

ภาคผนวก ค

เอกสารประกอบผลการปฏิบัติตามมาตรการติดตามตรวจสอบ

ผลกระทบสิ่งแวดล้อม

ภาคผนวก ง

ใบรับรองผลการตรวจวิเคราะห์ผลกระทบสิ่งแวดล้อม



Analysis / Test Report

TESTING
No.0009

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 2373266

Date Received : Jul 15, 2023

Date Reported : Jul 22, 2023

Report Number : 2726272-1

Page 1 of 1

Sample Number	2373266-1
Sampled Date	Jul 15, 2023 9:20 AM
Sample Description	Wastewater
Location	จุดรวมน้ำเสียเข้าระบบบำบัดน้ำเสีย
Date Analysis Commenced	Jul 15, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 degree C)	mg/L	-	2.0	3.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.8	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	2.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	284	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	21.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Sampling By : Wirat Chainara

Remark :

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Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2373266

Date Received : Jul 15, 2023

Date Reported : Jul 22, 2023

Report Number : 2726273-1

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P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	2373266-2
Sampled Date	Jul 15, 2023 9:10 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Jul 15, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	4.4	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.3	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	348	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	27.0	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Suwimon C.

Suwimon Chairuangwut
Scientist (3)



Analysis / Test Report

TESTING

No.0009

Lot ID: 2373266

Date Received : Jul 15, 2023

Date Reported : Jul 22, 2023

Report Number : 2726273-1

Client : WHA Corporation Public Company Limited

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P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	2373266-2						
Sampled Date	Jul 15, 2023 9:10 AM						
Sample Description	Wastewater						
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย						
Date Analysis Commenced	Jul 15, 2023						
Condition of Sample	Contained in one amber glass bottle and five 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							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Wirat Chainara

Remark :

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2373266

Date Received : Jul 15, 2023

Date Reported : Jul 22, 2023

Report Number : 2726274-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	2373266-3
Sampled Date	Jul 15, 2023 9:30 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Jul 15, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.7	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	416	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	10.6	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Suwimon C.

Suwimon Chairuangwut
Scientist (3)



Analysis / Test Report

TESTING

No.0009

Lot ID: 2373266

Date Received : Jul 15, 2023

Date Reported : Jul 22, 2023

Report Number : 2726274-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	2373266-3
Sampled Date	Jul 15, 2023 9:30 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Jul 15, 2023
Condition of Sample	Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Wirat Chainara

Remark :

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Accreditation No. 1031/47

Analysis / Test Report

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

Lot ID: 2373266

Date Received : Jul 15, 2023

Date Reported : Jul 22, 2023

Report Number : 2726275-1

Page 1 of 1

Sample Number	2373266-4
Sampled Date	Jul 15, 2023 9:40 AM
Sample Description	Consumption Water
Date Analysis Commenced	Jul 17, 2023
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Colorless, odourless, no solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	244	In-house method : STM 04-011 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Sampling By : Wirat Chainara

Remark :

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Analysis / Test Report

TESTING
No.0009

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 2379794

Date Received : Aug 19, 2023

Date Reported : Aug 26, 2023

Report Number : 2758700-1

Page 1 of 1

Sample Number	2379794-1
Sampled Date	Aug 19, 2023 9:30 AM
Sample Description	Wastewater
Location	จุดรวมน้ำเสียเข้าระบบบำบัดน้ำเสีย
Date Analysis Commenced	Aug 19, 2023
Condition of Sample	Contained in five plastic bottles and one amber glass bottle, 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	12.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	3	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	8.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	0.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	0.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	296	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	29.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	23	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Sampling By : Wisarut Sretamma

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2379794

Date Received : Aug 19, 2023

Date Reported : Aug 26, 2023

Report Number : 2758701-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	2379794-2
Sampled Date	Aug 19, 2023 9:25 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Aug 19, 2023
Condition of Sample	Contained in five plastic bottles and one amber glass bottle, 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	8.4	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.6	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	352	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	18.9	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Suwimon Chairuangwut
Scientist (3)



Analysis / Test Report

TESTING

No.0009

Lot ID: 2379794

Date Received : Aug 19, 2023

Date Reported : Aug 26, 2023

Report Number : 2758701-1

Client : WHA Corporation Public Company Limited

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P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	2379794-2
Sampled Date	Aug 19, 2023 9:25 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Aug 19, 2023
Condition of Sample	Contained in five plastic bottles and one amber glass bottle, 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	20	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Wisarut Sretamma

Remark :

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2379794

Date Received : Aug 19, 2023

Date Reported : Aug 26, 2023

Report Number : 2758702-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	2379794-3
Sampled Date	Aug 19, 2023 9:45 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Aug 19, 2023
Condition of Sample	Contained in five plastic bottles and one amber glass bottle, 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	3.5	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.5	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	400	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	7.7	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)



Analysis / Test Report

TESTING

No.0009

Lot ID: 2379794

Date Received : Aug 19, 2023

Date Reported : Aug 26, 2023

Report Number : 2758702-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	2379794-3
Sampled Date	Aug 19, 2023 9:45 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Aug 19, 2023
Condition of Sample	Contained in five plastic bottles and one amber glass bottle, 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							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Wisarut Sretamma

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Accreditation No. 1031/47

Analysis / Test Report

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 2379794

Date Received : Aug 19, 2023

Date Reported : Aug 26, 2023

Report Number : 2758703-1

Page 1 of 1

Sample Number	2379794-4					
Sampled Date	Aug 19, 2023 9:40 AM					
Sample Description	Consumption Water					
Date Analysis Commenced	Aug 21, 2023					
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Physical Property	Colorless, odourless, no solid and turbid					

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	248	In-house method : STM 04-011 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Sampling By : Wisarut Sretamma

Remark :

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Analysis / Test Report

TESTING
No.0009

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

Lot ID: 2397518

Date Received : Sep 30, 2023
Date Reported : Oct 07, 2023
Report Number : 2801072-1

Page 1 of 1

Sample Number	2397518-1
Sampled Date	Sep 30, 2023 10:00 AM
Sample Description	Wastewater
Location	จุดรวมน้ำเสียเข้าระบบบำบัดน้ำเสีย
Date Analysis Commenced	Oct 02, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	11.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	6.4	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	468	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	10.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	27	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Sampling By : Teerawat Puangsuk

Remark :

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2397518

Date Received : Sep 30, 2023

Date Reported : Oct 07, 2023

Report Number : 2801073-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	2397518-2
Sampled Date	Sep 30, 2023 10:10 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Oct 02, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	4.4	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.4	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	404	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	3.3	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Suwimon C.

Suwimon Chairuangwut
Scientist (3)



Analysis / Test Report

TESTING

No.0009

Lot ID: 2397518

Date Received : Sep 30, 2023

Date Reported : Oct 07, 2023

Report Number : 2801073-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	2397518-2
Sampled Date	Sep 30, 2023 10:10 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Oct 02, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	7	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Teerawat Puangsuk

Remark :

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2397518

Date Received : Sep 30, 2023

Date Reported : Oct 07, 2023

Report Number : 2801074-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	2397518-3
Sampled Date	Sep 30, 2023 10:15 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Oct 02, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	5.1	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.6	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	452	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	3.2	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)



Analysis / Test Report

TESTING

No.0009

Lot ID: 2397518

Date Received : Sep 30, 2023

Date Reported : Oct 07, 2023

Report Number : 2801074-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	2397518-3
Sampled Date	Sep 30, 2023 10:15 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Oct 02, 2023
Condition of Sample	Contained in one amber glass bottle and five 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							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Teerawat Puangsuk

Remark :

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Analysis / Test Report

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777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 2397518

Date Received : Sep 30, 2023

Date Reported : Oct 07, 2023

Report Number : 2801075-1

Page 1 of 1

Sample Number	2397518-4					
Sampled Date	Sep 30, 2023 10:20 AM					
Sample Description	Consumption Water					
Date Analysis Commenced	Oct 02, 2023					
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Physical Property	Colorless, odourless, no solid and turbid					

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	198	In-house method : STM 04-011 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Sampling By : Teerawat Puangsuk

Remark :

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Analysis / Test Report

TESTING
No.0009

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 23111926

Date Received : Oct 21, 2023

Date Reported : Oct 30, 2023

Report Number : 2820501-1

Page 1 of 1

Sample Number	23111926-1
Sampled Date	Oct 21, 2023 9:40 AM
Sample Description	Wastewater
Location	จุดรวมน้ำเสียเข้าระบบบำบัดน้ำเสีย
Date Analysis Commenced	Oct 21, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	19.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	6.6	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	452	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	26.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	31	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Sampling By : Teerawat Puangsuk

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang
Section Head

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Analysis / Test Report

TESTING

No.0009

Lot ID: 23111926

Date Received : Oct 21, 2023

Date Reported : Oct 30, 2023

Report Number : 2820502-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	23111926-2
Sampled Date	Oct 21, 2023 9:30 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Oct 21, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	5.4	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.0	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	436	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	25.2	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Approved by

Siriluk P.

Siriluk Puengpang
Section Head



Analysis / Test Report

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING
No.0009
Lot ID: 23111926
Date Received : Oct 21, 2023
Date Reported : Oct 30, 2023
Report Number : 2820502-1

Page 2 of 2

Sample Number 23111926-2
Sampled Date Oct 21, 2023 9:30 AM
Sample Description Wastewater
Location จดระเบียน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced Oct 21, 2023
Condition of Sample Contained in one amber glass bottle and five 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	8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Teerawat Puangasuk

Remark :

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

TESTING

No.0009

Lot ID: 23111926

Date Received : Oct 21, 2023

Date Reported : Oct 30, 2023

Report Number : 2820503-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	23111926-3
Sampled Date	Oct 21, 2023 9:55 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Oct 21, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	2.5	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.2	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	136	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	2.2	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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Approved by

Siriluk P.

Siriluk Puengpang
Section Head



Analysis / Test Report

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING
No.0009
Lot ID: 23111926
Date Received : Oct 21, 2023
Date Reported : Oct 30, 2023
Report Number : 2820503-1

Page 2 of 2

Sample Number 23111926-3
Sampled Date Oct 21, 2023 9:55 AM
Sample Description Wastewater
Location บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced Oct 21, 2023
Condition of Sample Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Teerawat Puangasuk

Remark :

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Siriluk P.

