ่และโรงงานผลิตภัณฑ์อาหารแช่เย็นและแช่แข็ง (บางพลี)(A1)	Temperature (°C) :	29.4
Calibrate Date :	6-Nov-25	High Volume ID :	RYG_F00199
CalibrationSheet No. :	C-080325-RYG_F00199	High Volume Model :	TE-6070X
Calibrator ID:	RYG_F00205	High Volume S/N :	4792
Calibrator Model :	TE-5028A	Calibrator Slope :	0.03661
Calibrator S/N :	1160	Calibrator Intercept :	-0.02266

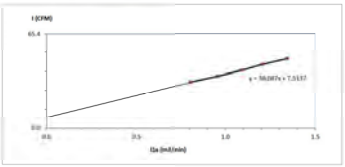
Test No.	Delta H_2O (inch)	Qa. (m^3/min)	I - Chart (CFM)
1	1.4	0.886	32
2	2.0	0.957	36
3	2.8	1.080	40
4	3.2	1.201	44
5	4.0	1.044	48

Linear Regression

Slope : 30.8694

Intercept : 7.5137

Correlation Coefficient : 0.9994



Calibrated by (Mr.Anurak Tongkhamsukda) RYG-Field Services Scientist(2)

Approved by : (Mr. Supot Salamteh) RYG-Field Services Section Head

FORM NO.: F-04-074 REVISION NO.:2 ISSUE DATE:-20/11/23

High Volume Air Sampler Calibration Worksheet

Project Site :	WHA Eastern Industrial Estate Co., Ltd.	Barometric Pressure (mm Hg) :	758.4
Calibrate Location :	โรงงานผลิต(A2)	Temperature (°C) :	29.4
Calibrate Date :	6-Nov-25	High Volume ID :	RYG_F00200
CalibrationSheet No. :	C-080325-RYG_F00200	High Volume Model :	TE-6070X
Calibrator ID:	RYG_F00205	High Volume S/N :	5582
Calibrator Model :	TE-5028A	Calibrator Slope :	0.03661
Calibrator S/N :	1160	Calibrator Intercept :	-0.02266

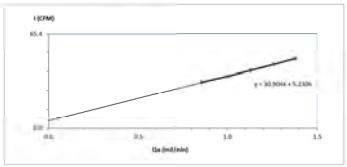
Test No.	Delta H_2O (inch)	Qa. (m^3/min)	I - Chart (CFM)
1	1.6	0.858	32
2	2.2	1.060	36
3	2.8	1.220	40
4	3.2	1.201	44
5	4.0	1.077	48

Linear Regression

Slope : 30.9494

Intercept : 5.2306

Correlation Coefficient : 0.9994



Calibrated by (Mr.Anurak Tongkhamsukda) RYG-Field Services Scientist(2)

Approved by : (Mr. Supot Salamteh) RYG-Field Services Section Head

FORM NO.: F-04-074 REVISION NO.:2 ISSUE DATE:-20/11/23

High Volume Air Sampler Calibration Worksheet

Project Site :	WHA Eastern Industrial Estate Co., Ltd.	Barometric Pressure (mm Hg) :	758.4
Calibrate Location :	สำนักงานใหญ่และโรงงานผลิตภัณฑ์อาหารแช่เย็นและแช่แข็ง (บางพลี)(A1)	Temperature (°C) :	29.4
Calibrate Date :	6-Nov-25	High Volume ID :	RYG_F00199
CalibrationSheet No. :	C-080325-RYG_F00199	High Volume Model :	TE-6070X
Calibrator ID:	RYG_F00205	High Volume S/N :	4792
Calibrator Model :	TE-5028A	Calibrator Slope :	0.03661
Calibrator S/N :	1160	Calibrator Intercept :	-0.02266

Test No.	Delta H_2O (inch)	Qa. (m^3/min)	I - Chart (CFM)
1	1.4	0.886	32
2	2.0	0.957	36
3	2.8	1.080	40
4	3.2	1.201	44
5	4.0	1.044	48

Linear Regression

Slope : 30.8694

Intercept : 7.5137

Correlation Coefficient : 0.9994

Calibrated by (Mr.Anurak Tongkhamsukda) RYG-Field Services Scientist(2)

Approved by : (Mr. Supot Salamteh) RYG-Field Services Section Head

FORM NO.: F-04-074 REVISION NO.:2 ISSUE DATE:-20/11/23

SARTORIUS

Accredited by

NSC-TISI-TIS 17025

Calibration 0426

NSC TISI-TIS 17025 CALIBRATION 0426

Calibration certificate

Calibration Certificate No. 25BKL0001

Object	Electronic non-automatic weighing instrument	This calibration certificate documents the traceability to national standards.
Manufacturer	Sartorius	Uncertainties of measurements are taken into account when only statements of conformance are made.
Type	LA130S-F	This certificate was prepared by Sartorius Corporation in accordance to the quality standard ISO/IEC 17025:2017 standard and Standard Work Instruction (Method) SOP WI 08.
Serial / QM Mat# no.	25409664 / RYG_EN0001	This certificate relate and apply this equipment only.
Customer	ALS Laboratory Group (Thailand)Co.,Ltd. (Rayong Branch) 618/10 Moo 5 T.Mamyom Kiou, A.Pluak Daeng, Rayong 21140, Thailand.	
Order no.	2230	
Number of pages	4	
Date of calibration	20 Feb 2025	

REVIEW BY Thanitah

APPROVED BY

NEXT CAL DATE 20/02/26

This calibration certificate may not be reproduced other than in full except with the permission of NSC-TISI-TIS 17025 and the issuing laboratory. Calibration certificates without signature are not valid.

The user is obliged to have the object recalibrated at appropriate intervals.

Date	Approval of the Calibration Certificate	Person in charge
06 Mar 2025	Mr. Chonchai Inthana	Kachen Lawa

Calibration object

Single range instrument

Model	LA130S-F
Serial Number	25409664
QM Mat# no. / Inventory no.	RYG_EN0001 / ---
Maximum capacity (Max. load)	150.0000 g
Measured range	150.0000 g
Scale interval	0.0001 g

Place of calibration

Address	According to page 1
Department / Cost center	Laboratory Department. / ---
Building / Floor	--- / 1st Floor.
Room	Balance Room
Maximum temperature variation at place of calibration	5 K

Calibration procedure

EURAMET cg-18, V4.0 - Guidelines on the Calibration of Non-Automatic Weighing Instruments

Test equipment

Test equipment type	Test equipment-ID	Valid until
Thermometer	MHB-382SD s/nB011342 Traceable to SI unit through DKSH	21 Aug 2025
Test weight set OIML R111 E2	Certificate No.M23081973_E2(Traceable to SI unit through TCS)	23 Aug 2025

Adjustment Status

The measuring device was internally adjusted before the calibration.

Environmental and measuring conditions

Date of calibration	20 Feb 2025
Temperature at place of calibration | Temp. diff $T_{weights} - T_{place}$	24.5 °C | 1.0 K
Measuring conditions	The installation site is suitable. The device was levelled. Balance was loaded up to Max before test.
Comments	Humidity 58.0 %RH

Measurement results | Measurement uncertainties

Repeatability

Test load (nominal): 10 g | 100 g		
	10 g	100 g
1	10.0000 g	100.0000 g
2	9.9999 g	100.0000 g
3	10.0000 g	99.9999 g
4	10.0000 g	100.0000 g
5	10.0000 g	99.9999 g
6	9.9999 g	99.9999 g
7	10.0000 g	100.0000 g
8	10.0000 g	100.0000 g
9	10.0000 g	100.0000 g
10	10.0000 g	100.0000 g
	s = 0.00004 g	s = 0.00005 g

Eccentricity

Test load (nominal):	50 g
Center	50.0000 g
Front left	50.0001 g
Back left	50.0000 g
Back right	49.9999 g
Front right	50.0001 g

Maximum deviation from centric loading indication

$|E_{ecc}|_{max}$ = 0.0001 g

Error of indication

Testload L	Indication I	Error E	Expansion factor k	Uncertainty U(E)	Uncertainty relative $U_{rel}(E)$
0.0100 g	-0.0100 g	0.0000 g	2.00	0.00013 g	1.3 %
0.0500 g	0.0500 g	0.0000 g	2.00	0.00013 g	0.26 %
0.1000 g	0.1000 g	0.0000 g	2.00	0.00013 g	0.13 %
0.5000 g	0.5000 g	0.0000 g	2.00	0.00013 g	0.026 %
1.0000 g	1.0000 g	0.0000 g	2.00	0.00013 g	0.013 %
2.0000 g	2.0000 g	0.0000 g	2.00	0.00013 g	0.0065 %
5.0000 g	5.0000 g	0.0000 g	2.00	0.00013 g	0.0026 %
10.0000 g	10.0000 g	0.0000 g	2.00	0.00013 g	0.0013 %
20.0000 g	20.0000 g	0.0000 g	2.00	0.00014 g	0.0006 %
100.0000 g	100.0000 g	0.0000 g	2.00	0.00021 g	0.00021 %
150.0000 g	149.9999 g	-0.0001 g	2.00	0.00026 g	0.00018 %

Maximum error of indication $|E|_{max}$ = 0.0001 g

U(x,E) is the quotient of U(E) and test load L. The uncertainty of measurement U(E) is valid only, if error E is considered. You will find reference notes on the Expansion factor k and the Coverage factor k in the calibration certificate | Interpretation of measurement results.

Reference note: The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the documented Expansion factor, determined in accordance with the European Calibration Guidelines EURAMET cg-18, V4.0. There is a 95 % probability that the value of the measurand will be in the assigned value range.

End of calibration certificate

Uncertainty of measurement in use

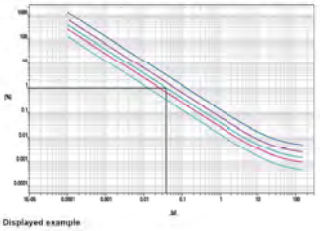
Device adjusted before measurement	Yes
Temperature deviation considered	± 5 K (maCAL actual)
Temperature coefficient considered	1 10^{-6}/K

Uncertainty of the weighing result $U_W(W)$ $U_W(W) = 0.00013 g + 3.96 \cdot 10^{-6} \cdot R$

Reference note: The current uncertainty of measurement is calculated by entering if into the reading R into this formula. In oxigon to this, there is no need for a correction of the indication error. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied with an Expansion factor of 2, determined in accordance with the European Calibration Guidelines EURAMET cg-18, V4.0. There is a 95 % probability that the value of the measurand will be in the assigned value range.

Indication in % from max load	Net indication R	Uncertainty $U_W(W)$	Uncertainty relative $U_W(W)/W$
---	0.0000 g	0.00014 g	0.0091 %
20 %	27.5000 g	0.00020 g	0.00014 %
50 %	75.0000 g	0.00043 g	0.00057 %
75 %	112.5000 g	0.00068 g	0.00051 %
100 %	150.0000 g	0.00072 g	0.00048 %

Graphic realization of the relative uncertainty of measurement | process accuracy



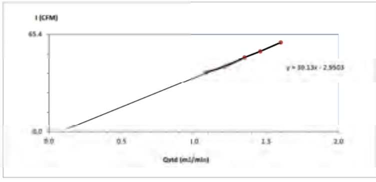
Displayed example

Process accuracy	1.00 %
Safety factor	3
Minimum sample weight	0.0380 g

High Volume Air Sampler Calibration Worksheet

Project Site :	WHA Eastern Industrial Estate Co., Ltd.	Barometric Pressure (mm Hg) :	758.4
Calibrate Location :	[illegible] (A1)	Temperature (°C) :	29.4
Calibrate Date :	8-Mar-25	High Volume ID :	RYG_FS0173
CalibrationSheet No.:	C-080325-RYG_FS0173	High Volume Model :	TE-6170D
Calibrator ID:	RYG_FS0285	High Volume S/N :	4795
Calibrator Model :	TE-5028A	Calibrator Slope :	1.02107
Calibrator S/N :	1166	Calibrator Intercept :	-0.03613

Test No.	Delta H_2O (inch)	Q_{std} (m^3/min)	I : Chart (CFM)	Linear Regression
1	2.6	1.0842	40	Slope : 39.1296
2	3.3	1.2189	44	Intercept : -2.9503
3	4.1	1.3522	50	Correlation Coefficient : 0.9982
4	4.8	1.4602	54	
5	5.8	1.6015	60	



Calibrated by: (Mr.Anurak Tongkhajonsalsla)
RYG-Field Services Scientist(2)

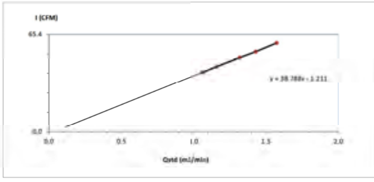
Approved by : (Mr. Supot Sulamith)
RYG-Field Services Section Head

FORM NO.: F 06-071 REVISION NO. 2 ISSUE DATE: 20/11/23

High Volume Air Sampler Calibration Worksheet

Project Site :	WHA Eastern Industrial Estate Co., Ltd.	Barometric Pressure (mm Hg) :	758.4
Calibrate Location :	[illegible](A2)	Temperature (°C) :	29.4
Calibrate Date :	8-Mar-25	High Volume ID :	RYG_FS0179
CalibrationSheet No.:	C-080325-RYG_FS0179	High Volume Model :	TE-6170D
Calibrator ID:	RYG_FS0285	High Volume S/N :	4805
Calibrator Model :	TE-5028A	Calibrator Slope :	1.02107
Calibrator S/N :	1166	Calibrator Intercept :	-0.03613

Test No.	Delta H_2O (inch)	Q_{std} (m^3/min)	I : Chart (CFM)	Linear Regression
1	2.5	1.0639	40	Slope : 38.7877
2	3.0	1.1619	44	Intercept : -1.2110
3	3.8	1.3197	50	Correlation Coefficient : 0.9998
4	4.6	1.4382	54	
5	5.6	1.5742	60	



Calibrated by: (Mr.Anurak Tongkhajonsalsla)
RYG-Field Services Scientist(2)

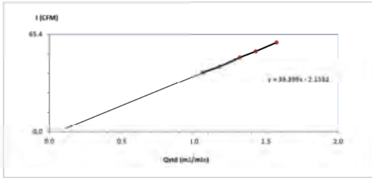
Approved by : (Mr. Supot Sulamith)
RYG-Field Services Section Head

FORM NO.: F 06-071 REVISION NO. 2 ISSUE DATE: 20/11/23

High Volume Air Sampler Calibration Worksheet

Project Site :	WHA Eastern Industrial Estate Co., Ltd.	Barometric Pressure (mm Hg) :	758.4
Calibrate Location :	[illegible](A3)	Temperature (°C) :	29.4
Calibrate Date :	8-Mar-25	High Volume ID :	RYG_FS0178
CalibrationSheet No.:	C-080325-RYG_FS0178	High Volume Model :	TE-6170D
Calibrator ID:	RYG_FS0285	High Volume S/N :	4804
Calibrator Model :	TE-5028A	Calibrator Slope :	1.02107
Calibrator S/N :	1166	Calibrator Intercept :	-0.03613

Test No.	Delta H_2O (inch)	Q_{std} (m^3/min)	I : Chart (CFM)	Linear Regression
1	2.5	1.0639	40	Slope : 39.3988
2	3.1	1.1805	44	Intercept : -2.1582
3	3.8	1.3197	50	Correlation Coefficient : 0.9995
4	4.6	1.4382	54	
5	5.6	1.5742	60	



Calibrated by: (Mr.Anurak Tongkhajonsalsla)
RYG-Field Services Scientist(2)

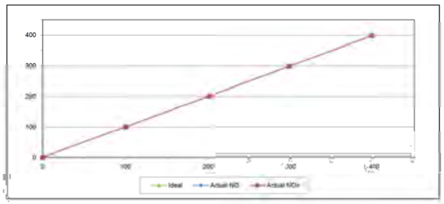
Approved by : (Mr. Supot Sulamith)
RYG-Field Services Section Head

FORM NO.: F 06-071 REVISION NO. 2 ISSUE DATE: 20/11/23

MULTIPOINT CALIBRATION REPORT

Calibration Date	3-Jan-25	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	WPY0JMWD	Equipment ID	BKK_FS0782
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	59.98	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1600	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.60	-0.40	-0.40	100.60	0.60	0.60
2	200.00	199.70	-0.30	-0.15	201.10	1.10	0.55
3	300.00	298.70	-1.30	-0.43	298.50	-1.50	-0.50
4	400.00	398.70	-1.30	-0.33	399.10	-0.90	-0.22
AVERAGE (%)				-0.24			0.10



Calibrated By
(Mr.Jirawut Sakarn)
Field Environmental Scientist (3)

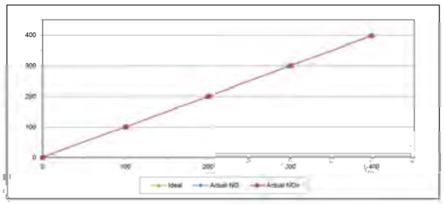
Approved By
(Mr.Sarayuth Jittranont)
Assistant General Manager

ALS Laboratory Group
FORM NO.: F 08-058 REVISION NO.: - ISSUE DATE: 02/04/12

MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-25	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	2198	Equipment ID	RYG_FS0250
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	59.98	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1600	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30	101.00	1.00	1.00
2	200.00	198.20	-1.80	-0.90	201.30	1.30	0.65
3	300.00	298.50	-1.50	-0.50	301.30	1.30	0.43
4	400.00	398.20	-1.80	-0.45	398.60	-1.40	-0.35
AVERAGE (%)				-0.61			0.37



Calibrated By
(Mr.Jirawut Sakarn)
Field Environmental Scientist (3)

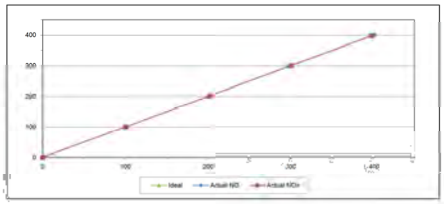
Approved By
(Mr.Sarayuth Jittranont)
Assistant General Manager

ALS Laboratory Group
FORM NO.: F 08-058 REVISION NO.: - ISSUE DATE: 02/04/12

MULTIPOINT CALIBRATION REPORT

Calibration Date	3-Jan-25	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	148EH0E0	Equipment ID	BKK_FS1084
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	59.98	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1600	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.10	-0.90	-0.90	100.70	0.70	0.70
2	200.00	199.30	-0.70	-0.35	201.40	1.40	0.70
3	300.00	298.50	-1.50	-0.50	301.30	1.30	0.43
4	400.00	401.30	1.30	0.33	398.30	-1.70	-0.42
AVERAGE (%)				-0.26			0.30



Calibrated By
(Mr.Jirawut Sakarn)
Field Environmental Scientist (3)

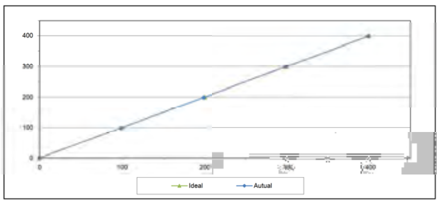
Approved By
(Mr.Sarayuth Jittranont)
Assistant General Manager

ALS Laboratory Group
FORM NO.: F 08-058 REVISION NO.: - ISSUE DATE: 02/04/12

MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-25	Equipment Name	SO2 Analyzer
Manufacturer	Teledyne API	Model	T100
Serial No.	6061	Equipment ID	RYG_FS0534
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	96.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	8-Feb-22	Expired Date	9-Feb-30

Point	Ideal	Autual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30
2	200.00	198.70	-1.30	-0.65
3	300.00	298.30	-1.70	-0.57
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				[illegible]



Calibrated By
(Mr.Jirawut Sakarn)
Field Environmental Scientist (3)

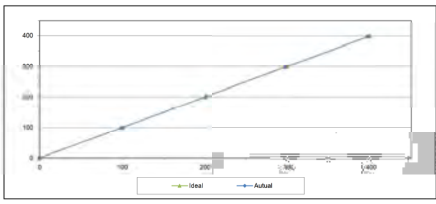
Approved By
(Mr.Sarayuth Jittranont)
Assistant General Manager

ALS Laboratory Group
FORM NO.: F 08-058 REVISION NO.: - ISSUE DATE: 02/04/12

MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-25	Equipment Name	SO2 Analyzer
Manufacturer	Teledyne API	Model	T100
Serial No.	1773	Equipment ID	RYG_FS0251
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	96.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	8-Feb-22	Expired Date	9-Feb-30

Point	Ideal	Autual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	99.60	-0.40	-0.40
2	200.00	201.10	1.10	0.55
3	300.00	297.30	-2.70	-0.90
4	400.00	397.50	-2.50	-0.63
AVERAGE (%)				-0.26



Calibrated By
(Mr.Jirawut Sakarn)
Field Environmental Scientist (3)

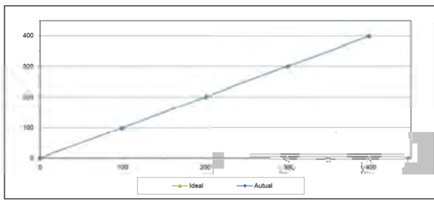
Approved By
(Mr.Sarayuth Jittranont)
Assistant General Manager

ALS Laboratory Group
FORM NO.: F 08-058 REVISION NO.: - ISSUE DATE: 02/04/12

MULTIPOINT CALIBRATION REPORT

Calibration Date	4-Jan-25	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	NM3M2D5M	Equipment ID	RYG_FS0266
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	96.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	8-Feb-22	Expired Date	9-Feb-30

Point	Ideal	Autual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30
2	200.00	201.10	1.10	0.55
3	300.00	302.30	2.30	0.77
4	400.00	398.20	-1.80	-0.45
AVERAGE (%)				-0.07



Calibrated By
(Mr.Jirawut Sakarn)
Field Environmental Scientist (3)

Approved By
(Mr.Sarayuth Jittranont)
Assistant General Manager

ALS Laboratory Group
FORM NO.: F 08-058 REVISION NO.: - ISSUE DATE: 02/04/12

JIRANATEE ASSOCIATES CO.,LTD.

Accredited calibration laboratory
ISO/IEC 17025:2017
NSC-TISI-TIS 17025
CALIBRATION 0367

NSC – TISI – TIS 17025
CALIBRATION 0367

Air speed measurement laboratory
Calibration services department

Certificate Number
[illegible]

CERTIFICATE OF CALIBRATION

Page 1 of 2 Pages

MEASUREMENT ITEM : Cup anemometer
MANUFACTURER : [illegible]
MODEL/TYPE : Sensor: WS-[illegible]; Data logger: 110-WS-25OL-D
SERIAL NUMBER : Sensor: [illegible]; Data logger: A5978
ID NUMBER : RYG_F50648
CONDITION AS RECEIVED : Used item
CUSTOMER : ALS laboratory group (Thailand) Co., Ltd. 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

RECEIVED DATE : 10 Jan 2025
MEASUREMENT DATE : 16 Jan 2025
ISSUE DATE : 20 Jan 2025

ENVIRONMENTAL CONDITIONS:
Ambient condition in the laboratory are as follow:
Temperature : 23.0 ± 3.0 °C
Relative Humidity : 55.0 ± 15.0 %RH
Atmospheric Pressure : [illegible] hPa

PLACE OF CALIBRATION : Eiffel-type wind tunnel of Jiranatee Associates Co., Ltd.

CALIBRATION CONDITIONS : Wind tunnel cross section area[1] 900 cm²; Wind direction frontal area[2] 100 cm²; Diameter of mounting pipe[3] - mm; Blockage ratio of test object[4] 0.111 [-]

Preconditioning : 24 hours at ambient conditions.
Measurement Condition : The average values during measurement are (24.3) °C, (62.9) %RH and (1011.9) hPa.

Calibration procedure: [illegible]

Traceability: [illegible]

Uncertainty of Measurement: [illegible]

TABULATION OF RESULTS:
The table on next page give the measured values.

Calibrated by:
Approved signatory
Mr. Pariya [illegible]
Calibration Department Manager

Remark:
[1] Nozzle cross section area of the wind tunnel
[2] Projected cross section area of the tested object include mounting pipe
[3] Diameter of mounting pipe
[4] Ratio [2] to [1]

15/ 07/ 26

THIS CERTIFICATE OF CALIBRATION MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY

Certificate Number
[illegible]

Page 2 of 2 Pages

MEASUREMENT RESULTS[1]

[illegible]

v_{std}[2] (m/s)	Temp. wind tunnel (°C)	Temp. room (°C)	v_{UUC}[3] (m/s)	Error (m/s)	U (k=2) (m/s)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	5.0	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	6.0	0.0	[illegible]
[illegible]	[illegible]	24.25	7.2	[illegible]	0.31
[illegible]	[illegible]	24.25	8.2	[illegible]	0.31
[illegible]	[illegible]	24.25	9.3	[illegible]	0.31
[illegible]	[illegible]	24.25	10.2	[illegible]	0.31
[illegible]	[illegible]	24.25	11.2	[illegible]	0.31
[illegible]	[illegible]	24.25	12.3	[illegible]	0.31
[illegible]	[illegible]	24.25	13.4	0.4	0.31
[illegible]	[illegible]	24.25	14.4	[illegible]	0.31
[illegible]	[illegible]	24.25	15.4	[illegible]	0.31
[illegible]	[illegible]	24.25	16.4	[illegible]	0.31

Remark:
[1] Calibration results only count for the tested circumstances and environmental conditions during which calibration took place
[2] Velocity of standard
[3] Velocity of Unit Under Calibration

PHOTO OF CALIBRATION SET-UP

[illegible]

JIRANATEE ASSOCIATES CO.,LTD.

Accredited calibration laboratory
ISO/IEC 17025:2017
NSC-TISI-TIS 17025
CALIBRATION 0367

NSC – TISI – TIS 17025
CALIBRATION 0367

Wind direction measurement laboratory
Calibration services department

Certificate Number
[illegible]

CERTIFICATE OF CALIBRATION

Page 1 of 2 Pages

MEASUREMENT ITEM : Wind Direction Sensor
MANUFACTURER : [illegible]
MODEL/TYPE : Sensor: [illegible]; Data logger: 110-WS-25OL-D
SERIAL NUMBER : Sensor: [illegible]; Data logger: A5978
ID NUMBER : RYG_F50648
CONDITION AS RECEIVED : Used item
CUSTOMER : ALS laboratory group (Thailand) Co. Ltd. 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

RECEIVED DATE : 10 Jan 2025
MEASUREMENT DATE : 16 Jan 2025
ISSUE DATE : 20 Jan 2025

ENVIRONMENTAL CONDITIONS:
Ambient condition in the laboratory are as follow:
Temperature : 23.0 ± 3.0 °C
Relative Humidity : 55.0 ± 15.0 %RH
Atmospheric Pressure : [illegible] hPa

PLACE OF CALIBRATION : Eiffel-type wind tunnel of Jiranatee Associates Co., Ltd.

CALIBRATION CONDITION : Wind tunnel cross section area[1] 900 cm²; Wind direction frontal area[2] 129 cm²; Diameter of mounting pipe[3] - mm; Blockage ratio of test object[4] 0.143 [-]

Preconditioning : 24 hours at ambient conditions.
Measurement Condition : The average values during measurement are (24.4)°C, (62.9) %RH and (1013.5) hPa.

Calibration procedure: [illegible]

Traceability: [illegible]

Uncertainty of Measurement: [illegible]

TABULATION OF RESULTS:
The table on next page give the measured values.

Calibrated by:
Approved signatory
Mr. Pariya [illegible]
Calibration Department Manager

Remark:
[1] Nozzle cross section area of the wind tunnel
[2] Projected cross section area of the tested object include mounting pipe
[3] Diameter of mounting pipe
[4] Ratio [2] to [1]

THIS CERTIFICATE OF CALIBRATION MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY

Certificate Number
[illegible]

Page 2 of 2 Pages

MEASUREMENT RESULTS[1]

The wind direction sensor was calibrated against standard rotary encoder by comparison method. [illegible]

Air speed (m/s)	θ'_{std} Degree (°)	θ'_{UUC} Degree (°)	Error Degree (°)	U (k=2) Degree (°)
5.01	45.000	42	[illegible]	0.80
	90.000	[illegible]	[illegible]	0.80
	135.000	137	[illegible]	0.80
	180.000	182	[illegible]	0.80
	225.000	228	[illegible]	0.80
	270.000	273	[illegible]	0.80
	315.000	318	[illegible]	0.80
	360.000	359	-1	0.80

Remark:
[1] Calibration results only count for the tested circumstances and environmental conditions during which calibration took place
[2] Direction of standard
[3] Direction of Unit Under Calibration

End of Certificate of Calibration

JIRANATEE ASSOCIATES CO.,LTD.

Accredited calibration laboratory
ISO/IEC 17025:2017
NSC-TISI-TIS 17025
CALIBRATION 0367

NSC – TISI – TIS 17025
CALIBRATION 0367

Temperature measurement laboratory
Calibration services department

CERTIFICATE OF CALIBRATION

Certificate No. : CDT-029-68

Page 1 of 2 Pages

MEASUREMENT ITEM : Data Logger with Temperature sensor
MANUFACTURER : Novalynx
MODEL/TYPE : 110-WS-25OL-D
SERIAL NUMBER : A5978
ID NUMBER : RYG_F50648
CONDITION AS RECEIVED : Used item
CUSTOMER : ALS laboratory group (thailand) Co. Ltd. 104 Phatthanakan 40, Phatthanakan Rd. Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

RECEIVED DATE : 10 Jan 2025
MEASUREMENT DATE : 16 Jan 2025
ISSUE DATE : 20 Jan 2025

ENVIRONMENTAL CONDITIONS:
Ambient condition in the laboratory are as follow:
Temperature : 23.0 ± 4.0 °C
Relative Humidity : 55.0 ± 15.0 %RH

NOTED: The certificate is valid only to the item calibrated on date and place of calibration.

TABULATION OF RESULTS:
The table on next page give the measured values.

Calibration procedure:
The temperature calibration was done by in-house calibration method [illegible] according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

Traceability:
The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT). Certificate number: [illegible], Certificate number: [illegible]

Reference Used During Calibration:
1. Standard Temperature Probe Model: [illegible], Serial No.: [illegible] Due date: 26 Mar 2025
2. Digital Temperature Indicator Model: [illegible], Serial No.: [illegible] Due date: 23 Oct 2025

Uncertainty of Measurement:
The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

Calibrated by:
☐ Mr. Surasak Thachaiad
☑ Miss [illegible] Lertsomphol
☐ Miss [illegible] Phasmont

Approved signatory
Mr. Pariya [illegible]
Calibration Department Manager

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Continuation of Certificate of Calibration Number CDT-029-68

Page 2 of 2 Pages

Result of Calibration: ☑ Without Adjustment ☐ With Adjustment

Calibration Range: 20 °C to 40 °C

Function:
Table 1: This equipment was connected with temperature sensor Model: HMP60 S/N: V1920213
Dimension: Diameter 12 mm. Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
80	20.077	19.6	-0.5	0.099
80	25.066	24.6	-0.5	0.099
80	30.054	29.6	-0.5	0.099
80	35.035	34.5	-0.5	0.099
80	40.018	39.5	-0.5	0.099

UUC*: Unit Under Calibration

End of Certificate of Calibration

JIRANATEE ASSOCIATES CO.,LTD.

Accredited calibration laboratory
ISO/IEC 17025:2017
NSC-TISI-TIS 17025
CALIBRATION 0367

NSC – TISI – TIS 17025
CALIBRATION 0367

Relative humidity and Air Temperature measurement laboratory
Calibration services department

CERTIFICATE OF CALIBRATION

Certificate No. : CRT-008-68

Page 1 of 2 Pages

MEASUREMENT ITEM : Relative humidity with data logger
MANUFACTURER : Novalynx
MODEL/TYPE : Data Logger: 110-WS-25OL-D; Sensor: HMP60
SERIAL NUMBER : Data Logger: A5978; Sensor: V1920213
ID NUMBER : RYG_F50648
CONDITION AS RECEIVED : Used item
CUSTOMER : ALS laboratory group (Thailand) Co., Ltd. 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

RECEIVED DATE : 10 Jan 2025
MEASUREMENT DATE : 16 Jan 2025
ISSUE DATE : 20 Jan 2025

ENVIRONMENTAL CONDITIONS:
Ambient condition in the laboratory are as follow:
Temperature : 23.0 ± 3.0 °C
Relative humidity : 55.0 ± 15.0 %RH

NOTED: The certificate is valid only to the item calibrated on date and place of calibration.

TABULATION OF RESULTS:
The table on next page give the measured values.

Calibration procedure: [illegible]

Traceability: [illegible]

Uncertainty of Measurement:
The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

Calibrated by:
☐ Mr. Surasak Thachaiad
☑ Miss [illegible] Lertsomphol
☐ Miss [illegible] Phasmont

Approved signatory
Mr. Pariya [illegible]
Calibration Department Manager

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Continuation of Certificate of Calibration Number: CRT-008-68

Page 2 of 2 Pages

Measurement Results:

The results of calibration and associated measurement uncertainties are reported in the table below.

Result of Calibration: ☑ Without Adjustment ☐ With Adjustment

Table 1: The results of calibration of relative humidity at 30 °C are reported in table below.
Calibration Range: 20%RH to 80%RH

Air Temperature (°C)	Standard Reading (%RH)	UUC Reading (%RH)	Error (%RH)	Uncertainty (%RH)
29.71	19.86	18.5	-1.4	0.78
29.75	51.21	49.0	-2.2	1.3
29.75	82.84	80.0	-2.9	2.1

UUC*: Unit Under Calibration

End of Certificate of Calibration

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NSC-TISI-TIS 17025
CALIBRATION 0367

NSC – TISI – TIS 17025
CALIBRATION 0367

Pressure measurement laboratory
Calibration services department

CERTIFICATE OF CALIBRATION

Certificate No. : [illegible]

Page 1 of 2 Pages

MEASUREMENT ITEM : Digital barometer
MANUFACTURER : Novalynx
MODEL/TYPE : Sensor: 110-WS-[illegible]; Data logger: 110-WS-25OL-D
SERIAL NUMBER : Sensor: [illegible]; Data logger: A5978
ID NUMBER : RYG_F50648
CONDITION AS RECEIVED : Used item
CUSTOMER : ALS laboratory group (Thailand) Co., Ltd. 104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

RECEIVED DATE : [illegible]
MEASUREMENT DATE : [illegible]
ISSUE DATE : [illegible]

Calibration procedure: [illegible]

Traceability: [illegible]

Reference Used During Calibration: [illegible]

Uncertainty of Measurement: [illegible]

CONDITION OF THIS RESULT OF CALIBRATION:
1. Calibration effort for calibration sequence [illegible]
2. The UUC* was installed in vertical orientation above reference standard instrument and center of UUC* was used as the reference level.
3. Calibration conditions:
4. Condition ☑ Normal ☐ Abnormal
Pressure transmitting medium : Air
[illegible] : 1.18 kg/m³
[illegible]
5. The certificate is valid only to the item calibrated on date and place of calibration.

Calibrated by:
Approved signatory
Mr. Pariya [illegible]
Calibration Department Manager

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CERTIFICATE OF CALIBRATION

Page 2 of 2 Pages

MEASUREMENT RESULTS : ☐ Without adjustment ☑ With adjustment

CALIBRATION IN THE RANGE OF : 950 mbar to 1050 mbar

The results of calibration and associated measurement uncertainties are reported in the table below:

STD (mbar)	UUC* (mbar)	Error (mbar)	Uncertainty (k=2) (mbar)
950.23	951.7	1.6	0.38
970.13	971.1	1.0	0.37
990.08	990.6	0.5	0.37
1010.05	1010.0	0.0	0.37
1029.99	1029.5	-0.5	0.38
1050.07	1049.0	-1.1	0.37

Note: UUC* Unit Under Calibration

- To convert the result in report unit to Pa should be multiply by 100

End of certificate

JNAC JIRANATEE ASSOCIATES CO.,LTD.

Jiranatee Associates Co.,Ltd.

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Certificate of System Qualification

GC-OQ + GCMS-OQ

System ID: RYG_EN0136
Organization Name: ALS Laboratory Group (Thailand) Co.Ltd.
Organization Location: 616/10, Moo 5, Tambol Mae Nam Khu, Pluak Daeng, Rayong,21140, Thailand

Date: January 5, 2024 10:53:24 AM
EQP Name: AgilentRecommended , AgilentRecommended
EQP Revision: GC.02.54, GCMS.02.54
Overall Qualification Status: Pass

REVIEW BY Chonticha
APPROVED BY [signature]
NEXT CAL. DATE 4/09/2025

CDS Logon Verification - GC
Logon: chonticha.khunkaew

Overall CDS Logon Verification - GC Test Status
Pass

System Inspection and Basic Safety and Operation
Name: 7890
Setpoint Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status
Pass

Inlet Pressure Accuracy
Name: 7890 Front SSL
Setpoint Status: Pass

	Setpoint		Actual	
Inlet Pressure:	25.0	psi	25	psi
Accuracy:			0.0	psi
Agilent Recommended:			<= 1.2	

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Overall Inlet Pressure Accuracy Test Status
Pass

GC Oven Temperature Accuracy
Name: 7890
Setpoint Status: Pass
Zone: Oven
Setpoint/Actual
Temperature: 230.0 229 °C
Accuracy: -1.0 °C
Agilent Recommended: >= -1.0 % setpoint in K (-5.0 °C)
<= 1.0 % setpoint in K (5.0 °C)

Setpoint Status: Pass
Zone: Oven
Setpoint/Actual
Temperature: 100.0 100.8 °C
Accuracy: 0.8 °C
Agilent Recommended: >= -1.0 % setpoint in K (-3.7 °C)
<= 1.0 % setpoint in K (3.7 °C)

Overall GC Oven Temperature Accuracy Test Status
Pass

GC Oven Temperature Stability
Name: 7890
Setpoint Status: Pass
Setpoint/Average
Temperature: 100.0 100.8167 °C
Stability: 0.1 °C
Agilent Recommended: <= 0.5

Overall GC Oven Temperature Stability Test Status
Pass

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Log Amp
Tested Combination1 Front SSL / External SQ
Name: 5977B
Setpoint Status: Pass

Overall Log Amp Test Status
Pass

RFPA
Tested Combination1 Front SSL / External SQ
Name: 5977B
Setpoint Status: Pass
Amu: 1050 m/z Drift After Five Minutes: 6 mV RFPA Voltage: 509 mV
Agilent Recommended: >= -100 and <= 100 <= 1100

Overall RFPA Test Status
Pass

Tune EI
Tested Combination1 Front SSL / External SQ
Name: 5977B
Setpoint Status: Pass
Filament: 1
Setpoint Status: Pass
Filament: 2

Overall Tune EI Test Status
Pass

Scouting Run

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Tested Combination1 Front SSL / External SQ
Manual Injection
Name: Not applicable
Source: EI - Extractor
Setpoint Status: Completed
Injection Volume on Column: 1.0 uL

Overall Scouting Run Status
Completed

Signal to Noise EI
Tested Combination1 Front SSL / External SQ
Name: 5977B
Source: EI - Extractor Filament: 1
Setpoint Status: Pass
Signal to Noise: 5113
Agilent Recommended: >= 1200
Source: EI - Extractor Filament: 2
Setpoint Status: Pass
Signal to Noise: 4456
Agilent Recommended: >= 1200

Overall Signal to Noise EI Test Status
Pass

NOTE: This test's 2 comment(s) and 3 deviation(s) are available in the Attachments section.

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Instrument Details

Purpose

This section describes the as found system configuration.

Details

System
- System ID: RYG_EN0136
- Manufacturer: Agilent Technologies
- Name: 7890
- Flow Data Input: Manual Data
- Temperature Data Input: Manual Data or Other Data Logging

Tested Combination1
- Injection Technique: Manual Injection
- Inlet: Front
- Detector: External
- LTM Included?: No

Sampler 1
- Manufacturer: Agilent Technologies
- Type: Manual Injection
- Usage: Sample Injection
- Syringe Volume (µL): 10

Mainframe 1
- Manufacturer: Agilent Technologies
- Name: 7890
- Model Number: G3442B
- Serial Number: CN16463238
- Firmware Revision: B.02.04.3
- Component ID/Asset No.: 081117000236
- Oven Type: Standard

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Inlet 1
- Manufacturer: Agilent Technologies
- Name: 7890
- Type: SSL
- Location: Front
- Carrier Gas: Helium
- Control Type: Electronic Pressure Control (EPC)
- Purged Inlet: Yes

Detector 1
- Manufacturer: Agilent Technologies
- Name: Mass Spectrometer
- Type: Mass Spectrometer
- Location: External

Mass Spectrometer 1
- Manufacturer: Agilent Technologies
- Type: SQ
- Name: 5977B
- Model Number: G7077B
- Serial Number: US1701M008
- Firmware Revision: 5977 6.00.34
- High Vacuum System: Turbo Pump
- Scouting Run Standard: OFN Std
- Component ID/Asset No.: 081117000236

MS EI Source 1
- Manufacturer: Agilent Technologies
- Source Type: EI - Extractor
- Number of filaments: 2

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Electronic Signature

Purpose

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Details
- Full Name of Signer: Eaknarin Puangsopa
- Logged On User Name: eaknarin_puangsopa@agilent.com
- Signature Creation Date: January 5, 2024
- Reason for Signature: Executed protocol and published this original version of document

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User Name: eaknarin_puangsopa
Report Generated by Hostname: ASRYGMX874
System Id: RYG_EN0136
Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 4, 2024 10:37:31 AM	Audit	SessionCreated	Session	None
January 4, 2024 10:37:31 AM	Start	Configuration	Session	None
January 4, 2024 10:37:31 AM	Audit	Entitlement	Licensing	User is FieldEngineer and does not require an unlock code
January 4, 2024 10:39:29 AM	Audit	EqpLoaded	Session	EQP details for primary technique [Gc] - File path: [ProtocolPacks/Gc/Configurations/02.54/Gc.02.54.eqp], EQP File Name: [Gc.02.54.eqp], EQP Name: [AgilentRecommended],Protocol Revision: [Gc.02.54] EQP details for hyphenated technique [GcMs] - File path: [ProtocolPacks/GcMs/Configurations/02.54/GcMs.02.54.eqp], EQP File Name: [GcMs.02.54.eqp], EQP Name: [AgilentRecommended]
January 4, 2024 10:39:40 AM	End	Configuration	Session	None
January 4, 2024 10:39:44 AM	Start	Qualification	Session	OQ
January 4, 2024 10:39:44 AM	Start	Execution	CDS Logon Verification - GC - 7890: - Qualitative test	None
January 4, 2024 10:46:00 AM	End	Execution	CDS Logon Verification - GC - 7890: - Qualitative test	Run Count : 1

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User Name: eaknarin_puangsopa System Id: RYG_EN0136
Report Generated by Hostname: ASRYGWX074 Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 4, 2024 10:46:05 AM	Start	Execution	System Inspection and Basic Safety and Operation - 7890: - Qualitative Test - No setpoints associated	None
January 4, 2024 10:46:18 AM	End	Execution	System Inspection and Basic Safety and Operation - 7890: - Qualitative Test - No setpoints associated	Run Count : 1
January 4, 2024 10:46:22 AM	Start	Execution	Inlet Pressure Accuracy - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
January 4, 2024 10:48:52 AM	End	Execution	Inlet Pressure Accuracy - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count : 1
January 4, 2024 10:48:54 AM	Start	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
January 4, 2024 10:51:05 AM	Audit	Data	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
January 4, 2024 10:51:08 AM	End	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count : 1
January 4, 2024 10:51:43 AM	Start	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
January 4, 2024 10:58:45 AM	Audit	Data	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry

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User Name: eaknarin_puangsopa System Id: RYG_EN0136
Report Generated by Hostname: ASRYGWX074 Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 4, 2024 10:58:46 AM	End	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count : 1
January 4, 2024 10:58:59 AM	Start	Execution	GC Oven Temperature Stability - 7890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	None
January 4, 2024 11:23:26 AM	Audit	Data	GC Oven Temperature Stability - 7890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Manual Data Entry
January 4, 2024 11:23:29 AM	End	Execution	GC Oven Temperature Stability - 7890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Run Count : 1
January 4, 2024 11:23:35 AM	Start	Execution	Log Amp - 5977B SQ: - Source: EI - Extractor	None
January 4, 2024 11:43:23 AM	End	Execution	Log Amp - 5977B SQ: - Source: EI - Extractor	Run Count : 1
January 4, 2024 11:43:26 AM	Start	Execution	RFPA - 5977B SQ: - Source: EI - Extractor	None
January 4, 2024 11:53:23 AM	End	Execution	RFPA - 5977B SQ: - Source: EI - Extractor	Run Count : 1
January 4, 2024 11:53:28 AM	Start	Execution	Tune EI - 5977B SQ: - Source: - EI - Extractor Filament 1 (Qualitative - No setpoints associated)	None
January 4, 2024 1:37:26 PM	End	Execution	Tune EI - 5977B SQ: - Source: - EI - Extractor Filament 1 (Qualitative - No setpoints associated)	Run Count : 1
January 4, 2024 1:37:29 PM	Start	Execution	Tune EI - 5977B SQ: - Source: - EI - Extractor Filament 2 (Qualitative - No setpoints associated)	None

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User Name: eaknarin_puangsopa System Id: RYG_EN0136
Report Generated by Hostname: ASRYGWX074 Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 4, 2024 1:48:59 PM	End	Execution	Tune EI - 5977B SQ: - Source: - EI - Extractor Filament 2 (Qualitative - No setpoints associated)	Run Count : 1
January 4, 2024 1:49:02 PM	Start	Execution	Scouting Run - Manual Injection, Front SSL, SQ: - Source: - EI - Extractor- Part of GCMS System Preparation	None
January 4, 2024 2:20:35 PM	Audit	AceClosed	Session	None
January 5, 2024 8:28:16 AM	Audit	AceRestarted	Session	None
January 5, 2024 8:28:18 AM	Audit	SessionReleased	Session	None
January 5, 2024 8:28:29 AM	Start	Qualification	Session	OQ
January 5, 2024 8:28:29 AM	Start	Execution	Scouting Run - Manual Injection, Front SSL, SQ: - Source: - EI - Extractor- Part of GCMS System Preparation	None
January 5, 2024 9:21:29 AM	Audit	Data	Scouting Run - Manual Injection, Front SSL, SQ: - Source: - EI - Extractor- Part of GCMS System Preparation	Data files Path : D:\OQ2024\scount1.D
January 5, 2024 9:21:53 AM	End	Execution	Scouting Run - Manual Injection, Front SSL, SQ: - Source: - EI - Extractor- Part of GCMS System Preparation	Run Count : 1
January 5, 2024 9:21:58 AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None

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User Name: eaknarin_puangsopa System Id: RYG_EN0136
Report Generated by Hostname: ASRYGWX074 Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 5, 2024 9:25:39 AM	End	Qualification	Session	OQ
January 5, 2024 9:25:39 AM	Start	Reporting	Session	None
January 5, 2024 9:27:46 AM	End	Reporting	Session	None
January 5, 2024 9:27:46 AM	Start	Qualification	Session	OQ
January 5, 2024 9:27:46 AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None
January 5, 2024 9:33:18 AM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : D:\OQ2024\SN_F1.D
January 5, 2024 9:45:22 AM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : 1
January 5, 2024 9:45:32 AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	None
January 5, 2024 9:56:15 AM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : D:\OQ2024\SN_F2.D
January 5, 2024 10:00:19 AM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 1

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User Name: eaknarin_puangsopa System Id: RYG_EN0136
Report Generated by Hostname: ASRYGWX074 Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 5, 2024 10:03:53 AM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation filed for Run Count : 1
January 5, 2024 10:03:53 AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	None
January 5, 2024 10:13:48 AM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : D:\OQ2024\SN_F02.D
January 5, 2024 10:17:58 AM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 2
January 5, 2024 10:22:04 AM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation filed for Run Count : 2
January 5, 2024 10:22:04 AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	None
January 5, 2024 10:22:15 AM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : D:\OQ2024\SN_F2.D
January 5, 2024 10:25:37 AM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 3

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User Name: eaknarin_puangsopa System Id: RYG_EN0136
Report Generated by Hostname: ASRYGWX074 Print Date: January 5, 2024 10:53:25 AM

ALS_OQ_RYG_EN0136 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
January 5, 2024 10:29:11 AM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation filed for Run Count : 3
January 5, 2024 10:29:11 AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	None
January 5, 2024 10:42:05 AM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : D:\OQ2024\SN_F002.D
January 5, 2024 10:46:34 AM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 4
January 5, 2024 10:46:41 AM	End	Qualification	Session	OQ
January 5, 2024 10:46:41 AM	Start	Reporting	Session	None
January 5, 2024 10:50:27 AM	Audit	Reporting	Session	Report Generated : Certificate
January 5, 2024 10:51:07 AM	Audit	Reporting	Session	Report Generated : Report
January 5, 2024 10:51:29 AM	Audit	Reporting	Session	Report Generated : Certificate
January 5, 2024 10:52:00 AM	Audit	Reporting	Session	Report Generated : Report

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Certificate of Calibration

Customer

Name : ALS Laboratory Group Thailand Co., Ltd. **Certificate No** : 25-ACT-010
Address : 104 Soi Phatthanakan 40, Phatthanakan Road, Suan Luang, Bangkok 10250 **Request No** : Req-2025-0091

Unit Under Calibration Details

Measurement item : Acoustic Calibrator Class : 1
Manufacturer : RION Range : 94 dB / 1000 Hz
Model : NC-74 Instrument Status : Used
Serial Number : 34178121
ID : RYG_FS0213

Calibration Environment and Details

Temperature : (23 ±2 °C)
Humidity : (50 ± 20 %RH)
Barometric Pressure : (1013 ±10.0 hPa)
Received Date : 15 January 2025
Calibration Date : 16 January 2025
Location of Calibration : LAB 1 Acoustic
Calibration Procedure : In-house method CP-ACT-02 based on IEC 60942:2017 Electroacoustics - Sound calibrators

16/01/26

Reference Standard	Model	Serial Number	Traceable	Due Calibration
Sound Calibrator	SV 35A	58079	SSI	12 June 2025
THD Multimeter	2015	1047765	NIMT	16 January 2025

Traceability : This certificate provides traceability of measurement to recognized national standard, and to the realization of the international System of Units (SI).

Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k =2, providing a level of confidence approximately 95 %.

Calibrated By : Mr. Noppadon Luangart, Service Calibration Engineer
Approved By : Mr. Pacit Malkaven, Calibration Engineer Supervisor
Issue Date : 16 January 2025

Certificate No : 25-ACT-010
Request No : Req-2025-0091

Calibration Results : Without Adjustment

Sound pressure level

Calibration Range (dB)	Without Adjustment (dB)		Adjustment (dB)		Uncertainty (± dB)	Acceptance limit Class 1 (± dB)	Result
	Measured	Deviated value	Measured	Deviated value			
94 dB / 1000 Hz	94.11	0.11	-	-	0.12	0.25	Pass

Frequency of Sound pressure level

Calibration Range (Hz)	Without Adjustment		Adjustment		Uncertainty (± %)	Acceptance limit Class 1 (± %)	Result
	Measured (Hz)	Deviated	Measured (Hz)	Deviated			
94 dB / 1000 Hz	1000.00	0.00	-	-	0.01	0.70	Pass

Total Harmonic Distortion plus Noise of Sound pressure level(THD+N %)

Calibration Range (Hz)	Without Adjustment	Adjustment	Uncertainty (± %)	Acceptance limit Class 1 (± %)	Result
	Measured (%)	Measured (%)			
94 dB / 1000 Hz	1.21	-	0.40	2.5	Pass

Note :

Function	Maximum-permitted Uncertainty of measurement
Sound pressure level	0.15 dB
Frequency	0.20%
Total distortion+noise	0.50%

Certificate No : 25-ACT-010
Request No : Req-2025-0091

Decision Rule for Statements of Conformity

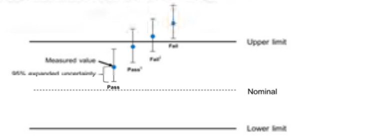
The standard decision rule employed for the statements of conformity to each calibration results will be applied using ILAC-G8:09/2019, Guidelines on the Reporting of Compliance with Specification as following Fig. and statements.

Pass = The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

Pass' = The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail' = The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail = The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



End of Calibration

Cert. No. : ACL24306
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 / Microphone UC-52 / Preamplifier NH-24
Serial No.: 00597160 / 158730 / 34370
ID No.: RYO_F50439

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (25.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

REVIEW BY Narakorn P
APPROVED BY
NEXT CAL. DATE 9/10/25

Received Date : 25 SEPTEMBER 2024
Calibration Date : 09 OCTOBER 2024
Date of Issue : 09 OCTOBER 2024

Calibrated by : Nathakorn Pisutpaisan

Approved by : (Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Cert. No. : ACL24306
Job No. : VC67AC0164
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :
This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :
1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KA4	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of unit maintained at :
3.1 National Institute of Metrology (Thailand).
3.2 Thailand Institute of Scientific and Technological Research (TISTR).

Cert. No. : ACL24306
Job No. : VC67AC0164
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

Cert. No. : ACL24306
Job No. : VC67AC0164
Page : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.94)	93.9	0.0	±0.3

2. Self-generated noise
2.1 Normal test

Measured Value (dB)
13.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting (dB)
A - weight	10.8
C - weight	16.8
Flat	22.4

3. Acoustical signal tests of frequency weightings
Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.4	0.4	±1.5
1000	0.0	0.0	0.0	±1.0
8000	-1.9	-1.8	-1.8	±5.0

Cert. No. : ACL24306
Job No. : VC67AC0164
Pages : 5 of 8

4. Electrical signal tests of frequency weightings
Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz
5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	±0.2
C - weight	94.0	94.0	0.0	±0.2
Flat	94.0	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	±0.1
Slow	94.0	94.0	0.0	±0.1
Leq	94.0	94.0	0.0	±0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	±0.3

Cert. No. : ACL24306
Job No. : VC67AC0164
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	38.9	-0.1	±1.1
34.0	34.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.1	0.1	±1.1
28.0	28.1	0.1	±1.1
27.0	27.1	0.1	±1.1
26.0	26.2	0.2	±1.1
25.0	25.3	0.3	±1.1

Cert. No. : ACL24306
Job No. : VC67AC0164
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	50.0	50.1	0.1	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	400	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

Cert. No. : ACL24306
Job No. : VC67AC0164
Pages : 8 of 8

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±3.0
One	136.4	136.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.6	0.0	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation,providing a level of confidence of approximately 95 %.

End of Calibration Certificate

Cert. No. : ACL25100
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 / Microphone UC-52 / Preamplifier NH-24
Serial No.: 00900072 / 188469 / 01734
ID No.: RYO_F50495

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 14 JANUARY 2025
Calibration Date : 27-29 JANUARY 2025
Date of Issue : 30 JANUARY 2025

29/01/2026

Calibrated by : Nathakorn Pisutpaisan

Approved by : (Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1000	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of unit maintained at :
   3.1 National Institute of Metrology (Thailand).
   3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

T. Petch.

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.94)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting (dB)
A - weight	10.8
C - weight	17.0
Flat	22.9

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.5	0.5	0.5	± 1.5
1000	0.2	0.2	0.2	± 1.0
8000	-0.4	-0.4	-0.4	±5.0

T. Petch.

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Petch.

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	127.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	78.9	-0.1	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	48.9	-0.1	± 1.1
44.0	43.9	-0.1	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.0	0.0	± 1.1

T. Petch.

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	29.0	28.8	-0.2	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

T. Petch.

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.1	-0.3	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation,providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petch.

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 / Microphone UC-52 / Preamplifier NH-24
Serial No.: 00990071 / 118464 / 01733
ID No.: RYG_150492

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 14 JANUARY 2025
Calibration Date : 27-29 JANUARY 2025
Date of Issue : 30 JANUARY 2025

26/01/2026

Calibrated by : Nathakorn Pinatpaisan

Approved by : T. Petch.
(Thanakul Petchurai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1C70	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of unit maintained at :
   3.1 National Institute of Metrology (Thailand).
   3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

T. Petch.

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.94)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.1

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting (dB)
A - weight	12.0
C - weight	18.4
Flat	24.1

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.5
1000	0.1	0.1	0.1	± 1.0
8000	0.9	0.9	0.9	±5.0

T. Petch.

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Petch.

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	78.9	-0.1	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	63.9	-0.1	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	48.9	-0.1	± 1.1
44.0	43.9	-0.1	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.2	0.2	± 1.1

T. Petch.

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	29.0	29.2	0.2	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

T. Petch.

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$

or any value following calculation,providing a lavel of confidence of approximately 95 %

End of Calibration Certificate

T. Petch.

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 / Microphone UC-52 / Preamplifier NH-24
Serial No.: 00000071 / 188966 / 01735
ID No.: RYG_F00494

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
108 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 14 JANUARY 2025
Calibration Date : 27-29 JANUARY 2025
Date of Issue : 30 JANUARY 2025

28/ 01/ 2026

Calibrated by : Nathakorn Piunpaisan

Approved by : T. Petch.
(Thanakul Petcharat)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1C70	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of unit maintained at :
   3.1 National Institute of Metrology (Thailand).
   3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

T. Petch.

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.94)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.1

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting (dB)
A - weight	12.0
C - weight	18.3
Flat	24.1

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.1	0.1	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	1.0	1.0	1.0	±5.0

T. Petch.

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.1	0.0	±2.0
125	0.0	0.1	0.1	±1.5
250	0.0	0.1	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.1	±1.0
2000	-0.1	0.1	0.0	±2.0
4000	-0.1	0.1	0.0	±3.0
8000	-0.1	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.1	0.1	± 0.3

T. Petch.

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.1	0.1	± 1.1
29.0	29.1	0.1	± 1.1
28.0	28.1	0.1	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.2	0.2	± 1.1
25.0	25.2	0.2	± 1.1

T. Petch.

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	29.0	29.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	108.0	0.0	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

T. Petch.

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.5	-0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petch.

[illegible]
Tel. [illegible] Email : [illegible]

SITHIPORN associates

Cert. No. : ACL25106
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 / Microphone UC-52 / Preamplifier NH-24
Serial No.: 00709746 / 187332 / 01297
ID No.: RYG_FS0491

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
166 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location : -
Ambient Temperature : (25.0 ± 3) °C
Pressure : (101.5 ± 3) kPa
Relative Humidity : (50.0 ± 20) %

Received Date : 14 JANUARY 2025
Calibration Date : 27-28 JANUARY 2025
Date of Issue : 30 JANUARY 2025

20/ 01/ 2025

Calibrated by : Nattakorn Pumpuan

Approved by : T. Petch.
(Thanakul Petcharat)

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Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.
The tests results of both items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1C70	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of unit maintained at :
   3.1 National Institute of Metrology (Thailand).
   3.2 Thailand Institute of Scientific and Technological Research (TISTR).

T. Petch.

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

T. Petch.

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.94)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting (dB)
A - weight	13.4
C - weight	20.0
Flat	25.5

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.3	± 1.5
1000	0.2	0.2	0.2	± 1.0
8000	2.1	2.1	2.1	±5.0

T. Petch.

SITHIPORN associates

SITHIPORN ASSOCIATES
CALIBRATION LABORATORY

Cert. No. : ACL25106
Job No. : VC68AC0064
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	-0.1	0.0	-0.1	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

T. Petch.

SITHIPORN associates

SITHIPORN ASSOCIATES
CALIBRATION LABORATORY

Cert. No. : ACL25106
Job No. : VC68AC0064
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	132.9	-0.1	± 1.1
132.0	131.9	-0.1	± 1.1
131.0	130.9	-0.1	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	26.0	0.0	± 1.1
25.0	25.0	0.0	± 1.1

T. Petch.

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Cert. No. : ACL25106
Job No. : VC68AC0064
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	29.0	29.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

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Cert. No. : ACL25106
Job No. : VC68AC0064
Pages : 8 of 8

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lcpeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.4	0.0	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation,providing a level of confidence of approximately 95 %

End of Calibration Certificate

T. Petch.

DKSH

ilac-MRA NAC

Certificate of Calibration

Equipment:	SPECTROPHOTOMETER	Certificate No.:	C06250108
Model:	DR6000	Issued Date:	18 March 2025
Serial No. (or ID.):	1627845 (RYG_EN0037)	Job No.:	WO-00064379
Manufacturer:	HACH	Page:	1 of 3
Condition:	In Condition		

Customer: ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch)
616/10 Moo 5 T.Maenam Khu,
A.Pluakdaeng, Rayong 21140, Thailand.

Phatchanan
APPROVED BY
NEXT CAL. DATE 18/03/26

Environment Condition: Temperature 24.4 °C ± 0.3 °C
Humidity 60.8 %RH ± 3.5 %RH

Calibration Place: ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch)
(Wet Chemistry Lab)
616/10 Moo 5 T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand.

Calibration By: Mr.Preecha Phoonsai
Calibration Date: 18 March 2025
The Method used: In house method, CAL-WI-21, base on ASTM E 275-08 and ASTM E 387-04
Traceability: This certificate is traceable to the CRM maintained by National Institute of Standards and Technology (NIST) through Starna Scientific Limited.
The standard for Wavelength Certificate No. 111583 and 111584
The standard for Photometric Certificate No. 9114984 and 111588
The standard for Stray light Certificate No. 111586 and 111585
The standard for Spectral resolution Certificate No. 111587

(Mr. Preecha Phoonsai)
Person in charge

(Miss Kaewkan Suradech)
Authorized signatory

This certificate is issued the units of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognized national standard laboratories.
The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM).
These results may be affected by deviations from specified conditions. The results relate only to the items tested, calibrated or sampled. The report shall not be reproduced except in full without approval of DKSH Technology Limited.