Siriluk Puengpang
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Analysis / Test Report

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Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 23111926

Date Received : Oct 21, 2023

Date Reported : Oct 30, 2023

Report Number : 2820504-1

Page 1 of 1

Sample Number	23111926-4					
Sampled Date	Oct 21, 2023 10:02 AM					
Sample Description	Consumption Water					
Date Analysis Commenced	Oct 24, 2023					
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Physical Property	Colorless, odourless, no solid and turbid					

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	152	In-house method : STM 04-011 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Sampling By : Teerawat Puangsuk

Remark :

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

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Analysis / Test Report

TESTING
No.0009

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 23124155

Date Received : Nov 18, 2023

Date Reported : Nov 25, 2023

Report Number : 2847436-1

Page 1 of 1

Sample Number	23124155-1
Sampled Date	Nov 18, 2023 9:52 AM
Sample Description	Wastewater
Location	จุดรวมน้ำเสียเข้าระบบบำบัดน้ำเสีย
Date Analysis Commenced	Nov 18, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	Method	Testing Location
Water Testing						
BOD (5 days at 20 degree C)	mg/L	-	2.0	10.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.8	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	0.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	316	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	27.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Sampling By : Wisarut Sretamma

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

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

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Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING

No.0009

Lot ID: 23124155

Date Received : Nov 18, 2023

Date Reported : Nov 25, 2023

Report Number : 2847437-1

Page 1 of 2

Sample Number	23124155-2
Sampled Date	Nov 18, 2023 9:40 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Nov 18, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	6.7	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	6.4	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	456	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	15.4	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 23124155

Date Received : Nov 18, 2023

Date Reported : Nov 25, 2023

Report Number : 2847437-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 2 of 2

Sample Number	23124155-2
Sampled Date	Nov 18, 2023 9:40 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Nov 18, 2023
Condition of Sample	Contained in one amber glass bottle and five 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							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Wisarut Sretamma

Remark :

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Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

Client : WHA Corporation Public Company Limited
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Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

TESTING

No.0009

Lot ID: 23124155

Date Received : Nov 18, 2023

Date Reported : Nov 25, 2023

Report Number : 2847438-1

Page 1 of 2

Sample Number	23124155-3
Sampled Date	Nov 18, 2023 10:10 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Nov 18, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	6.5	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.1	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	424	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	5.0	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Analysis / Test Report

Client : WHA Corporation Public Company Limited
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Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING
No.0009
Lot ID: 23124155
Date Received : Nov 18, 2023
Date Reported : Nov 25, 2023
Report Number : 2847438-1

Page 2 of 2

Sample Number	23124155-3
Sampled Date	Nov 18, 2023 10:10 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Nov 18, 2023
Condition of Sample	Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Wisarut Sretamma

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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Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Accreditation No. 1031/47

Analysis / Test Report

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 23124155

Date Received : Nov 18, 2023

Date Reported : Nov 25, 2023

Report Number : 2847439-1

Page 1 of 1

Sample Number	23124155-4
Sampled Date	Nov 18, 2023 10:00 AM
Sample Description	Consumption Water
Date Analysis Commenced	Nov 20, 2023
Condition of Sample	Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Colorless, odourless, no solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	144	In-house method : STM 04-011 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Sampling By : Wisarut Sretamma

Remark :

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Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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TESTING
No.0009

Client : WHA Corporation Public Company Limited
777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

Lot ID: 23134893

Date Received : Dec 16, 2023

Date Reported : Dec 22, 2023

Report Number : 2871601-1

Page 1 of 1

Sample Number	23134893-1
Sampled Date	Dec 16, 2023 11:10 AM
Sample Description	Wastewater
Location	จุดรวมน้ำเสียเข้าระบบบำบัดน้ำเสีย
Date Analysis Commenced	Dec 16, 2023
Condition of Sample	Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, a lot of odour, a lot of solid, and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 degree C)	mg/L	-	2.0	97.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	15	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	7.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	300	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	7.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	69	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Sampling By : Chawanthat Nakpanom

Remark :

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Approved by

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Suwimon Chairuangwut
Scientist (3)

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Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING
No.0009

Lot ID: 23134893

Date Received : Dec 16, 2023

Date Reported : Dec 22, 2023

Report Number : 2871602-1

Page 1 of 2

Sample Number	23134893-2
Sampled Date	Dec 16, 2023 10:40 AM
Sample Description	Wastewater
Location	จุดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced	Dec 16, 2023
Condition of Sample	Contained in one amber glass bottle and five 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	15.8	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.0	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	444	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	13.1	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING
No.0009
Lot ID: 23134893
Date Received : Dec 16, 2023
Date Reported : Dec 22, 2023
Report Number : 2871602-1

Page 2 of 2

Sample Number 23134893-2
Sampled Date Dec 16, 2023 10:40 AM
Sample Description Wastewater
Location จดระบายน้ำออกจากระบบบำบัดน้ำเสีย
Date Analysis Commenced Dec 16, 2023
Condition of Sample Contained in one amber glass bottle and five 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							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Chawanthat Nakpanom

Remark :

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Scientist (3)

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Analysis / Test Report

TESTING

No.0009

Lot ID: 23134893

Date Received : Dec 16, 2023

Date Reported : Dec 22, 2023

Report Number : 2871603-1

Client : WHA Corporation Public Company Limited

777 Moo 13 WHA Tower, 23rd -25th Floor, Debaratana Road (Bangna-trad) KM.7, Bang
Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Page 1 of 2

Sample Number	23134893-3
Sampled Date	Dec 16, 2023 11:15 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Dec 16, 2023
Condition of Sample	Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no 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	5.0	≤30	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Bangkok
Oil & Grease	mg/L	-	3	<3	≤20	In-house method : STM 04-014 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Bangkok
pH at 25 degree C		-	-	7.2	5.0-9.0	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Settleable Solid *	mL/L/hr	-	0.1	<0.1	≤0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Total Dissolved Solids Dried at 103-105 degree C	mg/L	-	5	360	(1)	In-house method : STM 04-010 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	4.6	≤35	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Kaeo, Bang Phli, Samut Prakan Thailand 10540
P/O : 54230089
Project Name :
Project Location :

TESTING
No.0009
Lot ID: 23134893
Date Received : Dec 16, 2023
Date Reported : Dec 22, 2023
Report Number : 2871603-1

Page 2 of 2

Sample Number	23134893-3
Sampled Date	Dec 16, 2023 11:15 AM
Sample Description	Wastewater
Location	บ่อพักน้ำสุดท้าย ก่อนระบายออกสู่ท่อระบายน้ำสาธารณะ
Date Analysis Commenced	Dec 16, 2023
Condition of Sample	Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, no solid, and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

Guideline : Notification of Ministry of Natural Resources and Environment November, 7, B.E. 2548 on Effluent Control Standard from Types and Sized of Buildings, Type B.

(1) : The values are in addition to the Total Dissolved Solids of the water used not more than 500 mg/L.

Sampling By : Chawanthat Nakpanom

Remark :

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Approved by

Suwimon C.

Suwimon Chairuangwut
Scientist (3)

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Accreditation No. 1031/47

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Kaeo, Bang Phli, Samut Prakan Thailand 10540

P/O : 54230089

Project Name :

Project Location :

Lot ID: 23134893

Date Received : Dec 16, 2023

Date Reported : Dec 22, 2023

Report Number : 2871604-1

Page 1 of 1

Sample Number	23134893-4					
Sampled Date	Dec 16, 2023 11:20 AM					
Sample Description	Consumption Water					
Date Analysis Commenced	Dec 18, 2023					
Condition of Sample	Contained in one amber glass bottle and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Physical Property	Colorless, odourless, no solid, and no turbid					

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	188	In-house method : STM 04-011 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Sampling By : Chawanthat Nakpanom

Remark :

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Scientist (3)

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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. 0-2717-3000-27 FAX. 0-2719-9484



Cert.No.: 22CH1222
Page.: 1 of 2

Certificate of Calibration

Equipment : pH Meter
Manufacturer : Mettler Toledo
Model : Seven Compact S220
Serial No. : B520948426
ID No. : BKK_EN0072
Condition As-Received: Used Item
Received Date : 09 September 2022
Calibration Date : 12 September 2022
Reference : 2209-0312DSC-1
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand
Ambient Temperature : (25 ± 2.5) °C
Relative Humidity : (50 ± 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with standard
voltage calibrator and direct measurement
with certified reference material (CRM)

Calibrated by : Warakorn Lernagatrakul

Approved by :

(✓) Malee Butkruea
() Saithip Meangmai
() Warakorn Lernagatrakul

Issue Date : 15 September 2022

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Cert. No.: 22CH1222
Page.: 2 of 2

Condition of this calibration result

1. Reference Standard Instrument : -

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	54030049	130RC116	22E2769	24 Aug 2023

This certification is traceable to the International System of Unit maintained at:-
- Traceable to National Institute of Metrology (Thailand), NIMT

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd.,
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	823320	20 June 2024
pH 6.985	CPA chem	794122	14 Feb 2023
pH 10.008	CPA chem	823323	20 June 2023

3. This certificate is valid only to the item calibrated on date and place of calibration.

Calibration Results

Function : mV Measurement

Performing standard curve by Fluke at pH (4,7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (±mV)	Coverage factor k
	pH	mV	mV	pH		
pH Meter S/N.: B520948426	4.000	177.48	177.4	4.000	0.058	2.00
	7.000	0.00	0.0	7.000	0.058	2.00
	10.000	-177.48	-177.5	10.000	0.058	2.00

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement (±)	Coverage factor k
pH Electrode S/N.:PCE-86-EX1001	4.008	3.999	153.9	0.0055	2.09
	6.985	7.017	-13.7	0.0084	2.00
	10.008	9.996	-179.0	0.0078	2.06

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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Metrological Center

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.co.th



Certificate No. T221644

Page 1 of 4

Certificate of Calibration

Equipment : Chamber (Cold Room)

Manufacturer : KOLDTECH

Model : KM 320

Serial No. : TBN-1012061/05

Customer Code : BKK_EN0167

ID No. : T2463A3

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : Environmental Laboratory

Date of Receipt : 27 June 2022

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By : [Signature] / Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 04 JUL 2022

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

FM-L14 I17/01-02-64



Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.