DKSH

Certificate No.: C06250108 Page 2 of 3

Calibration Results:
Without Adjustment

Wavelength Accuracy (nm), The spectral bandwidth of Std at 2 nm and UUC at 2 nm

Standard Wavelength	Unit Under Calibration	Correction	Uncertainty
[illegible]	[illegible]	[illegible]	[illegible]
536.66	536.7	-0.04	0.13
637.98	638.3	-0.32	0.13
748.48	748.8	-0.32	0.13
807.03	807.5	-0.47	0.13

Photometric Accuracy (Absorbance)

Wavelength	Standard absorbance	Unit Under Calibration	Correction	Uncertainty
420 nm	0.0000	0.000	0.0000	0.0045
	0.2930	0.291	0.0020	0.0045
	0.5168	0.518	-0.0012	0.0045
	1.0298	1.331	-0.0012	0.0045
440 nm	0.0000	0.000	0.0000	0.0045
	0.2867	0.285	0.0017	0.0045
	0.5073	0.508	-0.0007	0.0045
	1.0083	1.309	-0.0007	0.0045
465 nm	0.0000	0.000	0.0000	0.0045
	0.2516	0.250	0.0016	0.0045
	0.4595	0.461	-0.0015	0.0045
	0.9334	0.935	-0.0016	0.0045
546.1 nm	0.0000	0.000	0.0000	0.0045
	0.2461	0.246	0.0001	0.0045
	0.4652	0.466	-0.0008	0.0045
	0.9468	0.348	-0.0012	0.0045
590 nm	0.0000	0.000	0.0000	0.0045
	0.2594	0.259	0.0004	0.0045
	0.5040	0.505	-0.0010	0.0045
	1.0032	1.304	-0.0008	0.0045
635 nm	0.0000	0.000	0.0000	0.0045
	0.2579	0.258	-0.0001	0.0045
	0.4971	0.497	0.0001	0.0045
	0.9720	0.973	-0.0010	0.0045

DKSH

Certificate No.: C06250108 Page 3 of 3

Calibration Results:
Without Adjustment

Photometric Accuracy (Absorbance)

Wavelength	Standard absorbance	Unit Under Calibration	Correction	Uncertainty
235 nm	0.0000	0.000	0.0000	0.0080
	0.7355	0.738	-0.0025	0.0080
257 nm	0.0000	0.000	0.0000	0.0080
	0.8574	0.857	0.0004	0.0080
313 nm	0.0000	0.000	0.0000	0.0080
	0.2864	0.290	-0.0036	0.0080
350 nm	0.0000	0.000	0.0000	0.0080
	0.6374	0.637	0.0004	0.0080

Stray light *

Standard: cut-off	UUC: Wavelength (nm)	UUC: Transmission (%T)	Absorbance (A)
[illegible] +/- 0.11 nm	[illegible]	1.7	1.770
[illegible] +/- 0.11 nm	[illegible]	1.4	[illegible]

Spectral Resolution *

Nominal Concentration 0.02 % v/v	Peak	Trough	Ratio	SBW
Standard Wavelength (nm)	[illegible]	[illegible]	[illegible]	2.00
UUC: Wavelength (nm)	[illegible]	[illegible]		
Std Absorbance (A)	[illegible]	0.2780		
UUC: Absorbance (A)	0.413	0.299		

* Calibration Marked " Not TISI Accredited " in this Certificate have been included for completeness.

The End of Certificate

DKSH

ใบตรวจสอบสภาพเครื่องวัดสิ่งแวดล้อม

เลขที่ใบงาน: WO-00064379

ชนิดเครื่องมือ: SPECTROPHOTOMETER รุ่น: DR6000 หมายเลขเครื่อง: 1627845

ตรวจสอบ (รับ) 18 Mar 2025 ปกติ	ไม่ปกติ	รายการตรวจเช็ค	ตรวจสอบ (ส่ง) 18 Mar 2025 ปกติ	ไม่ปกติ	หมายเหตุ
		General			
☑	☐	1. ความสมบูรณ์เครื่อง	☑	☐	
☑	☐	2. ความสะอาด (ช่องใส่ตัวอย่าง, ภายใน-นอกเครื่อง)	☑	☐	
☑	☐	3. สวิทซ์ ปิด – เปิด เครื่อง (On-Off Swicth)	☑	☐	
☑	☐	4. ปุ่มกด (Keypad)	☑	☐	
☑	☐	5. หน้าจอ (Display, Screen Contrast)	☑	☐	
		Spectrophotometer			
☐	☐	6. แรงดันไฟฟ้า (Battery Backup) >= 2.5 VDC	☐	☐	
☐	☐	7. ตัวหมุนเลือกความยาวคลื่น (Wavelength Control)	☐	☐	
☑	☐	8. ความยาวคลื่น (Wavelength Check)	☑	☐	*
☑	☐	9. หลอดกำเนิดแสง (UV < 3,000 hour)	☑	☐	13.5 Hours
☑	☐	10. หลอดกำเนิดแสง (Visible < 5,000 hour)	☑	☐	893.0 Hours
☑	☐	11. ช่องวัดหลายตัวอย่าง (Carousel Module)	☑	☐	
		pH Meter and Conductivity Meter			
☐	☐	12. อิเล็คโทรด (Electrode and Connection Cable)	☐	☐	
☐	☐	13. ระดับสารละลายใน Electrode (Level KCl)	☐	☐	
☐	☐	14. ฝาปิดกันฝุ่นปลาย Electrode (Dust Protection Hood)	☐	☐	
☐	☐	15. ขาจับอิเล็คโทรด (Stand)	☐	☐	
		Turbidimeter			
☐	☐	16. ค่าความขุ่นที่ต่ำสุด (No Sample)	☐	☐	
☐	☐	17. ระดับการส่องสว่างของแสง (>= 2.5 ไม่เกิน 3.0)	☐	☐	
		Automatic titrator			
☐	☐	18. สภาพ Piston Burettes	☐	☐	
☐	☐	19. Function Rinsing and Dosing	☐	☐	
☐	☐	20. ระบบท่อสายยางและอุปกรณ์ประกอบ	☐	☐	

เพิ่มเติม/ข้อแนะนำ : * 656.1nm = 656.1nm
* 486.0nm = 485.7nm

Mr.Preecha Phoonsai
Service Engineer

TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
5/4/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL 0-2717-3000-29 FAX 0-2719-9484

ilac-MRA NAC

Certificate of Calibration

Cert. No.: 25LM10
Page.: 1 of 2

Equipment : DO Meter with Sensor
Manufacturer : YSI
Model : 5000-115V
Serial No. : 15E102796
ID No. : RYG_EN0032
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch) 616/10 Moo 5 T. Maenam Khu, A. Pluakdaeng, Rayong 21140 Thailand
Location : TPA On Site Calibration Laboratory
Received Order : 17 January 2025
Calibrated Date : 20 January 2025
Ambient Temperature : (25 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V
Calibrated by : Warakorn Lerngagtrakul

Phatchanan S.
20/07/26

Approved by :

Approved Signatory

( ) Chakrit Waewwanjua
(✓) Suwit Imjai
( ) Kunchit Promprat

Issue Date : 23 January 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

Equipment : DO Meter with Sensor
Condition As-Received : Used Item
Reference : 2501-0500DSC-2

Cert. No.: 25LM10
Page.: 2 of 2

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) into Temperature Bath.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Serial No.	Cert. No.	Traceable	Due Date
1) Digital Thermometer	2188080	24I1C22	TPA	17 Sep 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This certification is traceable to the International System of Unit.

Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function : Temperature measurement.

This instrument was connected with temperature sensor, S/N.: 15E100464

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty (±°C)	Coverage Factor k
20.00	80	20.002	19.81	-0.192	0.15	2.00

UUC* : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of aporoximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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Certificate of Testing

Cert.No.: 25TW15
Page.: 1 of 2

Equipment : DO Meter
Manufacturer : YSI
Model : 5000-115V
Serial No. : 15E102796
ID No. : RYG_EN0032
Received Date : 17 January 2025
Test Date : 20 January 2025
Reference : 2501-0500DSC-1
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch) 616/10 Moo 5, T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand
Laboratory Condition : Temperature (25 ± 5) °C; Humidity (50 ± 20) %
Test Procedure : In - house method : CP-CH9 by Comparison Technique with Azide Modification Method
Tested by : Walaiak Sirithean
Approved by : Saithip — Approved Signatory

( ) Pornthippa Tameyakul
( ) Ponpan Paipim
(✓) Saithip Meangmai

Issue Date : 21 January 2025

Cert.No.: 25TW15
Page.: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :
This certification is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

Instruments	Serial No.	ID No.	Certificate No.	Due Date
1. Burette	-	130BU10	23CG1172	22 Mar 2025
2. Balance	14233821	110RC001	24MM131	04 July 2025

2. Standard Material :-

Material	Manufacterer	Lot.No.	Assay
Sodium Thiosulfate 5-Hydrate AR	KEMAUS	2203162447	99.6%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %
Dissolved Oxygen Probe No.: 15E100464

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
8.20	8.20	0.0084

This report was certified only for the instrument we tested.It is allowable to use for study intend to use for advertising and referral purpose is prohibited.This report may not be reproduced other in full, without written approval of the laboratory

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TEL.0-2717-3000-29 FAX.0-2719-9484

Certificate of Calibration

Cert. No.: 24TM1663
Page : 1 of 3

Equipment : Low Temp. Incubator
Manufacturer : Memmert
Model : IPP750
Serial No. : V818.0984
ID No. : RYG_EN0154
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd. Rayong Branch 616/10 Moo 5, T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand
Location : BOD Room
Received Order : 01 November 2024
Calibration Date : 01 November 2024
Ambient Temperature : (25 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V
Calibrated by : Krisda Malee
Approved by : Kunchit — Approved Signatory

Thanitak. 01/05/26

( ) Ponpan Paipim
( ) Suwit Imjai
(✓) Kunchit Prompat

Issue Date : 07 November 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

Equipment : Low Temp. Incubator
Condition As-Received : Used Item
Reference : 2411-0002OC-1

Cert. No.: 24TM1663
Page : 2 of 3

Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

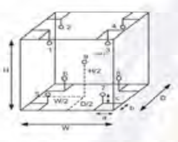
Instrument	Serial No.	Cert. No.	Traceable	Due Date
1) Data Acquisition	MY44073381	24LM73	TPA	16 May 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This certification is traceable to the International System of Unit.

Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Environment during calibration	Beginning	Finished
Temp. (°C)	24	25
REL.Humid. (%)	55	53
AC Supply (Volt)	220	221



Position :	Ref. Std. ID No.:
1	1RTD-2/1
2	1RTD-2/2
3	22-01RTD-03
4	1RTD-2/4
5	1RTD-2/5
6	1RTD-2/6
7	23-01RTD-07
8	1RTD-2/8
9 (ref.)	23-01RTD-09

Probe Installation Details :
a = 10 cm
b = 10 cm
c = 10 cm

Dimension of Chamber :
D = 0.60 m
W = 1.0 m
H = 1.2 m
Capacity = 0.72 m³

Equipment : Low Temp. Incubator
Condition As-Received : Used Item
Reference : 2411-0002OC-1
Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Cert. No.: 24TM1663
Page : 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (±°C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor k
20.0	20.0	20.0	0.026	0.20	0.53	2

Calibration Point (°C)	Measured Temperature (°C) Position 1	2	3	4	5	6	7	8	9 (ref.)	Uncertainty (±°C)
20.0	20.071	19.915	20.273	20.179	19.977	19.782	20.056	20.026	20.033	0.30

Average* : The average of 30 values in each position.
Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.
Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.
Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.
UUC* : Unit Under Calibration
Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
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534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484

Certificate of Calibration

Cert.No.: 24CG3997
Page.: 1 of 2

Equipment : Burette
Capacity : 50 mL
Serial No. : -
ID. No. : RYG_EN0162
Manufacturer : Witeg
Made in : Germany
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd. Rayong Branch 616/10 Moo 5, T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand
Ambient Temperature : (20 ± 2.5) °C
Relative Humidity : (50 ± 10) %
Barometric Pressure : 758 mmHg
Calibration Procedure : ASTM E 542 - 01
Calibrated by : Srisuda Khamtha
Approved by : Ponpan — Approved Signatory

Thanitak. 21/10/25

( ) Srisuda Khamtha
(✓) Ponpan Paipim
( ) Unnopphol Harachai

Issue Date : 21 October 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

Equipment : Burette
Received Date : 16 October 2024
Condition As-Received : Used Item
Calibration Date : 21 October 2024
Reference : 2410-0547DSC-1

Cert.No.: 24CG3997
Page.: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :

Instruments	Model	Serial No.	ID. No.	Certificate No.	Traceability	Due date
1) Balance	MS204TS	C226356983	140RC010	24MM603	TPA	10 Oct 2025
2) Thermo-Hygrograph	THDX-CE	00016540	140EC001	24H1153	TPA	10 June 2025
3) Thermometer	-	1594592	140EC010	24I175	TPA	20 Feb 2025

This certification is traceable to SI Unit

2. The certificate is valid only to the item calibrated on cate and place of calibration.
3. True value is converted to true volume at the standard temperature of 20 °C

Calibration result :

Nominal capacity (mL)	Reading (mL)	Uncertainty (± mL)	k Factor
50	49.9643	0.010	2.00

Remark mL = cm³

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k , providing a level of confidence of approximately 95 %.

-o0o-

TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000-29 FAX. 0-2719-9484

Cert.No.: 24CH96
Page.: 1 of 3

Certificate of Calibration

Equipment : pH Meter
Manufacturer : Mettler Toledo
Model : SevenCompact S220
Serial No. : C104059460
ID No. : RYG_EN0183
Condition As-Received: Used Item
Received Date : 18 January 2024
Calibration Date : 19 January 2024
Reference : 2401-0579DSC-2
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch) 616/10 Moo 5, T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand

REVIEW BY N.Bamrit
APPROVED BY
NEXT CAL. DATE 19/04/25

Ambient Temperature : (25 ± 2.5) °C
Relative Humidity : (50 ± 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with standard voltage calibrator and direct measurement with certified reference material (CRM)
- CP-CH8 by comparison with themperature standard

Calibrated by : Warakorn Lerngagtrakul
Approved by : Saithip — Approved Signatory

(✓) Saithip Meangmai
( ) Warakorn Lerngagtrakul
( ) Ponpan Paipim

Issue Date : 24 January 2024

The Uncertainties are for a confidence probability of approximately 95%

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A 0062854

Cert.No.: 24CH96
Page.: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	54630049	130RC116	23E2802	27 Aug 2024
2) Ref. Standard Thermometer	4982054	110RC044	23I908	26 July 2024

This certification is traceable to the International System of Unit maintained through:-
- Technology Promotion Association (Thailand-Japan)

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No. AR-1635

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	940102	27 Nov 2025
pH 6.986	CPA chem	940104	02 Nov 2024
pH 9.997	CPA chem	940106	02 Nov 2024

3. This certificate is valid only to the item calibrated on date and place of calibration.

Calibration Results

Function : mV Measurement

Performing standard curve by Fluke at pH (4,7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement	Coverage factor
	pH	mV	mV	pH	(±mV)	k
pH Meter	4.000	177.48	177.4	4.000	0.058	2.00
S/N.: C104059460	7.000	0.00	0.0	7.000	0.058	2.00
	10.000	-177.48	-177.5	10.000	0.058	2.00

a 1198287

Cert.No.: 24CH96
Page.: 3 of 3

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buFer nominal pH (4.01,7.00,10.01)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement (±)	Coverage factor k
pH Electrode	4.008	4.013	176.0	0.0054	2.07
S/N.: 3225367	6.986	6.983	2.2	0.0084	2.00
	9.997	9.996	-174.1	0.0065	2.00

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;
- Model : inLab®Expert Pro-ISM
- Serial No. : 3225367

Dimension of probe
- Length : 120 mm.
- Diameter : 12 mm.
- Immersion Depth : 100 mm.

Calibration Point (°C)	Standard Temperature (°C)	IUC* Reading (°C)	Error (°C)	Uncertainty of measurement (± °C)	Coverage factor k
25.0	25.001	25.2	0.199	0.13	2.00

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

-o0o-

a 1198288

TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
53/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG, BANGKOK 10250
TEL. 0-2717-3000-24 FAX. 0-2719-9484

Certificate of Calibration

Certificate No.: 24E289
Page.: 1 of 2

Equipment : pH Meter
Manufacturer: Mettler Toledo
Model : SevenCompact S220
Serial No.: C104059460
ID No.: RYG_EP09153
Condition As-Received: Used New
Received Date: 18 January 2024
Calibration Date: 23 January 2024
Reference: 2401-0579DSC
Ambient Temperature: (23 ± 2) °C
Relative Humidity: (50 ± 10) %

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Submitted by: ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch)
616/10 Moo 5, T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand

Procedure used: Calibration were conducted using calibration procedure No. CP-E17 According to EURAMET cg-15.

Condition of this result of calibration

1.Reference standards instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Multi-Product Calibrator	5500A	6315011	E2U2300035	29 May 2024

2.This result of calibration was made on requested at the point specified by customer.
3.The certificate is valid only to the item calibrated on date and place of calibration.
4.This Certification is traceable to the International System of Unit maintained through:-
-NA Caltechnologies Co.,Ltd., ANAB Accredited No. Calibration AC-2658

Calibrated by : Wutchareeporn Wongchutikrane
Issue Date : 24 January 2024
Approved Signatory :
[ ] Phalinee Prabpaipal
[✓] Nuntawat Khamchai
[ ] Pongsagorn Boonyapom

a 0333296

Cert. No.: 24E289
Page.: 2 of 2

Result of calibration :- (*) Without adjustment ( ) After adjustment

Function: DC voltage measurement Range: 2000 mV

Standard Value (mV)	UUC* Reading (mV)	Error (mV)	Uncertainty (± µV)
-200.0000	-200.0	0.0	68
-150.0000	-150.0	0.0	65
-100.0000	-100.0	0.0	63
-50.0000	-50.0	0.0	61
0.0000	0.0	0.0	58
50.0000	50.0	0.0	61
100.0000	99.9	-0.1	63
150.0000	149.9	-0.1	65
200.0000	199.9	-0.1	68

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*=2, providing a level of confidence of approximately 95 %

UUC* = Unit Under Calibration.

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a 1198963

TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
53/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG, BANGKOK 10250
TEL. 0-2717-3000-24 FAX. 0-2719-9484

Certificate of Calibration

Certificate No.: 24T1733
Page: 1 of 2

Equipment : Digital Thermometer
Manufacturer: Testo
Model : 106
Serial No.: 63517789/0921
ID No.: RYG_F00571
Condition As-Received: Used New
Received Date: 30 September 2024
Calibration Date: 08 October 2024 to 09 October 2024
Reference: 2409-1091DSC
Ambient Temperature: (25 ± 3) °C
Relative Humidity: (50 ± 20) %

This certificate may not be reproduced other than in full, except with the prior written approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.

Submitted by: ALS Laboratory Group (Thailand) Co.,Ltd. Rayong Branch
616/10 Moo 5, T.Maenam Khu, A.Pluakdaeng, Rayong 21140, Thailand

Procedure used: Calibration were conducted using in-house calibration procedure CP-T01 according to comparision with Industrial Platinum Resistance Thermometer (IPRT) into liquid bath temperature controller. The temperature scale used was based on ITS-90.

Condition of this result of calibration

1.Reference standards instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Digital Thermometer	1529	A74609	23I1245	19 Oct 2024
2) Industrial Platinum Resistance Thermometer	5627-12	371975	23I1245	19 Oct 2024

2.The certificate is valid only to the item calibrated on date and place of calibration.
3.This Certification is traceable to the International System of Unit maintained through:-
-Technology Promotion Association (Thailand-Japan), NSC-0450 Accredited No. Calibration 0008

Pitthaya T.
08/10/25

Calibrated by : Yossapon Polpom
Issue Date : 10 October 2024
Approved Signatory :
[ ] Phalinee Prabpaipal
[ ] Chatchawan Khunpliuek
[✓] Wanlop Larpkern

Cert. No.: 24T1733
Page.: 2 of 2

Result of Calibration:- Without Adjustment

Function: Temperature measurement

Dimension of probe : Diameter 3 mm., Length 25 mm. Sheath material : Stainless Steel

Immersion Depth (mm.)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of Measurement (± °C)
50	25.0033	25.0	-0.0033	0.12
50	30.0050	29.9	-0.1050	0.12
50	40.0027	40.0	-0.0027	0.12

UUC* : Unit Under Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor *k* = 2, providing a level of confidence of approximately 95%

-o0o-

SCG

Metrology
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.
Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100
Bangkok Tel : +668 9205 6851 , +669 8247 2360
Website : www.scieco.co.th E-Mail : calibrate@scg.com

Certificate No. T241120 Page 1 of 4

Certificate of Calibration

Equipment : Chamber (Cold Room)
Manufacturer : MODULAR
Model : IREVCOHCOO
Serial No. : C00351459
Customer Code : RYG_EN0184
ID No. : T1939A5
Customer : ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch)
616/10 Moo 5 T.Maenam Khu,
A.Pluakdaeng, Rayong 21140
Customer Location : Laboratory
Date of Receipt : 5 June 2024
Calibrated By : Sujjar Naknakred (Site Calibration Manager)
Approved By : Preecha Phisassutthikul (Temperature Calibration Manager)
Date of Issue : 12 JUN 2024

REVIEW BY Thanitsit.
APPROVED BY
NEXT CAL. DATE 11/12/25

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

FM-L14 119/18-08-66

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33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T241120 Page 2 of 4

Calibration Report

Equipment : Chamber (Cold Room)
Date of Calibration : 11 June 2024
Environment : Temperature : 23.1-24.1 °C
Line Voltage : 222.3-226.3 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert nine standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 200) and AS2853-1986).
All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .
2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN161-TN170	T240713	19 April 2025
TC	TYPE T	TN171-TN180	T240713	19 April 2025
DATA LOGGER	34970A	T149	T240713	19 April 2025

3. This certificate is traceable to :
National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)
4. Condition of calibrated item : good
Equipment Description :
Time Constant 3 Hour 30 Minute At 3 °C
Fresh Air Damper [ ] Open [ ] Min [ ] Medium [ ] Max
[ ] Close
[X] Not Available
5. Adjustment :
( ) without adjustment (X) after adjustment

Approved By

FM-L15 118/18-08-66

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Metrology
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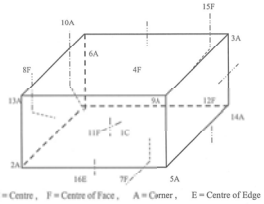
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T241120 Page 3 of 4

Calibration Report



C = Centre , F = Centre of Face , A = Corner , E = Centre of Edge

1C = TN161	11F = TN171
2A = TN162	12F = TN172
3A = TN163	13A = TN173
4F = TN164	14A = TN174
5A = TN165	15F = TN175
6A = TN166	16E = TN176
7F = TN167	
8F = TN168	
9A = TN169	
10A = TN170	

Approved By

FM-L15 118/18-08-66

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Metrology

SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T241130 — Page 4 of 4

Calibration Report

Measurement Results:

Calibration Point	Average Standard Reading at each position (°C)									
	TN161	TN162	TN163	TN164	TN165	TN166	TN167	TN168	TN169	TN170
3	2.73	2.70	2.77	2.71	2.99	2.35	3.09	3.21	3.08	2.90
	TN171	TN172	TN173	TN174	TN175	TN176				
	3.39	3.01	2.92	2.81	3.42	3.42				

Chamber (Cold Room)			Temperature Distribution				
Setting (°C)	Reading (°C) Min , Max	Reading (°C) Average	Average (°C)	Stability (±°C)	Uniformity (°C)	Uncertainty (±°C)	Coverage Factor k
3.0	2.9 , 4.4	3.7	2.97	1.32	1.13	2.02	2.00

* The quoted uncertainty exclude " uniformity "
The calibration result apply only the above calibrated item.
The result of test was found accurate as shown on date and place of test only.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By.

FM-L15 I18/18-08-66

SARTORIUS

Accredited by NSC-TISI-TIS 17025 Calibration 0426

Calibration certificate

Calibration Certificate No. 25BKL0004

Object	Electronic non-automatic weighing instrument	This calibration certificate documents the traceability to national standards.
Manufacturer	Sartorius	Uncertainties of measurements are taken into account when only statements of compliance are made.
Type	MSE224S-100-DU	This certificate was prepared by Sartorius Corporation in accordance to the current ISO/IEC 17025:2017 standard and Sartorius Work Instruction (Method) SOP 18.08.
Serial | QM Ident. no.	26207036 | RYG_EN0002	This certificate relate and apply this equipment only.
Customer	ALS Laboratory Group (Thailand)Co.,Ltd. (Rayong Branch) 616/10 Moo 5 T.Maenam Khu, A.Pluak Daeng, Rayong 21140, Thailand.	REVIEW BY Thanitak. APPROVED BY D. NEXT CAL DATE 20/02/26
Order no.	2230	
Number of pages	4	
Date of calibration	20 Feb 2025	

This calibration certificate may not be reproduced other than in full except with the permission of NSC-TISI-TIS-17025 and the issuing laboratory. Calibration certificates without signature are not valid.
The user is obliged to have the object recalibrated at appropriate intervals.

Date	Approval of the Calibration Certificate	Person in charge
06 Mar 2025	Mr. Chonchai Inthana	Kachen Laasa

Sartorius (Thailand) Co., Ltd.
129 Rama 9 Road, Huaykwang
10310 Bangkok

Verical® Version 6.5 — Page 1 | 4

Calibration certificate No.: 25BKL0004
Calibration Certificate

Calibration object

Single range instrument

Model	MSE224S-100-DU
Serial Number	26207036
QM Ident. no | Inventory no.	RYG_EN0002 | ---
Maximum capacity (Max. load)	220.0000 g
Measured range	220.0000 g
Scale interval	0.0001 g

Place of calibration

Address	According to page 1
Department | Cost center	Laboratory Department. | ---
Building | Floor	--- | 1st Floor.
Room	Balance Room
Maximum temperature variation at place of calibration	5 K

Calibration procedure

EURAMET cg-18, V4.0 - Guidelines on the Calibration of Non-Automatic Weighing Instruments

Test equipment

Test equipment type	Test equipment ID	Valid until
Thermometer	MHB-382SD s/nB011342 Traceable to SI unit through DKSH	21 Aug 2025
Test weight set OIML R111 E2	Certificate No.M23081973 ,E2(Traceable to SI unit through TCS)	23 Aug 2025

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10310 Bangkok

Verical® Version 6.5 — Page 2 | 4

Calibration certificate No.: 25BKL0004
Calibration Certificate

Adjustment Status

The measuring device was internally adjusted before the calibration.

Environmental and measuring conditions

Date of calibration	20 Feb 2025
Temperature at place of calibration | Temp. diff. $T_{weighing} - T_{place}$	24.4 °C | 0.6 K
Measuring conditions	The installation site is suitable. The device was levelled. Balance was loaded up to Max before test.
Comments	Humidity 50.2 %RH.

Measurement results \| Measurement uncertainties

Repeatability

Test load (nominal): 10 g | 200 g	10 g	200 g
1	10.0000 g	200.0000 g
2	10.0000 g	200.0001 g
3	10.0001 g	200.0001 g
4	10.0000 g	200.0000 g
5	10.0001 g	200.0000 g
6	10.0001 g	200.0001 g
7	10.0000 g	200.0000 g
8	10.0000 g	200.0001 g
9	10.0001 g	200.0000 g
10	10.0000 g	200.0000 g
	s = 0.00005 g	s = 0.00005 g

Eccentricity

Test load (nominal):	100 g
Center	100.0000 g
Front left	99.9999 g
Back left	100.0000 g
Back right	100.0000 g
Front right	100.0000 g
Maximum deviation from centric loading indication $\lvert E_{cend} \rvert_{max}$ = 0.0002 g	

Error of indication

Testload L	Indication I	Error E	Expansion factor k	Uncertainty U(E)	Uncertainty relative $U_{rel}(E)$
0.0100 g	0.0100 g	0.0000 g	2.00	0.00013 g	1.3 %
0.1000 g	0.1000 g	0.0000 g	2.00	0.00013 g	0.13 %
0.5000 g	0.5000 g	0.0000 g	2.00	0.00013 g	0.027 %
1.0000 g	1.0000 g	0.0000 g	2.00	0.00013 g	0.013 %
5.0000 g	5.0000 g	0.0000 g	2.00	0.00014 g	0.0027 %
10.0000 g	10.0000 g	0.0000 g	2.00	0.00014 g	0.0014 %
20.0000 g	20.0000 g	0.0000 g	2.00	0.00014 g	0.00072 %
50.0000 g	50.0000 g	0.0000 g	2.00	0.00016 g	0.00032 %
100.0000 g	100.0001 g	0.0001 g	2.00	0.00021 g	0.00021 %
200.0000 g	200.0000 g	0.0000 g	2.00	0.00034 g	0.00017 %
220.0000 g	220.0000 g	0.0000 g	2.00	0.00039 g	0.00018 %
Maximum error of indication		$\lvert E_{max} \rvert$ = 0.0001 g			

U(E) is the quotient of U(E) and test load L. The uncertainty of measurement U(E) is valid only, if error E is considered. You will find reference notes on the uncertainty of measurement in use under Appendix to the calibration certificate | Interpretation of measurement results.
Reference note: The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the documented Expansion factor, determined in accordance with the European Calibration Guideline EURAMET cg-18, V4.0. There is a 95 % probability that the value of the measurand will lie in the assigned value range.

End of calibration certificate

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10310 Bangkok

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Interpretation of measurement results | Appendix to the calibration certificate

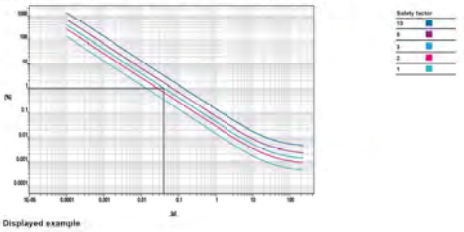
Uncertainty of measurement in use

Device adjusted before measurement	Yes
Temperature deviation considered	± 5 K (manCAL arsum)
Temperature coefficient considered	1 · 10^{-4}/K
Uncertainty of the weighing result $U_W(W)$	$U_W(W) = 0.00013\ g + 3.95 \cdot 10^{-4} \cdot R$

Reference note: The current uncertainty of measurement is calculated by entering of the reading R into this formula. In relation to this, there is no need for a correction of the indication error. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied with an Expansion factor of 2, determined in accordance with the European Calibration Guideline EURAMET cg-18, V4.0. There is a 95 % probability that the value of the measurand will lie in the assigned value range.