Certificate No. T221644

Page 2 of 4

Calibration Report

Equipment : Chamber (Cold Room)

Date of Calibration : 30 June - 1 July 2022

Environment : Temperature : 18.9-23.7 °C

Line Voltage : 222.9-226.5 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 2001) and AS2853-1986). All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN161-TN170	T210009	30 July 2022
TC	TYPE T	TN171-TN180	T210009	30 July 2022
DATA LOGGER	34970A	T149	T210009	30 July 2022

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

Equipment Description :

Time Constant 3 Hour - Minute At 3 °C

Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max

☐ Close

☒ Not Available

5. Adjustment :

() without adjustment

(X) after adjustment

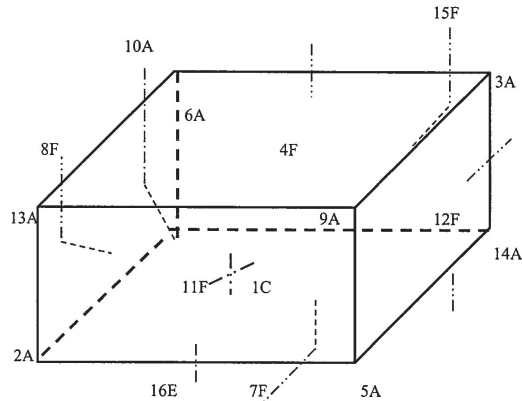
Approved By. [Signature]

FM-L15 I17/15-05-63

Certificate No. T221644

Page 3 of 4

Calibration Report



C = Centre, F = Centre of Face, A = Corner, E = Centre of Edge

1C	=	TN161
2A	=	TN162
3A	=	TN163
4F	=	TN164
5A	=	TN165
6A	=	TN166
7F	=	TN167
8F	=	TN168
9A	=	TN169
10A	=	TN170

11F	=	TN171
12F	=	TN172
13A	=	TN173
14A	=	TN174
15F	=	TN175
16E	=	TN176

Approved By. _____

Certificate No. T221644

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	2.71	2.82	2.75	2.89	2.95	3.68	3.02	2.96	3.03	2.85
	TN171	TN172	TN173	TN174	TN175	TN176				
	2.97	3.02	2.89	3.04	2.97	3.33				

Chamber (Cold Room)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage
	Min , Max	Average					Factor <i>k</i>
3.0	2.9 , 4.0	3.2	2.99	1.05	1.30	1.66	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. _____



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert.No.: 22CG3154
Page.: 1 of 2

Certificate of Calibration

Equipment : Burette
Capacity : 50 mL
Serial No. : -
ID. No. : BKK_EN0171

Manufacturer : Witeg

Made in : Germany

Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.
104 Phatthanakan 40, Phatthanakan Rd.
Khwaeng Phatthanakan, Khet Suan Luang
Bangkok 10250 Thailand

Ambient Temperature : (20 ± 2.5) °C

Relative Humidity : (50 ± 10) %

Barometric Pressure : 759 mmHg

Calibration Procedure : ASTM E 542 - 01

Calibrated by : Panward Pramklam

Approved by :

Approved Signatory

- () Pornthippa Tameyakul
() Malee Butkruea
(X) Ponpan Paipim
() Srisuda Khamtha

Issue Date : 31 August 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.



Equipment : Burette
Received Date : 26 August 2022
Condition As-Received : Used Item
Calibration Date : 30 August 2022
Reference : 2208-0918DSC-2

Cert.No.: 22CG3154

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	AE200S	N03679	140RC001	21MM429	NIMT	22 Sep 2022
2) Thermo-Hygrograph	THDX-CE	00016540	140EC001	22H1243	NIST,NIMT	09 June 2023
3) Thermometer	-	1594592	140EC010	22I181	NIMT	10 Feb 2023

This certification is traceable to SI Unit

2. The certificate is valid only to the item calibrated on date and place of calibration.

3. True value is converted to true volume at the standard temperature of 20 °C

Calibration result :

Nominal capacity (mL)	Reading (mL)	Uncertainty (± mL)	k Factor
50	49.9959	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-

a 1123908

A 0044607



SARTORIUS

Certificate of Calibration

Model Number : MSE224S-100-DU
Description : Analytical Balance
Serial Number : 26207042
ID No. : BKK_EN0002
Manufacturer : Sartorius

Certificate No. : 23BCI0072
Issued Date : Monday, February 13, 2023
Reference No. : 203245
Page No. : 1 of 2

Customer Name : ALS Laboratory Group (Thailand)Co., Ltd.
104 Phatthanakan 40,Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250.

Calibrated Place : Balance Room

Calibrated By : Mr. Chonchai Inthana
Calibration Date : Wednesday, February 08, 2023

Calibration Procedure No. : This calibration was conducted by Using in-house calibration procedure number (WI-003) Based on UKAS LAB 14 : 2019

Metrological data :
Capacity : 220 g Readability : 0.0001 g

Reasons for calibration
☐ New Installation ☐ Service / Repaired ☒ Re-calibration/ Maintenance

Ambients Conditions:
Temperature : 23.2 °C ± 5.0 °C
Humidity : 60.0 % RH ± 10.0 % RH
Pressure : ±

Equipment Condition: ☒ Good Operate ☐ Fair

Measurement Method UKAS Publication Ref :Lab 14

The measurement uncertainty stated is the expended uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The calibration certificate documents the traceability to National Standards, which realise the unit of measurement according to the International Standard System of Units (SI). Report of Tolerance came form list of Sartorius Metrological Specifications.

Traceability:

Model Number	Description	Traceability	Certificate No.	Due Date
YCS011-522-00	Sartorius weight set 1mg - 5000g E2,YCS011-522-00	SPC-RT	C02212565	14-Sep-2023
MHB-382SD	Humidity/Barometer/Temp Lutron MHB-382SD	DKSH	C19220444	5-Sep-2023

This certificate relate and apply this equipment only.

This certificate may not be reproduced other than in full except with the prior written approval of the Verification Operation Division Sartorius (Thailand) Co., Ltd.



SARTORIUS

Certificate of Calibration

Model Number : MSE224S-100-DU
Description : Analytical Balance
Serial Number : 26207042
ID No. : BKK_EN0002
Manufacturer : Sartorius

Certificate No. : 23BCI0072
Issued Date : Monday, February 13, 2023
Reference No. : 203245
Page No. : 2 of 2

Calibration Results : Without Adjustment

Repeatability			Eccentricity (Off-center loading error)	
The reproducibility is the ability of a weighing instrument to display nearly identical readouts under constant test conditions when the same load within a measurement series is placed repeatedly on the weighing pan in the same manner. The standard deviation is used to express reproducibility quantitatively.			The off-center loading error is yielded by the difference between the readout of the load, i.e. 1/3 or 1/4 of maximum capacity, placed in the middle of the weighing pan and between each of four additional measurement points (positions defined according to OIML R76).	
Nominal Value : (Low Load)	20.0000	200.0000	Nominal value :	50 g
20 g	20.0000	199.9999	Tolerance	0.0004 g
Tolerance	20.0000	200.0000		
0.0001 g	20.0000	199.9999		
	20.0001	200.0000		
	20.0000	200.0000		
Nominal Value : (High Load)	20.0000	199.9999		
200 g	20.0000	199.9999		
Tolerance	20.0000	200.0000		
0.0001 g	20.0000	199.9999		
	20.0001	199.9999		
	20.0000	199.9999		
Standard Deviation	0.00004	0.00005		

Linearity

The linearity, also called linearity error. Describes the deviation of the characteristic curve of a weighing instrument from the linear slope.

Tolerance 0.0002 g

Nominal Value	Conventional Mass Value	Displayed Value	Deviation	Uncertainty
(g)	(g)	(g)	(g)	(g)
0.01	0.0100	0.0100	0.0000	0.00014
0.1	0.1000	0.1000	0.0000	0.00014
1	1.0000	1.0000	0.0000	0.00014
2	2.0000	2.0000	0.0000	0.00014
5	5.0000	5.0000	0.0000	0.00014
10	10.0000	10.0000	0.0000	0.00014
20	20.0000	20.0000	0.0000	0.00014
50	50.0000	50.0000	0.0000	0.00015
100	100.0000	100.0000	0.0000	0.00019
200	200.0000	199.9999	-0.0001	0.00030

End of Report.



Metrological Center

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. T231303

Page 1 of 3

Certificate of Calibration

Equipment : Liquid Bath (Water)

Manufacturer : MEMMERT

Model : WNB29

Serial No. : L611.0135

Customer Code : BKK_EN0148

ID No. : T6455A4

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : ORGANIC PREPARATION LAB

Date of Receipt : 27 June 2023

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By : Bonchai / Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 11 JUL 2023

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.



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Certificate No. T231303

Page 2 of 3

Calibration Report

Equipment : Liquid Bath (Water)

Date of Calibration : 4 July 2023

Environment : Temperature : 22.2-22.5 °C

Line Voltage : 221.6-224.8 V

Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert five resistance thermometer detectors into its water bath , the other one thermocouple type T use for ambient temperature measurement . The calibration was done in according to WI-T36 (based on ASTM E715-80 (Reapproved 2001)).

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	M18 (CH1,CH6-CH7,CH9-CH10)	T230545	10 April 2024
DATA LOGGER	34970A	T149	T230545	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 3 Hour 45 Minute At 60 °C

5. Adjustment :

(X) without adjustment

() after adjustment

Approved By : Bonchai



Metrological Center

SCI ECO Services Company Limited

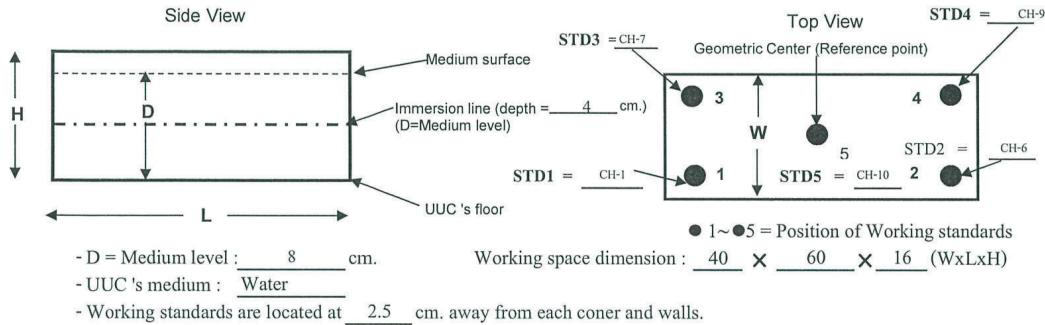
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Page 3 of 3

Certificate No. T231303

Calibration Report



Measurement Results:

Calibration Point	Average Standard Reading at each position (°C)				
	CH-1	CH-6	CH-7	CH-9	CH-10
60	60.03	60.06	60.24	60.11	60.18
85	84.79	84.83	85.42	85.05	85.20
95	93.71	93.83	94.62	94.15	94.42

Liquid Bath (Water)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (± °C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average					
61.0	60.9 , 61.1	61.0	60.12	0.13	0.19	0.29	2.04
86.0	85.8 , 86.2	86.0	85.06	0.19	0.47	0.44	2.17
95.0	94.6 , 95	94.9	94.15	0.32	0.65	0.55	2.13

* 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:



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. T230902

Page 1 of 5

Certificate of Calibration

Equipment : Digestion Unit

Manufacturer : SCP Science

Model : DigiPRER HT

Serial No. : HTC1120480658

Customer Code : BKK_EN0366

ID No. : T2635A5

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : Wet Chemistry Lab 1

Date of Receipt : 10 May 2023

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By : / Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 29 MAY 2023

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.