Indication in % from max load	Net indication R	Uncertainty $U_W(W)$	Uncertainty relative $U_W(W)_{rel}$
10 %	22.0000 g	0.00014 g	0.0063 %
50 %	55.0000 g	0.00020 g	0.00036 %
100 %	110.0000 g	0.00036 g	0.00031 %
75 %	165.0000 g	0.00076 g	0.00047 %
100 %	220.0000 g	0.00100 g	0.00045 %

Graphic realization of the relative uncertainty of measurement | process accuracy



Displayed example

Process accuracy	1.00 %
Safety factor	3
Minimum sample weight	0.0395 g

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10310 Bangkok

Verical® Version 6.5 — Page 4 | 4

SCG

Metrology

SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.
Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100
Bangkok Tel : +668 9205 6851 , +669 8247 2360
Website : www.scieco.co.th E-Mail : calibrate@scg.com

Certificate No. T250454 — Page 1 of 3

Certificate of Calibration

Equipment	:	Chamber (Oven)
Manufacturer	:	MEMMERT
Model	:	UF 110
Serial No.	:	B423.0853
Customer Code	:	RYG_EN0213
ID No.	:	T5884A5
Customer	:	ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch) 616/10 Moo 5 T.Maenam Khu, A.Pluakdaeng, Rayong 21140
Customer Location	:	ENVIRONMENT LABORATORY
Date of Receipt	:	12 March 2025
Calibrated By	:	Sujjar Naknakred (Site Calibration Manager)
Approved By	:	Boonchu Suriyawong (Site Calibration Manager)
Date of Issue	:	7 MAR 2025

REVIEW BY Thanitak.
APPROVED BY D.
NEXT CAL DATE 19/03/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

FM-L14 I19/18-08-66

SCG

Metrology

SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T250454 — Page 2 of 3

Calibration Report

Equipment	:	Chamber (Oven)
Date of Calibration	:	19 March 2025
Environment	:	Temperature : 26.5-26.9 °C
		Line Voltage : 223.9-231.3 V
		Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert nine resistance thermometer detectors into its chamber , the other one resistance thermometer detector use for ambient temperatue measurement . The calibration was done in according to WI-T20 (based on ASTM E345-94 (Reapproved 2019) and AS2853-1986).
   All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .
2. Reference Standard Instrument :

	Instrument	Model	Instrument No.	Certificate No.	Due Date
	RTD	100 ohm	27 (CH11 10)	T240709	19 April 2025
*	DATA LOGGER	34970A	T149	T240709	19 April 2025

3. This certificate is traceable to :
   National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244)
4. Condition of calibrated item : good
   Equipment Description :
   Time Constant 1 Hour 44 Minute At 104 °C
   Fresh Air Damper [ ] Open [ ] Min [ ] Medium [ ] Max
   [X] Close
   [ ] Not Available
5. Adjustment :
   ( ) without adjustment (X) after adjustment

Approved By.

FM-L15 I18/18-08-66

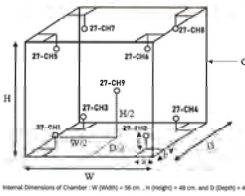
SCG

Metrology

SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T250454 — Page 3 of 3

Calibration Report



Remark : Internal Dimensions of Chamber : W (Width) = 56 cm , H (Height) = 48 cm, and D (Depth) = 40 cm.
Size of installed Standard sensor number 27-CH1 is number 27-CH8 : a = 5 cm , b = 5 cm, and c = 5 cm.
Size of installed Standard sensor number 27-CH2 : W/2 = 28 cm, H/2 = 24 cm, D/2 = 20 cm

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)								
	27-CH1	27-CH2	27-CH3	27-CH4	27-CH5	27-CH6	27-CH7	27-CH8	27-CH9
104	103.84	104.10	104.10	104.49	103.79	104.14	103.96	103.67	104.22
180	179.41	179.92	180.80	181.37	179.54	179.63	179.83	179.41	180.31

Chamber (Oven)			Temperature Distribution				
Setting °C	Reading (°C) Min , Max	Reading (°C) Average	Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor k
104.0	103.9 , 104.1	104.0	104.01	0.08	0.65	0.42	2.00
180.0	-	180.0	180.01	0.13	1.26	0.49	2.00

* The quoted uncertainty exclude "uniformity"
The calibration result apply only the above calibrated item.
The result of test was found accurate as shown on date and place of test only
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate.

Approved By.

FM-L15 I18/18-08-66

TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
53/4 RATTANARAIN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL 0-2717-3000-29 FAX 0-2719-9484

Certificate of Calibration

Cert. No.: 24TM635
Page : 1 of 3

Equipment :	Water Bath	Thanitak.
Manufacturer :	Memmert	
Model :	WNB22	
Serial No. :	1.513.0648	21/09/25
ID No. :	RYG_EN0061	
Submitted by :	ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch) 616/10 Moo 5, T. Maenam Khu, A. Pluakdaeng, Rayong 21140, Thailand	
Location :	Wet Chemistry Lab	
Received Order :	21 March 2024	
Calibration Date :	21 March 2024	
Ambient Temperature :	(26 ± 10) °C	
Relative Humidity :	(50 ± 30) %	
Calibrated by :	Man Pattanapongpaiboon	
Approved by :	Approved Signatory	
	( ) Pornthippa Tameyakul ( ) Unnopphol Harachai (✓) Suwit Imjai	
Issue Date :	23 March 2024	

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

Equipment : Water Bath

Condition As-Received : Used Item

Reference : 2403-0563OC-4

Cert. No.: 24TM635

Page : 2 of 3

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT04 Based on ASTM E715 according to direct measurement method with Data Acquisition which connected with Industrial Platinum Resistance Thermometer (IPRT).

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Serial No.	Cert. No.	Traceable	Due Date
1) Data Acquisition	MY57013711	23LM115	TPA	11 Jul 2024

2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This certification is traceable to the International System of Unit.

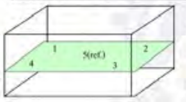
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Heat transfer medium used : Water

	Environmental		AC Voltage Supply
	(°C)	(%R.H.)	(Volt)
Beginning of Calibration	25	55	222
Finished of Calibration	25	57	223



Position :	Ref. Std. ID No.:
1	4803988-001
2	4803988-002
3	4803988-003
4	4803988-004
5(ref.)	4803988-005

Equipment : Water Bath

Condition As-Received : Used Item

Reference : 2403-0563OC-4

Cert. No.: 24TM635

Page : 3 of 3

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Calibration point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Average* Standard Reading (°C) Position 1	2	3	4	5 (ref.)	Uncertainty (± °C)
85.0	85.0	85.0	84.428	84.424	84.489	84.507	84.477	0.18

Calibration point (°C)	Uniformity (°C)	Stability (± °C)	Coverage Factor k
85.0	0.19	0.11	2

Average* : The average of 30 values in each position.

Uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Stability : One-half of the greatest maximum difference of measured temperature at any one probe.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity.

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)

CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES

5/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250

TEL 0-2717-3000-29 FAX 0-2719-9484

Certificate of Calibration

Cert. No.: 24TM632

Page : 1 of 3

Equipment : Hot Air Oven ThanitaK.

Manufacturer : Memmert

Model : UFE 500

Serial No. : G511.1572 21/09/25

ID No. : RYG_EN0010

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd. (Rayong Branch) 616/10 Moo 5 T. Maenam Khu, A. Pluakdaeng, Rayong 21140 Thailand

Location : Oven Room

Received Order : 21 March 2024

Calibration Date : 21 March 2024

Ambient Temperature : (26 ± 10) °C

Relative Humidity : (50 ± 30) %

Calibrated by : Man Pattanapongpaiboon

Approved by : Approved Signatory

( ) Pornthippa Tameyakul

( ) Unnopphol Harachai

(✓) Suwit Imjai

Issue Date : 22 March 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

Equipment : Hot Air Oven

Condition As-Received : Used Item

Reference : 2403-0563OC-1

Cert. No.: 24TM632

Page : 2 of 3

Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD) and Thermocouple Type T.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Serial No.	Cert. No.	Traceable	Due Date
1) Data Acquisition	MY57013711	23LM115	TPA	11 Jul 2024

2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This certification is traceable to the International System of Unit.

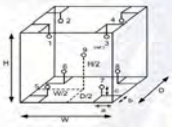
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close

Environment during calibration	Beginning	Finished
Temp. (°C)	27	27
REL.Humid. (%)	57	59
AC Supply (Volt)	222	224



Position :	Ref. Std. ID No.: @ Calibration Point (180) °C	(104) °C
1	18-18TC-01	18-18RTD-01
2	18-18TC-02	18-18RTD-02
3	18-18TC-03	18-18RTD-03
4	18-18TC-04	18-18RTD-04
5	18-18TC-05	18-18RTD-05
6	18-18TC-06	23-18RTD-06
7	18-18TC-07	18-18RTD-07
8	18-18TC-08	22-18RTD-08
9 (ref.)	18-18TC-09	18-18RTD-09

Probe Installation Details :

a = 5.0 cm

b = 5.0 cm

c = 5.0 cm

Dimension of Chamber :

D = 0.40 m

W = 0.56 m

H = 0.48 m

Capacity = 0.11 m³

Equipment : Hot Air Oven

Condition As-Received : Used Item

Reference : 2403-0563OC-1

Cert. No.: 24TM632

Page : 3 of 3

Result of Calibration :- (*) Without Adjustment

Function of UUC* : Temperature Source

Fresh air setting : Close

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor k
104.0	104.0	104.0	0.051	0.59	0.62	2
180.0	180.0	180.0	0.15	1.3	1.7	2

Calibration Point (°C)	Measured Temperature (°C) Position 1	2	3	4	5	6	7	8	9 (ref.)	Uncertainty (± °C)
104.0	103.921	103.786	103.757	103.759	103.960	103.817	104.213	103.672	103.673	0.42
180.0	179.614	179.270	179.145	179.599	180.001	180.423	180.293	180.629	179.429	1.1

Average* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

-olo-

SCG

Metrology

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851 , +669 8247 2360

Website : www.scieco.co.th E-Mail : calibrate@scg.com

NSC-TISI-TIS 17025 CALIBRATION 0244

Certificate No. T250353

Page 1 of 4

Certificate of Calibration

Equipment : Autoclave

Manufacturer : TOMY

Model : SX-700

Serial No. : 48134190

Customer Code : BKK_ML0041

ID No. : T7725A3

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250

Customer Location : Washing Room

Date of Receipt : 26 February 2025

Calibrated By : Boonchai Suriyawong (Site Calibration Manager)

Approved By : / Sujjar Naknakred (Site Calibration Manager)

Date of Issue : 10 MAR 2025

REVIEW BY Sithidak

APPROVED BY

NEXT CAL. DATE 04/03/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

FM-L14 I19/18-08-66

SCG

Metrology

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T250353

Page 2 of 4

Calibration Report

Equipment : Autoclave

Date of Calibration : 4 March 2025

Environment : Temperature : 22.2-25.4 °C

Line Voltage : 221.1-224.7 V

Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert 3 standard temperature recorder into its chamber and test according to WI-T23 inhouse method.(based on BS 2646-1 : 2021)
All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .
2. Reference Standard Instrument :

Instrument	Model	Standard No	Certificate No.	Due Date
1. Temperature recorder	RTD	T210	T242028	11 December 2025
2. Temperature recorder	RTD	T211	T242029	11 December 2025
3. Temperature recorder	RTD	T212	T242030	11 December 2025

3. This certificate is traceable to :
National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)
4. Condition of calibrated item : good
Equipment Description :
Pressure Indicator 0.11-0.12 MPa At 121 °C Holding time 20 minute
5. Adjustment :
(X) without adjustment ( ) after adjustment

Approved By.

FM-L15 I18/18-08-66

SCG

Metrology

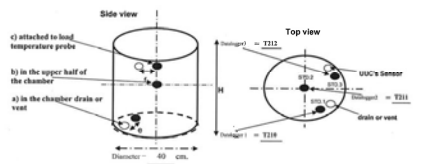
SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.

Certificate No. T250353

Page 3 of 4

Calibration Report



Remark :

Size of Installed Standard sensor STD.1 : Distance the chamber drain or vent e ≤ 10 cm.(less than or be equal to 10 cm.)

Size of Installed Standard sensor STD.2 : Geometric Center (upper half of the chamber)

Size of Installed Standard sensor STD.3 : Distance UUC's Sensor f = 2 cm.

Measurement Results :

Calibration Point	Average Standard Reading at each position (°C) T210	T211	T212
121	121.2	121.1	121.1

Autoclave Setting (°C)	Reading (°C) Min , Max	Average	Temperature Distribution Average (°C)	Stability (±°C)	Uniformity (±°C)	Uncertainty (±°C)	Coverage Factor k
121	-	121	121.2	0.1	0.1	0.65	2.00

*** The quoted uncertainty exclude "uniformity"**

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate

Approved By.

FM-L15 I18/18-08-66

SCG

Metrological Center

SCI ECO Services Company Limited

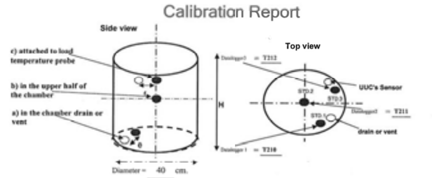
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110

Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109

Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T250353 ***TEST REPORT (BKK_ML0041)*** Page 4 of 4

Calibration Report



Remark :

Size of Installed Standard sensor STD.1 : Distance the chamber drain or vent e ≤ 10 cm.(less than or be equal to 10 cm.)

Size of Installed Standard sensor STD.2 : Geometric Center (upper half of the chamber)

Size of Installed Standard sensor STD.3 : Distance UUC's Sensor f = 2 cm.

Measurement Results :

Calibration Point	Average Standard Reading at each position (°C) T210	T211	T212
121	121.18	121.12	121.13

Autoclave Setting (°C)	Reading (°C) Min , Max	Average	Temperature Distribution Average (°C)	Stability (±°C)	Uniformity (±°C)	Uncertainty (±°C)	Coverage Factor k
121	-	121	121.16	0. 0	0.10	0.65	2.00

*** The quoted uncertainty exclude "uniformity"**

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

End of Certificate

Approved By.

FM-L13 I08/30-05-57

TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484

Certificate of Calibration

Cert. No.: 24TM1398
Page : 1 of 3

Equipment : Incubator
Manufacturer : SHEL-LAB
Model : 1915A
Serial No. : 0200599
ID No. : BKK_ML0010
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand
Location : Incubation & Micrological Reading
Received Order : 03 December 2024
Calibration Date : 03 December 2024
Ambient Temperature : (26 ± 10)°C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (208 ± 22) V

Sithichok T.
03/12/25

Calibrated by : Kunchit Promprat
Approved by : Approved Signatory

( ) Pornthippa Tameyakul
( ) Ponpan Paipim
(✓) Suwit Imjai

Issue Date : 17 December 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the Head of Corporate Services 3 - Equipment Calibration and Testing Services.

Equipment : Incubator
Condition As-Received : Used Item
Reference : 2412-0004OG-1

Cert. No.: 24TM1398
Page : 2 of 3

Procedure Used :-
Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-26 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).
The temperature scale used was based on ITS-90.

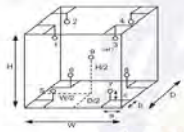
Condition of this result of calibration
1. Reference standard instrument:-

Instrument	Serial No.	Cert. No	Traceable	Due Date
1) Data Acquisition	MY49023932	24LM111	TPA	27 Jul 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This certification is traceable to the International System of Unit.
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Environment during calibration		
	Beginning	Finished
Temp. (°C)	24	24
REL.Humid. (%)	51	55
AC Supply (Volt)	223	223



Position :	Ref. Std. ID No.:
1	19-16RTD-01
2	19-16RTD-02
3	19-16RTD-03
4	23-16RTD-04
5	19-16RTD-05
6	19-14RTD-06
7	21-16RTD-07
8	19-16RTD-08
9 (ref.)	19-16RTD-09

Probe Installation Details :
a = 10 cm
b = 10 cm
c = 10 cm

Dimension of Chamber :
D = 0.50 m
W = 0.75 m
H = 1.2 m
Capacity = 0.45 m³

Equipment : Incubator
Condition As-Received : Used Item
Reference : 2412-0004OG-1

Cert. No.: 24TM1398
Page : 3 of 3

Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor k
35.0	35.0	35.0	0.046	9.40	0.46	2

Calibration Point (°C)	Measured Temperature (°C) Position 1	2	3	4	5	6	7	8	9 (ref.)	Uncertainty (±°C)
35.0	34.888	34.840	35.116	35.141	34.750	34.896	34.921	35.054	34.768	0.30

Average* : The average of 30 values in each position.
Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.
Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.
Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.
UUC* : Unit Under Calibration
Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor **k**, providing a level of confidence of approximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL.0-2717-3000-29 FAX.0-2719-9484

Certificate of Calibration

Cert. No.: 24TM667
Page : 1 of 3

Equipment : Hot Air Oven
Manufacturer : Binder
Model : ED 240/E2
Serial No. : 00-15533
ID No. : BKK_ML0013
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand
Location : Media Preparation Room
Received Order : 23 April 2024
Calibration Date : 23 April 2024
Ambient Temperature : (26 ± 10)°C
Relative Humidity : (50 ± 30) %

Sithichok T.
23/10/25

Calibrated by : Tawatchai Parna
Approved by : Approved Signatory

( ) Ponpan Paipim
(✓) Suwit Imjai
( ) Kunchit Promprat

Issue Date : 26 April 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 - Equipment Calibration and Testing Services.

Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2404-0439OC-8

Cert. No.: 24TM667
Page : 2 of 3

Procedure Used :-
Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-29 according to direct measurement method with Data Acquisition which connected with Thermocouple Type T.
The temperature scale used was based on ITS-90.

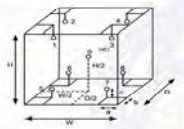
Condition of this result of calibration
1. Reference standard instrument:-

Instrument	Serial No.	Cert. No	Traceable	Due Date
1) Data Acquisition	MY49001451	24LM44	TPA	17 Mar 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.
3. This certification is traceable to the International System of Unit.
Remark : TPA : Technology Promotion Association (Thailand - Japan)

Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Environment during calibration		
	Beginning	Finished
Temp. (°C)	24	23
REL.Humid. (%)	65	65
AC Supply (Volt)	223	222



Position :	Ref. Std. ID No.:
1	24-19TC-01
2	24-19TC-02
3	24-19TC-03
4	24-19TC-04
5	24-19TC-05
6	24-19TC-06
7	24-19TC-07
8	24-19TC-08
9 (ref.)	24-19TC-09

Probe Installation Details :
a = 10 cm
b = 10 cm
c = 10 cm

Dimension of Chamber :
D = 0.50 m
W = 0.80 m
H = 0.60 m
Capacity = 0.24 m³

Equipment : Hot Air Oven
Condition As-Received : Used Item
Reference : 2404-0439OC-8

Cert. No.: 24TM667
Page : 3 of 3

Result of Calibration :- (*) Without Adjustment
Function of UUC* : Temperature Source
Fresh air setting : Close

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Coverage Factor k
180	180	180	0.64	2.7	3.7	2

Calibration Point (°C)	Measured Temperature (°C) Position 1	2	3	4	5	6	7	8	9 (ref.)	Uncertainty (±°C)
180	181.009	181.511	180.522	181.135	181.217	183.659	181.664	181.586	181.474	1.8

Average* : The average of 30 values in each position.
Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.
Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.
Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.
UUC* : Unit Under Calibration
Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor **k**, providing a level of confidence of approximately 95 %.

-o0o-

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REVIEW BY
APPROVED BY
NEXT CAL DATE 13-Jun-25

Agilent CrossLab Compliance Services

Certificate of System Qualification

GC-OG + GCMS-OG

System ID: GM-7
Organization Name: ALS Laboratory Group (Thailand) Co., Ltd.
Organization Location: 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Suan Luang, Khet Suan Luang, Bangkok
Date: December 13, 2023 3:32:44 PM
SOP Name: AgilentRecommended ; AgilentRecommended
SOP Revision: GC.02.56, GCMS.02.50
Overall Qualification Status: Pass

System Inspection and Basic Safety and Operation

Name: 7890
Setpoint Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status
Pass

Inlet Pressure Accuracy

Name: 7890
Front SSL
Setpoint Status: Pass

	Setpoint		Actual	
Inlet Pressure:	25.0	psi	25.0	psi
Accuracy:			0.0	psi
Agilent Recommended:		<=	1.0	

Overall Inlet Pressure Accuracy Test Status
Pass

GC Oven Temperature Accuracy

Name: 7890

Date: December 13, 2023 3:32:44 PM
System ID: GM-7

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Agilent CrossLab Compliance Services

Setpoint Status: Pass
Zone: Oven
Setpoint/Actual
Temperature: 230.0 232.3 °C
Accuracy: 2.3 °C
Agilent Recommended: >= -1.0 % setpoint in K (-5.0 °C)
<= 1.0 % setpoint in K (5.0 °C)

Setpoint Status: Pass
Zone: Oven
Setpoint/Actual
Temperature: 100.0 100.7 °C
Accuracy: 0.7 °C
Agilent Recommended: >= -1.0 % setpoint in K (-3.7 °C)
<= 1.0 % setpoint in K (3.7 °C)

Overall GC Oven Temperature Accuracy Test Status
Pass

GC Oven Temperature Stability

Name: 7890
Setpoint Status: Pass
Setpoint/Average
Temperature: 100.0 100.8 °C
Quantity: 0.0 °C
Agilent Recommended: <= 0.8

Overall GC Oven Temperature Stability Test Status
Pass

Log Amp

Tested Combination1 Front SSL / External SQ
Name: 5977A
Setpoint Status: Pass

Date: December 13, 2023 3:33:49 PM
System ID: GM-7

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Agilent CrossLab Compliance Services

Overall Log Amp Test Status
Pass

RFPA

Tested Combination1 Front SSL / External SQ
Name: 5977A
Setpoint Status: Pass
Area: 1050 mV2 Drift After Five Minutes: 2 mV RFPA Voltage: 904 mV
Agilent Recommended: >= -100 and <= 100 <= 1100

Overall RFPA Test Status
Pass

Tune EI

Tested Combination1 Front SSL / External SQ
Name: 5977A
Setpoint Status: Pass
Filament: 1
Setpoint Status: Pass
Filament: 2

Overall Tune EI Test Status
Pass

Signal to Noise EI

Tested Combination1 Front SSL / External SQ
Name: 5977A

Date: December 13, 2023 3:32:49 PM
System ID: GM-7

Source:	EI - Extractor	Filament:	1
Setpoint Status:	**Pass**		
Signal to Noise:		11518	
Agilent Recommended:	>=	1200	

Source:	EI - Extractor	Filament:	2
Setpoint Status:	**Pass**		
Signal to Noise:		16588	
Agilent Recommended:	>=	1200	

Overall Signal to Noise EI Test Status

Pass

NOTE: This test's 0 comment(s) and 0 deviation(s) are available in the Attachments section.

Instrument Details

Purpose

This section describes the as found system configuration.

Details

System	
System ID	GM-7
Manufacturer	Agilent Technologies
Name	7890
Tested Combination1	
Injection Technique	Manual Injection
Inlet	Front
Detector	External
LTM Included?	No
Sampler 1	
Manufacturer	Agilent Technologies
Type	Manual Injection
Usage	Sample injection
Syringe Volume (µL)	10
Mainframe 1	
Manufacturer	Agilent Technologies
Name	7890
Model Number	G3440B
Serial Number	CN14133181
Firmware Revision	B.02.03
Oven Type	Standard

Inlet 1	
Manufacturer	Agilent Technologies
Name	7890
Type	S/SL
Location	Front
Carrier Gas	Helium
Control Type	Electronic Pressure Control (EPC)
Purged Inlet	Yes
Detector 1	
Manufacturer	Agilent Technologies
Name	Mass Spectrometer
Type	Mass Spectrometer
Location	External
Mass Spectrometer 1	
Manufacturer	Agilent Technologies
Type	SQ
Name	5977A
Serial Number	US1418M209
Firmware Revision	5977 6.00.21
High Vacuum System	Turbo Pump
Scouting Run Direction	OFN Std
MS EI Source 1	
Manufacturer	Agilent Technologies
Source Type	EI - Extractor
Number of filaments	2

Electronic Signature

Purpose

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Details

Full Name of Signer:	Supasak Nimsongtham
Logged On User Name:	supasak.nimsongtham@agilent.com
Signature Creation Date:	December 13, 2023
Reason for Signature:	Executed protocol and published this original version of document

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User Name: supasak.nimsongtham System Id: GM-7
Report Generated by Hostname: ASBKKWX492 Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 10:22:24 AM	Audit	SessionCreated	Session	None
December 13, 2023 10:22:24 AM	Start	Configuration	Session	None
December 13, 2023 10:22:24 AM	Audit	Entitlement	Licensing	User is FieldEngineer and does not require an unlock code
December 13, 2023 10:23:03 AM	Audit	Expounded	Session	EQP details for primary technique (Gc) - File path: [illegible] EQP File Name: [illegible] EQP Name: (AgilentRecommended) Protocol Revision: [illegible] EQP details for hyphenated technique (GcMs) - File path: [illegible] EQP File Name: [illegible] EQP Name: (AgilentRecommended)
December 13, 2023 10:23:03 AM	End	Configuration	Session	None
December 13, 2023 10:23:03 AM	Start	Qualification	Session	OQ
December 13, 2023 10:23:03 AM	Start	Execution	System Inspection and Basic Safety and Operation - 7890 - Qualitative Test - No setpoints associated	None

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User Name: supasak.nimsongtham System Id: GM-7
Report Generated by Hostname: ASBKKWX492 Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 10:[illegible] AM	End	Execution	System Inspection and Basic Safety and Operation - 7890 - Qualitative Test - No setpoints associated	Run Count : 1
December 13, 2023 10:24:11 AM	Start	Execution	Inlet Pressure Accuracy - Front SSL - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
December 13, 2023 10:24:15 AM	End	Execution	Inlet Pressure Accuracy - Front SSL - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count : 1
December 13, 2023 10:24:17 AM	Start	Execution	GC Oven Temperature Accuracy - 7890 - Temperature - Oven - S: 230.0°C - L: <= 1.0 AND <= 1.0 % setpoint in K	None
December 13, 2023 10:[illegible] AM	Audit	Data	GC Oven Temperature Accuracy - 7890 - Temperature - Oven - S: 230.0°C - L: <= 1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
December 13, 2023 10:[illegible] AM	End	Execution	GC Oven Temperature Accuracy - 7890 - Temperature - Oven - S: 230.0°C - L: <= 1.0 AND <= 1.0 % setpoint in K	Run Count : 1
December 13, 2023 10:[illegible] AM	Start	Execution	GC Oven Temperature Accuracy - 7890 - Temperature - Oven - S: 100.0°C - L: <= 1.0 AND <= 1.0 % setpoint in K	None
December 13, 2023 10:[illegible] AM	Audit	Data	GC Oven Temperature Accuracy - 7890 - Temperature - Oven - S: 100.0°C - L: <= 1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
December 13, 2023 10:[illegible] AM	End	Execution	GC Oven Temperature Accuracy - 7890 - Temperature - Oven - S: 100.0°C - L: <= 1.0 AND <= 1.0 % setpoint in K	Run Count : 1

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User Name: supasak.nimsongtham System Id: GM-7
Report Generated by Hostname: ASBKKWX492 Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 10:[illegible] AM	Start	Execution	GC Oven Temperature Stability - 7890 - Temperature - Oven - S: 100.0°C - L: <= 0.5°C	None
December 13, 2023 10:[illegible] AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	None
December 13, 2023 10:[illegible] AM	Start	Execution	GC Oven Temperature Stability - 7890 - Temperature - Oven - S: 100.0°C - L: <= 0.5°C	None
December 13, 2023 10:[illegible] AM	Audit	Data	GC Oven Temperature Stability - 7890 - Temperature - Oven - S: 100.0°C - L: <= 0.5°C	Manual Data Entry
December 13, 2023 [illegible] AM	End	Execution	GC Oven Temperature Stability - 7890 - Temperature - Oven - S: 100.0°C - L: <= 0.5°C	Run Count : 1
December 13, 2023 [illegible] AM	Start	Execution	Log Amp - 5977A SQ - Source: EI - Extractor	None
December 13, 2023 [illegible] AM	End	Execution	Log Amp - 5977A SQ - Source: EI - Extractor	Run Count : 1
December 13, 2023 [illegible] AM	Start	Execution	RFPA - 5977A SQ - Source: EI - Extractor	None
December 13, 2023 [illegible] AM	End	Execution	RFPA - 5977A SQ - Source: EI - Extractor	Run Count : 1
December 13, 2023 [illegible] AM	Start	Execution	Tune EI - 5977A SQ - Source: EI - Extractor Filament 1 (Qualitative) - No setpoints associated	None
December 13, 2023 [illegible] AM	End	Execution	Tune EI - 5977A SQ - Source: EI - Extractor Filament 1 (Qualitative) - No setpoints associated	Run Count : 1

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User Name: supasak.nimsongtham System Id: GM-7
Report Generated by Hostname: ASBKKWX492 Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 11:[illegible] AM	Start	Execution	Tune EI - 5977A SQ - Source: EI - Extractor Filament 2 (Qualitative) - No setpoints associated	None
December 13, 2023 11:[illegible] AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	None
December 13, 2023 11:[illegible] AM	Start	Execution	Tune EI - 5977A SQ - Source: EI - Extractor Filament 2 (Qualitative) - No setpoints associated	None
December 13, 2023 11:[illegible] AM	End	Execution	Tune EI - 5977A SQ - Source: EI - Extractor Filament 2 (Qualitative) - No setpoints associated	Run Count : 1
December 13, 2023 11:[illegible] AM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	None
December 13, 2023 11:[illegible] AM	Audit	AceClosed	Session	None
December 13, 2023 12:[illegible] PM	Audit	AceRestarted	Session	None
December 13, 2023 12:[illegible] PM	Audit	SessionReloaded	Session	None
December 13, 2023 12:[illegible] PM	Start	Qualification	Session	OQ
December 13, 2023 12:[illegible] PM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	None

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User Name: supasak.nimsongtham System Id: GM-7
Report Generated by Hostname: ASBKKWX492 Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 12:[illegible] PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path: [illegible]
December 13, 2023 12:38:18 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : 1
December 13, 2023 12:[illegible] PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Deviation filed for Run Count : 1
December 13, 2023 12:[illegible] PM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	None
December 13, 2023 12:[illegible] PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path: [illegible]
December 13, 2023 12:42:[illegible] PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : 2
December 13, 2023 12:[illegible] PM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
December 13, 2023 12:[illegible] PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path: [illegible]

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User Name: supasak.nimsongtham
Report Generated by Hostname: ASBKKWX402
System Id: GM-7
Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 [illegible] PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 1
December 13, 2023 1:54:41 PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Deviation Test for Run Count : 2
December 13, 2023 [illegible]	[illegible]	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	None
December 13, 2023 1:54:50 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : [illegible]
December 13, 2023 [illegible]	[illegible]	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : [illegible]
December 13, 2023 [illegible]	[illegible]	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Deviation Test for Run Count : 1
December 13, 2023 [illegible]	[illegible]	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	[illegible]
December 13, 2023 2:14:32 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : [illegible]