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Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T230902

Page 2 of 5

Calibration Report

Equipment : Digestion Unit
Date of Calibration : 17 May 2023
Environment : Temperature : 23.9 - 26.3 °C
Line Voltage : 221.8 - 225.9 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

- This equipment was calibrated by insert four standard thermocouples type S into its chamber , the other one thermocouple type T use for ambient temperature measurement . The calibration was done in according to WI-T10.
- Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	Type S	M20A1-(CH17-CH20)	T230547	18 April 2024
DATA LOGGER	34970A	T149	T230547	18 April 2024
- This certificate is traceable to :
National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)
- Condition of calibrated item : good
Equipment Description :
Time Constant 1 Hour 54 Minute At 380 °C
Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max
☐ Close
☒ Not Available
- Adjustment :
(X) without adjustment () after adjustment

Approved By [Signature]



Metrological Center

SCI ECO Services Company Limited

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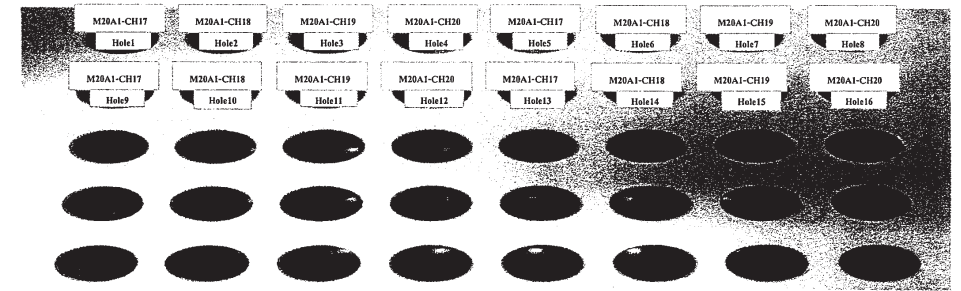
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Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T230902

Page 3 of 5

Calibration Report



FRONT

Measurement Results

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	Hole1	Hole2	Hole3	Hole4	Hole5	Hole6	Hole7	Hole8
				M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20	M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20
380.0	380.0	379.4 - 380.7	Max °C	377.3	379.0	379.2	380.2	377.5	379.5	380.7	380.1
			Min °C	376.8	378.6	378.9	379.9	377.0	379.0	380.2	379.6
			Average °C	377.0	378.8	379.1	380.0	377.3	379.2	380.4	379.9
			Stability ± °C	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	Hole9	Hole10	Hole11	Hole12	Hole13	Hole14	Hole15	Hole16
				M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20	M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20
380.0	380.0	379.4 - 380.7	Max °C	377.1	378.9	379.7	379.9	379.3	379.6	379.5	377.4
			Min °C	376.7	378.5	379.3	379.5	378.9	379.1	379.0	377.0
			Average °C	376.9	378.7	379.5	379.7	379.1	379.4	379.3	377.2
			Stability ± °C	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2

Approved By [Signature]



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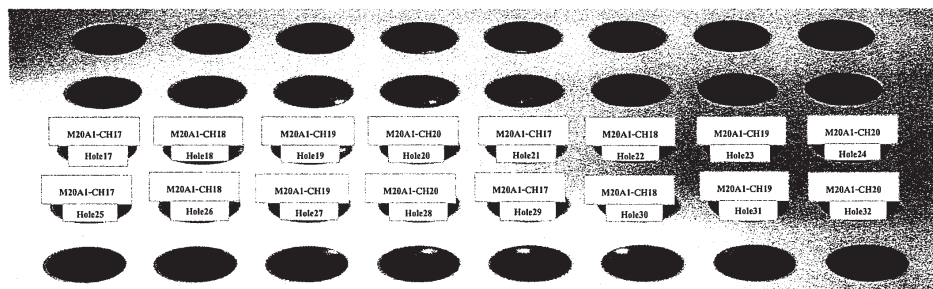
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Certificate No. T230902

Page 4 of 5

Calibration Report



FRONT

Measurement Results

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	Hole17	Hole18	Hole19	Hole20	Hole21	Hole22	Hole23	Hole24
				M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20	M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20
380.0	380.0	379.4 - 380.7	Max °C	378.4	380.1	380.1	380.0	379.1	379.8	379.6	377.8
			Min °C	377.8	379.6	379.7	379.3	378.6	379.2	379.2	377.3
			Average °C	378.1	379.9	379.9	379.7	378.9	379.5	379.4	377.5
			Stability ± °C	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	Hole25	Hole26	Hole27	Hole28	Hole29	Hole30	Hole31	Hole32
				M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20	M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20
380.0	380.0	379.4 - 380.7	Max °C	377.9	379.4	380.1	380.1	379.3	379.6	378.9	377.3
			Min °C	377.4	378.9	379.7	379.7	378.8	378.9	378.4	376.7
			Average °C	377.7	379.2	379.9	379.9	379.0	379.3	378.6	377.0
			Stability ± °C	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.3

Approved By.

[Signature]



Metrological Center

SCI ECO Services Company Limited

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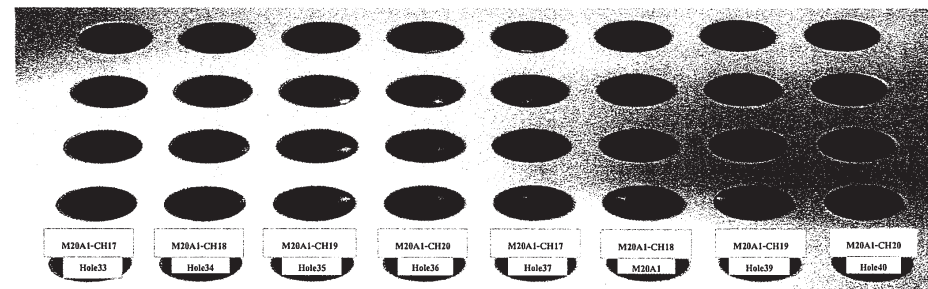
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Certificate No. T230902

Page 5 of 5

Calibration Report



FRONT

Measurement Results

Cal. Point	Setting	Reading	STD.	Position of Standards at Block							
(°C)	(°C)	(°C)	Reading	Hole33	Hole34	Hole35	Hole36	Hole37	Hole38	Hole39	Hole40
				M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20	M20A1-CH17	M20A1-CH18	M20A1-CH19	M20A1-CH20
380.0	380.0	379.4 - 380.7	Max °C	377.7	378.0	378.3	379.0	378.2	378.5	377.3	377.4
			Min °C	377.3	377.6	377.9	378.6	377.7	378.1	376.9	377.0
			Average °C	377.5	377.8	378.1	378.8	378.0	378.3	377.1	377.2
			Stability ± °C	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

The expanded uncertainty of temperature measurement was ± 1.85 °C

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=2 , providing a level of confidence of approximately 95 % .

Approved By.

[Signature]



บริษัท ดับเบิล เอส ไดแอกโนสติกส์ จำกัด
DOUBLE S DIAGNOSTICS CO., LTD.

4 ซอยอุดมสุข 14 แขวงบางนา เขตบางนา กรุงเทพมหานคร 10260 โทรศัพท์: (02) 747-7009 โทรสาร: (02) 747-7008
4 Soi Udomsuk 14, Bangna, Bangkok 10260 Tel. (02) 747-7009 Fax: (02) 747-7008

Maintenance Plan YEAR : 2023

เดือน	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
รวม							10/10 ck					

Periodical maintenance check list for Konelab

	6M	12M	Note!
1.Diluent-wash tubing change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.ISE tubing change	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	none
3.Syringe check/change		<input checked="" type="checkbox"/>	
4.Dispensing check/ change		<input checked="" type="checkbox"/>	
5.Waste tubing change when necessary		<input checked="" type="checkbox"/>	
6.Lamp check/change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7.Mixer paddle/paddle change(not Konelab20)		<input checked="" type="checkbox"/>	
8.ISE needles check/change		<input checked="" type="checkbox"/>	none
9.Pump tubing check/ change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10.Broken/worn out part check /change		<input checked="" type="checkbox"/>	
11.Peristaltic pump check /cleaning/ lubrication	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12.Heating check		<input checked="" type="checkbox"/>	
13.Cooling check		<input checked="" type="checkbox"/>	
14.Dispenser mechanic check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
15.Cuvette transfer mechanic check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
16.Dispenser movement check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
17.Sample/reagent register check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
18.Dispensing tubing tightness check	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
19.Photometer and optics cleaning/check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
20.Workstation PC cleaning if necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
21.Mechanic cleaning/lubrication	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
22.Instrument cleaning if necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
23.Complete analyzer testing with waterblank/QC or sample	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
24.Test parameters/Adjustment/config. Save to USB key	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
25.UPS Test	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Place: ALS LAB Instrument: 890 Aquakem
Date/Time: 12/7/66 Serial no: 22781
Service done by: 51706 Install date:
Signature of customer: 0111 Date/Time: 12/12/66

Accuracy results Aquakem 7.2.AQ2 Page: 1

Laboratory
Analyzer User

7/12/2023 21:21

Performed 7/12/2023
Lot W166

ACCEPTANCE CRITERIA

	Result	Limit	Warning
Temperature (?C)	37.7	37.0 +/- 1.0	
Dispensing ratio	16.4	14.8 - 17.2	
CV%	1.17	<1.7	
Photometric noise			
Max SD L340_2 (mA)	0.19	<2.0	
Max SD L340_4 (mA)	1.06	<3.0	
Linearity of photometer			
Slope	1.0188	0.94 - 1.06	
Curvature	0.0035	+/- 0.02	
Max bias from linear fit (mA)	3.2	<15.0	
Max delta %	-2.0	+/- 6.0	
Linearity of sample dispensing			
Proport. volume XDISP2 (?l)	2.06	1.96 - 2.16	
Proport. volume XDISP4 (?l)	4.13	3.85 - 4.40	
XDISP2 CV%	0.58	<2.0	
XDISP4 CV%	0.70	<2.0	
XDISP10 CV%	0.59	<2.0	
Needle 0 ?l volume			
Average (A)	0.009	<0.050	
Standard deviation (A)	0.002	<0.005	
Volume (?l)	0.06	<0.32	

OTHER INFORMATION

Dispensing ratio	Photom. noise: SD (mA)
Posit Result (A)	Posit L340_2 L340_4
1 0.1592	1 0.07 0.64
2 0.1624	2 0.09 1.06
3 0.1631	3 0.14 0.50
4 0.1631	4 0.13 0.53
5 0.1625	5 0.19 0.38
6 0.1650	6 0.02 0.64