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User Name: supasak.nimsongtham
Report Generated by Hostname: ASBKKWX402
System Id: GM-7
Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 [illegible]	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : 1
December 13, 2023 2:25:07 PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation Test for Run Count : [illegible]
December 13, 2023 [illegible]	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
December 13, 2023 [illegible]	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : [illegible]
December 13, 2023 [illegible]	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : [illegible]
December 13, 2023 [illegible]	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation Test for Run Count : 2
December 13, 2023 [illegible]	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
December 13, 2023 [illegible]	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : [illegible]

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User Name: supasak.nimsongtham
Report Generated by Hostname: ASBKKWX402
System Id: GM-7
Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 [illegible]	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 1
December 13, 2023 2:29:14 PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation Test for Run Count : 2
December 13, 2023 [illegible]	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
December 13, 2023 2:34:02 PM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
December 13, 2023 2:41:26 PM	Start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
December 13, 2023 2:42:42 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : [illegible]
December 13, 2023 [illegible]	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : [illegible]
December 13, 2023 [illegible]	End	Qualification	Session	OQ
December 13, 2023 [illegible]	Start	Reporting	Session	None

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User Name: supasak.nimsongtham
Report Generated by Hostname: ASBKKWX402
System Id: GM-7
Print Date: December 13, 2023 3:32:47 PM

GM-7-2023 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
December 13, 2023 [illegible]	Audit	[illegible]	Session	None
December 13, 2023 [illegible]	Audit	[illegible]	Session	None
December 13, 2023 [illegible]	Audit	[illegible]	Session	None
December 13, 2023 [illegible]	Start	[illegible]	Session	OQ
December 13, 2023 [illegible]	Audit	Reporting	Session	Report Generated : Certificate
December 13, 2023 [illegible]	Audit	Reporting	Session	Report Generated : Report

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Certificate of System Qualification

GC-OQ + GCMS-OQ

System ID: BKK_EN0259(GM-7)
Organization Name: ALS Laboratory Group (Thailand) Co., Ltd.
Organization Location: 104 Patthanakarn 40, Patthanakarn Rd., Khwang Suan Luang, Khet Suan Luang, Bangkok

Date: June 25, 2025 8:40:18 PM
EQP Name: AgilentRecommended , AgilentRecommended
EQP Revision: GC.02.50, GCMS.02.50
Overall Qualification Status: Pass

REVIEW BY [signature]
APPROVED BY [signature]
NEXT CAL. DATE 25-Dec-26

System Inspection and Basic Safety and Operation

Name: 7890
Setpoint Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status
Pass

Inlet Pressure Accuracy

Name: 7890
Front SSL
Setpoint Status: Pass

	Setpoint		Actual	
Inlet Pressure:	25.0	psi	25.2	psi
Accuracy:			0.2	psi
Agilent Recommended:		<=	1.2	

Overall Inlet Pressure Accuracy Test Status
Pass

GC Oven Temperature Accuracy

Name: 7890
Setpoint Status: Pass
Zone: Oven

	Setpoint	Actual				
Temperature:	230.0	228.8	°C			
Accuracy:		-1.2	°C			
Agilent Recommended:	>=	-1.0	% setpoint in K	(	-5.0	°C)
	<=	1.0	% setpoint in K	(	5.0	°C)

Setpoint Status: Pass
Zone: Oven

	Setpoint	Actual				
Temperature:	100.0	100.8	°C			
Accuracy:		0.8	°C			
Agilent Recommended:	>=	-1.0	% setpoint in K	(	-3.7	°C)
	<=	1.0	% setpoint in K	(	3.7	°C)

Overall GC Oven Temperature Accuracy Test Status
Pass

GC Oven Temperature Stability

Name: 7890
Setpoint Status: Pass

	Setpoint	Average	
Temperature:	100.0	101.0	°C
Stability:		0.0	°C
Agilent Recommended:	<=	0.0	

Overall GC Oven Temperature Stability Test Status
Pass

Log Amp

Tested Combination1 Front SSL / External SQ
Name: 5977A

Setpoint Status: Pass

Overall Log Amp Test Status
Pass

RFPA

Tested Combination1 Front SSL / External SQ
Name: 5977A
Setpoint Status: Pass

Amu:	1050	m/z	Drift After Five Minutes:				RFPA Voltage:	
				2	mV		462	mV
Agilent Recommended:			>=	-100	and <=	100	<=	1100

Overall RFPA Test Status
Pass

Tune EI

Tested Combination1 Front SSL / External SQ
Name: 5977A
Setpoint Status: Pass
Filament: 1
Setpoint Status: Pass
Filament: 2

Overall Tune EI Test Status
Pass

Signal to Noise EI

Tested Combination1 Front SSL / External SQ
Name: 5977A

Source: EI - Extractor Filament: 1
Setpoint Status: Pass
Signal to Noise: 35794093968
Agilent Recommended: >= 1200

Source: EI - Extractor Filament: 2
Setpoint Status: Pass
Signal to Noise: 32634365229
Agilent Recommended: >= 1200

Overall Signal to Noise EI Test Status
Pass

NOTE: This test's 0 comment(s) and 3 deviation(s) are available in the Attachments section.

Instrument Details

Purpose

This section describes the as found system configuration.

Details

System	
System ID	BKK_EN0259(GM-7)
Manufacturer	Agilent Technologies
Name	7890
Tested Combination1	
Injection Technique	Manual Injection
Inlet	Front
Detector	External
LTM Included?	No
Sampler 1	
Manufacturer	Agilent Technologies
Type	Manual Injection
Usage	Sample Injection
Syringe Volume (µL)	10
Mainframe 1	
Manufacturer	Agilent Technologies
Name	7890
Model Number	G3442B
Serial Number	CN14133181
Firmware Revision	B.02.03
Oven Type	Standard

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Inlet 1

Manufacturer	Agilent Technologies
Name	7890
Type	SSL
Location	Front
Carrier Gas	Helium
Control Type	Electronic Pressure Control (EPC)
Purged Inlet	Yes

Detector 1

Manufacturer	Agilent Technologies
Name	Mass Spectrometer
Type	Mass Spectrometer
Location	External

Mass Spectrometer 1

Manufacturer	Agilent Technologies
Type	SQ
Name	5977A
Serial Number	US1415M209
Firmware Revision	5977 6.00.21
High Vacuum System	Turbo Pump
Scouting Run Standard	OFN Std

MS EI Source 1

Manufacturer	Agilent Technologies
Source Type	EI - Extractor
Number of filaments	2

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Electronic Signature

Purpose

This signature page was created and published because the ACE sign-off action was executed, which is valid for the entire document, including attachments. The ACE sign-off is an electronic signature that requires two distinct identification components: Unique username and personal password. The Agilent representative who has delivered this service understands the meaning and legal status of an electronic signature. As a trained official operator, the Agilent representative has a unique password and logon to access ACE and electronically sign this document. (Other e-signatures can be applied to this document using a Document Content Management or other suitable method defined in your data access and control procedures.)

Details

Full Name of Signer:	Supasak Nimsongtham
Logged On User Name:	supasak.nimsongtham@agilent.com
Signature Creation Date:	June 25, 2025
Reason for Signature:	Executed protocol and published this original version of document

ACE Self Qualification Status

The installed version of ACE used to deliver this service passed qualification; the results conform with expected values. The self qualification summary report is available in the session folder location SDS\ClearStore\AceSelfQualification.

Regulatory Disclaimer

This document provides a protocol to verify and record instrument configuration and evidence of proper operation. It has been prepared from our interpretation of applicable regulations as well as industry best practices. The document is designed to provide an important component of a complete compliance package. Validation depends upon many factors and use of this protocol alone does not assure compliance. Agilent Technologies makes no promises or representations as to its sufficiency for any specific regulatory program.

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User Name: supasak.nimsongtham
Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 13, 2025 10:01:23 AM	Audit	SessionCreated	Session	Host Name: SCG1115HKC, Drive Serial Number: C2031778
June 13, 2025 10:01:24 AM	start	Configuration	Session	None
June 13, 2025 10:01:24 AM	Audit	Entitlement	Licensing	User is FieldEngineer and does not require an unlock code
June 13, 2025 10:04:40 AM	Audit	EqpLoaded	Session	EQP details for primary technique [Gc] - File path: [ProtocolPacks/Gc/Configurations/02.50/Gc.02.50.eqp], EQP File Name: [Gc.02.50.eqp], EQP Name: [AgilentRecommended],Protocol Revision: [Gc.02.50] EQP details for hyphenated technique [GcMs] - File path: [ProtocolPacks/GcMs/Configurations/02.50/GcMs.02.50.eqp], EQP File Name: [GcMs.02.50.eqp], EQP Name: [AgilentRecommended]
June 13, 2025 10:04:51 AM	End	Configuration	Session	None
June 13, 2025 10:05:03 AM	start	Qualification	Session	OQ
June 13, 2025 10:05:05 AM	start	Execution	System Inspection and Basic Safety and Operation - 7890: - Qualitative Test - No setpoints associated	None
June 13, 2025 10:05:35 AM	End	Execution	System Inspection and Basic Safety and Operation - 7890: - Qualitative Test - No setpoints associated	Run Count : 1

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User Name: supasak.nimsongtham
Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 13, 2025 10:06:49 AM	start	Execution	Inlet Pressure Accuracy - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
June 13, 2025 10:06:58 AM	End	Execution	Inlet Pressure Accuracy - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count : 1
June 13, 2025 10:07:00 AM	start	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
June 13, 2025 10:07:30 AM	Audit	Data	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
June 13, 2025 10:07:35 AM	End	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count : 1
June 13, 2025 10:07:59 AM	start	Execution	RFPA - 5977A SQ: - Source: EI - Extractor	None
June 13, 2025 10:11:14 AM	start	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
June 13, 2025 10:12:12 AM	Audit	Data	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
June 13, 2025 10:12:17 AM	End	Execution	GC Oven Temperature Accuracy - 7890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count : 1

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User Name: supasak.nimsongtham
Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 13, 2025 10:12:19 AM	start	Execution	GC Oven Temperature Stability - 7890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	None
June 13, 2025 10:30:39 AM	Audit	Data	GC Oven Temperature Stability - 7890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Manual Data Entry
June 13, 2025 10:30:45 AM	End	Execution	GC Oven Temperature Stability - 7890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Run Count : 1
June 13, 2025 10:30:56 AM	start	Execution	Log Amp - 5977A SQ: - Source: EI - Extractor	None
June 13, 2025 10:31:15 AM	End	Execution	Log Amp - 5977A SQ: - Source: EI - Extractor	Run Count : 1
June 13, 2025 10:34:14 AM	Audit	AceClosed	Session	None
June 16, 2025 11:55:53 AM	Audit	AceRestarted	Session	Host Name: DESKTOP-6PKI2AL, Drive Serial Number: 9494EA83
June 16, 2025 11:55:55 AM	Audit	SessionReloaded	Session	None
June 16, 2025 11:58:07 AM	start	Qualification	Session	OQ
June 16, 2025 5:47:31 PM	Audit	AceClosed	Session	None
June 17, 2025 1:34:47 PM	Audit	AceRestarted	Session	Host Name: DESKTOP-6PKI2AL, Drive Serial Number: 9494EA83
June 17, 2025 1:39:58 PM	Audit	AceClosed	Session	None
June 17, 2025 1:52:55 PM	Audit	AceRestarted	Session	Host Name: DESKTOP-6PKI2AL, Drive Serial Number: 9494EA83
June 17, 2025 2:03:56 PM	Audit	SessionReloaded	Session	None
June 17, 2025 2:03:58 PM	start	Qualification	Session	OQ
June 17, 2025 2:04:08 PM	Audit	AceClosed	Session	None

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Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 25, 2025 3:07:51 PM	Audit	AceRestarted	Session	Host Name: SCG1115HKC, Drive Serial Number: C2031778
June 25, 2025 3:07:54 PM	Audit	SessionReloaded	Session	None
June 25, 2025 3:09:13 PM	start	Qualification	Session	OQ
June 25, 2025 3:09:26 PM	start	Execution	RFPA - 5977A SQ: - Source: EI - Extractor	None
June 25, 2025 3:10:29 PM	End	Execution	RFPA - 5977A SQ: - Source: EI - Extractor	Run Count : 1
June 25, 2025 3:10:35 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None
June 25, 2025 3:10:40 PM	start	Execution	Tune EI - 5977A SQ: - Source: - EI - Extractor Filament 1 (Qualitative - No setpoints associated)	None
June 25, 2025 4:10:20 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None
June 25, 2025 4:10:23 PM	start	Execution	Tune EI - 5977A SQ: - Source: - EI - Extractor Filament 1 (Qualitative - No setpoints associated)	None
June 25, 2025 4:10:43 PM	End	Execution	Tune EI - 5977A SQ: - Source: - EI - Extractor Filament 1 (Qualitative - No setpoints associated)	Run Count : 1
June 25, 2025 4:10:45 PM	start	Execution	Tune EI - 5977A SQ: - Source: - EI - Extractor Filament 2 (Qualitative - No setpoints associated)	None

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User Name: supasak.nimsongtham
Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 25, 2025 4:11:08 PM	End	Execution	Tune EI - 5977A SQ: - Source: - EI - Extractor Filament 2 (Qualitative - No setpoints associated)	Run Count : 1
June 25, 2025 4:11:11 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None
June 25, 2025 4:30:52 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None
June 25, 2025 5:23:59 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : C:\Users\msongth\Downloads\OQ data\OQ data\OQ_SN_F1_001.D
June 25, 2025 5:24:19 PM	Audit	Data	DataManager	DataManager was in a data verification state but the user chose to start over
June 25, 2025 5:26:41 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : C:\Users\msongth\Downloads\OQ data\OQ data\OQ_SN_F1_001.D
June 25, 2025 5:27:29 PM	Audit	Reporting	Reintegration	Reintegration Count: 1 – [Integration Type: Injection;Baseline Correction Mode: Advanced;Initial Slope Sensitivity: 10;Initial Peak Width: 0.01;Initial Area Reject: 0;Initial Height Reject: 20000;Integration: Off at 0;Integration: On at 4]

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User Name: supasak.nimsongtham
Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 25, 2025 5:29:45 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : 1
June 25, 2025 5:31:32 PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Deviation filed for Run Count : 1
June 25, 2025 5:31:32 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	None
June 25, 2025 5:34:18 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : C:\Users\msongth\Downloads\OQ data\OQ data\OQ_SN_F1_001.D
June 25, 2025 5:35:03 PM	Audit	Data	DataManager	DataManager was in a data verification state but the user chose to start over
June 25, 2025 5:37:01 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Data files Path : C:\Users\msongth\Downloads\OQ data\OQ data\OQ_SN_F1_001.D
June 25, 2025 5:37:47 PM	Audit	Reporting	Reintegration	Reintegration Count: 1 – [Integration Type: Injection;Baseline Correction Mode: Advanced;Initial Slope Sensitivity: 10;Initial Peak Width: 0.01;Initial Area Reject: 0;Initial Height Reject: 20000;Integration: OFF at 0;Integration: ON at 4]

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User Name: supasak.nimsongtham
Report Generated by Hostname: SCG1115HKC
System Id: BKK_EN0259(GM-7)
Print Date: June 25, 2025 8:40:20 PM

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 25, 2025 5:40:08 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 1 - L: >= 1200	Run Count : 2
June 25, 2025 5:41:09 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	None
June 25, 2025 5:44:37 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : C:\Users\msongth\Downloads\OQ data\OQ data\OQ_SN_F2_001.D
June 25, 2025 5:48:26 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 1
June 25, 2025 5:49:39 PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation filed for Run Count : 1
June 25, 2025 5:49:40 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	None
June 25, 2025 5:57:10 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ: - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : C:\Users\msongth\Downloads\OQ data\OQ data\OQ_SN_F2_001.D
June 25, 2025 5:57:46 PM	Audit	Data	DataManager	DataManager was in a data verification state but the user chose to start over

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GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
June 25, 2025 5:59:51 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : C:\Users\mseongth\Downloads\OQ data\OQ data\OQ_SN_F2_001.D
June 25, 2025 6:00:02 PM	Audit	Data	DataManager	DataManager was in a data verification state but the user chose to start over
June 25, 2025 6:02:07 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : C:\Users\mseongth\Downloads\OQ data\OQ data\OQ_SN_F2_001.D
June 25, 2025 6:02:24 PM	Audit	Data	DataManager	DataManager was in a data verification state but the user chose to start over
June 25, 2025 6:19:36 PM	Audit	Data	DataManager	DataManager was in a data verification state but the user chose to start over
June 25, 2025 6:27:38 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : C:\Users\mseongth\Downloads\OQ data\OQ data\OQ_SN_F2_002.D
June 25, 2025 6:33:07 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 2
June 25, 2025 6:34:17 PM	Audit	TestUnlocked	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Deviation filed for Run Count : 2
June 25, 2025 6:34:17 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None

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Date: June 25, 2025 8:40:18 PM
System ID: BKK_EN0259(GM-7)

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Agilent CrossLab Compliance Services

GM-7-2025 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
[illegible]	Audit	[illegible]	Session	None
[illegible]	Audit	[illegible]	Session	Host Name: SCG1115492, Drive Serial Number: C3051779
June 25, 2025 6:35:59 PM	Audit	SessionReloaded	Session	None
June 25, 2025 6:36:12 PM	start	Qualification	Session	OQ
June 25, 2025 6:36:13 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	None
June 25, 2025 6:39:41 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Data files Path : C:\Users\mseongth\Downloads\OQ data\OQ data\OQ_SN_F2_002.D
June 25, 2025 6:42:57 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 1200	Run Count : 3
June 25, 2025 6:43:11 PM	End	Qualification	Session	OQ
June 25, 2025 6:43:11 PM	start	Reporting	Session	None
June 25, 2025 8:04:32 PM	Audit	Reporting	Session	Report Generated : Certificate
June 25, 2025 8:32:04 PM	Audit	Reporting	Session	Report Generated : Report

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Date: June 25, 2025 8:40:18 PM
System ID: BKK_EN0259(GM-7)

Bara Scientific Co., Ltd.
968 U Chu Liang Building Floor7 Rama4 Road
Silom Bangrak Bangkok Thailand 10500
Tel : 02-6324300 Fax : 02-6375496-7
www.barascientific.com

Certificate of Calibration

Number of Page(s) 1 of 3

Certificate No. BSCC-UV-374/24
Equipment UV/Vis Spectrophotometer
Model UV-1900
Manufacturer Shimadzu
Serial No. A11454... [illegible]
ID No. BKK_EN0018
Date of receipt 13 September 2024
Date of calibration 13 September 2024
Date of Issue 13 SEP 2024

REVIEW BY Jinda K
APPROVED BY Sulak P
NEXT CAL. DATE 10/9/2025

Customer name ALS Laboratory Group (Thailand) Co., Ltd.
Address 104 Soi Phatthanakan 40, Phatthanakan Road, Phatthanakan, Suan Luang, Bangkok 10250

Temperature (25.3 - 26.7) °C (On site)
Humidity (50.4 - 55.0) %RH (On site)

Equipment condition Good Operation

Calibration Location Organic Preparation Lab

Calibration Procedure In-house method WI-UV-702-01 based on ASTM E275-01

Traceability Wavelength Accuracy is traceable to certificate No. 108372 and 108371
Photometric Accuracy is traceable to certificate No. 108364 and 111390
Stray Light is traceable to certificate No. 108377
The above certificate are traceable to SI unit through Starna Scientific Ltd.
(UKAS accredited calibration laboratory NO. 0659)

Calibrated by Mr.Wanchana Jantoey

Approved by

Mr.Sonthi Temboonsakdi
Service Manager

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate. Advertising the report / Certificate and publicity of the results are prohibited and also shall not be reproduced except in full, without written approval of the Bara Scientific Co., Ltd.

Bara Scientific Co., Ltd.
968 U Chu Liang Building Floor7 Rama4 Road
Silom Bangrak Bangkok Thailand 10500
Tel : 02-6324300 Fax : 02-6375496-7
www.barascientific.com

Certificate of Calibration

Certificate No. BSCC-UV-374/24 Number of Page(s) 2 of 3

Calibration Results:

1.Wavelength Accuracy

Certified Wavelength (nm)	UUC (nm)	Error (nm)	Uncertainty (±nm)
241.70	241.55	-0.15	0.18
334.02	333.85	-0.17	0.18
418.53	418.57	0.04	0.18
572.99	572.97	-0.02	0.18
879.41	879.17	-0.24	0:18

2.Photometric Accuracy (UV)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
235	0.0000	0.0000	0.0000	0.0075
	0.7171	0.7169	-0.0002	0.0075
257	0.0000	0.0000	0.0000	0.0075
	0.8354	0.8345	-0.0009	0.0075
313	0.0000	0.0000	0.0000	0.0075
	0.2786	0.2781	-0.0005	0.0075
350	0.0000	0.0000	0.0000	0.0075
	0.6199	0.6194	-0.0005	0.0075

*CNR = Customer not request

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FM-UV-706-02 Rev.01 (23/01/63)

Bara Scientific Co., Ltd.
968 U Chu Liang Building Floor7 Rama4 Road
Silom Bangrak Bangkok Thailand 10500
Tel : 02-6324300 Fax : 02-6375496-7
www.barascientific.com

Certificate of Calibration

Certificate No. BSCC-UV-374/24 Number of Page(s) 3 of 3

Calibration Results:

3.Photometric Accuracy (Visible)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
420.0	0.0000	0.0000	0.0000	0.0042
	0.5761	0.5765	0.0004	0.0042
	0.7119	0.7105	-0.0014	0.0042
	1.0189	1.0174	-0.0015	0.0042
440.0	0.0000	0.0000	0.0000	0.0042
	0.5610	0.5613	0.0003	0.0042
	0.7001	0.6984	-0.0017	0.0042
	1.0026	1.0011	-0.0015	0.0042
465.0	0.0000	0.0000	0.0000	0.0042
	0.5235	0.5212	-0.0003	0.0042
	0.8614	0.8598	-0.0016	0.0042
	0.9456	0.9444	-0.0012	0.0042
546.1	0.0000	0.0000	0.0000	0.0042
	0.5249	0.5245	-0.0004	0.0042
	0.6975	0.6966	-0.0019	0.0042
	1.0009	0.9994	-0.0015	0.0042
590.0	0.0000	0.0000	0.0000	0.0042
	0.5590	0.5546	-0.0004	0.0042
	0.7725	0.7708	-0.0017	0.0042
	1.1125	1.1114	-0.0011	0.0042
635.0	0.0000	0.0000	0.0000	0.0042
	0.5666	0.5666	0.0000	0.0042
	0.7620	0.7604	-0.0016	0.0042
	1.0982	1.0971	-0.0011	0.0042

*CNR = Customer not request

4.Stray Light*

Standard	Unit Under Calibration(UUC)		
cut-off wavelenght (nm)	Wavelength (nm)	Transmission (%T)	Absorbance (A)
200.85±0.11nm	199.58	0.9520	2.0217

The Stray light transmission reference is less than 1.0%T and Stray light absorbance reference is greater than 2.00A
*Stray Light not NSC-ONSC Accredited.

The measurement uncertainty is base on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

End of Certificate

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FM-UV-706-02 Rev.01 (23/01/63)

BKK_EL0043

Agilent Technologies

SERVICE REPORT

Customer Contact:
ALS Laboratory Group (Thailand) Co Ltd Head Office
104 Phatthanakan 40 Phatthanakan Rd Khwaeng Phatthanakan Khet Suan

Customer Purchase Order Number:	Customer Number:
Service Request:	Service Request Date:
Service Order:	Service Confirmation: 6905905441

Invoice To:
ALS Laboratory Group (Thailand) Co Ltd Head Office
104 Phatthanakan 40 Phatthanakan Rd Khwaeng Phatthanakan Khet Suan

REVIEW BY Tattaporn C.
APPROVED BY Sawita N
NEXT CAL. DATE 3/4/2026

Delivery Site:
ALS Laboratory Group (Thailand) Co Ltd Head Office
104 Phatthanakan 40 Phatthanakan Rd Khwaeng Phatthanakan Khet Suan

Direct Inquiries to:
Contact Name: Customer Contact Center
Contact Telephone: +662 837 8383
Contact Fax: +662 832 4334

Location:
Room
Bldg
Lab
Dept

Page 1 of 3

Service Confirmation Number: 6905905441
Service Confirmation Date: 08.10.2024

Service Instrument:

Model Number	Model Description	Serial Number	System Handle	Parent Asset
SYS-IM-7900	ICPMS 7900 System			
G8410A	SPS 4 Autosampler	AU15430722	ICP MS 7900	SYS-IM-7900
G8411A	ISIS 3 for Agilent 7850/7900/8900	JP15510227	ICP MS 7900	SYS-IM-7900
G3292A	PSC 6106T Chiller	2U15A1948	ICP MS 7900	SYS-IM-7900
G8403A	Agilent 7900 ICP-MS	JP15471169	ICP MS 7900	SYS-IM-7900

Service Items:

Item	Service/Part #	Description	Qty	Entitlement	Service Start	Service End
1000	EOQ	Enterprise Operational Qualification	1.00	Agreement Entitlement - 100 % covered	04.10.2024	04.10.2024
1010	5185-5850	ICP-MS Checkout Solutions	1.00	Agreement Entitlement - 100 % covered		

Additional Information:

Page 2 of 3

Service Confirmation Number: 6905905441
Service Confirmation Date: 08.10.2024

Service Information:

Problem Description: *WU-EOQ-IM-7900-5001253655		
Service Provided: Perform OQ Hardware. Test CDS logon, auto sampler, Auto tune, BG and 20 Min stability. I calibrate the instrument No BKK_EL0043 test all pass.		
Service Overview Code: Reason Code: Scheduled Service Diagnosis Code: Scheduled Service Resolution Code: Scheduled Service		
Reported Hours: 7.0	**Travel Hours:** 2.0	
Customer Field Service Representative Name: Panthep Kurasathain	**Customer Field Service Representative Signature:**	**Date:** 08 Oct 2024
Customer Name: Supakwan Mak	**Customer Signature:** Supakwan M	**Date:** 08 Oct 2024
Additional Comments:		

Page 3 of 3

Metrological Center
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110
Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T250355 Page 1 of 6

Certificate of Calibration

Equipment	: HEATING BLOCK
Manufacturer	: Environmental Express
Model	: SC 196
Serial No.	: 6974CECW3285
Customer Code	: BKK_EL0054
ID No.	: T5306A3
Customer	: ALS Laboratory Group (Thailand) Co.,Ltd. 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250
Customer Location	: Acid Digestion Lab
Date of Receipt	: 26 February 2025
Calibrated By	: Atiphong Rongrat (Technician)
Approved By	: / Boonchai Suriyawong (Site Calibration Manager)
Date of Issue	: 17 MAR 2025

REVIEW BY Tattaporn C.
APPROVED BY Sawita N
NEXT CAL. DATE 04/03/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

FM-L12 I09/30-05-57

Metrological Center
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110
Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Calibration Report

Equipment : **HEATING BLOCK**
Date of Calibration : **4 March 2025**
Environment : **Temperature : 24.4-24.9 °C**
Line Voltage : 221.6-226.3 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert nine standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20.
   All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .
2. Reference Standard Instrument :

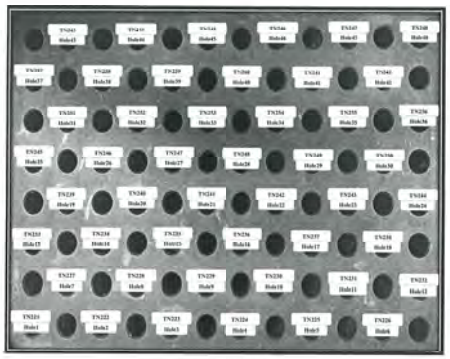
Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN211-TN230	T240712	19 April 2025
TC	TYPE T	TN231-TN240	T240712	19 April 2025
TC	TYPE T	TN241-TN250	T240401	16 March 2025
TC	TYPE T	TN251-TN260	T240401	16 March 2025
DATA LOGGER	34970A	T193	T240401	16 March 2025

3. This certificate is traceable to :
   National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)
4. Condition of calibrated item : good
   Equipment Description :
   Time Constant 2 Hour 40 Minute At 95 °C
   Fresh Air Damper [ ] Open [ ] Min [ ] Medium [ ] Max
   [ ] Close
   [X] Not Available
5. Adjustment :
   ( ) without adjustment (X) after adjustment

Approved By.

Metrological Center
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110
Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Calibration Report



FRONT CONTROL

Approved By.

Metrological Center
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110
Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Calibration Report

Measurement Results

Calibration Point		Average Standard Reading at each position (°C)					
R1 Hole1-Hole6		TN221	TN222	TN223	TN224	TN225	TN226
CAL POINT	Max	94.85	95.37	95.03	95.25	95.52	94.75
95	Min	94.17	94.66	94.38	94.63	94.87	94.12
	Average	94.51	95.02	94.70	94.94	95.20	94.43
R2 Hole7-Hole12		TN227	TN228	TN229	TN230	TN231	TN232
	Max	94.71	94.56	94.79	95.32	95.44	95.06
	Min	94.05	93.88	94.10	94.65	94.90	94.65
	Average	94.38	94.22	94.44	94.99	95.17	94.85
R3 Hole13-Hole18		TN233	TN234	TN235	TN236	TN237	TN238
	Max	95.26	95.43	95.40	95.71	95.41	95.06
	Min	94.54	94.64	94.71	95.10	94.86	94.42
	Average	94.90	95.03	95.06	95.41	95.13	94.74
R4 Hole19-Hole24		TN239	TN240	TN241	TN242	TN243	TN244
	Max	95.13	95.06	95.68	96.16	95.35	95.80
	Min	94.39	94.43	94.86	95.51	94.88	95.12
	Average	94.76	94.75	95.27	95.83	95.12	95.46
R5 Hole25-Hole30		TN245	TN246	TN247	TN248	TN249	TN250
	Max	94.95	95.81	95.39	95.82	95.66	95.66
	Min	94.47	95.03	94.67	94.99	94.84	94.87
	Average	94.71	95.42	95.03	95.41	95.25	95.27
R6 Hole31-Hole36		TN251	TN252	TN253	TN254	TN255	TN256
	Max	96.07	95.34	[illegible]	[illegible]	[illegible]	[illegible]
	Min	95.28	94.55	[illegible]	[illegible]	[illegible]	[illegible]
	Average	95.67	94.95	[illegible]	[illegible]	[illegible]	[illegible]
R7 Hole37-Hole42		TN257	TN258	TN259	TN260	TN241	TN242
	Max	95.15	95.63	[illegible]	[illegible]	[illegible]	[illegible]
	Min	94.38	94.88	[illegible]	[illegible]	[illegible]	[illegible]
	Average	94.76	95.25	[illegible]	[illegible]	[illegible]	[illegible]
R8 Hole43-Hole48		TN243	TN244	TN245	TN246	TN247	TN248
	Max	95.84	95.87	95.44	95.72	95.63	95.79
	Min	95.06	95.10	94.60	94.95	94.87	94.98
	Average	95.45	95.48	95.02	95.34	95.26	95.36

Approved By.