Laboratory
Analyzer User

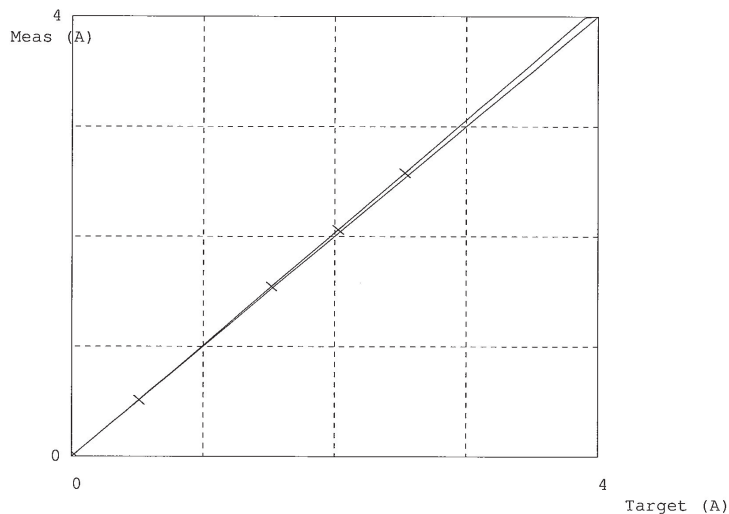
7/12/2023 21:21

Linearity of sample dispensing

Test	Absorbance (A)
XDISP2	0.311
XDISP4	0.616
XDISP10	1.478

Linearity of photometer

L340_	Target (A)	Meas (A)	Delta (A)	Delta %
1	0.001	0.005	-0.004	-394.7
2	0.512	0.519	-0.007	-1.5
3	1.523	1.550	-0.027	-1.8
4	2.027	2.066	-0.039	-1.9
5	2.532	2.582	-0.050	-2.0



Metrological Center

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. T222502

Page 1 of 4

Certificate of Calibration

Equipment : Chamber (Oven)

Manufacturer : Memmert

Model : UF 450

Serial No. : B7170531

Customer Code : BKK_EN0273

ID No. : T8042A4

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250



Customer Location : Oven Room

Date of Receipt : 23 November 2022

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By :  /Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 09 DEC 2022

REVIEW BY	
APPROVED BY	
NEXT CAL. DATE	29/05/24

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.

Calibration Report

Equipment : Chamber (Oven)
Date of Calibration : 29 November 2022
Environment : Temperature : 29.1-29.6 °C
Line Voltage : 221.3-223.2 V
Relative Humidity : 55 - 65 %RH

Condition of this results of calibration :

1. This equipment was calibrated by insert nine resistance thermometer detectors and nine standard thermocouples type T into its chamber , the other one resistance thermometer detector use for ambient temperature measurement .
The calibration was done in according to WI-T20 (based on ASTM E145-94 (Reapproved 2001) and AS2853-1986).
All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
RTD	100 ohm	27-(CH1-10)	T210004	30 December 2022
TC	TYPE T	TN261-TN270	T210010	30 December 2022
DATA LOGGER	34970A	T149	T210004	30 December 2022

3. This certificate is traceable to :

National Institute of Metrology (Thailand) through Metrological Center (NSC-TISI-TIS 17025 CALIBRATION 0244.)

4. Condition of calibrated item : good

Equipment Description :

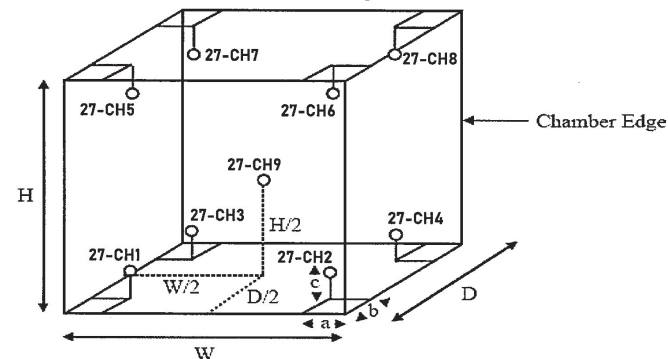
Time Constant 1 Hour 49 Minute At 104 °C
Fresh Air Damper ☒ Open ☐ Min ☐ Medium ☒ Max
☐ Close
☐ Not Available

5. Adjustment :

() without adjustment (X) after adjustment

Approved By. Ban Loi

Calibration Report



Remark :

Internal Dimensions of Chamber : W (Width) = 104 cm. , H (Height) = 72 cm. and D (Depth) = 60 cm.
Size of Installed Standard sensor number 27-CH1 to number 27-CH8 : a = 5 cm. , b = 5 cm. and c = 5 cm.
Size of Installed Standard sensor number 27-CH9 : W/2 = 104 cm./2 , H/2 = 72 cm./2 and D/2 = 60cm./2

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	104.07	103.60	103.45	104.02	104.47	103.57	104.59	103.78	104.18

Chamber (Oven)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average					
104.0	-	104.0	103.97	0.07	0.70	0.42	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. Ban Loi



Metrological Center

SCI ECO Services Company Limited

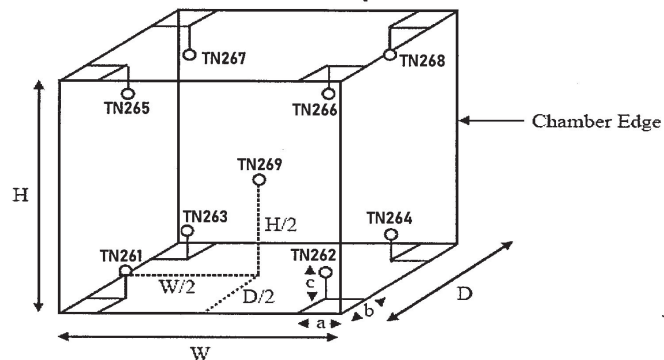
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.



Certificate No. T222502

Page 4 of 4

Calibration Report



Remark :

Internal Dimensions of Chamber : W (Width) = 104 cm. , H (Height) = 72 cm. and D (Depth) = 60 cm.
Size of Installed Standard sensor number TN261 to number TN268 : a = 5 cm. , b = 5 cm. and c = 5 cm.
Size of Installed Standard sensor number TN269 : W/2 = 104 cm./2 , H/2 = 72 cm./2 and D/2 = 60cm./2

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)								
	TN261	TN262	TN263	TN264	TN265	TN266	TN267	TN268	TN269
180	179.14	179.17	179.65	179.26	180.41	179.64	181.18	180.99	180.36

Chamber (Oven)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average					
180.0	-	180.0	179.98	0.38	1.78	1.10	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 I17/15-05-63



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)

CORPORATE SERVICES 3 : EQUIPMENT CALIBRATION AND TESTING SERVICES

534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250

TEL. 0-2717-3000 FAX. 0-2719-9484

Cert.No.: 22TW178

Page.: 1 of 2

Certificate of Testing

Equipment : DO Meter
Manufacturer : YSI
Model : 5100
Serial No. : 15L103204
ID No. : BKK_EN0205
Received Date : 02 August 2022
Test Date : 03 August 2022
Reference : 2208-0060DSC-1
Submitted by :

ALS Laboratory Group (Thailand) Co.,Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand

Laboratory Condition : Temperature (25 ± 5) °C
Humidity (50 ± 20) %
Test Procedure : In - house method : CP-CH9
by Comparison Technique with Azide Modification Method

Tested by : Walalak Sirithean

Approved by :

Malee
Approved Signatory

(✓) Malee Butkruea
() Saithip Meangmai
() Warakorn Lernagatrakul

Issue Date : 4 August 2022

B 0293758



Cert.No.: 22TW178
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).

<u>Instruments</u>	<u>Serial No.</u>	<u>ID No.</u>	<u>Certificate No.</u>	<u>Due Date</u>
1) Burette	-	130BU10	21CG1389	25 Mar 2023
2) Balance	1126143764	140RC004	21MM430	21 Sep 2022

2. Standard Material :-

<u>Material</u>	<u>Manufacturer</u>	<u>Lot.No.</u>	<u>Assay</u>
Sodium Thiosulfate pentahydrate	Merck	AM1763316	100.2%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %

Dissolved Oxygen Probe No.: 17A100064

<u>Titration Method</u> (Azide Modification Method)	<u>DO Meter</u> <u>Reading</u>	<u>Standard Deviation</u>
(mg/L)	(mg/L)	(mg/L)
8.06	8.07	0.0045

This report was certified only for the instrument we tested. It is allowable to use for study the system efficiency, The environmental impact control and present to organization it may concerned intend to use for advertising and referral purpose is prohibited. This report may not be reproduced other in full, without written approval of the laboratory

-o0o-

Malee

a 1119718



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert. No.: 22LM107
Page.: 1 of 2

Certificate of Calibration

Equipment : DO Meter with Sensor
Manufacturer : YSI
Model : 5100
Serial No. : 15L103204
ID No. : BKK_EN0205
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.
104 Phatthanakan 40, Phatthanakan Rd.,
Khwaeng Phatthanakan, Khet Suan Luang,
Bangkok 10250 Thailand
Location : TPA On Site Calibration Laboratory
Received Order : 2 August 2022
Calibrated Date : 4 August 2022
Ambient Temperature : (26 ± 10) °C
Relative Humidity : (50 ± 30) %
AC Line Voltage : (220 ± 22) V
Calibrated by : Man Pattanapongpaiboon

Approved by : *Malee*
Approved Signatory

() Pornthippa Tameyakul
✓) Malee Butkruea
() Suwit Imjai

Issue Date : 9 August 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

A 0044131



Equipment : DO Meter with Sensor
Condition As-Received : Used Item
Reference : 2208-0060DSC-2

Cert. No.: 22LM107
Page.: 2 of 2

Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) into Temperature Bath.

The temperature scale used was based on ITS-90.

Condition of this result of calibration

1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Digital Thermometer	1502A	A52847	2111144	20 Oct 2022

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration :- (*) Without Adjustment

Function : Temperature measurement.

This instrument was connected with temperature sensor, S/N.: 18C100772

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty (± °C)	Coverage Factor k
20.00	60	20.002	19.93	-0.072	0.15	2.00

UUC* : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k , providing a level of confidence of approximately 95 %.

-o0o-

Mah.

a 1120698



Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhohi, 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. T230683

Page 1 of 4

Certificate of Calibration

Equipment : Chamber (Incubator)

Manufacturer : MEMMERT

Model : ICP 750

Serial No. : F818.0075

Customer Code : BKK_EN0305

ID No. : T9571A4

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

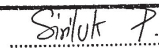
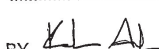
Customer Location : Wet Chemistry Lab 2

Date of Receipt : 30 March 2023

Calibrated By : Sujjar Naknakred (Site Calibration Manager)

Approved By :  / Boonchai Suriyawong (Assistant Calibration Manager)

Date of Issue : 10 APR 2023

REVIEW BY	
APPROVED BY	
NEXT CAL. DATE	05/04/24

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-L14I18/31-08-64



Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.



Certificate No. T230683

Calibration Report

Page 2 of 4

Equipment : Chamber (Incubator)
Date of Calibration : 5 April 2023 (Finished Time 4:30 PM)
Environment : Temperature 22.9-28.6 °C
Line Voltage 221.7-225.5 V

Condition of this results of test :

- This instrument was calibrated by insert 12 standard resistance thermometer into its chamber and test according to WI-T20 (based on ASTM E145-94 (Reapproved 2001) and AS2853-1986.)
All data show below were final values and the initial data may be obtained upon 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	37-(CH1-10)	T222493	28 November 2023
RTD	100 ohm	36-(CH1-10)	T222493	28 November 2023
DATA LOGGER	34970A	T193	T222493	28 November 2023

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

UUC Description :

Time Constant 2 Hour 24 Minute At 20 °C
Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max
☐ Close
☒ Not Available

5. Result of test :

() without adjustment (X) after adjustment

Approved By _____



Metrological Center

SCI ECO Services Company Limited

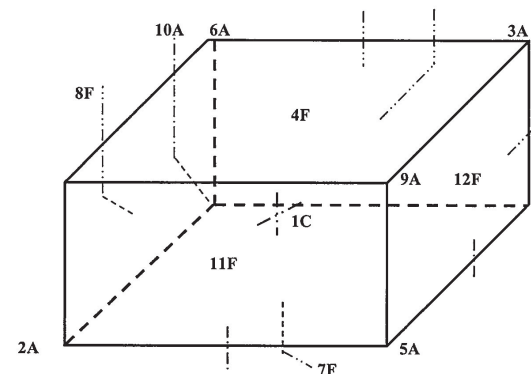
33/2 Moo 3, T.Banpa, A.Kaengkhoi, Saraburi 18110, Thailand.



Certificate No T230683

Calibration Report

Page 3 of 4



C = Centre , F = Centre of Face , A = Corner , E = Centre of Edge

1C	=	37CH1
2A	=	37CH2
3A	=	37CH3
4F	=	37CH4
5A	=	37CH5
6A	=	37CH6
7F	=	37CH7
8F	=	37CH8
9A	=	37CH9
10A	=	37CH10

11F	=	36CH1
12F	=	36CH2

Approved By _____



Certificate No. T230683

Calibration Report

Page 4 of 4

Measurement Results

Calibration Point	Average Standard Reading at each position (°C)									
	37CH1	37CH2	37CH3	37CH4	37CH5	37CH6	37CH7	37CH8	37CH9	37CH10
20.0	20.32	20.28	20.17	20.22	20.22	20.04	20.17	19.74	20.31	19.93
	36CH1	36CH2								
	20.14	20.20								
Calibration Point	37CH1	37CH2	37CH3	37CH4	37CH5	37CH6	37CH7	37CH8	37CH9	37CH10
25	25.28	25.15	25.13	25.13	25.20	25.02	25.11	24.79	25.20	25.26
	36CH1	36CH2								
	25.13	24.94								

Chamber (Incubator)			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor k
	Min , Max	Average					
20.0	19.9 , 20.1	20.0	20.02	0.09	0.54	0.38	2.00
25.0	24.9 , 25.1	25.0	25.03	0.03	0.51	0.38	2.00

* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By

ภาคผนวก ฉ

สำเนาหนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน



ที่ อก ๐๓๑๐(๑)/ ๑๐๖๙

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ เขตราชเทวี
กรุงเทพมหานคร ๑๐๔๐๐

๒๘ มกราคม ๒๕๖๕

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๓๐ กรกฎาคม ๒๕๖๓

- สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ แผ่น
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุ
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔
ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร
ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย)
จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้
ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย ตามสิ่งที่ส่งมาด้วย ๒
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๕๙ รายการ น้ำใต้ดิน
จำนวน ๑๒๖ รายการ อากาศเสีย ๑๖ รายการ สิ่งปฏิภณหรือวัสดุที่ไม่ใช้แล้ว จำนวน ๓๕ รายการ และดิน
จำนวน ๑๒๕ รายการ รวมทั้งสิ้นจำนวน ๓๖๑ รายการ ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ กันยายน ๒๕๖๖ หากประสงค์จะต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอ
ต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์
เอกชน ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

๒๒๒

(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๒๐๒ ๔๑๔๖ ๐ ๒๒๐๒ ๔๐๐๒

โทรสาร ๐ ๒๓๕๔ ๓๒๐๘ ๐ ๒๓๕๔ ๓๔๑๕

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย

๑) นางสาวยุพาพร จันทรเปล่ง

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๐

๒) นางสาวชัชชนัย โกมารกุล ณ นคร

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๑

๓) นายศรายุทธ จิตรานนท์

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๒

๔) นางสาวกนกกร เอนก

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๑

๕) นายสุริยา สอนแก้ว

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๒

๖) นายวิชาญ ชุมหรีต

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๓

๒๒๒

(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ ออก ๐๓๑๐(๑)/ ๑๐๖๙

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย

๑) นางสาวจินดา ไชจุลธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๐๘
๒) นางสาวสาวิตรี น้อยเสงี่ยม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๐๙
๓) นางสาวชนัญญาญจน์ อัมขม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๐
๔) นางสาวนรินทร์ สายเส็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๕
๕) นางสาวนันทวิทย์ สมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๖
๖) นางสาวศรัณยา เฉลิมธำรงค์	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๗
๗) นางสาวสรารักษ์ มงคลจิรวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๙
๘) นางสาวศิริลักษณ์ พึ่งแพง	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๒๐
๙) นายณพพงศ์ จันทร์พันธุ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๐๘
๑๐) นายนเรศรชัย โกมลย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๑
๑๑) นายธันนา จริยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๔
๑๒) นางสาวเกศรินทร์ แก้วมัน	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๖
๑๓) นางสาวสุวิมล ชัยเรืองวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๗
๑๔) นางสาวสุชาดา ธรรมถาวร	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๑
๑๕) นางสาวเปมิภา ชัยเดชชนกุล	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๓
๑๖) นางสาวศศิธร หมูสวัสดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๔
๑๗) นางสาวเสาวลักษณ์ ภูณาทำพร	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๕
๑๘) นายอภิสิทธิ์ สิงหา	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๖
๑๙) นายศักดิ์สิทธิ์ ไพศาลพิสุทธิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๗
๒๐) ว่าที่ร้อยตรีหญิง พรรณิภา ขำเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๘
๒๑) นางจิตตา คำภูแก้ว	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๓๑
๒๒) นางสาวอรพรรณ รักยง	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๑๕
๒๓) นางสาวนพรัตน์ แยมกรานต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๑๙
๒๔) นายจุลเดช วารินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๐
๒๕) นางสาวตายุรัตน์ ร้องคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๑
๒๖) นายนคร สุขเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๒
๒๗) นายบัญชา นามเขตต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๓
๒๘) นายพรมมี ศรีปัตเนตร	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๕
๒๙) นายอุทิศ อุณสิม	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๖
๓๐) ว่าที่ร้อยตรี เฉลิมเกียรติ อมรศรีเสริม	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๘
๓๑) นางสาววริยา สร้างนา	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๙
๓๒) นายอนุพงศ์ รตินศรีประเสริฐ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๓๐
๓๓) นางสาวจุฑารัตน์ โอนสันเทียะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๔๒
๓๔) นางสาวจาวรรณ พิมพ์อภิลักขิต	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๖๖

(นายศิระ จันทร์เกิด)

๓๕) นางสาวปรางค์ทิพย์...

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปลัดกระทรวงสาธารณสุข

- ๒ -

๓๕) นางสาวปรางค์ทิพย์ กิจไพศาลศักดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๗๙
๓๖) นางสาวเดือนใจ ทางกลาง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๐
๓๗) นางสาวจิราพร ศิริเวช	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๒
๓๘) นายวรกร ผูกกริช	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๓
๓๙) นายทง วีริยะสทกิจ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๔
๔๐) นายธนิต เจนจบ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๕
๔๑) นายคณิศร ขำเพชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๖
๔๒) นายอรรคพล นิยมวิทยาพันธ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๗
๔๓) นายภูวิช พรหมสะอาด	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๘
๔๔) นายธนเดช โกคาพิพัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๙
๔๕) นายชวลิต วงษ์จันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๐
๔๖) นายอาทิตย์ ศรีเสน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๑
๔๗) นายเจดดินทร์ คงศักดิ์ไทย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๒
๔๘) นายจรัส บุญยัง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๕
๔๙) นายธนาบดี เอนก	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๖
๕๐) นายอภิวัฒน์ ทุมหนู	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๗
๕๑) นางสาวสุภาขวัญ มาก	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๘
๕๒) นางสาวหัตพร ขวาลสมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๐
๕๓) นางสาวอติมา บุญเพ็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๑
๕๔) นางสาวกนกอร เข้มเพ็ชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๒
๕๕) นางสาวพัชรียา หงษ์สมดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๓
๕๖) นางสาวภาวนิดา สุวงศ์ตระกูล	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๔
๕๗) นางสาวภาณุมาศ นามวัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๕
๕๘) นางสาวอุไรรัตน์ หังสร้างแป้น	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๖
๕๙) นายธีรวัฒน์ ปวงสุข	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๗
๖๐) นายอิทธิพล ยะโส	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๘
๖๑) นายประพจน์ วรรณชูชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๙
๖๒) นายชยธร พวงทิพย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๐
๖๓) นางสาวกนกวรรณ จันทบาล	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๑
๖๔) นางสาวเกษร หลักบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๒
๖๕) นายสิทธิโชค ธงเงิน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๓
๖๖) นางศิวารณ ใจบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๕
๖๗) นางสาวพรรณธิดา ทุมคง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๘
๖๘) นางสาวศรณีย์ ยิ่งดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๙
๖๙) นายนวกัทร ศรีวิริยะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๐
๗๐) นายสุวิชา ทองอ่อน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๑
๗๑) นายวิญญู บุญตะนัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๓

(นายศิระ จันทร์เกิด)

๗๒) นายสมบูรณ์...