Metrological Center
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110
Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Calibration Report

Measurement Results

Calibration Point		Average Standard Reading at each position (°C)					
R1 Hole1-Hole6		TN211	TN212	TN213	TN214	TN215	TN216
CAL POINT	Max	104.68	104.40	104.60	105.27	105.24	105.19
105	Min	104.15	104.02	104.25	104.94	104.91	104.93
	Average	104.32	104.21	104.42	105.10	105.08	105.06
R2 Hole7-Hole12		TN217	TN218	TN219	TN220	TN221	TN222
	Max	105.20	105.45	105.58	105.96	105.81	106.03
	Min	104.92	105.14	105.29	105.64	105.53	105.79
	Average	105.06	105.29	105.43	105.80	105.67	105.91
R3 Hole13-Hole18		TN233	TN234	TN235	TN236	TN237	TN238
	Max	106.09	106.14	[illegible]	[illegible]	[illegible]	[illegible]
	Min	105.80	105.89	[illegible]	[illegible]	[illegible]	[illegible]
	Average	105.94	106.01	105.70	106.13	105.83	105.77
R4 Hole19-Hole24		TN239	TN240	TN241	TN242	TN243	TN244
	Max	105.87	105.75	105.30	105.07	105.22	105.66
	Min	105.62	105.52	105.13	104.90	105.05	105.49
	Average	105.74	105.63	105.22	104.98	105.14	105.57
R5 Hole25-Hole30		TN245	TN246	TN247	TN248	TN249	TN250
	Max	105.62	105.54	[illegible]	[illegible]	105.97	105.61
	Min	105.45	105.35	105.31	105.57	105.81	105.49
	Average	105.53	105.44	105.41	105.66	105.89	105.59
R6 Hole31-Hole36		TN251	TN252	TN253	TN254	TN255	TN256
	Max	106.19	106.34	106.47	105.86	105.76	105.75
	Min	106.02	106.16	106.31	105.73	105.58	105.71
	Average	106.10	106.25	106.39	105.87	105.67	105.73
R7 Hole37-Hole42		TN257	TN258	TN259	TN260	TN241	TN242
	Max	106.21	105.59	105.43	105.38	[illegible]	[illegible]
	Min	106.04	105.42	105.28	105.20	[illegible]	[illegible]
	Average	106.12	105.51	[illegible]	105.29	[illegible]	[illegible]
R8 Hole43-Hole48		TN243	TN244	TN245	TN246	TN247	TN248
	Max	106.54	106.33	[illegible]	[illegible]	105.92	105.89
	Min	106.38	106.16	105.60	105.20	105.25	105.52
	Average	106.46	106.25	105.69	105.29	105.33	105.61

Approved By.

Metrological Center
SCI ECO Services Company Limited
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Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Calibration Report

Measurement Results:

HEATING BLOCK			Temperature Distribution	
Setting (°C)	Reading (°C) Min , Max	Reading (°C) Average	Stability (±°C)	Uncertainty (±°C)
102.0	-	102.0	0.43	0.83
107.0	-	107.0	0.20	0.70

* The quoted uncertainty exclude " uniformity "
The calibration result apply only the above calibrated item.
The result of test was found accurate as shown on date and place of test only.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k* which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By.

Metrology
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.
Saraburi Tel : +66 3627 3890 Fax : +66 3627 3100
Bangkok Tel : +668 0205 8851 , +669 8247 2300
Website : www.scieco.co.th E-Mail : calibrate@scg.com
NSC-TISI-TIS 17025 CALIBRATION 0244

Certificate of Calibration

Equipment	Chamber (Cooling Room)
Manufacturer	KOLDTECH
Model	KM 320
Serial No.	TBN-1012061/05
Customer Code	BKK_EN0167
ID No.	T2463A3
Customer	ALS Laboratory Group (Thailand) Co.,Ltd. 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250
Customer Location	Laboratory
Date of Receipt	29 November 2023
Calibrated By	Atipbong Rongrat (Technician)
Approved By	/ Boonchai Suriyawong (Site Calibration Manager)
Date of Issue	05 JAN 2024

REVIEW BY
APPROVED BY
NEXT CAL. DATE 06/06/25

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrology.

Metrology
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.
NSC-TISI-TIS 17025 CALIBRATION 0244

Calibration Report

Equipment : **Chamber (Cooling Room)**
Date of Calibration : **6 December 2023**
Environment : **Temperature : 23.4-24.9 °C**
Line Voltage : 221.4-230.2 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert 16 standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2000) and AS2853-1986).
   All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .
2. Reference Standard Instrument :

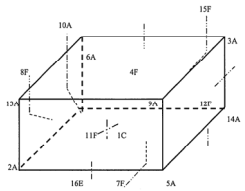
Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN161-TN170	T230773	10 April 2024
TC	TYPE T	TN171-TN180	T230773	10 April 2024
DATA LOGGER	34970A	T149	T230773	10 April 2024

3. This certificate is traceable to :
   National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)
4. Condition of calibrated item : good
   Equipment Description :
   Time Constant 1 Hour 30 Minute At 3 °C
   Fresh Air Damper [ ] Open [ ] Min [ ] Medium [ ] Max
   [ ] Close
   [X] Not Available
5. Adjustment :
   (X) without adjustment ( ) after adjustment

Approved By.

Metrology
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.
NSC-TISI-TIS 17025 CALIBRATION 0244

Calibration Report



C = Centre , F = Centre of Face , A = Corner , E = Centre of Edge

1C = TN161	12F = TN172
2A = TN162	13A = TN173
3A = TN163	14A = TN174
4F = TN164	15F = TN175
5A = TN165	16E = TN176
6A = TN166	
7F = TN167	
8F = TN168	
9A = TN169	
10A = TN170	
11F = TN171	

Approved By.

Metrology
SCI ECO Services Company Limited
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.
NSC-TISI-TIS 17025 CALIBRATION 0244

Calibration Report

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)										
	TN161	TN162	TN163	TN164	TN165	TN166	TN167	TN168	TN169	TN170	TN171	TN172
3.0	2.83	3.34	2.95	3.46	3.45	3.76	3.25	3.46	3.39	3.50	3.58	3.42
	TN173	TN174	TN175	TN176								
	3.33	3.39	3.15	3.43								

Chamber (Cooling Room)			Temperature Distribution				
Setting (°C)	Reading (°C) Min , Max	Reading (°C) Average	Average (°C)	Stability (±°C)	Uniformity (°C)	Uncertainty (±°C)	Coverage Factor *k*
3.0	2.8 , 4.1	3.5	3.36	1.10	2.00	1.90	2.09

The calibration result apply only the above calibrated item.
The result of test was found accurate as shown on date and place of testonly.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k* which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By.

SCG
Metrology Center
SCI ECO Services Company Limited
51 Moo 8, Tubkwang, Kaeng Khoi, Saraburi, Thailand 18260
Bangkok Tel : +668 9205 6851 , +669 81924 0059
Saraburi Tel : +669 8247 2360
Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate of Calibration

Equipment	: Chamber (Cooling Room)
Manufacturer	: KOLDTECH
Model	: KM 320
Serial No.	: TBN-1012061/05
Customer Code	: BKK_EN0167
ID No.	: T2463A3
Customer	: ALS Laboratory Group (Thailand) Co.,Ltd. 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250
Customer Location	: Laboratory Room
Date of Receipt	: 28 May 2025
Calibrated By	: Atiphong Rongrat (Technician)
Approved By	: / Boonchai Suriyawong (Site Calibration Manager)
Date of Issue	: 19 JUN 2025

Juda K
Saluk P
04/12/26

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

SCG
Metrology Center
SCI ECO Services Company Limited
51 Moo 8, Tubkwang, Kaeng Khoi, Saraburi, Thailand 18260

Calibration Report

Equipment	: Chamber (Cooling Room)
Date of Calibration	: 4 June 2025
Environment	: Temperature : 23.4-24.9 °C
	Line Voltage : 221.4-230.2 V
	Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert 16 standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2008) and AS2853-1986). All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .
2. Reference Standard Instrument :

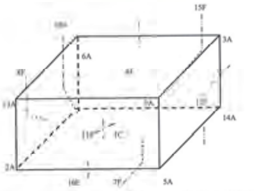
Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN91-TN100	T242036	3 December 2025
TC	TYPE T	TN101-TN110	T242036	3 December 2025
DATA LOGGER	34970A	T1E	T242036	3 December 2025

3. This certificate is traceable to : National Institute of Metrology (Thailand) through Metrological Center (NSC-TBI-TH 17025 CALIBRATION 0244)
4. Condition of calibrated item : good
   Equipment Description :
   Time Constant 2 Hour 20 Minute At 3 °C
   Fresh Air Damper: ☐ Open ☐ Min ☐ Medium ☐ Max
   ☐ Close
   ☒ Not Available
5. Adjustment :
   (X) without adjustment ( ) after adjustment

Approved By.

SCG
Metrology Center
SCI ECO Services Company Limited
51 Moo 8, Tubkwang, Kaeng Khoi, Saraburi, Thailand 18260

Calibration Report



C = Centre , F = Centre of Face , A = Corner , E = Centre of Edge

1C — TN91	12F — TN102
2A — TN92	13A — TN103
3A — TN93	14A — TN104
4F — TN94	15F — TN105
5A — TN95	16E — TN106
6A — TN96	
7F — TN97	
8E — TN98	
9A — TN99	
10A — TN100	
11F — TN101	

Approved By.

SCG
Metrology Center
SCI ECO Services Company Limited
51 Moo 8, Tubkwang, Kaeng Khoi, Saraburi, Thailand 18260

Calibration Report

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)											
	TN91	TN92	TN93	TN94	TN95	TN96	TN97	TN98	TN99	TN100	TN101	TN102
3.0	2.95	2.92	3.09	2.92	3.4	3.58	3.40	3.07	3.18	2.98	3.44	3.11
	TN103	TN104	TN105	TN106								
	3.19	3.06	3.46	2.92								

Chamber (Cooling Room)			Temperature Distribution				
Setting (°C)	Reading (°C) Min , Max	Reading (°C) Average	Average (°C)	Stability (±°C)	Uniformity (°C)	Uncertainty (±°C)	Coverage Factor k
3.0	2.8 , 3.9	3.4	3.14	[illegible]	1.38	1.80	2.09

The calibration result apply only the above calibrated item.
The result of test was found accurate as shown on date and place of test only.
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 %.

Approved By.

analytikjena

REVIEW BY Oraman T
APPROVED BY Sauda N
NEXT CAL. DATE 12/06/2026

Maintenance Protocol

Atomic Fluorescence Spectrometer
mercur DUO / mercur DUO plus

analytikjena

Serial-No.:	K170A0143	Customer-No.:	
Date:	12 December 2024	Carried out by:	Srichai Fak-on

Maintenance with following Operational Qualification (OQ) ☐
(requires a separate OQ protocol)

Company	บริษัท เอเอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด
User	
Department	ห้องแลบปฏิบัติการ
Street	104 ซอย 40 ถนนพัฒนาการ แขวงสวนหลวง เขตสวนหลวง
Zip Code, City	กรุงเทพมหานคร 10250
Country	ประเทศไทย
Phone	
Fax	
E-mail	

analytikjena

Maintenance works basic unit

- tightness visual check inside the Mercur ☑
- visual check if gold-traps are broken ☑
- visual check if spectrometer is contaminated ☑
- visual check of the fluorescence cell ☑
- visual check of the absorption cell, incl. window ☑
- reactor cleaning ☑
- check pump-hose, if necessary change it ☑
- check swivel drive (SEV) ☑
- check drying-hose, output gas-liquid-separator ☑
- test Bubble-Sensor ☑
- check gas flows ☑
- check volume flows, reagents ☑
- recording stray light values ☑
- measurement with 30 ng/l ☑

Maintenance works Autosampler Serial No.: 701 739

- lubricate the dosing-winding (Teflon-grease-spray) ☑
- clean the dosing cylinder, if necessary exchange it ☑
- lubricate the winding system of the height drive with some drops of oil ☑
- check the toothed belt ☐
- check the position of the mechanical stopper (height: 13mm) ☐
- check the pump rate of mixing pump (<14s ASS2, typ 7s/<20s ASS2S, typ 10s) ☐
- check the pump rate of washing cup ☐
- check the electrical hose connections for good contact ☐
- check the connectors of the magnetic valves ☐
- check the dosing hose for buckling, if necessary exchange it ☑

analytikjena

Device parameter		nominal value	actual value
visual check general tightness inside the Mercur		o.k.: ☑	changed: ☐
visual check Goldtraps		o.k.: ☑	changed: ☐
visual check spectrometer			
	Fluorescence cell	o.k.: ☑	changed: ☐
	Absorption cell, incl. window	o.k.: ☑	changed: ☐
	lens	o.k.: ☑	changed: ☐
	Swivel drive (SEV)	o.k.: ☑	changed: ☐
check pump hoses		o.k.: ☑	changed: ☐
check hoses and hose connectors		o.k.: ☑	changed: ☐
check and clean reactor		o.k.: ☑	changed: ☐
check drying hose output Gas-liquid-seperator		o.k.: ☑	changed: ☐
check bubble-sensor		o.k.: ☑	not o.k.: ☐
Check gasflow			
	Argon pressure valve 4	1.2 – 1.5 bar	1.5 bar
	Valve 1	10 Nl/h or 0.166 NL/min	0.142 NL/min
	Valve 2	50 Nl/h or 0.833 NL/min	0.785 NL/min
	Valve 3	5 Nl/h or 0.083 NL/min	0.080 NL/min
	Valve 4	10 Nl/h or 0.166 NL/min	-
Check liquidflow			
	Acid	2.5ml/min ± 1 ml	2.5 ml/min
	Red.-agent	2.5ml/min ± 1 ml	2.5 ml/min
	Sample	10ml/min ± 2 ml	10 ml/min
Adventitious light - values	(V)	from file	
	100	0	0
	200	0	0
	300	0	0
	350	0	0
	400	1	1
	450	2	3
	500	6	7
	550	13	15
	575	18	21
	600	25	29

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Device parameter	nominal value	actual value
Analytical parameters Fluorescence cell		
Conditions.: max.conc.: 10µg/L PMT-voltage: 380 V		
Blank-solution		Int 0.00044
without enrichment / FBR 30 ng/L	Int > 0.0015 RSD < 3 %	Int_1 0.00237 RSD 1.30 %
Conditions.: max.conc.: 1.7µg/L PMT-voltage: 350 V		
Blank-solution		Int –
with enrichment / FBR 30 ng/L	Int > 0.008 RSD < 3 %	Int_2 – RSD – %
Fok.- factor (Int_2 / Int_1)	> 3.5	–
Analytical parameters Absorption cell		
Blank-solution		Ext. 0.0011
without enrichment / FBR 100 ng/L	Ext. > 0.0012 RSD < 5 %	Ext. 0.0093 RSD 2.99 %
Comments		

- การใช้งานของ Tech: With enrichment ไม่สามารถวัดค่าได้เนื่องจาก Valve 4 (Gas flow) ไม่ทำงาน แต่ยังพบว่ามีไฟจาก Board control จ่ายออก 24 Vdc.
- หากมีต้องการที่ต้องวัดด้วย Tech: With enrichment ต้องเปลี่ยนเปลี่ยนตัว Gas box

Signature Technician
12 December 2024
Place, Date (DD/MM/YYYY)

Signature Customer
12 December 2024
Place, Date (DD/MM/YYYY)

analytikjena

Service Report

Customer's address : [illegible] | Customer's Ref. No. Co no. Service 2024

104 [illegible] 40 [illegible] 10250

E-mail : | Phone : | Fax :

☑ Analytik Jena Instruments (Thailand) Ltd.
☐ Analytik Jena Far East (Thailand) Ltd.

Job No. 241257178 | User : | Service Engineer : [illegible] | Date : 12/12/2024 | Page 1/1

Instrument model : Mercury | Serial No. K17OA0143 | Software Version No. WinAAS 4.7.5.0

☐ Repair (RE) ☑ Maintenance (PM) ☐ Installation (IN) ☐ Warranty ☐ Application (AP) ☐ Sale Prep (SP) ☐ Visit(VI)

Fault / Claim : [illegible] PM [illegible] Mercury (Contactyear 2025 1 Time)

Action taken :

- Maintenance work basic unit
- Check Device parameters
- Check gas flow
- Check liquid flow
- Check Adventitious light- Valves
- Test run Analytical parameter Fluorescence cell
- Test run Analytical parameter Absorption cell

Action Pending / Recommendation :

- [illegible] Tech: Without enrichment [illegible] Hg absorption
- Hg low pressure lamp (Energy [illegible] PMT voltage [illegible]) [illegible] Hg low pressure lamp

☐ Spare Part ☑ Instrument Configuration :

	Item No.	Name	Quantity	Unit Price
1.	403.336	[illegible] assembly [illegible]	1	
2.	407-401.808	Hg low pressure lamp	1	
3.				
4.				
5.				
6.				
7.				
8.				

Herewith the undersigned confirm the time required, the work performed, the perfect function of the device and the receipt/delivery of the specified spare parts. *Traveled hours and kilometers can only be entered after the return of the service engineer. | Date / Signature of Customer: Orawan T. | Date / Signature of Service Engineer | Work completed? ☑ Yes ☐ No

Services are subject to the General Terms and Conditions of Analytik Jena AG which will be sent on request.

Mercur

Report file:	C:\WinAAS\TMP\2024\Dec\Pro_008		
Program version:	4.7.10.0	Printed on:	12/12/2024 11:37
		Recording started on	12/12/2024 11:27 GMT+7.0
Operator:	PSU,OTA		
Laboratory:	ALS-BKK		
Code:	II_Hg067_2024		

Remarks:

Food,water

Method parameters Hg

Method	Without enrichment / FBF 30ng/L_PM24052023		
Created on	5/24/2023 Time 12:27		
Program	---		

Parameters Mercur Technique: Hg fluorescence

Line	253.7 nm		
Lamp type	Hg-LP		
Integr. mode	Peak height	Integr. time	30 s
PMT	360 V		
AZ time	5 s	Peak smoothing	12/11
Delay	0 s		

Working mode	w/o enrich.	System cleaning	Acid
FBR technique	on	Wash time acid	10 s
Pump speed	3	Seaking time	20 s
Sample load time	10 s	Gas load time	5 NL/h
Reaction time	10 s		
Waiting time AZ	5 s		
Delay	0 s		
Purge time1	28 s		
Purge time2	15 s	Gas wash time2	10 NL/h
Autosampler			
Autosampler	AS51S/F	Tray type	87/139
Working mode	continuous		
Dilution	---		

QC parameters

QC type	Conc. check		
QC check samp. 1	---	QC check samp. 2	---
Conc.	---	Conc.	---
Error limit	---	Error limit	---
Rep. measurement	off	Reaction	flag + continue
QC std.1 no.	1(30.000 ng/L)	QC std.2 no.	1(30.000 ng/L)
QC std.1 limit	± 50.00%	QC std.2 limit	± 50.00%
QC std. act.	flag + continue		
Expect. blank abs.	0.0100± 0.0100	Reaction	flag + continue
QC precision	off		
		Reaction	off
		QC Recal.factor	Off

Calibration settings

Calib. mode	Standard calib.	Calibr. unit	ng/L
No. standards	1	Conversion fac.	1000000
Type of standards	---	Standard prep.	Premixed
		Blank correct.	---
		Recalib. std. no.	---
Output unit	µg/L	Conversion fac.	1000
Calib. stat.	Mean	Meas. cycles	3
		Blind cycles	1
Stock sol. 1	---	Stock sol. 2	---
Stock sol. 3	---	Stock sol. 4	---
Type of cal. curve	linear	Intercept	calculated
Weighted cal.	off	Grubbs stat.	off
Check of cal. curve	no outlier test		

Sample statistics

Stat. mode	Mean	Meas. cycles	2
Confid. level	95.4 %	Blind cycles	1
Grubbs stat.	---		

Calibration standards Hg

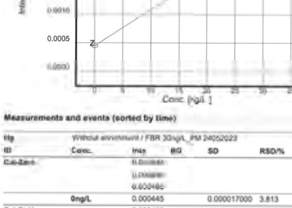
No	Name	State	Pos	Conc. ng/L	Ints	SD	RSD/%
1	Cal-Zero	(--)	79	0.000	H: 0.000445 A: 0.009414	0.000017 0.000140	3.813 1.487
2	Cal-Std1	(--)	80	30.000	H: 0.002375 A: 0.126403	0.000031 0.001423	1.306 1.244

Calibration function 1 12/12/2024 11:36 **Calibration (Peak height)**

Ints=k1+k2*conc

k1=0.000446 k2=0.000064 Recal. factor: ---

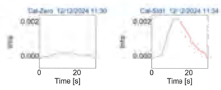
Slope	0.00006 Ints/(ng/L)	R2-adjusted	1.0000
sc0	1.00000 ng/L		
Lower limit	0 ng/L	Upper limit	33.9 ng/L
Detection limit	---	Deter. limit	---



Measurements and events (sorted by time)

Hg	Without enrichment / FBR 30ng/L_PM 24052023					12/12/2024	11:28
ID	**Conc.**	**Ints**	**BG**	**SD**	**RSD/%**	**Int. type**	**Time**
Cal-Zero		0.000[illegible]				PkH	11:30
		0.000[illegible]					11:31
		0.000460					11:32
	0ng/L	0.000445		0.000017000	3.813		11:32
Cal-Std1		0.002402				PkH	11:34
		0.002341					11:35
		0.002381					11:36
	30.00ng/L	0.002375		0.000031020	1.306		11:36
Calibration	Calibration function 01						11:36

Peak plots Hg



Mercur

Report file:	C:\WinAAS\TMP\2024\Dec\Pro_010		
Program version:	4.7.10.0	Printed on:	12/12/2024 13:31
		Recording started on	12/12/2024 13:16 GMT+7.0
Operator:	PSU,OTA		
Laboratory:	ALS-BKK		
Code:	II_Hg067_2024		

Remarks:

Food,water

Method parameters Hg

Method	Without enrichment / Abs / FBR 100ng/L_PM 24052023		
Created on	12/12/2024 Time 12:42		
Program	---		

Parameters Mercur Technique: Hg absorption

Line	253.7 nm		
Lamp type	Hg-LP		
Integr. mode	Peak height	Integr. time	55 s
PMT	225 V		
AZ time	5 s	Peak smoothing	8/5
Delay	8 s		

Working mode	w/o enrich.	System cleaning	Acid
FBR technique	on	Wash time acid	15 s
Pump speed	4	Seaking time	20 s
Sample load time	8 s	Gas load time	5 NL/h
Reaction time	12 s		
Waiting time AZ	15 s		
Delay	10 s		
Purge time1	50 s		
Purge time2	10 s	Gas wash time2	10 NL/h
Autosampler			
Autosampler	AS51S/F	Tray type	87/139
Working mode	continuous		
Dilution	---		

QC parameters

QC type	Conc. check		
QC check samp. 1	---	QC check samp. 2	---
Conc.	---	Conc.	---
Error limit	---	Error limit	---
Rep. measurement	off	Reaction	flag + continue
QC std.1 no.	1(100.00 ng/L)	QC std.2 no.	1(100.00 ng/L)
QC std.1 limit	± 50.00%	QC std.2 limit	± 0.00%
QC std. act.	flag + continue		
Expect. blank abs.	0.0100± 0.0100	Reaction	flag + continue
QC precision	off		
		Reaction	off
		QC Recal.factor	Off

Calibration settings

Calib. mode	Standard calib.	Calibr. unit	ng/L
No. standards	1	Conversion fac.	1000000
Type of standards	---	Standard prep.	Premixed
		Blank correct.	---
		Recalib. std. no.	---
Output unit	µg/L	Conversion fac.	1000
Calib. stat.	Mean	Meas. cycles	3
		Blind cycles	1
Stock sol. 1	---	Stock sol. 2	---
Stock sol. 3	---	Stock sol. 4	---
Type of cal. curve	linear	Intercept	calculated
Weighted cal.	off	Grubbs stat.	off
Check of cal. curve	no outlier test		

Sample statistics

Stat. mode	Mean	Meas. cycles	2
Confid. level	95.4 %	Blind cycles	1
Grubbs stat.	---		

Calibration standards Hg

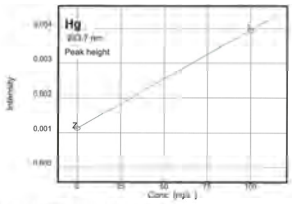
No	Name	State	Pos	Conc. ng/L	Abs	SD	RSD/%
1	Cal-Zero	(--)	79	0.00	H: 0.001129 A: 0.009784	0.000086 0.004388	7.666 11.00
2	Cal-Std1	(--)	81	100.00	H: 0.003950 A: 0.070580	0.000118 0.004290	2.993 6.081

Calibration function 1 12/12/2024 13:31 **Calibration (Peak height)**

Abs=k1+k2*conc

k1=0.001130 k2=0.000028 Recal. factor: ---

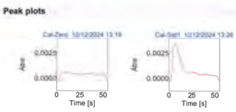
Slope	0.00003 Abs/(ng/L)	R2-adjusted	1.0000
sc0	1.00000 ng/L	Charact. conc.	154.568 (ng/L)/1%I
Lower limit	0 ng/L	Upper limit	110. ng/L
Detection limit	---	Deter. limit	---



Measurements and events (sorted by time)

Hg	Without enrichment / Abs / FBR 100ng/L_PM 24052023					12/12/2024	13:16
ID	**Conc.**	**Abs**	**BG**	**SD**	**RSD/%**	**Int. type**	**Time**
Cal-Zero		0.001[illegible]				PkH	13:19
		0.001227					13:20
		0.001059					13:22
	0ng/L	0.001129		0.000086605	7.666		13:22
Cal-Std1		0.003949				PkH	13:26
		0.004069					13:27
		0.003832					13:29
	100.ng/L	0.003950		0.00011825	2.993		13:29
Calibration	Calibration function 01						13:31

Peak plots Hg



Certificate of System Qualification

GC OQ

REVIEW BY
APPROVED BY
NEXT CAL DATE 9 May 26

System ID: 2025_ALS_GC#11_CN2303A021_OQHW
Organization Name: ALS Laboratory Group (Thailand) Co., Ltd.
Organization Location: 154 Soi 4/1 Pracharnakorn Rd (Yenang Suan Luang, Khlong Toei District, Bangkok 10260)

Date: May 9, 2025 11:32:14 AM
ECP Name: AgilentRecommended

ECP Revision: GC.02.53
Overall Qualification Status: Pass

CDS Logon Verification - GC
Login: Saengchai Tarak

Overall CDS Logon Verification - GC Test Status
Pass

System Inspection and Basic Safety and Operation

Name: 8890
Setpoint Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status
Pass

Inlet Pressure Decay

Name: 8890
Front SSL

Setpoint Status: Pass
Pressure: 25.0 psi
Pressure Change: -0.1 psi /5 minutes
Agilent Recommended: >= -2.0 and <= 0.5

Overall Inlet Pressure Decay Test Status
Pass

Inlet Pressure Accuracy

Name: 8890
Front SSL

Setpoint Status: Pass

	Setpoint		Actual	
Inlet Pressure:	25.0	psi	24.9	psi
Accuracy:			0.1	psi
Agilent Recommended:	<=	1.2		

Overall Inlet Pressure Accuracy Test Status
Pass

Inlet Pressure Decay

Name: 8890
Back SSL

Setpoint Status: Pass
Pressure: 25.0 psi
Pressure Change: -0.1 psi /5 minutes
Agilent Recommended: >= -2.0 and <= 0.5

Overall Inlet Pressure Decay Test Status
Pass

Inlet Pressure Accuracy

Name: 8890
Back SSL

Setpoint Status: Pass

	Setpoint		Actual	
Inlet Pressure:	25.0	psi	24.8	psi
Accuracy:			0.2	psi
Agilent Recommended:	<=	1.2		

Overall Inlet Pressure Accuracy Test Status
Pass

Detector Flow Accuracy

Name: 8890
Front FID

Setpoint Status: Pass
Flow Type: Fuel
Setpoint: 30.0 mL/min Measured Flow: 30.3 mL/min
Accuracy: 0.3 mL/min
Agilent Recommended: <= 10.0 % setpoint (3.0 ml/min)
Limit is percentage of setpoint or 0.5 ml/minute, whichever is largest.

Setpoint Status: Pass
Flow Type: Oxidizer
Setpoint: 400.0 mL/min Measured Flow: 398 mL/min
Accuracy: 2.0 mL/min
Agilent Recommended: <= 10.0 % setpoint (40.0 ml/min)
Limit is percentage of setpoint or 0.5 ml/minute, whichever is largest.

Setpoint Status: Pass
Flow Type: Makeup
Setpoint: 25.0 mL/min Measured Flow: 25.1 mL/min
Accuracy: 0.1 mL/min
Agilent Recommended: <= 10.0 % setpoint (2.5 ml/min)
Limit is percentage of setpoint or 0.5 ml/minute, whichever is largest.

Overall Detector Flow Accuracy Test Status
Pass

Detector Flow Accuracy

Name: 8890
Back FID

Setpoint Status: Pass
Flow Type: Fuel
Setpoint: 30.0 mL/min Measured Flow: 30.1 mL/min
Accuracy: 0.1 mL/min
Agilent Recommended: <= 10.0 % setpoint (3.0 ml/min)
Limit is percentage of setpoint or 0.5 ml/minute, whichever is largest.

Setpoint Status: Pass
Flow Type: Oxidizer
Setpoint: 400.0 mL/min Measured Flow: 391 mL/min
Accuracy: 9.0 mL/min
Agilent Recommended: <= 10.0 % setpoint (40.0 ml/min)
Limit is percentage of setpoint or 0.5 ml/minute, whichever is largest.

Setpoint Status: Pass
Flow Type: Makeup
Setpoint: 25.0 mL/min Measured Flow: 24.8 mL/min
Accuracy: 0.2 mL/min
Agilent Recommended: <= 10.0 % setpoint (2.5 ml/min)
Limit is percentage of setpoint or 0.5 ml/minute, whichever is largest.