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปลัดกระทรวงสาธารณสุข

๓๒) นายสมบุรณ์ บุตรจันทร์
๓๓) นายวิรัตน์ ไชยชนะรา
๓๔) นายอนุเบศร์ เพิ่มพูน
๓๕) นายจิรณัฐ ขวาละออ
๓๖) นายสมโภช วันสา
๓๗) นายอัสรี นามบุรี
๓๘) นายณัฐนันท์ ปานประเสริฐ
๓๙) นายอัครเวศ จอัสว
๔๐) นายประเสริฐ สุระขันธ
๔๑) นายบุญล จันทรเนียม
๔๒) นายพิรพงษ์ ทองคุณปรีดา
๔๓) นายณฤพล ทองนุช
๔๔) นายอนุวัฒน์ ม่วงแพร่
๔๕) นายเจตศรวุฒิ ปิตตะมะ
๔๖) นายกฤษณะ สายวรรณ
๔๗) นายพิชัย บุญยงค์
๔๘) นายภาณุพงศ์ โคมวงค์
๔๙) นายสามารถ คุ่มปลี
๕๐) นายสัญญาชัย โกศรนาม
๕๑) นายณัฐวุฒิ ศรีประเสริฐ
๕๒) นายชวลิตชัย นาคพนม
๕๓) นายพงศธร ชัยทิพย์
๕๔) ว่าที่ร้อยตรี ภาณุพงศ์ แสนศรี
๕๕) นายสิทธิโชค ทาสิดา
๕๖) นายธนากร อินสุตา
๕๗) นางสาววรรณิษา ขาติวันชัย
๕๘) นางสาวพิมพ์ตะวัน มินากุล
๕๙) นางสาวเพชรรัตน์ สิงห์สมบูรณ์
๖๐) นางสาวชญาณีน พรหมจันทร์
๖๐๑) นายกิตติ ทวีราช
๖๐๒) นายจักริน หมั่นวิชา
๖๐๓) นายฉัตรชัย สุขเปี้ย
๖๐๔) นายณรรณห์ ต๊ะทองคำ
๖๐๕) นายศุภพล สมนอก
๖๐๖) นายทักษ์ดนัย อุบลศรี
๖๐๗) นายธนศร นามะกุลณา
๖๐๘) นายธิตพงษ์ บัวแดง

ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๔
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๕
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๖
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๗
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๘
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๙
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๒๐
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ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๒๒
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๒๓
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๒๔
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๒๕
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ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๔๑
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๔๒
ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๔๓

(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปลัดบริหารการแพทย์สิ่งแวดล้อมและสุขภาพ

๑๐๙) นายอนนทชัย...

๑๐๙) นายอนนทชัย อุบลมณี
๑๑๐) นายณัฐพล คุณสุทธิ
๑๑๑) นายณันทวัฒน์ สาริน
๑๑๒) นายปิยะนัฐ พลมะศรี
๑๑๓) นายพงศ์สิริ โสมเขียว
๑๑๔) นายพิรพัฒน์ กำคำ
๑๑๕) นายภาณุพงศ์ มานิตย์
๑๑๖) นายมงคล ผลาทิพย์
๑๑๗) นายมนินทร พูลศิริ
๑๑๘) นายสิรินันท์ ทองอิน
๑๑๙) นายอนเนชา พันสมัย
๑๒๐) นายอดิศักดิ์ ผมไผ
๑๒๑) นายอนันตชัย วิสุม
๑๒๒) นายณัฐดนัย เจือละออง
๑๒๓) นายวรารุณ ดินัก
๑๒๔) นายแสงตะวัน นະตะสัถ
๑๒๕) นายยุทธพงศ์ รัตนะ
๑๒๖) นายชัยณัฐ ไชยชนะนิจ
๑๒๗) นายวิศรุต ศรีธรรมมา
๑๒๘) นายอนนทกร เมื่อภ่อง
๑๒๙) นายกำชัย สุทธิระ
๑๓๐) นางสาวณัฐภรณ์ รักทะเล
๑๓๑) นางสาวประภาภรณ์ บุตรพรม
๑๓๒) นางสาวนิลาวัลย์ นามพรม
๑๓๓) นางสาวพัชรินทร์ แสนสร้อย
๑๓๔) นายไพโรจน์ เปี่ยมพิมาย
๑๓๕) นางสาวศุภมาศ ทองมาก
๑๓๖) นางสาวลลิตา จิตรสว่าง
๑๓๗) นางสาวไมพร เลิกภูเขียว
๑๓๘) นางสาวกฤติมาพร คำมีแก่น
๑๓๙) นางสาวสกุลรัตน์ ภาณุภูมิ
๑๔๐) นางสาวกาญจนา คงคุณ
๑๔๑) นางสาวไพรินทร์ ศรีรูปี
๑๔๒) นางสาวทิพนพร ฝูยปัญญา
๑๔๓) นางสาวสาธิตา ปานทอง
๑๔๔) นางสาวอรวิสา ทองนวล
๑๔๕) นางสาวอริยา คำคล่อง

ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๔๔
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ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๔๖
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ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๗๕

(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปลัดบริหารการแพทย์สิ่งแวดล้อมและสุขภาพ

๑๔๖) นางสาวชุตานภรณ์...

๑๔๖) นางสาวชุตานันท์ สุนทรสนาน	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๕
๑๔๗) นางสาวสุภารัตน์ นนทประสาธ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๖
๑๔๘) นางสาวรัชนิกร เนียมกลาง	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๗
๑๔๙) นางสาวกัญญารัตน์ ศรีนิลทา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๘
๑๕๐) นางสาวอัญชลี คำจันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๙
๑๕๑) นายบุญฤทธิ์ เอี่ยมเทศ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๐
๑๕๒) นายศิริวัฒน์ พานิชย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๑
๑๕๓) นางสาวศุภรดา ปันมยุรา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๒
๑๕๔) นางสาวพาลิตี คุณน่าน	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๓
๑๕๕) นางสาวจิราเจต พองตา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๔
๑๕๖) นางสาวกนกภรณ์ อูระ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๕
๑๕๗) นางสาวอารยา มีชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๖
๑๕๘) นางสาวจิตสุภา ประเทืองสุข	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๗
๑๕๙) นางสาวอริสา วิริยขันติธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๘
๑๖๐) นางสาววิษุตา นาคผจญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๙
๑๖๑) นางสาวพนิดา ยอดอินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๕๐
๑๖๒) นางสาวนันทิยา จันทะลุน	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๕๑



(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการสาธารณสุข
ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบลอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑) ๑๐๖๕

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๖๑ รายการ

น้ำเสีย จำนวน 59 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 Method ^[4]
5	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
6	Barium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
7	α-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
8	β-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
9	δ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
10	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic 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, Titrimetric Method ^[4]
16	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic 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




(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
และทะเบียนห้องปฏิบัติการ

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 ^[4]
21	2,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
22	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
23	2,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
24	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
25	2,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
26	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
27	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
28	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
29	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
30	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
31	Endrin	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
32	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
33	Formaldehyde	Distillation, Colorimetric Method ^[3]
34	Free Chlorine	1) DPD Ferrous Titrimetric Method ^[4] 2) Iodometric Method ^[4]
35	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
36	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
37	Hexavalent Chromium	Filtration, 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	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 Method ^[4]



 (นางริกาญจน์ ฉัตรสกุลวิไล)
 ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
 ...

44 Methomyl...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
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 ^[4] 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 ^[4]
51	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
52	Sulfide	Iodometric Method ^[4]
53	Temperature	Laboratory and Field Methods ^[4]
54	Total Dissolved Solids	Dried at 180 °C ^[4]
55	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method ^[4]
56	Total Suspended Solids	Dried at 103-105 °C ^[4]
57	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
58	Trivalent Chromium	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation ^[4]
59	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4]

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]


 (นางริกาญจน์ ฉัตรสกุลวิไล)
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 และทะเบียนห้องปฏิบัติการ

3 Aldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
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]

วิมล

18 Bis(2-ethylhexyl)phthalate...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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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] Equilibrium Headspace, 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]

วิมล

34 Chromium (III)...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
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	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
37	Cyanide	Distillation, Colorimetric Method ^[4]
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]

วิธีพิมพ์

51 cis-1,2-Dichloroethylene...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
57	Dieldrin	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]

วิธีพิมพ์

68 Fluorene...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
98	pH	Electrometric Method ^[4]
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
100	Phenol	1) Distillation, Direct Photometric Method ^[4] 2) 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 ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
103	Silver	1) Digestion, Inductively Coupled Plasma Method ^[4] 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 ^[13,24]
110	TPH (C ₈ -C ₁₆)	Solvent Extraction, Gas Chromatographic Method ^[9,21]
111	TPH (C ₁₆ -C ₃₅)	Solvent Extraction, Gas Chromatographic Method ^[9,21]
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]

วิฑูรย์

114 1,1,2-Trichloroethane...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
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 (ปล่อยระบาย) จำนวน 16 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
2	Arsenic	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]


วิฑูรย์

3 Carbon Monoxide...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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
ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
3	Carbon Monoxide	1) Sampling Bag Non-Dispersive Infrared Method ^[5] 2) Non-Dispersive Infrared Method ^[5] 3) Instrumental Analyzer Method ^[5]
4	Chlorine	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
5	Copper	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
6	Dioxins	Isokinetic Sampling, Analysis by ISO/IEC 17025 Accredited Laboratory or Analysis by Department of Industrial Works Registered Laboratory (Dioxins/Furans Analysis Approved) ^[5]
7	Hydrogen Chloride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
8	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[5]
9	Lead	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
10	Mercury	1) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
11	Opacity	Ringelmann's Method ^[2]
12	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method ^[5] 2) Chemiluminescence Method ^[5] 3) Instrumental Analyzer Method ^[5]
13	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5] 2) UV Fluorescence Method ^[5] 3) Instrumental Analyzer Method ^[5]
14	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5]
15	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method ^[5]
16	Xylene	Adsorption Sampling, Gas Chromatographic Method ^[5]


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สิ่งปลูก...

สิ่งปลูกหรือวัสดุที่ไม่ใช้แล้ว จำนวน 35 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]


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6 Cadmium...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,19,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
8	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
9	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,6,15,17] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,6,16,17] 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,15,17] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8, 16,17]
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method ^[1,6,17] 2) Alkaline Digestion, Colorimetric Method ^[8,17]

วิมล

(นางริกาญจน์ ฉัตรสกุลวิไล)

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11 Cobalt...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
12	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
13	2,4-D	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25]

วิมล

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2) Soxhlet...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25]
18	Endrin	2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25]
19	Heptachlor	2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25]
20	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[1,6,18]

วิมล

2) Waste Extraction...