Overall Detector Flow Accuracy Test Status
Pass

GC Oven Temperature Accuracy

Name: 8890

Setpoint Status: Pass
Zone: Oven

	Setpoint	Actual	
Temperature:	230.0	230.4	°C
Accuracy:		0.4	°C
Agilent Recommended:	>= -1.0	% setpoint in K	(-5.0 °C)
	<= 1.0	% setpoint in K	(5.0 °C)

Setpoint Status: Pass
Zone: Oven

	Setpoint	Actual	
Temperature:	100.0	100.2	°C
Accuracy:		0.2	°C
Agilent Recommended:	>= -1.0	% setpoint in K	(-3.7 °C)
	<= 1.0	% setpoint in K	(3.7 °C)

Overall GC Oven Temperature Accuracy Test Status
Pass

GC Oven Temperature Stability

Name: 8890
Setpoint Status: Pass

	Setpoint	Average	
Temperature:	100.0	100.2	°C
Stability:		0.0	°C
Agilent Recommended:	<=	0.5	

Overall GC Oven Temperature Stability Test Status
Pass

Scouting Run

Tested Combination1 Front SSL / Front FID
Injection Tower
Name: 7693A

Setpoint Status: Completed
Injection Volume on Column: 1.0 uL

Overall Scouting Run Status
Completed

Noise and Drift

Tested Combination1 Front SSL / Front FID
Name: 8890

Setpoint Status: Pass
Base Signal: 5.89 pA

	ASTM Noise pA		Drift pA/h	
	0.05		1.11	
Agilent Recommended:	<= 0.10		<= 2.50	
Status:	Pass		Pass	

Overall Noise and Drift Test Status
Pass

Injection Precision

Tested Combination1 Front SSL / Front FID
Name: 7693A

Setpoint Status: Pass
Injection Volume on Column: 1.0 uL
Area RSD: 0.06 % Retention Time RSD: 0.19 %
Agilent Recommended: <= 3.00 <= 1.00

Overall Injection Precision Test Status
Pass

Signal to Noise

Tested Combination1 Front SSL / Front FID
Injection Tower
Name: 8890

Setpoint Status: Pass
Signal to Noise: 994826
Agilent Recommended: >= 300000

Overall Signal to Noise Test Status
Pass

Scouting Run

Tested Combination2 Back SSL / Back FID
Injection Tower
Name: 7693A

Setpoint Status: Completed
Injection Volume on Column: 1.0 uL

Overall Scouting Run Status
Completed

Noise and Drift

Tested Combination2 Back SSL / Back FID
Name: 8890

Setpoint Status: Pass
Base Signal: 17.79 pA

	ASTM Noise pA		Drift pA/h	
	0.04		0.07	
Agilent Recommended:	<= 0.10		<= 2.50	
Status:	Pass		Pass	

Overall Noise and Drift Test Status
Pass

Injection Precision

Tested Combination2 Back SSL / Back FID
Name: 7693A

Setpoint Status: Pass
Injection Volume on Column: 1.0 uL
Area RSD: 0.52 % Retention Time RSD: 0.23 %
Agilent Recommended: <= 3.00 <= 1.00

Overall Injection Precision Test Status
Pass

Signal to Noise

Tested Combination2 Back SSL / Back FID
Injection Tower
Name: 8890

Setpoint Status: Pass
Signal to Noise: 837739
Agilent Recommended: >= 300000

Overall Signal to Noise Test Status
Pass

Instrument Details

Purpose

This section describes the as found system configuration.

Details

System

System ID	2025_ALS_GC#11_CN2303A021_OQHW
Manufacturer	Agilent Technologies
Name	8890
Flow Data Input	Manual Data
Temperature Data Input	Manual Data or Other Data Logging

Tested Combination1

Injection Technique	Injection Tower
Sampler Identifier	Sampler 1
Inlet	Front
Detector	Front
LTM Included?	No

Tested Combination2

Injection Technique	Injection Tower
Sampler Identifier	Sampler 2
Inlet	Back
Detector	Back
LTM Included?	No

Sampler 1

Manufacturer	Agilent Technologies
Type	Injection Tower
Name	7693A
Model Number	G4513A
Serial Number	CN23125107
Firmware Revision	A.11.07
Usage	Sample Injection
Location	Front
Syringe Volume (uL)	10

Sampler 2

Manufacturer	Agilent Technologies
Type	Injection Tower
Name	7693A
Model Number	G4513A
Serial Number	CN23125121
Firmware Revision	A.11.07
Usage	Sample Injection
Location	Back
Syringe Volume (µL)	10

Sampler 3

Manufacturer	Agilent Technologies
Type	Tray
Name	7693A
Model Number	G4514A
Serial Number	CN2314054
Firmware Revision	A.12.03
Vial Heater	Not installed

Mainframe 1

Manufacturer	Agilent Technologies
Name	8890
Model Number	G3540A
Serial Number	CN2303A021
Firmware Revision	3.0.3.21
Oven Type	Standard

Inlet 1

Manufacturer	Agilent Technologies
Name	8890
Type	SSL
Location	Front
Carrier Gas	Helium
Control Type	Electronic Pressure Control (EPC)
Purged Inlet	Yes

Inlet 2

Manufacturer	Agilent Technologies
Name	8890
Type	SSL
Location	Back
Carrier Gas	Helium
Control Type	Electronic Pressure Control (EPC)
Purged Inlet	Yes

Detector 1

Manufacturer	Agilent Technologies
Name	8890
Type	FID
Adapter	Capillary
Control Type	Electronic Pressure Control (EPC)
Location	Front
Makeup Gas	Nitrogen

Detector 2

Manufacturer	Agilent Technologies
Name	8890
Type	FID
Adapter	Capillary
Control Type	Electronic Pressure Control (EPC)
Location	Back
Makeup Gas	Nitrogen

Electronic Signature

Purpose

This signature page was created and published because the ACE sign-off action was executed, which is valid for the entire document, including attachments. The ACE sign-off is an electronic signature that requires two distinct identification components: unique username and personal password. The Agilent representative who has delivered this service understands the meaning and legal status of an electronic signature. As a trained official operator, the Agilent representative has a unique password and logon to access ACE and electronically sign this document. (Other e-signatures can be applied to this document using a Document Content Management or other suitable method defined in your data access and control procedures.)

Details

Full Name of Signer:	Saenguthai Tarak
Logged On User Name:	saenguthai.tarak@[illegible].agilent.com
Signature Creation Date:	May 9, 2025
Reason for Signature:	Executed protocol and published this original version of document

ACE Self Qualification Status

The installed version of ACE used to deliver this service passed qualification; the results conform with expected values. The self qualification summary report is available in the session folder location SDS\ClearStore\AceSelfQualification.

Regulatory Disclaimer

This document provides a protocol to verify and record instrument configuration and evidence of proper operation. It has been prepared from our interpretation of applicable regulations as well as industry best practices. The document is designed to provide an important component of a complete compliance package. Validation depends upon many factors and use of this protocol alone does not assure compliance. Agilent Technologies makes no promises or representations as to its sufficiency for any specific regulatory program.

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[illegible]

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 1:49:44 PM	Audit	SessionCreated	Session	Host Name: LAPTOP-CQ3SKOMV, Drive Serial Number: 64A9D8A8
May 8, 2025 1:49:44 PM	start	Configuration	Session	None
May 8, 2025 1:49:44 PM	Audit	Entitlement	Licensing	User is Nonpaying and does not require an unlock code
May 8, 2025 1:56:00 PM	Audit	EqpLoaded	Session	EQP details for primary technique [Gc] - File path: [ProtocolPacks/Gc/Configurations/02.53/Gc.02.53.eqp], EQP File Name: [Gc.02.53.eqp], EQP Name: [AgilentRecommended],Protocol Revision: [Gc.02.53]
May 8, 2025 1:56:02 PM	End	Configuration	Session	None
May 8, 2025 1:56:09 PM	start	Qualification	Session	PM
May 8, 2025 1:56:10 PM	start	Qualification	Session	OQ
May 8, 2025 1:56:10 PM	start	Execution	System Inspection - 8890: - Mainframe	None
May 8, 2025 1:56:45 PM	End	Execution	System Inspection - 8890: - Mainframe	Run Count : 1
May 8, 2025 1:56:47 PM	start	Execution	Mainframe Maintenance - 8890: - Mainframe: 8890	None
May 8, 2025 1:56:56 PM	End	Execution	Mainframe Maintenance - 8890: - Mainframe: 8890	Run Count : 1
May 8, 2025 1:56:58 PM	start	Execution	Inlet Maintenance - Front SSL: - Inlet: 8890	None
May 8, 2025 1:57:57 PM	End	Execution	Inlet Maintenance - Front SSL: - Inlet: 8890	Run Count : 1

Page 1 / 13

[illegible]

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 1:58:00 PM	start	Execution	Inlet Maintenance - Back SSL: - Inlet: 8890	None
May 8, 2025 1:58:52 PM	End	Execution	Inlet Maintenance - Back SSL: - Inlet: 8890	Run Count : 1
May 8, 2025 1:58:54 PM	start	Execution	Detector Maintenance - Front FID: - GC Detector: 8890	None
May 8, 2025 1:59:48 PM	End	Execution	Detector Maintenance - Front FID: - GC Detector: 8890	Run Count : 1
May 8, 2025 1:59:50 PM	start	Execution	Detector Maintenance - Back FID: - GC Detector: 8890	None
May 8, 2025 2:00:25 PM	End	Execution	Detector Maintenance - Back FID: - GC Detector: 8890	Run Count : 1
May 8, 2025 2:00:27 PM	start	Execution	Sampler Maintenance - Front Injection Tower: - Sampler: 7693A	None
May 8, 2025 2:00:54 PM	End	Execution	Sampler Maintenance - Front Injection Tower: - Sampler: 7693A	Run Count : 1
May 8, 2025 2:00:55 PM	start	Execution	Sampler Maintenance - Back Injection Tower: - Sampler: 7693A	None
May 8, 2025 2:01:05 PM	End	Execution	Sampler Maintenance - Back Injection Tower: - Sampler: 7693A	Run Count : 1
May 8, 2025 2:01:09 PM	start	Execution	Service Review - 8890: - Qualitative Test - No setpoints associated	None
May 8, 2025 2:01:41 PM	End	Execution	Service Review - 8890: - Qualitative Test - No setpoints associated	Run Count : 1
May 8, 2025 2:01:43 PM	End	Qualification	Session	PM

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2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 2:01:43 PM	start	Qualification	Session	OQ
May 8, 2025 2:01:43 PM	start	Execution	CDS Logon Verification - GC - 8890: - Qualitative test	None
May 8, 2025 2:06:13 PM	End	Execution	CDS Logon Verification - GC - 8890: - Qualitative test	Run Count : 1
May 8, 2025 2:06:16 PM	start	Execution	System Inspection and Basic Safety and Operation - 8890: - Qualitative Test - No setpoints associated	None
May 8, 2025 2:06:30 PM	End	Execution	System Inspection and Basic Safety and Operation - 8890: - Qualitative Test - No setpoints associated	Run Count : 1
May 8, 2025 2:06:43 PM	start	Execution	Inlet Pressure Decay - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	None
May 8, 2025 2:11:09 PM	End	Execution	Inlet Pressure Decay - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	Run Count : 1
May 8, 2025 2:11:11 PM	start	Execution	Inlet Pressure Accuracy - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
May 8, 2025 2:12:26 PM	End	Execution	Inlet Pressure Accuracy - Front SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count : 1
May 8, 2025 2:12:27 PM	start	Execution	Inlet Pressure Decay - Back SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	None

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2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 2:17:04 PM	End	Execution	Inlet Pressure Decay - Back SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	Run Count : 1
May 8, 2025 2:17:06 PM	start	Execution	Inlet Pressure Accuracy - Back SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
May 8, 2025 2:18:01 PM	End	Execution	Inlet Pressure Accuracy - Back SSL: - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count : 1
May 8, 2025 2:18:04 PM	start	Execution	Detector Flow Accuracy - Front FID: - Type : Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	None
May 8, 2025 2:18:27 PM	Audit	Data	Detector Flow Accuracy - Front FID: - Type : Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
May 8, 2025 2:18:30 PM	End	Execution	Detector Flow Accuracy - Front FID: - Type : Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	Run Count : 1
May 8, 2025 2:18:32 PM	start	Execution	Detector Flow Accuracy - Front FID: - Type : Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	None
May 8, 2025 2:19:04 PM	Audit	Data	Detector Flow Accuracy - Front FID: - Type : Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
May 8, 2025 2:19:06 PM	End	Execution	Detector Flow Accuracy - Front FID: - Type : Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	Run Count : 1
May 8, 2025 2:19:08 PM	start	Execution	Detector Flow Accuracy - Front FID: - Type : Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	None

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2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 2:20:02 PM	Audit	Data	Detector Flow Accuracy - Front FID: - Type : Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
May 8, 2025 2:20:06 PM	End	Execution	Detector Flow Accuracy - Front FID: - Type : Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	Run Count : 1
May 8, 2025 2:20:08 PM	start	Execution	Detector Flow Accuracy - Back FID: - Type : Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	None
May 8, 2025 2:21:13 PM	Audit	Data	Detector Flow Accuracy - Back FID: - Type : Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
May 8, 2025 2:21:14 PM	End	Execution	Detector Flow Accuracy - Back FID: - Type : Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	Run Count : 1
May 8, 2025 2:21:17 PM	start	Execution	Detector Flow Accuracy - Back FID: - Type : Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	None
May 8, 2025 2:21:31 PM	Audit	Data	Detector Flow Accuracy - Back FID: - Type : Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
May 8, 2025 2:21:35 PM	End	Execution	Detector Flow Accuracy - Back FID: - Type : Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	Run Count : 1
May 8, 2025 2:21:37 PM	start	Execution	Detector Flow Accuracy - Back FID: - Type : Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	None
May 8, 2025 2:22:03 PM	Audit	Data	Detector Flow Accuracy - Back FID: - Type : Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
May 8, 2025 2:22:05 PM	End	Execution	Detector Flow Accuracy - Back FID: - Type : Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	Run Count : 1

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[illegible]

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 2:22:08 PM	start	Execution	GC Oven Temperature Accuracy - 8890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
May 8, 2025 2:23:02 PM	Audit	Data	GC Oven Temperature Accuracy - 8890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
May 8, 2025 2:23:07 PM	End	Execution	GC Oven Temperature Accuracy - 8890: - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count : 1
May 8, 2025 2:23:09 PM	start	Execution	GC Oven Temperature Accuracy - 8890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
May 8, 2025 2:25:03 PM	Audit	Data	GC Oven Temperature Accuracy - 8890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
May 8, 2025 2:25:05 PM	End	Execution	GC Oven Temperature Accuracy - 8890: - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count : 1
May 8, 2025 2:25:07 PM	start	Execution	GC Oven Temperature Stability - 8890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	None
May 8, 2025 2:31:03 PM	Audit	Data	GC Oven Temperature Stability - 8890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Manual Data Entry
May 8, 2025 2:31:04 PM	End	Execution	GC Oven Temperature Stability - 8890: - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Run Count : 1

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 8, 2025 2:31:12 PM	start	Execution	GC Scouting Run - Injection Tower, Front SSL, Front FID: - Part of System Preparation - No limits associated	None
May 8, 2025 2:31:35 PM	Audit	AceClosed	Session	None
May 9, 2025 8:32:28 AM	Audit	AceRestarted	Session	Host Name: LAPTOP-CQ3SKOMV, Drive Serial Number: 64A9D8A8
May 9, 2025 8:32:30 AM	Audit	SessionReloaded	Session	None
May 9, 2025 8:32:46 AM	start	Qualification	Session	PM
May 9, 2025 8:32:46 AM	start	Qualification	Session	OQ
May 9, 2025 8:32:46 AM	start	Execution	GC Scouting Run - Injection Tower, Front SSL, Front FID: - Part of System Preparation - No limits associated	None
May 9, 2025 8:34:41 AM	Audit	Data	GC Scouting Run - Injection Tower, Front SSL, Front FID: - Part of System Preparation - No limits associated	Data files Path : F:\OQ2025\Data\OQGC-11.rslt\OQ_Front_SC-F.dx
May 9, 2025 8:34:55 AM	Audit	Reporting	Reintegration	Reintegration Count: 1 – [Integration Type: Injection;Baseline Correction Mode: Advanced;Initial Slope Sensitivity: 10;Initial Peak Width: 0.01;Initial Area Reject: 0;Initial Height Reject: 100;Integration: Off at 0;Integration: On at 0.015;Integration: Off at 0.5]
May 9, 2025 8:35:11 AM	End	Execution	GC Scouting Run - Injection Tower, Front SSL, Front FID: - Part of System Preparation - No limits associated	Run Count : 1

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 9, 2025 8:35:14 AM	start	Execution	Noise and Drift - Front FID: - Detector FID - L (Noise): <= 0.10 pA - L (Drift): <= 2.50 pA/hour	None
May 9, 2025 8:56:15 AM	Audit	Data	Noise and Drift - Front FID: - Detector FID - L (Noise): <= 0.10 pA - L (Drift): <= 2.50 pA/hour	Data files Path : F:\OQ2025\Data\OQGC-11_2.rslt\OQ_Front_ND-F.dx
May 9, 2025 8:56:27 AM	End	Execution	Noise and Drift - Front FID: - Detector FID - L (Noise): <= 0.10 pA - L (Drift): <= 2.50 pA/hour	Run Count : 1
May 9, 2025 8:56:31 AM	start	Execution	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	None
May 9, 2025 9:34:24 AM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\OQGC-11_Front_IP.rslt\OQ_Front_IP-r004.dx
May 9, 2025 9:34:24 AM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\OQGC-11_Front_IP.rslt\OQ_Front_IP-r005.dx
May 9, 2025 9:34:24 AM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\OQGC-11_Front_IP.rslt\OQ_Front_IP-r006.dx
May 9, 2025 9:34:24 AM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\OQGC-11_Front_IP.rslt\OQ_Front_IP-r007.dx

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 9, 2025 9:34:24 AM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\OQGC-11_Front_IP.rslt\OQ_Front_IP-r008.dx
May 9, 2025 9:34:24 AM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\OQGC-11_Front_IP.rslt\OQ_Front_IP-r009.dx
May 9, 2025 9:34:34 AM	Audit	Reporting	Reintegration	Reintegration Count: 1 – [Integration Type: Injection;Baseline Correction Mode: Advanced;Initial Slope Sensitivity: 10;Initial Peak Width: 0.01;Initial Area Reject: 0;Initial Height Reject: 100;Integration: Off at 0;Integration: On at 0.015;Integration: Off at 0.5]
May 9, 2025 9:34:43 AM	End	Execution	Injection Precision - Injection Tower, Front SSL, Front FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Run Count : 1
May 9, 2025 9:34:49 AM	start	Execution	Signal to Noise - Injection Tower, Front SSL, Front FID: - Detector FID - L: >= 300000	None
May 9, 2025 9:35:19 AM	Audit	Data	Signal to Noise - Injection Tower, Front SSL, Front FID: - Detector FID - L: >= 300000	Data files Path : F:\OQ2025\Data\OQGC-11_Front_SN.rslt\OQ_Front_SN.dx

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 9, 2025 9:35:27 AM	Audit	Reporting	Reintegration	Reintegration Count: 1 – [Integration Type: Injection;Baseline Correction Mode: Advanced;Initial Slope Sensitivity: 10;Initial Peak Width: 0.01;Initial Area Reject: 0;Initial Height Reject: 100;Integration: Off at 0;Integration: On at 0.015;Integration: Off at 0.5]
May 9, 2025 9:35:34 AM	End	Execution	Signal to Noise - Injection Tower, Front SSL, Front FID: - Detector FID - L: >= 300000	Run Count : 1
May 9, 2025 9:35:38 AM	start	Execution	GC Scouting Run - Injection Tower, Back SSL, Back FID: - Part of System Preparation - No limits associated	None
May 9, 2025 9:46:40 AM	Audit	Data	GC Scouting Run - Injection Tower, Back SSL, Back FID: - Part of System Preparation - No limits associated	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_SC-1.rslt\OQ_Back_SC.dx
May 9, 2025 9:46:57 AM	End	Execution	GC Scouting Run - Injection Tower, Back SSL, Back FID: - Part of System Preparation - No limits associated	Run Count : 1
May 9, 2025 9:47:00 AM	start	Execution	Noise and Drift - Back FID: - Detector FID - L (Noise): <= 0.10 pA - L (Drift): <= 2.50 pA/hour	None
May 9, 2025 10:51:05 AM	Audit	Data	Noise and Drift - Back FID: - Detector FID - L (Noise): <= 0.10 pA - L (Drift): <= 2.50 pA/hour	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_ND-2.rslt\OQ_Back_ND-B.dx

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 9, 2025 10:51:12 AM	End	Execution	Noise and Drift - Back FID: - Detector FID - L (Noise): <= 0.10 pA - L (Drift): <= 2.50 pA/hour	Run Count : 1
May 9, 2025 10:51:16 AM	start	Execution	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	None
May 9, 2025 11:09:34 AM	Audit	Data	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_IP-1.rslt\OQ_Back_IP-r001.dx
May 9, 2025 11:09:34 AM	Audit	Data	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_IP-1.rslt\OQ_Back_IP-r002.dx
May 9, 2025 11:09:34 AM	Audit	Data	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_IP-1.rslt\OQ_Back_IP-r003.dx
May 9, 2025 11:09:34 AM	Audit	Data	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_IP-1.rslt\OQ_Back_IP-r004.dx
May 9, 2025 11:09:34 AM	Audit	Data	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_IP-1.rslt\OQ_Back_IP-r005.dx
May 9, 2025 11:09:34 AM	Audit	Data	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_IP-1.rslt\OQ_Back_IP-r006.dx

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 9, 2025 11:09:46 AM	End	Execution	Injection Precision - Injection Tower, Back SSL, Back FID: - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Run Count : 1
May 9, 2025 11:09:49 AM	start	Execution	Signal to Noise - Injection Tower, Back SSL, Back FID: - Detector FID - L: >= 300000	None
May 9, 2025 11:16:51 AM	Audit	Data	Signal to Noise - Injection Tower, Back SSL, Back FID: - Detector FID - L: >= 300000	Data files Path : F:\OQ2025\Data\Back\OQGC-11_Back_SN.rslt\OQ_Back_SC.dx
May 9, 2025 11:17:07 AM	End	Execution	Signal to Noise - Injection Tower, Back SSL, Back FID: - Detector FID - L: >= 300000	Run Count : 1
May 9, 2025 11:17:11 AM	End	Qualification	Session	OQ
May 9, 2025 11:17:11 AM	start	Reporting	Session	None
May 9, 2025 11:24:47 AM	Audit	Reporting	Session	Report Generated : Report
May 9, 2025 11:25:23 AM	Audit	Reporting	Session	Report Signed : Report PDF Name: 2025_ALS_GC11_CN2303A021_OQHW_20250509_PM Report_1.pdf User Name: saenguthai.tarak@non.agilent.com Full Name of Signer: Saenguthai Tarak Reason for signature: Executed protocol and published this original version of document
May 9, 2025 11:30:23 AM	Audit	Reporting	Session	Report Generated : Certificate

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User Name: saenguthai.tarak
Report Generated by Hostname: LAPTOP-CQ3SKOMV
System Id: 2025_ALS_GC#11_CN2303A021_OQHW
Print Date: May 9, 2025 11:32:14 AM

2025_ALS_GC11_CN2303A021_OQHW Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
May 9, 2025 11:31:17 AM	Audit	Reporting	Session	Report Generated : Report

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ภาคผนวก จ

สำเนาหนังสือรับรองห้องปฏิบัติการวิเคราะห์เอกชน

ที่ อก ๐๓๑๐(๑)/ ๑๖๑๖๘

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๐ พฤศจิกายน ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๔ สิงหาคม ๒๕๖๖

สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๓ แผ่น
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ แผ่น
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย ตามสิ่งที่ส่งมาด้วย ๑

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ ๑๔๑ ราย ตามสิ่งที่ส่งมาด้วย ๒

ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย น้ำใต้ดิน อากาศเสีย สิ่งปฏิกูล หรือวัสดุที่ไม่ใช้แล้ว และดิน ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ กันยายน ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายศิระ จันทร์เอิด)
นักวิทยาศาสตร์เชี่ยวชาญ รักษาราชการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน
กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๕๒๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๕๒๐ ๖๓๑๒ ต่อ ๒๑๑๙
ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th

"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"

สิ่งที่ส่งมาด้วย ๑

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ว-๒๐๔
ที่ อก ๐๓๑๐(๑)/ ๑๖๑๖๘ ลงวันที่ ๒๐ พฤศจิกายน ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย

๑) นางสาวยุพาพร จันทร์เปล่ง	ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๑
๒) นางสาวชัชนัย โกมารกุล ณ นคร	ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๒
๓) นายศรายุทธ จิตรานนท์	ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๓
๔) นางสาวกนกกร เอนก	ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๔
๕) นายสุริยา สอนแก้ว	ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๕
๖) นายวิชาญ ชุณหรัต	ทะเบียนเลขที่ ว-๒๐๔-ค-๐๐๐๖

สิ่งที่ส่งมาด้วย ๒

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ว-๒๐๔
ที่ อก ๐๓๑๐(๑)/ ๑๖๑๖๘ ลงวันที่ ๒๐ พฤศจิกายน ๒๕๖๖

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๔๑ ราย

๑) นายกางบัณฑิต กิตติศุภวณิชย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๑
๒) นายภัทรพล สว่างใจธรรม์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๒
๓) นายนราธิป เทือกชัยคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๓
๔) นายศิริโชค พงษ์ประสม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๔
๕) นายณัฐวุฒิ ด้วงแพง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๕
๖) นางสาวจันตา โชจุลธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๖
๗) นางสาวสาวิตรี น้อยเสงี่ยม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๗
๘) นางสาวขณัฐกาญจน์ อิ่มชม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๘
๙) นางสาวนรินทร์ สายเสิ่ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๙
๑๐) นางสาวนันทวดี สมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๐
๑๑) นางสาวศรัณยา เฉลิมธำรงค์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๑
๑๒) นางสาวธัญญธร มงคลจิรวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๒
๑๓) นางสาวศิริลักษณ์ บุนนาค	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๓
๑๔) นายนพพงศ์ จันทรุทันธุ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๔
๑๕) นายนรเศรษฐ์ โกมาลย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๕
๑๖) นายธันวา จริยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๖
๑๗) นางสาวเกศรินทร์ แก้วมั่น	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๗
๑๘) นางสาวสุวิมล ชัยเรืองวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๘
๑๙) นางสาวสุชาดา ธรรมอาวร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๑๙
๒๐) นางสาวเปมิกา ชัยเดชธนกุล	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๐
๒๑) นางสาวศศิธร หมูสวัสดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๑
๒๒) นางสาวสาวลักษณ์ ภู่นภาอำพร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๒
๒๓) นายอภิสิทธิ์ สิงหา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๓
๒๔) นายศักดิ์สิทธิ์ โพศาลพิสุทธิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๔
๒๕) ว่าที่ร้อยตรีหญิง พรรณิภา ชำเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๕
๒๖) นางจิลดา คำภูแก้ว	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๖
๒๗) นางสาวอรวรรณ รักยง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๗
๒๘) นางสาวนพรัตน์ แย้มกรานต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๘
๒๙) นายจุลเดช วารินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๒๙
๓๐) นางสาวดายุรัตน์ ร้องคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๐
๓๑) นายพรมมี ศรีปัตเนตร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๑
๓๒) นายอุทิศ อุ่นสิม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๒
๓๓) ว่าที่ร้อยตรี เฉลิมเกียรติ อมรศรีเสริม	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๓
๓๔) นางสาววรียา สร้างนา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๔
๓๕) นายอนุพงศ์ รัตนศรีประเสริฐ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๕

๓๖) นางสาวจุฑารัตน์...

๓๖) นางสาวจุฑารัตน์ โอนสันเทียะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๖
๓๗) นางสาวจารุวรรณ พิมพ์อภิกฤติยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๗
๓๘) นางสาวปราง์ทิพย์ กิจโพศาลศักดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๘
๓๙) นางสาวเดือนใจ ทางกลาง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๓๙
๔๐) นางสาวจิราพร ศิริเวช	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๐
๔๑) นายวรากร ผูกรักษ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๑
๔๒) นายทนง วิริยะสหกิจ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๒
๔๓) นายถนัด เจนจบ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๓
๔๔) นายคณิศร ชำเพชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๔
๔๕) นายภูวิช พรหมสะอาด	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๕
๔๖) นายธนเดช โภคาพิพัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๖
๔๗) นายชวฤทธิ์ วงษ์จันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๗
๔๘) นายอาทิตย์ ศรีเสน	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๘
๔๙) นายเจษฎินทร์ คงศักดิ์ไทย	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๔๙
๕๐) นายจรัล บุญยิ่ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๐
๕๑) นายธนาณัติ เอนก	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๑
๕๒) นายอภิวัฒน์ หุมหนู	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๒
๕๓) นางสาวสุภาพรวัญ มาก	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๓
๕๔) นางสาวทัศพร ชวาลสมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๔
๕๕) นางสาวอิสิมา บุญเพ็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๕
๕๖) นางสาวภานุมาศ นามวัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๖
๕๗) นางสาวอุไรรัตน์ ทึงสร้างแป้น	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๗
๕๘) นายธีรวัฒน์ ปวงสุข	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๘
๕๙) นายฮิทธิพล ยะโส	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๕๙
๖๐) นายประพจน์ วรรณชูชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๐
๖๑) นายชยธร พวงทิพย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๑
๖๒) นางสาวกนกวรรณ จันทบาล	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๒
๖๓) นายสิทธิโชค ธงเงิน	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๓
๖๔) นางศิลาวรรณ ไชยบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๔
๖๕) นางสาวพรรณธิดา ทุ่มคง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๕
๖๖) นายนวภัทร ศรีวิริยะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๖
๖๗) นายสุวิชา ทองอ่อน	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๗
๖๘) นายวิญญู บุญคะนัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๘
๖๙) นายสมบูรณ์ บุตรจันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๙
๗๐) นายวีรัตน์ ไชยนะรา	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๐
๗๑) นายนญเบศน์ เพิ่มพูน	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๑
๗๒) นายจิรเมัฐ ขาวสะออ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๒
๗๓) นายอัสรี นายบุรี	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๓
๗๔) นายอัศวเรศ จ๋อสาว	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๔

๗๕) นายประเสริฐ...

๗๕) นายประเสริฐ สุระขันธ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๗๕
๗๖) นายบุญล จันทร์เนียม	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๗๖
๗๗) นายพีรพงษ์ ทองคุณปรีดา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๗๗
๗๘) นายนฤพล ทองบุช	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๗๘
๗๙) นายอนุวัฒน์ ม่วงแพร	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๗๙
๘๐) นายเจตศราวุฒิ ปิตตะมะ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๐
๘๑) นายกฤษณะ สายวรรณ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๑
๘๒) นายพิชัย บุญยงค์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๒
๘๓) นายภานุพงศ์ โยมวงศ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๓
๘๔) นายสามารถ คุ้มปลี	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๔
๘๕) นายสัญชัย โกศรีนาม	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๕
๘๖) นายณัฐวุฒิ ศรีประเสริฐ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๖
๘๗) นายขวัลชัย นาคพนม	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๗
๘๘) นายพงศธร ชัยทิพย์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๘
๘๙) นายสิทธิโชค ทาสีดา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๘๙
๙๐) นายธนากร ยิ่นสุดา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๐
๙๑) นางสาววรณิชชา ขาติวันชัย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๑
๙๒) นางสาวพิมพ์ตะวัน มินากูล	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๒
๙๓) นางสาวเพชรัตน์ สิงห์สมบุญ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๓
๙๔) นางสาวขญาพิน พรหมจันทร์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๔
๙๕) นายกีรติ ทวีราช	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๕
๙๖) นายจักริน พนิ่นวิชา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๖
๙๗) นายฉัตรชัย สุขเปีย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๗
๙๘) นายณรนนท์ ลีละทองคำ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๘
๙๙) นายคุลยพล สนนอก	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๙๙
๑๐๐) นายทักษ์ดนัย อุบลศรี	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๐
๑๐๑) นายธนศวร นามะกุณณา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๑
๑๐๒) นายธิติพงศ์ บัวแดง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๒
๑๐๓) นายนนทชัย อุปถัมภ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๓
๑๐๔) นายนิฐพล คุณสุทธิ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๔
๑๐๕) นายนันทวัฒน์ สาริน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๕
๑๐๖) นายปิยะนัฐ พลมะศรี	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๖
๑๐๗) นายพงศ์สิริ โสมเขียว	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๗
๑๐๘) นายพีรพัฒน์ ก่ำคำ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๘
๑๐๙) นายภาณุพงศ์ มานิตย์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๐๙
๑๑๐) นายมงคล ผลาพิพย์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๐
๑๑๑) นายสิรินนท์ ทองอ้น	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๑
๑๑๒) นายอเนชา ทันสมัย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๒
๑๑๓) นายอดิศักดิ์ ผมไผ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๓

๑๑๔) นายอนันตชัย...

๑๑๔) นายอนันตชัย วีสม	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๔
๑๑๕) นายวรรุล ตีนัก	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๕
๑๑๖) นายแสงตะวัน นะตะสัด	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๖
๑๑๗) นายยุทธพงศ์ รัตนะ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๗
๑๑๘) นายขยัณวุฒิ โชยสะนิจ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๘
๑๑๙) นายวิศรุต ศรีธรรมมา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๑๙
๑๒๐) นายนนทกร เผือกผ่อง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๐
๑๒๑) นายกำชัย สุทธะ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๑
๑๒๒) นางสาวณัฐกรณ์ บุญละนัย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๒
๑๒๓) นางสาวพัชรินทร์ แสนสร้อย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๓
๑๒๔) นายไพรวัลย์ เปรื่องพิมาย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๔
๑๒๕) นางสาวศุภมาศ ทองมาก	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๕
๑๒๖) นางสาวสลิดา จิตรสว่าง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๖
๑๒๗) นางสาวปนพร เลิศภู่เขียว	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๗
๑๒๘) นางสาวกฤติมาพร คำมีแก่น	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๘
๑๒๙) นางสาวสกุลรัตน์ ภาคภูมิ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๙
๑๓๐) นางสาวไพรินทร์ ศรีรูปิ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๐
๑๓๑) นางสาวทิพเนตร ผุอปัญญา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๑
๑๓๒) นางสาวสาธิตา บานทอง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๒
๑๓๓) นางสาวอรีสา ทองนวล	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๓
๑๓๔) นางสาวอรยา ค้าคล่อง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๔
๑๓๕) นางสาวขุตากรณ์ ลุนทรสนาน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๕
๑๓๖) นางสาวอัญชลี คำจันทร์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๖
๑๓๗) นายบุญฤทธิ์ เอี่ยมเทศ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๗
๑๓๘) นางสาวศุภรดา ปั้นมยุรา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๘
๑๓๙) นางสาวพาฤดี คุณนาน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๙
๑๔๐) นางสาวจิราเจต พ่องศา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๐
๑๔๑) นางสาวอารยา มีชัย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๑
๑๔๒) นางสาวชิชชุดา นาคผจญ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๒
๑๔๓) นางสาวนันทิยา จันทะลุน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๓
๑๔๔) นายกิตติพงศ์ แซลี้	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๔
๑๔๕) นายอนุวัติ ภูถวิล	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๕
๑๔๖) นายธีรพล แสงทอง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๖
๑๔๗) นายสัจจ์พิพัฒน์ บุญมั่น	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๗
๑๔๘) นายชูชีวิรัตน์ เอมอุไร	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๘
๑๔๙) นายชัยณรงค์ ศรีบุรินทร์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๙
๑๕๐) นางสาวอัจฉราวรรณ สวนสนอง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๐
๑๕๑) นางสาวณัฐฐาพร สิงหา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๑
๑๕๒) นายภีมเรศ แหยมโต	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๒

๑๕๓) นางสาวอุบล...

๑๕๓) นางสาวอุบล เศิกศิริ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๓
๑๕๔) นางสาวมโนรัตน์ ทองบุตร	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๔
๑๕๕) นายภาคภูมิ แทนไทย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๕
๑๕๖) นางสาวสุภาณัฐ เมล็พ่วง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๖
๑๕๗) นางสาวพรทิวา สาตายนม์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๗
๑๕๘) นายเอกริทย์ วันทะนา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๘
๑๕๙) นายไตรมณฑล ทิพย์วรรณ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๙
๑๖๐) นายจิรเมธ ประเสริฐสิริพงศ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๐
๑๖๑) นายจิรายุส เกษมสุข	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๑
๑๖๒) นายจีรศักดิ์ ศรีวิชัย	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๒
๑๖๓) นายณัฐกฤษน์ สะพานแก้ว	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๓
๑๖๔) นายบูรณศักดิ์ ปะหิ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๔
๑๖๕) นายปิณฑวิชญ์ เสมอทรัพย์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๕
๑๖๖) นายพิษณุพงษ์ ไชยา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๖
๑๖๗) นายภัทรพงษ์ มณฑาทอง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๗
๑๖๘) นายวสันต์ ศรีนกุล	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๘
๑๖๙) นายภาณุเดช เพชรอุด	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๖๙
๑๗๐) นายอนุกูล วิสะแสง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๐
๑๗๑) นายภัทรพงษ์ มีสุข	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๑
๑๗๒) นางสาวนุชรี สีละพิป	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๒
๑๗๓) นางสาวสุภาวดี โกศรีนาม	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๓
๑๗๔) นางสาวอรณิช เทียนคำ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๔
๑๗๕) นางสาวพรเพ็ญ ชอบสอน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๕
๑๗๖) นางสาววันวิลา ขอนพิกุล	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๖
๑๗๗) นางสาวอรวรรณ เถาว์ทอง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๗
๑๗๘) นางสาวอัยย์ลิณ เมอร์วิณณ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๘
๑๗๙) นางสาววริสรา คุ้มครอง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๗๙
๑๘๐) นายวุฒิกร ศิริวรรณ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๘๐
๑๘๑) นางสาวจาฤวรรณ กระจ่างพันธุ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๘๑

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ว-๒๐๔
ที่ อก ๓๓๐(๑)/ ๑๖๑๖๘ ลงวันที่ ๒๐ พฤศจิกายน ๒๕๖๖

ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๗๔ รายการ

น้ำเสีย จำนวน 60 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldicarb	High-Performance Liquid Chromatographic Method[4]
2	Aldicarb Sulfone	High-Performance Liquid Chromatographic Method[4]
3	Aldicarb Sulfoxide	High-Performance Liquid Chromatographic Method[4]
4	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
5	Arsenic	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
6	Barium	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
7	α-BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
8	β-BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
9	δ-BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
10	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
11	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method[4] 2) 5-Day BOD Test, Membrane Electrode Method[4]
12	Carbaryl	High-Performance Liquid Chromatographic Method[4]
13	Carbofuran	High-Performance Liquid Chromatographic Method[4]
14	Cadmium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
15	Chemical Oxygen Demand	1) Closed Reflux, Colorimetric Method[4] 2) Closed Reflux, Tritimetric Method[4]
16	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
17	Chromium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
18	Color	ADMI Weighted-Ordinate Spectrophotometric Method[4]

19 Copper...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Copper	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
20	Cyanide	Distillation, Colorimetric Method[8]
21	2,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
22	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
23	2,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
24	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
25	2,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
26	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
27	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
28	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
29	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
30	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
31	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
32	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
33	Formaldehyde	Distillation, Colorimetric Method[3]
34	Free Chlorine	1) DPD Ferrous Titrimetric Method[4] 2) DPD Colorimetric Method[4]
35	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
36	Heptachlor Epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
37	Hexavalent Chromium	Colorimetric Method[4]
38	3-Hydroxycarbofuran	High-Performance Liquid Chromatographic Method[4]
39	Lead	1) Digestion, inductively Coupled Plasma Method[4] 2) Digestion, inductively Coupled Plasma/ Mass Spectrometric Method[4]

40 Manganese...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	Manganese	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
41	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass spectrometric Method[4]
42	Methiocarb	High-Performance Liquid Chromatographic Method[4]
43	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
44	Methomyl	High-Performance Liquid Chromatographic Method[4]
45	Nickel	1) Digestion, inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
46	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method[5] 2) Soxhlet Extraction Method[4]
47	Oxamyl	High-Performance Liquid Chromatographic Method[4]
48	Propoxur	High-Performance Liquid Chromatographic Method[4]
49	pH	Electrometric Method[4]
50	Phenols	1) Distillation, Chloroform Extraction Method[4] 2) Distillation, Direct Photometric Method[8]
51	Selenium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
52	Sulfide	Iodometric Method[8]
53	Temperature	Laboratory and Field Methods[6]
54	Total Dissolved Solids	Dried at 180 °C[4]
55	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method[4]
56	Total Phosphorous	Digestion, Colorimetric Method[4]
57	Total Suspended Solids	Dried from 103-105 °C[4]
58	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
59	Trivalent Chromium	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation[4]
60	Zinc	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[4]

น้ำใต้ดิน...

น้ำใต้ดิน จำนวน 126 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
8	Barium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
13	Benzoic Acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
15	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]

18 Bis(2-ethylhexyl)phthalate...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
22	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
25	Carbon disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
27	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation[4]
35	Chromium (VI)	Colorimetric Method[4]

36 Chrysene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
36	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
37	Cyanide	Distillation, Colorimetric Method[8]
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
39	DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
40	DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
41	DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
43	Di-n-Butyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
47	3,3-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]

56 1,3-Dichloropropene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
57	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
58	Diethyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
63	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
64	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
65	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
69	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
70	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
74	α-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
75	β-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]

76 γ-HCH...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
76	γ-HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
81	Lead	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
82	Manganese	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
83	Mercury	1) Digestion, Cold Vapor Atomic Absorption Spectrometric Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
84	Methanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
86	Methyl bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
87	Methylene chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
89	2-Methylnapthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
90	Methyl tert-butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
92	Nickel	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]

94 N-Nitrosodiphenylamine...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
95	N-Nitrosodi-n-Propylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB 1242 - PCB 1248 - PCB 1254 - PCB 1260	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
98	pH	Electrometric Method[5]
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
100	Phenol	1) Distillation, Chloroform Extraction Method[5] 2) Distillation, Direct Photometric Method[4] 3) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
102	Selenium	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
103	Silver	1) Digestion, Inductively Coupled Plasma Method[5] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
104	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
105	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
106	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
107	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
108	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
109	TPH (C_5-C_8)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[19,20]

110 TPH (C_{9}-C_{12})...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
110	TPH (C_{34}-C_{40})	Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[9,22]
111	TPH (C_{10}-C_{35})	Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[9,22]
112	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
113	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
114	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
115	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
116	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
117	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method[4]
118	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
119	Vanadium	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]
120	Vinyl acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
121	Vinyl chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
122	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
123	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
124	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
125	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[4]
126	Zinc	1) Digestion, Inductively Coupled Plasma Method[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[4]

อากาศเสีย...

อากาศเสีย (ปล่องระบาย) จำนวน 28 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
2	Arsenic	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
3	Beryllium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
4	Cadmium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
5	Carbon Monoxide	1) Instrumental Analyzer Method[5] 2) Sampling Bag Non-Dispersive Infrared Method[5]
6	Chlorine	1) Absorption Sampling, Ion Chromatographic Method[5] 2) Isokinetic Sampling, Ion Chromatographic Method [5]
7	Chromium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
8	Cobalt	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
9	Copper	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
10	Cresol	Adsorption Sampling, Gas Chromatographic Method[5]
11	Dioxins	Isokinetic Sampling[5]
12	Hydrogen Chloride	1) Absorption Sampling, Ion Chromatographic Method[5] 2) Isokinetic Sampling, Ion Chromatographic Method[5]
13	Hydrogen Fluoride	1) Absorption Sampling, Ion Chromatographic Method[5] 2) Isokinetic Sampling, Ion Chromatographic Method[5]
14	Hydrogen Sulfide	Absorption Sampling, Iodometric Method[5]

15 Lead...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
15	Lead	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
16	Manganese	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
17	Mercury	1) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[5] 2) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method[5]
18	Nickel	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
19	Opacity	Ringelmann's Method[2]
20	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method[5] 2) Absorption Sampling, Alkaline Permanganate/ Colorimetric Method[5] 3) Instrumental Analyzer Method[5]
21	Selenium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
22	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method[5] 2) Instrumental Analyzer Method[5]
23	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method[5]
24	Tellurium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
25	Tin	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
26	Total Suspended Particulate	1) Isokinetic Sampling, Gravimetric Method[5] 2) Paired Train, Isokinetic Sampling, Gravimetric Method[5]

27 Vanadium...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Vanadium	1) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[5]
28	Xylene	Adsorption Sampling, Gas Chromatographic Method[5]

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 35 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,24] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]

5 Beryllium...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
8	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
9	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method[1,6,16,19] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method[1,6,17,19] 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method[7,8,16,19] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method[7,8,17,19]

10 Chromium (VI)...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method[1,6,19] 2) Alkaline Digestion, Colorimetric Method[8,19]
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
12	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
13	2,4-D	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26]

2) Soxhlet...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
		2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
17	Dieldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
20	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]

22 Mercury...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[1,6,20] 2) Waste Extraction, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method[1,6,20] 3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[20] 4) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method[20] 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method[21]
23	Methoxychlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic / Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic /Mass Spectrometric Method[11,26]
24	Mirex	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic / Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic /Mass Spectrometric Method[11,26]
25	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
26	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
27	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic Method[11,26]

- 2-Chlorobiphenyl...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
	- 2-Chlorobiphenyl - 2,3-Dichlorobiphenyl - 2,2',5-Trichlorobiphenyl - 2,4',5-Trichlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5'-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2',3,4,4',5'-Hexachlorobiphenyl - 2,2',3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6-Hexachlorobiphenyl - 2,2',4,4',5,5'-Hexachlorobiphenyl - 2,2',3,3',4,4',5-Heptachlorobiphenyl - 2,2',3,4,4',5,5'-Heptachlorobiphenyl - 2,2',3,4,4',5',6-Heptachlorobiphenyl - 2,2',3,4',5,5',6-Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
28	Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
29	pH	Electrometric Method[23,25]
30	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
31	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
32	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
33	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[1,9,26] 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 3) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
35	Zinc	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method[1,6,17] 3) Digestion, Inductively Coupled Plasma Method[7,16] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]

<u>ดิน จำนวน 125 รายการ</u>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
2	Acetone	1)Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25] 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method[13]
3	Aldrin	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
4	Anthracene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
7	Atrazine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
8	Barium	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
9	Benz(a)anthracene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
11	Benzo(b)fluoranthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
12	Benzo(k)fluoranthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
13	Benzoic acid	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
14	Benzo(a)pyrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
15	Benzo(g,h,i)perylene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
17	Bis(2-chloroethyl)ether	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
18	Bis(2-ethylhexyl)phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
21	Butanol	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method[13,25]
22	Butyl Benzyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
24	Carbazole	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
27	Chlordane	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
28	p-Chloroaniline	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
32	2-Chlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method[7,8,16,19] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method[7,8,17,19]
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method[8,19]

36 Chrysene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
36	Chrysene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
37	Cyanide	Extraction, Distillation, Colorimetric Method[27,28,29]
38	2,4-D	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
39	DDD	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
40	DDE	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
41	DDT	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
42	Dibenz(a,h)anthracene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
43	Di-n-Butyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
47	3,3-Dichlorobenzidine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]

49 1,2-Dichloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
53	2,4-Dichlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
57	Dieldrin	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
58	Diethyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
59	2,4-Dimethylphenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
60	2,4-Dinitrophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
61	2,4-Dinitrotoluene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
62	2,6-Dinitrotoluene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]

63 Di-n-Octyl Phthalate...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
63	Di-n-Octyl Phthalate	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
64	Endosulfan	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
65	Endrin	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
67	Fluoranthene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
68	Fluorene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
69	Heptachlor	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
70	Heptachlor epoxide	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
71	Hexachlorobenzene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
73	n-Hexane	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25] 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method[13]

73 n-Hexane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
74	α-HCH	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
75	β-HCH	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
76	γ-HCH	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
77	Hexachlorocyclopentadiene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
78	Hexachloroethane	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
79	Indeno(1,2,3-cd)pyrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
80	Isophorone	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
81	Lead	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
82	Manganese	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[20] 2) Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry[21] 3) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method[30]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25] 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method[13,25]
85	Methoxychlor	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
88	2-methylphenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
89	2-Methylnaphthalene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
91	Naphthalene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
92	Nickel	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
93	Nitrobenzene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
94	N-Nitrosodiphenylamine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
95	N-Nitrosodi-n-propylamine	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
96	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5'-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2',3,4,4',5'-Hexachlorobiphenyl - 2,2',3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6-Hexachlorobiphenyl - 2,2',4,4',5,5'-Hexachlorobiphenyl - 2,2',3,3',4,4',5-Heptachlorobiphenyl - 2,2',3,4,4',5,5'-Heptachlorobiphenyl - 2,2',3,4,4',5',6-Heptachlorobiphenyl - 2,2',3,4',5,5',6-Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
97	Pentachlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
98	Phenanthrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
99	Phenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
100	Pyrene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
101	Selenium	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
102	Silver	1) Digestion, Inductively Coupled Plasma Method[7,16] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
103	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
106	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
107	Toxaphene	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
108	TPH (C_5–C_9)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
109	TPH (C_{10}– C_{14})	1) Automate Extraction, Gas Chromatographic Method[11,22] 2) Solvent Extraction, Gas Chromatographic Method[12,22] 3) Ultrasonic Extraction, Gas Chromatographic Method[22,31]
110	TPH (C_{15} – C_{35})	1) Automate Extraction, Gas Chromatographic Method[11,22] 2) Solvent Extraction, Gas Chromatographic Method[12,22] 3) Ultrasonic Extraction, Gas Chromatographic Method[22,31]
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
114	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
115	2,4,5-Trichlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
116	2,4,6-Trichlorophenol	1) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[10,26] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method[11,26]
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
118	Vanadium	1) Digestion, Inductively Coupled Plasma Method[7,14] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]
119	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
120	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
121	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
122	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
123	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
124	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method[15,25]
125	Zinc	1) Digestion, Inductively Coupled Plasma Method[7,14] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method[7,17]

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ที่ อก ๐๓๑๐(๑)/ ๔๑๒๑

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๕ เมษายน ๒๕๖๗

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๒๙ มีนาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓ ราย

๑) นางสาวพรรณธิดา พุ่มคง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๐๖๕
๒) นายกำชัย สุทธะ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๒๑
๓) นางสาวศุภรดา ปั้นมยุรา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๓๘

๒. ให้เพิ่มเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑๒ ราย

๑) นางสาวฐานิตา กลิ่นเขียว	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๒
๒) นางสาวกัญญ์ภัสสร สายคำ	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๓
๓) นางสาวณัฐนันท์ กันทะวงศ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๔
๔) นายอำนาจ วงษาเคน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๕
๕) นายกฤษณพล ปัญญาวงศ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๖
๖) นายณชากร หรรษา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๗
๗) นายวัชรินทร์ ผ่องสามสวน	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๘
๘) นายณัฐพงศ์ โสภา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๔๙
๙) นายศักรินทร์ ปานเพ็ง	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๐
๑๐) นายณัฐพล ชุ่มชื่น	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๑
๑๑) นายธนา สุพาพันธุ์	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๒
๑๒) นายนวารธ แก้วพงษ์ษา	ทะเบียนเลขที่ ว-๒๐๔-๑-๐๑๕๓

อนึ่ง หนังสือฉบับนี้...

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ในวันที่ ๒ กันยายน ๒๕๖๙

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

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กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๑๙
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ที่ อก ๐๓๑๐(๑)/ ๑๒๓๖๘ ๑

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๑๘ ธันวาคม ๒๕๖๗

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๒ ธันวาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๑๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอยกเลิกบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๘ ราย ได้แก่

๑) นายประพจน์ วรรณชูชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๖๐
๒) นายจิรณัฐ ขาวละออ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๗๒
๓) นายพีรพัฒน์ กำคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๐๘
๔) นางสาวอรยา ค้าคล่อง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๓๔
๕) นายกิตติพงศ์ แซ่ลี้	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๔๔
๖) นายจิรเมธ ประเสริฐสิริพงศ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๖๐
๗) นายภัทรพงษ์ มณฑาทอง	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๖๗
๘) นางสาวจารุวรรณ กระจ่างพันธุ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๐๑๘๑

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายธีรทัศน์ อิศรางกูร ณ อยุธยา)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน
กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๑๙
ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th

ที่ อก ๐๓๑๐/ ๗๔๓๖

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๐๘ สิงหาคม ๒๕๖๗

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๒๗ พฤษภาคม ๒๕๖๗

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด จำนวน ๑ แผ่น

ตามคำขอที่อ้างถึง บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๓๒๓ สถานที่ตั้งเลขที่ ๒๓๖/๓๐ หมู่ที่ ๕ ตำบลแม่น้ำคู้ อำเภอปลวกแดง จังหวัดระยอง ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมห้องปฏิบัติการวิเคราะห์เอกชน

๑) นายเดช ช้างขุน	ทะเบียนเลขที่ ว-๓๒๓-ค-๐๐๐๑
๒) นางวิลาวัณย์ บริรักษ์	ทะเบียนเลขที่ ว-๓๒๓-ค-๐๐๐๒
๓) นายสุพจน์ สลามเดิด	ทะเบียนเลขที่ ว-๓๒๓-ค-๐๐๐๓

ข. เจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน

๑) นายณัฐพงษ์ เพ็งขาวนา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๑
๒) นางสาวกัลยพรรศน์ รักดี	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๒
๓) นางสาวจุฑารัตน์ สีทองหลาง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๓
๔) นางสาวจิตสุภา ประเทืองสุข	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๔
๕) นายสรรเสริญ คุ้ยยกสุย	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๕
๖) นายณัฐวุฒิ อณมพรมราช	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๖
๗) นายจิตกร สิวะสา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๗
๘) นายสิทปวิชญ์ สุวรรณรัตน์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๘
๙) นายสิทธิพันธ์ เสนาชิว	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๐๙
๑๐) นายอนุเวศน์ เดมา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๐
๑๑) นายสุวรัทย์ นราพงษ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๑
๑๒) นายณัฐพล เจียงวรีวงศ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๒
๑๓) นายชานนท์ บุญขึ้น	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๔
๑๔) นายณัฐกานต์ วงศ์ยินทรัยญ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๕
๑๕) นายอานนท์ ไพลิ์พระทอง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๖

๑๖) นายณัฐพล...

๑๖) นายณัชพล ถ้ำกลาง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๗
๑๗) นายศุภณัฐ พิสัยพันธ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๘
๑๘) นายวสันต์ คินันติ	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๑๙
๑๙) นายวรัญญู ฉิมพาลี	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๐
๒๐) นายศุภณัฐ สกุลกิตติมศักดิ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๑
๒๑) นายเอกชัย ถันทอง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๒
๒๒) นายพงษ์เทพ สิทธิเลาะ	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๓
๒๓) นายทินกร กุมภาษี	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๔
๒๔) นางสาวนันทิยา เบญจขันธ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๕
๒๕) นายสิทธิชัย ยันพิมาย	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๖
๒๖) นางสาวปภาณิน หลอดทอง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๗
๒๗) นางสาวพจนา สีดา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๘
๒๘) นางสาวธนิตา กุลศิริวงศ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๒๙
๒๙) นายพิทยา ทองแดง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๐
๓๐) นางสาวชลธิชา สุขงกช	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๑
๓๑) ว่าที่ร้อยตรี รณชัย ม่วงมา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๒
๓๒) นางวราวุฒิ พับพา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๓
๓๓) นายศักดิ์นรินทร์ จรัสกาย	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๔
๓๔) นายสุรศักดิ์ สาชิน	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๕
๓๕) นายสถาพร ถาแก้ว	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๖
๓๖) นายสุทธิ์ดำรง โชคปิตินันท์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๗
๓๗) นายวัลลภ หันไชยเนาว์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๘
๓๘) นางสาววนาลี เหรียญตระกูล	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๓๙
๓๙) นายธนะสิทธิ์ วงศ์ษาไชย	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๐
๔๐) นายชัยนุสรณ์ เลิศนันทกุลชัย	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๑
๔๑) นายสัจจา เพ็ชรแสวง	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๒
๔๒) นายกัณฑภณ มณีสัมพันธ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๓
๔๓) นายธารินทร์ อ๊อกจินดา	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๔
๔๔) นายศุภชัย วงศ์สุริย์ฉาย	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๕
๔๕) นายไสว ต้นโพธิ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๖
๔๖) นางสาวกิตติยา สัญญาอริยาภรณ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๗
๔๖) นางสาวอิดารัตน์ ศิริมังคะโร	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๘
๔๗) นายพิพัฒน์ นิภัทร์เศรษฐ์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๔๙
๔๘) นายศิริวิทย์ เรืองสม	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๕๐
๔๙) นายปารามเมศ สัตยาคุณ	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๕๑
๕๐) นายนฤนาท ธรรมสะโร	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๕๒
๕๑) นางสาวศุภรัตน์ โสจันทร์	ทะเบียนเลขที่ ว-๓๒๓-จ-๐๐๕๓

๕๒) นายพชรกร...

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๕๒) นายพพรกร เจ็งเจริญ	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๕๔
๕๓) นายทิวากร เชื้อมาก	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๕๕
๕๔) นายอนุรักษ์ ทองขจรศักดา	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๕๖
๕๕) นายอภิชาติ วิลาศ	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๕๗
๕๖) นายจรัสชระวี ศรีรักษา	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๕๘
๕๗) นายประสานมิตร เชื่อนเพชร	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๕๙
๕๘) นายภานุวัฒน์ รัจนง	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๖๐
๖๐) นายสันติ ชัยชนะ	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๖๑
๖๑) นายทินกร กุลชาติ	ทะเบียนเลขที่ ว-๑๒๓-๑-๐๐๖๒

ค. ขอบข่ายขนิดสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย น้ำใต้ดิน อากาศเสีย ตามสิ่งที่ส่งมาด้วย

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒๘ มิถุนายน ๒๕๗๑ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๖๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายพรเทพ กลิ่นกรอง)
วิศวกรชำนาญการพิเศษ ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก
โทร. ๐ ๓๓๘๓ ๖๐๕๗ ต่อ ๕๐๐๑-๒
ไปรษณีย์อิเล็กทรอนิกส์ envw@diw.mail.go.th

Green Industry "อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"

เอกสารแนบท้ายหนังสือเปลี่ยนแปลงสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ว-๑๒๓
ที่ อก ๐๓๒๐/ ๗ ๙๓ ๘ ลงวันที่ ๐ ๘ สิงหาคม ๒๕๖๗

ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๕ รายการ

น้ำเสีย จำนวน 14 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method[2] 2) 5-Day BOD Test, Azide Modification Method[2]
2	Chemical Oxygen Demand	1) Open Reflux, Titrimetric Method[2] 2) Closed Reflux, Colorimetric Method[2] 3) Closed Reflux, Titrimetric Method[2]
3	Color	ADMI Weighted-Ordinate Spectrophotometric Method[2]
4	Cyanide	Distillation, Colorimetric Method[2]
5	Formaldehyde	Distillation, Colorimetric Method[1]
6	Free Chlorine	DPD Ferrous Titrimetric Method[2]
7	Oil and Grease	Liquid-Liquid, Partition-Gravimetric Method[2]
8	pH	Electrometric Method[2]
9	Phenols	1) Distillation, Chloroform Extraction Method[2] 2) Distillation, Direct Photometric Method[2]
10	Sulfide	ZnS Precipitation, Iodometric Method[2]
11	Temperature	Field Method[2]
12	Total Dissolved Solids	Dried at 180 ^{0}C [2]
13	Total Kjeldahl Nitrogen	Semi-Macro Kjeldahl Method[2]
14	Total Suspended Solids	Dried at 103-105 ^{0}C[2]

น้ำใต้ดิน จำนวน 3 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Cyanide	Distillation, Colorimetric Method[2]
2	pH	Electrometric Method[2]
3	Phenols	Distillation, Direct Photometric Method[2]

อากาศเสีย...

-2-

อากาศเสีย (ปล่องระบาย) จำนวน 7 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Carbon Monoxide	1) Sampling Bag, Non-Dispersive Infrared Method[5] 2) Instrumental Analyzer Method[9]
2	Hydrogen Sulfide	Absorption Sampling, Iodometric Method[5]
3	Opacity	Ringelmann's Method[3,4]
4	Oxide of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method[8] 2) Instrumental Analyzer Method[10]
5	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Acid Method[5] 2) Instrumental Analyzer Method[11]
6	Sulfuric Acid	Isokinetic Sampling, Barium – Titrimetric Method[6]
7	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method[7]

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ที่ อก ๐๓๑๐/ ๑๐๐๙๙

กรมโรงงานอุตสาหกรรม
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เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๐๔ ตุลาคม ๒๕๖๗

เรื่อง แก้ไขรายชื่อเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง หนังสือ บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขที่ Env 2024/005 ลงวันที่ ๒๐ สิงหาคม ๒๕๖๗

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๑๒๓ สถานที่ตั้งเลขที่ ๖๑๖/๑๐ หมู่ที่ ๕ ตำบลแม่น้ำคู้ อำเภอปลวกแดง จังหวัดระยอง ขอแก้ไขชื่อเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน เนื่องจากมีความคลาดเคลื่อน ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรม ได้รับทราบและดำเนินการแก้ไขรายชื่อเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๕ ราย ตามที่แจ้งเรียบร้อยแล้ว เป็นดังนี้

ลำดับที่ ๒๗ นางพจนา สีดา
ลำดับที่ ๒๘ นางสาวธนิตา กุยสุริวงศ์
ลำดับที่ ๓๐ นางชลธิชา สุนงกช
ลำดับที่ ๓๖ นายสุทธิ์ดำรงค์ โชคปิตินันท์
ลำดับที่ ๔๒ นายกันตภณ มณีสัมพันธ์

จึงเรียนมาเพื่อทราบ

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เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

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เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

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อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๑๐ เมษายน ๒๕๖๘

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กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑ ราย ได้แก่ นายปาราเมศ สัตยาคุณ ทะเบียนเลขที่ ว-๑๒๓-จ-๐๐๕๑

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อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๑๕ พฤษภาคม ๒๕๖๘

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