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
23	Methoxychlor	2) Waste Extraction, Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method ^[1,6,19] 3) Waste Extraction, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[1,6,20] 4) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[18] 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method ^[19] 6) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[20]
24	Mirex	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
25	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
26	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]


วิมล

27 Polychlorinated...

(นางริกาญจน์ ฉัตรสกุลวิไล)


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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,3-Dichlorobiphenyl - 2,2',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'-Pentachlorobiphenyl - 2,3,3',4,6-Pentachlorobiphenyl - 2,2',3,4,4',5'-Hexachlorobiphenyl - 2,2',3,4,5'-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) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,23] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,23] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]


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28 Pentachlorophenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
28	Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
29	pH	Electrometric Method ^[29,30]
30	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
31	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16]
32	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
33	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15]


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4) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
35	Zinc	4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16] 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]

ดิน จำนวน 125 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
3	Aldrin	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
4	Anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
7	Atrazine	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
8	Barium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]

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9 Benz(a)anthracene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
9	Benz(a)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
11	Benzo(b)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
12	Benzo(k)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
13	Benzoic acid	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
14	Benzo(a)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
15	Benzo(g,h,i)perylene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
17	Bis(2-chloroethyl)ether	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
18	Bis(2-ethylhexyl)phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
21	Butanol	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[12,24]
22	Butyl Benzyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
24	Carbazole	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]

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26 Carbon tetrachloride...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
27	Chlordane	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
28	p-Chloroaniline	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
32	2-Chlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,15,17] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,16,17]
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method ^[8,17]
36	Chrysene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
37	Cyanide	Extraction, Distillation, Colorimetric Method ^[26,27,28]
38	2,4-D	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
39	DDD	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]

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40 DDE...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	DDE	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
41	DDT	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
42	Dibenz(a,h)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
43	Di-n-Butyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
47	3,3-Dichlorobenzidine	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
53	2,4-Dichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]

วิภา
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57 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
57	Dieldrin	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
58	Diethyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
59	2,4-Dimethylphenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
60	2,4-Dinitrophenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
61	2,4-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
62	2,6-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
63	Di-n-Octyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
64	Endosulfan	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
65	Endrin	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
67	Fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
68	Fluorene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
69	Heptachlor	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
70	Heptachlor Epoxide	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]

71 Hexachlorobenzene...

(นางริภาณูจน์ อัครสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
71	Hexachlorobenzene	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
73	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
74	α -HCH	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
75	β -HCH	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
76	γ -HCH	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
77	Hexachlorocyclopentadiene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
78	Hexachloroethane	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
79	Indeno(1,2,3-cd)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
80	Isophorone	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
81	Lead	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
82	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[18]

2) Thermal...

(นางริภาณูจน์ อัครสกุลวิไล)

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และคณะเทคนิคห้องปฏิบัติการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	2) Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry ^[19] 3) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[20] Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[12,24]
85	Methoxychlor	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
88	2-methylphenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
89	2-Methylnaphthalene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
91	Naphthalene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
92	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
93	Nitrobenzene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
94	N-Nitrosodiphenylamine	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
95	N-Nitrosodi-n-propylamine	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
96	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,23] 2) Automated Soxhlet Extraction, Gas Chromatographic Method ^[23,32]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
	- 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	
97	Pentachlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
98	Phenanthrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
99	Phenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
100	Pyrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
101	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
102	Silver	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
103	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
106	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
107	Toxaphene	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
108	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
109	TPH (C ₈ -C ₁₆)	1) Solvent Extraction, Gas Chromatographic Method ^[11,21] 2) Automated Soxhlet Extraction, Gas Chromatographic Method ^[21,31]
110	TPH (C ₁₆ - C ₃₅)	1) Solvent Extraction, Gas Chromatographic Method ^[11,21] 2) Automated Soxhlet Extraction, Gas Chromatographic Method ^[21,31]
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
114	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
115	2,4,5-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]

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116 2,4,6-Trichlorophenol...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
116	2,4,6-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
118	Vanadium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
119	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
120	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
121	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
122	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
123	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
124	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
125	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]

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
วิมล

7. United States...

(นางริกาญจน์ ฉัตรสกุลวิไล)


ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

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ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
และทะเบียนห้องปฏิบัติการ

20. United States...

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(นางริกาญจน์ จัตรสกุณีไค)
ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
และทะเบียนห้องปฏิบัติการ

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ กองวิจัยและเตือนภัยมลพิษโรงงาน กรมโรงงานอุตสาหกรรม โทร. ๐ ๒๒๐๒ ๔๐๐๒, ๔๔๔๖



ที่ อก ๐๓๑๐(๑)/ ๕ ๓ ๗ ๙

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๐ ๙ มีนาคม ๒๕๖๖

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และขณิฉาสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๔ กุมภาพันธ์ ๒๕๖๖

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการ
วิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ
เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๙ ราย

- | | |
|---------------------------------|----------------------------|
| ๑) นายนคร สุขเจริญ | ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๒ |
| ๒) นายบัญชา นามเขตต์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๓ |
| ๓) นายอรุณพล นิยมวิทย์พันธ์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๗ |
| ๔) นางสาวพัชรียา หงษ์สมดี | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๓ |
| ๕) นางสาวภาณิดา สุรวงศ์ตระกูล | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๔ |
| ๖) นางสาวศรณีย์ ยิ่งดี | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๔ |
| ๗) นายสมโภช วันสา | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๔ |
| ๘) นายณัฐนันท์ ปานประเสริฐ | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๘๑๔ |
| ๙) ว่าที่ร้อยตรีภาณุพงศ์ แสนศรี | ทะเบียนเลขที่ ว-๒๐๔-จ-๗๘๓๖ |
| ๑๐) นายมนินทร์ พูลศิริ | ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๒ |
| ๑๑) นายณัฐดนัย เจือละออง | ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๗ |
| ๑๒) นางสาวกาญจนา คงคุณ | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๔ |
| ๑๓) นางสาวรัชนิกร เนียมกลาง | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๗ |
| ๑๔) นางสาวกัญญารัตน์ ศรีนิลทา | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๘ |
| ๑๕) นายศิริวัฒน์ พานิชย์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๑ |
| ๑๖) นางสาวกนกกรรณ์ อูระ | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๕ |
| ๑๗) นางสาวจิตสุภา ประเทืองสุข | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๗ |
| ๑๘) นางสาวอริสา วิริยขันติธรรม | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๘ |
| ๑๙) นางสาวพนิดา ยอดอินทร์ | ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๕๐ |

๒. ให้เพิ่มเจ้าหน้าที่...

-๒-

๒. ให้เพิ่มเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ ราย

- | | |
|-----------------------------|----------------------------|
| ๑) นายกาจบัณฑิต กิตติคุณชัย | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๑ |
| ๒) นายภัทรพล สว่างใจธรรม | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๒ |
| ๓) นายณราธิป เทือกชัยคำ | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๓ |
| ๔) นายศิริโชค พงษ์ประสม | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๔ |
| ๕) นายณัฐวุฒิ ตัวงแพง | ทะเบียนเลขที่ ว-๒๐๔-จ-๐๐๐๕ |

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ที่ อก ๐๓๑๐(๑)/๑๐๖๙ ลงวันที่ ๒๘ มกราคม ๒๕๖๔ คือในวันที่ ๒ กันยายน ๒๕๖๖ ทั้งนี้ สามารถยื่นคำขอ
ผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

วิมล

(นางริกาญจน์ ฉัตรสกุลวิไล)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”





ที่ อก ๐๓๑๐(๑)/ ๖ ๑๒๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๓ มีนาคม ๒๕๖๖

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๑๐ มีนาคม ๒๕๖๖

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด
ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐
ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากรของห้องปฏิบัติการ
วิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้เปลี่ยนแปลงชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการ
วิเคราะห์ จากเดิม นางสาวสรารัตน์ มงคลจิรภูมิ ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๙ เป็น นางสาวธัญญธร มงคลจิรภูมิ
ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๙

ทั้งนี้ หากท่านมีความประสงค์จะยื่นคำขอใดๆ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์
ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายประสม ดำรงพงษ์)
ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเฝ้าระวังมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน

แบบ ปอ.1

วันที่ 4 เดือน สิงหาคม พ.ศ. 2566

ข้าพเจ้า () ผู้รับใบอนุญาตประกอบกิจการโรงงาน

(√) บริษัท/ห้างหุ้นส่วนจำกัด เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

ตั้งอยู่ที่เลขที่ 104 หมู่ที่ - ตรอก/ซอย พัฒนาการ 40

ถนน พัฒนาการ ตำบล/แขวง พัฒนาการ

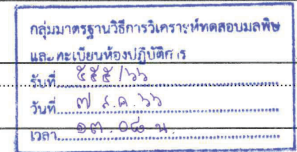
อำเภอ/เขต สวนหลวง จังหวัด กรุงเทพมหานคร รหัสไปรษณีย์ 10250

โทรศัพท์ 02 760-3040 โทรสาร 0 2 760-3197

ได้รับทราบระเบียบกรมโรงงานอุตสาหกรรมว่าด้วยการขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน พ.ศ. 2560 โดยตลอดแล้วและยินยอม
ปฏิบัติตามระเบียบฯทุกประการ และได้แนบบเอกสารต่างๆ ตามรายการเอกสารประกอบการพิจารณา (แบบ ปอ.1-1) มาพร้อมนี้

รายการขอดำเนินการ

การดำเนินการ	รายละเอียด (รายการ)				
	น้ำเสีย/น้ำทิ้ง	น้ำใต้ดิน	อากาศเสีย	สิ่งปฏิกูลหรือ วัสดุที่ไม่ใช้แล้ว	ดิน
[] ขอขึ้นทะเบียนห้องปฏิบัติการ วิเคราะห์เอกชน					
[√] ต่ออายุห้องปฏิบัติการวิเคราะห์ เอกชน	59	126	16	35	125
[√] เปลี่ยนแปลงสารมลพิษที่วิเคราะห์ (√) เพิ่มสารมลพิษ () ยกเลิกสารมลพิษ	-	-	12	-	-
[√] เปลี่ยนแปลงบุคลากร (√) เพิ่มบุคลากร (√) ยกเลิกบุคลากร	จำนวน จำนวน	38 ราย (รายละเอียดตาม แบบ ปว.1) 2 ราย (รายละเอียดตาม แบบ ปว.1)			
[] ยกเลิกห้องปฏิบัติการวิเคราะห์เอกชน					
[] อื่นๆ ..โปรดระบุ.....					



จึงเรียนมาเพื่อโปรดพิจารณา

ลงชื่อ.....
เพื่อโปรดพิจารณา

(นายประสม ดำรงพงษ์)
ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน

ลงชื่อ.....

(นางทัศนีย์ เลขาภกุลพร)

ผู้มีอำนาจลงนามแทนนิติบุคคล
ประทับตรา (ถ้ามี)





บริษัท เอแอลเอส แลборาทอรี กรุ๊ป (ประเทศไทย) จำกัด (สำนักงานใหญ่)
104 ซอยพัฒนาการ 40 ถนนพัฒนาการ
แขวงพัฒนาการ เขตสวนหลวง กรุงเทพฯ 10250



ติดต่อเรา

